DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE Idm-E NO._____ DMEA NO. 4827

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and attachments

Right Side

- [ ] Project summary (final)
- [ ] Work Completed analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports

- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No._____: Maps (Use pocket folder or envelope)

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

AMENDMENT

March 13, 1958

Amendment to the Sunshine Mining Company's D.M.E.A. Loan Application for the Kagati Lake Mercury Project, Dated August 22, 1957.

In place of 5,000 feet of AX diamond core drilling 1,000 feet of crosscutting and drifting is proposed. 800 feet would be in the form of crosscutting; 200 feet would be drifting on the "Main Shear Zone". The location of the proposed portal (see Figure 1) provides the best access point having the best possible depth on the vein system. A point near the top of the hillside would be very difficult to use. Materials would have to be lowered from the top. The dump material would not stay in place making the dumping of cars difficult. The weather conditions (snow and slides) could delay starting at a point near the top of the hill for more than a month, whereas at the proposed portal work can commence almost any time. The difference in elevation at the final face of the proposed drift and the surface is approximately 390 feet (see Figure 2).

A minimum drift size of 5' x 7' is proposed. The drift would be driven in approximately 250 feet increments as a slusher drift, and the muck would be slushed to a ramp from which point the muck would be hand-trammed to the dump at the portal. Two contract miners per shift (2) would be employed, plus a miner for tramming muck. During the mucking cycle one contract miner would operate the slusher and the other would tram muck from the ramp to the portal, along with the other miner. They would use two hand tram cars. When drilling the round two jackleg machines would be used at the face. The mining would be done on a two-shift basis.

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MAR 18 1958
U. S. G. S.
SPOKANE, WASH.

The completed crosscut and drift would provide an excellent location for further exploration along the strike of the vein; raising to the surface;

long hole drilling the walls for the veins expected to be encountered; and as a basis for deeper development. See Figure 3.

Along with the underground work surface exploration is also proposed. This would be done along the strike of the "Main Shear Zone", both north and south of the final (proposed) face of the mining. The large dozer cut on the Anna claim should be deepened and further surface work should be performed in this area and along the strike of the vein (See Figures 1 and 3). The large boulders encountered can be drilled with gasoline-operated jack hammers and blasted.

The surface exploration should provide new clues on which to base additional exploration. The placer possibilities of both the residual and transported material should be tested.

A total of 120 days (estimated) would be needed for all phases of the operation. This would include camp and mining preparations.

Attached are the following estimates:

1. Labor Cost Estimate
2. List of Supplies and Equipment
3. Surface Exploration Estimate
4. Transportation Estimate
5. Final Estimate of Costs

Enclosed under separate cover are six copies of the following:

Figure 1 -- Topographic Map showing the Proposed Crosscut and Drift.
Figure 2 -- Longitudinal Section along the Proposed Crosscut and Drift.
Figure 3 -- Geology and Assay Map showing the Proposed Crosscut and Drift.

1. LABOR COSTS ESTIMATE

Contract mining - 4 men		
1,000 ft. @ $12.00/ft.	$12,000.00	
Overtime for above, 14 x $120.00	1,680.00	$13,680.00
Mining Prep. - 4 men		
10 days @ $2.50/hr. (4 x 80 x $2.50)	800.00	
Overtime for above - 1 week	80.00	880.00
Trammers - 2 men		
110 days @ $2.50/hr. (2 x $20.00 x 110)	4,400.00	
Overtime for above (15 x $40.00)	600.00	
+30% of Contract Miner's Earning above $20.00/day (2-100 x .3 x $10.00)	600.00	5,600.00
Surface Labor - 3 men		
120 days @ $2.50/hr. (3 x $20.00 x 120)	7,200.00	
Overtime for above (17 x $60.00)	1,020.00	8,220.00
Cooking - 1 man		
4 mos. @ $600.00/mo.	2,400.00	2,400.00
Maintenance and Dozing - 1 man		
4 mos. @ $800.00/mo.	3,200.00	3,200.00
		33,980.00
School tax, 11 x $7.50		82.50
Social Security, .0225 x 33,980		764.55
E.S.C. Tax - .027 x 33,980		917.46
Workmen's Comp. - 5.74 x 340		1,951.60
Transportation - 5 men - 5 x $430.00 (From Spokane and return)		2,150.00
Transportation - Kagati Lake - Bethel 100.00 - 1 man, 11 x 100.00		1,100.00
Transportation, Supervisory:		
Kagati Lake - Bethel		800.00
Spokane - Bethel		880.00
Salary, Supervision, $1,000.00/mo.		4,000.00
Technical assistance, $600.00/mo.		2,400.00
Estimated Cost, Labor and Supervision		$49,026.11

2. LIST OF SUPPLIES & EQUIPMENT

	Unit Cost	Cost	Weight	Remarks
MINING				
1 - IR 315 CyroFlo Compressor, Diesel Engine, Skid Mounted		$11,605.00	4,790#	Pt. Rost, N. Y.
1 Lot - Spare Parts for Above		258.00	200#	Pt. Rost, N. Y.
3 - IR-JR38B Jackleg Drills	$980.00	2,940.00	420#	Seattle
1 - Lot Spare Parts for Above		808.50	200#	"
1 - 1R4B31 Jackbit Grinder (Air)	370.00	370.00	60#	"
25 - CA5 8x1x5/8" Grinding Wheels	4.65 ea.	116.25	30#	"
2 - End & Side Dump Cars, 20 cu. ft.	335.00	670.00	1,500#	Kellogg
18" gauge				"
150 lgths. - 15 ft. - 12# Mine Rails		750.00	9,000#	"
600 - ½"x2½" Track Bolts		125.58	600#	"
500 - Steel Track Ties	2.02 ea.	1,010.00	1,500#	"
150 pr. - Fish Plates		78.27	385#	"
1 - Switch, complete	98.55	98.55	200#	"
1,100 ft. - 3" Std. wgt. Black Pipe - vic. grooved	112.00/100 ft.	1,232.00	8,382#	"
120 - 3" Vic. couplings		240.00	460#	"
1 - 3" #460 Gate Valve	36.37	36.37	57#	"
5 - 3" Nipples - vic. grooved		2.50	15#	"
2 - 3" Vic. Ties		8.60	16#	"
2 - 3" Vic. Els - 90°		6.26	9#	"
2 - 3" Vic. Els - 45°		5.16	9#	"
50 ft. - 2" Std. Black Pipe	53.00/100 ft.	26.50	184#	"
3 - 2" Els @ 90°		1.50	6#	"
3 - 2" Els - 45°		1.20	6#	"
10 - 2" Couplings		4.50	30#	"
1 - Victaulic Groover		35.00	25#	"
1,000 ft. - 1" Carlon Plastic Pipe		194.90	300#	Seattle
6 - 1" Couplings (300 lgths.) (w. clamps)		5.04	10#?	"
4 - Adapters for 1" Black Pipe (w. clamps)		2.24	10#?	"
1,000 ft. - 1" Std. Black Pipe - T&C	24.60/100 ft.	246.00	1,680#	Kellogg
10 - 1"-#1228 Plug Cocks		19.30	13#	"
2 - 1" #440 Gate Valves		10.82	5#	"
10 - 1" Els - 90°		1.28	20#	"
10 - 1" Els - 45°		1.40	20#	"
5 - 1" Street Els		1.90	10#	"
60 - 1" Couplings		2.22	30#	"
5 - 1" Ties		.94	5#	"
20 - 1" Assorted Nipples		2.00	15#	"
50 - Tamping Sticks		28.00	60#	"
400 Cs. - 1-1/8"x8" Powder - 40% Dupont	22.75/100 wt.	4,550.00	23,200#	Seattle
15 rolls - Black Sequoia Fuse (3,000 rolls)	11.00/1000 ft.	4,950.00	1,500#	"
6 boxes - Blasting Caps (5000/box)	2½¢ ea.	750.00	300#?	"
3 pr. - Hand Crimpers		3.00	6#	Kellogg
100 - 1-3/8" #113x5 IR Jackbits	11.80	1,180.00	40#	"
10 - 36" Drill Steel	12.95/20 ft. 3.00 for ends.	49.45	60#	"
10 - 54" Drill Steel		60.15	100#	"
20 - 72" Drill Steel		124.65	240#	"

	Unit Cost	Cost	Weight	Remarks
20 - 7'-10" Drill Steel		$132.30	320#	Kellogg
2 - 50 ft. - 1½" Wire Braid w. Fittings		129.84	100#	"
3 - 50 ft. - 1" Wire Braid w. Fittings		130.50	75#	"
3 - 50 ft. ½" Wire Braid w. Fittings		61.03	40#	"
1 - 2" Stand. Pipe Assembly		37.14	42#	"
3 - 3"-2" Reducers for Above		6.00	5#	"
1 - 1" Stand. Pipe Assembly		18.57	16#	"
100 - 4 ft. Exp. Sh. Rock Bolts		95.35	650#	"
100 - 6 ft. Exp. Sh. Rock Bolts		124.80	850#?	"
100 - Wooden Wedges		1.50	100#	"
2 - P36 Pocket Hose Binders		5.75	1#	"
200 - 1½" Hose Bands		47.08	17#	"
100 - 1" Hose Bands		13.30	7#	"
100 - ½" Hose Bands		9.90	5#	"
3 - Gardner-Denver L.07 Oilers	$27.60	82.80	45#	"
3 - 1"-1½" Bushings for Above		1.50	2#	"
1,000 ft. - Ventulie, 16", No. Grade, 50 ft. lgths.		1,120.00	1,000#?	"
1,000 ft. - SM½" Steel msgr. cable		19.73	100#?	"
100# - #2ga. Black Wire		12.00	100#	"
1 - CDA Blower w/Wisconsin Engine, W. 16" flange diffuser (air operated)		454.00	500#	"
500 ft. - 3/8" - 6x37 H.C. Steel Wire		63.10	400#	"
50 - 3/8 Galv. Clips		8.32	20#	"
50 - 3/8" Galv. Thimbles		4.00	15#	"
1 - A5NN-OH IR 7HP Slusher	1,405.00	1,405.00	340#	"
1 - Scraper and accessories for Above		100.00	250#	"
CAMP SUPPLIES & EQUIPMENT				
1 - 15-man First Aid Kit		8.92	5#	Kellogg
1 - Lot Safety Supplies (incl. Stokes Navy Stretcher)		200.00	100#	"
3 - Fire Extinguishers	20.00	60.00	40#	"
3 - Load Binders		30.00	60#?	Seattle
1 - 1½ Ton Chain Hoist		250.00	136#	"
6 - Towing Clevices - 2½"		36.00	30#	"
2 - 8'x10' Tarps		40.00	40#	"
2 - 12'x16' Tarps		60.00	80#	"
5 - 12'x16'x4' Wall Tents		500.00	500#	"
3,500 BF - Rough Lumber	100.00/1000 BF.	350.00	18,500#	Aniak
1 set - Tools for Repair & Mtce.		300.00	200#	Seattle
1 kit - Rpr. Tr. Mech. on HD-14 Tractor		1,000.00	600#	"
1 only - Used Cat. D-6 Tractor		5,000.00		Kagati Lake
1 only - Used AC-HD-14 Tractor		5,000.00		" "
1 - Weld & Power Unit, complete with accessories		1,692.65	1,865#	Seattle
1 - KAAR Model TR242 Radio (Trans. Rec.)		648.00	70#	Seattle
3 - Crystal Frequencies for Above		22.50	10#	"
Accessories for Radio, Antenna, etc.		50.00	50#	"
1 - Camp Stove, Lang Range 20SF		293.60	500#	"
3 - Therm Radiant Heaters (oil)		209.85	225#	"
4 mos. Food Supply		6,000.00	12,800#	Bethel
12 - Compact Steel Beds	12.95	155.40	528#	Seattle
1 - Dozer for D-6 Tractor		1,850.00	5,000#	"

	Unit Cost	Cost	Weight	Remarks
100# - 60DD Nails, Common		$10.57	100#	Bethel
100# - 16DD Nails, Common		12.76	100#	"
100# - 8DD Nails, Common		10.08	100#	"
1 set - Kitchen Utensils, est.		300.00	200#	Seattle
FUELS				
17 bbls. - Cooking Fuel - 900 gals.	0.24/gal.	216.00	7,480#	Bethel
17 bbls. - Heating Fuel - 900 gals.	0.24/gal.	216.00	7,480#	"
76 bbls. - Diesel - Comp. & Mtce. 4,050 gals.	0.23/gal.	931.50	33,440#	"
5 bbls. - Gasoline-Mtce. - 265 gals.	0.34/gal.	90.10	2,200#	"
2 bbls. - Kerosene-Heating-106 gals.	0.393/gal.	41.66	880#	"
Bbl. chg. for Above - 117 bbls.	6.00/bbl.	702.00		"
Greases and Motor Oils		100.00	100#	
ELECTRICAL				
2 - 50 ft. #10-2 cdr. Portable Cords		30.00	65#	Kellogg
150 ft. - #10 - 2 cdr. Type U.F. Cable		10.00	75#	"
150 ft. - #12 - 2 cdr. Type U.F. Cable	95.95/M ft.	14.40	75#	"
3 rolls - 3/4" Friction Tape	.44/each	1.32	1#	"
3 rolls - 3/4" Rubber Tape	.47/ea.	1.41	1#	"
2 rolls - 3/4" Koroseal Tape	1.02/ea.	2.02	1#	"
2 - Safety switches - 2 pole - 110V PF. 211K, Type D - 30 Amp.	3.03/ea.	6.06	2#	"
1 - Fuse Assortment (20)	.05/ea.	1.00	2#	"
3 - 2 cell Flashlights	.95/ea.	2.85	1#	"
2 crtn. - (48) F.L. Batteries	12.65/c.	6.07	10#	"
MISC. TOOLS - SURFACE AND UNDERGROUND				
3 - S.B. Axes, 4# Less Handles	4.55/ea.	13.65	12#	Kellogg
3 - Axe Handles	.75/ea.	2.25	6#	"
4 - R.P. #2L.H. Mining Shovels	3.65/ea.	14.60	19#	"
4 - #5 Drifting Picks	2.70/ea.	10.80	20#	"
4 - Drift Pick Handles	.84/ea.	3.36	6#	"
2 - 8# Striking Hammers, Less Handles	3.88/ea.	7.76	16#	"
2 - Striking Hammer Handles, 36"	.72/ea.	1.44	3#	"
3 - Nail Hammers - Eslwings	2.17/ea.	6.51	1#	"
1 - 30" Wrecking Bar		6.00	10#	"
1 - 28" Disston D8-5 tooth Rip Saw		6.00	3#	"
2 - 26" Diston D8-8 tooth Hand Saw		6.00	3#	"
2 - 8" Crescent Wrenches, Crostaloy	1.87/ea.	3.74	1½ ea.	"
2 - 12" Crescent Wrenches	3.24/ea.	6.48	1# ea.	"
2 - 10" Rigid Pipe Wrenches	2.10/ea.	4.20	2# ea.	"
2 - 14" Rigid Pipe Wrenches	2.85/ea.	5.70	3# ea.	"
1 - 18" Rigid Pipe Wrench	3.74/ea.	3.74	6# ea.	"
3 - 4# Screw Drivers, 4" blade	.84/ea.	2.52	2#	"
2 - 6" Screw Drivers, 6" blade	1.05/ea.	2.10	½#	"
3 - 8" Crescent Slip Joint Pliers	2.00/ea.	6.00	2#	"
2 - 7" 201 N Klein Lineman's Pliers	3.47/ea.	6.94	4#	"
6 - 6" M.B. Files	.38/ea.	2.28	½#	"
6 - 8" M.B. Files	.47/ea.	2.82	1¼#	"
6 - 6" Ex. Slim Taper Files	.34/ea.	2.04	½#	"
1 - 8" Oil Stove		3.00	2#	"
1 - Ratchet Bil Brace - 12" Swing		5.00	8#	"
1 set - 62T Irwin Auger Bits - in Rolls		12.00	10#	"

3. SURFACE EXPLORATION ESTIMATE

Bulldozing and Trenching

Labor:		
Maintenance and Dozing		
2 mos. @ $800.00/mo.	$1,600.00	
Surface Laborers - 2 men		
120 days @ $2.50/hr. (2 x $20.00 x 120)	4,800.00	
Overtime for above (17 x $40.00)	680.00	$7,080.00
School Tax - 2 x 7.50		15.00
Social Security - .0225 x 7,808.00		159.30
E.S.C. Tax - .027 x 7,080.00		191.16
Workmen's Comp. - 5.74 x 71		407.54
Transportation - Kagati Lake - Bethel 2 x 100.00		200.00
		8,053.00
Portion of Supervision		1,000.00
Portion of Technical Assistance		600.00
		9,653.00
Portion of Cat. D-6 Tractor		2,000.00
Total Cost of Angle Dozer for D-6 Tractor		2,625.00
Portion of AC-HD-14 Tractor		2,000.00
Portion of AC-HD-14 Tractor repair		400.00
Portion of Food Supply		1,250.00
Portion of Diesel Fuel Costs		465.75
Portion of Bbl. Charge for Above		
Portion of Grease and Motor Oils		40.00
		18,433.75
Portion of Personnel Transportation Costs		685.00
Costs of Bulldozing and Trenching		$19,118.75

4. TRANSPORTATION ESTIMATE

Total weight - 154,503#

Kellogg-Seattle-30,209# @ 2½¢/lb.	$755.23	
Painted Port, N. Y. - Seattle - 4,990#	396.00	$1,151.23
Seattle-Anchorage-66,333# @ est'd. $2.50/100 wt.	1,658.33	
Anchorage-Kagati Lake-66,333# @ est'd. 13¢/lb.	8,623.29	
Bethel-Kagati Lake-64,680# @ est'd. 13½¢/lb.	8,731.80	
Aniak-Kagati Lake-18,500# @ est'd. 15¢/lb.	2,775.00	21,788.42
Estimated Transportation Cost		$22,939.65

5. FINAL ESTIMATE OF COSTS

Estimated Cost of Supplies and Equipment	$63,306.19	
Estimated Cost of Transportation	22,939.65	
Estimated Cost of Labor	49,026.11	
Total Estimated Cost of Project		$135,271.95
Cost of Bulldozing and Trenching		19,118.75
Costs Applied to Mining		$116,153.20
Estimated Cost per Foot of Drift or Crosscut	$116.15	

INSTRUCTIONS FOR USE

1 — Identify Agency of Addressee

U.S. Government Messenger Envelope

Standard Form No. 65 (Rev. 1957)
Promulgated by Bureau of the Budget Circular A-33 (Rev.)

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
Surveillance Office Room 2659	STOP		STOP
Mr Roberts Rm 4-8	STOP		STOP
Mr Mitchendorf Defense Attachés Room 4459 (Secy)	STOP		STOP
400	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP

Use other side

Use STOP only when messenger service between Government buildings in Washington, D. C., is required or wherever a STOP system is used. Your mail room has STOP information.

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	STOP		STOP

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 9 1957

DATE	INITIALS	CODE
	WSM	

September 5, 1957

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: New Application (Mercury)
Sunshine Mining Company
Bethel Property
3rd Judicial Division, Alaska

Dear Mr. Selfridge:

Enclosed are three copies of an application for Government aid to explore for mercury in the 3rd Judicial Division, Alaska.

The applicant, Sunshine Mining Company, proposes to explore a shear zone by diamond drilling 12 holes, AX size, totaling 5,000 feet at an estimated total cost of $157,827.00, or $31.57 per foot, of which the Government's share would be 75 percent or $118,270.25.

I have discussed this application with Rowland King, Manager of Exploration, prior to the departure of our men for the field. The application was prepared in the field and adverse weather conditions made it impossible for Mr. King to get the application to us sooner. As our men are in Alaska now and the season is getting late, I authorized them to make an examination during their present trip. Mr. King will see that a copy of the application is available in the field for the use of the examiners.

Sincerely yours,

for D H Mackeven
A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

Enclosures

cc: USBM (2)
MacKevett

Form MF-103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

Sunshine Mining Company
738 Peyton Building
Spokane, Washington

RECEIVED
SEP 4 1957
U. S. G. S.
SPOKANE, WASH.

APPLICANT NOT TO USE THIS BLOCK

Docket Number: 4827
Date Received: 9/9/57
Government Participation %:
Region: I
Division Code: 400

BUSINESS ORGANIZATION (Check one)

- Individual [ ]
- Corporation [X]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized: Washington

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
R. M. Hardy, Jr.	738 Peyton Bldg. Spokane 1, Wash.	President
C. M. Hull	P. O. Box 1313 Yakima, Wash.	Vice-President
F. M. Hardy	P. O. Box 1313 Yakima, Wash.	Secy.-Treasurer

Mineral(s) for which you wish to explore: Mercury

Estimated Cost of Project $ 157,827.20

LOCATION OF PROPERTY

Name	County	State
Bethel	3rd Judicial Div.	Alaska

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order-I, Amended, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

August 24, 1957
Dated

Robert M. Hardy, Jr. BY (Signature)

President
Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. (*Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

Note – No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. *(a)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Amended.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 15539

Sunshine Mining Company

738 PEYTON BUILDING - RIVERSIDE 7-1035
SPOKANE 1, WASHINGTON

August 22, 1957

1. Property Rights

Property rights of the Bethel Exploration Company are held by the following unpatented mining claims recorded in the Aniak Recording Precinct, as filed by Mr. Noah Jackson, at Aniak, Alaska.

Winchester Lode,	No. 8103,	page 433,	Volume	10	in	Mining	Location
Wally Lode	No. 8104,	page 433,	"	"	"	"	"
Ball Lode	No. 8105,	page 434	"	"	"	"	"
Bow Wow	No. 8106,	page 434	"	"	"	"	"
Anna Lode	No. 8107,	page 435	"	"	"	"	"
Joy Lode	No. 8108,	page 435	"	"	"	"	"
Snow Lode	No. 8109,	page 436	"	"	"	"	"
Chew Gum Lode	No. 8110,	page 436	"	"	"	"	"
Moses Lode	No. 8111,	page 437	"	"	"	"	"
King Lode	No. 8112,	page 437	"	"	"	"	"
Whiskey Lode	No. 8113,	page 438	"	"	"	"	"
Coffee Lode	No. 8114,	page 438	"	"	"	"	"

The property is known as the "Kagati Lake Mercury Deposit", and the mountain on which the claims are located has been referred to as "Mount Winchester".

Ownership of the property is by a group of seven individuals operating as the Bethel Exploration Company. The Sunshine Mining Company has a lease on the above-mentioned claims. A copy of the "Lease Agreement" is included with this application.

2. Physical Description

At the present time exploratory work is being conducted at the property. This has been in the form of hand dug trenches, and dozer t trenches where possible. The "Main Shear Zone" has been explored on the Winchester, Wally and Ball claims. Adjacent veins have been explored on the Anna, Stone and Groundhog claims. The locations of these cuts and veins explored are shown on the enclosed map. No production is recorded from the deposit, nor has there ever been any published data.

Ore reserves have not been determined so far. The veins at the surface are highly altered and very unconsolidated. It is not possible to get a quantitative idea of the deposits on the surface, however the indications are there, and only by drilling in depth will a conclusion on the ore reserves be reached.

The claims are located on what appears to be a "Granitic Stock". The rocks in the area are simply called "Granitic Rocks", however the rocks may be more accurately described as "Biotite Granites" with considerable amounts of Hornblende. Many veins are seen on the surface that are composed of Quartz and Hornblende principally. The ore minerals are Stibnite and Cinnabar, accompanied by (in most cases) Realgar, in a gangue that is composed chiefly of Quartz. The Quartz shows encrustations for the most part, and quite often Cinnabar is found in them. Cinnabar is found dispersed through Stibnite and Realgar, as well as Quartz. The veins dip steeply 85 degrees to the West. The "Main Shear Zone" can be traced at least for two miles.

Cut samples have been taken in the trenches where any vein matter was exposed. No fresh exposures on the veins have been made so that the samples are not entirely conclusive, but very indicative of ore in depth. High assays were obtained on specimens of float taken in August 1956 by the Bethel Exploration Company. Some ran as high as thirty-two per cent Mercury. The altered portions of the veins found so far shows a good amount of Cinnabar by "panning."

3. Accessibility of Project

The D.M.E.A. representative will be met in Bethel, Alaska by Mr. Pat DeWilliam of the Sunshine Mining Company, and they will go to the property by bush planes operating out of Bethel. In the event that Mr. DeWilliam is unable to be in Bethel at any set date, Mr. Ray Miller, Agent for the Alaska Airlines in Bethel will handle the transportation to and from the property. The property will be viewed only on the surface. Trench cuts and dozer cuts show the exposures of the veins.

The shipping point at the present time is Bethel, Alaska. This probably will be changed as plans progress. Most of the employees reside in the Bethel area. The property is approximately ninety air miles Southeast of Bethel, accessible only by bush plane and possibly "cat train" at this time.

4. The Exploration Project

The exploration project will consist of four, 520 ft. holes to intersect the "Main Shear Zone", two, 420 ft. holes to intersect the vein west of the "Main Shear Zone"; three, 280 ft. holes to intersect the "Main Shear Zone"; one, 340 ft. hole to intersect the vein east of the "Main Shear Zone", and two, 280 ft. holes to intersect the vein east of the "Main Shear Zone". The proposed diamond drill hole locations

are shown on the enclosed map. A summary of the holes follows:

DIAMOND DRILL HOLES SUMMARY

No. of Holes	Offset Distances from Vein	Angle with Horizontal	Distance to Drill	Totals
6	400 ft.	40°	520 ft.	3,120 ft.
5	200 ft.	45°	280 ft.	1,400 ft.
1	340 ft.	49°	480 ft.	480 ft.
			Grand Total	5,000 ft.

3,120 ft. will be drilled in excess of 500 ft. per hole, and

1,880 ft. will be drilled less than 500 ft. per hole.

The work will start as soon as weather permits in the 1958 season, presumably in the first part of June. The project will take approximately three and one half months to complete. We anticipate a daily average of of 55.5 feet per day diamond drilling AX size holes.

5. Experience

The Sunshine Mining Company operates a large silver mine in Kellogg, Idaho; the Ransom Mine in Blanding, Utah, and has extensive oil interests in Alberta, Canada, and a very successful oil venture at Ocean City, Washington.

6. Estimate of Costs

(a) Bids on diamond drilling by Boyle Bros. Drilling Company of Salt Lake City, Utah, and Western Drilling and Equipment Company of Anchorage, Alaska, are enclosed.

(b) Personal Services

1.-	Exploration Supervisor	$1,200.00 per mo.
1.-	Mining Engineer-Geologist	1,000.00 per mo.
3.-	Surface Laborers	3.20 per hr.

(c) Operating materials and Supplies

Food and quarters for employees	$4,500.00
Transportation for employees	2,500.00
Fuel for "Cats" and heating	500.00
Tools	250.00
Assay determinations	600.00
Core boxes (100)	850.00

(d) Operating Equipment

1.- Allis Chalmers HD-14 Tractor, w/operator	$30.00 per hour
1.- Caterpillar D8 Tractor, w/operator	20.00 per hour

(e) Initial Rehabilitation and Repairs

Track mechanism, Allis Chalmers HD 14 Tractor	$2,000.00

(f) Analysis of Costs

(See attached)

7. (a) The Sunshine Mining Company is prepared to furnish its share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of D.M.E.A. Order - 1, Amended.

(b) The Sunshine Mining Company will furnish its share of the cost by providing seventy-five per cent by money, and the other twenty-five per cent by use of equipment.

ANALYSIS OF COSTS

ITEM	FOOTAGE	COST PER FOOT	LENGTH OF TIME	NO.	TOTAL COST EA.	PER HOUR w/OPERATOR	TOTALS
Diamond Drilling:							
1. Mobilization							$ 8,200.00
2. Footages over 500 ft. per hole	3120	$18.70*					58,344.00
3. Excess of 500 ft. per hole of the above	120	$ 5.20					624.00
4. Footages less than 500 ft. per hole	1880	$18.70					35,156.00
Personal Services:							
1. Supervision			3½ mos				4,200.00
2. Technical			3½ mos.				3,000.00
3. Labor			12 weeks	3			8,755.20
4. Food & Quarters							4,500.00
5. Transportation							2,500.00
6. Fuel							500.00
7. Tools							250.00
8. Assay Determinations				100	$6.00**		600.00
9. Core Boxes				100	$8.50**		850.00
Operating Equipment:							
1. Allis Chalmers HD-14 Tractor			200 hrs.			$30.00	6,000.00
2. Caterpillar D-6 Tractor			400 hrs.			$20.00	8,000.00
Repairs:							
1. Tracks on HD-14 Tractor							2,000.00
Contingency							14,348.00
						TOTAL	$157,827.20
		Cost per foot of diamond drilling (overall)					$31.57

* Using "M" series core barrels.

** Includes cost of air freight.

Diamond Core Drilling
Mining
Quarries
Shaft Sinking
Tunnel Driving

Boyles Bros.
DRILLING COMPANY

CONTRACTORS - ENGINEERS - GEOLOGISTS
General Offices
1321 South Main Street Phone HUnter 4-4401
SALT LAKE CITY 15, UTAH

June 27, 1957

Reply to: S. L. C.

Mr. Pete De William
Sunshine Mining Company
Bethel, Alaska

Dear Mr. De William:

Mr. Frank Kness informs us that he has now received information concerning your proposed drilling program near Bethel, Alaska, and asked that we submit the following rates for your consideration.

1. Mobilization to Anchorage - $2,300.00

2. Drilling Rate for AX size holes to be drilled to a depth of 300 feet $8.60 per foot.

3. Moving between holes, setting up, laying pipe lines and readying equipment for moving back to Anchorage, $100.00 per shift for each crew used.

4. Moving equipment from Anchorage to Bethel and from Bethel to job and return to Anchorage at no cost to Boyles Bros. All supplies for our camp and equipment to be delivered to us at your expense.

5. Reaming -- If necessary will be $3.00 per foot.

6. Cementing - If necessary will be done at the rate of $14.00 per hour, plus the cost of cement or cement substitute.

Due to previous commitments and the fact that we did not plan on this work sooner, would necessitate us moving a drill and crew in from the States. It would take us about two weeks to get the equipment to Anchorage after notification. We would plan on driving to Anchorage on our truck and leaving the truck there to bring the equipment back. Frank Kness attempted to contact you as soon as he heard about the job, but as you know, unfortunately missed connections. However, he did get all the information as to approximate costs from Anchorage into the job by plane and estimates this to be about $1,350.00 for the 6,000 pounds from Anchorage to Bethel and about $750.00 by Norseman from Bethel to a lake which I believe he said was named "Cogate." From there it would require a cat to the job.

We are sorry to have been so long in submitting these quotations, but Mr. Kness did not receive your letter for some time as he was weathered in on an Island out from Juneau. We hope the foregoing information will be of some help to you and that it is not too late to start the job this year.

Thank you for calling on us.

Yours very truly,

A. F. Goldsworthy

A. F. Goldsworthy
Manager, Drilling Division

AFG/em

cc: Mr. Roland King

Western Drilling & Equipment Co.
P.O.Box 3491 Anchorage,Alaska

Mr.Pat DeWilliams
Sunshine Mining Co.
Bethel,Alaska

The following is our quotation covering the diamond drilling project in the vicinty of Lake Kagati:

Furnish labor,materials,equipment,supplies and transportation for the drilling of a minimum of 5,000 linear feet of AX diamond drilling,except as indicated herein.

Mobilization of equipment,supplies and men,including camp facilities and freight	Lump Sum	$8,200.00
Drilling 0-500 feet deep per hole	per foot	17.90
Coring with "M" series core barrel,add per foot		.80
Coring at depths from 500 feet to 1000 feet add per ft.		5.20
Furnish cement and other cementing compounds at cost F.O.B. Jobsite,as required by operations and with your approval		
Place cement and cement compounds in drill holes as required and with your approval,per crew hour		25.00
Core boxes ,if desired,furnished at cost F.O.B. jobsite.		

We would anticpate furnishing sufficient equipment and work force to accomplish the above amount of drilling in the 1958 working season.We would provide our own camp and transportation facilities,except for the use as may be necessary of your bulldozers in transporting and moving equipment.

Your early reply will be most appreciated and will assist in the proper planning of such operations.

Yours very truly,

Western Drilling & Equipment Co.

LeRoy Gunnarson partner July 23,1957

LEASE OF MINING CLAIMS

THIS LEASE made and entered into this 22 day of March, 1957, by and between L. R. Miller, Ed Bratton, Noah Jackson, Nick Charles, Edward Hoffman, John Long, and S. E. Andrews, doing business as BETHEL EXPLORATION COMPANY, a co-partnership of Bethel, Alaska, consisting of seven (7) general partners above-said each of whom have an equal undivided 1/7 interest in each claim hereinafter named irregardless of whose name said claim be in, hereinafter called the Lessor, and SUNSHINE MINING COMPANY, a Washington corporation, hereinafter called the Lessee,

W I T N E S S E T H :

That said lessor, for and in consideration of the rents, royalties, covenants and agreements hereinafter reserved, and by the said lessee to be paid, kept and performed, has let and by these presents does let unto the said lessee all the following described mining claims situated in the Quinhagak Mining District, Fourth Judicial Division, Territory of Alaska, designated as follows, to-wit;

Name of Claim	Recording Information
Winchester & 11 other unpatented lode mining claims	Recorded at Aniak, Alaska in volumne 10, mining locations, on pages 433, 434, 435, 436, 437 and 438. Dated Oct. 1956.

more particularly described as follows: 6 miles airline in a north easterly direction from Kagati Lake on or near the divide between the drainage of the Kanektok and the Togiak Rivers, and between two lakes that drain into Atmugiak Creek,

TO HAVE AND TO HOLD unto said lessee for the term of thirty (30) years from the date hereof unless sooner forfeited or terminated as hereinafter designated, together with an option of renewal thereof for a like period upon the same terms and provisions as hereinafter enumerated. It being specifically understood and agreed, however, that in the event of the exercise of the option to renew herein granted, no formal notice thereof shall be required, and the mere occupancy and continued operation of the properties herein concerned after the expiration of the original term hereof shall be deemed to be an exercise of the power of the lessee of its right to continue to mine the properties concerned, under the terms herewith outlined.

It is further mutually understood and agreed by and between all parties hereto that the properties herein concerned are mining claims of an undetermined and unproven economic mining value.

Lessor hereby warrants and guarantees unto the lessee that it is the record holder and owner of the herein concerned mining claims, and that the same are free and clear of any encumbrances by any third persons, subject only to the applicable mining laws and regulations of the United States; that all current required exploratory, location and assessment work as required by any federal or territorial statute has been completed, and that it has the sole and exclusive right to enter into this agreement.

NOW, THEREFORE, in consideration of the said lease, the said lessee does covenant and agree with the said lessor as follows, to-wit:

To enter upon said mining claims as soon as practicable commensurate with feasible weather and transportation facilities and to promptly proceed to prospect, explore and develop said claims to ascertain the economic feasibility of placing the properties in

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production in accordance with sound economic mining practices so as to take out the greatest amount of ore possible, with due regard to the safety, development and preservation of the said premises as a workable mine.

To allow the said lessor and its agents to enter upon and into all parts of said mining properties for the purposes of inspection at any and all reasonable times.

It is agreed that lessee will upon demand of lessor immediately supply lessor or their agents at Anchorage, Alaska, all geological, exploratory, sample, assay and other information of all types which lessee may acquire relative to the area leased. Said information, assays and reports shall be equally the property of lessor and lessee irrespective of termination or forfeiture of this lease and may be used by either party for any purpose said party may desire. It is specifically agreed that such information to be given to lessor on demand is a valuable consideration for the giving of this lease.

To occupy and hold all cross or parallel lodes, dips, spurs, feeders, crevices or mineral deposits of any kind which may be discovered in working under this lease, or in any tunnel run to intersect any lode, by the lessee, or any persons under it, in any manner, at any point within a radius of one-half mile from the side boundaries of any claim the subject of this lease, as the property of said lessor, with the privilege to said lessee of working the same as an appurtenance of said demised premises, during the term of this lease or an extension thereof; and to not locate or record the same, nor to allow anyone under its control to locate or record, except in the name of the said lessor.

Irrespective of the foregoing it is agreed that lessee shall stake in the name of lessor all claims necessary to cover the valuable mineral rights that may be found along the extension or strike of the lodes on the claims above mentioned, irrespective of distance involved, provided further however, that lessee shall

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not be obligated to stake non-commercial mineral deposits.

It is further agreed by lessor that any claims occupied or staked by it or its agents within the area above designated shall immediately become subject to the terms of this lease the same as though they had been enumerated in the original claims set forth in the caption of this lease.

As a further consideration of this lease, the lessee agrees to pay to the lessor a minimum rental for the properties herein concerned of the sum of $12,000.00 per annum, or royalty as hereinafter designated, whichever is the greater, in the following manner and subject to the following mutual understandings and agreements.

1. Concurrently with the execution of this agreement, the lessee has paid to the lessor the sum of Fifteen Hundred Dollars ($1,500.00), which is hereby acknowledged by the lessor.

2. On or before July 1, 1957, lessee shall have completed not less than 100 man hours of work on the above claims doing on site trenching, sampling, and/or drilling and during the month of July, 1957, not less than an additional 300 hours of like work, and during the month of August prior to the 15th day thereof lessee shall perform an additional 300 man hours of like work. On or before September 1, 1957, the lessee shall pay to the lessor the additional sum of $10,500.00, and thereafter on the 15th day of August of each year, a like sum of $12,000.00 shall be paid by the lessee to the lessor.

3. As designated, the $12,000.00 annual payment hereinabove set forth, shall be considered a s a minimum yearly rent. The maximum yearly rental shall be determined on the basis of royalty on ore values to be determined on a scale hereinafter set forth using mined short dry tons and the gross market value of recovered mineral or metals, less:

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a. reasonable and necessary transportation costs of ore, concentrates or metals from the mine to place of sale.

b. Refining costs at smelters or refineries located outside the Territory of Alaska. Concentration or refining of ores or metals within the Territory is not a deductible item.

c. Territorial license and severance tax.

It is agreed that deductible items above shall be borne by the parties on the same percentage as the royalty paid. It being specifically understood and agreed that the determined royalties shall be figured and paid each calendar month for the preceding calendar month, based upon the monthly production thereof. All royalty payments shall be deposited by lessee to the account of lessor at the FIRST NATIONAL BANK of Anchorage, Alaska.

SCALE FOR DETERMINING PERCENTAGES

Value Per Short Dry Ton			
$ 0 per ton	to	$ 99.99	10%
100 per ton	to	199.99	12%
200 per ton	to	299.99	14%
300 per ton	to	399.99	16%
400 per ton	to	499.99	18%
500 per ton	to	599.99	20%
600 per ton	to	799.99	24%
800 per ton	to	999.99	28%
1000 per ton	to	1199.99	32%
1200 per ton	to	1399.99	36%
1400 per ton	to	1599.99	40%
1600 per ton	to	1799.99	44%
1800 per ton	to	1999.99	48%
2000 per ton and all over			50%

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As an example and for the purpose of clarification and mutual understanding only, the following paragraph hereinafter set forth explains the application of the above designated scale in conformance with the ore mined during any monthly period as follows:

"In the event 2,000 short dry tons were mined during any given month of operation, and the determined market value of the recovered ore from said tonnage amounted to $101,000.00 market value, and in the further event that the cost of transportation of said recovered ore from mine to market was the sum of $500.00, and in the further event that there was a stateside smelting or refining cost of $100.00, and an Alaskan Territorial license or tax of $400.00, the total market value would be computed by deducting the $1,000.00 enumerated expenses of transportation, smelting and taxation, leaving a net market value of $100,000.00, then by dividing the $100,000.00 net value by the 2,000 short dry tons of ore mined, there would be a $50.00 per ton ratio to apply to the scale as above designated, resulting in a determined royalty for that month's operation of 10% or a total payable by lessee to lessor for the given period of $10,000.00."

It is mutually understood and agreed by and between the parties hereto that all royalties shall be figured on a calendar monthly basis and that a full and complete accounting shall be made thereof on or before the 15th of March of each calendar year immediately following the placing of the properties herein concerned in production.

It is further mutually understood and agreed by and between the parties hereto that [redacted] all minimum rental payments are to be considered as advance royalty and such sum shall be deductible from actual royalties determined commencing with the operation of the mine, and to be credited lessee

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on the first future royalty payment, when the mine goes into production, and no actual rents or royalties are due save and except for the purposes of this agreement until the mine goes into operation.

[redacted] It is specifically understood and agreed as heretofore indicated, that the properties herein concerned are unproven mining claims and that the lessee will diligently assert its best efforts to prove the feasibility of the development of said claims on or before September 1, 1957. In the event, however, that the lessee shall conclude on or before September 1, 1957, that in its opinion the properties herein concerned are not economically feasible for commercial mining operations, lessee shall, on or before said date, notify the lessor in writing of its cancellation of this agreement and then and in that event this lease shall be declared null and void without further liability to lessee, save and except that lessee shall forfeit the Fifteen Hundred Dollars ($1500.00) paid herewith on the execution of this agreement, which the lessor hereby agrees to accept in full and complete compensation for any and all claims it might have by virtue of this agreement or lessee's occupying the claims herein concerned, provided however, that the afore-mentioned geologic, exploratory and other information shall have been furnished and nothing above-said shall release lessee from obligation to furnish said information or from damages to lessor for lessee's failure to furnish same.

Lessee further reserves the right to abandon the property at any time upon thirty (30) days written notice to the lessor, and in that event lessee does abandon the property at any time, lessee's only obligation will be to furnish above-said geologic, exploratory and other information, and to make an accounting for the ores

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ANCHORAGE, ALASKA

extracted as hereinbefore provided, and if no ores have been extracted, no further accounting shall be required.

Lessee further agrees to keep books of account showing the amount of ores extracted from said mine, the amount of ore shipped, sold or treated, and the amount of money received from the sale of said ores, or the values extracted therefrom; and the said books of account and all geologic, mine, assay reports and other information relative to said mine or property shall be open at all reasonable times to the said lessor and its representatives.

Lessee further agrees to save the lessor harmless from any liens for labor or material or other liability in connection with the operation of said property and to do any and all necessary annual assessment work which may be required by federal or territorial law, statute or regulation, during the period of occupancy of the premises by the lessee herein, and to cause to be filed or recorded all due notices thereof in compliance with the then current mining laws and regulations.

Lessee further covenants and agrees that at the expiration of said term hereof, or sooner termination of this lease, that lessee will quit and surrender the premises hereby demised.

Provided always, nevertheless, that if the rental above reserved to the lessor, or any part thereof, shall be in arrears or unpaid thirty (30) days after the day of payment whereon the same shall be due, or if the lessee shall make any default in any of the covenants herein contained on its part or on behalf of the lessee to be paid, kept or performed, then and from that date, it shall be lawful for the lessor, either in person or by its agents, to re-enter in and upon the above described premises and all and any part thereof, and to hold the same as though this lease had not been made.

LAW OFFICES OF
HARTLIEB, GROH & RADER
FIFTH AVENUE & "E" STREET
P.O. BOX 2068
ANCHORAGE, ALASKA

Lessee hereby covenants and agrees with the lessor that it will pay the rent above reserved to the lessor as hereinbefore provided, that it will in all respects keep the agreements in this lease contained and on its part agreed to be performed, and that it will at the termination of this lease remove quietly and peaceably from the premises.

The lessor agrees hereby that the lessee, paying said rental in the manner aforesaid, and performing the other covenants, terms and conditions of this lease on the part of the said lessee to be kept and performed, may and shall have the right at all times during the term of this lease to quietly and peaceably hold, possess, use, occupy and mine the said leased premises and property.

Each and every clause and covenant of this lease, where the context requires it, shall extend to and include the heirs, executors, administrators and assigns of the respective parties hereto as the same shall apply.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals this 23 day of MARCH, 1957.

S. E. Andrews

BETHEL EXPLORATION COMPANY

Lee Ray Miller

Noah Jackson

Nicholas A. Charlie

Edward Hoffman

John Jones

Ed Bratton

Lessor

SUNSHINE MINING COMPANY

By Raymond Lasky
President

Lessee

ATTEST:

Secretary

LAW OFFICES OF
HARTLIEB, GROH & RADER
FIFTH AVENUE & "E" STREET
P. O. BOX 2068
ANCHORAGE, ALASKA

UNITED STATES OF AMERICA)
)
TERRITORY OF ALASKA)

THIS IS TO CERTIFY that on this 23d day of March, 1957, before me, the undersigned, a Notary Public in and for the Territory of Alaska, duly commissioned and sworn as such, personally appeared L. R. MILLER, NOAH JACKSON, NICK CHARLES, EDWARD HOFFMAN and JOHN LONG, known to me and to me known to be the individuals named in and who executed the foregoing instrument and they, each for himself and not one for the other, acknowledged to me that they signed and sealed the same as their voluntary act and deed for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first hereinabove written.

Gertrude B Marsh
Notary Public for Alaska
My commission expires:
U. S. Commissioner
Bethel Precinct

(SEAL)

UNITED STATES OF AMERICA)
)
TERRITORY OF ALASKA)

THIS IS TO CERTIFY that on this 25 day of MARCH ,1957, before me ,the undersigned,a N OTARY PUBLIC in and for the Territory of Alaska, duly commissioned and sworn as such,personally appeared Ed Bratton, and S.E.Andrews,known to me and to me known to be the individuals named in and who executed the foregoing instrument and they, each for himself and not one for the other. acknowledged to me that they signed and sealed the sameas thier voluntary act and deed for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first hereinabove written.

Hallie F. Bollen
N OTARY PUBLIC FOR ALASKA
My commission expires
My commission expires May 20, 1957

Government Messenger Envelope

m No. 65 (Rev. 1/46)

1. Use blocks consecutively, one at a time.
2. Void previous block.
3. Write clearly.

E OR TITLE OF PERSON, DEPARTMENT, ADDRESS, AND ROOM		NAME OR TITLE OF PERSON, DEPARTMENT, ADDRESS, AND ROOM	
	RUN	[redacted]	RUN
	STOP		STOP
	RUN		RUN
	STOP		STOP
~~Thomas~~	RUN		RUN
~~5653~~	STOP	Allen S. Dakan OMEA Room 4456	STOP
	RUN		RUN
	STOP		STOP
Corbett	RUN		RUN
5659	STOP		STOP
	RUN		RUN
	STOP		STOP
Denton	RUN		RUN
ounter	STOP		STOP
	RUN		RUN
	STOP		STOP
604	RUN		RUN
4546	STOP		STOP
Johnston	RUN		RUN
	STOP		STOP

us envelopes to
m for reissue.

Use other side

Use RUN and STOP only when messenger service between Government buildings in Washington is required.
Your mail room has RUN and STOP information.

NAME OR TITLE

RUN
STOP
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STOP

Use other side first

Kamea - 4827
Received 4/20/59

Copied from the MINING WORLD - MAY 1958
Page 87

ALASKA -- Sunshine Mining Company is awaiting a decision from the DMEA regarding assistance on a comprehensive diamond drill program the firm would like to undertake this summer. Sunshine has a lease on a mercury property and has already made detailed engineering and geological reconnaissance of the area.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

Dmea 4827

July 8, 1958

WSM

Memorandum

To: J. A. Herdlick, Acting Assistant Regional Director for Alaska, Region I, Juneau, Alaska

From: Bureau of Mines Member, DMEA Operating Committee

Subject: Examination report on the Kagati Lake cinnabar deposit

The Annual Summary Report, FY 1958, for the Alaska District, Region I, shows on page 280 that a report of examination on the Kagati Lake prospect now under development by the Sunshine Mining Company has been submitted for review.

I would appreciate your sending me a copy of the examination report when it is prepared in final form so that it can be placed in the DMEA docket file with other information pertinent to the Sunshine Mining Company's application.

SIGNED
Frank D. Lamb

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 9 1958

DATE		CODE
7/9	J. L.	225
		400

Copy to: DMEA Field Team, Region I
W. S. Martin, DMEA
J. W. Pennington, USBM
Division of Minerals
Files

Mr. Martin:

George says he discussed this letter, in draft form, with the committee yesterday. They decided it should not be sent, but that Yopes would write directly to Herdlick, asking that a copy of the report be sent to you when ready.

S. P. H.
7.8.58

OK - please file this in Dorkat DMEA 4827 WSM

DRAFT

SPH
7.3.58

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 4827 - Mercury
Sunshine Mining Company
Bethel property (Kagati Lake Prospect)
4th Judicial Division, Alaska

Dear Mr. Weissenborn:

As discussed in your conversation with the Division of Iron and Ferro-Alloys on July 2, it will be appreciated if you will ask Mr. Agnew to obtain for us a copy of the report that the Bureau of Mines prepared on the Kagati Lake mercury deposit.

We note on page 121 of Mr. J. A. Herdlick's "May Highlights Report, FY 1958" that the rough draft of such a report has been completed.

Sincerely yours,

Chairman, Operating Committee

APPROVED:

_____
Member, Bureau of Mines

_____
Member, Geological Survey

DMEA Operating Committee Minutes
Meeting No. 616
January 13, 1956

Final Field Reports on Project Contracts

DMEA-2445
Idm-E460
Mercury
Region III

ORD MERCURY MINES, INC., PHOENIX, ARIZONA. Ord Mercury Mine, Gila County, Arizona.

Final Field Engineering Report recommending certification of the project. The report was referred to the Commodity Group.

DMEA-3740
Idm-E14
Mica
Region V

ROY GRIMESTAFF, B. C. THOMAS, AND W. J. BOONE, BAKERSVILLE, NORTH CAROLINA. John Conley Mine, Mitchell County, North Carolina.

Final Field Report recommending certification of the project. The report was referred to the Commodity Group.

DMEA-3821
Idm-E845
Mica
Region V

ROBY M. BUCHANAN AND JOE SNYDER, BAKERSVILLE, NORTH CAROLINA. Jim Riddle Mine, Yancey County, North Carolina.

Final Field Report recommending certification of the project. The report was referred to the Commodity Group.

DMEA-3822
Idm-E849
Mica
Region V

RICHMOND THOMAS, BROWN WILLIS, PAUL FORTNER, AND LEE WILLIS, BAKERSVILLE, NORTH CAROLINA. Black Bull Mine, Mitchell County, North Carolina.

Final Field Report recommending that no certification be issued on the project. The report was referred to the Commodity Group.

Miscellaneous

DMEA-2603
Idm-E428
Lead and Zinc
Region III
Terminated

MAGMA KING MANGANESE MINING COMPANY, PHOENIX, ARIZONA. Ajax Lead-Zinc Mine, Final County, Arizona.

Letter to the Field asking it to advise when final reports on the project by the Field Team and the Operator will be submitted to the Washington Office.

DMEA-2746
Idm-E522
Copper and Zinc
Region III

CORONADO COPPER AND ZINC COMPANY, LOS ANGELES, CALIFORNIA. Cochise County, Arizona.

Letter to the Field asking it to advise when final reports on the project by the Field Team and the Operator will be submitted to the Washington Office. The Field was also asked to advise its recommendation regarding certification of the project.

DMEA-3162
Idm-E660
Manganese
Region III

SOUTHWEST MANGANESE, DEMING, NEW MEXICO. Manganese Valley Mine, Luna County, New Mexico.

Teletype to the Field in reply to its wire of January 12, 1956, relating to proposed amendment to the contract.

DRAFT

SPH
6.30.58

Typed
7-1-58
[illegible]

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, ~~Alaska~~ Wash.

Re: Docket No. DMEA 4827 - Mercury
Sunshine Mining Company
Bethel property, (Kagati Lake prospect)
4th Judicial Division, Alaska

Dear Mr. Weissenborn:

~~We see from~~ note Mr. J. A. Herdlick's "May Highlight Report, FY 1958" shows that the rough draft of an examination report on the Kagati Lake deposit is completed.

We would appreciate receiving a copy of ~~this~~ the above mentioned report when it is prepared in final form.

APPROVED:

Chairman, Operating Committee

Member, Bureau of Mines

Member, Geological Survey

Miscellaneous (continued)

DMEA-4055
Mica
Region V

JOE C. VANCE, PLUMTREE, NORTH CAROLINA. Leaning Locust Mine, Avery County, North Carolina.

Letter to the Field with reference to report of examination. Two copies of the DMEA map were returned to the Field for addition of more information.

DMEA-4067
Mica
Region V

A. T. GARLAND AND S. B. LACEY, JR., NEWLAND, NORTH CAROLINA. Johnson Mine, Ashe County, North Carolina.

Letter to the Field with reference to report of examination. The Field was asked to furnish its comments on condition of the equipment and give a separate cost estimate for maintenance and repair.

DMEA-4080
Tungsten
Region III

LOUIS HALMER, OAKLAND, CALIFORNIA. Great Cross Cut Mine, Yavapai County, Arizona.

Letter to the Field with reference to report of examination on the property.

Letter to Region II in reply to its memorandum of January 16, 1956. Two copies of excerpts taken from Minutes of the Operating Committee covering Special Notices for dates requested were sent to the Field.

The Minutes for January 16, 1956, were approved. The next meeting will be held on January 23, 1956.

APPROVED:

George C. Selfridge
Chairman, Operating Committee

Robert W. Gerlach
For Bureau of Mines

Walter H. Weitzgaard
For Geological Survey

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7-1	Holt	400
7-1	Martin	400
		138
		110
		100
		~~210~~ 220

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 4827 - Mercury
Sunshine Mining Company
Bethel property (Kagati Lake Prospect)
4th Judicial Division, Alaska

Dear Mr. Weissenborn:

Mr. J. A. Herdlick's "May Highlight Report, FY 1958" shows that the rough draft of an examination report on the Kagati Lake deposit is completed.

We would appreciate receiving a copy of the above-mentioned report when it is prepared in final form.

Sincerely yours,

Chairman, Operating Committee

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

SPHOLT:foc 7-1-58

cc to: Code 400
Admr. R. File
Oper. Comm.
FT REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

Mr. Martin:

George said Lamb's suggestion was that you should write directly to Hendrick. I explained that we thought the request should be made through the Field Team.

George said he would submit the letter to the Committee if you wish, but says you call him on the phone

S.O.H.

OFFICIAL FILE COPY

Date	Surname	Code
4-16	Chapman	400
4-16	Martin	400
4/16	Selfridge	130
4/16	Lamb	130
4/16	Kiilsgaard	30
"	Olmen	110
"	Gulleudson	100
		220

APR 17 1959

Sunshine Mining Company
738 Peyton Building
Spokane, Washington

Re: Docket No. DMEA 4827 - Mercury
Bethel property, (Kagati Lake prospect)
4th Judicial Division, Alaska

Gentlemen:

Your re-application of March 13, 1958, suggesting a different exploration program for the subject property has been reviewed. We note that only the proposed method of exploration was changed, and that there has been no further work on the property, and consequently no additional data are available.

Our denial of March 24, 1958, stipulated as follows: "In the event that further work should disclose more favorable data which might alter our decision, we shall be pleased to consider a new application." Without such new work, or resulting information that could justify the proposed crosscutting and drifting on the property, we must repeat our denial.

We wish to thank you for your continued interest in the Defense Minerals Exploration Administration program, and for presenting a revised application for the subject property.

Sincerely yours,

(for)

Administrator

TLCHAPMAN/foc
4-16-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-16	Chapman	400
4-16	Martin	400
4/16	[illegible]	130
"	[illegible]	110
"	[illegible]	100
		225

APR 17 1958

Mr. A. E. Weissenborn
Executive Officer
DMEA Field Team, Region I
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 4827 - Mercury
Sunshine Mining Company
Bethel property, (Kagati Lake prospect)
4th Judicial Division, Alaska

Dear Mr. Weissenborn:

Thank you for the Consent to Lien and Subordination Agreement forms for the Winchester and 11 other unpatented lode mining claims covering the subject application.

As our denial was made without prejudice to the property these documents will be kept in our files here.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

APPROVED:

Frank D. Lamb (JB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JB)
Member, Geological Survey

TLCHAIRMAN/foc 4-16-58
cc to: Docket
Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

OFFICIAL FILE COPY
DMEA
RECEIVED APR 14 1958

DATE	INITIALS	CODE
4/15	D	220
	WSM	400

April 9, 1958

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4827 (Mercury)
Sunshine Mining Company
Kagati Lake
4th Judicial Division

Dear Mr. Selfridge:

We are enclosing herewith the original and three reproduced copies of three Consents to Lien for the Winchester and 11 other unpatented lode mining claims. These have been submitted by the Sunshine Mining Company.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

Enclosures

cc: USBM (2)
MacKevett

(Acks to be filed on left side)

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

RECEIVED
APR 14 1958
D.M.E.A.

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the ~~County of~~ Fourth Judicial Division ~~State of~~ of Alaska, described as follows: 2/

Winchester and 11 other unpatented lode mining claims, all recorded at Aniak, Quinhagak Mining District, in volume 10, mining locations, on pages 433, 434, 435, 436, 437 and 438, dated October, 1956.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Noah Jackson	[Seal]	akiak alaska	[Address]
Johnnie Long	[Seal]	Kwethluk alaska	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-20[illegible] and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

RECEIVED APR 14 DMEA

CONSENT TO LIEN and SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the ~~County of~~ Fourth Judicial Division ~~State of~~ of Alaska, described as follows: 2/

Winchester and 11 other unpatented lode mining claims, all recorded at Aniak, Quinagak Mining District, in volume 10, mining locations, on pages 433, 434, 435, 436, 437 and 438, dated October, 1956.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby—

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Noah Jackson	[Seal]	Akiak Alaska	[Address]
Johnnie Tong	[Seal]	Kwethluk Alaska	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-2[illegible] and MF-203)
June 1956

For Government's Use Only
EXPLO[illegible]ION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

RECEIVED APR 14

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

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Referring to that certain land in the ~~County~~ Fourth Judicial Division ~~State~~ of Alaska, described as follows: 2/

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which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

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5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Noah Jackson	[Seal]	Alick Clarke	[Address]
Johnnie Tong	[Seal]	Kenthlick Clarke	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-20[illegible] and MF-203)
June 1956

For Government's Use Only
EXPLOR[illegible]ON PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the ~~county of~~ Fourth Judicial Division ~~state of~~ of Alaska, described as follows: 2/

Winchester and 11 other unpatented lode mining claims, all recorded at Aniak, Quinhagak Mining District, in volume 10, mining locations, on pages 433, 434, 435, 436, 437 and 438, dated October, 1956.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby—

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Noah Jackson	[Seal]	Akiak Alaska	[Address]
Johnnie Tong	[Seal]	Kwethluk Alaska	[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the ~~County of~~ Fourth Judicial Division ~~State of~~ of Alaska, described as follows: 2/

Winchester and 11 other unpatented lode mining claims, all recorded at Aniak, Quinhagak Mining District, in volume 10, mining locations, on pages 433, 434, 435, 436, 437 and 438, dated October, 1956.,

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1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Samuel E. Andrews [Seal] Box 1995, Juneau, Alaska [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 [redacted] MF-203)
June 1956

For Government's Use Only
EXPLORA[redacted] PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Samuel E. Andrews [Seal] Box 1995, Sonora [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Samuel E. Anderson [Seal] Box 1995, Farmington [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-20[illegible]nd MF-203)
June 1956

For Government's Use Only
EXPLO[illegible]ON PROJECT CONTRACT
Operator_____
Docket No. DMEA-_____
Contract No. Idm-E_____
Contract Date_____

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

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6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Samuel E. Andrews [Seal] Box 1995, Jonesboro [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

RECEIVED
APR 14 1958

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the ~~County of~~ Fourth Judicial Division ~~State of~~ of Alaska, described as follows: 2/

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7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

Le Roy Miller	[Seal]		[Address]
Edward Hoffman	[Seal]		[Address]
Nicholas A Charles	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

MP-205
(Combines and supercedes MP-20[redacted]nd MP-203)
June 1956

RECEIVED APR 14 1958 D.M.E.A.

For Government's Use Only
EXPLOR[redacted]ON PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

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7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 195__.

LeRoy Miller	[Seal]		[Address]
Edward Hoffman	[Seal]		[Address]
Nicholas A Chartier	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

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_____

[Corporate Seal]

MF-205
(Combines and supercedes MF-2[illegible] and MF-203)
June 1956

For Government's Use Only
EXPLO[illegible]ON PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E
Contract Date

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

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Dated this 24th day of August, 1957.

LeRoy Miller	[Seal]		[Address]
Edward Hoffman	[Seal]		[Address]
Nicholas A Chaulin	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

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[Corporate Seal]

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator_____
Docket No. DMEA-_____
Contract No. Idm-E_____
Contract Date_____

CONSENT TO LIEN
and
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2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

NONE

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: NONE (State "None" or "See Annex No.____")

Dated this 24th day of August, 1957.

L. Reg Miller	[Seal]		[Address]
Edward Hoffman	[Seal]		[Address]
Nicholas A Chacko	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]
	[Seal]		[Address]

I, _____ certify that I am the _____ (Secretary, etc.) of the corporation named herein; that _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED APR 11 1958

DATE	INITIALS	CODE
4/11	C	226
	WSM	400

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

April 10, 1958
Re: DMEA 4827
Sunshine Mining Company
Kagati Lake prospect
3rd Judicial Division, Alaska
$157,827.20 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Executive Officer's memorandum and supplementary report of the engineer examiner.

A second analysis has been made of the information contained in the report of the examiners in which they recommend that the application be denied. I recommended that the application be denied without prejudice. The application was denied March 6, 1958.

Considerable stripping and trenching have been done by bulldozer and one structure at least 40 feet long and from 1.5 to 4.0 wide, from which good grade samples have been taken, has been opened up. One sample from the Anna zone, sample KL-2, which was taken across 3.2 feet, assayed 2.52% Hg. No strike length has been demonstrated. Otherwise no significant structure is indicated.

Location considered, and I think location should be considered, the prospect has nothing to recommend it.

Again, I think the denial is appropriate.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
DMEA
RECEIVED APR 4 1958

DATE	INITIALS	CODE
4/4	C	220
4/9	2ZB	1304
4/10	C	220
	WSM	402

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

April 2, 1958

Air Mail

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4827 (Mercury)
Sunshine Mining Company
Kagati Lake, 90 miles SE of
Bethel, Alaska
(4th Judicial Division)

AMEND. ON SITE EXAM.

Dear Mr. Selfridge:

Enclosed are three copies of an analysis by E. W. Parsons, Bureau of Mines, of the amended application by Sunshine Mining Company for the exploration of the Kagati Lake prospect.

Parsons recommends denial of the revised application. He feels that the proposed work is basically prospecting, not exploration; he is not impressed with the assays of samples taken and he feels that because of the difficult location the costs are excessively high. He also believes that the altered zone in which the ore occurs might require extensive timbering when explored at depth. Any timbering would, of course, be expensive.

While many of Parsons points are well taken, the Field Team cannot wholly agree with a number of them. To be specific, we do not believe that the proposed work is basically prospecting. At the Kagati Lake deposit there is a definite trenchlike zone traceable for a considerable distance through the property; trenching and panning have shown that cinnabar and stibnite are found at intervals along this zone. Thus, we have a definite target along which valuable minerals have been found. Opinion may differ as to how much, if any, it is prudent to spend in further investigation, but if done at all, such investigation, to our minds, is very clearly exploration, not prospecting. It does not seem, therefore, that this is a logical basis for denying the application.

As Parsons points out, much timbering would be almost prohibitively expensive if it has to be air-freighted to the property

Reviewed by
DMEA OPERATING COMMITTEE
4-9-58
(date)

and this is, of course, an important factor in considering exploration under the conditions at Kagati Lake. However, it is one thing to avoid known heavy ground and quite another to argue against participating in a project merely because the granite is weathered and friable at the surface 300 feet above the exploration level. The ground might be bad at this level; it might equally well firm up at shallow depth and present no difficulty. It appears that Parsons is being extremely cautious in this instance.

Present exposures merely show interesting amounts of cinnabar and stibnite at scattered places along the Kagati structure; whether ore lenses of significant size exist is not evident from present information; the purpose of the exploration is to find this out. Further trenching is not likely to yield much more information and the Field Team has previously stated the opinion that diamond drilling would be ineffectual; if the property is to be explored, some such scheme as the proposed adit seems to be the only feasible means. Such work involves a very considerable element of risk and there is obviously no certainty of success. Nevertheless, judging only from the examiners' and the applicant's reports, the showings appear sufficiently attractive so that if the property were situated in a less remote and forbidding locality, it seems likely that DMEA would agree to a contract without much hesitation. At its particular locality in Alaska the proposed exploration will be much more costly and the risk correspondingly greater.

The point to be decided is whether the risk is too great and, depending on one's degree of conservatism, one could agree that the proposal is too hazardous. On the other hand, the question can well be asked, "Are not the higher costs in Alaska and the consequent greater risks additional justification for DMEA participation in projects in this area?" In other words, if only because exploration is more expensive, is not the need, and consequently the justification, for Government assistance greater in Alaska than it is in this country?

A certain amount of daring is obviously required for successful exploration in Alaska; an overly cautious attitude will not find many ore bodies. The question is how venturesome DMEA's attitude should be and this appears to be a matter of policy for DMEA itself to decide. The Kagati Lake proposal appears to fall in this category.

By Field Team, Region I

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Wing G. Agnew

Wing G. Agnew, Member
U. S. Bureau of Mines

Enclosures
cc: USBM(2)
MacKevett

OFFICE FILE COPY
DMEA
RECEIVED APR 4 1958
DATE | INITIAL | CODE
4/9 | NB | 130
220

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
1201 N. Division St.
Spokane 2, Washington

March 26, 1958

MEMORANDUM

To: DMEA Field Team, Region I

From: E. W. Parsons, Mining Engineer, Bureau of Mines

Subject: Amended application, Docket No. DMEA-4827 (mercury)
Sunshine Mining Company, Kagati Lake Prospect,
4th Judicial Division, Alaska

An amendment to the Kagati Lake DMEA application was submitted by the Sunshine Mining Company on March 13, 1958. The amendment asked to substitute 1,000 feet of crosscut and drift, plus trenching and bulldozing, for the 5,000 feet of diamond drilling originally requested. The only new information supplied included results of re-assaying 9 samples, a profile drawing showing the proposed underground work, 2 aerial photographs on which were sketched the proposed portal site and direction of adit, and 2 maps with some additional information.

The basis for the application is the presence of a few thin stringers containing cinnabar, stibnite, orpiment, and realgar along fracture planes in granite that have been exposed in place in five places along the shear zone on the Wally and Winchester claims and three places along an apparent fracture zone on the Anna claim. In possibly two pits there were two stringers cut by the channel sample. There is no indication that there is or might be a series of these high grade cinnabar stringers. The longest trench on material in place cut at right angles to the shear zone is more than 20 feet long and shows only one band containing two streaks of cinnabar (Sple. KL-1). There is definitely not enough work done to be able to trace the fracture zones with cinnabar from one pit to another or to determine whether more than one or two will be found across the width of the zone. The best exposure lies in the center of the Wally claim and appears to be about 100 feet long. From the five samples in this block it has an average width of vein and altered material of 1.88 feet and carries 1.18% mercury.

Due to weathering and movement the granite in and near the shear zones is very friable and very easily breaks down to sand. For this reason the walls of the pits and trenches slough badly soon after being completed. In order to cut samples during the examination it was necessary to clean out up to 2 feet of sand and water from trenches about 4 feet deep. In other mining districts the alteration and breakdown of

Reviewed by
DMEA OPERATING COMMITTEE
4-9-58
(date)

granite or other igneous rock along shear zones will continue to great depths. The possibility in the present case of the rock not being competent at depth is a factor which should be considered. If the rock to a depth of 300 to 400 feet is altered similar to that at the surface it would be very difficult to obtain a core in diamond drilling, and it would be impossible to drive an adit without timbering. The approximate minimum weight of a timber set and lagging per 5-foot advance in a 5 x 7-ft. drift would be 600 pounds. The timber would have to be flown to the property for a distance of 100 miles. If only a third of the proposed adit needed timber it would mean air-freighting 100 tons.

The applicant states that at least 2% mercury ore would be necessary to make an operation feasible in this area. It is difficult to obtain a 2% assay even by hand-picking high grade pieces of ore or specimen rock. In a few places in the overburden the applicant reports finding traces or colors of cinnabar when panning. This can well be explained by surface erosion and consequent residual concentration in the overburden of the small high grade streaks exposed in the trenches. In a similar operation in other localities workmen invariably pick out and exhibit specimens of ore. Here the only specimens exhibited were small bottles of panned cinnabar. If there were a series of high grade stringers and some containing high grade pockets, some good specimens would be in evidence. None of the cinnabar seen was massive nor was any disseminated in the country rock; most of it was crystalline and had been deposited along fracture planes and openings.

The only work that might possibly be recommended from the evidence seen and presented is additional surface stripping and pitting accompanied by some sluicing. This will give an idea of the amount of cinnabar contained in the stringers, expose areas which may contain additional stringers, and provide sufficient information to justify either additional work or dropping the project. Neither the diamond drilling nor the underground work proposed is practical. It would be a risky undertaking even if a bonanza deposit was exposed, but with the small known mineralized quartz stringers located in a mountainous region approximately 100 miles from transportation and in an area devoid of timber, any project involving moving tonnage freight by plane and large capital outlays for pure prospecting can hardly be justified.

The proposed adit would undoubtedly cut a downward extension of the stringers exposed on the surface or other cinnabar stringers. The last 200 feet would be on or parallel to the main shear, and the face would be about 500 feet north of the top of the cliff. Surface exposures above this 200 feet along the shear carry little more than a trace of mercury. The face would lack 300 feet of reaching the extension of the best surface exposure.

Cost of doing mining work in Alaska is high by standards known here in the States and doubly so when the work is in an isolated outlying region such as the one in question. For the proposed work most of the items listed in the estimated costs are necessary, and the quantities are reasonable although a few are out of line. Four hundred cases of dynamite (20,000#) to drive 1,000 feet of 5 x 7 drift appears too high by over 100 percent. Caps needed to drive 1,000 feet would be nearer 5,000 than 30,000. A 10-inch ventube would be ample to supply air and would need a smaller blower than if a 16-inch tube was used. Two tractors (dozers) are necessary for an operation of this kind, but the purchase and major repair of the machines that are on the property may be questionable.

Inasmuch as the proposed project is basically prospecting, impractical because of location, and the chances of making a significant discovery based on known facts not encouraging, I recommend that the application in its present form be denied.

Distribution:
DMEA (3)
USGS (2)
USBM (2)

A Form 7
2-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-27	Chapman	400
3-27	[illegible]	400
3/28	[illegible]	130
3/28	Yoyes	130
3/28	Kiilsgaard	130
"	Shannon	110
"	Matteuson	100
4/2	[illegible]	220
		411

MAR 28 1958

INTERIOR

T E L E T Y P E
XXXXXXXXXXXXXXXXXXXXXXXXX

DMEA

14x4401(01) REVOLVING FUND,

DEFENSE PRODUCTION ACT, INTERIOR,
(TRANSFER TO OFFICE OF SECRETARY)

MR. A. F. WEISSENBORN, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION I
SOUTH 157 HOWARD STREET
SPOKANE 4, WASHINGTON

REFT MARCH 26, DOCKET 4827, MERCURY, SUNSHINE MINING COMPANY'S

RECENT SUBMITTAL WILL BE CONSIDERED AS A REOPENING OF THE DENIED

APPLICATION AND IF A CONTRACT ~~WAS~~ is ISSUED THE GOVERNMENT PARTICIPATION

~~WOULD~~ will BE 75 PERCENT.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (GCS)

TLCHAPMAN/dlm 3-27-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

DMEA
RECEIVED MAR 27 1958

DATE	INITIALS	CODE
3/27	C	220
	WSOM	400

XDXXXXXX-103K

YWB090

WAF SP 14 I-GS-G

SPOKANE WASH 3-26-58 1357U

GEORGE C. SELFRIDGE CHAIRMAN OPERATING COMMITTEE DMEA

DEPT OF INTERIOR, WA

RE DOCKET 4827, MERCURY. PLEASE WIRE WHETHER SUNSHINE MINING COMPANY'S RECENT SUBMITTAL WILL BE CONSIDERED AN AMMENDMENT TO THE ORIGINAL APPLICATION WITH 75 PERCENT DMEA PARTICIPATION OR AS A NEW APPLICATION WITH 50 PERCENT PARTICIPATION.

A. E. WEISSENBORN EXECUTIVE OFFICER REGION 1

4827 75 50

SLP 1400U

MAR 27 8 43 AM '58

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
SO. 157 Howard Street
Spokane 4, Washington

March 17, 1958

RECEIVED MAR 20 1958		
DATE	INITIALS	CODE
3/20	C	220
	WSM	400

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Amended Application
Docket No. DMEA-4827 (Mercury)
Sunshine Mining Company
Kagati Lake, 90 miles SE of
Bethel, Alaska

Dear Mr. Selfridge:

Enclosed are the original and two copies of an amended application submitted by Sunshine Mining Company for the exploration of its quicksilver prospect at Kagati Lake, Alaska. The amended proposal is for exploration by underground methods supplemented by bulldozing. The company believes that the property can be explored by this method more adequately and at less cost than by the diamond drilling proposed in its original application.

Also submitted are additional data in support of the application.

The Field Team's comments will follow at a later date.

Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I

3-21-58
Copies to BM & GS
fag

Enclosures

cc: USBM (2)
MacKevett

Amend. is attached to appl.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/24	Chapman	400
3/24	Martin	400
3/24	[illegible]	130
3/24	Long	130
3/24	Kiilsgaard	130
"	Johnson	110
"	Hutchinson	110
3/25	[illegible]	220
		400

MAR 24 1958

INTERIOR

DMEA

14X1401(01) REVOLVING FUND, DEFENSE PRODUCTION ACT, INTERIOR, (TRANSFER TO OFFICE OF SECRETARY)

T E L E T Y P E

XXXXXXXXXXXXXXXXXXXXXXX

MR. A. E. WEISSENBORN, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION I
SOUTH 157 HOWARD STREET
SPOKANE 4, WASHINGTON

REURLET MARCH 17 DOCKET NO. 4827, MERCURY. PLEASE AIRMAIL CONCISE SUMMARY YOUR PROPOSED COMMENTS.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (HB)

WSMARTIN/foc
3-24-58
cc to: DOCKET
CODE 400
ADMR. R. FILE
OPER. COMM.
FT. REG. I
MESSRS. J. W. PENNINGTON, USBM
T. H. KIILSGAARD, USGS

8623

3/6/58 denial letter

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
2-28	Chapman	400
2-28	Martin	400
3-5	Selfridge	130
3/5	Bishop	130
3/5	Lindgaard	130
"	Johnson	110
"	Mittendorf	100
		220

MAR 6 1958

Sunshine Mining Company
738 Peyton Building
Spokane, Washington

Re: Docket No. DMEA 4827 - Mercury
Bethel Property (Kagati Lake Prospect)
4th Judicial Division, Alaska

Gentlemen:

Your application for aid for an exploration project and other data available to us in Washington concerning the above-referenced property have been reviewed.

Projects approved by the Defense Minerals Exploration Administration must, in its judgement, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our data indicates that, although mercury mineralization occurs on the property, the probability of disclosing significant minable reserves is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances that your application is denied. Such denial, however, is made without prejudice to the property. In the event that further work should disclose more favorable data which might alter our decision, we shall be pleased to consider a new application.

We wish to thank you for your interest in the Defense Minerals Exploration Administration program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

TLCHAPMAN/dlm 2-27-58
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3-3	Chapman	400
3-3	Martin	400
		110
		130

MEMORANDUM

To: Administrator, DMEA

From: Division of Iron and Ferro-Alloys, DMEA

Subject: Denial of the subject application for exploration assistance in the amount of $157,820.20
Docket No. DMEA 4827 - Mercury
Sunshine Mining Company
Bethel Property (Kagati Lake Prospect)
4th Judicial Division, Alaska

A denial without prejudice of the subject application for exploration assistance is recommended by this Division based on the following information:

The above-noted property was the subject of a request dated August 24, 1957, for exploration assistance, at an estimated cost of $157,820.20 for bulldozing, camp establishment, transportation and diamond drilling. The property was examined on September 4 and 5, 1957, by E. W. Parsons, Bureau of Mines, and E. M. McKevitt, Geological Survey, accompanied by Pat DeWilliams and John Magura for the Sunshine Mining Company, and John Long, and Noah Jackson, Eskimos, locators of the property.

Applicant: Sunshine Mining Company
738 Peyton Building
Spokane, Washington

Property Owners: The property is owned by individuals in Bethel, Alaska, dba and known as the Bethel Exploration Company, Bethel, Alaska.

The Applicant holds the property under a Lease of Mining Claims, dated March 23, 1957, from the Bethel Exploration Company, Bethel, Alaska.

The property is located in the Goodnews quadrangle, in the Aniak Recording Precinct, Aniak, Alaska, and consists of 12 unpatented lode mining claims, recorded as follows:

Name	No.	Book No.	Page No.
Winchester Lode	8103	10	433
Wally Lode	8104	10	433
Ball Lode	8105	10	434
Bow Wow	8106	10	434

Anna Lode	8107	10	435
Joy Lode	8108	10	435
Snow Lode	8109	10	436
Chew Gum Lode	8110	10	436
Moses Lode	8111	10	437
King Lode	8112	10	437
Whiskey Lode	8113	10	438
Coffee Lode	8114	10	438

Geology:

The host rock for the Kagati Lake mercury deposits is a biotite granodiorite. This rock is considered to be a Tertiary intrusive and crops out over several square miles and is in contact with a Cretaceous shale-graywacke-volcanic rock. A shear zone cuts through the length of the property and is marked by a depression from 10 to 35 feet deep. Outcrops within the limits of the shear zone are sparse.

The mineralization found in the area consists of cinnabar in association with realgar and orpiment. This is found as float and at the few points that trenching reached bedrock. The float found on the property is the main source of information on the distribution of mineralization.

Development:

A few trenches are the only exploration workings on the property. It was difficult to reach bedrock with the trenches because of the presence of big boulders.

Ore Values and Tonnage:

Due to the lack of work and outcrops no estimate can be made of possible ore reserves.

Eight samples taken by the examining engineers gave the following results.

Sample No.		Width Ft.	Percent Mercury Hanks	Washington Test Lab.	USBM, Chem	Albany X-Ray	
KL-1	EWP-4A	1.5	1.66	1.36	2.29	0.9	Chan Cut
2	5	3.2	1.71	0.34	2.52	1.0	Chan Cut
3	6	4.0	Tr.	0.02	0.15	0.2	Chan Cut
4	7	2.0	0.46	0.16	0.74	1.2	Chan Cut
5	8	1.3	0.11	0.16	0.37	0.8	Chan Cut
6	9	Grab	Tr.	0.06	0.22	0.5	Grab
7	10	1.8	Tr.	Nil	0.12	0.3	Chan Cut
8	11	4.0	1.32	0.42	1.89	--	Chan Cut

Twelve samples taken by the Applicant and assayed in two different laboratories gave the following results:

Sample No.	Fairbanks % Hg.	Kellog % Hg.	Width Ft.
1852	Nil	--	0.6
1853	Tr	--	0.2
1854	2.10	1.37	0.3
1855	0.60	2.13	0.5
1856	0.23	0.12	1.3
1857	0.50	0.51	Grab
1958	0.33	3.25	Grab
1960	0.10	--	2.0
1961	Nil	--	0.3
1962	0.07	0.09	4.0
1963	1.56	1.50	4.0
1964	0.74	0.54	2.5

The large variation in results from different laboratories makes it difficult to arrive at definite conclusions of the value of the property.

Applicant's Proposal:

The Applicant requests exploration assistance for bulldozing, camp establishment, transportation and 5,000 feet of diamond drilling at an estimated cost of $157,820.20, Government participation, 75 percent $118,365.15. The over-all cost for drilling would be $31.56 per foot.

Comments and Conclusions:

The examing engineer and geologist conclude that diamond drilling would be inconclusive, trenching would give indefinite results and underground work would be too expensive for such indefinite targets. The conclusion is that work to date gives very little data as to the possibility of finding a significant tonnage of high grade ore.

The Commodity Division of the Bureau of Mines concurs in the recommendation of the Field Team. The Commodity Division of the Geological Survey recommends denial without prejudice.

W S Martin
W. S. Martin, Director
Division of Iron and Ferro-Alloys

TLCHAPMAN/dlm 3-3-58
cc to: Docket
Admr. R. File
Oper. Comm.

STANDARD FORM No. 14
APPROVED BY THE PRESIDENT
MARCH 10, 1926

Dmc 4827

TELEGRAM

OFFICIAL BUSINESS—GOVERNMENT RATES

FROM

BUREAU

CHG. APPROPRIATION

52

U. S. GOVERNMENT PRINTING OFFICE 10—1723

Copy of Message brought in by Mr. Weissenborn

QWT099 PD - SPOKANE WASH 21 1135AMP - 1958 FEB 21 PM 3 53

A W WEISSENBORN -

HOTEL NATIONAL 1808 I ST NORTHWEST -

IT WILL BE MOST HELPFUL TO HAVE DECISION ON ALASKA MERCURY BY MARCH FIFTEENTH. SHORT SEASON DEMANDS EARLY ESTABLISHMENT OF CAMP AND EQUIPMENT -

SUNSHINE MINING CO -

DME
RECEIVED FEB 25 1958

DATE	INITIALS	CODE
2/25	C	220
		400

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 7 1958

DATE	INITIALS	CODE
2/7	C	220
	WSM	400

February 6, 1958
Re: DMEA 4827
Sunshine Mining Co.
Kagati Lake Prospect
Third and Fourth Judicial Div.
Alaska
$157,827.20 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance in exploring by diamond drilling long shear zones in 'granite' (quartz monzonite) at spots in which samples of mercury, arsenic and antimony bearing material had been taken.

The examiners no doubt saw much less exposed bedrock than did those on the ground when the bulldozing was done. Nevertheless it appears likely they saw 4 of the 5 well mineralized areas previously spotted.

The sampling indicates there may be a continuous vein, 0.3 to 4.0 feet wide and at least 80 feet long, at the northerly end of the Main Shear Zone. On the Anna claim, in the Anna Shear, 2, (possibly 3) spots show ore grade and width material. The long Main Shear Zone except for the 80-foot vein at the north end, as now indicated, is low grade to barren. The 2 spots in the Anna Zone are 400 feet apart with one low grade trench between them.

The examiners recommend that the application be denied. I recommend denial without prejudice.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED FEB 6

DATE	INITIALS	CODE
2/6	C	220
	WSM	400

February 5, 1958

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: Assistant Chief, Branch of Base Metals

Subject: Review of Field Team examination report, Docket No. DMEA 4827 (mercury) Sunshine Mining Company, Kagati Lake, 90 miles SE of Bethel, Alaska. $157,827.20.

The applicant proposed to explore a mineralized zone by diamond drilling 12 holes aggregating 5,000 feet at a total estimated cost of $157,827.20.

Due to excessive water and large boulders in the overburden, exploration of the zone by surface trenching was not successful. Moreover, the Field Team believes that exploration by diamond drilling would also be unsatisfactory and inconclusive.

Because of insufficient evidence to justify the expense of underground exploration of the property, the Field Team recommends that the application be denied.

I concur with this recommendation.

J. W. Pennington

J. W. Pennington

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

Excerpt from Mr. Mittendorf's diary, 1/29/58:

Weissenborn phoned from Spokane late in the afternoon. He said we might expect a visit tomorrow from John Edgar, who is manager of the Sunshine Mining Co. Edgar will wish to discuss DMRA-4827, a mercury deposit in Alaska which was examined by the field team last September.

Al apologised for not giving us his recommendations earlier and said he mailed them only last night. Of course, we won't have the report by tomorrow, and that is the reason Al phoned.

He said the field team has been in disagreement among themselves for many weeks. The examiners recommended denial because they felt that the ore should run 2% Hg to be economic in that remote area. Al said our samples ran from 1% to 1.8% and he was unable to rule the property out from the standpoint of grade.

He said the ore occurs in a shear zone which can be traced for about two miles. Some trenching has been done, but there were too few exposures. Trenching, he said has been very difficult due to large boulders occurring in the overburden. Al suggested diamond drilling, but Wing Agnew is bitterly opposed to that approach.

I can't help but agree with Wing, and I think Al is ready to accept Wing's conclusions.

They do not wish to approve any underground work at this time because of insufficient surface showing compared with the costs of the underground work. Everything must be flown off by helicopter.

The field team, I understand, have agreed on a denial based on these considerations. Al did so reluctantly. He suggests that when John Edgar calls we try to work out some plan where additional trenching might be done. Al suggests that maybe a small compressor and tools would be flown in to break up the boulders that are encountered in the trenches.

Al asked me to brief Thor, because he was quite certain that Edgar would call on Thor first.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11-4	Hopkins	400
11-4	Martin	400
		130
		110
		100
		245 220

Sunshine Mining Company
738 Peyton Building
Spokane 1, Washington

Re: Docket No. DMEA 4827 - Mercury
Bethel Property
3rd Judicial Division, Alaska

Gentlemen:

The above-docketed application for exploration assistance for mercury ores has been reviewed by the Washington office of the Defense Minerals Exploration Administration.

Members of the Region I, DMEA Field Team are now in Alaska and have been authorized by Mr. A. E. Weissenborn, Executive Officer, to make an examination of the property during their present trip.

Any assistance that you can give the members of the Field Team will be appreciated.

Sincerely yours,

Administrator

JHOPKINS/dlm 11-4-57
cc to: Code 400
Admr. R. File
Oper. Comm.
FT. REG. I
Messrs. J. W. Pennington, USBM
T. H. Kiilsgaard, USGS

P. S. Copies of memoranda dated September 10 and 11, 1957, by N. E. Nelson, Geological Survey, and J. W. Pennington, Bureau of Mines, respectively, relating to the project are enclosed. Also enclosed is an extra copy of the application for the use of the Field Team.

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

DMEA
RECEIVED JAN 31 1958

DATE	INITIALS	CODE
1/31	C	220
2/5	2/3	130
2/5	C	220
	WSM	400

January 28, 1958

Mr. George C. Selfridge, Chairman
Operating Committee, DMEA
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4827 (Mercury)
Sunshine Mining Company
Kagati Lake, 90 miles SE of
Bethel, Alaska

Dear Mr. Selfridge:

Enclosed are three copies of a memorandum examination report by E. W. Parsons, Mining Engineer, U. S. Bureau of Mines and E. M. MacKevett, Geologist, U. S. Geological Survey on the subject application.

Parsons and MacKevett point out that the bulldozed trenches have sloughed, giving poor and infrequent exposures of bedrock from which they took eight samples. They conclude that the samples are representative of the grade of the deposit at the surface and that the grade will not improve at depth. They therefore recommend that the application be denied.

In considering the proposal the following should be kept in mind. As is pointed out in the geology section of the report the main shear zone extends entirely through the property and cinnabar float is found here and there along its entire length. The shear zone is marked by a depression between 10 and 35 feet wide within which outcrops are sparse. What exposures there are indicate that the zone contains numerous nearly parallel fractures about 1 foot apart. While most of the fractures are joints, some are faults and a few contain veins. Because of the sloughed walls of the trenches, exposures in the main zone are only a few feet along the strike and from a few inches to 4 feet wide. Because of thick overburden between trenches it is not possible to project structures from one trench to another with any certainty, and therefore the lengths of the individual ore shoots are unknown.

Because of these factors the property is a difficult one to evaluate. With the few exposures available it is not possible to state that the ore lenses are continuous between exposures but

Reviewed by
DMEA Office of Mineral
2-5-58
(date)

neither is it possible to state that the lenses are too short and scattered to be of interest. The examiners point out quite correctly that the grade of ore is unlikely to increase with depth but it does not necessarily follow that the best ore has been exposed in the few scattered trenches. The results of the sampling suggest to us that any structure as long and continuous as that described on which scattered trenches have yielded assays as high as this is of interest, and doubtless if the property had happened to have been situated in a less remote and inaccessible locality it would have been explored long ago.

As trenching in the deep and boulder-ridden overburden has not proven successful in furnishing adequate surface exposures across the main fracture zone, or the second zone indicated on the Anna claim, further work of this sort appears to be useless, unless an improved method can be devised. The problem then is whether, in view of its inaccessible location, the property could be explored adequately and at reasonable cost by some other method.

Weissenborn at first favored a drilling program somewhat similar to that proposed by the applicant but with some modifications--including the elimination of some of the supervision. He suggested drilling 12 holes for a total of 5,000 feet of drilling. Nine of the holes would be collared about 100 feet apart west of the main zone and drilled to cut this zone; three holes similarly spaced would be drilled to cut the Anna zone from the west. The approximate locations are shown on the attached map. Weissenborn regarded the drilling as something that would be undertaken in the hope of providing enough evidence to justify underground exploration, which, in this remote locality, would be very expensive.

Agnew likewise views the property more optimistically than do the examiners. He points out, however, that exploration by diamond drilling not only would be expensive in itself but also, because of the lenticular nature of mercury deposits and the probable bad drilling conditions, such exploration would be unlikely to provide anything but unsatisfactory and inconclusive results. He therefore is unwilling to recommend diamond drilling.

In view of this expected difficulty, the Field Team is now agreed that diamond drilling probably would not be a practicable means of exploring this particular deposit. As the available

evidence is insufficient to justify the expense of underground exploration at this remote locality, it is concluded that the application should be denied.

By Field Team, Region I

A. E. Weissenborn

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Thomas E Howard

for: Wing G. Agnew, Member
U. S. Bureau of Mines

Attachment (pl. 1-A)
Enclosures

cc: USBM (5)
USGS (SRO)
Gates
MacKevett

DMEA

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DMEA
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DATE	INITIALS	CODE
2/5	JHB	130
		220

ON SITE EXAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

January 23, 1958

MEMORANDUM

To: DMEA Field Team, Region I

From: E. W. Parsons, Mining Engineer, U. S. Bureau of Mines, and E. M. MacKevett, Geologist, U. S. Geological Survey

Subject: Field Examination Report, Docket No. DMEA-4827 (Mercury), Sunshine Mining Company, Kagati Lake Mercury Deposit, Kagati Lake, 90 miles southeast of Bethel, Fourth Judicial Division, Alaska.

INTRODUCTION

The Sunshine Mining Company of Spokane, Washington, submitted an application on September 4, 1957, for aid to explore its Kagati Lake Mercury Deposit located approximately at Latitude 59° 55' N., Longitude 159° 58' W., at an altitude of about 4,000 feet above sea level. The property is 6 miles northeast of Kagati Lake and straddles the line between the Third and Fourth Judicial Divisions, Alaska. The property, which is about 90 miles southeast of Bethel and 90 miles northeast of Platinum, Alaska, was examined September 4 and 5, 1957, by E. W. Parsons, Mining Engineer, U. S. Bureau of Mines, and E. M. MacKevett, Geologist, U. S. Geological Survey, accompanied by Pat DeWilliams, Mining Engineer, and John Magura for the Sunshine Mining Company, and Noah Jackson and John Long, Eskimos, locators of the property.

SUMMARY

The property, evidently known for a number of years, was staked in 1956. It is owned by a group of individuals operating as the Bethel Exploration Company, Bethel, Alaska. The Sunshine Mining Company of Spokane, Washington, controls the property by a lease agreement and in 1957 bulldozed a few trenches and sank several test pits. Residual boulders in the overburden prevented any effective dozer work. The sides of the pits and trenches are badly sloughed, but the bedrock in those sampled was cleaned with a shovel. Pat DeWilliams pointed out all the significant features of the property in the area covered by the application. With the completion of the examination, work at the prospect stopped for the season.

Reviewed by
DMEA OPERATIONS COMMITTEE
2-5-58
(date)

CONCLUSIONS AND RECOMMENDATIONS

The prospect is in a remote part of southwestern Alaska (fig. 1) where costs are generally very high.

The "Main Shear Zone" mentioned in the application is a strongly fractured zone in quartz monzonite with a few minor fractures and with some of the fractures splitting off on either side. In some places minor quartz veins or stringers accompany the fractures along with cinnabar, stibnite, orpiment and realgar. With so few exposures it is not known whether the mineralization is continuous or is limited to a series of lenses within the fractures. No rich zones of cinnabar were seen though there is evidence of cinnabar mineralization over an extended distance.

The observed width of the fracture zones ranges from 1.5 to 4.0 feet and the 1 or 2 cinnabar-rich streaks in the zone range from 0.1 to 0.25 foot. Channel samples taken during the examination indicate the mercury content of the structures to be low and assay results of samples taken by the applicant serve as a check with those taken by the examiners. The samples are considered to be representative of the exposed cinnabar deposits and it is believed that they are representative of the deposits at depth. The exposures visible in the pits offer very meager evidence for judging the merits of the deposit. The mercury exposures are believed to be the feeder roots in igneous rock of deposits in sedimentary rocks long since eroded away. A major change in the size or mineral concentration of the exposed structures is not considered likely; therefore, the examiners concur in recommending that the application be denied.

LOCATION

The property lies about 90 miles southeast of Bethel, Alaska, or 90 miles northeast of Platinum. The most practical means of access in summer is by plane. Two tractors were driven overland from Platinum which is on Goodnews Bay, but this was done in the spring before the frost was out of the ground. There is no road and the trip was extremely difficult. There is a small lake within a mile of the prospect where light planes can land in favorable weather, but large planes or small planes in bad weather must land on Kagati Lake which is 10 miles by trail from the prospect. From Kagati Lake materials and supplies are transported to the property on a large sled pulled by a tractor.

The country is frozen up from about November to April or May. Temperatures of -50° F. are common and undrifted snow is usually 3 feet or more in depth. Equipment and supplies can be moved during the winter by dog team or "cat train."

The property is located on the Goodnews quadrangle topographic map of 1951, just north of the first lake north of Atayak Mountain.

The Rainy Creek Mercury Prospect, 10 miles to the northwest on the headwaters of the Eek River was discovered sometime between 1910 and 1920. The deposits consist of cinnabar, realgar, and quartz in sediments tentatively considered to be Permian in age. Claims were located in the area but have since been allowed to lapse.

APPLICANT

The applicant is the Sunshine Mining Company with headquarters in Spokane, Washington, and operating mines in Kellogg, Idaho, and Blanding, Utah, and oil interests in Alberta, Canada, and Ocean City, Washington. Financially and technically the company is able to handle the proposed program.

PROPERTY RIGHTS

The property consists of 12 unpatented lode mining claims recorded in the Aniak Recording Precinct, Aniak, Alaska, in volume 10, Mining Locations, as follows:

Name	No.	Page
Winchester Lode	8103	433
Wally Lode	8104	433
Ball Lode	8105	434
Bow Wow	8106	434
Anna Lode	8107	435
Joy Lode	8108	435
Snow Lode	8109	436
Chew Gum Lode	8110	436
Moses Lode	8111	437
King Lode	8112	437
Whiskey Lode	8113	438
Coffee Lode	8114	438

The claims were filed by Noah Jackson and are owned by a group of individuals operating as the Bethel Exploration Company. The Sunshine Mining Company has a lease-agreement which was included with the application.

DESCRIPTION OF THE PROPERTY

The property is on the slope of a mountain called Mount Winchester by company personnel. There is no timber in the surrounding area. The surface is covered with moss and blueberry bushes with local clumps of willow and alder near the lakes and streams. The company has a bulldozer in the area as well as a tractor with sleds and a tamnigan. A dozen or more pits and trenches have been made, but most of them are partly filled with debris and exposures of ore minerals are uncommon. Excessive moisture in the ground causes almost immediate sloughing of the trench walls which covers any mineralized exposures shortly after they have been opened. There are no underground workings and no equipment other than that noted. The company has mapped the surface and structures including the pits and trenches.

GEOLOGY

Biotite quartz monzonite or biotite granodiorite, called biotite granite by the applicant, is the host rock for the Kagati Lake mercury deposits. This rock, which is considered to be a Tertiary intrusive by Hoare (Hoare, J. M., et al., Reconnaissance Map of the Lower Kuskokwim Region, Alaska: U. S. Geological Survey Open-File Report, 1954), crops out over several square miles and is in contact with a Cretaceous shale-graywacke-volcanic rock sequence. Locally, glacial debris, gravel, and bouldery rockslide material mantle the bedrock near the deposits. The deposits lie about half way between and a little to the north of Mt. Oratia and Atayak Mountain at the headwaters of Atmugiak Creek which flows into Kagati Lake.

The Rainy Creek Mercury Prospect, known for about 40 years, lies 10 miles northwest of the Kagati Lake deposits or 6 miles northwest of Mt. Oratia. A description of the occurrence is found in the "Mercury Deposits of Southwestern Alaska," U. S. Bureau of Mines R. I. 4065, 1947. Sediments, ranging from conglomerate through sandstone to black shale, constitute the observed country rock at the Rainy Creek prospect. Three parallel lodes mineralized by cinnabar and realgar are along shear zones which cut the sediments at a high angle.

Important occurrences of mercury are found in the Central Kuskokwim area 150 miles to the northeast (Cady, W. M., et al., The Central Kuskokwim Region, Alaska: U. S. Geological Survey Prof. Paper 268, 1955), and at Marsh Mountain 75 miles to the southeast. No other mercury deposit in Alaska is known to have a geologic setting similar to that of the Kagati Lake deposit.

The quartz monzonite at the prospect is strongly fractured. Most of the fractures are joints occurring in more or less well-defined sets; others are faults, probably shears, marked by gouge, veins a few inches thick, and minor slickensides. The prevailing faults strike between N. 15°-25° W. as do the dominant joints, and both dip nearly vertically. It is probable that the faults and joints both resulted from the same forces and that additional strains caused small movements along some of the fractures developing the faults.

The "Main Shear Zone" trends about N. 20° W. parallel with the long sides and in the medial parts of the Winchester, Wally, and Ball claims (pl. 1). It undoubtedly extends at least several hundred feet farther beyond the limits of these claims both to the northwest and southeast, but it was examined in detail only in the area of the proposed DMEA exploration. It is marked by a depression between 10 and 35 feet wide and from 1 to 8 feet deep that contains abundant boulders of quartz monzonite -- probably constituents of a rockslide. Outcrops within the limits of the "Main Shear Zone" are sparse. What bedrock exposures that there are, either natural or artificial, reveal quartz monzonite that is cut by numerous near-parallel fractures that trend northwesterly and are spaced about a foot apart. Most of these fractures are joints, but some are faults, and a few contain veins.

Another northwest-trending set of fractures occurs on the Anna claim, west of the "Main Shear Zone" (pl. 1). Outcrops along this set are generally poor, but apparently it is similar to the "Main Shear Zone" being composed of closely spaced near-parallel joints, faults, and minor veins. Due to the poor outcrops and lack of topographic expression the width of this fracture zone could not be discerned, but it is probably narrower than the "Main Shear Zone."

The quartz monzonite adjacent to some of the fractures along the "Main Shear Zone," and to a lesser extent near some of the other fractures, is altered, probably both by weathering and by hydrothermal activity. The susceptibility of the altered quartz monzonite to erosion is evidenced by the depression along the "Main Shear Zone."

Steep fractures that strike between N. 50°-60° W., and others striking N. 80° E. also occur on the property.

Ore deposits

The Kagati Lake Mercury Deposits consist of fracture fillings in which cinnabar occurs in quartz veinlets, as gouge coatings, and along fractures in weathered quartz monzonite. Cinnabar appears to be the youngest mineral in the deposits. Locally, its crystals

are perched on quartz, elsewhere cinnabar lines open spaces both along gouge and in altered quartz monzonite. In places the cinnabar is closely associated with realgar and subordinate amounts of orpiment, or elsewhere to a lesser extent with stibnite and minor amounts of oxidized antimony minerals. Not all the occurrences of arsenic and antimony minerals are cinnabar-bearing nor do the antimony and arsenic minerals occur together in any of the exposures that were examined.

Data concerning the ore bodies and possible reserves are scant. All exposures of the cinnabar-bearing deposits are in small pits or trenches separated by areas of overburden. The deposits are exposed for only a few feet along the strike and are from a few inches to about 4 feet in thickness. It is impossible to project the ore-controlling structures from one pit or trench to another with any degree of certainty; hence we don't know the lengths of the individual ore-bearing zones, how many of them there are within the different sets of fractures nor whether the cinnabar deposits are persistent. One encouraging indication that the deposits in the "Main Shear Zone" extend longitudinally to the northwest is that cinnabar-bearing float has been found along this zone to the northwest for several hundred feet beyond the limits of the proposed DMEA exploration. Some of the other ore-bearing structures may similarly be extended on the basis of float. Probably the deposits both along the "Main Shear Zone" and on the Anna claim are chiefly in and near multiple fractures separated by barren quartz monzonite.

Identical pulps from the eight samples taken during the examination were prepared by the U. S. Bureau of Mines at Spokane and were assayed by the Washington Testing Laboratory, Spokane, Washington, Abbot Hanks, San Francisco, California, and the Bureau of Mines, Albany, Oregon, and the results are listed below. The results reported by Hanks were used in appraising the property.

Engineer's samples

FOR MERCURY

Sample No.		Width (ft.)	Hanks	Washington Test. Lab.	USBM - Albany Chem.	X-ray	Type
KL-1	EWP-4A	1.5	1.66	1.36	2.29	0.9	Chan. cut
2	5	3.2	1.71	0.34	2.52	1.0	do.
3	6	4.0	Tr.	0.02	0.15	0.2	do.
4	7	2.0	0.46	0.16	0.74	1.2	do.
5	8	1.3	0.11	0.16	0.37	0.8	do.
6	9	Grab	Tr.	0.06	0.22	0.5	Grab
7	10	1.8	Tr.	N11	0.12	0.3	Chan. cut
8	11	4.0	1.32	0.42	1.89	--	do.

FOR ARSENIC

KL-1	EWP-4A	1.5	0.62	0.82	--	6.1
2	5	3.2	0.50	0.71	--	4.5
3	6	4.0	0.62	0.41	--	5.3
4	7	2.0	5.58	4.74	--	38.0
5	8	1.3	7.04	6.22	--	46.0
6	9	Grab	0.50	0.45	--	3.8
7	10	1.8	1.08	0.89	--	14.0
8	11	4.0	0.77	0.67	--	--

FOR ANTIMONY

KL-1	EWP-4A	1.5	0.27	0.10	--	0.1
2	5	3.2	0.32	0.31	--	0.2
3	6	4.0	0.05	N11	--	0.1
4	7	2.0	0.22	0.28	--	0.1
5	8	1.3	0.05	0.10	--	0.1
6	9	Grab	25.06	23.18	--	52.0
7	10	1.8	0.44	0.31	--	0.6
8	11	4.0	0.40	0.48	--	--

The applicant furnished sample data on 12 samples, which is also listed below.

Applicant's samples

Sample No.	Width (ft.)	Assayed at Fairbanks by Terr. Dept. of Mines	Assayed by applicant at Kellogg	Approximate location
		% Hg	% Hg	
1852	0.6	Nil	--	Near KL-7
1853	0.2	Tr.	--	At KL-5
1854	0.3	2.10	1.57	At KL-8
1855	0.5	0.60	2.13	At KL-1
1856	1.3	0.23	0.12	At KL-4
1857	Grab	0.50	0.51	At KL-7
1858	Grab	0.33	3.25	At KL-8
1860	2.0	0.10	--	Johnny claim
1861	0.3	Nil	--	Johnny claim
1862	4.0	0.07	0.09	At KL-3
1863	4.0	1.58	1.50	Near KL-2
1864	2.5	0.74	0.54	Near KL-1

The location of samples and results are plotted on plate 1.

The variation in the assays of the same sample causes some doubt as to which result to use. A straight average is very close to the results submitted by Hanks, and as Hanks enjoys a reputation for accuracy their results will be used.

The assay results submitted by the applicant check in a rough way the results obtained by the samples taken during the examination.

PAST OPERATION

The work done by the company during the past summer is the only work which has been done on the property. A tractor and bulldozer, each equipped with sleds for moving supplies and equipment, were used. An attempt to excavate cuts and trenches along the outcrop with a bulldozer failed because the overburden, consisting of

decomposed granite saturated with water and containing large residual boulders, proved to be too soft to afford footing for the bulldozer. In some of the cuts boulders were partially uncovered and then pulled out by use of a tractor and a wire rope but there were too many boulders and the overburden generally too thick for this method to succeed. The hand-dug pits and trenches in which mercury-arsenic and mercury-antimony mineralization was found were at points where the overburden was from 2 to 5 feet thick. During the examination these exposures had to be cleaned of wet, sandy, sloughed material a foot or two deep in order to obtain a clean face for sampling. Many of the pits and trenches did not penetrate the overburden so were of little value. Generally, the overburden contains little or no mineralized float except when close to bedrock over mineralized structures.

There has been no production and there is no work now in progress.

MATERIALS AND SUPPLIES

Materials, supplies, and equipment will have to be brought in by plane or by boat and plane, either from Anchorage or Seattle and could be landed at Bethel or Platinum for transfer to pontoon planes. Two freight boats a year arrive at Bethel. It is possible that heavy equipment could be moved to the property during the winter over ice and snow. Transportation costs by plane from Anchorage to the property will probably be in excess of 7 cents per pound. Skilled labor probably will have to be secured in the United States, although there may be some available in Alaska. Common labor is available in most places along the coast and rivers but usually must be trained. Labor costs will start at $2.50 to $3.00 per hour plus meals and lodging and all labor must be transported to the property by plane. Technical and skilled manpower costs will start at $4.00 to $5.00 per hour, plus meals, lodging, and transportation, and the usual work week is 7 days. Power will have to be supplied by gasoline- or diesel-driven equipment. There is water available for drilling and domestic use, and lakes which could be used for mill water.

APPLICANT'S PROPOSAL

The applicant's proposal calls for diamond drilling 12 holes for a total of 5,000 feet. This drilling would crosscut three sets of fractures: the "Main Shear Zone", the one on the Anna claim, and a set which is mainly on the Groundhog claim. The latter, on the basis of float, is believed to contain cinnabar. The costs and details of the project are as follows:

Personal Services:

Exploration supervisor	$1,200.00 per mo.
Mining engineer-geologist	1,000.00 per mo.
Surface laborers	3.20 per hr.

Materials and Supplies:

Food and quarters for employees	4,500.00
Transportation of employees	2,500.00
Fuel for cats and heating	500.00
Tools	250.00
Assay determinations	600.00
Core boxes (100)	850.00

Operating Equipment:

1 A C HD-14 tractor-dozer, w/operator	30.00 per hr.
1 Caterpillar D-6 tractor, w/operator	20.00 per hr.

Repairs:

Track mechanism for HD-14	2,000.00

Diamond drill hole summary:

6 holes	520 ft.	3,120 ft.
5 holes	280 ft.	1,400 ft.
1 hole	480 ft.	480 ft.
12 holes		5,000 ft.

Analysis of costs:

Diamond Drilling:

1.	Mobilization	$ 8,200.00
2.	Drilling - holes to 500' or less 4,880 ft. at $18.70/ft.*	91,256.00
3.	Drilling - per foot of hole over 500' 120ft. at $23.90/ft.*	2,868.00

Personal Services

1.	Supervision	3½ months	4,200.00
2.	Technical	3½ months	3,000.00
3.	Labor - 3	12 weeks	8,755.20
4.	Food and quarters		4,500.00
5.	Transportation		2,500.00
6.	Fuel		500.00
7.	Tools		250.00
8.	Assay determinations - 100 at $6/ea.**		600.00
9.	Core boxes - 100 at $8.50/ea.**		850.00

Operating Equipment

1.	A C - HD-14 Tractor-dozer - 200 hrs. at $30/hr.	6,000.00
2.	Caterpillar tractor - 400 hrs. at $20/hr.	8,000.00

Repairs

1.	Tracks on HD-14 Tractor-dozer	2,000.00

Contingency	14,348.00
Totals	$157,827.20
Cost per foot of diamond drilling (over-all)	$ 31.57

*Using M series core barrels.
**Includes cost of air freight.

DISCUSSION OF APPLICANT'S PROPOSAL

For an operation of any kind in a remote section of Alaska, most of the essential equipment should be duplicated so as to eliminate complete shutdown of the project in case of failure of one unit. The application calls for a bulldozer and a tractor for which there will be little use other than for transporting equipment and supplies for a distance of 10 miles from Kagati Lake to the property. These machines proved to be of little use during the past season for the excavation of pits and trenches. In case of a breakdown of a dozer, if only one unitwere available, it might be extremely difficult, if not impossible, to move spare parts by manpower and position the machine for repair. Radio communication is essential with the nearest airport so that in case of accident or breakage no time is lost waiting for a scheduled flight, which may be a week or more away.

Representatives of the applicant were asked for their reaction to the relatively poor showing of the assay results. They admitted that the samples did not indicate the presence of ore of the grade needed for an operation in this region but were counting on encountering better material with depth. They could not explain just why better material was to be expected at depth in this type of deposit.

The recommendation of the examining team is for denial because there are too few exposures upon which to judge the deposit. With one exception, the samples taken during the examination were in the same pits or close to those taken by the applicant and, in general, the results check. This indicates that the examining team saw the exposures the applicant considered worthy of sampling. The applicant states that for a mining operation to be possible in this location, the ore would have to average 2 percent mercury. On the "Main Shear Zone", one area less than 100 feet long from which 5 samples have been taken appears to have an ore zone 1.88 feet wide averaging 1.18 percent mercury. On the Anna shear zone, 2 samples about 75 feet apart indicated the possibility of ore-grade material. Because of the nature of this occurrence of cinnabar in fractures in granite, it seems doubtful that the mineralization will open up at any point to form large lenses or shoots. It is believed that these fractures were the feeders or channels along which the mineral-bearing solutions moved toward the surface and that at one time the sedimentary rocks that have been eroded away contained deposits similar to those described at Rainy Creek 10 miles to the northwest.

A study of the exposures in the cuts failed to indicate whether the showings form a continuous mineralized band along the fractures or will be pods or lenses. The comparatively low grade, small size, and spotty nature of the exposures do not warrant an exploration project in this remote region.

Attachments

Distribution:
DMEA (3)
USEM (5)
USGS(SRO)
MacKevett
Cates
Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DOCKET NO DMEA 4827

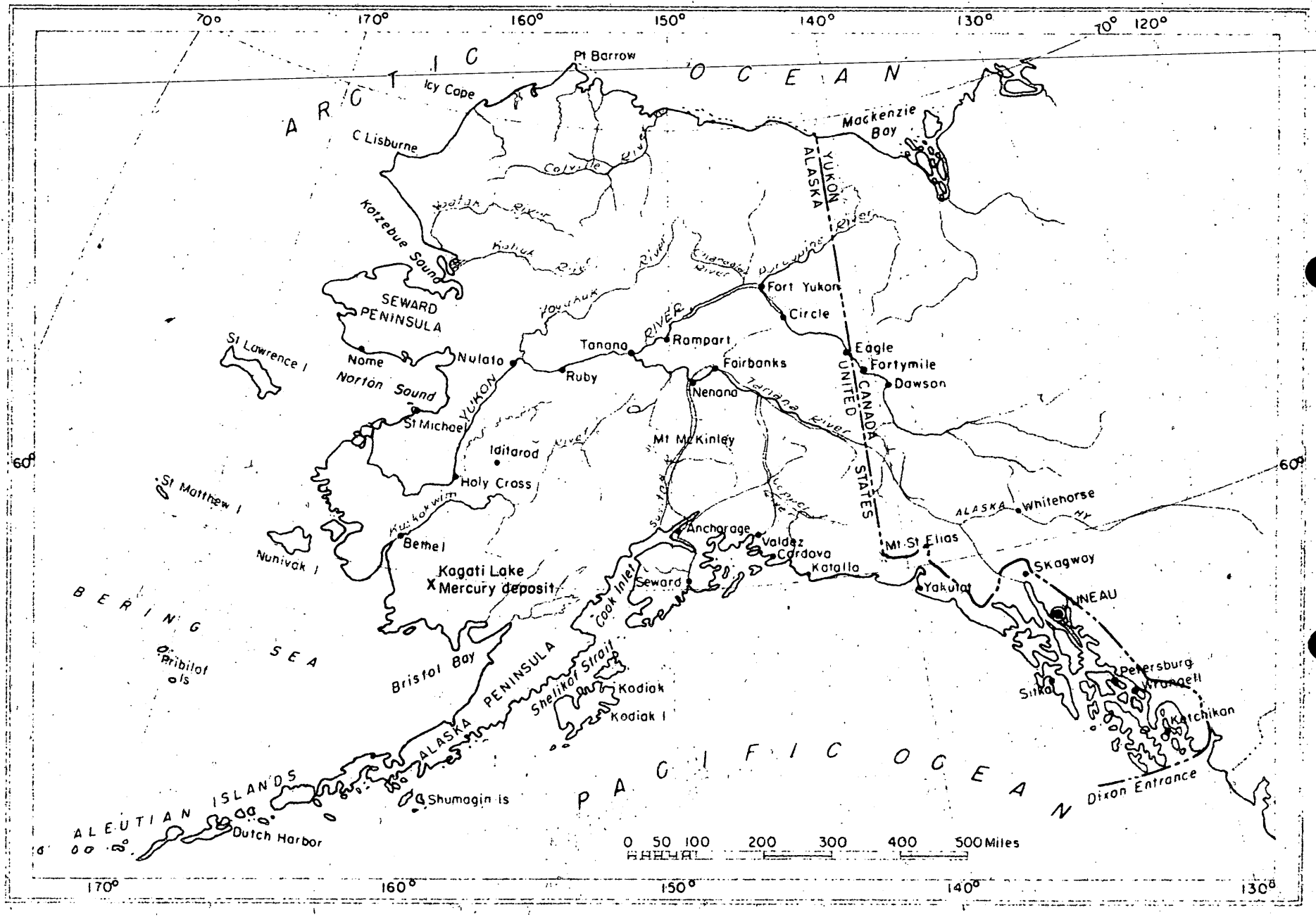

Figure I Index map of Alaska showing the location of the Kagati Lake Deposits

September 1957

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DMEA
RECEIVED JAN 31 1958

DATE	INITIALS	CODE

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATION ADDRESS, AND ROOM
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Use other side first

INSTRUCTIONS FOR USE

1. Identify Agency of Addressee
2. Void Previously Used Block
3. Write Clearly
4. Send Surplus Envelopes to Supply Room for Reissue

U.S. Government Messenger Envelope

No. 65 (Rev. 1957)
y Bureau of the Budget Circular A-33 (Rev.)

R TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
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Use other side

ly when messenger service between Government buildings in Washington, D. C., is required or wherever a STOP system is used.
Your mail room has STOP information.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

September 11, 1957

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: Assistant Chief, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4827 (mercury), Sunshine Mining Company, Bethel Property, 3rd Judicial Division, Alaska. $157,827.20

The applicant proposes to explore mercury mineralization at depth by diamond drilling 12 holes, totaling 5,000 feet, at an estimated total cost of $157,827.20.

According to A. E. Weissenborn's letter of transmittal, an examination of the property will be made by the Field Team personnel. As a result, it seems that no action is necessary until the Field Team examination report is received.

The application is returned herewith.

J. W. Pennington

Attachment

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

9/11	C	220
9/11	WSM	400

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

GENERAL FILE COPY
DMEA
9-11 C 220
WSM 400

September 10, 1957
Re: DMEA 4827
Sunshine Mining Company
Kagati Lake Prospect
3rd Jucicial Division, Alaska
$157,827.20 - Mercury

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The applicant requests assistance in exploring a "Main Shear Zone" and adjacent and branching stibnite-cinnabar-realgar bearing veins by 5,000 feet of diamond drilling. The shear zone and veins occur in a granite stock.

The shear zone and veins have been prospected by bulldozer, trenches and pits and samples have been taken, but no results are given and the only near definitive information at hand is furnished by notes on a geological map of the Kagati Lake Mercury deposit. Notes and coloring point to places where "Higrade Stibnite Float", "Cinnabar Float", "Rich Float", etc. have been seen, and two 2-foot veins are indicated.

The shearing appears to have been exposed for 4,500 feet and is said to be traceable for 2 miles.

As an examination has been arranged for by the Field Team, a recommendation that the application be referred to the Team for appropriate action is mere routine.

N. E. Nelson

N. E. Nelson

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

September 9, 1957

Sunshine Mining Company
738 Peyton Building
Spokane, Washington

Subject: DMEA 4827

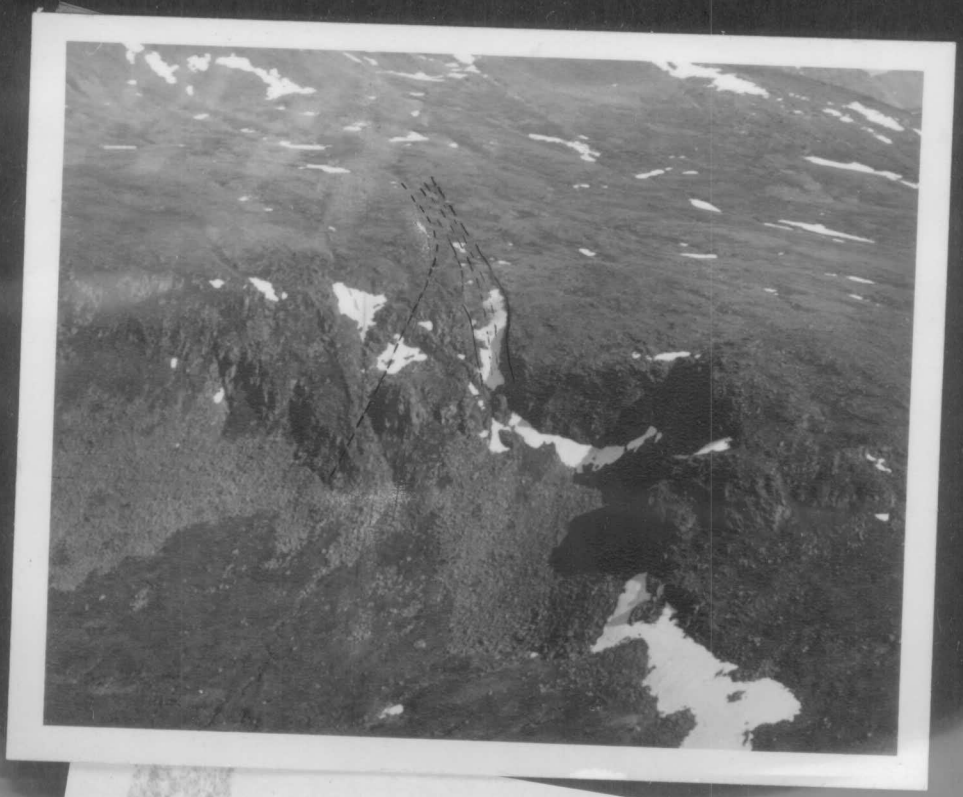
Gentlemen:

Your application for exploration assistance, dated August 24, 1957 submitted to our office at Spokane, Washington has been assigned Docket Number 4827 and referred to the Division of Iron & Ferro-Alloys in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:
Region I



Looking North on the Kagati Lake Mercury Prospect, showing the outline of the "Main Shear Zone" and the course of the Proposed Crosscut and Drift.

See other side
for skyline

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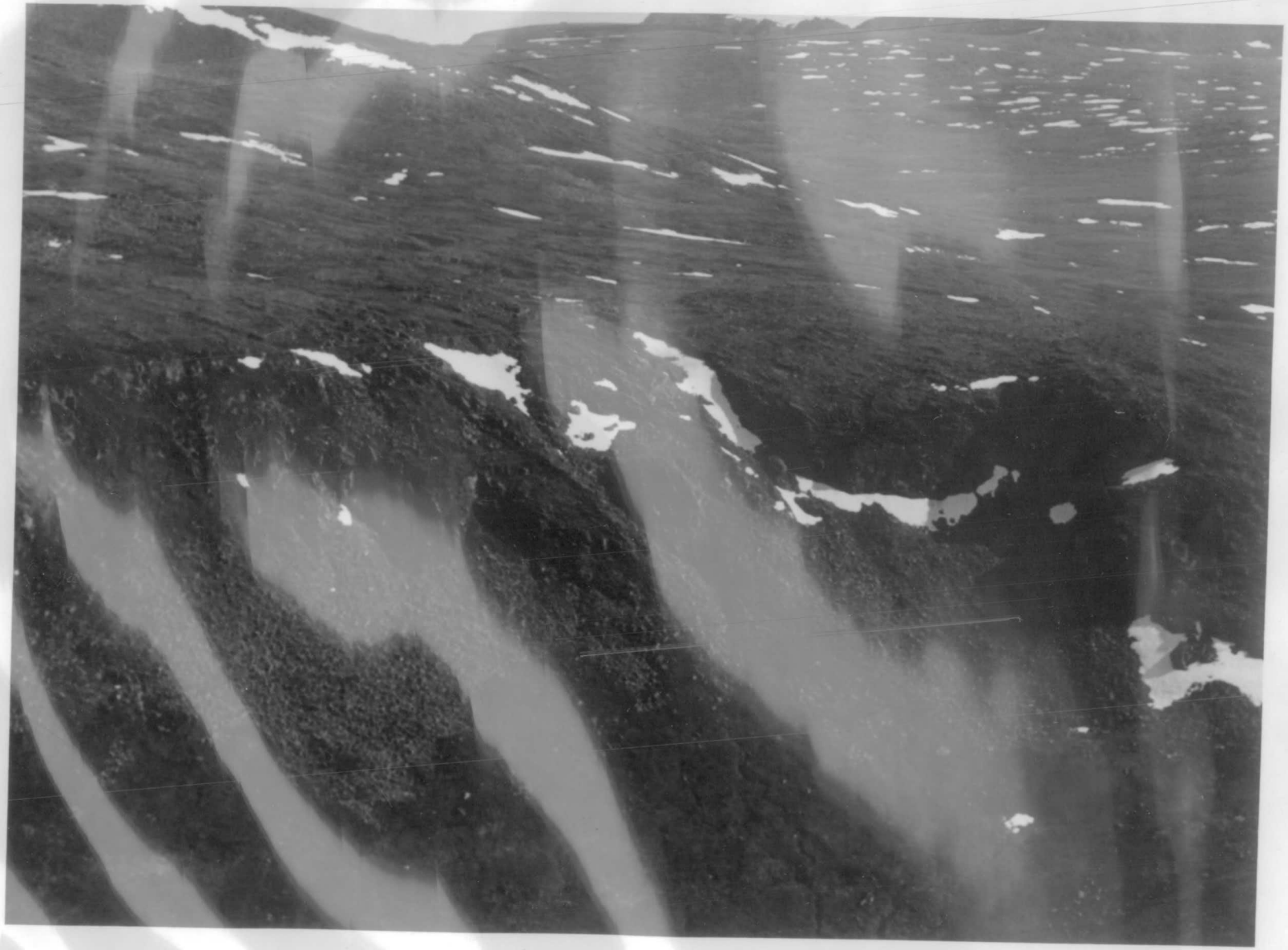
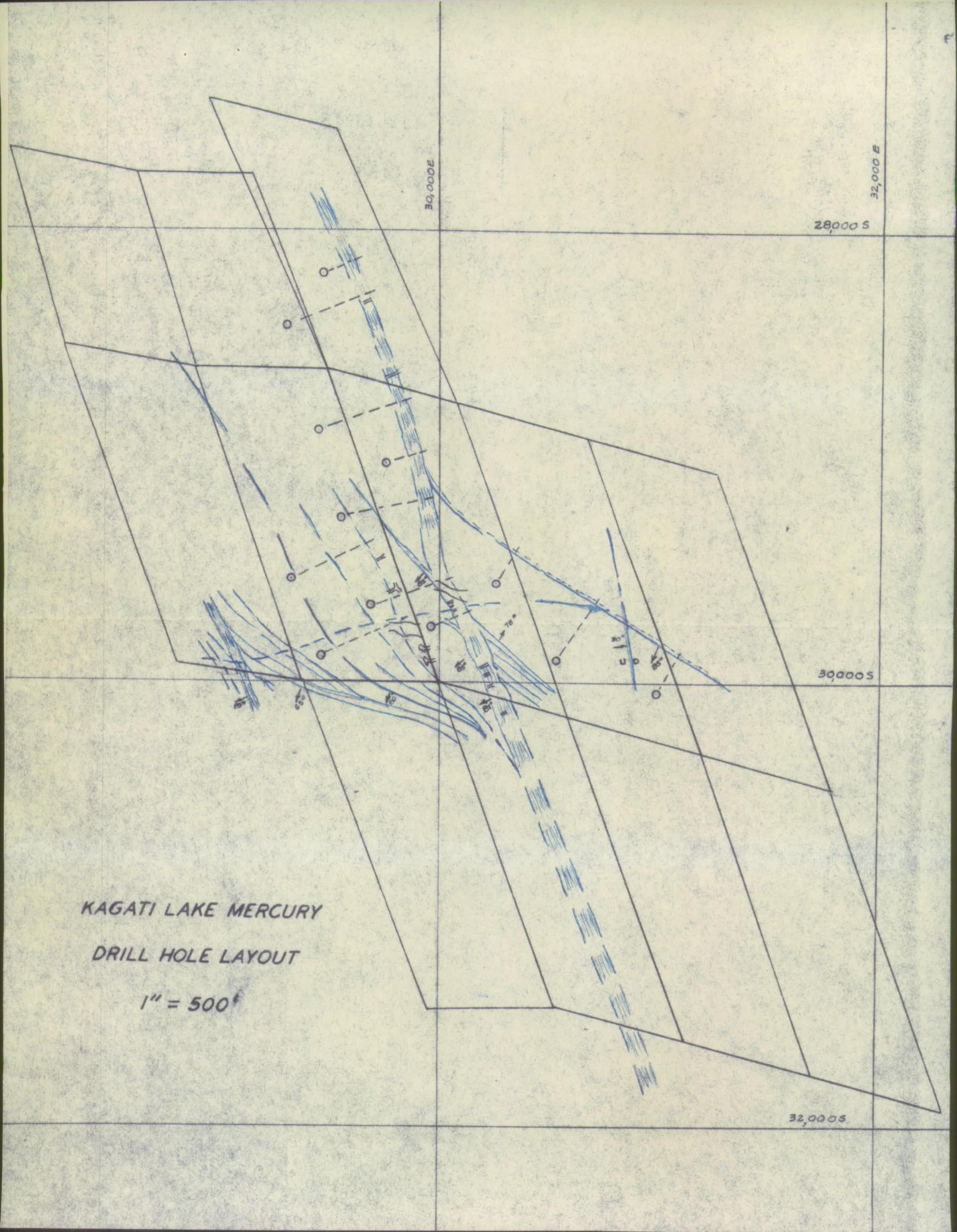
DATE	INITIALS	CODE




30,000E
32,000 E
28,000 S
30,000 S
32,000 S
KAGATI LAKE MERCURY
DRILL HOLE LAYOUT
1" = 500'

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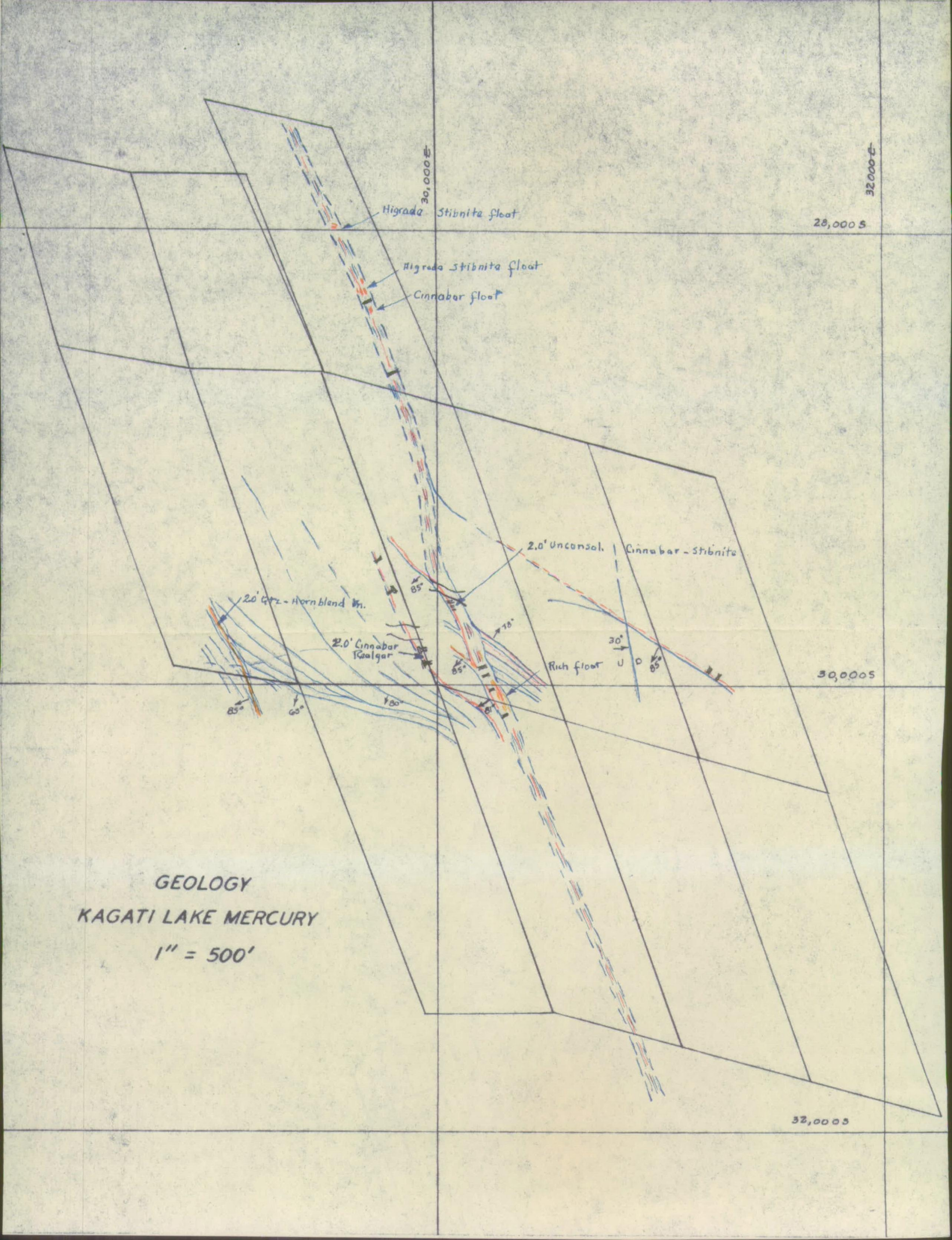
DATE | INITIALS | CODE
1957


30,000E
32,000E
28,000S
30,000S
32,000S
Higrade Stibnite float
Higrade Stibnite float
Cinnabar float
2.0' Unconsol.
Cinnabar - Stibnite
2.0' Qtz - Hornblend Vn.
2.0' Cinnabar
Realgar
Rich float
U
D
85°
85°
85°
85°
60°
80°
80°
70°
30°
GEOLOGY
KAGATI LAKE MERCURY
1" = 500'

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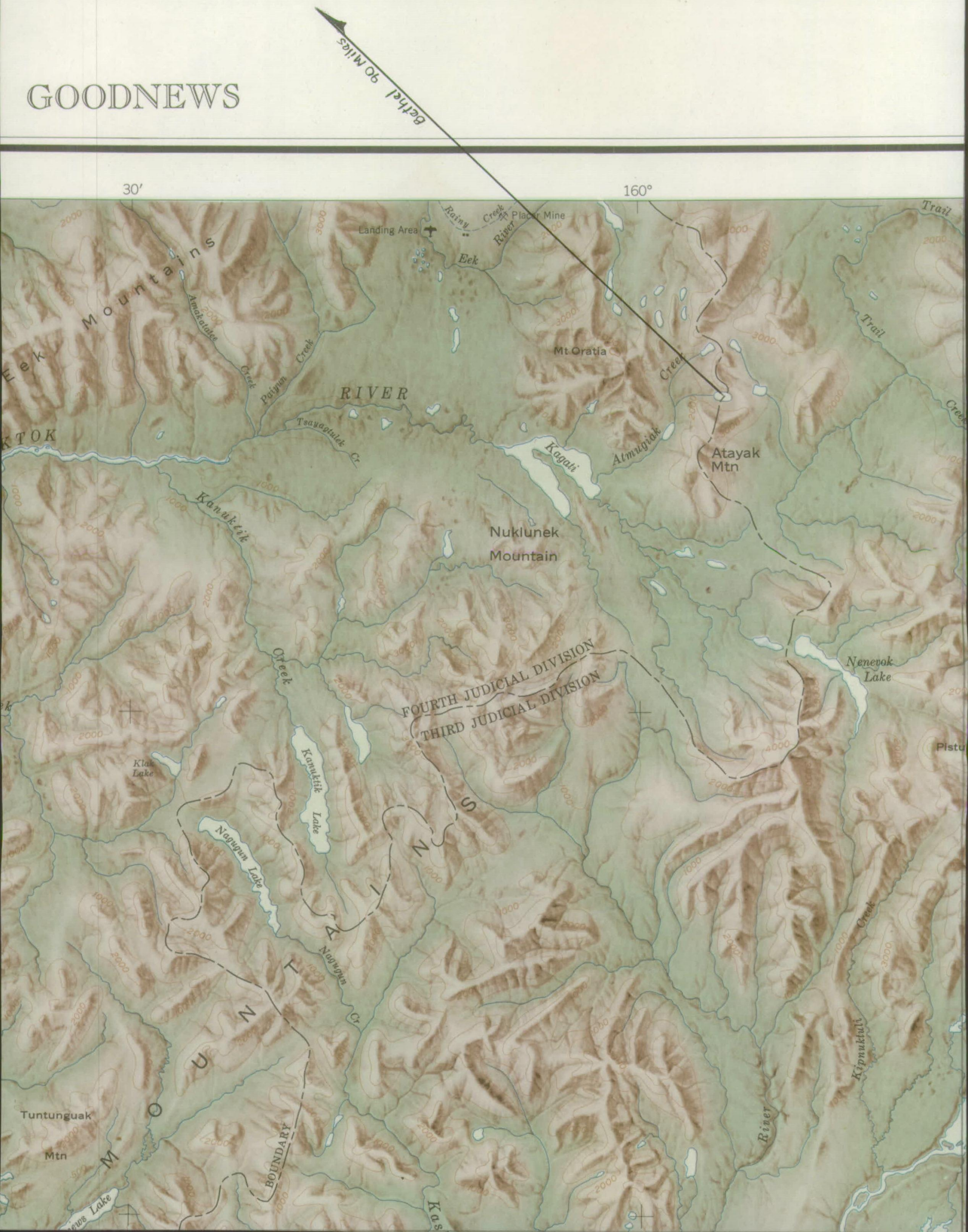
RECEIVED SEP 9 1957

DATE	INITIALS	CODE

GOODNEWS


Bethel 90 Miles
30′
160°
Landing Area
Rainy Creek
Placer Mine
Eek River
Eek Mountains
Amakatatee Creek
Paiyun Creek
Mt Oratia
Trail
Creek
RIVER
Tsayagtulek Cr
Kagati
Atmugiak
Atayak Mtn
Kanuktik
Nuklunek Mountain
Nenevok Lake
FOURTH JUDICIAL DIVISION
THIRD JUDICIAL DIVISION
Klak Lake
Kanuktik Lake
Nagugum Lake
Nagugum Cr
MOUNTAINS
Kipnuktuli Creek
Tuntunguak Mtn
BOUNDARY
Riner

OFFICIAL FILE COPY
D M E A
RECEIVED
DATE 9 1957
INITIALS
CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
APPLICATION REPORT

DOCKET NO. D.M.E.A. 4827

DMEA samples for MERCURY

Sample No.	Width	Hanks	Wash. Test.	USBM Albany
KL-1	1.5'	1.66	1.36	2.29
2	3.2'	1.71	0.34	2.52
3	4.0'	Tr.	0.02	0.15
4	2.0'	0.46	0.16	0.74
5	1.3'	0.11	0.16	0.37
6	Grab	Tr.	0.06	0.22
7	1.8'	Tr.	Nil	0.12
8	4.0'	1.32	0.42	1.89

DMEA samples for ARSENIC

Sample No.	Width	Hanks	Wash. Test
KL-1	1.5'	0.62	0.82
2	3.2'	0.50	0.71
3	4.0'	0.62	0.41
4	2.0'	5.58	4.74
5	1.3'	7.04	6.22
6	Grab	0.50	0.45
7	1.8'	1.08	0.89
8	4.0'	0.77	0.67

DMEA samples for ANTIMONY

Sample No.	Width	Hanks	Wash. Test.
KL-1	1.5'	0.27	0.10
2	3.2'	0.32	0.31
3	4.0'	0.05	Nil
4	2.0'	0.22	0.28
5	1.3'	0.05	0.10
6	Grab	25.06	23.18
7	1.8'	0.44	0.31
8	4.0'	0.40	0.48

EXPLANATION

qm — Biotite quartz monzonite

60 — Fault showing strike and dip

60 — Vein or probable ore showing strike and dip

60 — Joint showing strike and dip

2475 — Altitude of point (based on an assumed altitude of 2500 feet for initial point of traverse.).

Pit or trench

KL-2 Sample location

cinn.-cinnabr

qz-quartz

SM 1857 Applicant's sample number

KL-6 Examiner's sample number

GEOLOGIC MAP SHOWING
WORKINGS ON THE ANNA CLAIM
Kagati Lake Mercury Prospect
Alaska

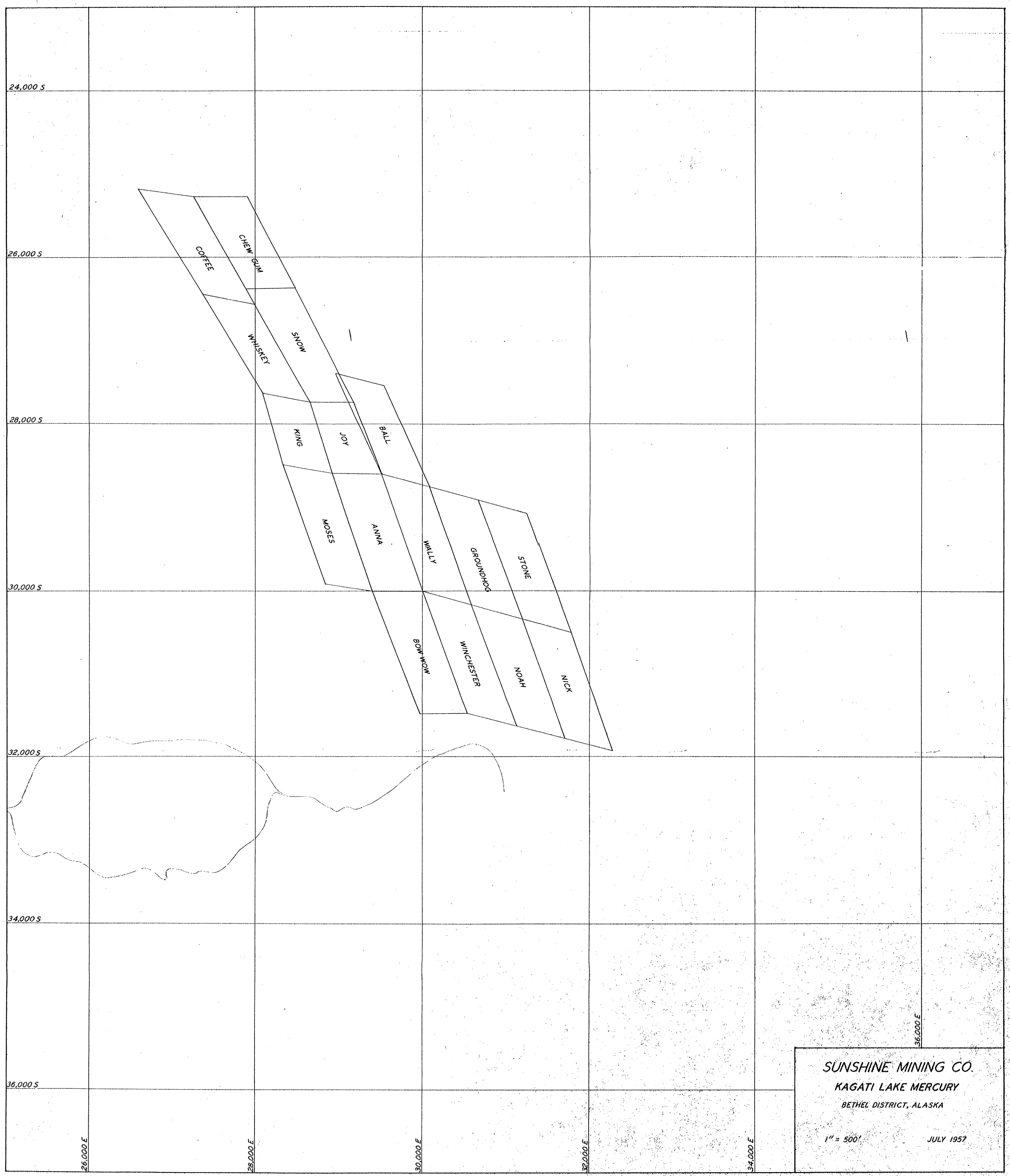
100 50 0 100 200 FEET

E.M. MacKevett Jr.

Mapped by E.M. MacKevett Jr. and E.W. Parsons
(By Brunton-Tape methods)
September 5, 1957

Sept. 1957

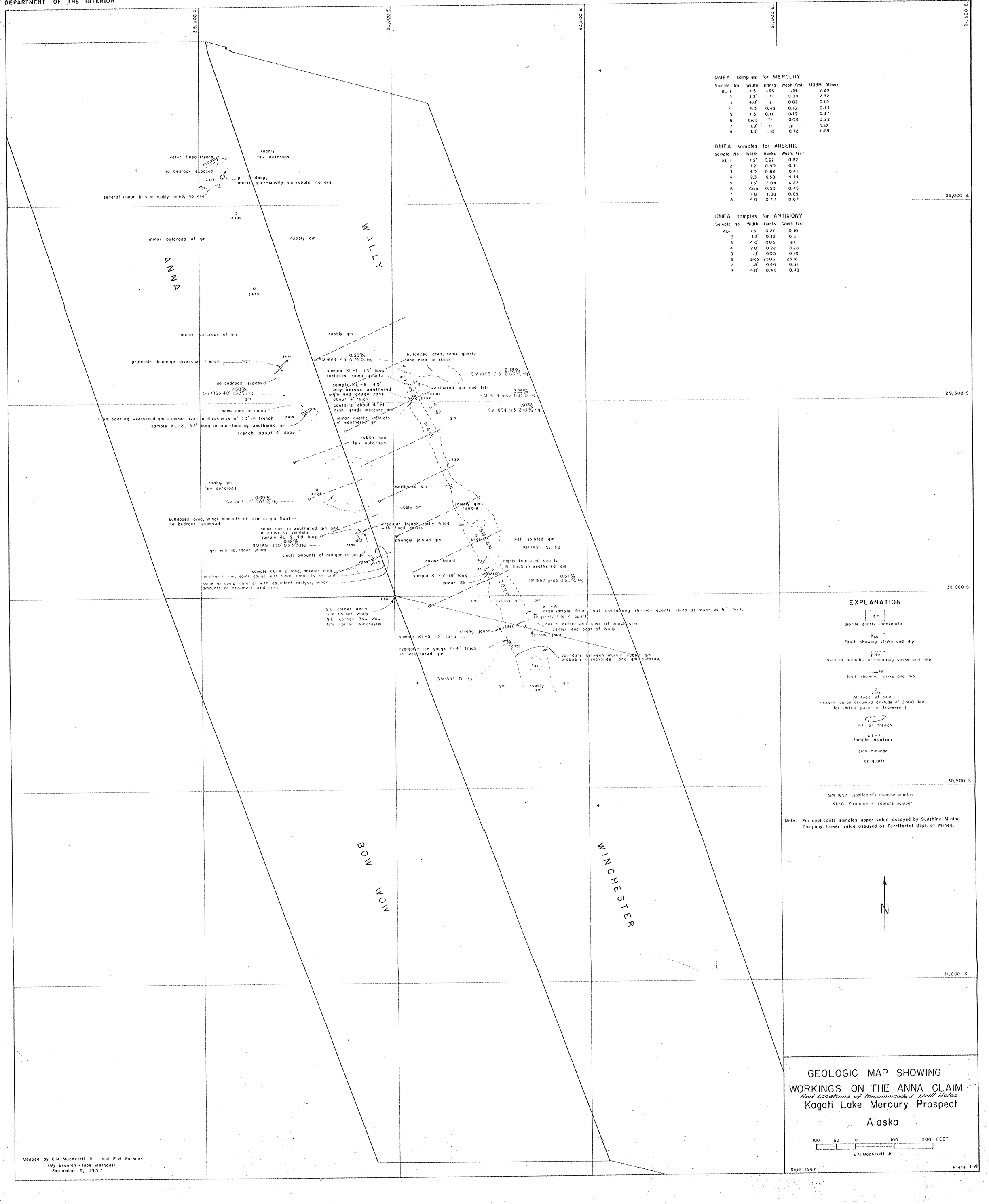
Plate I

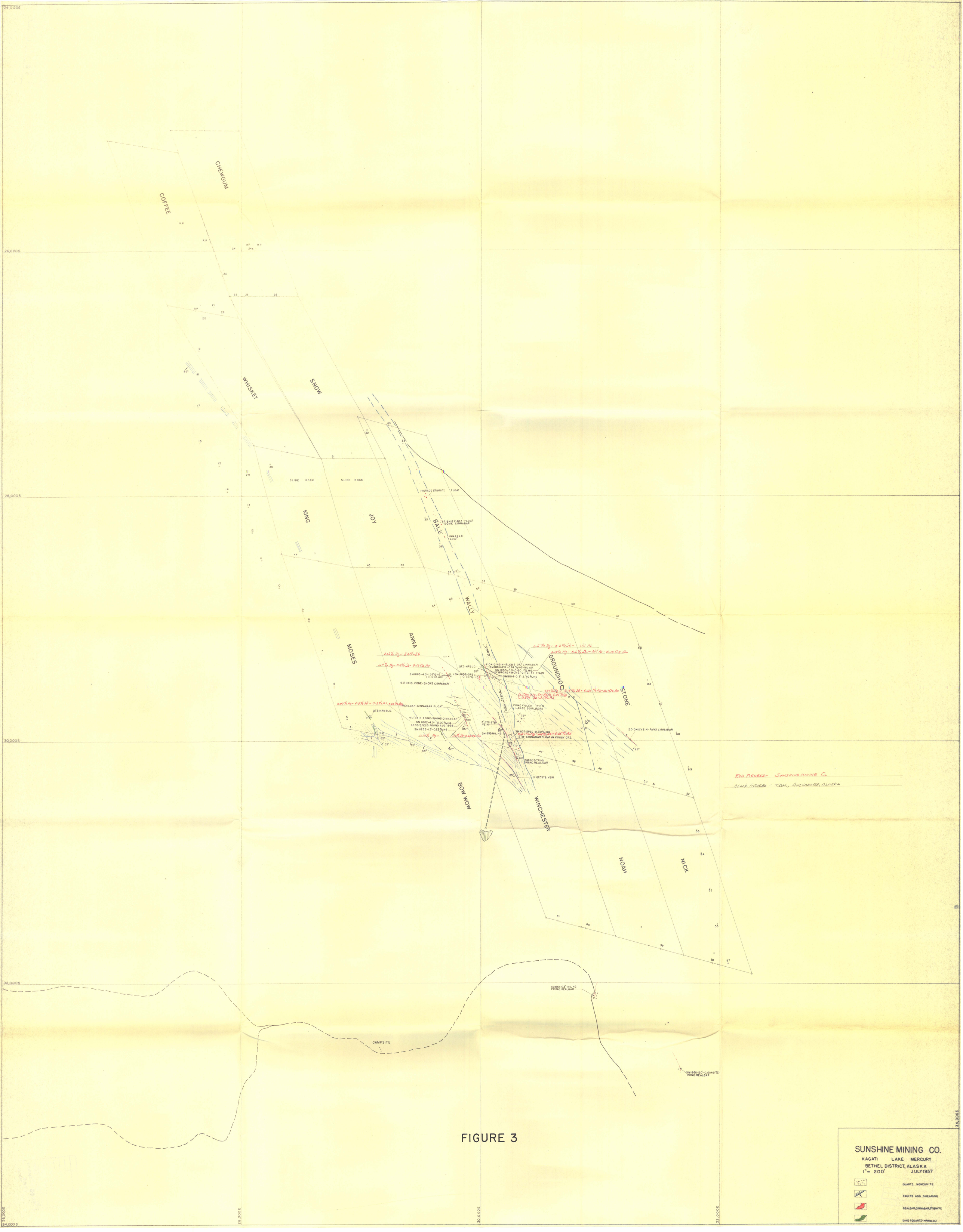

24,000 S
26,000 S
28,000 S
30,000 S
32,000 S
34,000 S
36,000 S
26,000 E
28,000 E
30,000 E
32,000 E
34,000 E
36,000 E
COFFEE
CHEW GUM
WHISKEY
SNOW
KING
JOY
BALL
MOSES
ANNA
WALLY
GROUNDHOG
STONE
BOW WOW
WINCHESTER
NOAH
NICK
SUNSHINE MINING CO.
KAGATI LAKE MERCURY
BETHEL DISTRICT, ALASKA
1" = 500'
JULY 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
APPLICATION REPORT

DOCKET NO. D.M.E.A. 4827





RED FIGURES- SUNSHINE MINING Co.

BLACK FIGURES - T.D.M., ANCHORAGE, ALASKA

FIGURE 3

SUNSHINE MINING CO.

KAGATI LAKE MERCURY

BETHEL DISTRICT, ALASKA

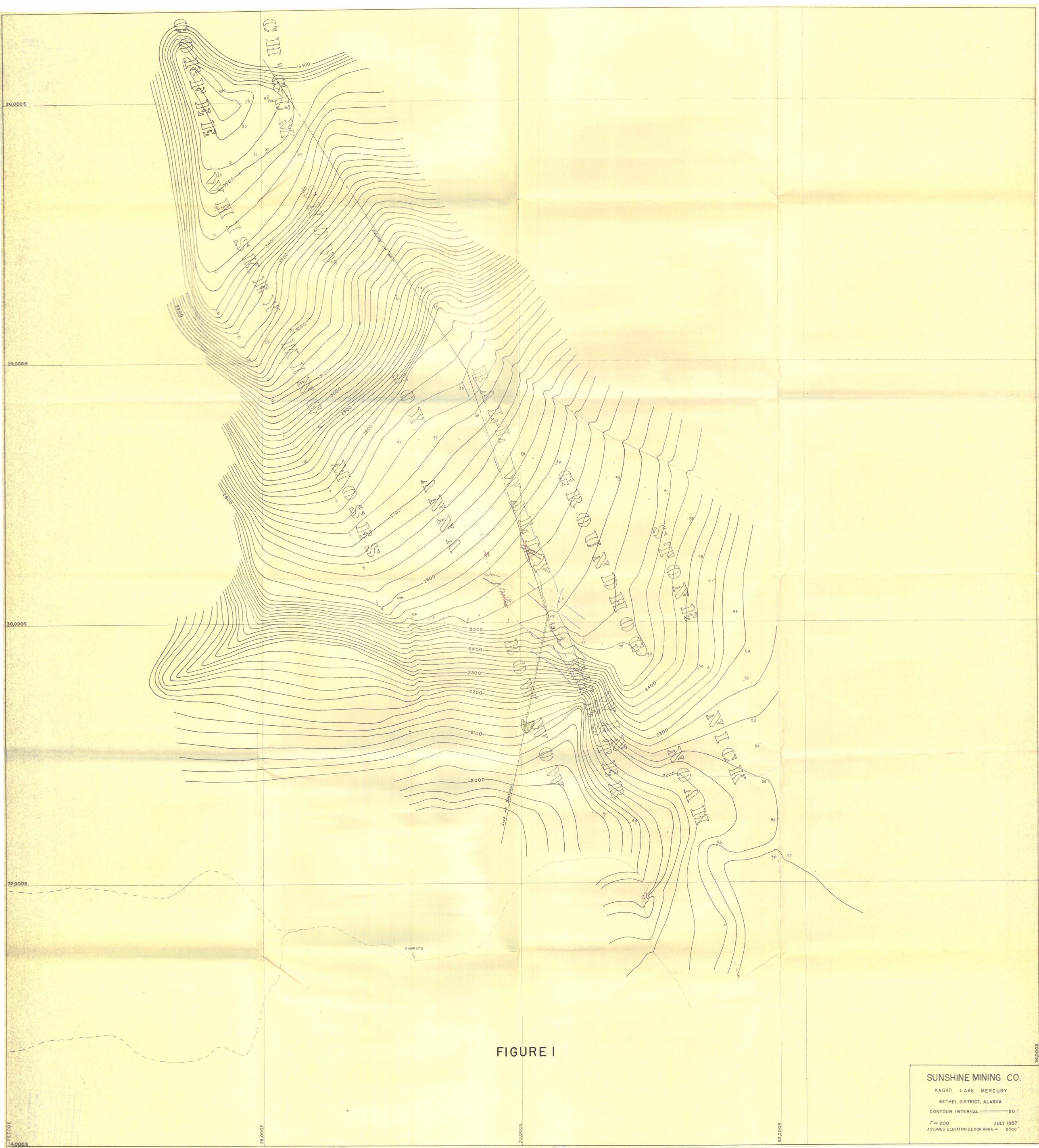
1" = 200' JULY 1957

QUARTZ MONZONITE

FAULTS AND SHEARING

REALGAR, CINNABAR, STIBNITE

DIKE (QUARTZ-HRNBLD.)


26,000S
28,000S
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32,000S
34,000S
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32,000E
34,000E
3400
3500
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
Line of Section
CAMPSITE
SUNSHINE MINING CO.
KAGATI LAKE MERCURY
BETHEL DISTRICT, ALASKA
CONTOUR INTERVAL 20'
1" = 200'
JULY 1957
ASSUMED ELEVATION S.E. COR. ANNA = 2300'

FIGURE I

KAGATI LAKE MERCURY

BETHEL DISTRICT, ALASKA

1" = 200'

3-13-58

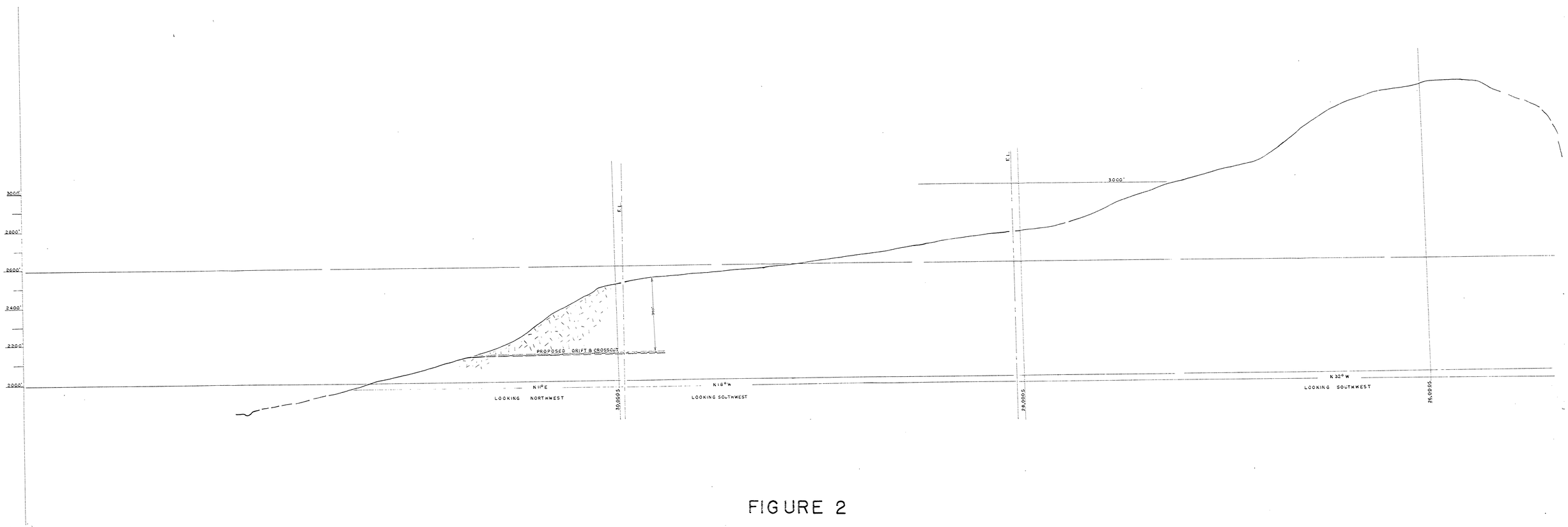

FIGURE 2