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STATE OF ALASKA
DIVISION OF MINES AND MINERALS

REPORT ON PRELIMINARY EXAMINATION OF THE BONANZA CREEK VALLEY ALLUVIALS LAKE CLARK QUADRANGLE, ALASKA

by -

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BONANZA CREEK
Lake Clark Quadrangle

Gold Alluvials

A surficial examination of the alluvials and general geological conditions along the central 8 mile section of Bonanza Creek was made during period of May 22 to 26, 1961. The study was devoted largely to determine extent and influence of glaciation in the area as a whole, and the possible extent, depth, character, and economic effect glacial alluvials may have had on preglacial gold bearing stream sorted gravels.

Location and Accessibility

Central point of examined area is at approximate coordinates Longitude 154° 42' and Latitude 60° 43' North. Bonanza Creek heads in the Bonanza Hills and flows westerly 24 miles (airline) to its confluence with the Mulchatna River. During the late '90's to 1909 access to area by trappers and prospectors was by use of shallow draft boats for distance of 200 miles from mouth of Nushagak to points beyond mouth of Bonanza Creek on the Mulchatna River. 1/ During next 25 to 30 years an overland route from Nondalton was favored, a distance of 70 to 80 miles, requiring crossing numerous streams and swamp areas. During past 15 years "float" planes have been favored transportation medium to various lakes and rivers in the region. 2/ During past 2 years a Port Alsworth pilot has made number of landings on an unimproved right limit bench within 1 mile of Terry Gills camp and placer property.

Study of the region to date has been insufficient to determine whether a practical all year overland route can be located at reasonable cost.

Climate and Water Supply

Lying northwest of Alaska Range, the winters are said to be somewhat milder than along the Kuskokwim valley, with severe sub-zero periods of shorter duration. Average annual snow depths are

reported to be 2 to 3 feet. Hot weather is common during summer months, and seasonal rains must be moderate as no evidence of flood conditions was noted.

Along the entrenched section of Bonanza Creek the ground water level is within 2 to 3 feet of surface, with same ground water condition reported in the low-lands. Permafrost appears limited to small areas on north facing slopes. The spring "run-off" was over before time of visit, with snow remaining limited to small drifts in depressions on north slopes. Stream flow at that time was said to be normal for the summer season, and was estimated to be well in excess of 2000 cubic feet per minute, which should be sufficient for dredging or drag-line operations. Stream gradient along Bonanza Creek is within limits of 1 to 1½% in area examined, with its tributaries being considerably greater.

Timberline in the district is around 1800 feet above sea level.

Timber and Vegatation

Tree growth is fairly abundant along the creeks entrenched, narrow valley, and upon some south slope areas having the required soil cover; on north slopes it is scattered and generally "scrubby". Spruce is the most common, grows to 30 or 40 foot heights, and up to 10 or 12 inch diameters. Birch is next with occasional tree having 8 to 10 inch diameter. Poplar and cottonwood are fewer but reach greater heights. Alder and willow occur in fairly dense growths along some sections of the narrow valley.

Along the traversed section moss growth was limited to few inches in thickness; in much of area it occurs in small bunches with bedrock shale and argillite exposed between them, making it "bumpy" for landing and take-off of small aircraft. Caribou moss is plentiful in the uplands (sixteen caribou were noted on airstrip). Muskeg is confined to small, swampy areas on gentle slopes on both sides of valley. Other vegetation generally found in northern latitudes is not plentiful above timberline due to the general shallow soil cover.

History and Ownership

First reported finding of placer gold along upper Bonanza Creek was in 1914, with a party of six establishing a camp near mouth of Little Bonanza Creek (present site of Mr. Gills' camp). A 65 foot shaft was reported put down to bedrock, but no evidence was found of it.4/

O. B. Millett, then of Ilimna, was one of original locators, and spent 5 years prospecting the 6 claims he held. His first work was sinking a 14 foot shaft on right limit of Creek which was abandoned as hand pump would not handle the water. Bedrock was not reached, but he reported finding "pay". His next work was an open-cut on an old short and narrow channel remnant on right limit rim, 80 feet above the 14 foot shaft, from which he reported recovering $400.00 from 100 cubic yards, with nuggets up to $1.50(values based on $20.67/oz.) The gravels were lowered to creek level by cable for washing. One third of the gold was considered of local origin and reported to be 846 "fine" ($17.50/oz.). This cut was examined and it was estimated that not more than 100 cubic yards had been mined.

In the mid-twenties Mr. Millett brought in a 4 inch hand drill and hand pump to test the narrow valley alluvials. A total of 6 holes were put down - 3 holes on each of two drill lines 4½ miles apart. Line 1 is 6 miles below Gill's camp, and Holes 1, 2, and 3 were reported bedrocked at 26 to 40 foot depths with average values of 37¢/cy. Line 2 was located 1 3/4 miles below Gills' camp with Holes 4, 5, and 6 drilled to reported bedrock at 40 to 60 foot depths with 35¢ to 40¢/cy values (gold at $20.67/oz.). This hand drill equipment was observed where left along Line 2. With values too low and 1 to 1½% stream gradient small scale operation was impractical and only assessment work was done by Mr. Millett for some years thereafter.

Interest of other claim holders during this period was sporadic, and so far as observed, was limited to ground sluicing on two tributaries - Scynneva and Pass Creeks. Scynneva appeared to have had the most work done upon it. This was limited to a ground-sluice and shovelling-in operation of one man at mouth of this stream's narrow gulch, from which an unconfirmed $1,200.00 was recovered from an estimated 800 to 900 cubic yards. There was no evidence indicating bedrock had been reached in this small working, as the "wash" exposed in bottom of cut was too large to handle by hand.

Less work was done on upper Pass Creek, 2½ miles above Gill's camp due to scarcity of water, although unconfirmed reports claim coarsest gold found in the area (up to $4.00 nuggets?) was obtained here.

A number of old shafts (small dumps indicating their depth to be shallow due to high ground water level) were observed in valley floor above Gill's camp. Near by them are remains of old cabins or caches.

During the early 1930's Mr. Millett optioned 30 placer claims on upper end and 40 on lower end, which, with his 6 placer claims, made a continuous block of 76 placer claims. His efforts in 1934 to interest an operating company in the project were unsuccessful. In 1935 he made an agreement with Mr. William Hill and associates to drill the property, and Mr. Hill brought in a 4 inch Hillman Airplane Drill overland from Nondalton. Enroute several holes were reported drilled on Dummy and Chilikindrotna Creeks with discouraging results. On reaching Bonanza Creek no holes were put down due to lack of funds and the venture was abandoned. This equipment was briefly examined, appeared to be complete, and was in excellent shape.

The next reported interest shown in this area was during 1946 when four men located 27 claims for an operating company. No work was done upon them, however, and the claims were dropped. No interest was reported in the area for the next 12 years.

The next known interest was that of Mr. Terry Gill, who has been prospecting Bonanza Creek since 1959. During this period he has staked about 5 miles of ground, which includes the areas where most of past interest has been centered.

Topography

The Bonanza Hills region is one of general low relief and mature topography. To date it has not been thoroughly mapped geologically or topographically. There are no indications pointing to glaciation having been a major agent in erosional cycle of the district.

In the 8 mile canyon section studied, Bonanza Creek is entrenched 50 to 200 foot depths below the canyon rims to creek level. Slopes on both sides of the narrow valley are quite steep.

Geology

The Bonanza Creek area, as shown by outcrops along the entrenched valley section, lies within a belt of slates, argillites, shales, and graywackes of great thickness. No limestone, sandstone, or quartzite was noted. Granititic "stocks" are reported present in the district but were not observed. A number of fine grained, porphyritic, granitic dikes, 10 to 20 feet thick outcrop in the narrow valley walls. Strike of the metamorphosed sediments is N40 to 45E and their dip varied from 60° to 75° southwest.

Mineralization

Many quartz veins were noted along section of valley studied. The only one of these closely examined is located on the steep left limit valley slope about 1½ miles upstream from Gill's camp. Here a narrow gulley was recently "washed-out", exposing a 12 foot wide shear zone extending 150 feet up the slope to the "rim". This zone is about two thirds quartz

and the balance is sheared slate. The quartz occurs as more or less continuous stringers from few inches to 10 or 12 inches in width. This shear zone strikes easterly and dips 45 to 50 degrees north, cutting the sediments at about 45 degrees. The vein as a whole carries an estimated 5 or 6% pyrite (most of which is altered to limonite) and minor amounts of arsenopyrite. No other metallic minerals were noted. One "pan" taken across 18 inches of outcrop showed 3 fine gold colors. The sample was not crushed to free "possible" gold included in quartz fragments.

The structural components and formations of this district are similar to some others elsewhere that have proven to be "sources" for highly productive placers in the past.

Glaciation

No lateral or terminal moraines, eskers, drumlins, or sink-holes were noted in the area. "Hanging" (cirque) valleys or other evidence of deep glacial scouring are absent, and no glacial clay deposits were observed. "Signals" remaining appear to be limited to predominately granitic gravels remaining on both Bonanza creek rims - more frequently on left limits. The several terraced benches beyond left limit rim could be of glacial origin; this is suggested by the well rounded, unsorted, predominately granitic gravels where exposed, especially along left limit rim. Their thickness ranges from nil to 10 feet. However, Mr. Millet's open-cut 80 feet above his 14 foot shaft, and the reported coarse gold found in upperlimits of Pass Creek, together with values found in cnayon at lower end of Scynneva Creek suggest some of the low terraces may be remnants of old channels.

Along considerable portion of right limit rim there is no soil cover - except for the small moss hummocks - with bedrock slate and shale being at or within few inches of surface. From rim westerly for one mile across unimproved air strip to crest of a long, well rounded hill, soil cover is within

few inches of bedrock. In this section, about 2 miles north of Gill's camp, there are 5 or 6 scattered granitic glacial "erractics" on right limit rim; sitting on bedrock from a quarter mile distance their diameters were estimated to be 10 to 15 feet. No other "erratics" were noted in the area.

Valley Alluvials

With evidence indicating glacial scouring was not an important factor in erosional cycle of this area, it is believed that pre-glacial alluvials were undisturbed, and that placer gold concentrations remain more or less as originally deposited along Bonanza Creek's course.

Entrenched in a relatively narrow valley throughout the area traversed, its surface width varies from 300 to 700 feet with an estimated average width around 400 feet.

In the 5 mile section below Gill's camp the gravel exposed in creek bed is over 90% local shingly slate, argillite, and some quartz. An occasional well rounded, small granite boulder (up to 12 or 14 inch diameter) was noted. Near side limits of the valley floor - especially along the left limits - granite boulders up to 2 and 3 foot diameters, are more common and are half covered with soil and moss: these glacial source boulders have been gradually moved down the slopes by bank "creep", and so far as observed were confined to 40 or 50 feet from base of slope.

The meager information available on Mr. Millett's two drill lines suggest that he did not encounter large boulders in his holes. One "hearsay" report claims that the gravels were uniform in character from top to bottom of holes, which could be interpreted as meaning it was sedimentary in origin. Holes drilled by Millett report depth to bedrock varied from 26 to 40 feet in 3 holes across Line 1, and from 40 to 60 feet in three holes across Line 2. These drill

lines indicate a flatter bedrock gradient than that of Bonanza Creek and 20 feet or more greater depth of gravels across upper drill line. This is contrary to general rule that depth of alluvials decrease more or less uniformly upstream. The greater depth across Line 2 suggests it may be due to large volume of glacial alluvials being fed into the valley by Little Bonanza creek which was more than could be carried away by the master stream. This does not seem likely, however, as surface gradient is uniform for the 8 mile section studied.

In the first 1½ to 2 mile section above Gill's camp, the gravels are also predominately sedimentary, (estimated 90%) and stream gradient the same - 1 to 1½%. However, granite boulders occur a little more frequently, with one measuring 10 by 12 feet across the top where it sticks up a foot or so above the surface. The "fan" built up about two thirds across valley width at mouth of Pass Creek is largely composed of well rounded medium granitic wash, up to 12 inches in diameter. Beyond this up-stream the gradient increases, and granitic boulders are more plentiful in the Creek bed.

The near surface ground water level, together with the "oldtimers" trouble to complete shafts to bedrock because of the water problem, suggests fairly loose gravel due to lack of sufficient sediment to "tighten" the ground. Under these circumstances the greater gold concentrations (if any) may be on or near bedrock. However, Mr. Millett reported finding "fair" pay in his 14 foot shaft; this makes it a reasonable expectation that appreciable gold values may be found at number of horizons from surface to bedrock.

Little Bonanza creek has a steeper gradient - 2% or more for the lower mile traversed along this drainage. Granitic boulders (up to 3 and 5 foot diameters) are abundant in the creek, on surface, and in fairly wide areas

where they are partially covered by small willow brush, grass and other vegetation. With the obvious abundance of boulders no evidence of serious prospecting was noted. In any event the valley is too narrow for a dredging venture.

Only the lower canyon section of Scynneva Creek was examined. Good values apparently were found here by the early day prospector, but the large boulders proved too difficult to handle by hand and the claims were abandoned.

Summary

The Bonanza Creek drainage system has received little attention from prospectors and none from competent mining companies. Another retarding influence has probably been due to general belief that the valley was too narrow for dredging or large dragline operations; however, the recent study of the area shows a minimum width of 300 feet and an average of 400 feet along the 8 mile section. The major handicap has been its continued all season's inaccessibility overland.

Although information on values and depth of ground is limited largely to results obtained by Mr. Millet's work, geological conditions, erosional maturity of the area, the presence of many mineralized quartz veins and acidic type dikes, all combine to make favorable conditions for placer gold concentrations of interest.

Using an average 400 foot width and 30 foot minimum depth the yardage potential of the 8 mile section is calculated to be 18,000,000 cubic yards. The proving of economic gravels for that yardage will justify drilling balance of the narrow valley, and an exploration program in the lowlands of this drainage system where early day prospectors reported appreciable fine gold in near surface panning will be justified.

This district's development, however, will continue to be retarded until a practical all season's overland route is located.

REFERENCES:- 1/ Refer to Map I
2/ Refer to USGS Bul. 622 pgs 262-63; USGS Bul. 655 pgs 26,90 & 136
4/ USGS Bul.655, pg. 136

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1/ Refer to Map I

2/ USGS Bul. 622, pgs 262-63; Bul. 655, Pgs 26, 90 & 136

3/ Plates 1 to 7

4/ USGS Bul. Pg 136.

REPORT ON
PRELIMINARY EXAMINATION
OF
THE BONANZA CREEK VALLEY ALLUVIALS
LAKE CLARK QUADRANGLE, ALASKA

SUMMARY

The Bonanza Creek drainage basin has received very little serious attention from experienced placer miners or competent exploration companies to date. This is largely due to its relative "overland" inaccessibility, and the unfavorable economic climate for gold operations the past 15 to 20 years.

There has alos been the general impression that the entrenched section of the upper valley is too narrow for conventional type dredging or large dragline operations. However, the average 400 foot surface width along the 8 miles traversed there should be ample room for manuevering that type equipment. A drilling program to determine the valleys cross-section contour, as well as type of wash and values, is obviously first requiredto determine feasibility of a dredging operation.

The sedimentary formations and erosional "maturity" of the area, combined with granitic intrusive "stocks" within a reported few miles distance, plus many visible mineralized quartz veins and a number of acid type dikes, combine to make favorable conditions for placer gold concentrations of interest.

It is considered that recent glaciation was not accompanied by any marked "scouring" action. The debris left by it was largely composed of granitic medium to coarse "wash" of shallow depth in this upland area. No glacial clay deposits were noted. Thickness of the post-glacial gravels washed into the narrow valley has not been determined. The short, steeper tributaries examined show abundant coarse granite wash, but along the master stream only an occassional boulder was noted in the lowdr 7 miles.

While reliable information concerning placer gold values largely limited to statements made by Mr. O. B. Millett concerning depth of his drill holes and gold recovered in them, plus his mention of values found in small cuts in the right limit rim at widely separated points, results of observations made during this examination are considered sufficiently encouraging to warrant a well planned exploration program.

INTRODUCTION

An examination of the 8 mile central section of Bonanza Creek was made during period of May 22nd to 26th, 1961, at request of Terry Gill, who holds 17 placer claims in that area.

Purpose of the investigation and study was to appraise its yardage potential, and determine whether the valley bottom widths were sufficient, and type stream gravels were suitable for conventional continuous bucket type dredging or dragline mining operations. A third consideration was to study extent and severity of glaciation, and its possible adverse influence on pre-glacial gold concentrations that may have been of economic interest.

LOCATION AND ACCESSIBILITY

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Mr. Gills campsite is located a short distance above confluence of Little Bonanza with Bonanza Creek, the latter being the master stream of the district, at approximate Longitude 154 42' and Latitude 60 43'. Bonanza Creek heads in the western slopes of the Bonanza Hills, and flows westerly 24 miles (airline) to its junction with the Mulchatna River. 1/

The upper Mulchatna region as a whole has had no serious prospection or exploration attention because of its relative "overland" inaccessibility. In the late '90's and prior to 1910 old reports mention use of shallow draft boats for 160 miles up the Nushagak and Mulchatna Rivers to mouth of Bonanza Creek. 2/ During the next 20 to 30 years the few prospectors and trappers in the area favored use of the trail from Nondalton, a route crossing a number of rivers and muskeg areas.

For the past 10 or 15 years "float" planes have been used to reach the region. For the past 3years Mr. Gill has been serviced by a light "wheeled" plane, with landings made on an unimproved strip on right rim of Bonanza Creek 1¼ mile from his campsite, a charter service operated by Pilot Leon Alsworth, based at Port Alsworth on Lake Clark, whose flight time is about 25 minutes.

CLIMATE AND WATER SUPPLY

Lying to the northwest of the Alaska Range, the winters of this area are reported somewhat milder than those experienced along the Kuskokwim River valley, with severe sub-zero temperatures of shorter duration. Snow depth is reported to be 2 to 3 feet. On May 22nd arrival at the property the ground was bare except for small drifts in protected depressions. 3/ Rainy periods during the summer are said to be frequent but generallyof short duration.

No permafrost is reported along the entrenched section of Bonanza Creek, as the ground-water level is 2 to 4 feet, and seasonal frost is gone in early May.

Stream flow in Bonanza Creek at time of visit was estimated to be in excess of 2000 cubic feet per minute, which should be ample for mining requirements in dredging or dragline operation. With the spring run-off over, stream flow was said to be normal for low periods of summer and fall.

TIMBER AND VEGETATION

Timberline within the district is around 1800 feet. Although scattered it is fairly abundant along the narrow valley floor and on southern exposure slopes. On slopes to the north is is generally "scrubby" and not as plentifull. 3/ Areas barren of timber as those which have little or no soil "cover" - especially so on the southern slopes.

Spruce is the most common and grows to 30 to 40 heights and up to 12 inches diameter on the "stump". Birch is fairly common with an occassional tree reaching 8 to 10 inches in diameter. Poplar and cottonwood are fewer but reach greater heights.

Alder and willows occur in fairly dense growth along sections of the valley.3/

In the 8 mile section traversed along Bonanza Creek valley moss thickness on the average was limited to a few inches; "muskeg" was confined to a small swamp areas in slight depressions on the gently sloping "uplands" on both sides of the valley. Other vegetation generally found in northern latitudes did not appear plentiful - probably due to the shallow soil "cover". Caribou moss is plentiful on the uplands - 16 caribou were counted at the air strip.3/

HISTORY AND OWNERSHIP

The first reported interest and finding of placer gold along Bonanza Creek was in 1914. " Asmall camp consisting of 6 persons has been established. This place was not visited, but from what are believed reliable sources it was learned that a 65 foot hole was recently sunk to bedrock and gold discovered! 4/ This shaft is thought to be in vicinity of Mr. Gills campsite but to date he has not found evidence of it.

A summary of past Bonanza Creek activity based largely upon information supplied by O. B. Millett (then of Iliamna), was written up by R. A. Richelson, Mining Engineer, Seattle, Wn., in February 1935. For the record of "lore" on that area that portion dealing with Mr. Milletts activity there (supplied by Mr. Gill) is as follows:-

Millett Prospect

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"Mr. O. B. Millett, of Iliamna, Alaska, was one of the early prospectors in the district and originally had 6 placer claims along Bonanza Creek, and in a period of 5 years spent over $4000 on development work.

"Workings

"The first work consisted of a shaft which was sunk for distance of 14 feet, on the right limit of the creek below the canyon, and Millett states that the ground was a heavy gravel with occassional boulders and carried pay, but it was impossible to get to bedrock on account of water as the ground was not frozen, and after several attempts to handle the water with a small pump, the site was abandoned.

"The next work was on a small bench on the right limit about 80 feet above the creek near the site of the shaft. Mr. Millett stated that this was a fairly rich piece of ground, but could not be worked profitably due to the shortage of water as the pay dirt had to be moved down to the creek bottom by means of a short jig-back tram in order to do any sluicing. The cleanup amounted to about $400.00 on 100 cubic yards of gravel and some of the nuggets ran as high as $1.50. He estimated that at least 1/3 of the gold recovered was of local origin and stated that the mint return assay on all of the gold gave a value of $17.50 per oz.

"The attractive values on the bench indicated that there was a possibility of good values in the creek bottom and as it was impossible to do any sinking, he decided to resort to hand drilling to test out the creek, and brought in a light hand rig and drilled a total of 6 holes, located as shown on May No. 46, and no boulders were encountered in any of the holes. The lower drill holes No.s 1, 2, and 3 reached bedrock at depth from 26 to 40 feet, and according to Millett showed values averaging about $0.37 per cy., and the upper drill holes No.s 4, 5, and 6 struck bedrock at depth from 40 to 60 feet and gave values from $0.35 to $0.40 per cy.

"These values were not attractive enough to warrant attempting to work the ground by ordinary methods of placer mining and although Mr. Millett was unable to personally finance any further work it was felt that the creek offered good dredging possibilities when consideration was given to the amount of ground available with practically no overburden, the nature of the gravel with no large boulders, the ample water supply, topography and the unfrozen ground which would allow an operating season of approximately 8 months, and an attempt was made to interest capital to do further drilling in order to prove the extension of the values already obtained.

"Present Status

"As a result a small amount of capital was obtained in 1934 from interests in Alaska, who now have 30 placer claims along upper portion of the creek just below the canyon, and they intend to send in a light hand drilling rig to be used during t the coming season. Mr. Millett, however, is of the opinion that the use of any light rig will be a useless expenditure of money with unsatisfactory results and would prefer having some of the larger dredging companies come in and examine the district and do the necessary exploration drilling with proper equipment.

"In anticipation of such action he has obtained the option on the 30 placer claims at the upper end of the creek and also on 40 additional claims on the lower end, which with the original 6 claims makes a total of 76 placer claims. All of these have a clear title and will be offered at a reasonable term to any of the larger and more reliable gold dredging companies who would be interested in the district.

"Remarks

"The above notes are not based on any examination of the district, but have been summarized from the various USGS Bulletins mentioned and from personal communications from Mr. Millett which may be accepted as reliable."

Mr. Milletts effort to obtain support for the venture were not successful, and knowledge of the creek gravels are still limited to his two drill lines. The upper was seen on May 23rd, about 100 yards upstream from Lucky Gulch, where an old hand pump, and half dozen 40 inch lengths of 4 inch casing remain. His lower drill line is approximately located on Map 1, attached.

In 1935 Mr. Wm. Hill brought in a 4 inch Hillman Airplane Drill from Nondalton. Enroute he is reported to have drilled a few holes on Dummy Creek and Chilikindrotna Creek with negative results. On reaching Bonanza Creek it is stated no holes were drilled as funds for the work had not been received. This equipment was stored in a log wannigan and appears to be in very good condition. No inventory was taken of the equipment, but Mr. Gill returned latter and advised the equipment appeared completed, and that he counted 15 lengths of 4 inch casing. The wannigan is located 60 feet south of the creek in the timber, at point about $\frac{1}{4}$ mile upstream from mouth of Tom Creek.

The next reported interest in the area was period from June7th to August 7th, 1946, during which 27 placer claims were staked by B. J. McGougall, C. M. Holmes, a Mr. Richards, and Mr. Isert for Strandberg and Sons. No further work was done on the property, and it was apparently dropped the following year. It appears there was no interest in the area for the next 12 years.

During the past 3 years Mr. Terry Gill has located and held 17 placer claims - 15 adjoining claims on Bonanza upstream from point about half a mile from Tom creek, and 2 claims on Lower Bonanza Creek.

TOPOGRAPHY

The Bonanza Hills region is one of general low relief and mature topography, which has not been thoroughly mapped topographically or geologically. There are no indications pointing to glaciation having been a strong influence in the erosional cycle of the area.

GEOLOGY

The Bonanza Creek area - as shown by outcrops along the entrenched valley - lies within a belt of fissil slates, argyllites, graywackes, and shales of great thickness. No sandstone or limestone or quartzite were noted. Strike readings of the sedimentary series were taken at a number of points, and were within limits of N40 to45W and their dips were 60°to 75° to northwest.

Intrusives noted along Bonanza and Little Bonanza Creeks were limited to several porphyry (granitic) dikes, whose widths were not determined but appear to be within limits of 15 to 20 feet.

Glaciation

Evidence remaining of the recent glacial period appears to be limited to shallow covering of the uplands of predominately granitic gravels, ranging in thickness from nil to 5 or 6 feet - as exposed on the valley rims. A considerable portion along right limits of the main stream beyon the rim has no soil cover, and slate bedrock is exposed or is with a few inches of the surface. The long rounded hill to west of the air strip has a similar surface. The landing strip itself has a

bumpy surface due to small hummocks of moss (3 to 5 inches high and 6 to 10 inches wide) with small shingly slate taus between. Along this right limit rim about 2 miles upstream from camp there are 5 or 6 scattered granitic "erratics" sitting on bedrock; from distance of ¼ mile their size was estimated to vary from 5 to 12 or 15 foot diameters.

Along left limit rim the bedrock seem to have 2 to 5 foot of glacial gravels and a little soil on surface. This is especially prevalent where left limit rim has steeper plus surface slopes to the south.

Lateral or terminal morains, eskers, drumlins, or "sink holes" which are usually left behind by melting glaciers are entirely absent. No well defined evidence of "scouring" was noted, and "hanging" (cirque")valleys do not occur in the area. No glacial clays were observed.

Valley Alluvials

With evidence indicating that glacial scouring was probably negligible. it is believed that the preglacial gravels were probably undisturbed and that any gold concentrations in those gravels remain more or less as originally laid down. With bedrock grade being flatter that Bonanza Creeks presnt surface - 27 feet to bedrock along the lower drill line and 65 feet depth across the upper drill line - it is suggested that the top 30 to 40 feet of alluvials across Line 2 is largely composed of gravels derived from glacial material, which could not have had appreciable thickness as the alluvials down stream are half the thickness of Drill Line No. 2.

The high ground water level indicates loosegravels, and lack of sediment to "tighten"the ground is reason for oldtimers failure to sink shafts to bedrock. This suggests that gold concentrations will favor bedrock "pay" or within a few feet of bedrock.

In the five mile traverse downstream from camp - following left limit side of the creek - only an occassional well rounded boulder was noted in creek bed, the gravels being an estimated 75% of the local sedimentary type (mostly the shingly slate. Near base of the valleys south (left limit) rim, granite boulders were occassionally noted, half embedded in a foot of more of top soil and moss, varying in size from 2 to 4 feet in diameter. Most of them were located below the steeper south side slopes, and probably reached the valley floor during bank " "creep"accompaning spring thaws.

Upstream above camp for the 2½ to 3 miles traversed similar conditions exist. An exception is the presence of an occassional large "erratic" granite boulder, the of which was almost completely buried in the slate gravels; the flat surface exposed was 12 feet or more across.

The alluvial fan at mouth of Bass Creek, extending two thirds of way across the valley is composed of medium, well rounded wash of igneous and sedimentary origin. At upper limits of this area the creek shows more abundant coarse wash.

Little Bonanza and Scynneva Creeks showing an increasing abundance of coarse wash. Their valleys are too narrow and boulders too plentiful for dredging. Their stream gradients are greater - as is the case with all the tributaries.

Whether or not the lowlands section (8 or 10 Miles) of Bonanza Creek holds values of possible interest is not known. A reference in the USGS Bulletins referred to in this report makes casual mention of early day prospectors getting fine colors in area near mouth of the creek. If a large yardage of economic value can be proven in area in which past work has been concentrated, investigation of the lowland valley will be justified.

Mineralization

Many quartz veins were noted along section of the valley studied. The only one closely examined is located on left limit of the valley about 1½ miles upstream from camp. Here a narrow gulley was recently "washed" out exposing a 12 foot wide shear zone extending up the steep slope to the rim. This zone is about two thirds quartz, the balance being sheared slate. The zone is one of alternating bands of quartz and slate of easterly strike and 45 to 50 degree dip to north, cutting the sedimentary series at about 45 degrees.

One "pan" taken from a section of this outcrop showed 3 fine colors. The sample was not crushed to free "possible" gold it might contain.

The vein carried possibly as much as 5% (or more) of pyrite, most of which was altered to limonite, and minor amounts of arsenopyrite. No other minerals were noted in the vein.

CONCLUSIONS

The area examined is considered one that justifies an exploration drilling program. The formation in which it occurs is commonly considered a favorable gold area. Factual information concerning values is admittedly sketchy, although it is believed a certain reliance upon Mr. Millett's drilling results are warranted.

In the eight mile section examined and taking 400 feet as the average width, and 30 feet as a minimum depth, the available potential yardage is over 18,000,000 cubic yards. It is believed the average depth will be around 40 feet, in which case it would add one third to the potential yardage.

Under the present unfavorable and "unhealthy" economic climate for the gold miner, the average values must be higher than formerly required for a profitable operation. In this age of ever increasing costs it seems evident this project can only be considered or undertaken by a substantial mining organization.

By- Martin W. Jasper
Martin W. Jasper
Mining Engineer
State Division of Mines
& Minerals

Anchorage, Alaska
July 1, 1961

Bonanza Creek Valley
Looking downstream of valley from east side canyon rim at mouth of Scynneva Creek. May 23, 1961. AM

Bonanza Creek Valley
Looking upstream from same vantage point as above.
May 23, 1961. 9:30 AM.

PLATE 1

Bonanza Creek Valley
View looking N85W from left limit slope about 75 feet at point about 5 miles below campsite and 1 mile above mouth of Victoria Creek. May 23, 1961. 1 PM.

Bonanza Creek Valley
View looking upstream N80E from same point as view above.
May 23, 1961. 1 PM.

PLATE 2

Bonanza Creek Valley
View looking N85W from left limit slope about 100 feet above valley floor from point about ½ mile east of last view. Victoria Creek joins Bonanza from the south at left center background. May 23, 1961. 1:30 PM.

Bonanza Creek Valley
View looking N80 E along left limit bench from point about 1/8 mile east of last shot. Bonanza Hills in the background. May 23, 1961. 2 PM.

Bonanza Creek Valley

Panoramic view looking westerly (downstream) from point on left limit valley rim. Campsite at left center foreground. "White area (marked X) on "break" of right limit slope opposite camp is narrow remnant of old channel from which old-timers are reported to have found some coarse gold. Two pans taken of the rotten porphyry dike bedrock showed total of 8 small colors. The dike appears at several points for half mile downstream. Argillite (slate) bedrock at or within few inches of surface along both rims of valley predominates.

May 24, 1961. 8:30 AM.

PLATE 4

Bonanza Creek Valley
View looking northerly up the valley from point ½ mile from camp. Terry Gill in foreground. "Shingly" slate gravels within 1 foot of surface. May 24,1961. 9 AM

Bonanza Creek Valley
View upstream looking northeasterly about 2 miles above camp. Taken from north side of alluvial fan at mouth of Pass Creek - a right limit tributary. - 25 to 30 feet above valley floor. "Fan" extends 2/3 of distance across valley, which is 350 to 400 feet wide in this section. Oldtimers are reported to have found several dollar nuggets up Pass Creek. The tributary was not examined due to very dense alder and willow growth. May 24, 1961. Noon

Little Bonanza Creek
View looking downstream from about 3/4 mile above mouth of creek. Shows abundance of coarse wash which becomes progressively more abundant and larger upstream. The lower end of Scynneva Creek has same characteristics.
May 25, 1961. 12:30 PM

Bonanza Creek Valley
View looking northerly from campsite, with Mr. and Mrs. Terry Gill in foreground. May 25, 1961. 5:30 PM.

PLATE 6

View 1
15 Caribou in center background

View 2

Panoramic views from unimproved landing strip (1½ mi. from camp) showing Bonanza Hills in background, and the entrenched narrow Bonanza Creek valley in center background. Slate (argillite) bedrock at surface in foreground with erratic moss cover few inches thick. Depth to same bedrock on far side of creek is few inches to 5 or 10 feet (??).

View 3

View 4

Upper Bonanza Creek Area
Lake Clark Quad. May 25, 1961. 6:30 PM

PLATE 7

BONANZA CR REPORTS (MAY '61 EXAM.)

DISPOSITION

2 TO JUNEAU OFFICE (original & 2nd Copy)

2 TO TERRY GILL (passed on to Newmont)

1 TO CHAS. F. HERBERT (Sept. '61)

10/11/61 1 TO ERNIE BUSCH

1 FOR MJ's PERSONAL FILE

Oct. 11, '61
Memo:-
Require 2 more sets of Pix –
1 for MJ's Copy
1 for Office ✓

Nov. 23, '61. Memo:- Two copies reproduced by Rich.
1 Copy with complete pix layout mailed to
M.G. (Joe) Lynch, Seattle, today at his
Nov. 17th request.
Joe advised on 17th that M.G. Bob Fullen not interested
in deal. Fullen advised me Gill should check old
drill holes before he or anyone would be justified
to do any drilling.

March 16, 1964

Weldon F. Appelt, Consulting Engineer
355 Adams Petroleum Center
Houston 25, Texas

Dear Sir:

RE: Bonanza Gold Inc. Lake Clark Quad.
REF: Your March 14, 1964 Inquiry

With regard to your above inquiry received today:-

It is believed you have reference to a placer property that is located on Bonanza Creek, which is a left limit tributary of the Mulchatna River. The approximate coordinates of the property are Longitude 154° 42' and Latitude 60° 43' and is about 200 miles southwest of Anchorage. It lies within the USGS Lake Clark Quadrangle, and is about 35 miles N15W of Tanalian Point, which later point is situated mid-way on southeast shore of Lake Clark.

As of May 26th, 1961, 17 placer claims had been staked by Terry Gill, whose permanent address is, I believe Port Alsworth. The latter settlement is within a mile of Tanalian. It is my understanding that Bonanza Gold, Inc., was formed in Spokane, Washington in late 1961 or early 1962, and the property was turned over to that company.

With regard to the Swift River, it is assumed that you have reference to a river of that name in the Lime Hills Quadrangle. I am not familiar with that stream, but the map suggests it is navigable a considerable distance - possibly ½ to 2/3rds upstream from its mouth - especially during high-water periods. For more reliable information it is suggested you make inquiry of Robt. Van der Pool, Red Devil, Alaska. Bob is a long-time bush pilot and knows more about that regions rivers and navigability than any one I know.

The location of the Bonanza Creek placer claims are a matter of public record, and can be inspected at any time in the Anchorage Magistrates office.

It is hoped the foregoing covers the information you want. If not please advise and will attempt to get it for you.

Yours truly,

Martin Jasper
Mining Engineer

PHONE RI-8-1188

WELDON F. APPELT
CONSULTING ENGINEER
358 ADAMS PETROLEUM CENTER
HOUSTON 25, TEXAS

March 14, 1964

Mr. Martin Jasper
State of Alaska Mining Engineer
State Mining Bldg.
Anchorage, Alaska

Dear Mr. Jasper:

In a recently published mining journal we read about the BONANZA GOLD INC. organization planning to do work this summer on claims located one hundred seventy-five (175) miles west of Anchorage. Is the location of these claims a matter of public record, and if so would you please send me the approximate coordinates? Also, can you tell us to what degree the Swift River is navigable?

Your consideration in giving me an answer to these requests will be greatly appreciated.

Very truly yours,

Weldon F. Appelt

Weldon F. Appelt

WFA/dl

ARTHUR F. DAILY
488 FAIRBANKS AVENUE
OAKLAND 10, CALIF.
27 July 1961

Rec'd 8/1/61 WJ

Mr. Martin M. Jasper,
Box 2139,
Anchorage, Alaska.

Subject: Bonanza Creek Placer,
Mulchatna River, Alaska.

Dear Martin:

From Bob Fulton I have received a copy of your interesting report on subject property, for review and comment. Just to be certain of the figures, I would appreciate your advising whether the unit values from prospecting, shown in paragraph 2 on page 4 refer to Au @ $20.67 or to Au @ $35.00; from the text it appears to be the former. Also, did you make an estimate of the average grade of the creek?

I have been working on a very interesting property in California, and trying to get someone interested in it. Was in northern California for the past two days, examining a small property which must have had some high grade ground, judging from the large piles of boulders taken out by hand methods, presumably during the 1850's.

Will write a proper letter soon. Very best regards to Olga, Pat and yourself.

Sincerely,

Art

August 1, 1961

COPY

Mr. Arthur F. Daily
488 Fairbanks Avenue
Oakland 10, California

Dear Art:

Subject: Bonanza Creek Placer
Ref.: Your July 27th note

I was very glad to receive your above note this morning, on getting back from a few days vacation. It has been my intention to write you for the past four or five months and advise how much I admired your three items in the Mining World covering the various diamond fields of the world that you spent most of the year visiting. It has been our hope that the principals who sent you on that global pilgrimage, liked the results but when they decided the time wasn't ripe to go ahead with it, gave you a clearance on the deal and that you have been able to obtain the support of substantial ~~of substantial~~ interests to take on that challenge.

With regard to the Bonanza Creek surface gradient, the lower five miles that I traversed had a gradient of 1 - 1½ degrees below the mouth of Little Bonanza with a slightly increasing surface gradient above the mouth of the latter's tributary. I had also taken readings with the Paulin Altimeter, but I note in checking the map now that I only put three of those readings down. The type of wash showing in the stream bed and along the banks of Little Bonanza creek indicate , as you know, structure gradient on the surface at least for Little Bonanza.

With regard to the values reported by Mr. Millett obtained from his work in the 1920's, the values are quoted in USGS reference listed on my report on the old $20.67 per ounce basis.

I was glad to see that Bob Fulton had contacted you "forthwith" and it is hoped that they will dispatch you to make a more thorough examination in the not distant future. Mr. Fulton flew down to Homer and spent a day with me on July 19th and we thrashed over that area and some other areas of non-ferreous possible interest. I was down in the Homer area at the time checking into the typical clay deposits and the day that he arrived I was glad to see him for it was raining like hell and the bush had been wet enough before that day.

Olga ran away from me with Pat in June for five or six weeks with her folks in Alberta and got back a few days ago. We recently sold our shack on Ingra Street and since then we have been located in a new place at 3007 30th Avenue, Spenard, so here is hoping that Mr. Fulton will be shooting you up this way some time this season and we can all three get together and get more details of your activities in the past six years.

Olga joins in best wishes to Mrs. Arthur, yourself and family.

Sincerely,

MWJ:bb

Martin W. Jasper
Mining Engineer

July 26, 1961

Mr. Terry Gill
Port Alsworth, Alaska

Dear Terry:

RE: Bonanza Cr. Report Pictures

Enclosed you will find the two Kodacolor Pix to be placed on ~~Page~~ PLATE 1 to complete the suite of pictures in your second copy of my report on the above area.

Sorry to have missed you when you were here - I returned home from 8 day field trip last Friday nite.

As you probably know Bob Fulton looked me up at Homer a week ago, at which time we discussed Bonanza Creek and various hardrock areas.

Trust the very short fishing season lived up to your expectations financially.

I will be away on trip this weekend and then leave first of week for a ten day to two weeks field trip.

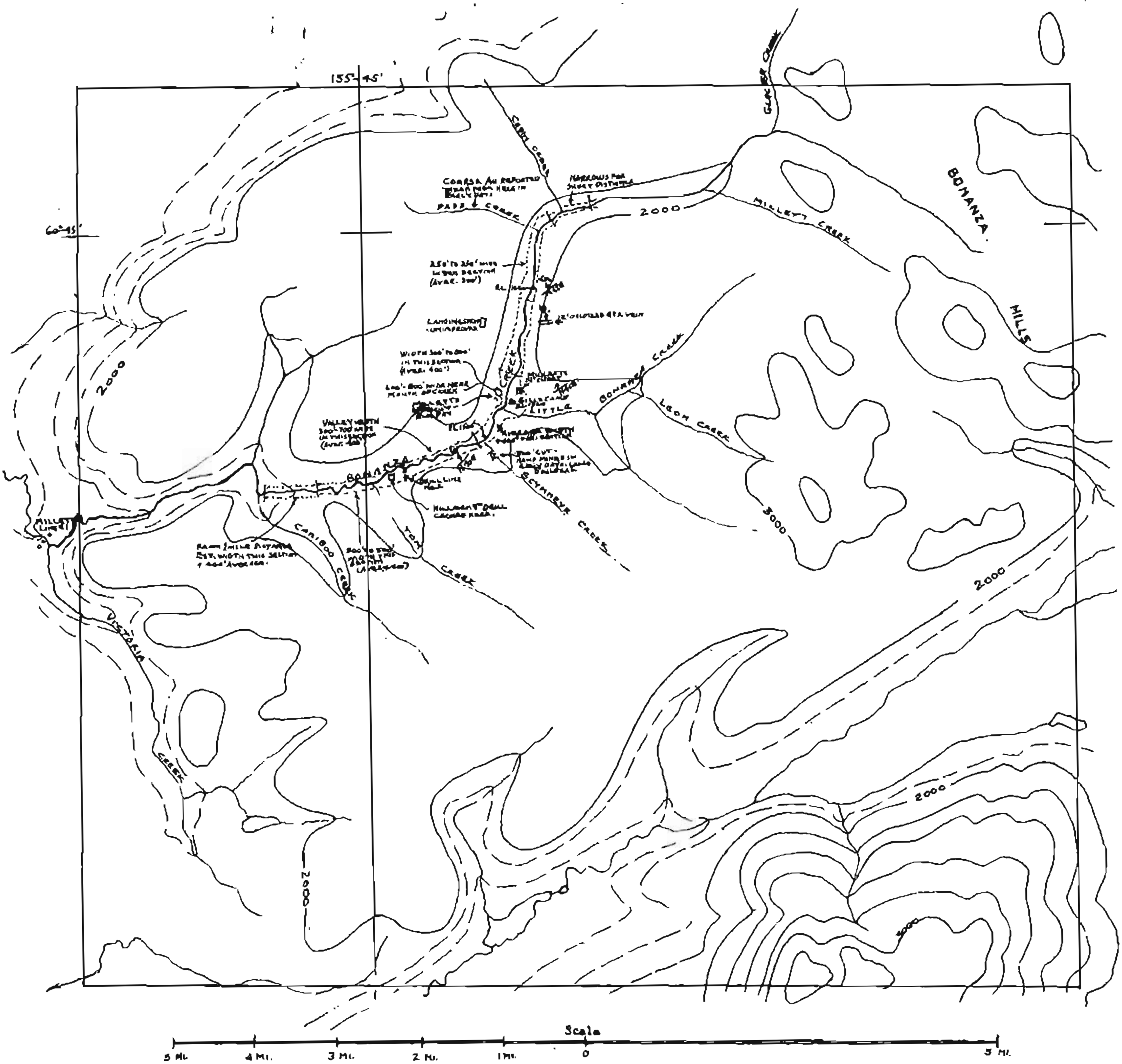
With kind personal regards to Mrs. Gill and yourself,

Sincerely yours,

MJ.

Martin Jasper

2nd Naylor for Anchorage files - 1st sent Juneau
1/5/62



MAP SHOWING
UPPER BONANZA CREEK, BONANZA HILLS AREA
Lake Clark Quadrangle, Alaska
Section of U. S. G. S. map enlarged 4 diameters
by
M. W. Jasper, Min. Eng. State Div. of Mines & Minerals
Anchorage June 1961
MAP I

November 22, 1961

COPY

Mr. Terry Gill
c/o Stratford Hotel
Third Avenue
Seattle, Washington

Re: Bonanza Creek Report
Lake Clark Quad.

Dear Terry:

Our Director, James A. Williams, has asked me to contact you to determine whether you would permit him to print my report for inclusion in Division of Mines and Minerals next Annual Report. Please advise us at your earliest convenience. If you are agreeable, let us know whether you would want any specific deletions made (such as number of placer claims held).

I had called Mr. Sargent a number of times to get your address but no one answered the phone. However, M. V. (Joe) Lynch dropped into the office last Friday and gave it to me. Joe asked for copy of my report, stating he had discussed the Bonanza Creek project with you, read your copy of my report, and that he had advised you he had some friends who "might" be interested in the property. As you did not have an extra copy he asked me for one, which I have taken liberty to have made to send him today. However, I do not have set of pictures to include at this time.

With kind personal regards to Mrs. Gill and yourself, and the hope that your winter in the South will be a pleasant and profitable one.

Sincerely yours,

Martin W. Jasper
Mining Engineer

MWJ:bb

cc: James A. Williams
M. J. Lynch

November 22, 1961

COPY

Mr. M. J. Lynch
Lynch Machinery Company
7836 11th Avenue
Seattle 5, Washington

Dear Joe:

RE: Bonanza Cr. Report
Lake Clark Quad

Enclosed you will find a reprint of the above property report, including pictures with copy of letter to Terry Gill of this date.

Bill Powell was in Monday and regretted missing you. He is quite concerned over your plans to use the Kuskalana bridge. His conviction is the strong belief that this structure will not stand crossing with a D-8 (or D-6), nor any steady usage for hauling of the heavy loads that you plan to do. To make it a safe structure it would cost a very large sum.

I have assumed that you have personally traversed the whole distance along the old railroad grade. Whether you have or not, it is suggested you drop Bill a line and/or look him up on your next trip and get his views. If you care to write him, address the letter care of our office.

The foregoing is passed along for what it may be worth. Never having been over that road bed I have no opinion on the subject.

With kind personal regards to Mrs. Lynch and yourself.

Sincerely yours,

Martin W. Jasper
Mining Engineer

MWJ:bb

cc: Terry Gill
James A. Williams

Jas. A. Williams

FILE 2, DR. 1

Oct. 11, 1961

Martin Jasper

BONANZA CREEK PLACER AREA
Lake Clark Quad

COPY

CONFIDENTIAL

Chuck Herbert was in 10 days ago for copy of my report on above, reporting that he might have a couple of clients (friends) sufficiently interested to take a prelim exploration crack at the project. During last meeting with Bob Fulton he expressed they were still interested but thot that the owner should put down a few holes to check Mr. Milletts findings.

This morning Ernie Bush, Geologist, Sinclair Oil, was in for a copy of this report. He knows Terry Gill, and from discussions with him Ernie thot it worth sending the dope into his head office.

M J