PE-075-04

State of Alaska

Department of Natural Resources

Grandview Exploration Company

Tin and Silver Prospects

Talkeetna D-5 Quadrangle

Alaska

by

Cleland N. Conwell
Mining Engineer

Prospect Examination 75-4

Open Filed by

Division of Geological and Geophysical

Surveys

College, Alaska

February 1973

Contents

Tables

Figures

Appendix

Grandview Exploration Company
Talkeetna D-5 Quadrangle
Alaska

Prospect Examination
Talkeetna 75-4

CONCLUSION

The Boulder Creek tin prospect contains cassiterite in a structure of sufficient width (21 feet) and sufficient grade (3.50% tin) to warrant the capital expenditure necessary to evaluate the commercial potential of the property. There is no proven ore reserve at the present time. The potential tin reserve must be determined by physical exploration.

The Hogback lead-silver prospect contains lead and silver in a vein with sufficient value (24 ounces of silver per ton and 24% lead) over a width of 4.17 feet, enough to justify a drift along the vein to determine the economic potential.

There are three other prospects that warrant additional exploration and sampling; the Mespelt, the Jiles-Knudson pyrrhotite, and the Sulphide zone. At the Mespelt, float with a very high silver value was found. The Jiles-Knudson pyrrhotite is a strong structure with low copper values and an anomalous tin value. The Sulphide zone has high silver values although the occurrence is erratic.

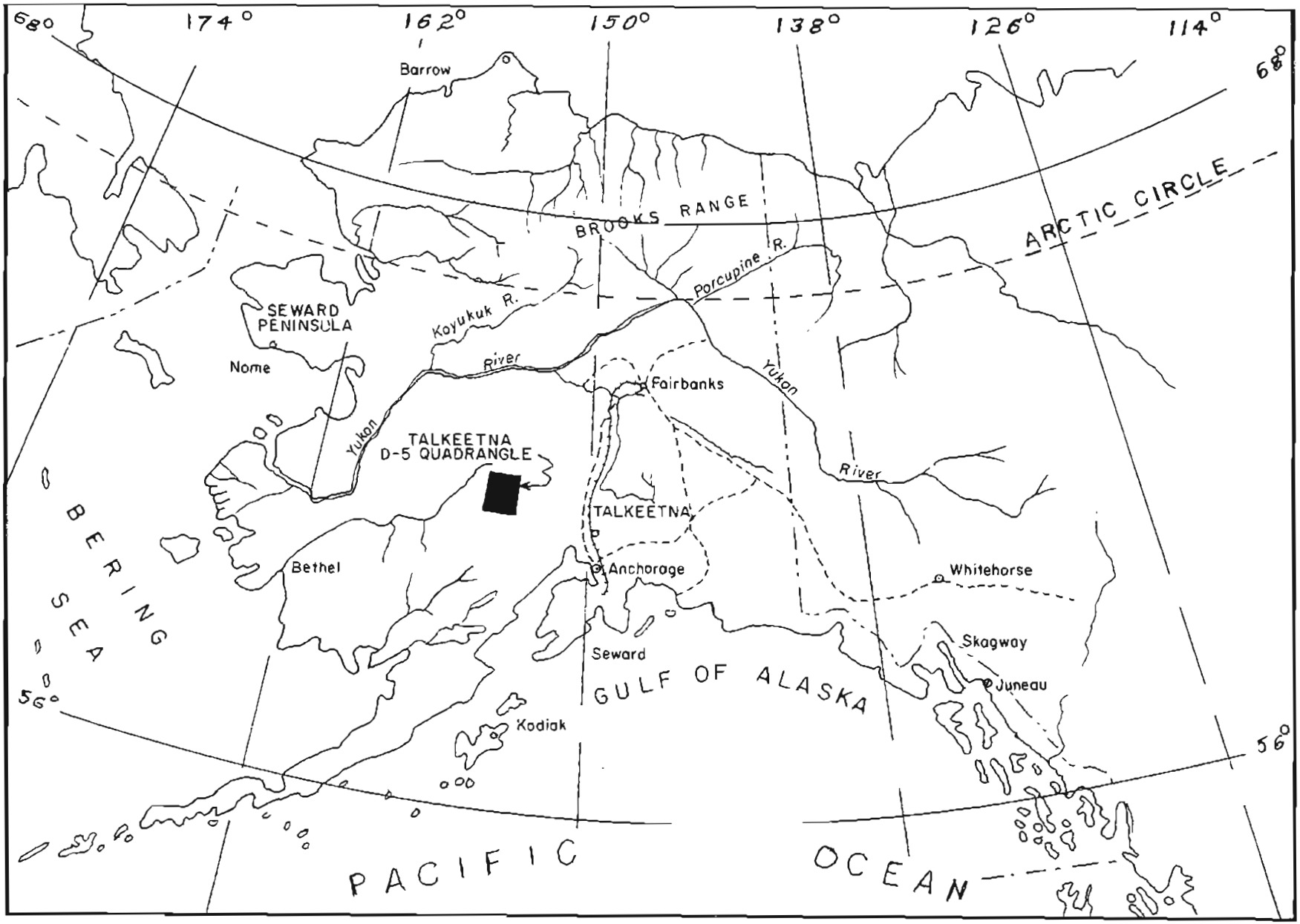
OBJECTIVE OF THIS REPORT

The objective of this report is to make a preliminary evaluation of the Grandview Exploration Company's claims to determine if the discoveries have sufficient potential to warrant the capital expenditure necessary to complete an economic evaluation. In order to complete the objective the mineral occurrences were sampled in detail. The general geology of a 35 square mile area was mapped, and a literature search completed. The mineral samples were analyzed in the laboratory by Donald Stein, assayer, and Thomas Trible, geochemist. Tom Mowatt reviewed thin sections of the granite. Namok Veach completed X-ray diffraction studies of rock and mineral specimens.

HISTORY

Between 1921 and 1923, F. B. Jiles and Ed Knudson of Poorman, Alaska prospected in the vicinity of Boulder Creek and concentrated their efforts on the west side of the stream. About the same time Adolph and Charles Mespelt of McGrath, Alaska found a galena float and prospected about 2 1/4 miles southwest of the Knudson prospect. Figure 1 shows the location in Alaska, and Figure 2 shows the relative location of the two prospects. Activity in the area ceased until the summer of 1947 when I. W. Purkeypile prospected the area and discovered the Hogback prospect. Since that time all mining claims in the immediate area have been controlled by the Purkeypile family. At the present time the claims are owned by the Grandview Exploration Company, with David Purkey as President.

Early developments consisted of a shallow shaft on the Mespelt prospect, a shallow shaft and a 10 ft. long crosscut adit on the Knudson



INDEX MAP of ALASKA

Figure 1

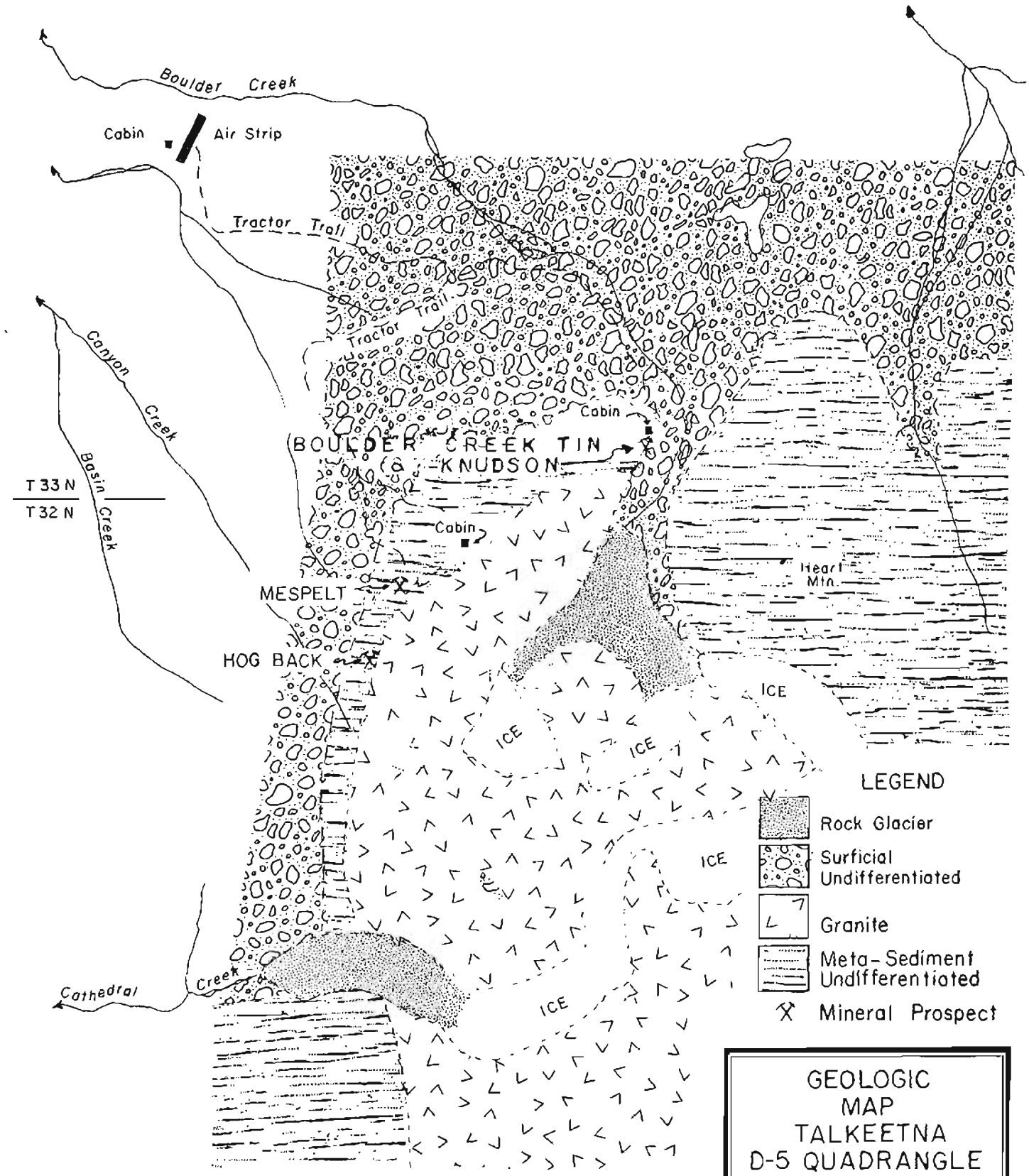

Boulder Creek
Cabin
Air Strip
Tractor Trail
Tractor Trail
Canyon Creek
Basin Creek
T 33 N
T 32 N
BOULDER CREEK TIN
(a) KNUDSON
Cabin
Cabin
MESPELT
HOG BACK
Heart Mtn.
ICE
ICE
ICE
ICE
ICE
Cathedral Creek
LEGEND
Rock Glacier
Surficial Undifferentiated
Granite
Meta-Sediment Undifferentiated
Mineral Prospect
R16 W
R15 W
T 32 N
T 31 N
GEOLOGIC MAP
TALKEETNA
D-5 QUADRANGLE
East Central Part
Date Sept. 1972
C.N. Conwell
0
1
Scale in miles

Figure 2

prospect. The present owners have exposed the vein on the Hogback by a bulldozer cut, and completed approximately 400 feet of diamond core drilling on the claims. In addition to exploration the owners have prepared an airstrip, constructed cabins at the airstrip, near the Mespelt and Knudson prospects, and established tractor trails to the various prospects.

In 1948 Bruce Thomas, Associate Mining Engineer for the Alaska Territory Department of Mines, (currently the Division of Geological and Geophysical Surveys) examined the property. Since that time several mining engineers, and geologists have visited the area. In 1968 Reed and Elliot of the U. S. Geological Survey conducted a stream sampling project that included the area. Examinations by the personnel of the Territorial Department of Mines, U. S. Bureau of Mines and U. S. Geological Survey are on open file. Mr. Purkey made several private reports available.

The writer spent from August 6 through August 23, 1972 in the area, accompanied by R. L Gebhardt, geologist and field assistant. Their work included an examination of the Grandview Exploration Company's mining claims, geological mapping and geochemical sampling in adjacent areas.

LOCATION

The claims of the Grandview Exploration Company are located on the north slope of the Alaska Range in the Talkeetna D-5 Quadrangle. The nearest airstrip, with a 4,000 foot runway accessible to the Alaska Railroad, is Talkeetna, Alaska (Figure 1).

PHYSICAL FEATURES AND CLIMATE

The elevation at the airstrip is about 2,000 feet. The elevation at the Knudson and Boulder Creek tin prospect is about 3,200 feet. The Mespelt and Hogback claims are above 4,500 feet. Peaks in the immediate area are 7,000 to 9,000 feet. Glacial features dominate the topography of the mountains. Figure 2 shows the location of several glaciers. The transition from the mountains to the alluvial plain is abrupt.

Timber grows to an altitude of about 2,500 feet and consists of spruce up to 12 inches in diameter. Alder, willow, dwarf spruce, and poplar are sometimes found along small streams up to an altitude of about 3,000 feet. No timber is found at the prospects. The hills and moraines are moss covered.

The climate is sub-Arctic with long, extremely cold winters and comparatively warm summers. Precipitation in the area is approximately 20 inches. High winds and small freak whirlwinds are frequent.

GEOLOGY

Metasediments

The oldest rock in the area is a metasediment (Figure 2). Capp (1927) assigned a probable age of Devonian or Silurian. No attempt was made to diferentiate the group. There are rocks sufficiently metamorphosed to exhibit a well developed schistose structure with a predominantly gray color. In an area east of Heart Mountain there is a glossy thin-cleaving phyllite. On the ridge immediately west of the Boulder Creek tin prospect there is a gray limestone. On Canyon Creek a light tan quartzite is exposed in three places. The variation in rock type and composition may be one of

the controls of ore deposition in the area.

Granite

The central part of the area as shown in Figure 2 is granite. The granite shows zoning. The feldspar crystals are less than 1/8 inch in diameter near the contact with the metasediment. There is a porphyritic texture closer to the center of the pluton, with phenocrysts of feldspar more than 3/8 inch long. The granite appears in the hand specimens to have both biotite and muscovite mica, with tourmaline as an accessory mineral. The granite appears to meet the requirements of a "Tin Granite" as described by Sainsbury, (1969). Bruce Reed of the U. S. Geological Survey has assigned an age of approximately 55 million years to the granite, late Cretaceous or early Tertiary. He stated that it is a "Tin Granite", and intrusives of this age or middle Tertiary are the intrusives associated with sulphide mineralization in the Alaska range.

Surficial

The surficial deposits as shown on Figure 2 have not been differentiated. The deposits grade from the stream sand and gravels, through colluvium, and talus. There does appear to be sufficient sand and gravel for concrete construction and the alluvial material near the airport appears to be satisfactory for extending the airstrip.

Rock Glacier

The rock glaciers are well formed and are prominent below the ice glaciers.

MINERAL OCCURRENCES

Jiles-Knudson Prospect

The original findings were the Pyrrhotite zone, the Sulphide zone, and the Goethite zone, all shown in Figure 3.

The pyrrhotite zone has the heaviest concentration of sulphides. The zone, which is 55 feet north of the granite, is 15 to 20 feet wide and exposed for nearly 160 feet. An adit has been driven into the hillside about 10 feet. The sulphide mineral pyrrhotite is well exposed in the tunnel. Several investigators have sampled the adit. The varying results show:
Chadwick (1962) obtained 0.4 oz/pt for silver and 0.831% copper over a width of 11 feet. Maloney and Thomas (1965) reported 0.78 oz/pt of silver and a trace of copper from a 11-foot channel sample.

The writer sampled the adit wall with channel samples each one foot in length starting at the entrance of the tunnel on the footwall side to try and determine if there were enriched zones in the pyrrhotite. Table 1 shows the results.

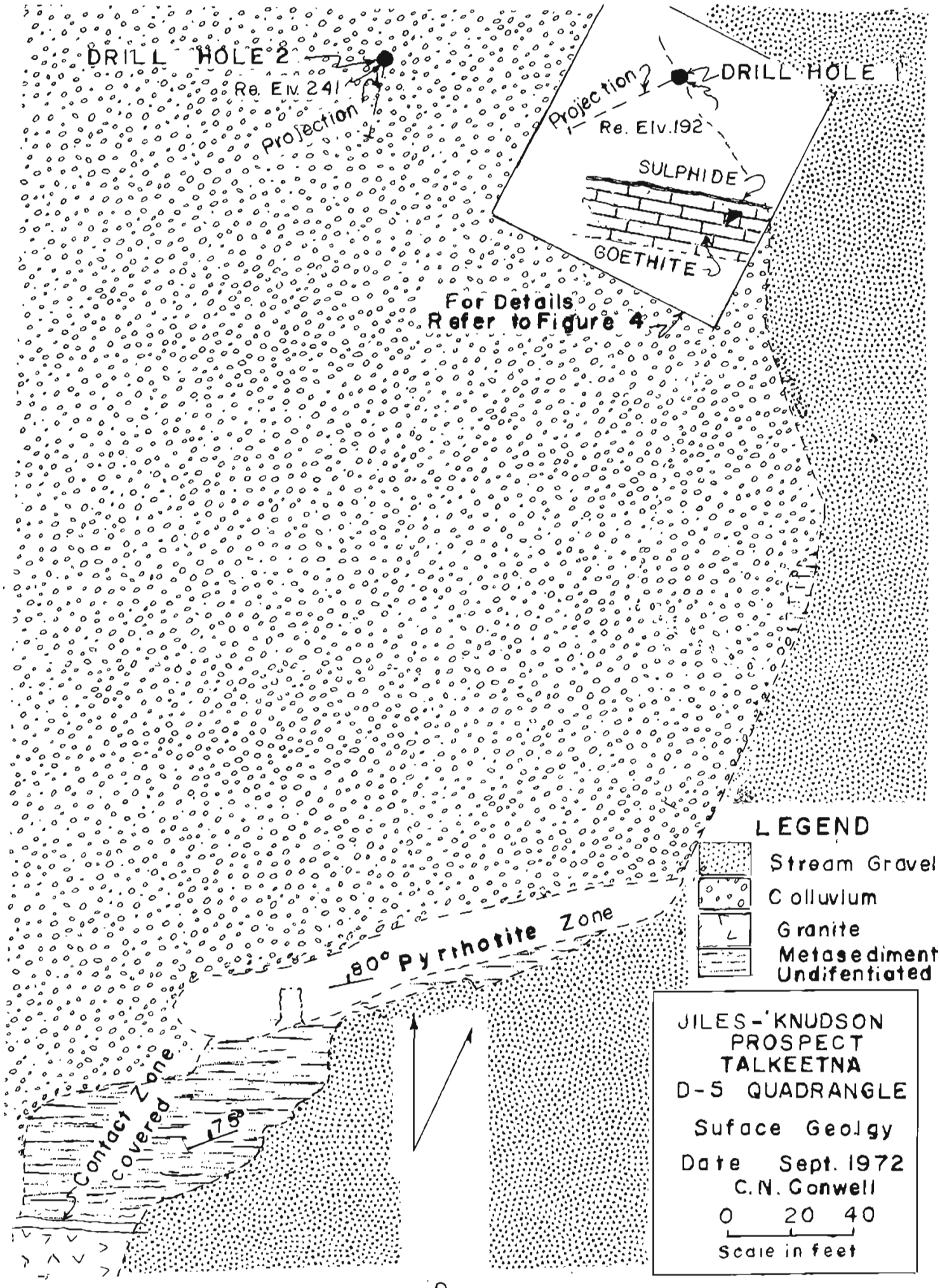

DRILL HOLE 2
Re. Elv. 241
Projection
DRILL HOLE 1
Projection
Re. Elv. 192
SULPHIDE
GOETHITE
For Details
Refer to Figure 4
LEGEND
Stream Gravel
Colluvium
Granite
Metasediments
Undifentiated
80° Pyrrhotite Zone
Contact Zone
Covered
75
JILES-KNUDSON
PROSPECT
TALKEETNA
D-5 QUADRANGLE
Suface Geolgy
Date Sept. 1972
C.N. Conwell
0 20 40
Scale in feet

Figure 3

Table 1

Pyrrhotite Zone Assays

	E. Ounces Per Ton		E. Weight Per Cent			
	Gold	Silver	Copper	Lead	Zinc	Nickel
P-1	Nil	0.25	0.048	0.004	0.032	0.002
P-2	Nil	0.68	0.060	0.003	0.003	0.002
P-3	Nil	0.25	0.550	0.002	0.013	0.002
P-4	Nil	0.51	1.20	0.002	0.006	0.002
P-5	Nil	0.28	0.700	0.002	0.003	0.002
P-6	Nil	0.15	0.215	0.002	0.003	0.002
P-7	Nil	0.50	0.950	0.002	0.012	0.001
P-8	Nil	0.11	0.092	0.002	0.004	0.001
P-9	Nil	0.28	0.410	0.002	0.002	0.001

Note: Sample P-1 thru P-8, tin not detected.
Sample P-9, tin 0.01% (weight per cent.)
Sample P-1 would be on the foot wall side and P-9 on the hanging wall side of the vein.

The table shows that silver and copper values are not evenly distributed. Sample P-9 shows .01% tin. This might be significant and indicate a tin bearing zone on the hanging wall side of the vein. In as much as there is an indication of valuable metals present, and the structure is prominent; I believe additional sampling below the zone of oxidation is warranted.

The second area of mineralization on the Jiles-Knudson prospect is the Sulphide and Goethite zones. These zones are shown on Figure 3 and in greater detail on Figure 4. The shaft and cut noted in the figures

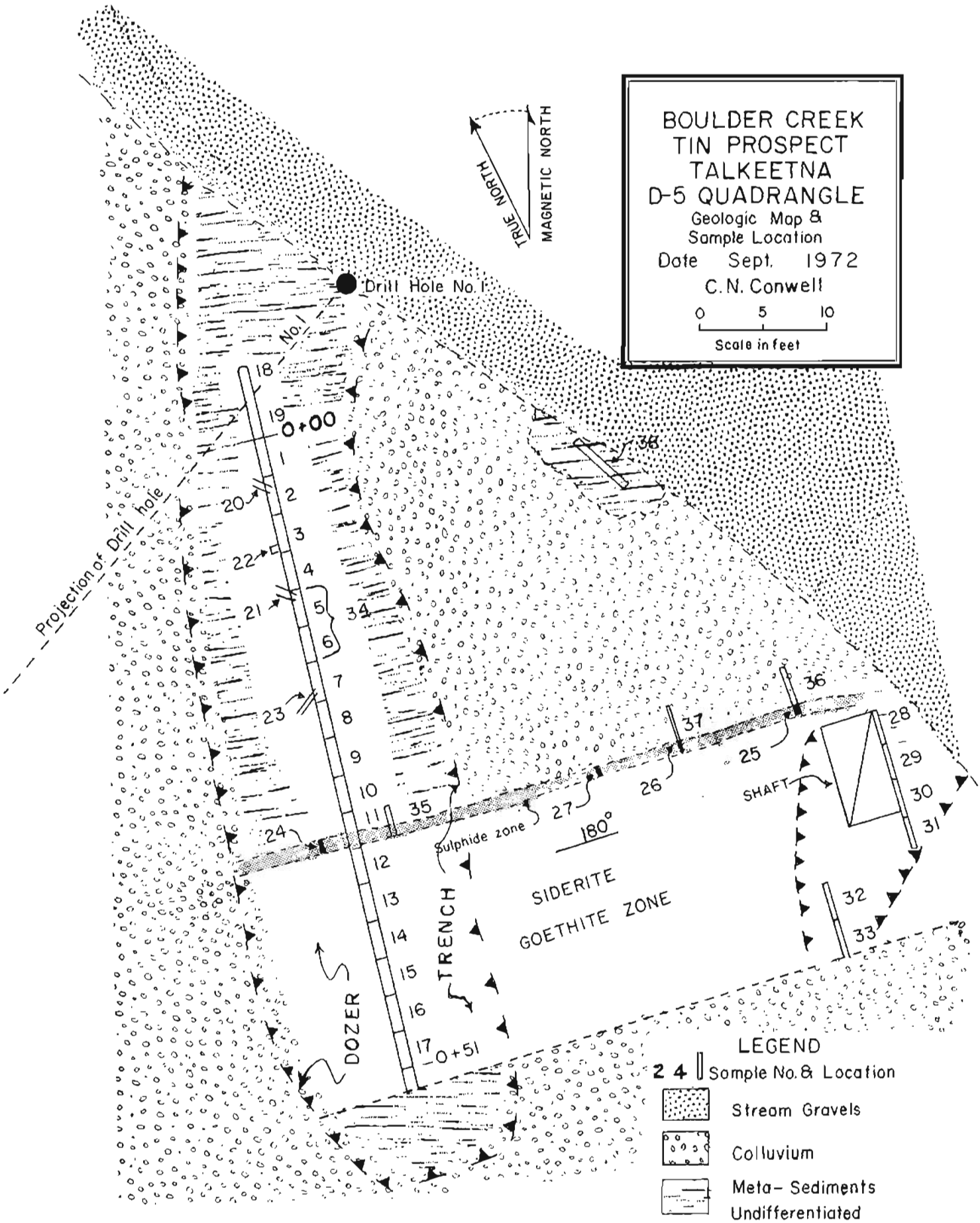

BOULDER CREEK
TIN PROSPECT
TALKEETNA
D-5 QUADRANGLE
Geologic Map &
Sample Location
Date Sept. 1972
C. N. Conwell
0 5 10
Scale in feet
TRUE NORTH
MAGNETIC NORTH
Drill Hole No. 1
Projection of Drill hole
0+00
0+51
TRENCH
DOZER
SHAFT
Sulphide zone
180°
SIDERITE
GOETHITE ZONE
LEGEND
24 Sample No. & Location
Stream Gravels
Colluvium
Meta- Sediments
Undifferentiated

Figure 4

existed in 1948 when Bruce Thomas first visited the property. Various investigators recognized the silver value but the tin was not recognized until September of 1969. At that time Namok Veach identified tin in a sample cut by Dave Purkey in the sulphide zone. (Knudson silver prospect).

Sample

by Dave Purkey

Ounces Per Ton		Weight in Percent			
Gold	Silver	Copper	Lead	Zinc	Tin
0.029	4.96	0.250	0.380	0.250	1.2

In the summer of 1970 Dave Purkey completed 56.2 feet of diamond core drilling north of the sulphide zone. The location and projection of the drill hole are shown in Figures 4 through 8.

Boulder Creek Tin Prospect

Figure 4 shows the location of samples, drill hole Number 1, and the approximate extent of rock outcrops. The analyses by the Division of Geological Survey for Drill Holes 1 and 2 and as shown on Figure 4 are appended to this report. It should be noted that most of the area is covered by colluvium or stream gravels. The tin values are found in the sulphide and the goethite zones but predominate in the undifferentiated metasediments. The metasediment in this area could be classified as a quartz schist.

The principal mineral is quartz, and the accessory minerals as determined by Namok Veach are muscovite, biotite, K-feldspar, plagioclase, amphibole, and cassiterite. There are trace amounts of pyrite and arsenopyrite.

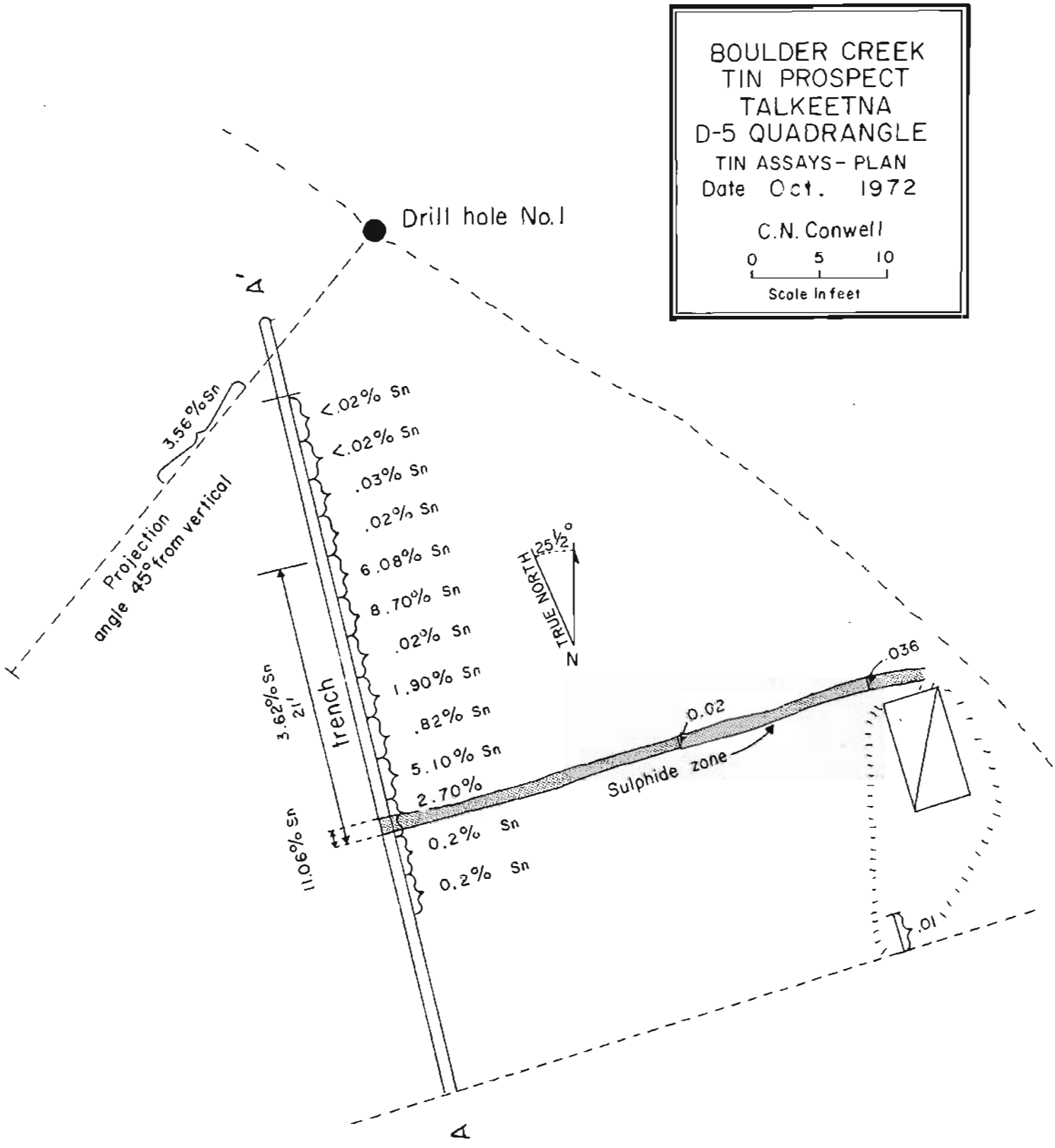

BOULDER CREEK
TIN PROSPECT
TALKEETNA
D-5 QUADRANGLE
TIN ASSAYS - PLAN
Date Oct. 1972
C.N. Conwell
0 5 10
Scale in feet
Drill hole No.1
A'
A
3.56% Sn
Projection
angle 45° from vertical
<.02% Sn
<.02% Sn
.03% Sn
.02% Sn
6.08% Sn
8.70% Sn
.02% Sn
1.90% Sn
.82% Sn
5.10% Sn
2.70%
3.62% Sn
21'
trench
11.06% Sn
0.2% Sn
0.2% Sn
TRUE NORTH (25½°)
N
.036
0.02
Sulphide zone
.01

Figure 5

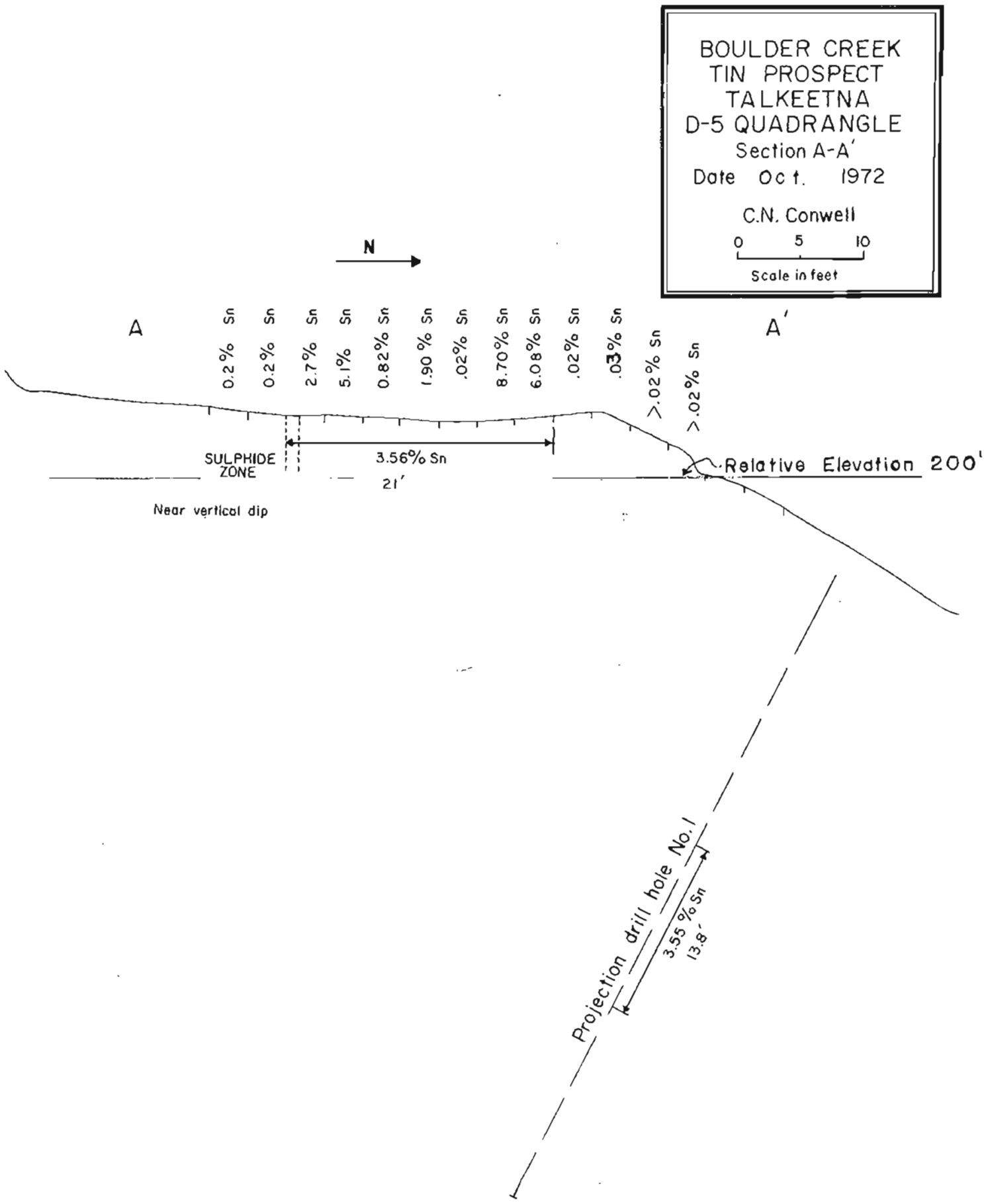

BOULDER CREEK
TIN PROSPECT
TALKEETNA
D-5 QUADRANGLE
Section A-A'
Date Oct. 1972
C.N. Conwell
0 5 10
Scale in feet
N
A
A'
0.2% Sn
0.2% Sn
2.7% Sn
5.1% Sn
0.82% Sn
1.90% Sn
.02% Sn
8.70% Sn
6.08% Sn
.02% Sn
.03% Sn
>.02% Sn
>.02% Sn
SULPHIDE ZONE
3.56% Sn
21'
Near vertical dip
Relative Elevation 200'
Projection drill hole No.1
3.55 % Sn
13.8'

Figure 6

The principal mineral in the sulphide zone is an arsenopyrite, with minor amounts of pyrite, galena, sphalerite, and chalcopyrite.

The principal minerals in the Goethite zone are quartz, goethite and siderite.

Figures 5 and 6 have been prepared to show the location of the high tin values. These two figures show assays along the trench and in the drill hole indicating tin in sufficient value (3.62% Sn in the trench and 3.56% in the drill hole) and sufficient width (21 and 13.8 feet) to have commercial value. Metals Week, 1-26-73, quote tin at $1.79 per pound on the New York market. Therefore a 3.5% tin ore would have a gross value of $125.30 per ton.

In Figure 4 the dip of the sulphide zone and the metasediments were purposely omitted. In Figure 6 the dip of sulphide zone is projected as nearly vertical. The surface exposure appears to have a dip of about 80° north. The core from drill hole 2 indicates the drill followed the dip of the bed. The hole was drilled at an angle of 77° in a S10°W direction. This would indicate an apparent dip of about 80° south. If drill hole 2 did follow the dip instead of crossing the structure, this might explain why no significant amount of tin was found in the drill hole.

The location of all samples is shown on Figure 4. Figure 5 shows the location of the samples in which the tin value is near or over 0.02% tin. All of these samples were channel samples taken in 3 feet sections or as indicated on the figure. The samples contained at least 2 pounds of rock per lineal foot. Samples 20 through 24 inclusive are selected

samples taken to identify the mineral cassiterite. Cassiterite was not identified in hand specimens in the field. The analyses of all samples are given in the appendix.

Figure 7 shows the location of silver values over 1 ounce per ton. Figure 8 shows copper values over 0.4%. These assays have been plotted because they could represent a valuable addition to tin values and are recoverable in a mining and milling operation.

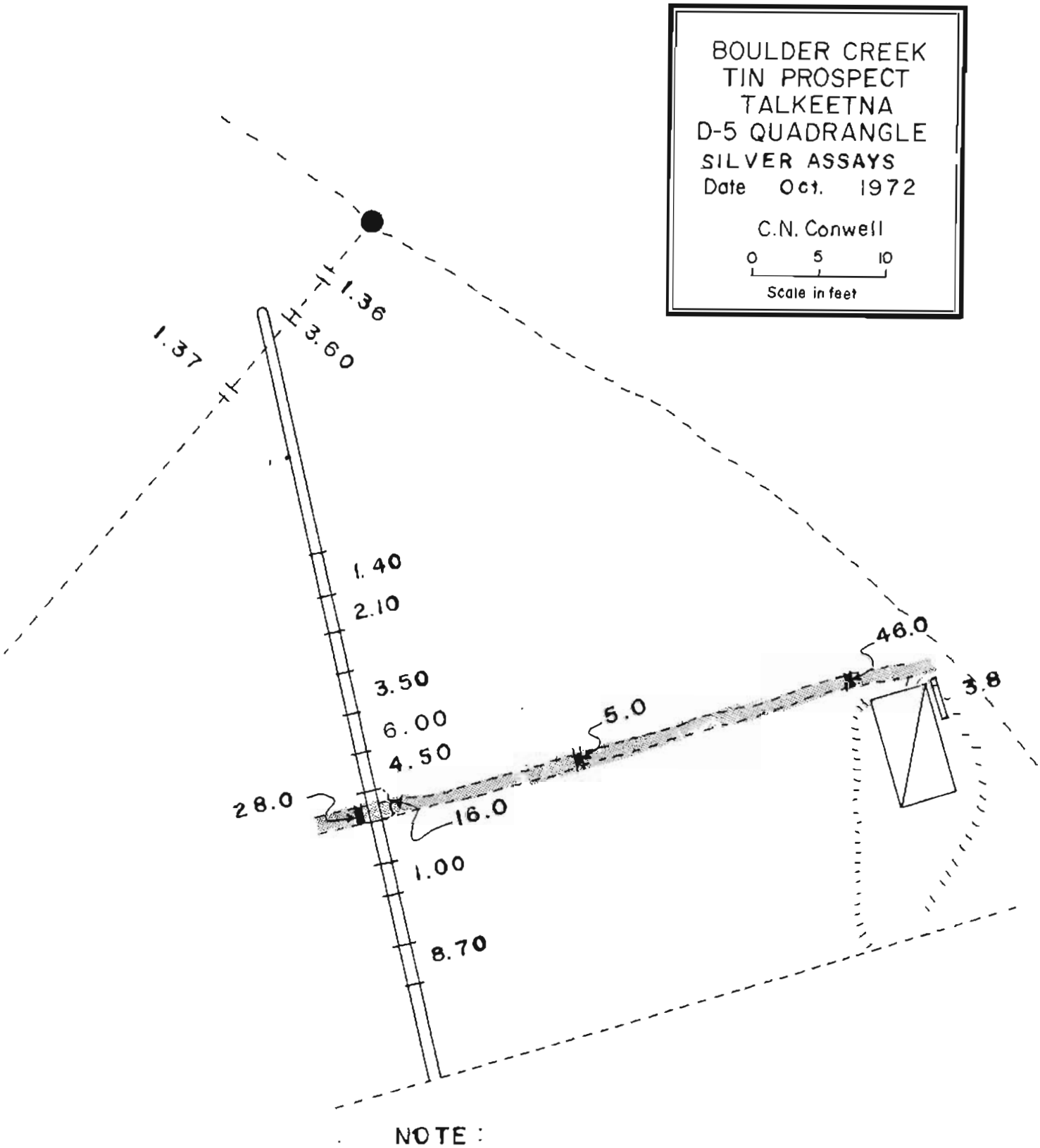
Mespelt Prospect

No cuts or shafts were available to sample the mineral vein. Thomas (1947) reported high silver assays from float of 29.22 to 124.73 ounces per ton. Saunders (1956) reported high silver values, 63.08 to 94.16 ounces per ton in float and a dump by an old shaft. Thomas found minor amounts of tin in 1959. The silver values are sufficiently high to warrant the attempt to locate the source. The presence of tin at this location may indicate another ore deposit in this area.

Hogback Prospect

Figure 2 shows the location of the Hogback Prospect in metasediments. The prospect is probably less than 300 feet from the granite. Mineralization was exposed by a dozer cut. The outcrop has been sampled and recorded by four investigators. Figure 9 correlates the silver and lead values. The complete analyses of samples collected by the writer are included in the appendix. The shaded area shows the correlation, but this might not be completely accurate. The interpretation is:

1. Three out of four investigators found a narrow fissure with sufficient value from which selective mining could produce a product acceptable for direct smelting.



NOTE :

SILVER IN OUNCES PER TON

ONLY SILVER ASSAYS OF 1 OR MORE OZ/PT PLOTTED

Figure 7

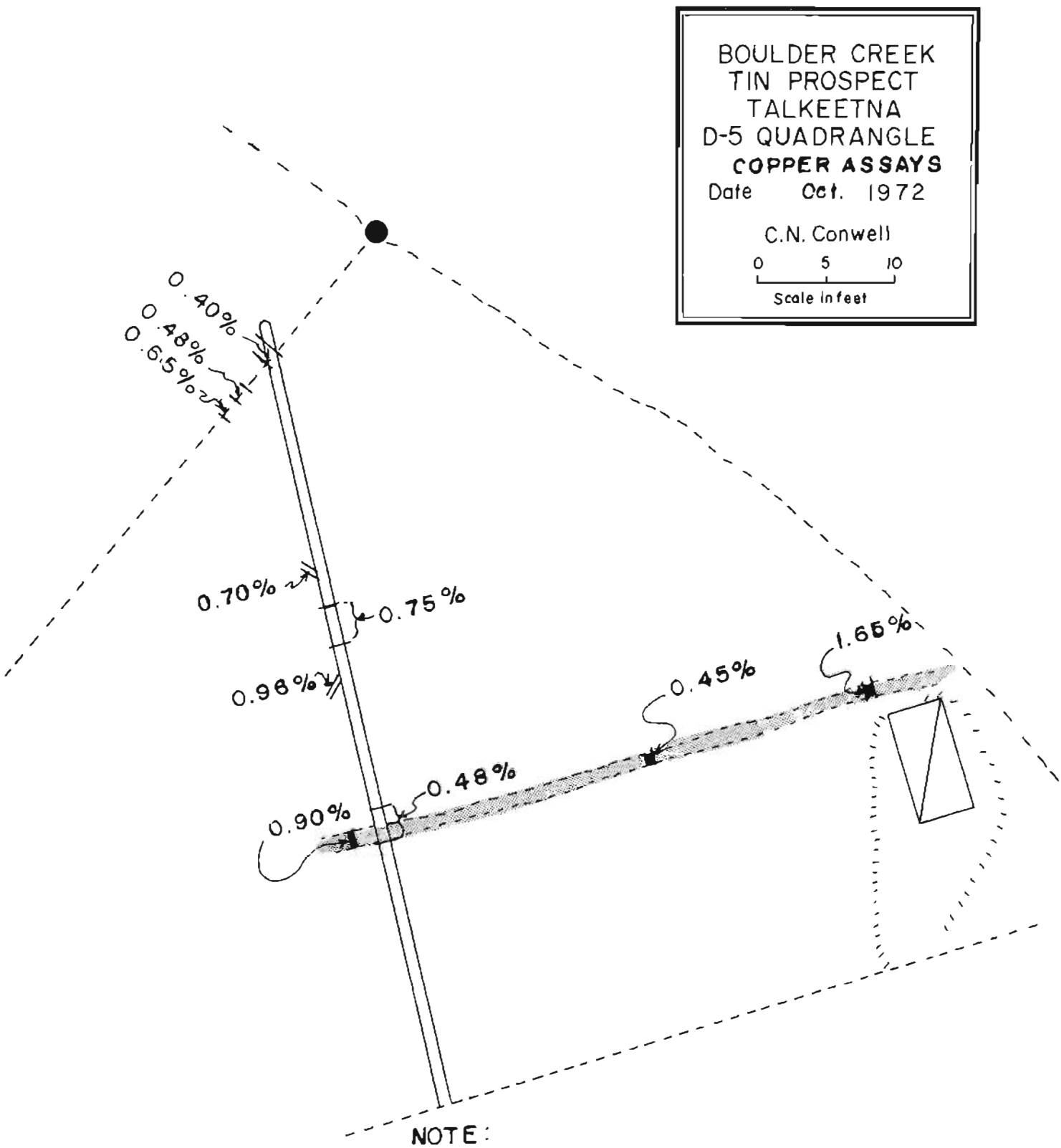

BOULDER CREEK
TIN PROSPECT
TALKEETNA
D-5 QUADRANGLE
COPPER ASSAYS
Date Oct. 1972
C.N. Conwell
0 5 10
Scale in feet
0.40%
0.48%
0.65%
0.70%
0.75%
0.98%
1.65%
0.45%
0.48%
0.90%
NOTE:
ONLY COPPER ASSAYS OF 0.4% COPPER OR MORE PLOTTED.

Figure 8

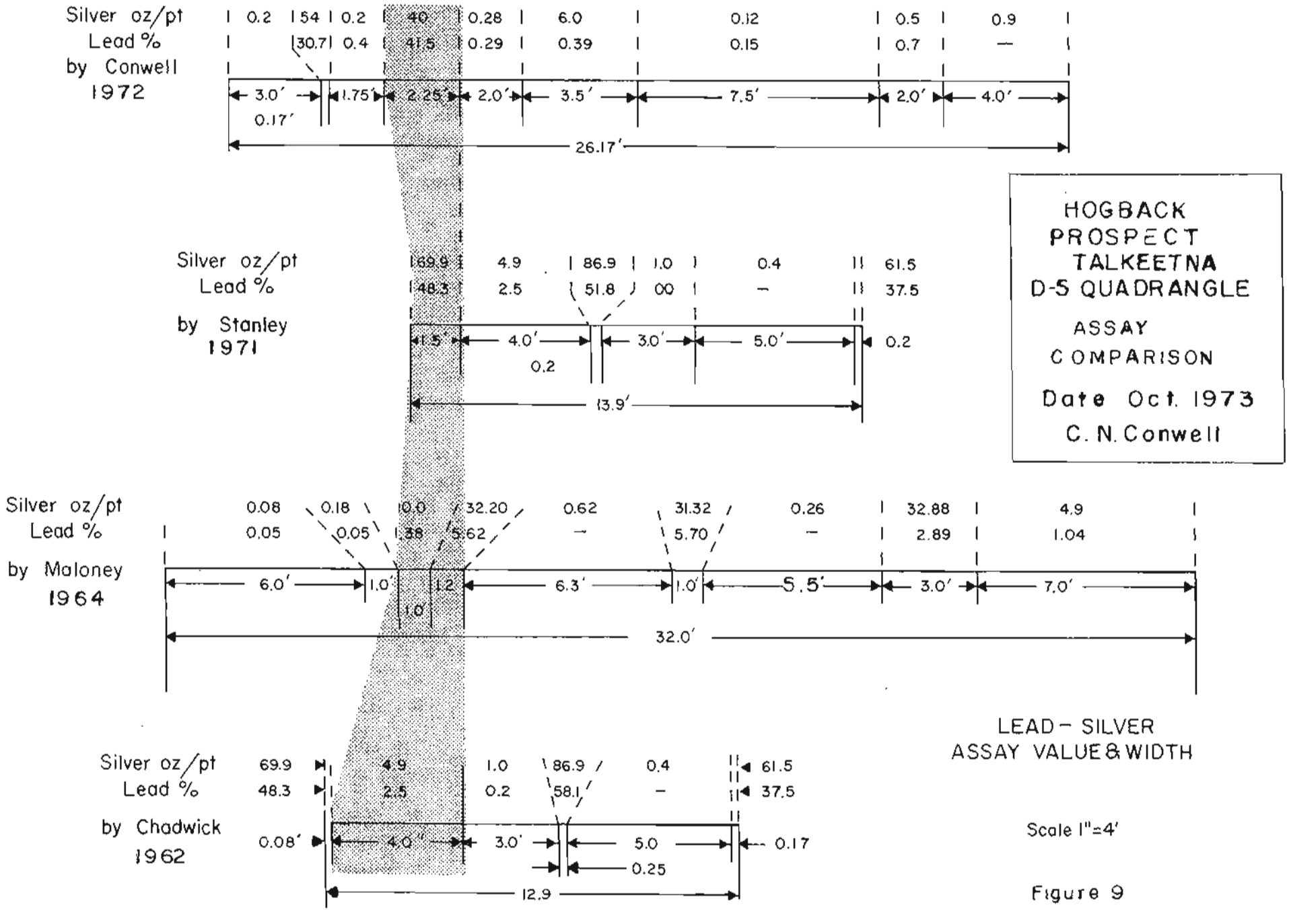

Silver oz/pt
Lead %
by Conwell
1972
0.2 54 0.2 40 0.28 6.0 0.12 0.5 0.9
30.71 0.4 41.5 0.29 0.39 0.15 0.7 —
3.0′ 0.17′ 1.75′ 2.25′ 2.0′ 3.5′ 7.5′ 2.0′ 4.0′
26.17′
Silver oz/pt
Lead %
by Stanley
1971
69.9 4.9 86.9 1.0 0.4 61.5
48.3 2.5 51.8 00 — 37.5
1.5′ 4.0′ 0.2 3.0′ 5.0′ 0.2
13.9′
Silver oz/pt
Lead %
by Maloney
1964
0.08 0.18 0.0 32.20 0.62 31.32 0.26 32.88 4.9
0.05 0.05 .38 5.62 — 5.70 — 2.89 1.04
6.0′ 1.0′ 1.0′ 1.2 6.3′ 1.0′ 5.5′ 3.0′ 7.0′
32.0′
Silver oz/pt
Lead %
by Chadwick
1962
69.9 4.9 1.0 86.9 0.4 61.5
48.3 2.5 0.2 58.1 — 37.5
0.08′ 4.0′ 3.0′ 5.0 0.17
0.25
12.9
HOGBACK
PROSPECT
TALKEETNA
D-5 QUADRANGLE
ASSAY
COMPARISON
Date Oct. 1973
C. N. Conwell
LEAD – SILVER
ASSAY VALUE & WIDTH
Scale 1"=4'

Figure 9

2. Three out of four investigators found sufficient value over a stoping width to provide a good mill feed.

3. All four investigators have reported sufficient value in a surface outcrop to justify additional exploration.

Samples by the writer indicate a grade of ore 4.17 feet wide has a gross value of $119.50 per ton.

24.25 oz/pt silver @ $2.03875	=	$ 49.44
24.16% lead @ 14.5¢ pound	=	$ 70.06
gross value per ton	=	$119.50

This would be an adequate value for an operation in a remote location.

If we assume a larger operation then a gross value for a 9.67 foot width would be $55.84 per ton.

12.5 oz/pt silver @ $2.03875	=	$ 25.48
10.47% lead @ 14.5¢	=	$ 30.36
gross value	=	$ 55.84

Similar calculations can be made from samples by the other investigators. It is significant that the values indicate that a drift following the fissure might produce sufficient metal to pay for the cost of the drift, The best way to evaluate this prospect is to drive a drift along the fissure, and then to sample the area adjacent to the drift with long hole percussion drilling.

OPERATIONS RESEARCH

Figure 10 illustrates stages a discovery must pass through before sufficient information is obtained to place the discovery in a producing status. Four phases exist between discovery and production. The first 3 phases each contain a decision making plateau. The Evaluation Flow dia-

EVALUATION FLOW DIAGRAM
Minor base metal deposit

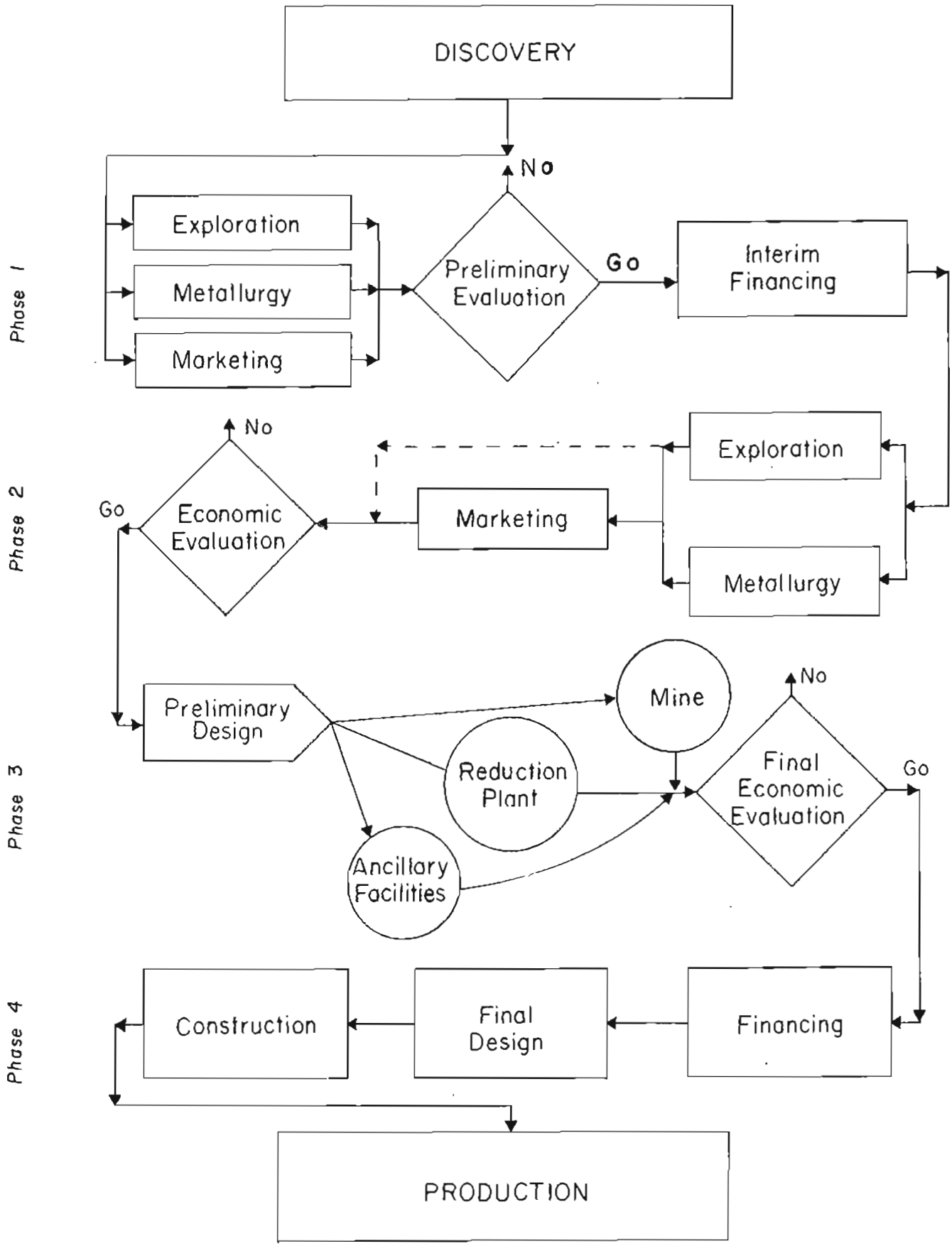


Figure 10

gram has been set up for a minor base metal such as tin to stress the necessity for metallurgy and marketing problems to be considered at the same time exploration is conducted. The lead-silver ore flow sheet would be similar except the metallurgical and marketing problems will probably not be as great.

Exploration in phase 1 consists of the preliminary geological studies that include sampling of outcrops, preliminary geochem. sampling, recognition of the host rock, a cursory study of the source and appraisal of the possible extent of mineralization.

Exploration in phase 2 includes the physical exploration, trenching, drilling, drifting, and sampling necessary to determine the size of the ore body. Exploration in phase 2 should also determine the physical characteristic of the rock and the type of mining that will be required in extracting the ore.

In phase 2, the theoretical science must give way to the more fundamental aspects of engineering. Basic information must be developed in detail to provide the criteria for the next decision making plateau. It must be recognized that exploration alone could provide the information to move to the second decision making plateau. This is shown by the dotted line. Assuming that exploration is proving an ore body, then metallurgical testing should proceed concurrent with exploration. The grade of a tin concentrate will affect the marketing position. Therefore marketing has been assigned a position after the exploration and metallurgy have been completed. Then the second decision can be reached. Assuming the second decision is "go", then a preliminary design will be required in phase 3 to move towards the Final Economic Evaluation.

In phase 3 the information developed by exploration in phase 2 should be sufficiently complete to establish an ore reserve. Metallurgy should be sufficient to select the recovery and product (concentrate or metal). Marketing will establish shipping routes and buyers. This information will move forward through preliminary design to the specialties of the mine, reduction plant and ancillary facilities. The result will be a feasibility report for the final economic evaluation. In summary, phase 3 will be the engineering study to determine the best method of mining, select the concentrator or reduction plant required, and estimate the ancillary facilities. Ancillary facilities will include supporting shops, housing in a remote area and the mode of transportation to the market.

This report covers exploration in phase 1. The metallurgy and marketing were examined in sufficient detail to determine that the ores are amenable to concentration and that there is a market. The reports of several geologists and mining engineers have been reviewed by the writer and considered in making a recommendation. The preliminary evaluation has been completed and the recommendation is "go". A budget should now be set up as indicated in phase 1 to move into phase 2.

RECOMMENDATIONS

Both the Boulder Creek Tin Prospect and the Hogback Lead-Silver Prospect warrant the expenditure necessary to prove the existence of an ore body. The program should include the following items:

1. 15,000 feet of diamond drilling on the Boulder Creek Tin Prospect.
2. A trench cut at least 4 feet into bedrock to provide a better exposure for obtaining geological information under the existing trench, and metallurgical samples.

3. Assuming exploration by drilling is encouraging, sink a 100 foot shaft, then drift at least 50 feet along the ore to obtain material for metallurgical tests.

4. A 500 foot drift on the Hogback fissure, with horizontal long hole percussion drill holes on 25 feet centers to sample the area adjacent to the drift on each side.

5. 200 feet of long hole percussion drilling (4-50 foot holes) through the pyrrhotite zone to sample for copper and the hanging wall or north side for tin.

6. Geological or geophysical exploration to locate the source of high grade silver-bearing float at the Mespelt prospect.

7. Four test pits to penetrate the sulphide zone and obtain bulk samples for a better determination of the silver and tin values.

ACKNOWLEDGEMENTS

Assistance and suggestions by colleagues in the Alaska Division of Geological and Geophysical survey are appreciated. The writer benefited from discussion of geology with T. Mowatt. G. Eakins and B. Britch assisted in editing the manuscript. N. Veach completed x-ray diffraction patterns to identify the minerals present. T. Smith reviewed the thin sections and confirmed the identification of transparent minerals. T. Trible and D. Stein made the chemical analyses. Charlotte Renaud assisted with the illustration.

REFERENCES CITED

Capps, S. R., 1927, The Toklat-Tonzana Region: U.S. Geol. Survey Bull. 792-C, p. 74-110

Chadwick, R., 1962, Report of Examination Purkeypile Prospect: Private report 20 p. with 17 page addenda

Maloney, R. P., and Thomas, B. I., 1965, Investigation of the Purkeypile Prospects, Kuskokwim River basin, Alaska: Open-file report U. S. Bureau of Mines, 12 p.

Reed, B. L., and Elliot, L. E., 1968, Results of Stream sediment sampling in parts of the southern Alaska Range: Open-file report 310, U. S. Geol. Survey, 9 p., 1 table, 9 pl.

Sainsbury, C. L., 1969, Tin resources of the world: U. S. Geol. Survey, Bull. 1301, 55 p.

Saunders, R. H., 1956, Supplementary report on the Mespelt Prospect: Open-file report, (P.E. Talkeetna, 75-2), Territory of Alaska, Department of Mines (now Alaska Division of Geological and Geophysical Surveys), 7 p., 1 pl.

Stanley, K. W., 1971, Report on Purkeypile property, Mt. McKinley district, Alaska. Private report 12 p., 16 pl.

Thomas, B. I., 1948, Reconnaissance Survey of Tonzana district, Alaska, MR Talkeetna, 75-1: Open-file report, Territory of Alaska, Department of Mines

DM-11
Rev. 10/67

Report No. 2556

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
C, College, Alaska 99701

Date of Report February 26, 1971

LABORATORY ANALYSIS REPORT

For Dave Purkey

Address 320 Farewell Ave. Fairbanks, Alaska 99701

Number of Samples 31

Date Sample Received 12/7/70

Work Done: (for Analyst see below)
A. X-ray fluorescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐
G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
39516	Hole #1 0-2'	0.01	0.03	0.014	0.007	0.044
39517	Hole #1 2-4'	Trace	0.03	0.018	0.017	0.10
39518	Hole #1 4-6'	0.01	0.03	0.015	0.008	0.031
39519	Hole #1 6-8.3'	0.01	0.33	0.018	0.010	0.10
39520	Hole #1 8.3-10.3'	0.01	1.36	0.048	0.64	0.70
39521	Hole #1 10.3-12.3'	0.02	0.09	0.011	0.062	0.25
39522	Hole #1 12.3-14.0'	0.02	0.21	0.025	0.086	0.45
39523	Hole #1 14.0-15.0'	0.03	3.60	0.400	1.04	0.80
39524	Hole #1 15.0-16.5'	Trace	0.21	0.049	0.082	0.40

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:

LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

DM-11
Rev. 10/67

Report No. 2556 con't

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
C. College, Alaska 99701

Date of Report February 26, 1971

LABORATORY ANALYSIS REPORT

For Dave Purkey Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐
G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Gold	Silver	E. Copper	Lead	Zinc
39525	Hole #1 16.5-18.2'	0.02	0.31	0.047	0.012	0.038
39526	Hole #1 18.2-20.2'	0.01	0.12	0.056	0.006	0.024
39527	Hole #1 20.2-22.2'	Trace	0.53	0.48	0.009	0.037
39528	Hole #1 22.2-24.2'	Trace	1.37	0.65	1.00	6.75
39529	Hole #1 24.2-25.9'	0.01	0.29	0.022	0.080	1.05
39530	Hole #1 25.9-27.6'	0.02	0.12	0.017	0.032	0.25
39531	Hole #1 27.6-29.6'	0.02	0.06	0.001	0.024	0.20
39532	Hole #1 29.6-31.6'	0.02	0.15	0.035	0.064	0.50
39533	Hole #1 31.6-32.6'	0.01	0.03	0.001	0.007	0.30
39534	Hole #1 32.6-34.0'	0.01	0.53	0.087	0.011	0.75

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

DM-11
Rev. 10/67

Report No. 2556 con't

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
C. College, Alaska 99701

Date of Report February 26, 1971

LABORATORY ANALYSIS REPORT

For Dave Purkey Address

Number of Samples Date Sample Received

Work Done: (for Analysi see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Gold	Silver	E. Copper	Lead	Zinc
39535	Hole #1 34.0-34.7'	0.02	0.03	0.006	0.007	0.10
39536	Hole #1 34.7-36.7'	0.02	0.07	0.007	0.022	0.024
39537	Hole #1 36.7-38.0'	0.01	0.29	0.017	0.19	1.15
39538	Hole #1 38-40'	0.01	0.06	0.001	0.007	0.034
39539	Hole #1 40-42'	0.02	0.06	0.003	0.003	0.018
39540	Hole #1 42-44.5'	0.02	0.02	0.010	0.002	0.007
39541	Hole #1 44.5-45.8'	0.01	0.01	0.006	0.001	0.002
39542	Hole #1 45.8-47.8'	0.02	0.02	0.006	0.002	0.004
39543	Hole #1 47.8-49.8'	0.01	0.02	0.008	0.003	0.006
39544	Hole #1 49.8-51.7'	0.01	0.02	0.007	0.001	0.006

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

DM-11
Rev. 10/67

Report No. 2556 con't

Date of Report February 26, 1971

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
P. O. C, College, Alaska 99701

LABORATORY ANALYSIS REPORT

For Dave Purkey Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray fluorescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐
G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Gold	Silver	E. Copper	Lead	Zinc
39545	Hole #1 51.7-53.7'	0.02	0.02	0.006	0.007	0.026
39546	Hole #1 53.7-56.2'	0.01	0.07	0.057	0.001	0.045

E. Trace of gold means less than 0.01 troy ounces per ton.

Accuracy of the atomic absorption analysis for gold and silver is + or - 10% of the reported value.

Accuracy of the atomic absorption analysis for copper, lead, and zinc is + or - 5% of the reported value.

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

DM-11
Rev. 10/67

Report No. 2556 con't

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report February 26, 1971

LABORATORY ANALYSIS REPORT

For Dave Purkey Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐
G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION
		A. Weight Per Cent
		Tin
39528		Trace (less than 0.05%)
39529		6.7
39530		12.9
39531		0.57
39532		0.24
39533		5.2
39534		0.19
39535		5.9
39536		1.9
39537		0.46
		A. Accuracy of the XRS analysis for tin is + or - 20% of the reported value.

Donald R. Stein
ANALYST & WORK DONE

A. Namok Cho
ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: Thomas C. Mowatt
LABORATORY SUPERVISOR

3J

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. 3006

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report December 1, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell Address Div. of Geological Survey - College

Number of Samples 33 Date Sample Received 11/27/72

Work Done: (for Analyst see below)
A. X-ray fluorescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
40976	74.5-76.5	Nil	0.070	0.0026	0.1095	0.0100
40977	76.5-78.5	Nil	0.090	0.0026	0.0180	0.0400
40978	78.5-80.5		0.023	0.0040	0.0040	0.0170
40979	80.5-82.5		0.024	0.0043	0.0045	0.0120
40980	82.5-83.2		0.015	0.0030	0.0020	0.0075
40981	83.2-85.0		0.020	0.0025	0.0022	0.0075
40982	85.0-86.9		0.037	0.0050	0.0075	0.0300
40983	86.9-89.0		0.022	0.0085	0.0015	0.0080
40984	89.0-91.0		0.019	0.0060	0.0023	0.0032
40085	91.0-92.5		0.012	0.0040	0.0015	0.0042
40986	92.5-94.5		0.012	0.0026	0.0020	0.0044
40987	94.5-96.5		0.012	0.0037	0.0017	0.0040
40988	96.5-98.8		0.019	0.0026	0.0020	0.0080
40989	98.8-100.8		0.015	0.0019	0.0016	0.0050
40990	100.8-102.0		0.019	0.0035	0.0044	0.0120
40991	102.0-104.0		0.015	0.0030	0.0027	0.0100

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. 3006

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report December 1, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION				
		E. Ounces Per Ton		E. Weight Per Cent		
		Gold	Silver	Copper	Lead	Zinc
40992	104.0-106.3		0.012	0.0027	0.0017	0.0066
40993	106.3-108.3		0.010	0.0049	0.0022	0.0050
40994	108.3-110.0		0.009	0.0025	0.0015	0.0040
40995	110.0-111.6		0.009	0.0050	0.0025	0.0030
40996	111.6-113.4		0.005	0.0020	0.0017	0.0032
40997	113.4-115.0		0.009	0.0040	0.0013	0.0040
40998	115.0-117.0		0.011	0.0047	0.0022	0.0050
40999	117.0-119.0		0.012	0.0037	0.0030	0.0057
41000	119.0-120.5	Nil	0.030	0.0025	0.0550	0.0570
41001	120.5-122.5	Nil	0.012	0.0030	0.0055	0.0100
41002	122.5-124.4	Nil	0.50	0.0125	0.0430	0.1000
41003	124.4-126.4	Nil	0.92	0.1110	0.1150	0.0170
41004	126.4-128.9	Nil	1.55	0.600	0.870	0.1500
41005	128.9-132.0	Nil	0.24	0.0095	0.0330	0.2550
41006	132.0-133.8	Nil	0.32	0.0130	0.0160	0.0080

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. 3006

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report December 1, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray fluorescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION					
		E. Gold	Silver	E. Copper	Lead	Zinc	
41007	133.8-135.2	Nil	0.030	0.0015	0.0050	0.0030	
41008	135.2-137.2	Nil	0.25	0.0095	0.0750	0.2500	

E Nil gold means less than 0.001 troy ounces per ton.

Accuracy of the atomic absorption analysis for gold, silver, copper, lead, and zinc is ±10% of the reported value.

Your sample(s) was tested for radioactivity; no significant radioactivity was detected.

E. Donald R. Stein Donald R. Stein
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR
Thomas C. Mowatt

34

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOOSE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. 3006 (supplement)

Date of Report December 12, 1972

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

LABORATORY ANALYSIS REPORT

For Cle Conwell Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION
		E. Parts Per Million
		Tin
41000	119.0-120.5	37
41001	120.5-122.5	55
41002	122.5-124.4	82
41003	124.4-126.4	65
41004	126.4-128.9	82
41005	128.9-132.0	95
41006	132.0-133.8	67
41007	133.8-135.2	57
41008	135.2-137.2	65

Donald R. Stein
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOOSE BUSINESS FORMS, INC.

DM-11
Rev. 10/67

Report No. SR-CC-1

Date of Report October 5, 1972

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

LABORATORY ANALYSIS REPORT

For Cleland Conwell

Address Div. of Geological Survey - College

Number of Samples

Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flouroescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION					
		E. Ounces Per Ton		E. Weight Per Cent			
		Gold	Silver	Copper	Lead	Zinc	Tin
	T 1	Nil	0.08	0.0360	0.0070	0.0440	<0.0200
	T 2	Nil	0.07	0.0310	0.0100	0.0460	<0.0200
	T 3	0.007	0.59	0.2400	0.3700	0.0900	0.0300
	T 4	Nil	0.24	0.0600	0.0780	0.1375	0.0200
	T 5	Nil	1.40	0.2200	0.4400	0.1200	6.08
	T 6	0.016	2.10	0.7500	0.6600	0.3700	8.70
	T 7	0.0035	0.52	0.0960	0.0850	0.1250	0.0200
	T 8	Nil	3.50	0.3100	0.2050	0.1150	1.90
	T 9	Nil	6.00	0.1950	0.3200	0.1350	0.82
	T 10	0.035	4.50	0.3400	0.4400	0.1250	5.10
	T 11	0.035	16.0	0.4800	1.87	0.1800	2.7
	T 12	Nil	0.73	0.0630	0.1600	0.2800	0.20
	T 13	Nil	1.00	0.1950	0.0525	0.1150	0.20
	T 14	Nil	0.40	0.0120	0.0150	0.0455	----
	T 15	Nil	8.70	0.1900	0.2750	0.3350	----

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. SR-CC-1 con't

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report October 5, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION					
		E. Ounces Per Ton		E. Weight Per Cent			
		Gold	Silver	Copper	Lead	Zinc	Tin
	T 16	Nil	0.09	0.0020	0.0055	0.0510	----
	T 17	Nil	0.10	0.0025	0.0080	0.0900	----
	T 18	0.035	0.09	0.0130	0.0475	0.1600	----
	T 19	Nil	Trace	0.0125	0.0080	0.0405	----
	T 20	Nil	0.10	0.0360	0.0050	0.0410	----
	T 21	Nil	0.17	0.7000	0.3800	0.2500	----
	T 22	Nil	0.11	0.2500	0.2000	0.0450	0.04
	T 23	Nil	2.20	0.9600	1.0000	0.5400	16.8
	T 24	0.035	28.0	0.9000	1.75	0.2000	11.06
	T 25	0.004	46.0	1.65	6.90	3.20	0.02
	T 26	Nil	0.52	0.1100	0.2350	0.3350	----
	T 27	Nil	5.00	0.4500	0.3000	0.1500	----
	T 28	0.035	3.80	0.1650	1.22	0.2500	----
	T 29	Nil	0.82	0.0280	0.0780	0.0500	<0.015
	T 30	Nil	0.58	0.0200	0.0820	0.0850	<0.015

con't

ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED:
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report October 5, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell Address

Number of Samples Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☑
F. Fire assay ☐ G. Microscopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION

E. Ounces Per Ton — E. Weight Per Cent

SAMPLE MARKED	Gold	Silver	Copper	Lead	Zinc	Tin
T 31	0.002	0.55	0.0110	0.0485	0.0800	----
T 32	0.002	0.15	0.0025	0.0100	0.0190	----
T 33	0.002	0.26	0.0048	0.0355	0.0280	0.1
T 34	Nil	1.60	0.1800	0.3000	0.1750	4.55
T 35	0.003	1.70	0.1750	0.3450	0.1200	3.92
T 36	Nil	0.20	0.0420	0.0375	0.0575	----
T 37	Nil	0.10	0.0230	0.0565	0.0800	----
T 38	Nil	0.08	0.0085	0.0410	0.1000	----

E. Trace of gold means less than 0.01 troy ounces per ton.
Nil gold means less than 0.001 troy ounces per ton.

Trace of silver means less than 0.1 troy ounces per ton.

Accuracy of the atomic absorption analysis for gold, silver, copper, lead, zinc, and tin is ±10% of the reported value.

Tin not detected - less than 0.010%.

Your sample(s) was tested for radioactivity; no significant radioactivity was detected.

E. Donald R. Stein Donald R. Stein
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: T C Mowatt
LABORATORY SUPERVISOR
Thomas C. Mowatt

38

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M

DM-11
Rev. 10/67

Report No. 2958

STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND GEOLOGY
Box C, College, Alaska 99701

Date of Report October 3, 1972

LABORATORY ANALYSIS REPORT

For Cleland Conwell

Address Div. of Geological Survey - College

Number of Samples 12

Date Sample Received

Work Done: (for Analyst see below)
A. X-ray flourescence quant. ☐ semi-quant. ☐
B. X-ray diffraction ☐
C. Spectrographic quant. ☐ semi-quant. ☐
D. Spectroscopic ☐
E. Atomic absorption quant. ☐ semi-quant. ☐
F. Fire assay ☐ G. Micrascopic examination ☐
H. Other (Specify) ☐
I. Ultraviolet light ☐

LABORATORY NUMBER	SAMPLE MARKED	ANALYSIS OR IDENTIFICATION					
		E. Ounces Per Ton		E. Weight Per Cent			D. Spec Exam
		Gold	Silver	Copper	Lead	Zinc	Tin
	HB 1	0.003	0.20	0.007	0.063	0.560	N.D.
	HB 2	0.009	50.0	0.020	30.7	0.035	N.D.
	HB 3	0.003	0.20	0.003	0.041	0.065	N.D.
	HB 4	0.007	40.0	1.55	41.5	6.50	0.01%
	HB 5	0.023	0.28	0.010	0.145	0.280	N.D.
	HB 6	0.008	6.00	0.012	0.290	2.20	N.D.
	HB 7	0.016	0.12	0.006	0.039	0.650	N.D.
	HB 8	Trace	0.050	0.007	0.017	0.220	N.D.
	HB 9	0.003	0.095	0.005	0.028	0.150	N.D.

NOTE: Fluorine present in #7

E. Trace of gold means less than 0.01 troy ounces per ton.
Nil gold means less than 0.001 troy ounces per ton.

Accuracy of the atomic absorption analysis for gold, silver, copper, lead, and zinc is ±10% of the reported value.

E.D. Donald R. Stein
ANALYST & WORK DONE

ANALYST & WORK DONE

ANALYST & WORK DONE

APPROVED: Thomas C. Mowatt
LABORATORY SUPERVISOR

NOTE: Samples discarded after 60 days and pulps after 6 months unless instructed otherwise.

MOORE BUSINESS FORMS, INC. M