PE 15-2

TERRITORY OF ALASKA

DEPARTMENT OF MINES

COLLEGE, ALASKA

PE-075-02

November 1, 1951

MEMORANDUM REPORT

TO: Leo H. Saarela, Commissioner of Mines, Juneau, Alaska

FROM: Robert H. Saunders, Associate Mining Engineer, College, Alaska

SUBJECT: Investigation of the United States Commissioner's Record of Mining Claims Involved in the Litigation of Gus and James George vs. B. W. Lyons and C. W. Bradley of the Dutch Hills Exploration and Development Co.

INTRODUCTION

In August 1951, two brothers, Gus and James George brought suit in Third District Court against B. W. Lyons and C. W. Bradley of the Dutch Hills Exploration and Development Co., charging that the defendants had staked and were mining on ground legally claimed by the plaintiffs. The following quotation is from the Anchorage Daily Times of September 4, 1951: "The plaintiffs stated in the complaint that they had worked the land for ten years until on July 15, they were driven away by the defendants who were armed with guns and threatened to kill them."

I learned of the litigation while making routine field examinations in the Cache Creek District in August 1951. Because the property may play an important part in the future mineral production of the Territory, the ownership of the land is of interest to the Territorial Department of Mines. An investigation was made, therefore, of the records of the United States Commissioner at Talkeetna, Alaska, and this report is written from notes taken during that investigation.

Acknowledgement is due Mrs. Musgrove, Commissioner at Talkeetna, for her aid and co-operation in obtaining information included in this report.

LOCATION

The property is situated at approximately 62 degrees 35 minutes north latitude and 151 degrees 00 minutes west longitude. It is about 35 airline miles northwest of Talkeetna. It lies on the left limit of Bird Creek in the Dutch Hills about one and one-half miles from the junction of Bird Creek and Peters Creek.

The notice of amended location of the Gold Nugget lode claim, signed by Gus George and witnessed by Mike Trepte, is on a post on the Golden Anchor lode claim of the Dutch Hills Exploration and Development Co. The original location notice for the Gold Nugget was neither on that post nor in the immediate vicinity on August 30, 1951. The area claimed in the amended location of the Gold Nugget as described on the amended location notice includes part of the Golden Anchor lode claim and part of the Idiot's Delight lode claim, both of which are claimed by the Dutch Hills Exploration and Development Co.

HISTORY

The Commissioner's record shows that the original location of the Gold Nugget lode claim was made July 20, 1935 by O. W. Billion and F. Wyant as co-locators.

On September 2, 1941, a labor lien was recorded by A. J. Brooks and Gus and Jimmy George against O. W. Billion. The lien was on the following claims: Billion Dollar, Gold Nugget, Billion Wyant and Coulter, Billion Wyant and Coulter No. 2, O. W. Billion No. 1, and O. W. Billion No. 2.

On October 31, 1941, a quitclaim deed was recorded to satisfy the preceding labor lien. This transferred O. W. Billion's interest in the foregoing claims to A. J. Brooks and Gus and Jimmy George.

Proof of annual labor on the Gold Nugget lode claim was filed on August 5, 1942 by A. J. Brooks for the year ending June 30, 1942.

Intent to hold the Gold Nugget lode claim was filed on July 6, 1943 by A. J. Brooks; on July 18, 1944 by A. J. Brooks; on June 29, 1945 by A. J. Brooks; on June 25, 1946 by James George; on June 27, 1947 by James George; on April 28, 1948 by James George; and on April 22, 1949 by James George.

The Golden Anchor lode claim was staked in 1949 by Lyons and Bradley for the Dutch Hills Exploration and Development Co.

The Idiot's Delight lode claim was staked July 26, 1950 by Lyons and Bradley for the Dutch Hills Exploration and Development Co.

On July 19, 1951, proof of labor on the Gold Nugget lode claim for the year ending June 30, 1950 and also the year ending June 30, 1951 was filed by James and Gus George.

On July 20, 1951, Gus George filed an amended location of the Gold Nugget lode claim. The description of the claim in the amended location certificate is the same as the description given in the original location certificate by Billion and Wyant. The amended location certificate offers no reason for making an amended location, nor does it explain how the amended location changed the boundaries of the claim.

None of the location certificates pertaining to the ground involved in the dispute describe the claims with reference to a natural object or permanent monument as required by law. It is therefore impossible to determine where the claims are, or should be, from reading the location certificates in the Commissioner's records.

SUMMARY

There has been a misunderstanding of some of the basic principles of mining law on the part of various claimants of the claims involved, and it is interesting to note how much this misunderstanding has contributed to the cause of the present litigation.

The chief cause of the present litigation seems to be a disagreement between the plaintiffs and the defendants in regard to the area encompassed by the original location of the Gold Nugget lode claim. The disagreement might never have occurred if the original location certificate had included a reference to some natural object or permanent monument.

Another point of disagreement is the matter of whether or not the assessment work was done on the Gold Nugget lode claim for the year ending June 30, 1950. The plaintiffs did not file proof of annual labor within the ninety day period set by law, therefore the burden of proof is with the plaintiffs.

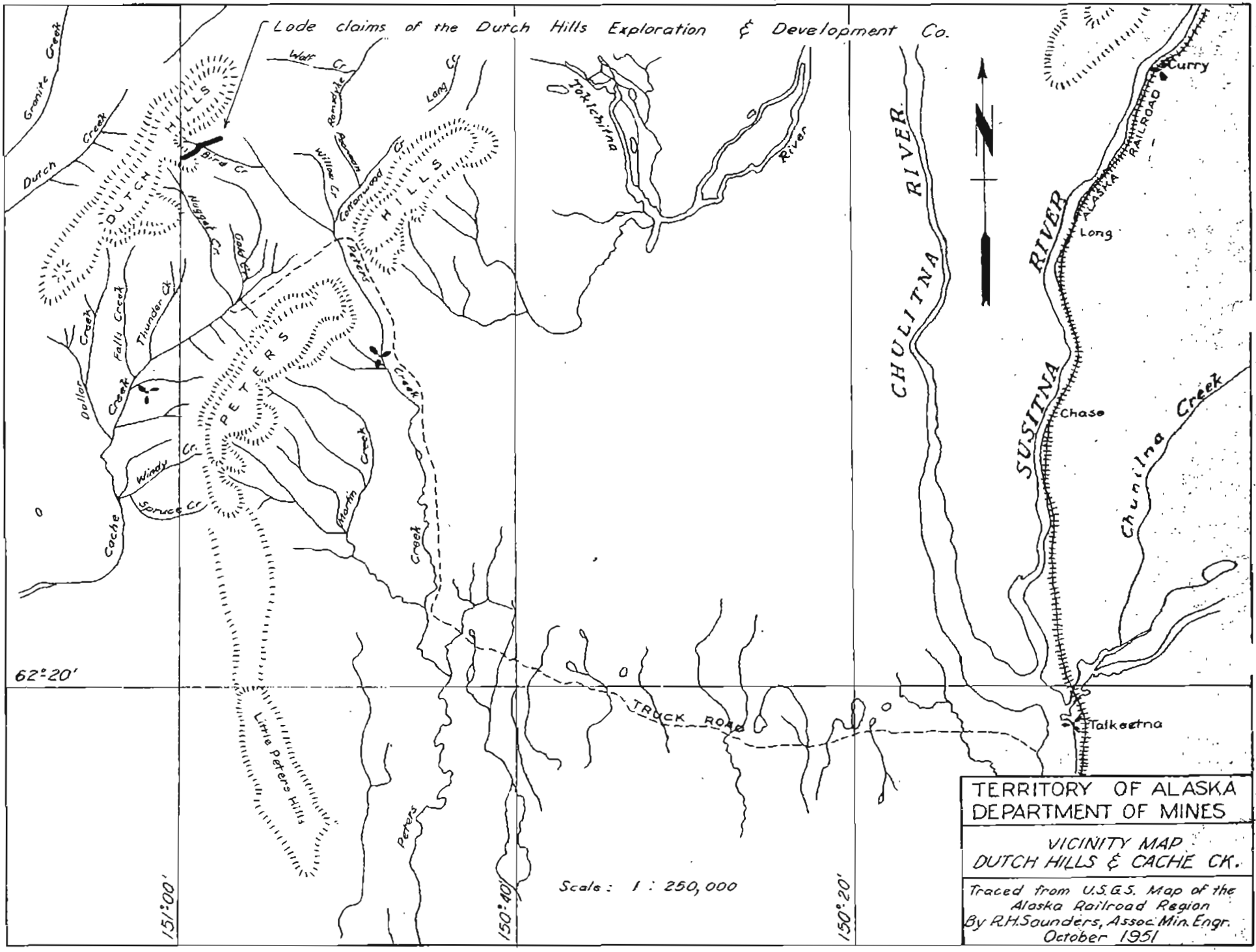
The labor lien of September 2, 1941 was against C. W. Billion, and the quit-claim deed of October 31, 1941 was signed by C. W. Billion. The name of F. Wyant, Billion's co-locator, is mentioned in neither document. The deed, therefore, can convey no more than an undivided one-half interest in the claim. In the amended location of July 20, 1951, Gus George signed as sole locator, but the records indicate that Gus George had only an undivided one-sixth interest in the claim. The names of all of the claim owners should have been on the amended location notice and on the amended location certificate. The only legitimate reason for making an amended location is to change the boundaries of a claim, and, for his own protection, a claim owner should explain in both the amended location notice and the amended location certificate how the claim boundaries are changed. An amended location notice should be posted at the original point of discovery, and, for his own protection, a claim owner making an amended location should not destroy the original location notice but should leave it in its place on the discovery monument.

At the time he recorded his amended location certificate, Gus George must have known or suspected that Lyons and Bradley had staked claims in the same area; he stated that he had visited the property five days before and had been driven off by the defendants. From the description of the claim in the amended location notice, it appears that the claims staked by Lyons and Bradley not only overlap the Gold Nugget but almost surround it. It is hard to conceive of a poorer time for the owners of the Gold Nugget to try to change their claim boundaries. Under the circumstances, it seems probable that the amended location was made for some purpose other than changing the claim boundaries, and if the amended location was made for some other purpose, the plaintiffs must have a complete misunderstanding of the law in regard to amended locations.

Respectfully submitted,

Robert H. Saunders

Robert H. Saunders
Associate Mining Engineer


Lode claims of the Dutch Hills Exploration & Development Co.
Granite Creek
Dutch Creek
DUTCH HILLS
Bird Cr
Wolf Cr
Ramsdyke
Lang Cr
Willow Cr
Peters Creek
Cottonwood Cr
Nugget Cr
Gold Cr
Toklatchitna River
CHULITNA RIVER
SUSITNA RIVER
ALASKA RAILROAD
Curry
Long
Chase
Talkeetna
Chunilna Creek
Dollar Creek
Falls Creek
Thunder Ck
PETERS HILLS
Windy Cr
Spruce Cr
Cache Creek
Portage Creek
Peters Creek
TRUCK ROAD
Little Peters Hills
62°20'
151°00'
150°40'
150°20'
Scale: 1 : 250,000
TERRITORY OF ALASKA
DEPARTMENT OF MINES
VICINITY MAP
DUTCH HILLS & CACHE CK.
Traced from U.S.G.S. Map of the Alaska Railroad Region
By R.H. Saunders, Assoc. Min. Engr.
October 1951

TERRITORY OF ALASKA

DEPARTMENT OF MINES

PE 15-2

REPORT ON THE PRELIMINARY EXAMINATION OF THE LODE DEPOSITS OF THE DUTCH HILLS EXPLORATION AND DEVELOPMENT CO. CACHE CREEK DISTRICT, ALASKA

by

Robert H. Saunders

Associate Mining Engineer

November 1951

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SUMMARY

In the Cache Creek District, owners of the Dutch Hills Exploration and Development Co. have staked a group of lode claims along a series of parallel igneous dikes crossing Bird Creek. Gold occurs in slate adjacent to the dikes and in gouge along the dike walls. High-grade pockets in the gouge can be mined by small-scale, selective mining methods. The lower grade deposits in the slate adjacent to the dikes are probably large enough to support large-scale mining operations.

The owners now have on the property almost enough equipment to start mining and milling the high-grade deposits. Prospecting and development of the low-grade deposits will proceed after mining of the high-grade pockets has been started. The prospecting that has been done to date indicates that the high-grade pockets are rich enough to provide capital for starting a large-scale operation in the lower grade deposits. The property, therefore, seems to have the requirements for a mine that will not only be profitable but will pay its own way from the very beginning.

INTRODUCTION

As part of its program to furnish aid to prospectors in Alaska, the Department of Mines regularly employs mining engineers to examine mines and prospects. Examinations are made at the request of property owners. Mr. B. W. Lyons, one of the partners of the Dutch Hills Exploration and Development Co., requested that the Department of Mines send an engineer to examine the property owned by that company in the Dutch Hills. In response to his request, a preliminary examination was made on August 30, 1951 by Robert H. Saunders, Associate Mining Engineer.

Acknowledgement for hospitality and assistance given in gathering the information in this report is due Mr. and Mrs. C. W. Bradley and Mr. and Mrs. B. W. Lyons.

LOCATION AND ACCESSIBILITY

The property is situated at approximately 62° 35' N lat and 151° 00' W long. It lies about 35 airline miles northwest of Talkeetna. The claims of the Dutch Hills Exploration and Development Co extend from the head of Nugget Creek to the ridge on the north side of Bird Creek. The line of claims crosses Bird Creek about one and one-half miles from the junction of Bird Creek and Peters Creek. Development work is being concentrated on that part of the property that lies on the left limit of Bird Creek.

From Talkeetna, which is on the Alaska Railroad, to Cache Creek there is a truck road about fifty miles long. There is no bridge, however, across the Susitna River; heavy equipment can be taken across on the ice during the winter, but during the summer only small boats are available for making the crossing.

At the present time, the owners are using pack horses to carry supplies from one end of the truck road to their camp on Bird Creek, a distance of five or six miles. The topography between Cache Creek and Bird Creek would offer no great obstacles to road construction. If a large mine is developed on Bird Creek, the Alaska Road Commission will probably aid in extending the road to the mine workings.

There is a small airfield on Cache Creek near the mouth of Falls Creek and another on the low divide between upper Cache Creek and Peters Creek.

PHYSICAL FEATURES AND CLIMATE

The Dutch Hills is a group of rounded hills about fifteen miles long with the long axis trending southwest-northeast. To the southwest of the Dutch Hills lies the valley of the Kahiltna River, tributary of the Yentna; to the northeast lies the valley of the Tokichitna River, tributary of the Chulitna. The Alaska Range lies to the north and to the west of the Dutch Hills. To the east, a broad depression, probably of glacial origin, separates the Dutch Hills from the Peters Hills.

Two major streams drain the eastern flank of the Dutch Hills. Cache Creek drains the southern part and flows southward through the broad depression east of the Dutch Hills into the Kahiltna. Peters Creek heads in the northern part, flows eastward across the northern end of the depression, and dissects the Peters Hills in a deep, steep-walled canyon. East of Peters Hills, Peters Creek turns to the southwest and flows along the west side of the Susitna valley to the Kahiltna.

Bird Creek heads near the center of the Dutch Hills and flows eastward about five miles through a U-shaped, glaciated valley to the headwaters of Peters Creek. The upper Bird Creek valley is at an elevation of about 3000 ft. and the rounded hilltops at its head rise to over 4000 ft. There are a few rock outcrops on the hills and ridges, and there are others where Bird Creek's cascading tributaries have cut into the hillsides.

Vegetation in the Dutch Hills consists of alders, willows, grass, moss, and various kinds of berries. The nearest stands of heavy timber are in the Susitna valley to the east.

In general the region has less precipitation and lower winter temperatures than the coast, but more precipitation and higher winter temperatures than

the interior of Alaska. Precipitation may vary considerably from one year to the next. The streams are usually frozen from October until April. Patches of snow may remain in sheltered spots in the hills until late summer.

LABOR AND LIVING CONDITIONS

There are no buildings on the property. Placer miners have built camps throughout the Cache Creek District. Talkeetna, the nearest permanent settlement, had a population of 89 when the 1930 census was taken. The main business buildings are two roadhouses and a general store. The Civil Aeronautics Authority maintains an airfield and radio station near the town. Most of the people living in the town are miners, trappers, CAA employees, or Alaska Railroad employees.

Probably enough workers for a small-scale mining operation could be recruited at Talkeetna, but workers for a large-scale operation would have to be imported. Importing workers during the present construction boom in Alaska would necessitate paying wages comparable to wages paid on government construction projects. The cost of labor for any large-scale mining operation in the near future will depend, therefore, on wage scales paid by government contractors; and, since the start of the present boom, each succeeding year has seen a substantial increase in construction workers' wages.

HISTORY AND PRODUCTION

Placer mines in the Cache Creek District have been producing gold since the first discovery of placer gold in 1905. Deposits in the stream beds were worked in the early days by hand-shoveling into sluice boxes; recently hydraulic methods have been used to work the bench deposits beside the streams. Pieces of gold adhering to quartz are occasionally found in the placer concentrates. Early prospecting for lodes was probably confined, therefore, to searching for gold-bearing quartz veins, and the failure to find commercial

gold-bearing quartz veins led to the logical conclusion that the placers were derived from quartz veinlets too narrow to be commercial lodes. Lode claims were staked on Bird Creek at least as early as 1935, but apparently no attempt was made to drive any underground workings. There is no record of any production from lode deposits in the entire district. The discovery of the deposits described in this report was probably the first discovery of commercial lodes in the district, and when the nature of these deposits becomes generally known, there may be a renewal of lode prospecting in the region.

PROPERTY AND OWNERSHIP

C. W. Bradley and B. W. Lyons have staked aline of twelve claims extending from the ridge between Nugget Creek and Bird Creek northeastward to the ridge on the north side of Bird Creek. The names of the claims in order starting at the southwest end are: Apex, Drunken Miner, Wet Slipper, Danny Boy, Honey Bucket, Starvation, Bradley Extension, Lyons Extension, Golden Anchor, Golden Eagle, Helen L., and Setting Sun. They also staked the Idiot's Delight lode claim parallel to, and on the southeast side of, the Golden Anchor. All of the claims are owned by the Dutch Hills Exploration and Co. except the Bradley Extension, which is owned by C. W. Bradley, and the Lyons Extension, which is owned by B. W. Lyons.

Ownership of part of the ground included in the Golden Anchor and the Idiot's Delight is being contested by Mr. Gus George of Anchorage. Mr. George has, or had, a part interest in a claim on Bird Creek called the Gold Nugget. In July 1951, he filed an amended location of the Gold Nugget lode claim and included in his amended location part of the Golden Anchor claim and part of

the Idiot's Delight claim. The amended location notice was not signed by the other owners of the original Gold Nugget claim.

GENERAL GEOLOGY

The geology of the Cache Creek District has been described by S. R. Capps in U. S. G. S. Bulletin 534, THE YENTNA DISTRICT, ALASKA. The oldest known rocks in the district are slates and metamorphosed graywackes of either Paleozoic or Mesozoic age. Tertiary sands, clays, and gravels, with some lignite, unconformably overlie the slates and graywackes. Recent stream deposits and Pleistocene glacial deposits unconformably overlie the Tertiary beds. The sediments of Paleozoic or Mesozoic age have been intruded by igneous rocks of Lower or Middle Jurassic age. The larger intrusions consist of granite, granodiorite, quartz diorite, or diorite. In addition to the larger intrusions there are numerous dikes of which many have been altered to such an extent that their determination is difficult even under the microscope.

MINERAL DEPOSITS

On the Golden Anchor claim five parallel igneous dikes are exposed. The dikes strike N 30° E and dip 30° to 45° west. Most of the rock in the dikes is fine-grained and even-granular. All the rocks near the surface have been weathered. Specks of limonite profusely scattered throughout indicate that ferromagnesian minerals constituted at least fifty per cent of the primary rock. Numerous quartz-filled ladder veins, one to five inches wide cut across the dikes from wall to wall. The dikes are consistent in width at least within the area exposed; the narrowest is about five feet wide, and the widest is about fifteen feet wide. Apparently the dikes are continuous throughout the length of twelve claims, a distance of about three miles.

The wallrock is slate, a part of the series ascribed by Capps to the Paleozoic or Mesozoic age. The general strike of the cleavage in the slate is east-west, and the dip is 60° to 80° north.

In places there is gouge along the dike walls between solid slate wallrock and the igneous rock. Isolated pockets in the gouge are remarkably rich in gold. Also, gold is disseminated through the slate adjacent to and between the dikes. The ladder veins within the dikes carry a little gold. B. W. Lyons said that wherever there is a rich pocket in the gouge, there is always a ladder vein nearby. Apparently the rich pockets are genetically related to the ladder veins, and the dikes merely provided fractures to serve as passageways for the ore-bearing solutions. Much of the gold in the gouge is coarse, but the gold in the slate is fine. Besides gold and silver, the ore contains pyrite but apparently no other metallic sulfides.

It is conceivable that a placer from this deposit would include a few pieces of gold adhering to quartz (from the ladder veins) and would thereby lead to the false conclusion that the bulk of the gold was derived from quartz veins.

DEVELOPMENT AND UNDERGROUND WORKINGS

There are no underground workings at the present time. The work to date has consisted of exposing and sampling the deposits at the surface. Mining will be started in surface pits, and underground development will be done later.

EQUIPMENT

The only equipment on the property other than hand tools is a home-made ball mill, Pelton wheel, and a frieze-covered table for concentrating. The ball mill is made of a heavy-gauge steel, 50-gallon drum. The drum is mounted almost horizontally on an axle through its ends; ore will be hand-fed through a six

inch pipe at the upper end of the mill and will discharge through a screened opening at the lower end. Steel liners are bolted to the inside of the drum. The Pelton wheel will turn the mill by means of a belt drive. Discharge from the ball mill will fall onto the table. The upper part of the table is covered with burlap held in place by expanded metal lath. The lower part of the table is covered with upholsterer's frieze. B. W. Lyons said that he has used frieze previously under similar circumstances and has found it to be fully as satisfactory as English corduroy.

SAMPLING AND ASSAYS

Channel samples taken by the owners during three years of prospecting show that the deposits may be divided into two groups. The first group consists of high-grade pockets in the gouge, and the second group consists of lower grade slate adjacent to the dikes.

Some of gouge along the dike walls is apparently barren, but samples from the high-grade pockets have ranged as high as one thousand ounces of gold per ton. Samples taken by the owners and assayed at the Department of Mines assay office in Anchorage indicate that there is enough high-grade ore to support a small-scale mining operation. During this examination, results of those assays were substantiated by panning the gouge. It is not possible to estimate the tonnage in the high-grade pockets. Mining can be started without further capital investment, and in working these deposits, there will probably be no clear demarcation between prospecting and mining.

Channel samples taken in the slate adjacent to the dikes indicate that there is a large ore-body that will support a large-scale, low-cost mining operation. Basing his figures on assays of channel samples, B. W. Lyons estimates that

mill heads would average about fifteen dollars per ton. In some places, it apparently will be possible to mine all the material between the dikes. In other places, mining will be limited on one side by a dike and on the other side by an "assay wall". The total minable width along the dikes may exceed 50 feet, and the total length may exceed three miles. Further prospecting is required before an estimate of tonnage can by made.

During the examination, a sample was taken in pit "A" shown on the sketch map in the appendix. The sample was taken across a band of unidentified material in the dike. An assay at the Department of Mines assay office at College showed the sample to run 0.32 oz gold and 0.30 oz silver per ton, a value of $11.47 per ton. Examination in the laboratory showed that this material was sedimentary in origin; the microscope showed that the rock consisted of fine, rounded samd grains, most of them dark in color. This is probably an inclusion from one of the graywacke beds that Capps has described as being interbedded with the Paleozoic or Mesozoic slates.

PRESENT OPERATIONS AND PROPOSALS

At the time of this examination, operations were being delayed by the lack of a fire hose for bringing water to the Pelton wheel. After the hose arrived, the owners were called to Anchorage by litigation resulting from the amended location of the Cold Nugget by Mr. Gus George. They did not, therefore, mill any ore in 1951, but they plan to start mining and milling in the spring of 1952.

Mining will start in the high-grade pockets in the gouge. Where panning has shown the presence of high-grade ore, surface pits will be dug with pick and shovels; small shafts will follow the pockets in depth. A short aerial tram will be used to convey the ore from the pits to the mill. No long surface haulage will be necessary, because the mill can be moved after the pockets near the present mill location have been mined. As mining of the high-grade

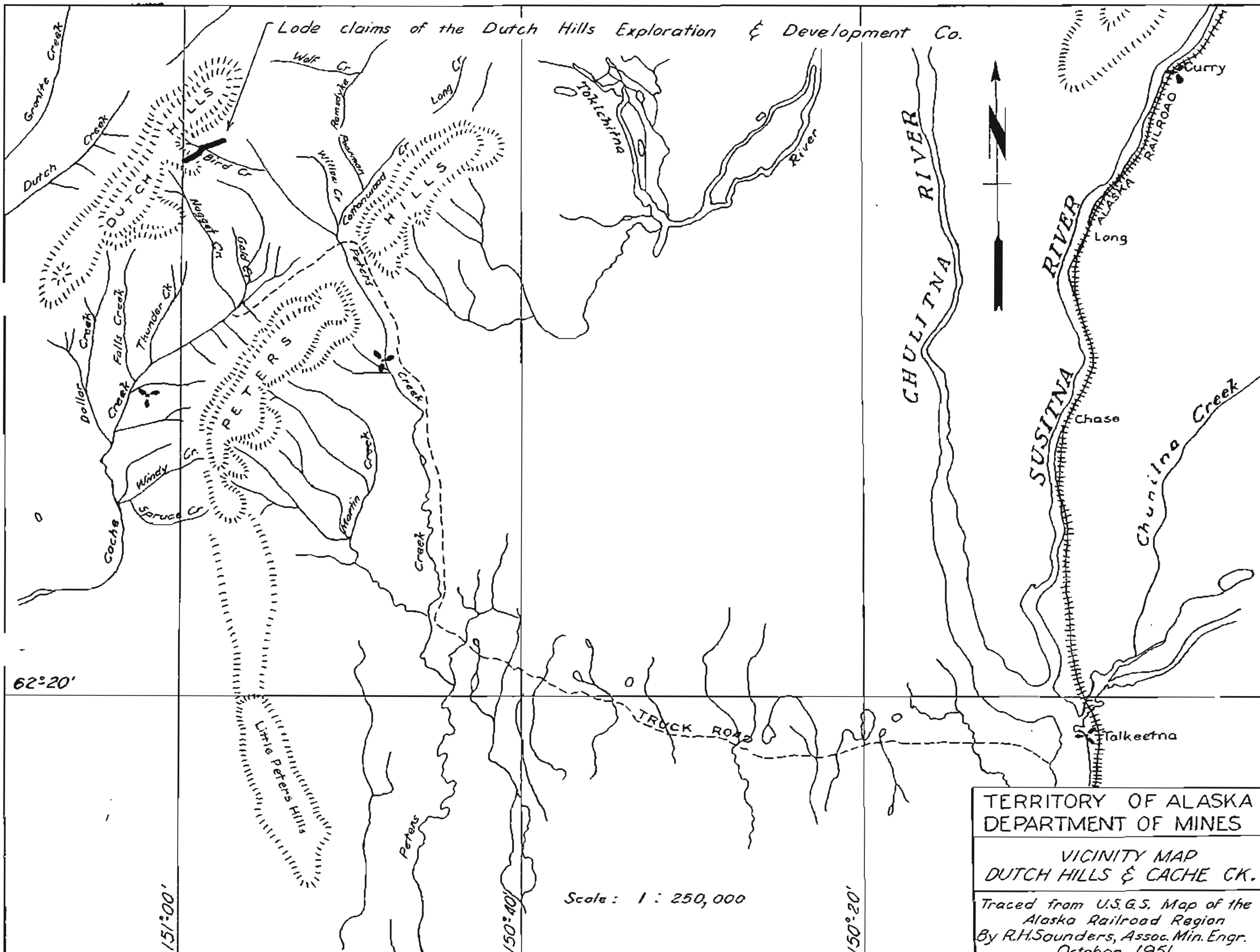
parts of the ore progresses, prospecting and development will be carried on in the low-grade parts. In this early stage of mining, no attempt will be made to operate during the winter months.

Mining the low-grade parts of the deposit will require equipment suitable for a large-scale operation. Permanent mill and camp buildings will probably be located about one-quarter mile downstream from the dikes in order to be safe from snow slides. Experience gained by mining the high-grade pockets and information gained by additional prospecting will aid in the selection of equipment and mining methods for large-scale mining.

A small launder should be installed at the lower end of the frieze-covered table to catch any coarse pieces of gold that might roll over the frieze. With this addition to the milling equipment there should be no appreciable loss in the tailing. If it becomes desirable to increase the capacity of the mill, a classifier could be installed at the lower end of the table. A coarser screen could then be used in the mill, and the larger particles from the table discharge would be returned to the mill feed for regrinding.

Much sampling will be required to determine the limits of the ore for large-scale mining. All samples taken should be accurately plotted on a map, and a permanent record should be kept of all assays from those samples. When a sufficient number of samples have been plotted on the map, it will be possible to outline the mining limits of the deposit.

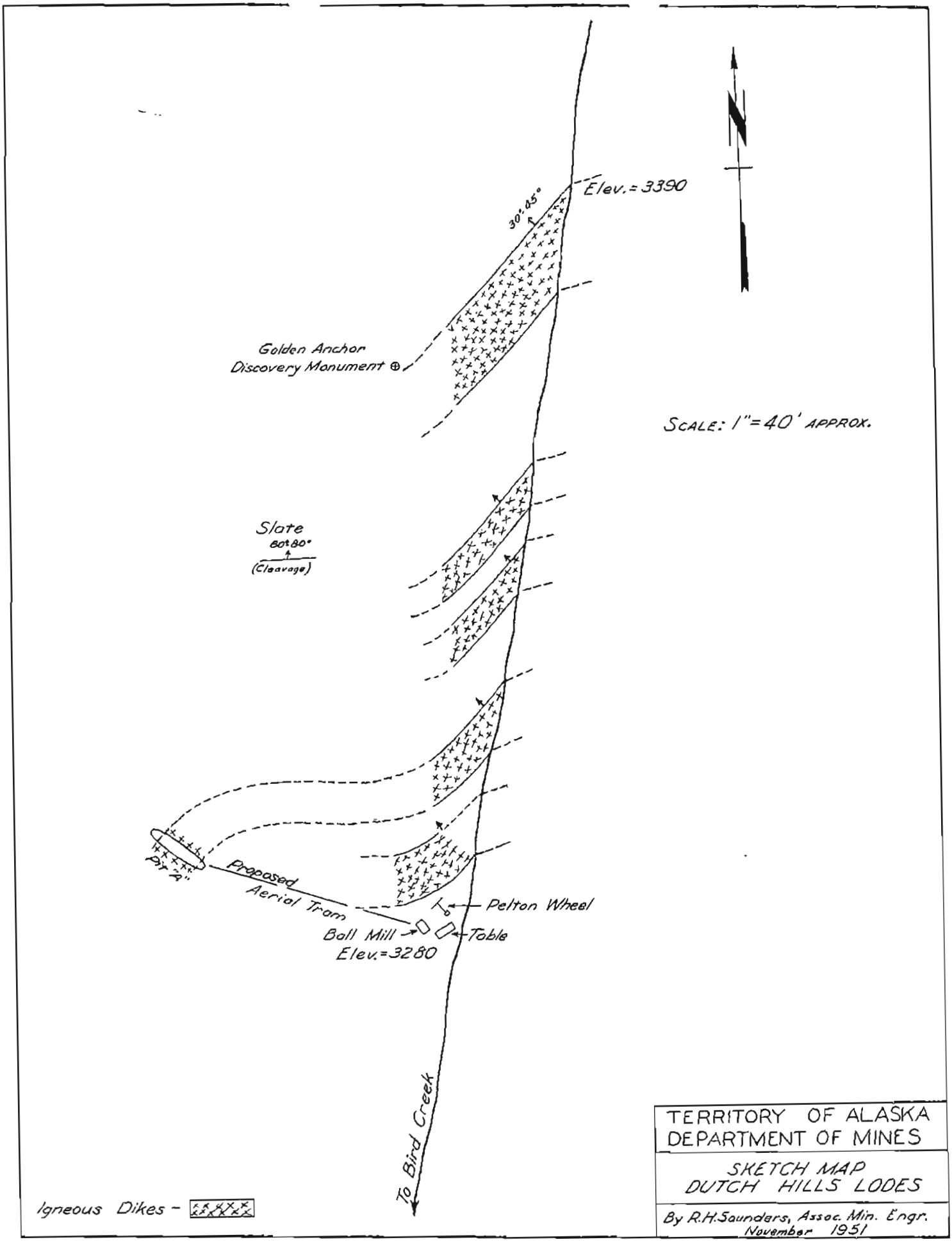
Presumably the operators will be expending all their efforts in mining and will have neither the time nor the equipment for mapping during the next few years. The location of samples taken before a map is made should be marked on the ground by a numbered stake; the location could then be picked up by later survey. The Department of Mines can aid in this work by making a topographic map of the property by plane table survey, if the work can be fitted into the Department's schedule.



TERRITORY OF ALASKA
DEPARTMENT OF MINES

VICINITY MAP
DUTCH HILLS & CACHE CK.

Traced from U.S.G.S. Map of the Alaska Railroad Region
By R.H.Saunders, Assoc. Min. Engr.
October 1951



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SKETCH MAP
DUTCH HILLS LODES

By R.H. Saunders, Assoc. Min. Engr.
November 1951