Graphite Group
Uncle Sams
Mining Syndicate

TERRITORY OF ALASKA
DEPARTMENT OF MINES
COLLEGE, ALASKA

MR-043-01

November 22, 1948

43-1

Port Clarence
Precinct.

2nd Division.

Mr. B.D. Stewart, Commissioner of Mines
Territorial Department of Mines
P.O. Box 2811
Juneau, Alaska

Dear Mr. Stewart:

REPORT, JOHN D. FIELDS, GRAPHITE KA 43-28

Enclosed please find a copy of "Report of an Examination of the Graphite Group of Claims Situated in the Port Clarence Mining District, District of Alaska, and Owned by the Uncle Sam Mining Syndicate" by John D. Fields, July 1910

This report belongs to Ralph Loman and I have prepared a co py of it for the Juneau files.

Yours very truly,

Bruce Thomas

Bruce I. Thomas

Encl.

RECEIVED

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REPORT OF AN EXAMINATION OF THE GRAPHITE GROUP OF CLAIMS SITUATED IN THE PORT CLARENCE MINING DISTRICT, DISTRICT OF ALASKA, AND OWNED BY THE UNCLE SAM MINING SYNDICATE,

by

JOHN D. FIELDS

July 1910

COPY

LOCATION

These properties are located 10,168 feet south of or from tide water on Graphite Bay, an indenture of the Imuruk Basin, longitude 165 deg. 38' W. and latitude 65 deg. 2' N. at an elevation of 500 feet above sea level, on the North slope of Kiguslik mountains, three miles west of Cobblestone river in Port Clarence Mining District, District of Alaska, and comprise approximately a total of 194.9 acres of which are covered by nine locations of mining claims and two locations of mill sites.

These claims were found to be properly staked and the provisions of the law governing the location and recording of mining claims complied with in each and every particular. No intervening stakes or locations were found on the ground. The title was found to be clear and to rest with the Uncle Sam Alaska Mining Syndicate Ltd., (Now held by Commercial Chemical Co.)

TOPOGRAPHY

Beginning at tide water the head of Graphite Bay, a gently sloping moss covered gravel plain slopes up in a southerly direction to the base of the mountains with a grade of 4.7% This plain is barren of timber and is cut with numerous creeks flowing in a northwesterly direction. From the head of this plain the foot hills rise with a slope of 10 deg., for a distance of 1,000 feet. Here vegetation ends and the mountains rise abruptly to an average heoght of 1,200 feet above the sea.

SHOWING TOPOGRAPHY

The claims are located along the flanks of these mountains at a point where the gently sloping plain and foot hills cease and the abrupt rise of the mountains proper begin, being located in an east and west direction, which parallels the main axis of the mount in range. The mountains present at this point the appearance of an series of rounded domes and sharp ridges, but further to the south they rise in jagged saw-tooth peaks. At the point of location of the claims they are cut by numerous canyons and it is in these canyons where the vegetation and the overlying burden of debris has been washed away by running water, that the outcrops of the graphite are exposed.

GEOLOGY

The center stakes of the claims are posted on the outcrop of a band of graphite schist which has a strike east and west and which stands at an angle of 70 deg., the dip being to the north. This band of schist has an length of several miles. To the West it is terminated by white granite containing biotite; to the East by the limestone of Cobblestone River. On th south this band of schist rests upon a very ancient gniss which in places contains zircon, biotite and graphite. As a whole these gneisses present the appearance of ordinary metamorphosed basic granites. These gneisses properly form the foot wall of the deposits and have, as a general rule, an east west strike and a dip to the north of 70 deg.; the exceptions being where slight foldings has taken place which causes the strike locally to vary. In no place throughout the whole horizon has any exposure of the hanging wall (been) discovered) so that the proper width of the graphite schist, (which is the rock from which the graphite deposits derived their contents) can be stated with accuracy.

The graphite occurs in bands varying in width from an inch to eighteen (18') feet, and has the same east and west strike and northerly dip; the graphite is a high commercial grade and lends itself readily to hand sorting. In all of the deposits examined, quartz bunches and veinlets occurred but the graphite readily separates itself from these bunches or impuritiessupon being struck a heavy blow with a hammer.

DESCRIPTION AND HISTORY OF CLAIMS

CANYON CLAIM

This claim was located on the 29th day of June 1906 by C.E. Christofferson. It overlaps on the easterly end for a short distance, the TILLY B. claim of the Alaska Graphite Mining Co.

At this point the ground is of no value as an extensive fault occurs, the regular northerly dip of the strata abruptly terminating, the easterly extension being overthrust with a dip of the east and the strike north and south, with no exposure of commercial consequence.

Thirty feet N.E. of the center end strike there is exposed an open cut No.1, 15 ft. long, 4 ft. wide and 6 ft. deep, a vein 4 ft. in width which contains an excessive amount of hemitite of iron and disseminated flakes of graphite. This vein is very irregular and apparently follows a joint of schist. This vein contains a gold value of 80¢ per ton but has no value for graphite.

Fifty feet north is open cut No. 2, 10 ft. long, 6 ft. deep and 5 ft. wide which shows in the face, 4 ft. of decomposed and very impure graphite, the foot wall to the south,being graphite schist. The hanging wall to the north is eroded away, the covering being unsolidified gravels and boulders. This deposite has a prospective value. If the tunnel was driven in at this point, this graphite would become solid and most of the impurities would disappear. The decomposed condition of the ore at this point is caused by hydration, commonly known as weathering;

Fifty feet to the east and 30 Ft. higher in elevation is open cut No. 3, 8 ft. long, 5 ft. deep and 5 ft. wide. The face of this exposed a band of interstratified graphite and quartz which at the present time is of no commercial value. If this open cut is continued into the hill to the east, graphite of a commercial quality will be opened up.

This claim at the present time has but a prospective value, its real value being a reserve.

BLACK BEAR CLAIM

This claim joins the CANYON claim to the west. Fifty feet west of initial stake is an open cut 8 feet deep, 13 feet long and 50 feet wide, exposing on the face of this cut numerous small bands of decomposed graphite varying from one inch to 3 feet in thickness. Everything in this cut is in a decomposed condition caused by hydration. From the initial post of this claim to the westerly end line, along the north slope of the hill large pieces of graphite float

occur, indicating that these bands run the whole length of the claim, while at present the ore at this point does not lend itself readily to extraction. The claim is of great possible value as 100 feet in depth can be obtained the whole length of the claim by driving a tunnel from the point at which the open cut is driven. The graphite here is high grade.

SAMPSON No. 1

Located July 5th. 1910, by John D. Fields.

No development work. Three hundred fifty feet from the westerly center end stake occurs an outcrop 18" wide with an exposed length of 100 feet. This ore is of a high commercial grade, and can be opened up to a depth of 150 feet by a tunnel driven on the ore. This claim has a prospective value in that it is a reserve.

SAMPSON NO. 2

Located July 5th., 1910 by C.D. Livingston/

No development work. No exposures of massive graphite. A band of graphite schist 80 feet wide containing disseminated flakes of graphite follows the whole length of the claim. Prospective value.

SAMPSON NO. 3

Located July 6th., 1910 by J,M. Bradley.

No development work. No exposures of massive graphite. A band of schist 80 feet wide containing disseminated flakes of graphite follows the whole length of the claim. Prospective value.

SAMPSON NO. 4

Located July 7th., 1910 F.L. Green.

The westerly end of this claim where the initial stake is located is cut to a depth of 300 feet by Graphite Creek.

The walls of the canyon rise very abruptly from the floor of the canyon 400 feet above sea level, to a height of 700 feet. Exposed in these walls is a band of graphite schist 200 feet in width containing numerous veins of solid graphite varying in width from one to six feet. This band can be traced the whole length of the claim while the eastern end of the claim is more or less covered with moss and broken rocks. The large amount of float found on the surface would indicate that these veins exposed in the walls of the canyon run the whole length of the claim. A 100 pound sample was taken at this point. This ore is exceptionally pure and has a very high commercial value. This point here in discussion, is where any operations on a commercial scale will have to be conducted, as the Black Hawk Claim mentioned below joins the Sampson No. 4, at this point and extends in a westerly direction.

BLACK HAWK CLAIM

Located August 20th., 1908 by G.C. Christofferson.

The initial post of this claim is located 10,628 feet from the head of

Graphite Bay at an elevation of 650 feet above a sea level and 120 feet above the valley floor of Graphite Creek, and is set up on an exposure of graphite nine (9) feet wide. Thirty feet to the south, at the same elevation, is an exposure of graphite 15 feet wide. Following this exposure down the face of the cliff to the snow line (of a drift) it widens to a width of eighteen (18') feet. This deposite can be traced for a distance of 200 feet, to the apex of the hill; amd followed by means of large pieces of float weighing many hundreds of pounds for a distance of 600 feet. Between the first and the second exposures there is a band of graphite schist containing disseminated flakes of graphite.

Two hundred pounds of ore was taken from these exposures and a commmercial refining test made. This ore represented mine run and gave the following results:

Crude (Run of mine) - 60 per cent graphite
Refined, 12½ per cent flake No. 1 - 86½ to 90% graphitic carbon.
Dust, 80%, 70% graphitic carbon.

A test was made of the Dixon Flake graphite, sold on the market at 30¢ (now 80¢) per pound, which showed that it contained 93% graphite. A test was made of Mexican graphite, manufactured and sold by the United States Graphite Company, which gave 90% graphite.

These tests indicated that the flake graphite is equal in quality to the best makes now on the market. (Therefore its retail value would be 30¢ per pound) the ground graphite as a rule contains but 60% graphite.

In making the test it was found that about 30% of the graphite remained on the 10 mesh sieve in the form of flake, but a large percentage of quarts remained with it and other impurities. An analysis of this gave 42% graphite and after flotating gave a return of 73% (graphite). If may be found possible during future refining practice, to separate this flake by using a static magnetic concentrator. Again the ore when mined should be hand sorted, which if done, would bring the average of the crude up to 80% (graphite). If then by refining, this flake that remains on the 40 mesh screen is raised to a product of 90% graphite, it will raise the flake percentage of the graphite to at least 40%.

The design for the graphite refinery submitted with this report is simple to install and inexpensive to operate, and the cost of refining by this method would not exceed $2.50 per ton. The impurities that are now in the flake graphite consist of black mica (biotite) which is no deteriment to it as a lubricator, asthis mineral is used itself as a lubricant.

At the point where this ore occurs is where the company could econonically carry on the operation of extracting and transporting the ore to tide water.

Mill site No. 1 was located 430 feet south of the initail post, the terminal point being 10,160 feet from tide water and 480 feet in elevation. If so desired, a short cross-cut tunnel if driven south would reach the ore bodies exposed in the canyon at a depth of 100 feet or tunnels can be driven directly on the ore and a large amount of ore extracted per day per man employed. If this is done, a trestle 400 feet long will have to be constructed to convey the ore from the tunnel to the terminal house and a branch trestle 150 feet long will reach the ore exposed on Sampson No. 4. These two claims, Sampson No. 4 and the Black Hawk in their present undeveloped state have a value of $250,000 apiece.

This estimate is based on the ore exposed and from the fact that at this point, and at this point only, a tram (aerial) can be erected for the purpose of transporting the ore to tide water, and with the amount of ore in sight and exposed in the canyon, the vertical height and horizontal length that it can be traced is sufficient to justify the assumption that they will fill any demand that may be made upon them, to supply the graphite market on the Pacific Coast.

BLACK EAGLE CLAIM

Located July 7th, 1910, by A.P. Tilly

This is a fraction of a claim 300 feet in length by 600feet in width and is located for the purpose of connecting the Black Hawk and Black Swan claims. A band of graphite schist runs thru the claim, containing disseminated flakes of graphite but no exposures of massive graphite. Prospective value.

BLACK SWAN CLAIM

Three hundred feet east of the initial claim stake is an open cut 15 feet wide, 10 feet long and 4 feet deep containing three feet of decomposed graphite. Seventy feet N.E. is an open cut No. 3 exposing interstratified rock of graphite schist 4 feet wide. These cuts should be driven further into the hill until the graphite becomes solid. The graphite apparently is of high quality. Prospective value.

BLACK CROW CLAIM

No exposures of graphite. No development work. Claim located over heavy gravel debris. Composed of large granite boulders. No. value.

BUNKER HILL CLAIM

Located over gravel debris composed of large granite boulders. Of no value.

OSOEOLA CLAIM

Located over gravel debris composed of large granite boulders. Of no value.

MILL SITE NO. 2

Located on tide water at head of Graphite Bay, 660 feet by 660 feet containing approximately 6 acres of land surface.

MILL SITE NO. 2

Graphite Bay is a still body of water with 6 feet of water at the banks edge which is sufficient for all purposes. This mill site is the only available site at which a tram could be constructed to any of the graphite deposits. There are practically two harbors, the land surface lying in the form of a peninsula extending out into the bay, which gives both a north and a south harbor, the water in the north harbor being 6 feet deep at the shallowest point. The south harbor is 3 feet deep. The site contains sufficient land surface to meet all requirements.

MILL SITE NO. 1

This comprises 10 acres 660 by 660 feet adjoining the BLACK HAWK on the north side lines, located for the purpose of acquiring land for the erection of the necessary bunk houses, dining room and work shops for the housing of the men and it is the proper terminal of the tram. On the easterly end, the point designed for the erection of the terminal house, the west bank of Graphite Creek has a sheer fall of 100 feet to the valley floor which give facilities for rejecting material or waste dump, and permits of a tunnel being driven into the ore and the ore being delivered by gravity to the terminal bunkers.

TRAMWAY

The survey of the tram is staked with the stakes plainly marked with the distance upon them. This survey is 10,160 feet long as per plat. There being no brush, timber of other impediment, the cost of installation of the tram will be comparatively small.

FUEL

At the point where the creeks leave the mountains and enter the plain there is a considerable growth of alders which obtain a thickness of from 3 to 4 inches and a height of from 6 to 8 feet. These alders make excellent fuel, and there is enough to insure an abundance of fuel for a long period.

WATER

There is sufficient water in all of the creeks that run through the claims for all purposes.

TRANSPORTATION FACILITIES

The route would be from Seattle via ocean going steamship to Teller where there is a well protected harbor, from which the ice leaves between the 25th of June and the first of July each season, and closes again about the first of October. It is 30 miles from this anchorage to the end of the tram on Graphite Bay. The transportation of ore this distance will have to be by boats and barges, using tug boat. From the data available at this time, ten dollars is the indicated cost of mining and transporting the ore to Seattle.

RECOMMENDATIONS

Would recommend that before the close of navigation which occurs about October 1st, 1910, the company see that sufficient lumber and supplies are landed on the property for the purpose of erecting buildings for the men to be employed in driving tunnels on the ore on the BLACK HAWK and SAMPSON NO. 4 claims during the winter months. That at least one team of horses be employed for hauling from the Mill Site No. 2 to Mill Site No. 1, and that upon the return trip they haul ore extracted from the tunnels back to tide water. That bids be called for the furnishing of the necessary rope, buckets, terminals, carriers and timbers for the towers for a light tram witha capacity of 50 ton per day. That this tram, with the necessary terminal buildings on Mill Site No. 2 be Installed as soon as possible. That instead of constructing bunkers at Graphite Bay, the Company purchase atleast 4 barges of about 250 tons capacity and that the ore be dumped direct from the tram into the barges. That the Company acquire at Seattle or some other Puget Sound port, the necessary ground for the construction of a graphite refinery and manufacturing plant. That said refinery be erected during the present winter and be in shape to commence operations on or before the 15th day of July, 1911 when the cargo of ore should be shipped from the properties.

That the company in selecting a mine superintendent should be careful to select a man who is a competent miner who has had experience as a mine manager. That a system of weekly reports be furnished him showing the amount of equipment on hand, amount of men employed, number of hours worked per day, amount of food purchased, amount of food expended, number of feet of tunnels driven, number of feet of shafts sunk, amount of ore extracted, amount of powder, caps, fuse and tools purchased and amount efpended.

That the mining and refining of the ore, the mill practice be watched very closely for the purpose of increasing the efficiency of the plant and the purity of the product.

OPINION

It is my opinion that this property is capable of producing from $5,000. to $10,000. tons of ore per year and if properly managed will produce a revenue each year equal to the product of an investment made up to $500,000.

(Signed) John D. Fields.