DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 1541X

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

_____

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

To:	Gowen	Date	
To:	Coordinating Committee	Date	7/19/51
To:		Date	
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CONTROLLED DOCUMENT

INT.-DUP. SEC., WASH., D.C. 98868

DMA Form 2

DEFENSE MINERALS ADMINISTRATION
Status Change Notice

DMA Docket No. 1541X

To: Reports and Records Branch

From: Copper Branch, Supply Division

Date: 7/19/51

The following action has been taken this date on the above Controlled Document.

Forwarded to Field Team, Region I, thru Coordinating Committee

Type of request changed to:

Denied ☐ Withdrawn ☐

Approved in amount of $

Other action, specify:

Interior—Duplicating Section, Washington, D. C. 98869

700

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

URGENT

JAN 22 1952

Miss Helen F. Cooper
2225 Mount Morton Street
Lincoln 4, Nebraska

Re: Docket [illegible] (Cooper)
[illegible] Copper Prospect
[illegible] of Alex Island, Alaska

Dear Miss Cooper:

Your subject application for exploration aid has been reviewed by the Defense Minerals Exploration Administration and we regret to inform you that your application has been denied.

A review of this application and the material available to the Government. We believe that the geological and mineral [illegible] are not such as to justify the expenditure of funds under the proposed exploration project at this time.

Sincerely yours,

C. O. Mittendorf (for) CE 1-22-52

Chief Administrator
Defense Minerals Exploration
Administration

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

CF Keller/jem 1-18-52
cc to: Adm. Reading File
Docket
Messrs. Johnson, Ch. Rm. 3621
Nelson, Red Rm. 4216 G.S.
Ellis
Keller
Field Team, Reg. I (2)

1/17/52

Mr. Keller —

Re DMA-1541X
Helen & Cooper
Lake Bay Copper Prospect
~~Kobuk~~ Prince of Wales I.

I'll be glad to concur in denial, as recommended by Field Team. It seems to me the conclusion that the deposit is too small (or thin) and low-grade, as shown by previous exploration, to justify Government participation in further exploration, is a good and sufficient reason for denial.

The failure of Anaconda to take up its options and the low grade of ore on the dump of the caved shaft are not of much account. There could be many explanations other than the poor prospects.

C. H. Johnson

RVWaugh:ez
DRAFT

10/ 15/51

Miss Helen E. Cooper
2226 East Morton Street
Tacoma 4, Washington

Docket No. DMA-1541X

Dear Miss Cooper:

Your application for exploration aid has been reviewed by the Defense Minerals Administration and we are sorry to inform you that it must be denied.

On the basis of the material submitted with your application and the material available to the Government it is felt that the geological possibilities are not such as to justify Government participation in an exploration project at this time.

Very truly yours,

Tom Lyon, Director
Supply Division

Copy to: Administrator's Reading File
Executive Officer, Region I
Mr. Gowen
Mr. C.H.Johnson
Mr. D.MacLaren
Files - DMA Docket

RVWaugh:ez
DRAFT

10/15/51

Memorandum:

To: Administrative Management Division

From: Director, Supply Division

Subject: Application for Exploration aid of Miss Helen E. Cooper, 2226 East Morton Street, Tacoma 4, Washington

Denial of this application is recommended by Field Team Region I for the following reasons:

2 ~~2~~. Although the deposit has not been delimited, there is no geological evidence that higher-grade ore shoots might be discovered by additional surface trenching or diamond drilling to depth

3 ~~3~~. The surface work done in 1946 by a representative of of a large mining company proved discouraging.

4 ~~4~~. The early abaundonment of the 65-foot shaft and the low grade ore on the dumps indicate that this work also was discouraging.

1 ~~5~~. Work done to date on the Lake Bay copper prospect indicated that the deposit is to small and low grade to justify further exploration.

A letter has been prepared to the applicant notifying him of this denial.

Transmitted herewith for your disposal is the entire file ~~docket~~ consisting of the following:

1 Form MF-100
2 Forms MF-103
2 DMA Review of Application for Exploration assistance
1 Field Team report Region I
1 Report on the Lake Bay Mining Property
1 Report on the Lake Bay Mine made to the Lake Bay Mining Co. by N.W.Sweetser- 1923
1 Geological Map of Lake Bay Copper
1 Map of Lake Bay District
1 DMA Status Change Notice
1 Original letter of H. Cooper to DMA May 26, 1951
1 Carbon letter of J. B.Gowen to F.B. Prescott, Oct. 4, 1951
carbon with letter of Prescott to DMA

1 Carbon letter of L. F. Strobel to F. B. Prescott, June 20, 1951
1 Carbon letter of T. Lyon, to H. E. Cooper, July 20, 1951
2 Original letters to T. Lyom from S.H. Lorain
Oct. 2, 1951
Oct. 10, 1951

Tom Lyon, Director
Supply Division

Copy to: Adm. Reading File
Region I
Gowen
Johnson
D.MacLaren
Files - DMA Docket

Miss Helen F. Cooper
2226 East Main St.
Tacoma 4, Washington

JMA 1541A

Dear Miss Cooper:

Your application for employment and the form recommended by the Department might be of some value to you which is enclosed herewith.

On the basis of the material submitted with your application and the material available to the Department it is felt that the geological qualifications are such as to justify the Department participation in an exploration project at this time.

Regrets

To: A-MD
From: D SD

Subject: Application for Exploration Aid Claim
Helen E Cooper 2226 East Morton St.
Tacoma 4, Washington.

Denial of this application is recommended by Field Team Report for the following reasons:

1. Although the deposit has not been delineated, there is no geological evidence that higher grade ore shoots might be discovered by additional surface trenching or by diamond drilling to depth.

2. The surface work done in 1946 by a representative for large mining company proved discouraging.

3. The early abandonment of the 65-foot shaft and the low grade ore in the dump, indicate that this work also was discouraging.

4. Work done to date on the Helen Bay copper prospect indicates that the deposit is small & low grade & justify further exploration.

A letter has been given to the applicant notifying him of this denial.

Transmitted herewith for your disposition is the entire docket covering the following:

1 Form MF 100
2. Forms MF-113.
2 DMA Review of Application for Exploration Assistance
1 Field Team report Report
1 Report on the Helen Bay Mining Property

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D.C.~~
P. O. Box 2990
Juneau, Alaska

October 10, 1951

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 1 5 1951

Mr. Tom Lyon, Chairman
Coordinating Committee
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Re: DMA Docket 1541X

Dear Mr. Lyon:

Enclosed are 4 copies of the Field Team report on the exploration loan application of Helen E. Cooper.

The subject docket was forwarded to this office from Washington and included the following documents which are returned herewith:

Letter: Helen E. Cooper to Dr. James Boyd
Form MF-100
Form MF-103 and exhibits

One copy of form MF-103 has been retained at this office for reference.

Very truly yours,

S. H. Lorain
Executive Officer
Alaska Field Team, Region I

Enclosures

310

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

RVWaugh

OCT 4 1951

Mr. F. B. Prescott
901 South 9th Street
Tacoma 3, Washington

Re: Docket No. DMA-1541X

Dear Mr. Prescott:

This is to acknowledge your letter of September 21, 1951 requesting information on Docket No. DMA-1541X.

It is the policy of the various field teams to contact an applicant whose docket they have received from Washington, D. C. only when they are ready to visit the property for a field investigation. Since many of these field teams have rather a large backlog of applications and properties to visit, there is a time lag between the receipt of an application and visiting the property. Therefore, I imagine this would apply to your delay in hearing from Mr. Lorain, and believe that Mrs. Copper will hear from him in due time.

Very truly yours,

J. B. Gowen

J. B. Gowen, Chief
Copper Branch

RVWaugh:rw
10/2/51

Copy to: Administrator's Reading File
Executive Officer, Region I
Copper Branch
Files-DMA Docket

DEFENSE MINERALS ADMINISTRATION
WASHINGTON, D. C.
SEP 26 3 43 PM '51
OFFICIAL FILE
Rec'd OK 9-27
210

901 South 9th St.
Tacoma, 3, Washington.
September 21,1951

U. S. Department of the Interior
Defense Minerals Administration
Washington, 25, D. C.

Att: Mr. J. B. Gowen, Chief
Copper Branch
Number DMA-1541X

Gentlemen:

I made application for an exploration loan for Helen E. Cooper on May 26th, 1951.

She was advised that the matter had been referred to Mr. S. M. Lorain of Juneau, Alaska for study. Mrs. Cooper has had no report from Mr. Lorain. Will you please advise either me or Mrs. Cooper what has been done in regard to this matter?

Yours very truly,

WESTERN MINERALS DEVELOPMENT CO.

By F B Prescott
F. B. Prescott

P/m

File

DEFENSE MINERALS ADMINISTRATION
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS ADMINISTRATION

OCT 8 8 04 AM '51

~~WASHINGTON 25, D.C.~~
P. O. Box 2990
Juneau, Alaska

October 2, 1951

Helen E. Cooper

Mr. Tom Lyon
Chairman, Coordinating Committee
Defense Minerals Administration
Department of the Interior
Washington 25, D. C.

Ref: Docket DMA 1541X

Dear Mr. Lyon:

I have just received a copy of a letter that F. B. Prescott, for Western Minerals Development Company, wrote to J. B. Gowen, Chief, Copper Branch, D.M.A., regarding an exploration loan application on their copper property in Southeastern Alaska.

For your information we have given serious consideration to this application on the basis of data already in our possession. It has been determined that we will recommend that their application be denied, but because of prior commitments and a very limited staff we have not had time to prepare a formal analysis. We expect to start preparation of the analysis within the next few days, and hope to get it out to you within not more than two weeks.

Yours sincerely,

S. H. Lorain, Executive Officer
Alaska Field Team, Region I

310
FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

J. W.
Gowen
Tyson
Lemmon for Lee

Re: Docket No. [illegible]-15413

Miss Helen L. Cooper
2226 East Norton Street
Tacoma 4, Washington

Dear Miss Cooper:

This is to inform you that your application for oil for and exploration project has been referred to the field team for further study. You should hear shortly from Mr. S. H. Lorain, Executive Officer, DMA Field Team, Region I, Room 2990 Federal Building, Juneau, Alaska.

Very truly yours,

Tom Lyon

Tom Lyon, Director
Supply Division

JWAlt:ez

Copy to: Executive Officer, DMA Field Team, Region I
Reports and Records Branch
Administrator's Reading File
Coordinating Committee
J.D.Gowen, Room 2612
Charles H. Johnson, Room 3425
D. MacLaren
Files
Mr. T. B. Prescott, Manager, 901 South 9th Street,
Tacoma 3, Washington

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1541 X

Commodity COPPER

Total Amount $20,000

Govt. Participation ? PRESUMABLY $10,000

1. Name and Address of Applicant HELEN E POOPER
2226 EAST MORTON STREET, TACOMA 4 WASHINGTON

2. Location of Property KETCHICAN MINING DIST. PRINCE OF WALES ISLAND, 60 MILES NORTH OF KETCHIKEN, ALASKA

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES - OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? —

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? NO

a) MF-201? —

b) MF-202 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower YES

b) Equipment and supplies YES
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* YES

d) Water (question 13)* YES

e) Power (question 13)* YES

Is a field check needed on any of these points? NO

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* YES

Is a field check needed on this point? NO

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? NO

If not, are there sufficient data given so that you can describe the project? NO; DIAMOND DRILLING — If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? NO

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? YES

If not, what part of it is? —

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? —

f) Should more information be requested from applicant? YES

g) Is a field examination necessary to complete Exhibit A? YES

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? YES - CONTRACT DRILLING

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? YES -

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? CAN'T TELL

c) Is the schedule excessive for the work proposed? "

d) Are the proposed wages and salaries reasonable? NO WAGES & SALARIES QUOTED

e) Is a field check needed? YES

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? No

15. In your judgment, can the proposed work be done in the proposed time? PROJECT NOT OUTLINED ENOUGH TO TELL

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? No information needed at this point at all exhibits. Have applicant indicate on map location and number of holes, depth, etc to be drilled. Have him submit a firm drilling contract.

Check geological probabilities

Reviewed by: R Wanek

C H Johnson

Date 28 June 51 J B Gowen

97692

6/5/51

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. 1541 X

Commodity COPPER

Total Amount $20,000

Govt. Participation ? PRESUMABLY $10,000

1. Name and Address of Applicant HELEN E COOPER
2226 EAST HORTON STREET, TACOMA 4 WASHINGTON

2. Location of Property KETCHICAN MINING DIST PRIDRE OF WALES ISLAND 60 MILES NORTH OF KETCHIKAN, ALASKA

3. Mineral or metal COPPER Is it listed in Section 9 of MO-5? YES

If not, application will be rejected.

4. Geologic probability of discovery—based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know—needs field examination ✓

e) Is there an alternative and favorable project?
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? YES — OWNER
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? —

Does the lease have sufficient time to run to cover a future —

productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? -

b) MF-202 -

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

Is a field check needed on this point?

10. Exhibit A. (questions 21 and 22)*

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? No, [illegible] DRILLING - If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? —

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? —

f) Should more information be requested from applicant? YES

g) Is a field examination necessary to complete Exhibit A? YES

11. Exhibit B (question 23-d)*

a) Is it applicable? NO

b) If so, are sufficient data furnished? — If so, attach a draft.

c) Is a field check needed? No

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? YES — CONTRACT DRILLING

b) Sufficient data? NO If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? YES -

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? [illegible]

c) Is the schedule excessive for the work proposed?_____

d) Are the proposed wages and salaries reasonable? No [illegible]

e) Is a field check needed? YES

14. Exhibit E (question 23-c)*

a) Is it applicable? N/A

b) Sufficient data? –

c) Reasonable? –

d) Field check needed? N/A

15. In your judgment, can the proposed work be done in the proposed time? PROJECT NOT OUTLINED ENOUGH TO TELL

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? [illegible] of [illegible] all [illegible]. Have applicant indicate on map location and number of holes, depth, etc. to be drilled. Have him submit a firm drilling contract

Check geological probabilities

Reviewed by: [illegible]

[illegible]

C. Johnson

Date [illegible] J. R. Gowen

97692

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

June 20, 1951

Mr. F. B. Prescott
Manager
901 South 9th Street
Tacoma 3, Washington

Subject: DMA-1541X
Re: Exploration Loan
Victory No. 1, 2, 3,
& 4

My dear Mr. Prescott:

Receipt is acknowledged of your application and attachments of May 26, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1541X and was referred to Mr. J. B. Gowen, Chief, Copper Branch on June 7, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1541X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
Gowen
>Files
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1541X

Date received 6-7-51

Participation

Name and address of applicant

Helen E. Cooper
2226 East Morton St.
Tacoma, 4, Wash.

Date May 29, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $20,000

Mineral or metal Copper-Gold & Silver

Percentage of Government participation

Location of mine Ketchican Mining Dist. Prince of Wales Island

Sixty miles north of Ketchiken, Alaska.

Date of filing MF-100

DMA Docket Number, if available 1541X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? -Individual

*2. If a partnership, state names and addresses of partners.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. F. B. Prescott, Mgn. Engr. -30 years experience.

*5. Are you the owner or the lessee of the property? Owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing. Mining Claims

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. None

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. See enclosed reports

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. Mining claims- Victory No. 1-2-3 & 4.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. See enclosed reports

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source. See reports

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None of consequence

15. State in detail how the ore could be shipped and how and where milled. Smelted at Tacoma Smelter

*16. History: See reports

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See reports

(*b*) State briefly the known history and production of adjoining and neighboring properties.

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

(*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.) See reports and Maps

(*a*) Describe the ore or mineral deposits briefly.

(*b*) Submit available maps and assay data.

(*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Copper

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. Diamond Drilling- 6 Mo.

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See reports

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

(*b*) Supervisors, by numbers and positions, with salaries of each.

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

(*f*) Cost of rental for equipment which the operator proposes to rent. Contract drilling

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

(*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

RECEIVED
JUN 1 1951
LANDS DIVISION
DEPARTMENT OF NATURAL RESOURCES
Olympia, Washington

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Helen E. Cooper
(Name of company)

By F. B. Trewartha
(Signature of authorized official)

May 28th 1951
(Date)

Manager
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-100
(March 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 1 1951

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA 1541 X

Date received 6-4-51

No BM Reports

Helen E. Cooper
2226 East Morton St.
Tacoma, 4, Wash.

Name and address of applicant

Date MAY 29, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) Necessity Certificate pursuant to the provisions of Sec. 124–A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products? Copper- Gold & Silver
   (*b*) What are the byproducts, if any? Silica
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following: See reports
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point. One half mile
   (*b*) Mining district. Ketchican- Prince of Wales Island.
   (*c*) Township, Section, Range.
   (*d*) County, State. Alaska
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated. Not in operation
   (*b*) Are you operating this property as:
   - [x] Owner.
   - [ ] Lessee.
   - [ ] Contractor.
5. Number of years in production No

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project. Mining Engineer- 30 years experience
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation. See reports
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Helen E Cooper
(Name of company)

By F B Greaves
(Signature of authorized official)

May 29th 1951
(Date)

Manager
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1541 X

Date received 6-4-51

Participation

Helen E. Cooper
2226 East Morton St.
Tacoma, 4, Wash.

Name and address of applicant

Date MAY 29, 1951

FILL IN THIS BLOCK

Date of application MAY 29, 1951

Estimated cost $20,000

Mineral or metal Copper-Gold & Silver

Percentage of Government participation

Location of mine Ketchican Mining Dist. Prince of Wales Island
Sixty miles north of Ketchiken, Alaska.

Date of filing MF-100

DMA Docket Number, if available 1541 X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? Individual

*2. If a partnership, state names and addresses of partners.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. F. B. Prescott, Mgn. Engr. 30 years experience

*5. Are you the owner or the lessee of the property? Owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing. Mining Claims

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. None

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. See enclosed reports
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any. Mining Claims- Victory No. 1-2-3 & 4

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. See enclosed reports

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source. See reports

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. None of consequence

15. State in detail how the ore could be shipped and how and where milled. Smelted at Tacoma Smelter

*16. History: See reports
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. See reports
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.) See reports & Maps
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Copper

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. Diamond Drilling-6 Mo.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. See reports

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent. Contract Drilling
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and all other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

JUN 5 1981
Department of the Interior
Bureau of Mines
Received
Exploration Section

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Helen E Cooper
(Name of company)

By C B Truswell
(Signature of authorized official)

May 28th 1981
(Date)

Manager
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 5 1951

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 15-41X

Date received 6-4-51

Participation

Name and address of applicant

Helen E. Cooper
2226 East Morton St.
Tacoma, 4, Wash.

Date May 29, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $20,000

Mineral or metal Copper- Gold & Silver

Percentage of Government participation

Location of mine Ketchican Mining Dist. Prince of Wales Island

Sixty miles north of Ketchiken, Alaska.

Date of filing MF-100

DMA Docket Number, if available 1541X

INSTRUCTIONS

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    (*b*) Supervisors, by numbers and positions, with salaries of each.
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    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
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    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
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24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Helen E Comfy
(Name of company)

By F B Trevorrow
(Signature of authorized official)

May 28th 1951
(Date)

Manager
(Title)

DEPARTMENT OF THE INTERIOR
Bureau of Mines
Received
MAY 31 1951
Examined
Recorded
Indexed
Filed

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

Dm A
1541X

901 South 9th St.
Tacoma, 3, Wash.
May 26, 1951

United States Department of Interior
Defense Minerals Administration
Washington, D. C.

Att: Dr. James Boyd, Administrator

Gentlemen:

I am enclosing form M.F. 100 and forms M.F. 103 with the information and reports requested for assistance on exploration projects.

We will be pleased to furnish you any further information in regard to this matter.

Mr. F. B. Prescott, who will have charge of this exploration work is the manager of the Western Minerals Development Co and is located at 901 South 9th Street, Tacoma, Wash.

Yours very truly,

Helen E. Cooper

P/m

REPORT BY FIELD TEAM
REGION I - ALASKA

Docket DMA 1541X (Copper)
Helen E. Cooper, 2226 E. Morton St., Tacoma 4, Wash.

INTRODUCTION

The copper prospect referred to in the subject docket was examined in 1943 by W. S. Twenhofel, U. S. Geological Survey, member of the Field Team, and in 1944 by W. S. Wright and Earl L. Foss, mining engineers, Bureau of Mines. The results of the examination by the Survey are published in Geological Survey Bulletin 963-A; Bureau of Mines examination and sampling results are described in A Supplementary Report dated March 1945 which is on file in Washington and Juneau.

In addition to the above examinations, information from the following sources has been utilized in evaluating the exploration proposal:

Chapin, Theodore, Mining Developments in Southeastern Alaska, U. S. Geol. Survey Bull. 642-b, pp. 88-89, 1916.

Roehm, J. C., Summary of Mining Developments in the Ketchikan, Wrangell, Petersburg and Juneau Precints; Department of Mines, Territory of Alaska, 1942.

Townsend, Harry, Mining Engineer and Sweetser, N. W., Mining Engineer, Maps and reports submitted with the loan application.

The map submitted with the subject docket shows the results of trenching and sampling done subsequent to the Geological Survey, Bureau of Mines and Department of Mines examinations. The author of the map, (HT) is identified as Harry Townsend, a reliable mining engineer regularly employed as a consultant by the Anaconda Copper Mining Company. Mr. Townsend's report is not available, but the Lake Bay exploration project was dropped by A.C.M. after the completion of the trenching and sampling shown on his map.

SUMMARY OF APPLICANT'S PROPOSAL

The applicant proposes to spend $20,000.00 in diamond drill exploration of the Lake Bay deposit. DMA participation in the amount of $10,000.00 is requested. Plan of drilling, estimated costs and time schedules are not detailed in the application. The engineering report submitted by the applicant bases ore grade estimates on the assay result of one dump sample. Costs given in this report are based on 1923 conditions. The applicant has made no attempt to adjust those costs to present conditions.

LOCATION, ACCESS AND FACILITIES

The Lake Bay copper prospect is on the northeast side of Prince of Wales Island, near Lake Bay which is a small protected inlet off Kashevarof Passage. The prospect is about 35 miles southwest of Wrangell or 70 miles northwest of Ketchikan, (fig. 1). Access is by means of float plane or boat from either of the above towns to Lake Bay. From Lake Bay, a small boat must be used to navigate rapids between the bay and Barnes Lake and between Barnes Lake and Goose Lake. The distance from deep water to the mine landing on Goose Lake is about 4 miles. The passage through the rapids can be made only by shallow draft boat during a short interval at high tide. The prospect is at an altitude of about 100 feet and is about 1¼ miles by trail and surface tram from the small boat landing on Goose Lake, (fig. 2).

There are no improvements or living facilities on the property. All buildings are in ruins. Two 30-foot shafts were sunk on prominent outcrops and a 65-foot inclined winze was sunk on the south end of the ore shoot during early operations. All workings are caved and have been inaccessible for many years.

THE DEPOSIT

Description

The deposit is a breccia lode composed essentially of quartz enclosing angular pieces of graywacke and argillite ranging from microscopic particles to blocks 6 inches across. The breccia fragments apparently have controlled the deposition of the chalcopyrite and other sulfide minerals to some extent as concentrations of these minerals are greatest either in or near the margins of the fragments. The vein strikes N 30° to 45° W and is approximately vertical. The country rock is black slate, argillite and banded graywacke.

Sampling Results

According to Sweetser 1/ a 5-ton shipment of picked ore to the Hadley smelter gave the following returns: copper - 5.07 percent, silver - 0.50 ounces per ton, gold - trace. No other sampling records from the early work are available.

The results of the sampling done by the Bureau of Mines in 1944 and by Townsend in 1946 are given in the following table. Sample locations are shown on figures 3 and 4.

Bureau of Mines Channel Samples

Sample No.	Width ft.	Copper percent	Gold oz /T
2	8	0.02 .02	Tr
3	6	0.75	0.01
4	6	0.35 0.43	0.01
5	8	0.18	Tr
6	10	2.04 2.04	0.02
Weighted average	7.6	0.74 2.48 ÷ 3 = .83	0.01

Sampled distance 120 feet.

1/ Cited on page 1.

Townsend - Trench Samples

Sample No.	Width ft.	Copper %	Gold oz/T	Silver oz/T
V-2	5.0	0.77	Tr	0.16
V-1 & 15 1/	6.5	1.80	Tr	0.19
V-10	6.0	2.68	Tr	0.22
V-4 & 5 1/	8.0	2.79	0.04	0.10
V-13	6.0	1.61	Tr	0.12
V-8	4.0	1.13	Tr	0.12
V-12	6.0	0.81	Tr	Nil
V-6	4.0	2.09	Nil	Nil
V-11	6.0	0.90	Tr	Nil
Weighted average	5.5	1.68	Tr	0.08

Sampled distance, 217 feet.
1/ Combined widths.

A pile of picked ore estimated to contain about 120 tons (fig. 4) was sampled by various engineers with results as follows:

	Copper percent	Silver oz /T	Gold oz/T
Sweetser	3.80	0.50	0.06
Alaska Department of Mines	3.30	Nil	Nil
Townsend	3.62	0.34	Trace

Grab samples from the dump at the 65-foot inclined shaft taken by the Bureau of Mines and the Department of Mines assayed 0.40 percent copper and 0.70 percent copper respectively.

Ore Reserves and Values

Based on Townsend's trench samples, the 217-foot sampled length of the deposit contains approximately 100 tons of indicated ore per foot of depth or 21,700 tons to a depth equal to the sampled length of the deposit. Average metal content, as indicated by 11 trench samples, is 1.68 percent copper and 0.08 ounces silver per ton. Gross value at present prices (October 1951) is $8.47 per ton.

The strike length of the deposit might be extended by additional trenching but there is little or no geological probability of finding ~~higher grade~~ commercial ore by either horizontal or vertical exploration.

ESTIMATED COSTS

The following estimate costs are given as a basis for economic evaluation of the deposit.

Smelter charges on copper ore and freight from Southeastern Alaska ports will currently average approximately $15.50 per ton or the total value of a 4.5 percent copper ore. Obviously, Lake Bay ore cannot be shipped without

prior treatment. Overall recoveries and costs on a 50-ton per day operation are estimated as follows:

Recovery

Copper, 90% recovery of 1.68% or 30.24# @ 24½¢	$7.41
Silver, 90% recovery of 0.08 oz. or 0.07 oz. @ 90¢	.06
Gross mill recovery, per ton ore	$7.47

Smelter Deductions and Payments

Copper, 1 ton concts. @ 20% Cu (conct. ration 1:13.23)	400#	
Less smelter deduction (1%)	20#	
Pay for	380#	
380 lbs. Cu @ 22¢ (market less 2½¢)		$82.60
Silver, 1 ton concts. @ 0.94 oz. per ton	0.94 oz.	
Less smelter deduction	.50 oz.	
Pay for	.44 oz.	
0.44 oz. Ag @ 90¢		.40
Smelter gross per ton concentrates		$83.00
Base treatment charge	$8.00	
Freight and sacks	8.00	
Treatment & freight	$16.00	16.00
Smelter net per ton concentrate		$67.00

Smelter net per ton of ore milled $5.06

Estimated Mining and Milling Costs

	Per ton
Mining (development & stoping)	$5.00
Milling (50-ton mill)	2.00
Freight, mine to deep water	1.00
Administration and misc.	.50
Amortization	6.91
Total	$15.41
Smelter net	5.06
Loss per ton milled	$10.35

Capital Costs - Amortization

Mill 50 ton @ $2,000 per ton per day capacity)	$100,000.00
Mine plant and camp	50,000.00
Total	$150,000.00

Distributed to 21,700 ton (indicated ore), $6.91 per ton.

CONCLUSIONS AND RECOMMENDATIONS

The work done to date on the Lake Bay copper prospect indicated that the deposit is too small and low grade to justify further exploration. Although the deposit has not been delimited, there is no geological evidence that higher-grade ore shoots might be discovered by additional surface trenching or by diamond drilling to depth. The surface work done in 1946 by a representative of a large mining company proved discouraging. The early abandonment of the 65-foot shaft and the low grade ore on the dump indicate that this work also was discouraging. Becuase of these results and because of the character and geologic environment of the deposit, it is highly unlikely that additional exploration will develop an ore deposit of sufficient grade and tonnage to justify the large expenditure which would be necessary to bring the prospect to the producing stage. The Field Team recommends that the application be denied.

FIELD TEAM, REGION I

S. H. Lorain, Chairman
S. H. Lorain, Regional Director, Region I

W. S. Twenhofel
W. S. Twenhofel, Geologist
U. S. Geological Survey

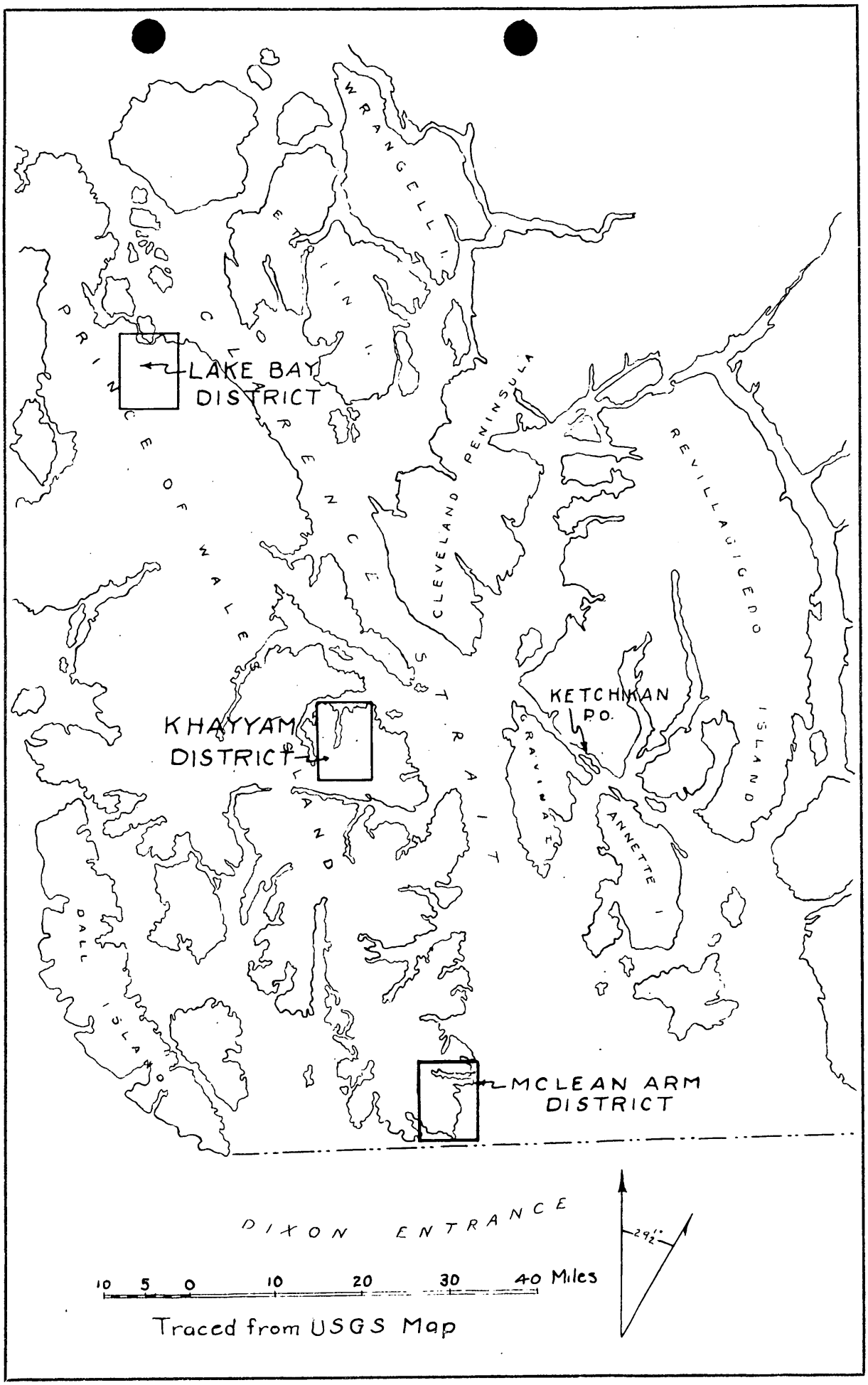


FIG. 1 SOUTHEASTERN ALASKA

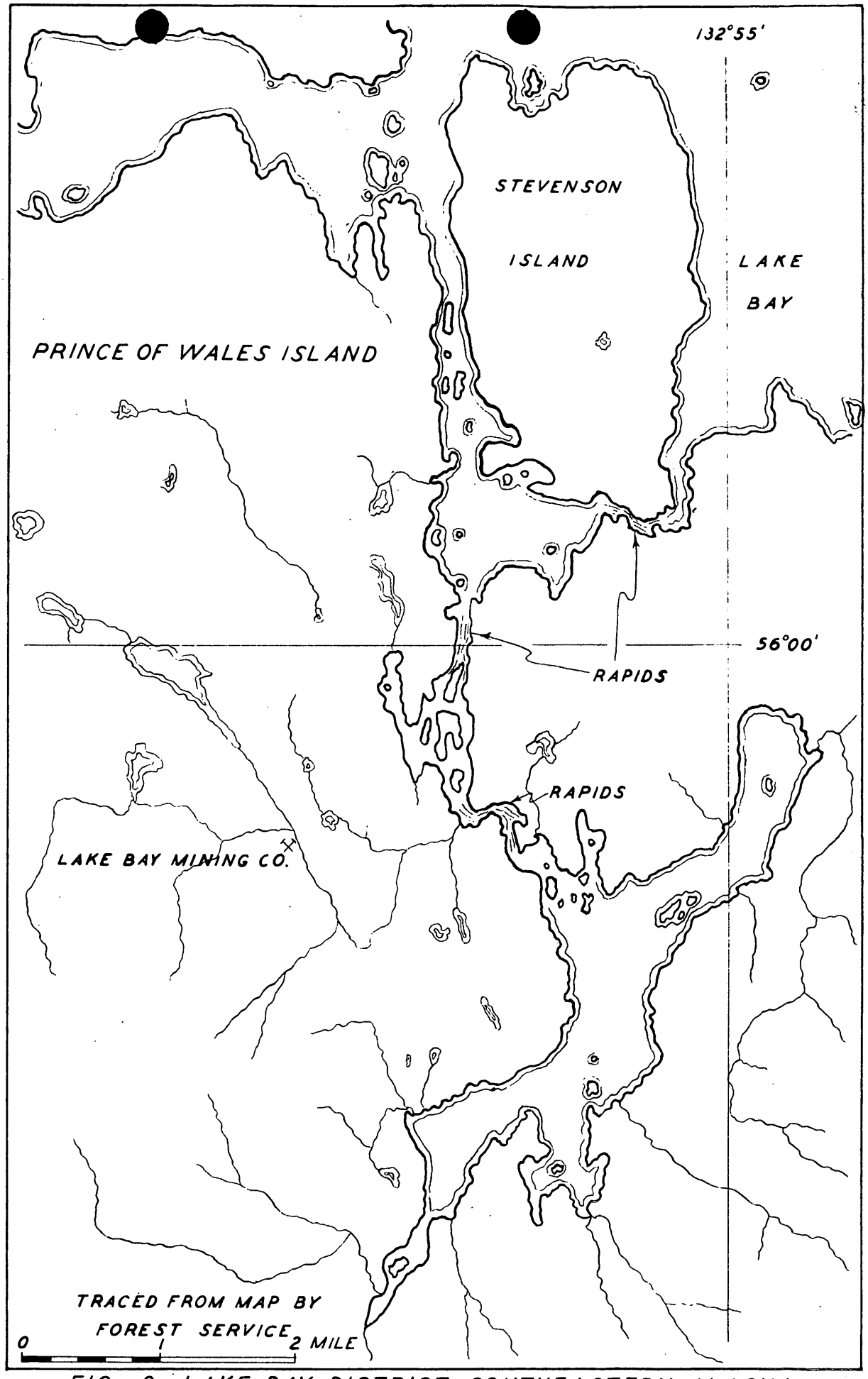
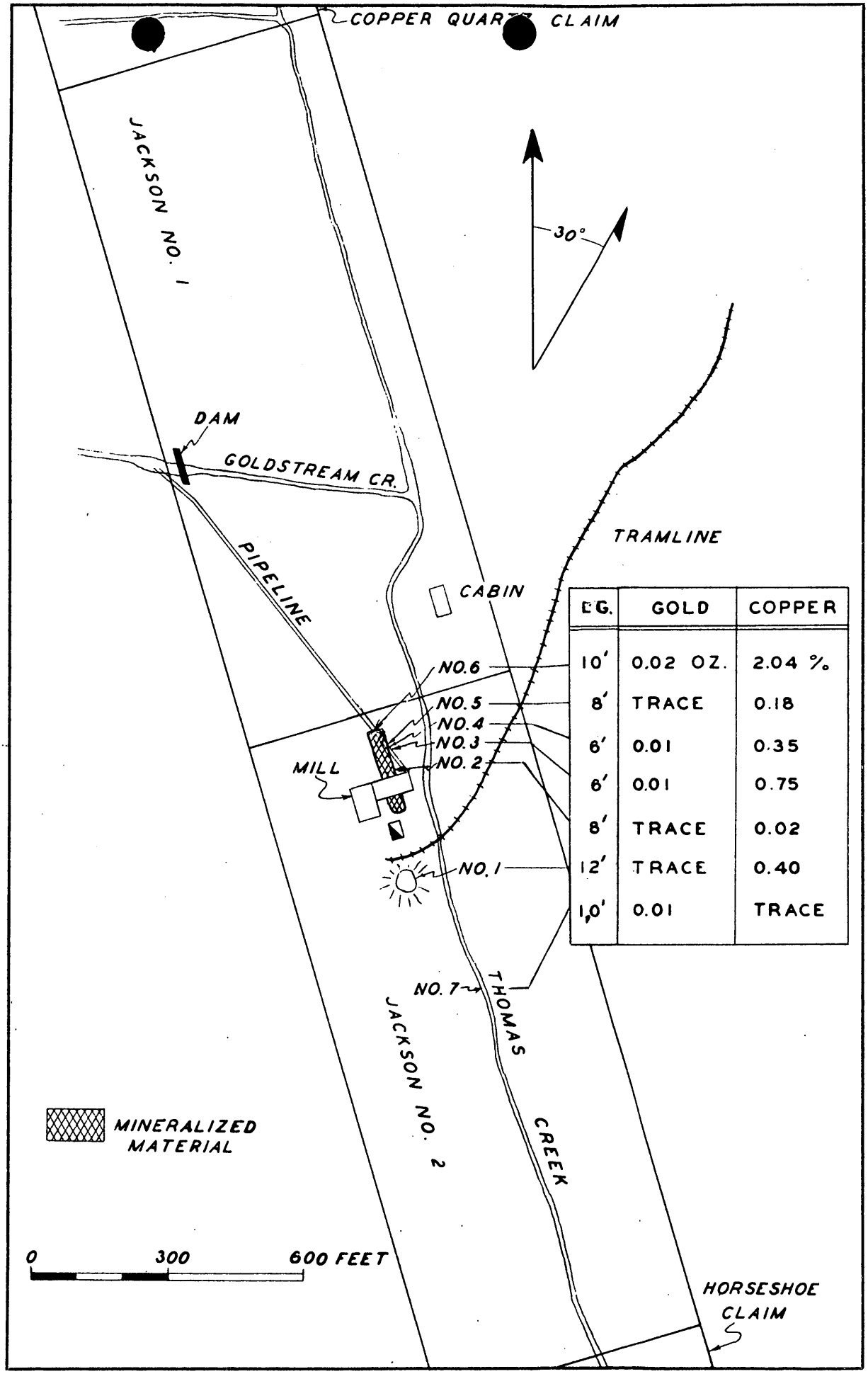


FIG. 2 LAKE BAY DISTRICT SOUTHEASTERN ALASKA



E.G.	GOLD	COPPER
10'	0.02 OZ.	2.04 %
8'	TRACE	0.18
6'	0.01	0.35
6'	0.01	0.75
8'	TRACE	0.02
12'	TRACE	0.40
10'	0.01	TRACE

FIG. 3 LAKE BAY MINING COMPANY CLAIMS

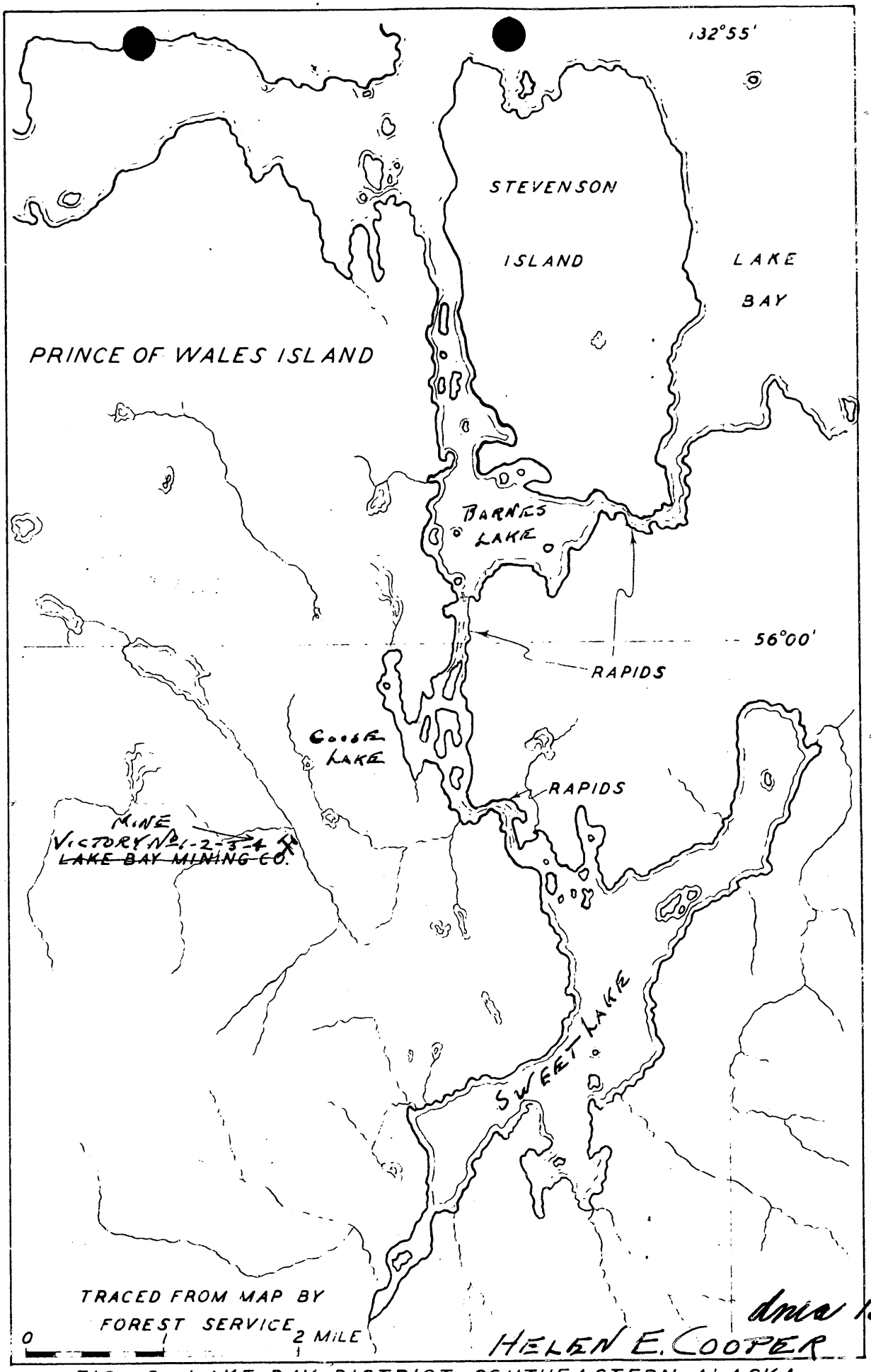


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FIG. 2 LAKE BAY DISTRICT SOUTHEASTERN ALASKA

REPORT ON THE LAKE BAY MINING PROPERTY

GEOGRPAHY

This property is located about one and one half miles in a southwesterly direction from Lake Bay, Prince of Wales Island, Alaska, and about forty miles southwest from the twon of Wrangell and sixty miles north from Ketchikan, six to eight miles off the steamship course between these ports.

It consists of four claims 600' x 1500' each lying end to end along the strike of the ore body which is in a northerly and southerly direction, together with three mill sites of fifteen acres all told in one body on the water front, and valuable water power site on stream which passes through the property. (see map)

GEOLOGY

Early in the Mesozoic era and contemporaneous with the vast intrusion of the granitic rocks forming the major portion of the coast range, great batholiths of granitic and dioritic rocks intruded the overlying argilites, greenstrones and limestones of Prince of Wales Island and other Islands of the coast, causing these rocks to be highly metamorphosed. When still far beneath the surface, these intrusives, coming in contact with the cold argolites began to shrink, at the same time giving off under high pressure large quantities of magmatic solutions which were highly impregnated with the metals. These solutions were forced into the porus intruded or contact rocks from great depths. On account of the shrinkage of the intrusives these contact rocks were fissured and shear zones established near the intrusive granitic batholiths. The passage of these hot magmatic solutions through the contact rocks which contained the necessary precipitants together with silica, etc. found typical and ample opportunity for precipitation and crystallization of the metals and gange matter, principally Chalcopyrite (copper sulphide) Pyrite (iron sulphide) and Silica (quarts) in the fissures and shear zones already mentioned, forming deep seated veins which is recognised as primary ore.

HELEN E. COOPER

This is a short description of how the ore bodies on the above properties were formed. Later during the glacial age, the surface was eroded away in parts, uncovered in places the upper part of the ore body which was a width of twenty to twenty-five feet and is exposed in one place about the middle of the property for several hundred feet, with shipping ore of about four feet. The angle of dip is about 65 degrees to the East.

MINERALOGY

After what has already been stated under the head of Geology, it is scarcely necessary to go into further details other than that the ore being in the sulphide form (Chalcopyrite) rather than the oxide, carbonate or silicates, permanency at depth is assured.

METALLURGY

As the ores from this property would ordinarily be shipped to and treated at the smelters near by, and as the best methods of treatment would be determined by them, it is scarcely necessary to go into detail on this subject. However, as there will be quantities of low grade or non-shipping ore developed and since these ores are highly siliceous, carrying about 80% of that element with Shelcopyrite !! (Copper Sulphide) makes it a typical concentrating material. Having remarkably cheap power, ores of this class could be treated very economically on the ground and the concentrates also shipped to the smelters.

PROSPECTING

The fact that the surface of the locality is covered to agreater or less degree with drift and a heavy stand of timber, makes prospecting throughout the length of the ledge very difficult and expensive. However, a great deal of work has been done in the form of stripping, open cuts, cross cuts and shafts, which show the ledge in place.

Two shafts have been sunk in the ore body itself to the depth of thirty feet or more, and about three hundred feet apart, at the bottom of which the ore is still continuing.

A large amount of sampling and assaying has been done, a few of the assays being exhibited herewith:

ASSAYS

SAMPLES	GOLD Ore per ton	SILVER Ore per ton	COPPER Ore per ton
Surface	.01	.90	6.10
	.02	.80	4.40
	.02	1.80	5.10
	.01	.70	3.40
	.03	.90	4.45
	.04	1.15	5.40
	.02	1.32	16.15
	.03	1.48	13.22
	.05	1.94	9.68
	.04	.92	6.54
	.06	1.20	5.48
	.04	.89	11.42
	.02	.60	2.30
	.06	.80	5.20
	.04	.70	4.40
	.03	.50	4.90
	.04	.40	3.60
	.03	.30	2.80
Prospect Shaft No. 1	.02	.30	2.30
	.03	.30	3.00
	.02	.40	2.20
	.02	.70	1.40
	.03	2.20	1.90
	.07	4.80	1.50
Prospect Shaft No. 2	Trace	Trace	1.50
	Trace	Trace	3.65
	.04	.20	3.15
	.05	.30	3.70
	.04	.70	4.20
Mill Test 1 ton	.04	1.	7.80
Shipment to Alaska S&RCo.			
5 tons ore	Trace	.50	5.07
100 tons	Trace	.40	8.90

The above assays, those marked surface, were made from samples taken across the ore body at various points. Those marked "shaft" were taken by the miners at intervals of five feet as the work progressed. The smelter shipment and mill test was taken from the ore body at the surface.

The average of over 50 samples taken by the miners as the work progressed-mentioned before--shows assay value of:

	Gold Os. per ton	Silver Oz. per ton	Copper Percent	--Copper @ 30 cent value per ton
	.02	.80	4.90	$30.60
Mill Test one ton	.04	1.00	7.80	
5 ton shipment to Alaska S&RV Co.	Trace	.50	5.07	

ASSAYS- Cont.

The following is the analysis of the samples of ore dumps, #1 by the Tacoma Smelting Co. and #2 by the Granby Smelting Co.

	GOLD	SILVER	COPPER	INSOL.	SILICA	IRON	LIME	SUL.	ALUMINA
#1			3.90%	73.2%	70.5%	9.2%		8.7%	1.1%
#2	Trace	0.4	4.26%	74.0	70.8	8.8	1.5%	10.0	2.4

Note the high siliceous contents as shown in these analyses. The smelters are offering favorable rates for this ore on account of this element. There are about 200 tons in these dumps and there would not be less than 6,000 tons within the small area from which these samples have been taken, with an assay value of over 180,000 and this is a very small part of the ore body. The present hoisting plant would handle 100 tons per day, and with 25% further development and equipment the mine should be producing that amount in a very short time, From present indications we judge the ore body should continue at least to the first level at 135 feet, and the length of one claim, 1500 feet, on which work is now in progress, in which case there should be above this first level in this claim alone at the present assay value, at least $1,200,000.00 worth of ore. Our explorations indicate this ore extends into the other three claims composing the holdings of the company. Cost of mining, transportation and smelting will be about 8.00 per ton.

DEVELOPMENT

Other than prospecting the ledge, a large amount of work has been done and a plant has been installed for the purpose of proving the property at considerable depth and putting it on a shipping basis.

This plant consists of a water power with eighteen inch steel pipe line and an eight foot Pelton type wheel having direct connection with the machinery in the shaft house and saw mill. Power house, shaft house, saw mill and shops are all under the same roof and well constructed, being a two story building thirty by fifty feet. A splendidly constructed tower 55ft high stands over a double compartment shaft which is being timbered with 8x8 square timbers all the way down, sets being placed four foot centers. At the time of writing, a depth of 60 ft has been attained. It is proposed to continue the shaft to a depth of 130 ft before beginning the first cross cut, the shaft to be continued to other levels at 100 ft intervals. Ample camp buildings for the men are in use with water under pressure. The road bed for a narrow gauge railroad has been built ready for rails about two-thirds of the distance to tide water, which is 6600 ft all told, with a one percent grade and easy curves. At tide water the bunkers will be built below the track so that the ore will drop from the cars into them and be drawn from the bunkers on to the barges. The ore will be drawn into the

ASSAYS- Cont.

cars from the ore bins at the shaft and may be conveyed by motor to the bunkers at tide water.

POWER

The present power plant will generate up to 50 H.P. the water being taken direct from the stream (without impounding reservoir) 1000 ft. from the power plant. The Pelton type wheel operates with single nossle under 65 ft. head. By extending the pipe line 1000 Ft farther up stream to a point where there is a natural reservoie (about one by two miles in extent) and b y building a comparatively small dam 20 ft. high with a length of 25 ft at the bottom and 100ft at the top, this area would be flooded to a depth of approximately 10 ft. This reservoir would impound the flood water which is very great and cannot be used at present.

This being under a head of 120 ft at the power house, would give not less than 500 H.P. thruout the year with an estimated flow of water of 2500 cubic ft per minute. The present wheel would then generate 125 H.P. with single nozzle. An additional nozzle could be added doubling its capacity. For greater power additional wheels would be required, but the pipe line would be sufficient up to 500 H.P.

There is a magnificent stand of timber on the property and in the vicinity, principally hemlock, which makes excellent mine timber, also spruce and red and yellow cedar.

MARKET

The mearest smelter is at Hadley about 40 miles by water: however, this plant was closed on account of a sufficient amount of siliceous ores wuch as are found in this property not having been developed in the locality. The next nearest smelter is the Granby plant which was is large and up-to-date. This is about one hundred and seventy-five miles distant to the south. There is also the Tacoma Smelting Co. at Tacoma, Washington about eight hundred miles distant.

SHIPPING

As Lake Bay is not a regular port of call, a certain steamship company, whose steamers ply between Seattle and the ports of Alaska will have their boats call

upon request, when there is $50.00 worth of business. The freight rate to Lake Bay from Seattle under these circumstances or conditions is $8.00 per ton for ordinary merchandise. First class passenger fare is $26.00.

CONCLUSION

Having a strong ore body of fair grade ore close to tide water with land locked harbor and easy grade over narrow guage road, with remarkably cheap and ample power, an abundance of fine timber and salubrious climate, which assures the greatest economy of working this property with a comparatively small further outlay, should be made a very lucrative producer.

Respectfully submitted,

(signed) A.McCullough
Mining Engineer

REPORT
on

THE LAKE BAY MINE

made to

THE LAKE BAY MINING COMPANY

By

N. W. SWEETSER

Mining Engineer -

1923

Dm A 15-41

HELEN E. COOPER

TOPOGRAPHY

The present topography of Prince of Wales Island is largely due to the severe erosion it suffered during the Glacial Geological Period. At that time, the entire Island with the exception of a few of the highest peaks was covered with a thick slow moving mantle of ice, much as Iceland is today. Many hundreds of feet of the rock formation was scoured away, the softer sedimentary rocks suffering more severely than the harder intrusive rocks.

As the climate became milder, and the ice mantle gradually receded to the mountain peaks, the irregular topography of the country was exposed as it is today. One outstanding feature is the many areas of rolling level table lands of the softer rock formations which occur at practically the present sea-level. The valleys are occupied with fresh and salt water lakes, surrounded with low smooth contoured hills. The water level in many of the lakes arises and falls with the tide through narrow channels or "salt chucks".

ACCESS TO THE PROPERTY

Access is had to the property in an easy manner from deep water through two of these narrow channels and across two salt lakes at slack high tide, a distance of two and one half miles. This channel is deep enough for scows or barges of several hundred tons capacity, and a good anchorage is afforded in the upper lake at the mill sites. It is at this point, where bunkers would logically be built.

CLAIMS

The company has acquired three mill sites of five acres each bordering upon the water. These tracts are named the Jackson No.1, Jackson No.2, and the Copper Quartz Mill Sites, and are held by performing One Hundred Dollars worth of work upon each one annually.

The Lake Bay Mineral Claims are 7000 feet distant from the Mill Sites. They consist of four claims in all, namely: The Jackson No.1, Jackson No.2., Copper Quartz, and The Horseshoe. They are unpatented and are held by perform-

CLAIMS-Continued

ing One Hundred Dollars worth of work annually upon each claim. The claims are each 600 x 1500 feet and are staked end to end along the ore zone for a distance of 6000 feet.

CLIMATE

The climate of Southeastern Alaska is greatly influenced by the Japan Current. It is very much the same as the Puget Sound climate averaging only a few degrees colder, and with greater precipitation. The summers are long without excessive rainfall. The winters are mild, the termometer rarely falling below 15 degrees above zero. The winter precipitation is heavy. The yearly average is 150 inches. At this elevation, that is at sea level, mining operations are conducted throughout the year without inconvenience. The snow seldom exceeds a depth of more than two feet.

FOREST

Owing to the heavy rainfall, the forests are dense, and the undergrowth is luxurious and semi-tropical. The Lake Bay District is particularly well forested. Hemlock, Sitka Spruce, Red, Yellow, and White Cedar, are the common varieties. Both the hemlock and the spruce grow to large sizes and cannot be surpassed for mining and building purposes.

EQUIPMENT AND BUILDINGS

From the beach to the camp and mine is 7000 feet. A surface tram has been constructed over 4000 feet of this distance. This tram has a one per cent grade in favor of the load. It is built largely with stringers and corduroy, and track could be laid upon it without difficulty.

A small power plant has been installed at the shaft head which will develop sufficient power for exploratory purposes. The plant consists of a water power installation, with eighteen inch steel pipe line 1000 feet long, and an eight foot impulse water wheel of the Pelton type. This wheel is directly connected to the hoist in the shaft house and to a small saw mill capable of cutting several thousand feet of lumber a day. The pipe line takes the water from Gold Creek at 165 feet elevation and delivers it to the

wheel at 100 feet elevation under 27 pounds pressure, generating approximately 50 horsepower. All of the machinery is installed in a two story plant building 50 x 30 feet. At one end of the building is a 65 foot headframe, which stands over the main working shaft.

A well built cook-house and bunk-house capable of accomodating a crew of ten men is located one hundred yards from the plant building.

GEOLOGY OF DISTRICT

Prince of Wales Island has been the seat of more intensive copper mineralization than any other part of Southeastern Alaska. Before the Mesozoic era a series of sedimentary rocks had been laid down in this district. The series had a vertical thickness of many thousands of feet, and consisted of limestone, argillites, greywackes and slates. In the Mesozoic era these rocks were disturbed by intense intrusive activity. Large masses or magmas of granitic and dioritic rocks in a molten state were forced upwards, stopping or dissolving their channels, until, upon reaching points of lessened pressures they uplifted the overlying strata of sedimentary rocks into an irregular mountain range. This particular range has a North West trend extending from the toe of Kasaan Peninsula to the northern end of the Island.

The older sedimentary rocks were tilted, folded and enfolded, sheared and faulted by this intrusion, and formed favorable structure for the deposition of the minerals which were among the original constituents of the grano-dioritic magmas. These minerals were mainly copper, silver, gold, platinum and palladium.

Such magmas give off great quantities of superheated water in a gaseous form, which has the ability to dissolve and transport relatively large percentages of the precious and base minerals, together with silica, calcite and other compounds.

These superheated vapors were given off around the margins of the magmas under great pressure, and sought their release along the contacts, through the

GEOLOGY OF DISTRICT-Cont.

shattered marginal zones, and along fault fissures and shear zones in the bordering sedimentary rocks. Deposition of the minerals was caused or effected by both physical and chemical reactions. As the solutions reached cooler zones, under less pressure, their burden of minerals were precipitated following the physical law of super-saturation, and meeting with favorable rocks within or upon the walls of the zones through which they were traveling they deposited their minerals by the chemical reactions of replacement.

It must be understood, however, that these mineral deposits were formed a long distance beneath the surface as it existed then. This distance is variously computed at from one to three miles. This overburden of rock was afterwards eroded and carried away during the long Glacial Period. Only local climatic erosion of minor extent has occured since and the ore bodies are today as they were at the end of Glacial period.

Most of the copper deposits of Prince of Wales Island lie within the sedimentary rocks, along the margins or adjacent to the grano-dioritic batholiths. There are two general type of deposits, the lens, or contact metamorphic type, and the fissure zone or shear zone type. The Lake Bay Deposit is of the shear zone type.

The grano-dioritic range along which the Lake Bay Deposit occurs has been especially productive. Among the well known mines of this district may be mentioned.

Name	Gross Production to Date
Mount Andrew Mine	$2,000,000.00
Mamie Mine	1,500,000.00
Stevenstown Mine	1,000,000.00
It Mine	1,500,000.00
Salt Chuck Mine	1,000,000.00
Rush Brown Mine	1,225,000.00
	8,225,000.00

The grano-diorite range extends Northward from Kasaan Peninsula, and runs parellel to the shore a mile or more inland, with the sedimentary rocks forming the lowlands and coast line. At Lake Bay the intrusion is about one half mile farther inland than the mineral showing. The country rock exposed upon the property is largely argillite, a sedimentary rock, fine grained in texture, light gray in color. Many dark colored fine grained dikes of intrusive rocks were also in evidence.

The claims are staked along a shear zone, which is a zone of shattered rock which has the same strike and dip as that of the general country rock. The shattered rock is the result of movement along the strata and subsequent crushing. This has followed certain strata because of a structural weakness or because they were the pivotal plane in the relief of adjustment strains during the intrusive period. The shear zone and wall rock have a strike of N 20 Degrees West and a Dip of 70 Degrees from the Horizontal to the East.

Due to the shattered condition of the shear zone, it was found to be a line of weakness to erosional agencies so that today it is largely occupied by the Bed of Thomas Creek, and much of its width is buried under the stream boulders and gravel.

The shear zone can be traced Southerly from the mine workings for a thousand feet or more. In a Northerly direction it is obscured by the heavy undergrowth and may be intersected by an East and West Fissure . There is little doubt that the shear zone extends for several thousand feet or more both horizontally and vertically, as its width (30 feet or more) is indicative of an extensive zone.

The ore zone proper occurs within the shear zone. It consists of a quartz filling mineralized chiefly with chalcopyrite (Copper and Iron Sulphide). This ore body outcrops along the bank of Thomas Creek. Much of the hanging wall of the zone is buried under the bed of Thomas Creek. It can be traced on the sur-

GEOLOGY OF LAKE BAY DEPOSIT- Cont.

face for more than 350 feet in length. It would appear to be not less than 10 feet wide, in one place reaching a width of 20 feet.

Prospecting along the surface of the shear zone might result in the discovery of additional ore shoots. The ore will undoubtedly occur in the shear zone in definite lenses or shoots, and barren zones will be met with between the lenses.

MINERALOGY

The gangue rock of the ore is chiefly quartz (Silica). There are many remaining fragments of the shattered argillite now held in the quartz, which were probably held in suspension in the zone during the solidification of the quartz. Copper is present in the form of Chalcopyrite, together with small amounts of gold and silver. Pyrite is present in small amounts. The chalcopyrite occurs as a complete network throughout the quartz, in veinlets, ribbons, small grains and masses so its deposition must have been contemporaneous with and continuous throughout the deposition of the quartz gangue. The gold and silver probably are carried by the quartz in minute amounts, the greater proportion being carried by the chalcopyrite and pyrite.

ORE TENURE

Many samples have been taken of the ore at various points upon the outcrop, and down the two 30 foot prospect shafts which have been sunk upon the zone. These samples gave returns that would indicate the average tenure of the ore to be between three and four percent copper, with small gold and silver values.

The author took an average sample from a pile of ore containing one hundred tons, more or less, and obtained the following results.

	Copper	Silver	Gold	Total
	3.8%	.50 Oz.	.06 Oz	
Value	$11.40	30 cts.	$1.20	$12.90

ORE TENORE*-Continued

A five ton lot of ore shipped to the Alaska Smelting and Reduction works at Hadley, Alaska, gave the following returns:

Copper	Silver	Gold
5.07%	.50 Oz.	Tr.

Owing to the heavy underbrush it would take considerable work to determine the exact grade of the ore exposed. There is no question, however, that the outcrop as a whole is of commercial grade.

DEVELOPMENT WORK

Besides a considerable amount of surface trenching and stripping, the following underground work has been accomplished:

2 Shafts each 30 feet deep sunk upon the Outcrop. These shafts were caved and filled with water at the time of the authors visit, so were inaccessible.

One shaft 65 feet deep sunk at the South end of the ore shoot in the footwall. This shaft is a two compartment shaft sunk vertically. If sunk to the 135 foot level as contemplated a crosscut forty or fifty feet in length would have to be driven to intercept the ore zone.

ORE TREATMENT

Inasmuch as the ore is a clean silicious ore, it is in demand by the smelters at all times, and very favorable smelting rates can be obtained upon it. Such ores are often smelted without cost for the benefit of the silica in the smelting furnace. By hand cobbing and sorting a shipping product could be obtained that would run from six to eight percent copper, the discard being stored for future treatment upon the ground.

This ore would be very amenable to treatment in a mill employing the flotation process. The gangue rock would eliminate readily, giving a chalcopyrite concentrate running between fifteen and twenty percent copper, and carrying several dollars in gold and silver. This would make a profitable shipping product. The connentration ratio would vary from five to one to eight to one depending upon the grade of the crude ore and the cleanness of the concentrate.

WATER POWER

A great asset to the property is the possibility for the development of an efficient and economical water power. Gold Creek, whose waters are being utilized in the present power plant has a drainage area of ten or twelve square miles. Its waters can be impounded behind a dam one hundred feet long, forty feet of which would be 20 feet high, and 60 feet of which would be only 3 or 4 feet high. A very favorable site for this dam is available. This would flood a basin with an area of two square miles to a depth of several feet, and give a working head at the mine plant of 140 feet, developing not less than 500 horse power throughout the year. It would require 1600 feet of pipe line of of suitable size for this installation.

WORKING COSTS

If the mine was developed to a point where an output of 100 tons per day could be obtained, the costs per ton would be approximately as follows, with mill treatment of the ore:

Mining	$2.00
Development	.50
Milling	1.50

Total would be $4.00 a ton to obtain a six to one concentration ratio. Handling and treating of concentrate would approximate:

Handling	$1.00
Freight	3.00
Treatment	8.00
	$12.00 to be distributed over 6

tons of ore, or $2.00 per ton. Total Costs would be $6.00 per ton. Figuring copper at 15 Cts. per pound the deductions would be marketing 3 Cts.per pound, slag loss per ton of concentrate, 1.3% or 26 pounds, or 4 and 1/4 pounds per ton of crude ore.

The market price of copper today is not influenced by the cost of pro-

WORKING COSTS- Continued

ducing it, and only a few properties can operate at a profit. This condition of affairs cannot last and the time will soon come when the selling price will be in proportion to the cost of production. When that period is reached, a good profit should be made upon ore carrying three percent copper in the Lake Bay property.

CONCLUSION

The author of this report has spent eight years in the Southeastern Alaska district continuously in the operation and examination of mines. From two of these mines, namely the Mamie and It, over $3,000,000.00 worth of ore was extracted during his superintendency. The author has made an examination of practically every property in the district, and does not hesitate to say that the Lake Bay property has the best surface showing of any property visited, with the exception of the producing mines.

The property can be operated under exceptional advantageous conditions, namely:

1. Nearness to Tidewater
2. Low elevation
3. Nearness to steamer routes
4. Plentiful Timber
5. Ample Water Power can be cheaply developed.
6. Crude ore is desirable to smelters or amenable to flotation process.
7. Ore body is of sufficient size to permit low mining costs.
8. Ore body can be recovered practically without timber.

It can be said in conclusion that the Lake Bay property well warrants

CONCLUSIONS- Continued

further exploration work, and it is the author's belief that the property will become a productive mine.

Respectfully submitted,

(signed) N.W. Sweetser

Mining Engineer

November 30, 1923.

Author's Biography

1902 - Graduated from Polytechnic Academy

1902-1906- Worked as miner, shift boss, foreman in various mines in Butte, Rossland, Couer de Alene, etc.

1910- Graduated from College with Mining Engineer Degree

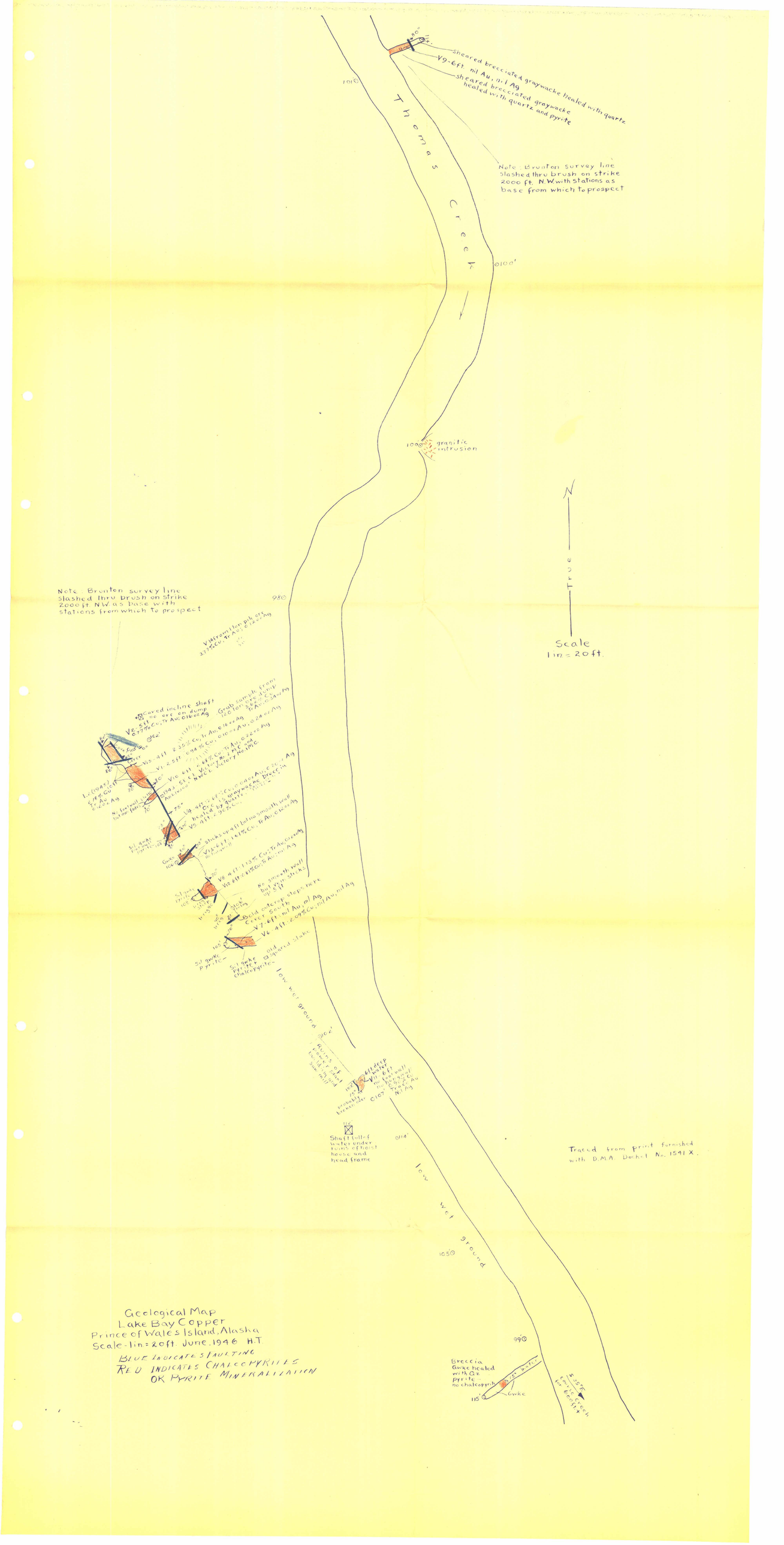
1910-1914- U.S. Geological Survey Assistant in Nevada

1914-1919- Supt. of Mamie and It Mines and in charge of exploration work in S.E. Alaska for Granby Co.

1920 Supt. of Gold Standard Mine at Ketchikan.

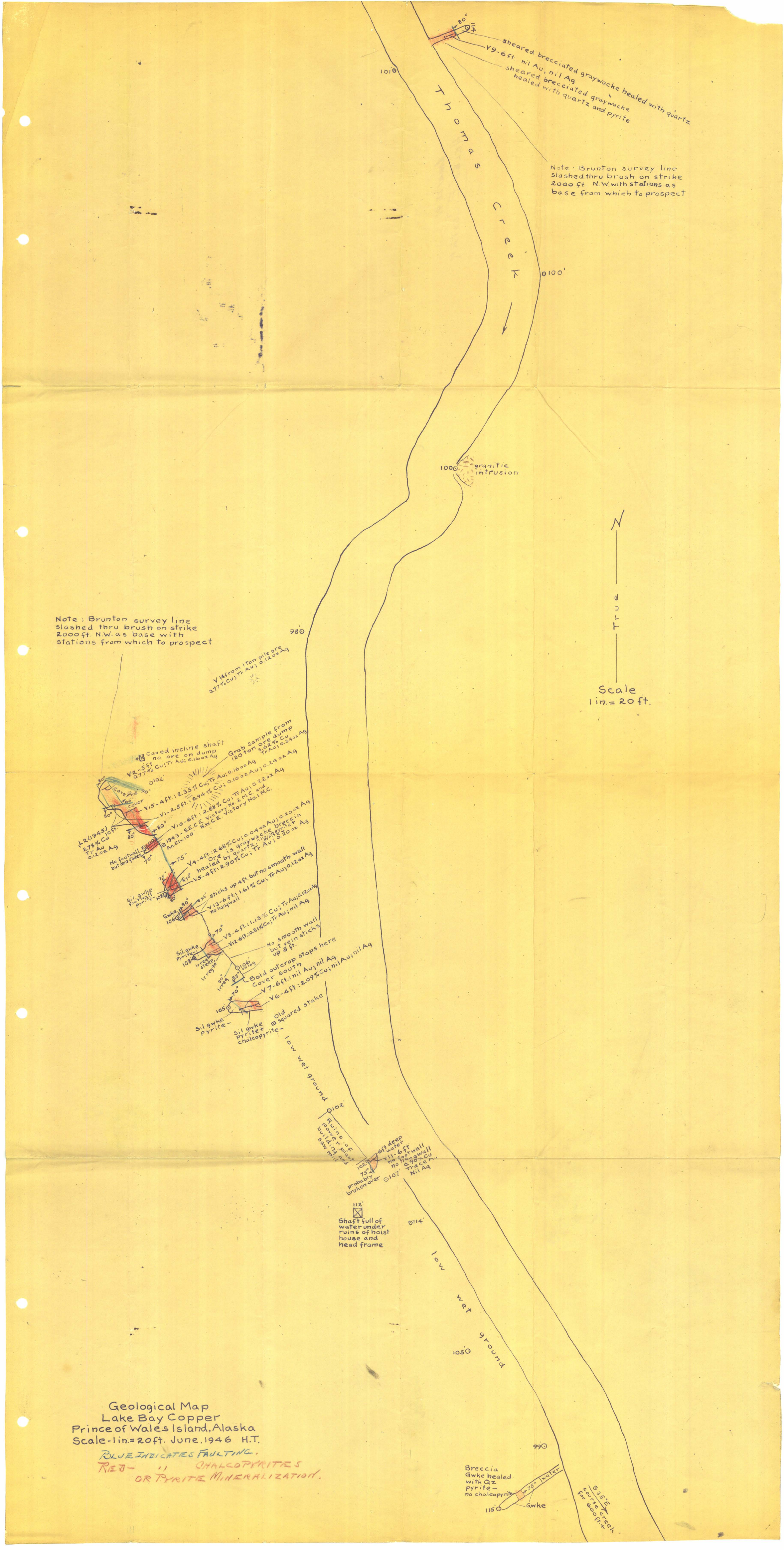
1921-1922- Manager and Supt. of the Moonshine Property for the Chomley Mining Co. Ketchikan.

1923 Supt. Apex-El Nidd Mine, Chicagof Island, S.E. Alaska.



Geological Map
Lake Bay Copper
Prince of Wales Island, Alaska
Scale - 1in = 20ft. June, 1946 H.T

BLUE INDICATES FAULTING
RED INDICATES CHALCOPYRITES
OR PYRITE MINERALIZATION



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