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United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

OFFICE OF SURVEY AND REVIEW
Audit Operations, Region I
801 19th Street, N.W., Room 813
Washington, D.C. 20240

Memorandum

To: Director, Geological Survey

From: Regional Director

Subject: Review of Contract 2262
Docket No. OME-6689 (Silver)
Vitro Minerals Corporation
San Juan, San Miguel Counties, Colorado

As requested by the Chief, Office of Minerals Exploration, we made a cost review of Contract 2262. The results of our review are shown in the attached report.

Attachment

IC-DC-OME-16-71

UNITED STATES
DEPARTMENT OF THE INTERIOR

Office of Survey and Review

Audit Operations

Report of Review-Contract 2262
Docket No. OME-6689 (Silver)
Vitro Minerals Corporation
San Juan, San Miguel Counties, Colorado

Washington, D.C.
April 1971

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The units of work authorized and approved under Contract 2262 are summarized in Exhibit I. We believe that the claimed and accepted costs of $135,413 and the OME participation on a 75-percent basis of $101,559 were proper under the terms of the contract.

Regional Director

IC-DC-OME-16-71
Contract 2262-Vitro Minerals Corporation
Summary of Contract Terms, Accepted Costs and Unexpended Balances

	Authorized Amount	Costs Accepted Previous Audit 1-26-70	Costs Accepted Current Audit 4-1-71	Final Total Accepted Costs	Unexpended Balances
Drilling:					
Mobilization and demobilization to staging area	$ 2,450	$ 1,225	$ 1,225	$ 2,450	$ -0-
Mobilization and demobilization at initial drill sites	450	450	-0-	450	-0-
Moving between drill sites and setting up drill rigs	450	450	-0-	450	-0-
Diamond core and overburden drilling	61,585	49,481	14,056	63,537	(1,952)
Reaming and casing	4,400	385	-0-	385	4,015
Cementing and redrilling 1/	5,200	5,198	-0-	5,198	2
Casing lost in completed holes	2,400	-0-	32	32	2,368
Core boxes, cardboard	585	585	-0-	585	-0-
Cement, drill muds, and additives	2,000	402	-0-	402	1,598
Survey with in-hole instruments	1,650	1,029	132	1,161	489
Transportation:					
Helicopter	32,582	32,582	-0-	32,582	-0-
Saddle horses	2,418	2,418	-0-	2,418	-0-
Subsistence:					
Camp and board	5,439	5,439	-0-	5,439	-0-
Personal Services:					
Supervisor-3 months @ $1,000/month	3,000	3,000	-0-	3,000	-0-
Geologist-3 months @ $950/month	2,850	2,850	-0-	2,850	-0-
Field Assistant-3 months @ $600/month	1,800	1,800	-0-	1,800	-0-
Miscellaneous:					
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Rent of core storage space-3 months	150	150	-0-	150	-0-
Office expenses-3 months	225	225	-0-	225	-0-
Vehicle rental, 2 vehicles	180	180	-0-	180	-0-
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Subtotal-Actual Costs	$133,989	$108,634	$15,468	$124,102	$9,887

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Subtotal Fixed Costs	$ 11,311	$ 9,030	$ 2,281	11,311	-0-
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Report of Review-Contract 2262
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San Juan, San Miguel Counties, Colorado

Washington, D.C.
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ENGINEERING-GEOLOGICAL REPORT

OME 6689

ICE LAKE PROJECT

OCTOBER 1, 1970

ENGINEERING-GEOLOGIC REPORT-OCTOBER 1, 1970

Work Performed by Vitro Minerals Corporation, a subsidiary of Earth Resources Company, from August 1, 1970 to September 16, 1970

No. 2B Drill Hole

This drill hole was advanced, by NX reaming from 0 feet to 509 feet at which point the diameter of the core hole was enlarged to NX wireline size. This hole was advanced by NX wireline core drilling, from 509 feet to 588 feet where the hole was bottomed. Core recovery was very good throughout this interval. Eastman single shot surveys taken at approximately 200 foot intervals down the hole provide the following inclination and bearing readings:

Depth	Inclination from the Horizontal	Bearing
100'	-50°	N80E
300'	-51°	N78E
520'	-52°	N80E

This survey indicates that the maximum departure of 3° in inclination and 8° in bearing was encountered throughout the hole. The projected intersection of the Columbus-Grand View vein structure was between 500 feet to 530 feet, the departure of the hole would not have altered this projected intersection by more than 10 to 20 feet. The drill hole encountered a gouge zone in the interval between 509 feet to 511 feet. This gouge zone may represent the pinched out vein structure indicating the vein structure narrows appreciably at depth.

A geologic log of this hole is appended as a part of this report.

No. 6C Drill Hole

This drill hole was advanced by NX wireline core drilling, from 32 feet to 407 feet at which time Eastman single shot hole surveys were taken. The results of these surveys are as follows:

Depth	Inclination from the Horizontal	Bearing
100'	58°	N9E
200'	58°	N8E
300'	59°	N9E
400'	59°	N7E

This survey indicates that the maximum departure of 9° in inclination and 13° in bearing from the original collar setting of the hole. The 13° departure in bearing accounted most appreciably in the deeper core hole intersection of the Lucy vein structure. In this NX wireline core hole, the Lucy vein structure was intersected between 318 feet to 338.5 feet. Core recovery through the vein structure was approximately 76% which is the best recovery through any of the vein structures drilled to date. Assay results through this interval indicate that it was weakly mineralized. A geologic and assay log of this hole are appended as a part of this report.

EARTH RESOURCES COMPANY MEMO

October 23, 1970

TO: Bill Cole

FROM: George Ambariantz

RE: Final Engineering and Geologic Report for the Ice Lake Project, San Juan County, Colorado

Discussion

The original objective of the Ice Lake project was to test the various vein structures, in the top part of the San Juan Formation. The San Juan Formation had been the biggest producer in the Telluride-Sneffels Mining District, 8 to 10 miles to the north. It was surmised by the investigators of the property that there were in the Silverton series overlying the San Juan Formation strong vein structures at the surface with erratic Au-Ag mineralization which might have at depth bonanza ore shoots in the San Juan Formation. In the Telluride-Sneffels district, the structures horsetailed at the surface with no appreciable mineralization, therefore, it was felt that there was good potential in the San Juan Formation at depth in the project area.

In order to test the vein structures, a diamond drilling program was proposed with eight holes and a total footage of 7,100 feet. At this point, Vitro Minerals Corporation applied for an Office of Mineral Exploration precious metals loan to finance the diamond drilling exploration. The OME reviewed the geologic data, the exploration targets, the proposed budget required to test these targets and granted Vitro the loan in the amount of $108,750.00

Work commenced on the Ice Lake project in July, 1968 with Sprague and Henwood, the diamond drilling contractor and Aerial Applicators of Salt Lake City, the helicopter contractors. The helicopter company was commissioned due to the inaccessibility of the project area. The only access to the project area was by a pack trail which was impractical for the transportation of drilling rigs and other heavy equipment.

In briefly reviewing the work performed in the 1968 and 1969 field seasons, six holes were completed by Sprague and Henwood. The results of these holes were as follows:

DDH#1 - total depth ~~620~~ 605 ft. - vein structure 4 to 8 feet wide in the San Juan Formation. Poor core recovery, but sludge samples indicated weak mineralization.

DDH#3A - total depth 1,201 ft. - no vein intersected in the San Juan Formation. First conclusion was that the vein dipped away from the hole, but later work disproved that explanation.

DDH#4 - total depth 1,157 ft. - same as #3A

DDH#6A - total depth ~~710~~ 701 ft. - vein structure 20 to 25 feet true width in the Silverton series. The core had 8" @ 19 oz/ton Ag. However, poor core recovery through the vein structure was encountered.

DDH#7 - total depth 1,200 ft. - no vein was intersected in the San Juan Formation. The hole was poorly located at a fault intersection.

DDH#8 - total depth 7~~4~~3 ft. - vein structure was 16' wide in the San Juan Formation and poor core recovery encountered with weak mineralization.

In reviewing the 1970 field season, three diamond drill holes were completed by Sprague and Henwood. The Diamond mine was opened to examine the vein structure. The results of this work were:

DDH#2B - total depth 588 ft. - vein structure narrows to gouge zone with weak mineralization.

DDH#6B - total depth 301 ft. - vein structure, 20 to 30' true width in the Silverton series, with weak mineralization. Poor core recovery was encountered through the vein structure. Spectrographic analysis of sludge samples indicated high iron and manganese content indicating the presence of hematite and rhodochrosite.

DDH#6C - total depth 407 ft. - vein structure 12-15' true width in the Silverton series near the top of the San Juan Formation with weak mineralization. Core recovery through the vein structure was good due to changing of the drilling method. Drilling mud with the combination of a larger hole size were used successfully in gaining 76% core recovery through the vein structure.

Diamond mine - this mine was opened for examination. The findings indicated that the vein dips toward diamond drill holes No. 3A and 4. The vein structure was several inches to 6 feet wide. Vein width ranged from several inches to 4 feet wide in a gouge zone. The largest stope encountered averaged 3.5 feet wide, 75 feet long and approximately 50' high. A detailed sampling program was aborted due to poor air circulation in the mine. However, several grab samples were taken from the vein and the adjacent gouge zone. The vein material assayed 8.6 oz/ton Ag and the gouge zone adjacent to the vein assayed 5.00 oz/ton Ag.

Conclusions and Recommendations

The vein structures were intersected in the Silverton series and the San Juan Formation indicating weak mineralization. The diamond drill results have shown that the attitude of the Lucy-Last Hope vein is irregular and the vein width is reasonably persistant, but without economic values. The Diamond and the Columbus-Grand View veins were shown to pinch out with depth where drilled.

In analyzing this project in retrospect, the initial method of exploration in testing the favorability of the San Juan Formation meant deep diamond drilling on poorly defined targets. Instead of this long shot approach with deep drill holes, the structures in my opinion should have been tested with shallow holes first to determine their attitude, then, with deeper holes beneath the encouraging shallow holes to test them in the San Juan Formation. This method of approach would have better defined the targets. On the project, as the initial deep drill holes failed to give satisfactory results, shallower holes were then proposed this past season to better define the structures. The drilling method in the last two holes employed NX core with drilling mud, resulting in the best core recovery on the project. With the Lucy-Last Hope structure well defined and acceptable core recovery where there was previously no recovery, Vitro Minerals is faced with the fact that this information has cost over twice the original proposed budget of $167,000.

The exorbitant project costs were two fold, expense of access and the poor performance by the drilling contractor which was probably the single most contributor to the higher costs. The expense of access, chiefly the use of a helicopter to transport equipment was unavoidable. However, the poor performance by Sprague and Henwood may have been eliminated by having a more stringent drilling contract based on performance rather than time spent on the project.

In summarizing the results of the diamond drilling program, assay results indicated that the continuity of grade of mineralization in the Silverton series is too erratic to meet Vitro Minerals' objective for a mine and there is no positive encouragement for an improvement in the San Juan Formation. The cost to prove continuity of grade and thickness of the veins in the Ice Lake Mining District in light of the past performance with its exorbitant cost is the prohibiting factor for further exploration in the area by Vitro Minerals Corporation. Therefore, the writer recommends that Vitro Minerals Corporation terminate its exploration in the Ice Lake area. An alternative plan could be to interest another company with a partial interest for a cash commitment. In this way, the geologic knowledge gained and the operating techniques employed could be put to good use.

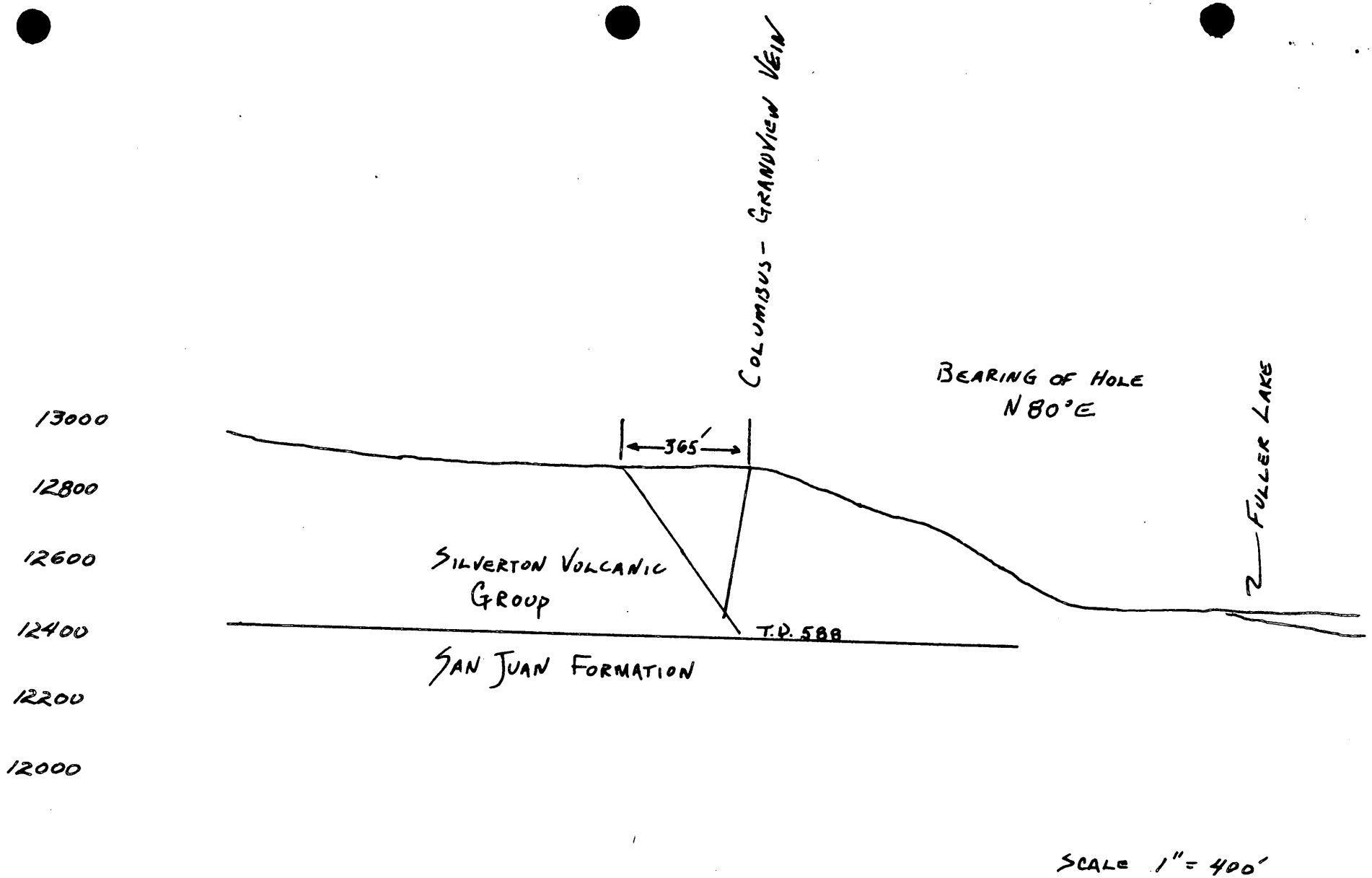
GA/nm

Costs

ITEM	PLANNED	ACTUAL	DIFFERENCE
Salaries (Geological)	4,000	4,275	275
Labor, Camp, Assays	7,130	8,258	1,128
Other G & A	0	1,678	1,678
Consulting	0	100	100
Drilling	21,133	24,659	3,526
Helicopter	7,250	13,834	6,584
Packer, Moving Core	4,604	4,804	200
Core and Warehouse Storage	0	492	492
	44,117	58,099	13,982

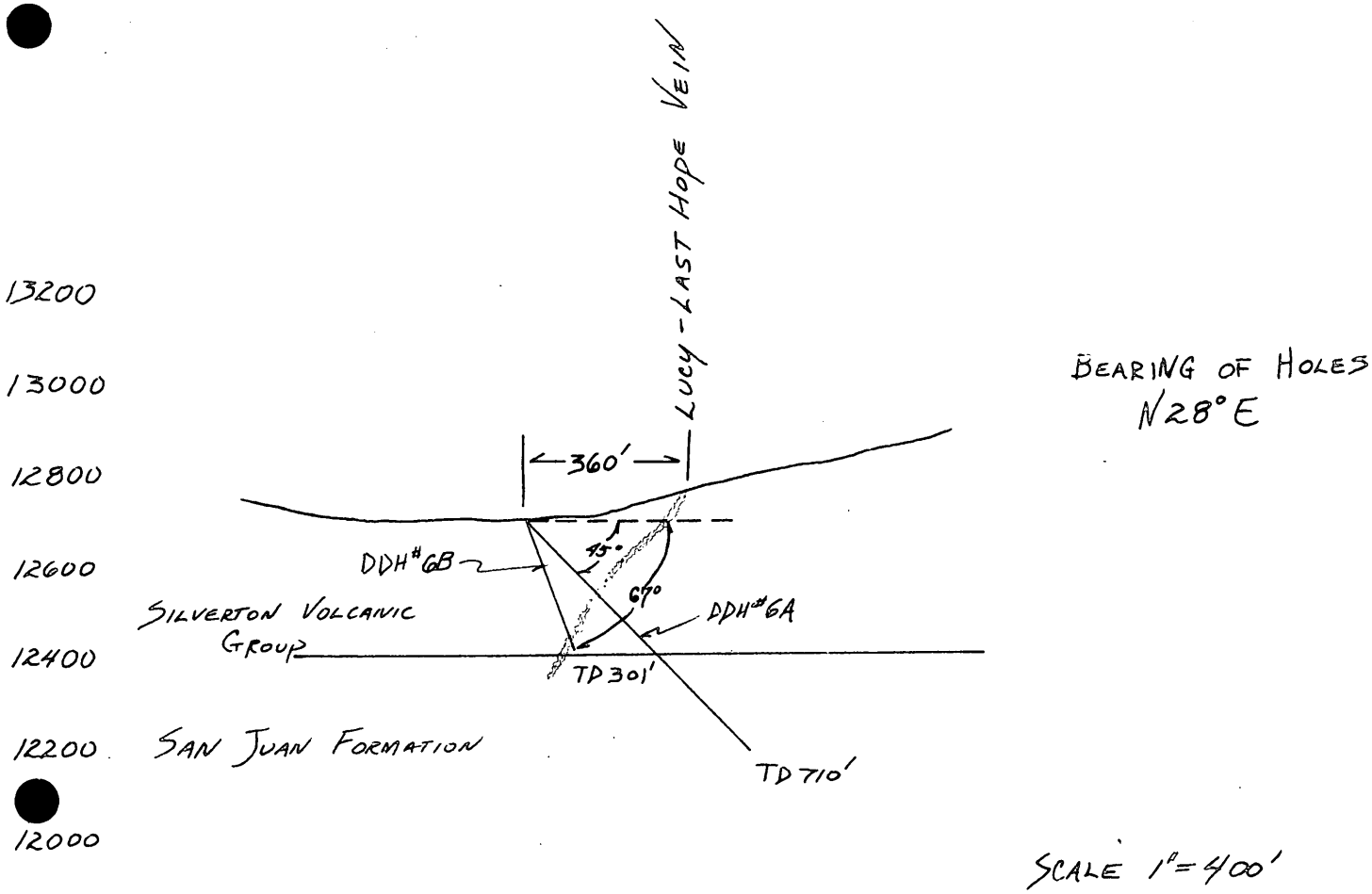
The direct drilling cost was $\frac{\$24,659}{1,296 \text{ ft.}}$ = $19.03 per ft.

The actual costs exceeded plan because in order to obtain satisfactory drilling results, it was necessary to bing in NX drilling equipment and circulation materials. This overage is reflected principally in the helicopter costs and the additional reaming and standby time. The helicopter costs were underestimated not only because of the additional equipment needed but the underestimation of the amount of time needed to finally clear the site at the end of the project.

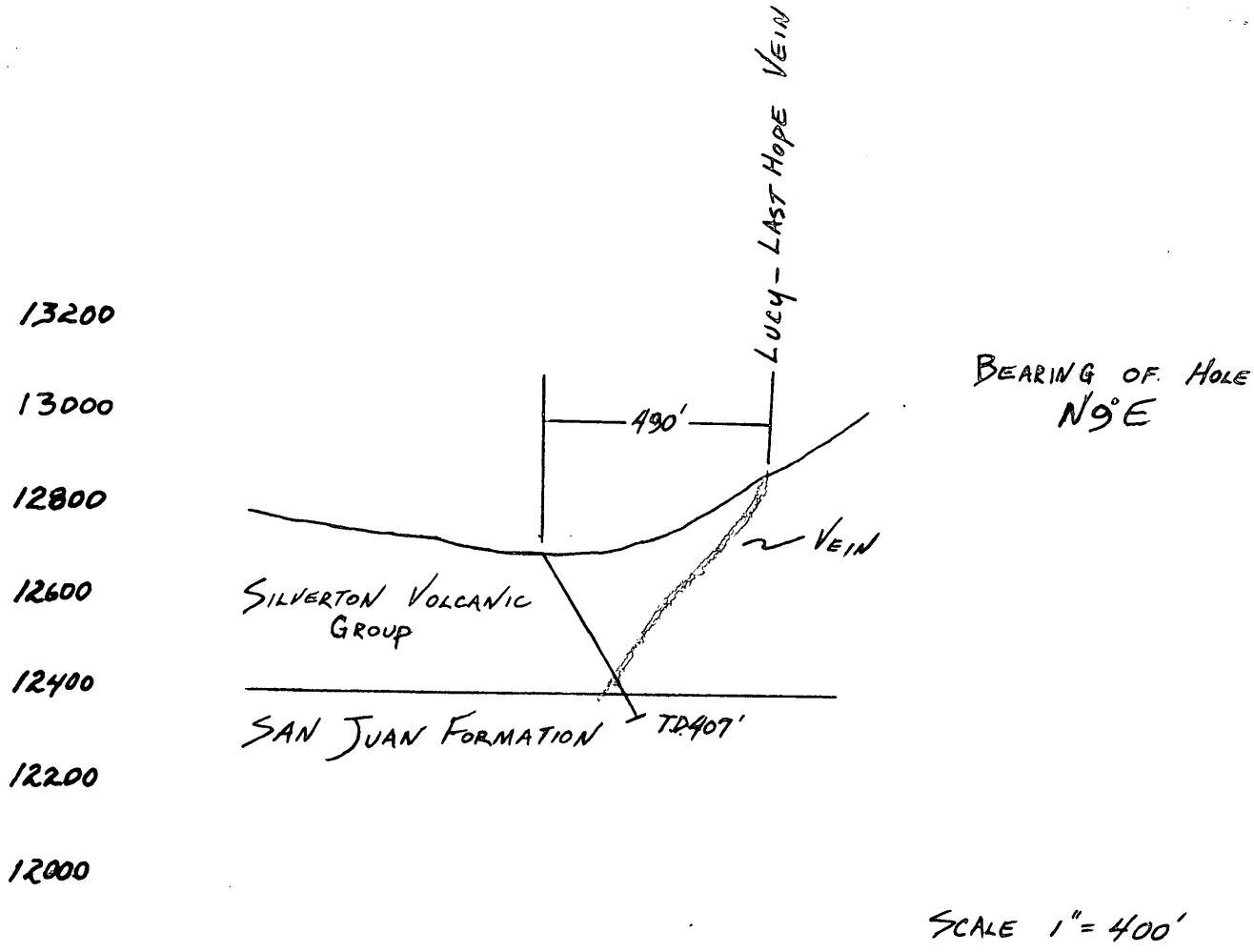


DIAMOND DRILL HOLE NO. 2B

G.P.A.



DIAMOND DRILL HOLE NO. 6B



DIAMOND DRILL HOLE No. 6C

ENGINEERING-GEOLOGICAL REPORT

OME-6689

ICE LAKE PROJECT

November 1, 1969

ENGINEERING-GEOLOGIC REPORT-NOVEMBER 1, 1969

Work Performed by Vitro Minerals Corporation, a division of Earth Resources Company, from August 1, 1969 to October 27, 1969

No. 3A Drill Hole

This drill hole was advanced, by Bx wireline core drilling, from 917 feet to 1034.5 feet at which point the hole diameter was reduced to Ax wireline size and the hole was bottomed at a depth of 1201 feet. Core recovery was very good throughout these intervals. Eastman single shot surveys taken at approximate 100 foot intervals down the hole provides the following inclination and bearing readings:

Depth	Inclination from the horizontal	Bearing
100'	-58°	N86°E
200'	-59°	N88°E
300'	-60°	N86°E
380'	-60°	N86°E
500'	-61°	N85°E
550'	-62.5°	N84°E
620'	-63°	N88°E
720'	-64°	S87°E
820'	-65.5°	S85°E
920'	-65°	N89°E
1020'	-65.5°	N89°E

This survey indicates that the maximum departure of 5.5° in inclination and 12°30' in bearing from the original collar setting of the hole occured at a depth of 820 feet. Beyond that point the hole began to swing back toward its original course. In as much as the general direction of deviation was to the right (toward the vein) this deflection is not considered important in evaluating the merits of the drill hole. The drill hole did not intersect the vein and no significant mineralization was encountered during this field seasons drilling. A cross section of the hole is depicted in figure 1 and a surface trace of its course is shown in the accompanying map. It is evident that the Diamond vein, the prime target of this drill hole, dips to the northeast rather than to the southwest as originally postulated in our exploration proposal.

A geologic log of this hole is appended as a part of this report.

Figure 2 of contract indicates that the diamond vein must dip either northwest or southeast.
WEL

No. 4 Drill Hole

This drill hole was advanced by Bx wireline core drilling from 681 feet to 703 feet at which time Eastman single shot hole surveys were taken. The results of these surveys are as follows:

Depth	Inclination from the horizontal	Bearing
100'	-50°	S53°E
200'	-50.5°	S52°E
300'	-51°	S49°E
400'	-52°	S51°E
425'	-51°	S50°E
440'	-55°	S51°E
700'	-71°	S53°E

This survey data indicates that the hole plunges steeply below the 425 foot depth. A decision was therefore made to place a 1°30' whipstock between the 400 foot and 425 foot depths. A packer was installed and cemented in the hole and a 10 foot 1°30' whipstock was precisely placed, using Eastman instruments, at a depth of 406 feet. A concave diamond plug bit mounted on a flexible shaft was used to "drill off" the wedge and Bx wireline core drilling was resumed at a depth of 406 feet. The hole was then advanced by Bx wireline size to a total depth of 1,157 feet. Hole surveys taken at 100 foot intervals with a Tro Pari instrument indicate that departures from the original collar settings did not exceed 2° in inclination or 5° in bearing. No significant metal mineralization was encountered in this hole and although the Diamond vein, the prime target of the hole, was not intersected drilling was terminated at a depth of 1,157 feet. This information confirms the determination made on No. 3A drill hole in that the Diamond vein must dip to the Northeast rather than the Southwest as originally thought. ?? see p. 1

One disclosure of note that was gained from the necessity to whipstock this hole was that the hornblends dellinite dike that was penetrated at a depth of 524 feet in last years drilling was not cut by the reoriented hole. This would indicate that the dike must top out at a depth of approximately 400 feet below the ground surface.

The geologic log of this hole is appended as part of this report. The cross section of the hole is depicted in figure 2 and the surface trace is illustrated on the accompanying map.

No. 6A Drill hole

Originally it was planned to drill No. 6 hole from the same collar location and with the same machine that drilled No. 4 hole. No. 7 hole, however, completed prior to No. 4 and it was decided to use the No. 7 rig to drill 6 with. Permission was granted by the OME to relocate the collar of No. 6 hole provided the target area remained the same. Therefore No. 6A drill hole was located 105 feet S 48°E from No. 4 hole. The bearing of the hole was established at N 28°E and the inclination was set at -50° from the horizontal.

Drilling on No. 6A hole began on September 6, 1969. The hole was drilled and cased Nx size to 12 feet and from there it was advanced by Bx wireline core drilling to 701 feet where it was terminated. Down the hole surveys were run using a Tro Pari instrument giving the following results:

Depth	Inclination from the horizontal	Bearing
200'	-47°	N28°E
400'	-46°	N29°E
500'	-46°	N31°E
600'	-45°	N29°E
700'	-45°	N30°E

This survey indicates that the hole flattened approximately 5° from the original collar setting and although a survey was not taken above 200 feet it is believed that the deflection took place very near the surface during the setting of the Nx casing. As far as the bearing is concerned the hole followed a very good course and deflected only 3° from the original setting.

Of the 6 holes completed to date on the Ice Lake project, this hole has been the most encouraging. A quartz vein was intercepted at a depth of 197 feet which carried through for a distance of 25 feet to 222 feet. If, as is illustrated in figure 3, the vein dips down to this interception from its outcropping at the Lucy adit then the angle of dip in the vein is approximately 45°. Therefore, the drill hole intersection of the vein represents its true width. This width of 25 feet would be in keeping with the vein's width at its surface exposure in the notch near the contact between the Potosie and Silverton volcanic flows. A 2 foot increment of this zone between 206 and 208 feet assayed 19.6 oz/ton Ag, 0.25 oz/ton Au, 6.29% Zn, 4.22% Pb, and 0.30% Cu. A complete listing of the assay data for this hole is included with the drill hole log appended to this report. Figure 3 illustrates the cross section of this drill hole and the surface trace of the hole's course is shown on the accompanying map.

No. 7 Drill Hole

Drilling commenced at the No. 7 drill site on July 10, 1969. The hole was drilled and cased Nx size to 10 feet and from there it was advanced by Bx wireline core drilling to a total depth of 1200 feet. The hole was surveyed by the Eastman single shot method with the following results:

Depth	Inclination from the horizontal	Bearing
100'	-74°30'	N84°E
200'	-75°	N84°E
300'	-75°	N85°E
400'	-75°	N85°E
500'	-76°30'	N84°E
600'	-75°30'	N85°E
700'	-76°	N86°E
800'	-76°30'	N86°E
880'	-76°	N86°E
980'	-76°	N87°E

One survey was made at the bottom of the hole using the Tro Pari instrument indicating that at that point the drill was following a course of N86°E at an inclination of -77°. These surveys indicate that maximum departures of 3°15' in bearing and 1°30' in inclination were encountered.

Geologically the hole was significant in that it intersected 3 feet of quartz vein at a depth of 367 feet. It is probable that this is the Lucy-Last Hope vein as no other vein material was cut throughout the remainder of the drill hole. The true thickness of the vein at this point is approximately 2½ feet and the vein is dipping at about -50° from the horizontal. This dip determination supports the dip finding on No. 6A hole indicating that the vein flattens along strike to the southeast.

A complete geologic log of this hole is attached to this report and the cross section is depicted in figure 4.

Total Costs - and Costs Per Foot

The total cost of the 1969 field season totals $122,604.07. This is broken down as follows:

Payroll--Vitro personnel	$ 11,742.15
Travel expenses, Vitro	$ 1,813.30
Drilling, Helicopter, and Camp	$108,637.71
Sampling	$ 410.91
Total	$122,604.07

The cost per foot for this season's drilling is arrived at by dividing the total cost by the total footage drilled:

$$\frac{\$122,604.07}{3,616 \text{ feet}} = \$33.90 \text{ per foot}$$

RECOMMENDATIONS FOR THE 1970 FIELD SEASON

General Procedure of Operations

In order to reduce the operating costs as well as the factor of risk to life and limb it is proposed to limit the use of helicopter transportation to freighting in diesel fuel and gasoline at the beginning of the season and moving out of equipment at the shutdown of the campaign. This would necessitate the use of mule trains for supplying the camp and horses for transportaion of personnel, however, these costs would be considerably lower than the same services when supplied by helicopter. This form of transportation is considered plausible for the next season's operations only because the distance between the camp site and the most distant drill will be much shorter than during the 1969 season. Helicopter transportation to and from the drill rigs for the crews will not be requisite, and verbal agreement to this mode of operations has been made with the drilling contractor.

We have also determined that only two drilling machines will be required to complete the project. We plan on completing this project with 2,000 feet of Bx wireline core drilling. Actual drilling experience gained from the 1969 season indicates that this amount of drilling can easily be accomplished with two rigs working one shift per day between July 1 and September 1. The usual work periods of ten days on and four days off will be resumed. This will, therefore, amount to 46 working shifts per rig or a total of 92 rig-shifts to complete the work. In as much as 20 gallons of diesel fuel are required per rig per shift the total fuel requirement will be 1840 gallons or approximately 34 barrels. In addition to this 4 tons of coal will be needed to heat the camp and 4 cylenders of propane will be needed for range fuel. Helicopter costs for this freighting will be around $1,000.00. Any freighting requirements beyond this can be readily handled with pack animals and the helicopter can, at this point, be dispensed with until the demobilization period at the termination of the campaign. This is visualized as taking place in early September, 1970.

Accommodations

The bunkhouse which was built during June, 1969 was rendered uninhabitable during a windstorm in October, 1969. Therefore a new building will have to be constructed. This building need only be large enough to accomodate ten men and it is figured that sufficient building materials can be salvaged from the old structure to build it. Labor requirements should not exceed 160 man hours at a total cost of $800.00.

Contract Drilling

At this time we are planning to continue with the same drilling company (Sprague and Henwood) for the rest of the contract drilling. Roughly 2,000 feet of Bx wireline drilling is planned. Five hundred fifty feet of this will be utilized on Holes 6B and 6C which will be drilled from the same collar location as No. 6 Hole. These holes will test the Lucy vein down dip from the mineralization found in No. 6 hole. A cross section of these holes is given in figure 5. No. 2B drill hole will be put down to test the Columbus vein and although the target area of this hole is the same as the old No. 2 hole the collar location of this hole has been moved to facilitate a more normal intersection of the vein. This relocation of the collar also reduces the total postulated depth from 1,050 feet to 700 feet. The cross sections of this hole is illustrated in figure 6 and the collar location is shown on the accompanying map. The remaining 750 feet of drilling will be programmed during the field season and will be contingent upon the drilling results of 6B, 6C, and 2B. If we intersect good ore grade mineralization over a significant width in No. 2B hole, we may wish to offset that hole. The location and orientation of this drilling will of course not be done without the approval of the OME.

Respectfully submitted,

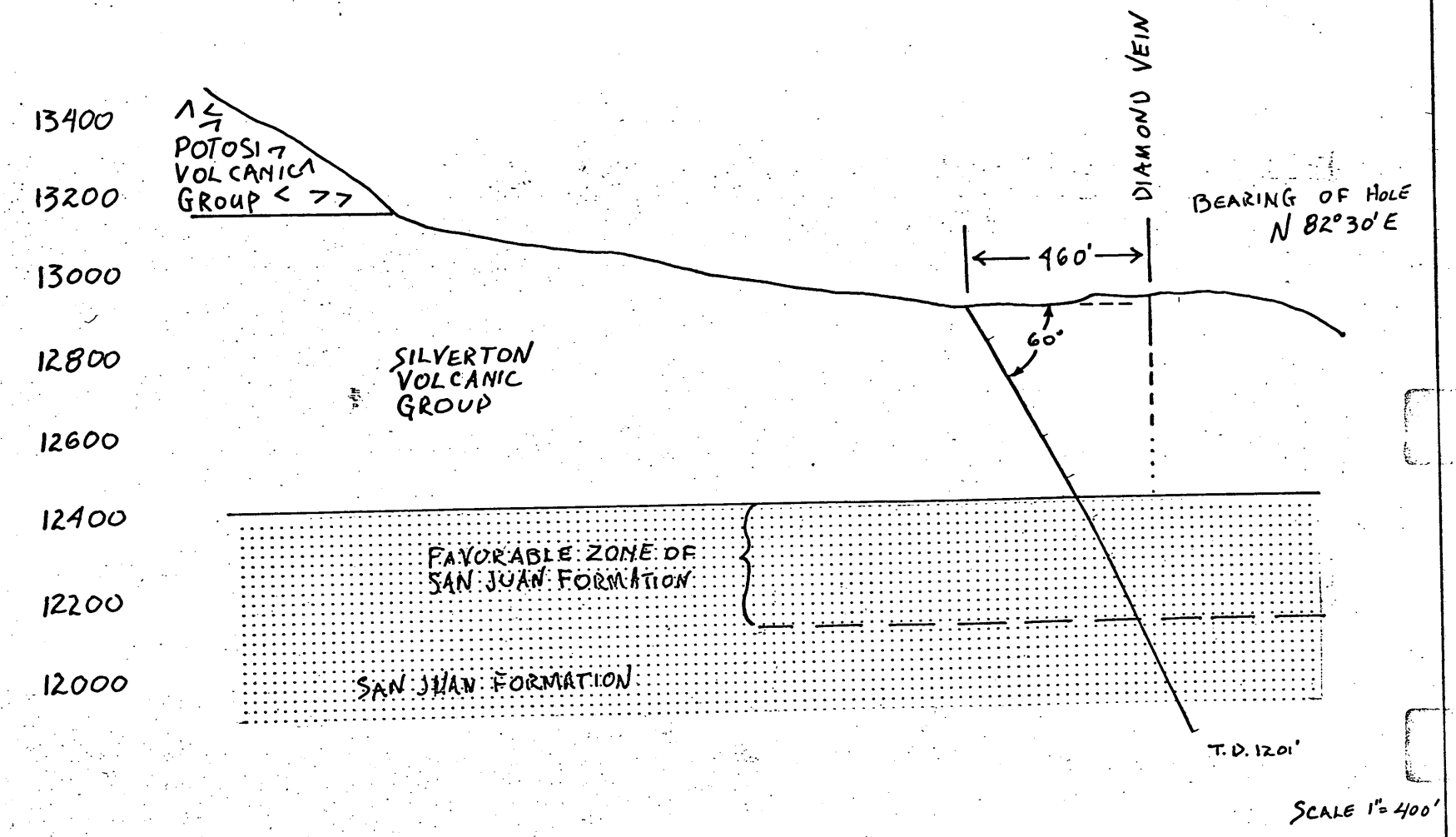
VITRO MINERALS CORPORATION

Original Signed By

THOMAS I. SHARPS

Thomas I. Sharps, Senior Geologist

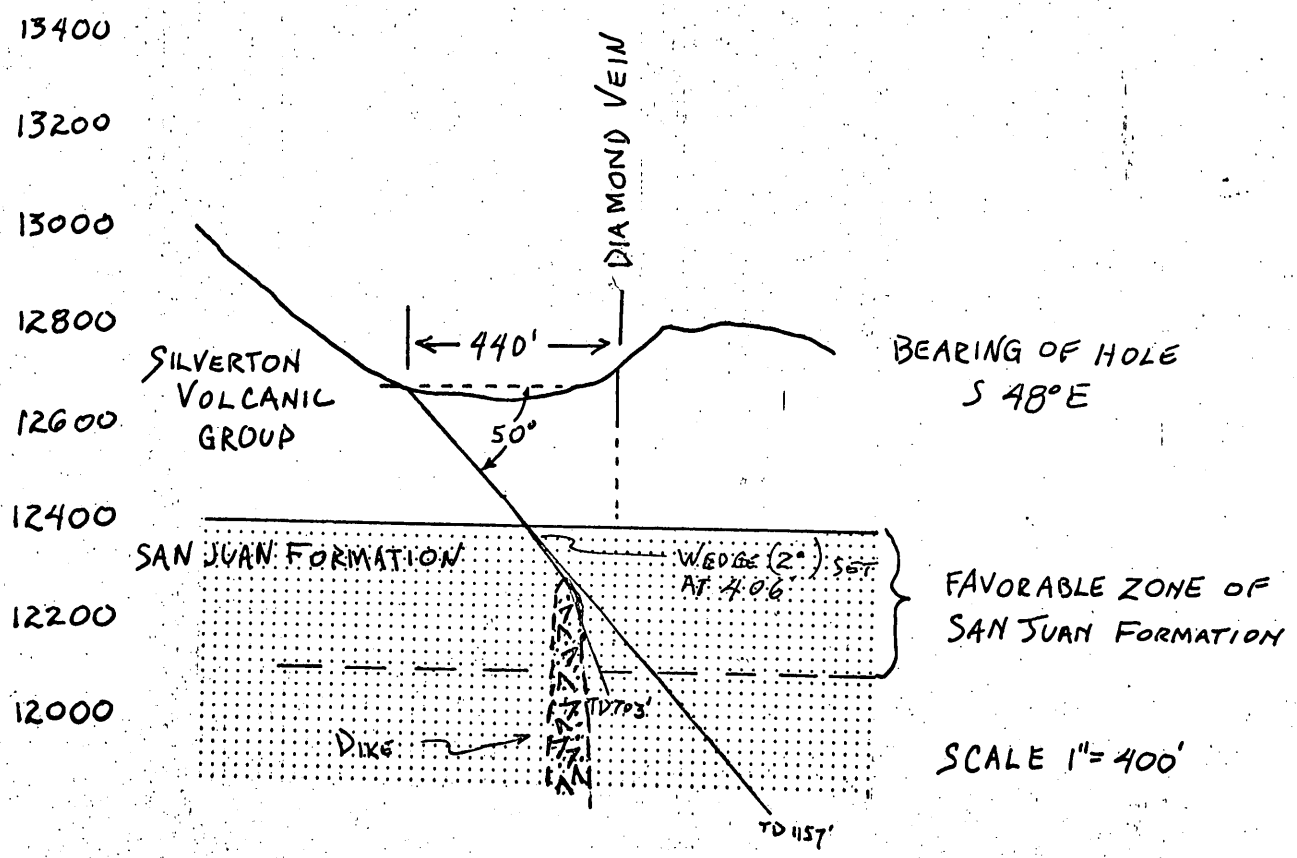
TIS:gr
Attachments



DIAMOND DRILL HOLE NO. 3A
As of Nov. 1, 1969

Figure 1

GPA

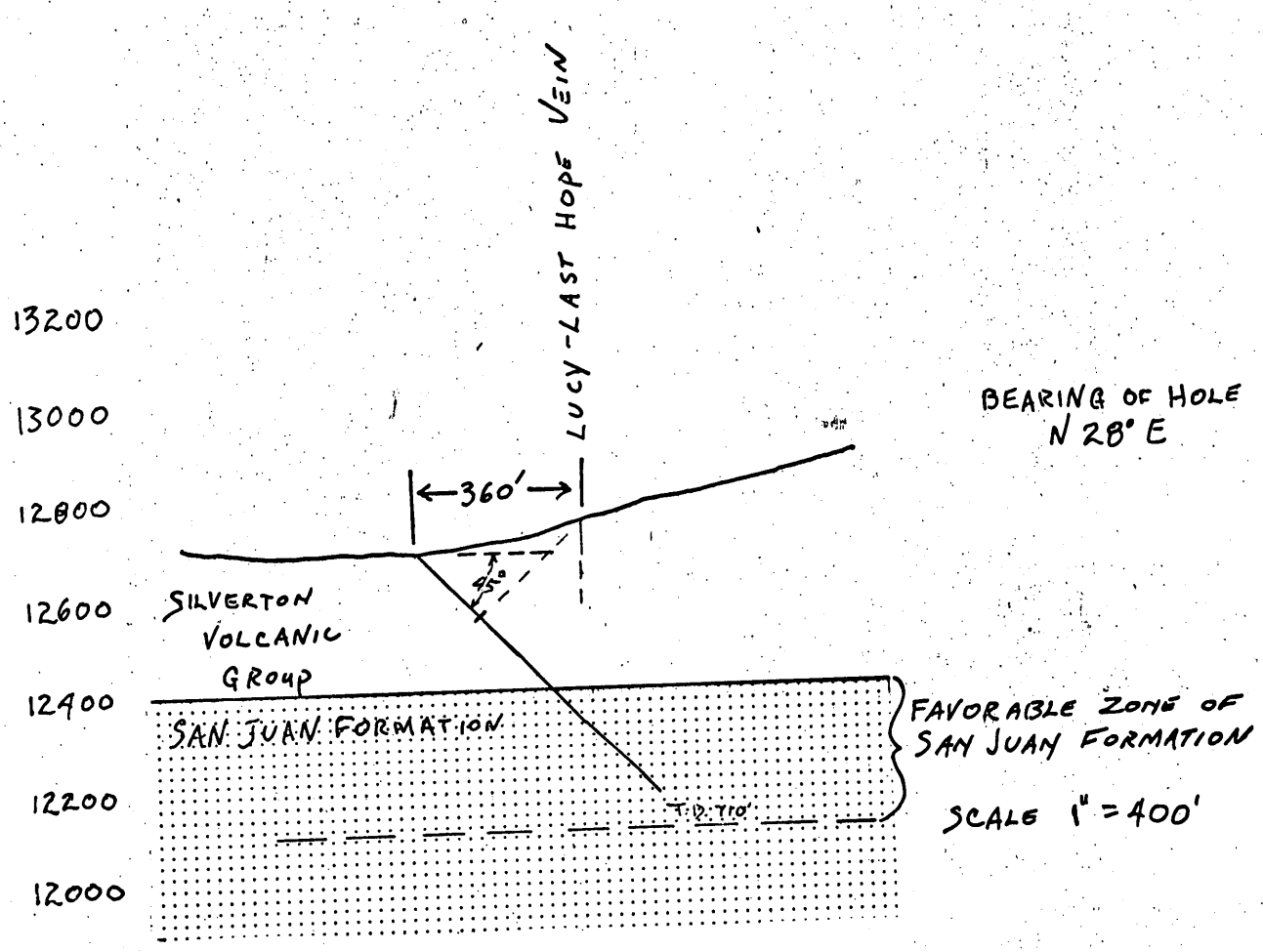


DIAMOND DRILL HOLE NO 4

As of Nov. 1, 1969

Figure 2

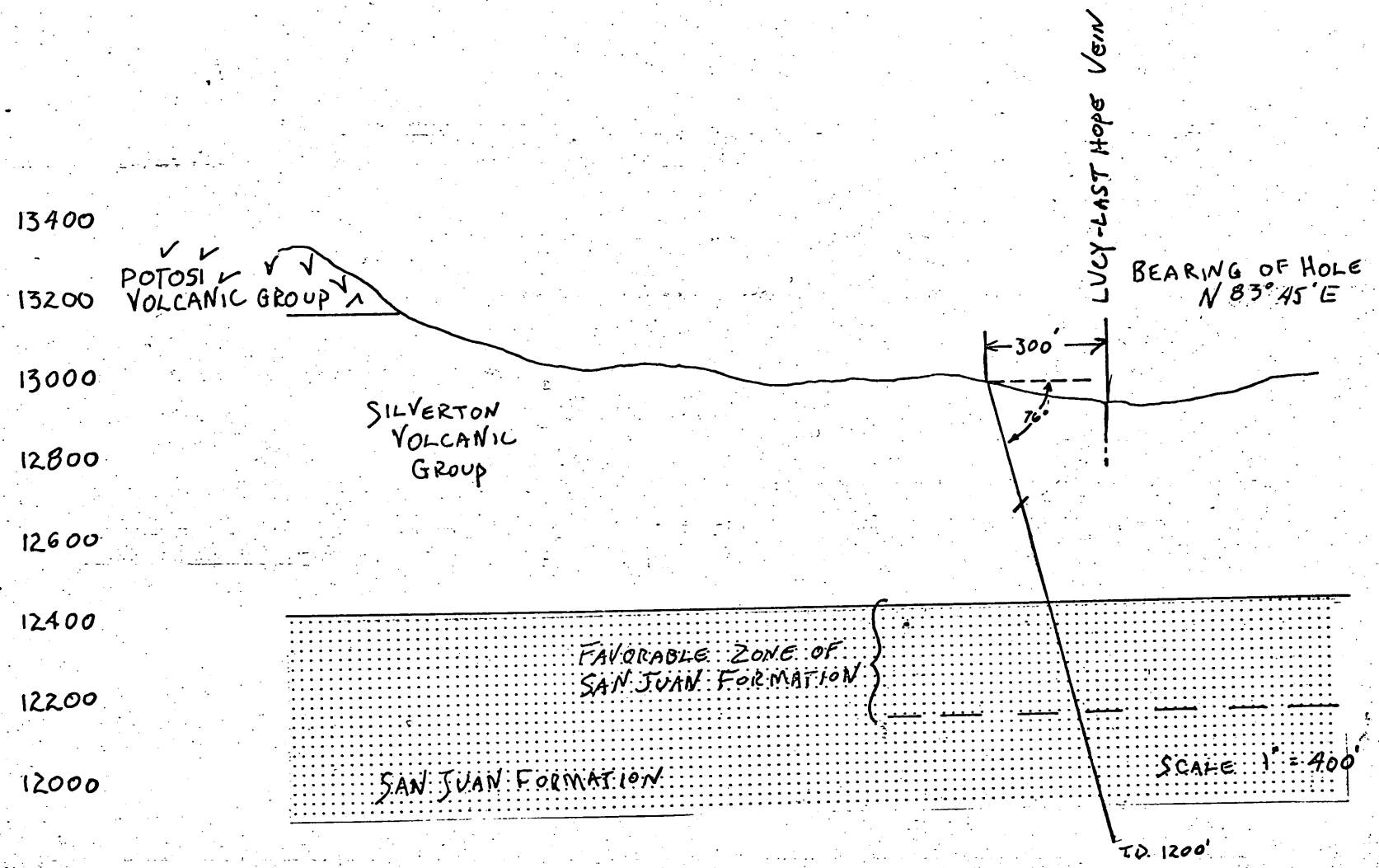
G.P.A.



DIAMOND DRILL HOLE NO. 6A
As of Nov. 1, 1969

Figure 3

G.P.A.

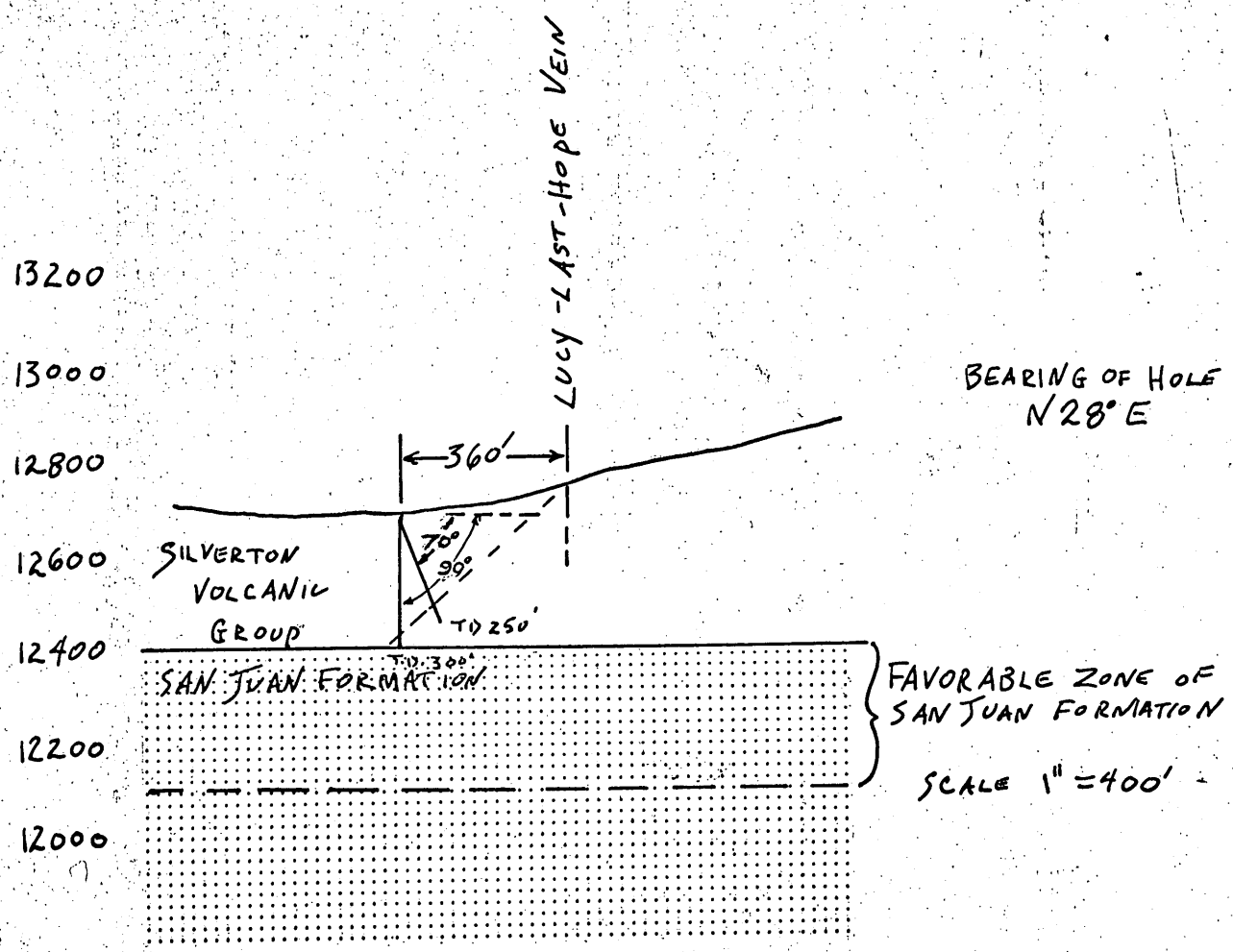


DIAMOND DRILL HOLE NO. 7

As of Nov. 1, 1969

Figure 4

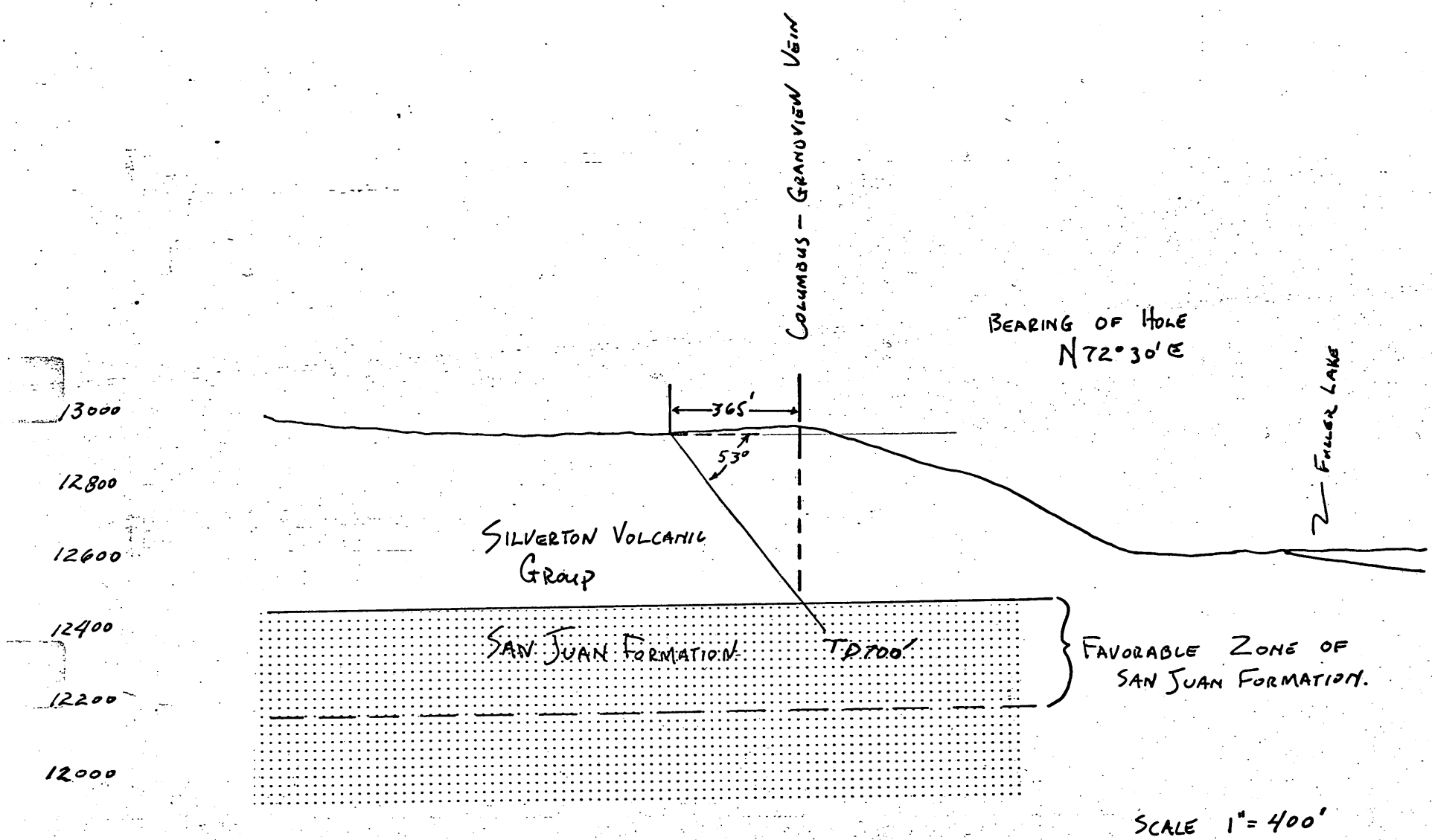
G.P.A.



DIAMOND DRILL HOLE NO. 6B AND 6C

Figure 5

GPA.



DIAMOND DRILL HOLE No. 2B

GPA.

HAZEN RESEARCH, INC.

4601 INDIANA STREET
GOLDEN, COLORADO • 80401
TELEPHONE 279-4549

REPORT OF ANALYSIS

To: Mr. Thomas I. Sharps, Geologist
Vitro Minerals Corporation
720 equitable Building
730-17th Street
Denver, Colorado 80202

Date: November 17, 1969

HRI Project No. 324
HRI Series No. 2588

Analysis No.	Sample Designation	%Cu	% Pb	% Zn	Au (oz/ton)	Ag (oz/ton)
DDH#6A						
269-271' 2588-1	4270	0.015	0.009	0.022	0.01	0.05
271-273' -2	4271	0.015	0.007	0.015	0.02	0.77
273-274' -3	4272	0.018	0.009	0.022	0.01	0.06
274-275' -4	4273	0.024	0.38	0.65	0.03	0.14
275-276' -5	4274	0.013	0.12	0.19	0.01	0.04
276-277' -6	4275	0.014	0.10	0.13	0.005	0.07
277-279 -7	4276	0.022	0.22	0.56	0.005	0.10
242-246 -8	4277	0.024	0.027	0.18	0.005	0.05

By: Alex Sitkin
Alex Sitkin
Chief Chemist

PLEASE NOTE:
1. Samples will be stored for a three-month period then discarded unless advised to the contrary.
2. When inquiring about the above samples please quote HRI Project No. and HRI Series No.

HAZEN RESEARCH, INC.

4601 INDIANA STREET
GOLDEN, COLORADO • 80401
TELEPHONE 279-4549

REPORT OF ANALYSIS

To: Mr. Thomas I. Sharps, Geologist
Vitro Minerals Corporation
720 Equitable Building
730-17th Street
Denver, Colorado 80202

Date: November 7, 1969

HRI Project No. 324
HRI Series No. 2571

Analysis No.	Sample Designation	% Cu	% Pb	% Zn	Au (oz/ton)	Ag (oz/ton)
DDH#6A						
196-197' — 2571-1	4259	0.020	0.010	0.11	<0.005	0.02
197-197.5 — -2	4260	0.015	0.020	0.070	<0.005	0.02
197.5-206 — -3	4261	0.023	0.12	0.17	0.005	0.24
206-208 — -4	4262	0.30	4.22	6.29	0.25	19.6
208-210 — -5	4263	0.029	0.13	0.23	0.01	0.56
210-212 — -6	4264	0.024	0.037	0.098	0.02	0.24
212-214 — -7	4265	0.022	0.074	0.095	0.01	0.20
214-216 — -8	4266	0.050	0.036	0.076	0.02	0.24
220-220.5 — Void -9	4267	0.024	0.010	0.055	0.01	0.10
220.5-221 — -10	4268	0.043	0.029	0.21	0.06	0.47
221-222 — -11	4269	0.039	0.046	0.22	0.02	0.23

By: Alex Sitkin
Alex Sitkin
Chief Chemist

PLEASE NOTE:
1. Samples will be stored for a three-month period then discarded unless advised to the contrary.
2. When inquiring about the above samples please quote HRI Project No. and HRI Series No.

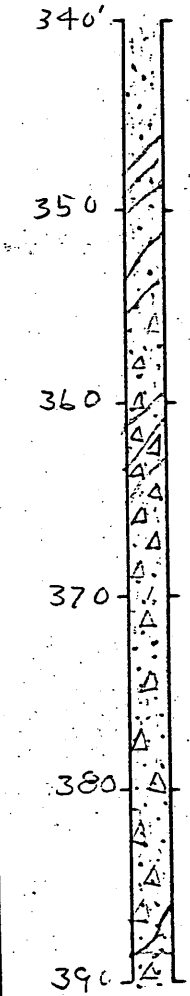
HOLE No. 3

July 10, 1969

VITRO MINERALS CORPORATION
Drill Log

From	To	Thickness	% Core Recovery	Geologic description and remarks
340	341	1	90	Correction from last year - Drilling was stopped at
341	343	2	90	340' instead of 348' as reported. Drilling was
343	345	2	75	resumed on June 29, 1969 at 340'
345	346	1	95	
346	350	4	95	340-346 - Silverton breccia; has been altered gray
350	354	4	100	Considerable pyrite, disseminated and in fine
354	359	5	90	grain masses 1/4 1/4".
359	363	4	100	344-346 - Vuggy areas in breccia fragments
363	368	5	95	
368	370	2	95	346-354 Silverton breccia which has been altered gray
370	371	1	85	Pyrite veinlets as well as grain masses and disseminated pyrite. Oxidation of pyrite veins at 351'. Small
371	372	1	100	amounts of qtz from 352' to 354 in form of thin veinlets.
372	374	2	85	
374	376	2	90	
376	378	2	90	354-374- Silverton breccia altered gray. Considerable
378	381	3	40	pyrite with abundance of disseminated and grain masses
381	384	3	100	Material remaining constant. Veinlets decreasing in
384	386	2	95	abundance to 374'. Chlorite and epidote alteration
386	389	3	65	starting at 358'. Epidote abundant from 360' to 365'
389	391	2	100	and commonly encloses grain masses of pyrite. Chlorite
				often occurs along pyrite veinlets.
				374-391 - Silverton breccia, altered gray. Abundance
				of pyrite decreasing slightly with depth. Very few
				veinlets but fine grained masses becoming slightly more
				abundant. Chlorite-epidote alteration continues with
				increasing amounts of chlorite in veinlets. 372.5 - 373.5'
				dark gray silicified band
				374-375' small grains of black metallic mineral/hematite(?)

Graphic log
Scale 1" = 10'



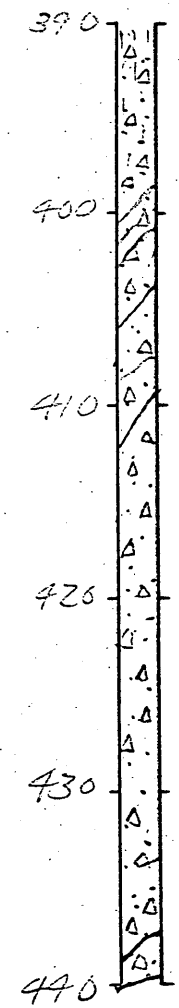
July 12, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 2 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
391	394	3	100	391-398' Silverton breccia altered to a purplish
394	396	2	100	grey-green. Breccia fragments becoming more
396	398	2	55	visible and vary in color from dark green to red-brown
398	400	2	65	Chlorite-Epidote alteration continuing with some
400	406	6	100	breccia fragments strongly epidotized. Pyrite not as
406	410	3	45	common as above and in disseminate form only
409	411	2	100	Argillaceous alteration of Goldcrest
411	415	4	75	0397-399 Zone of strong purple-grey alteration
415	421	6	100	
421	423	2	100	398-405 Silverton breccia altered as from 391-398
423	433	10	90	but becoming slightly less grey and more green-purple.
433	436	3	100	Chlorite-Epidote and argillaceous alteration continuing.
436	440	4	100	Amount of disseminated pyrite remaining constant. Veinlets
				of pyrite reappearing
				405-412 - Rock same as 398-405 section with the ex-
				ception of quartz along pyrite veinlets
				412-423 - Silverton breccia altered purplish-grey green.
				Chlorite-epidote alteration. Argillaceous alteration
				decreasing at 420'. No veinlets. Disseminated
				pyrite only. Selective mineralization of some breccia
				fragments
				423-435 Silverton breccia alteration same as
				above. Slight increase in size of breccia
				fragments up to 3 inches in diameter. Pyrite very
				finely disseminated and slightly less abundant
				than above.

Graphic log
Scale 1" = 10'



Hole No. 3

Rob Rogers

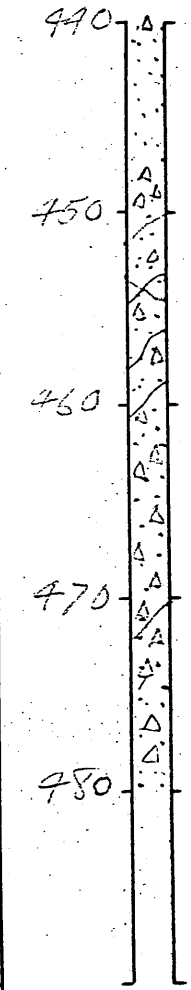
July 12, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 9 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
440	441	1	100	435 - 440.5 Silverton breccia with purplish-grey-green
441	443	2	50	alteration. Slightly less green. Chlorite-epidote alteration
443	446	3	75	Disseminated pyrite. Veinlets of pyrite with quartz. Some
446	448	2	90	show slight oxidation.
448	451	3	100	
451	456	5	80	440.5 - 447.5 - Greenish-grey silicified zone. No visible
456	466	10	100	breccia fragments. Qtz veinlets. Pyrite becoming
466	476	10	100	more abundant and is in the form of disseminate grains,
				masses of grains, and veinlets.
				447.5 - 462 - Silverton breccia silicified greenish
				grey. Breccia fragments visible but not always distinct
				Slight chlorite-epidote alteration with strong band from
				449.5 to 450. Pyrite becoming more common. Strongly
				disseminated and in veinlets & several areas of
				slightly oxidized pyrite - Veinlets decreasing in abundance with depth
				462 - 479 - Silverton breccia regaining purplish-grey
				green color. Breccia fragments again becoming distinct
				Many fragments strongly epidotized. Pyrite common
				but decreasing with depth. It is in form of disseminated
				grains with occasional grain masses and veinlets
				478' large breccia fragment, 7 inches in diameter
				very strongly epidotized

Graphic log
Scale 1" = 10'



Hole No. 3

Papers

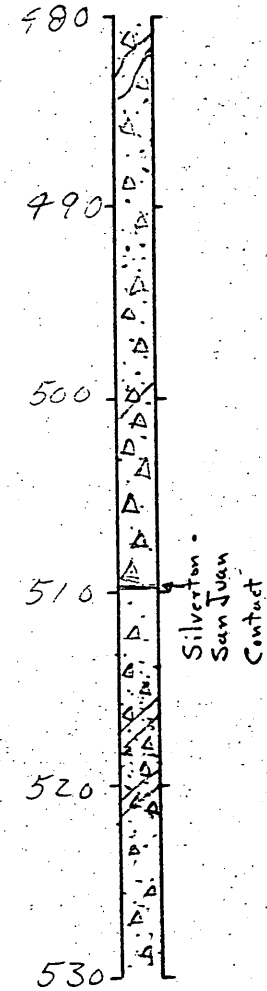
July 13, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 10 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
476	486	10	100	479-509.7 - Silverton breccia, altered. Color is a grey-
486	496	10	100	green with spotty areas of purplish-grey coloration.
496	506	10	100	Breccia fragments upto 4 in. in diameter and usually
506	516	10	100	a darker green than matrix. Strong chlorite-epidote
516	517	1	100	alteration. Chlorite along seams and throughout the rock
517	522	5	100	Epidote disseminated in small grains throughout. Some
522	526	4	100	breccia fragments very strongly epidotized. Disseminated
526	530	4	100	pyrite throughout. Occasional grain masses. Veinlets of pyrite
				484-485 - slightly oxidized. Slight oxidation of pyrite
				grains from 492'-503'. Some pyrite xls to 1/8"
				509.7 San Juan - Silverton contact
				509.7-513.5 San Juan breccia, grey-green. Breccia fragments
				smaller and more common than in Silverton. Some
				epidote and chlorite alteration. Pyrite finely disseminated
				513.5-530 San Juan breccia. Color - areas of grey-green mixed
				with areas of brownish-purple. Increase in size of breccia
				fragments to 9". Increase in amount of epidote and
				chlorite alteration with some fragments strongly epidotized
				Increase in pyrite, mostly disseminated and selectively
				mineralized some breccia fragments
				517-522 Pyrite veinlets and grain masses. Slight
				oxidation of some pyrite in selected breccia fragments
				522-530 Slightly darker in color. Some decrease in
				epidotization

Graphic log
Scale 1" = 10'



Hole No. 3

Bob Rosen

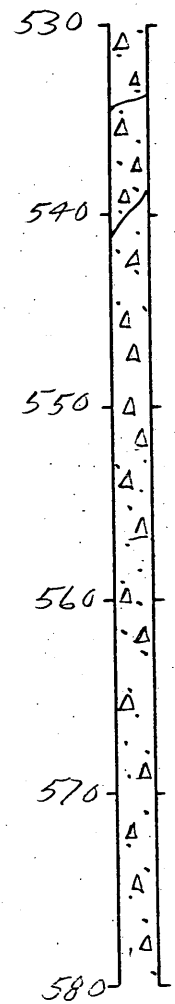
July 15, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 11 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
530	536	6	100	530-546 San Juan breccia grys from brownish-purple
536	546	10	100	and grey-green to a greyish green. Strong epidote
546	551	5	100	alteration throughout w/ some breccia fragments nearly
551	556	5	100	totally epidotized. Chlorite alteration throughout.
556	564	8	100	Several lstr. veins. Pyrite common and disseminated
564	572	8	100	in fine grains. Occasional thin veinlets of pyrite.
572	582	10	100	
				546-552 San Juan breccia. Rock color and alteration
				same as above. No pyrite
				552-581 San Juan breccia, greyish-green. Strong
				epidote alteration. Some of epidotized breccia
				fragments are vuggy. Strong chlorite alteration
				Disseminated pyrite in form of grains and small xls
				is common. Several thin qtz veins.

Graphic log
Scale 1" = 10



Hole No. 3

Bob Rogers

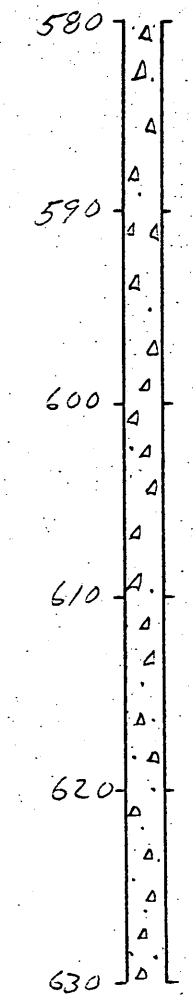
July 15, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 12 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
582	588	6	100	581-616 San Juan breccia, greyish green in color but
588	590	2	100	gradually regaining a purplish tint with depth
590	596	6	100	Epidote and chlorite same as above. Little to no
596	606	10	100	very finely disseminated pyrite. Several epidote
606	616	10	100	seams.
616	626	10	100	
626	636	10	100	616-647 San Juan breccia greyish green. Epidote and
				chlorite alteration continue to be strong. Some breccia
				fragments nearly replaced by epidote. Others are vuggy.
				Chlorite found mainly in the matrix. Small amounts of
				disseminated pyrite. Also small amounts of disseminated
				black mineral which is probably metallic. However it is too
				small for hand lense identification. Slight decreas in the
				amount of pyrite with depth

Graphic log
Scale 1" = 10'



Hole No. 3

Bob Rogers

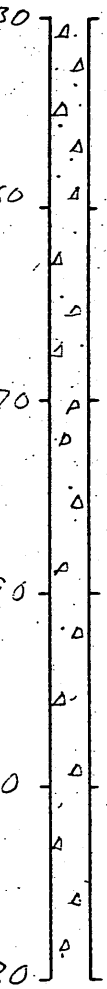
July 22, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 13 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
636	646	10	100	647-667 San Juan breccia with grayish-green color. Rock
646	656	10	100	denser than above. Epidote and chlorite alteration is
656 -	666	10	100	similiar to above with a decrease in the amount of epidote
666	675	9	100	Very small amount of finely disseminated pyrite. Disseminated
675	676	1	100	black mineral continuing in slightly lesser amounts - hematite(?)
676	680	4	75	697.5' Replacement of a breccia fragment w/ black mineral
680	681	1	100	About 1/2" across. It is possibly hematite
681	690	9	100	
690	696	6	100	717-733 San Juan breccia with color patchy ening
696	705	9	100	from grey-greens to brownish purples. Breccia fragments
705	706	1	75	distinct with a wide variation in color and size. Epidote
706	716	10	100	and chlorite alteration. Epidote in seams and strongly
716	726	10	100	replacing some fragments. Small amounts of black
726	736	10	100	disseminated mineral believed to be hematite(?).
				Small amounts of very finely disseminated pyrite. Slight
				variations in amount. Small scattered areas of Fe oxide
				staining. Occasional small vugs some of which are
				lined with epidote.

Graphic log
Scale 1" = 20'



Hole No. 3

Bob Rogers

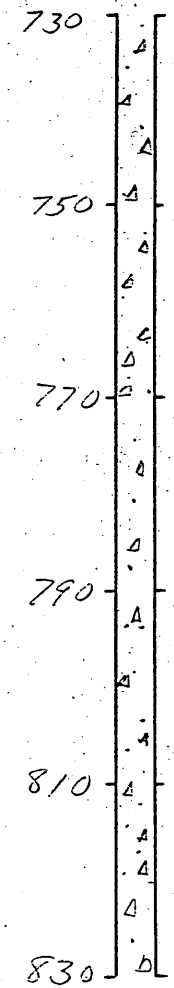
July 25, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 14 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
736	746	10	100	733-772 San Juan breccia with color becoming more
746	755	0	100	uniform + tending towards a greyish-green Breccia fragments
755	765	10	100	smaller than above. Epidote and chlorite as above. Rock
765	775	10	100	less dense and more porous than above. Pyrite and
775	785	10	100	possible hematite(?) as above.
785	795	10	100	
795	799	4	100	772-799 San Juan breccia greyish-green. Fragments small
799	806	7	100	and/or indistinct. Epidote + chlorite alteration w/ slightly
806	814	8	100	less epidote. Rock denser than above. Little to no finely
814	820	6	95	disseminated pyrite. Small amounts of disseminated
820	828	8	100	hematite(?)
				799-870 San Juan breccia color mainly a greyish-
				green. Fragment becoming larger and more distinct
				Epidote and chlorite alteration. Occasional thin seams
				of epidote and qtz. Very small amounts of disseminated
				pyrite. Small amounts of disseminated hematite(?).
				795-800 High concentration of qtz and epidote
				seams, very thin
				826-836 San Juan very similiar to above with two
				exceptions. No hematite(?) Also with occasional grains
				of pyrite

Graphic log
Scale 1" = 20'



Hole No. 3

Bob Rogers

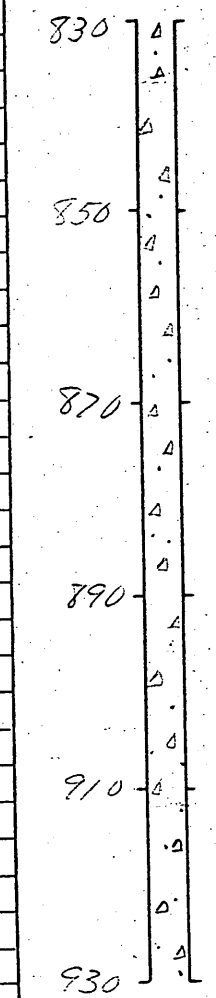
July 29, 1969 + Aug 15, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 15 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
828	833	5	100	836-912 San Juan breccia color a greyish-green with
833	836	3	70	small areas of brownish purples. Chlorite alteration fairly
836	844	8	100	strong. Epidote alteration throughout. Some epidote lined
844	854	10	100	vugs, small. Occasional thin seams of epidote. Very small
854	864	10	100	amounts of disseminated hematite(?). Occasional large of
864	869	5	100	areas of small amounts of disseminated pyrite.
869	876	7	100	851' - Area of hematite 1/2" x 1"
876	885	9	100	
885	895	10	100	912-931 San Juan tuff breccia color a greyish-green but
895	905	10	100	slightly different than above. Epidote and Chlorite
905	912	7	100	alteration throughout. Possibly small amounts of disseminated
912	917	5	90	hematite. Occasional scattered grains of disseminated
917	919	2	95	pyrite. Argillaceous alteration
919	923	4	100	
923	928	5	100	
928	931	3	100	

Graphic log
Scale 1" = 20



Hole No. 3

Bob Rogers

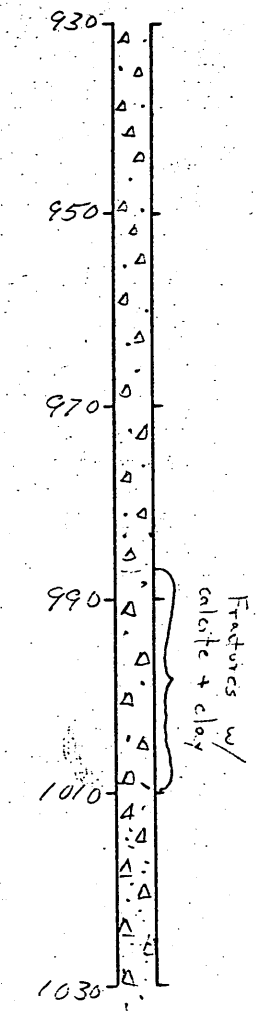
Aug 18, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 3
Page 16 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
931	936	5	100	931-987 San Juan breccia color of matrix is a greyish
936	939	3	100	green w/ small areas of purplish-brown. Breccia fragments
939	942	3	100	vary widely in rock type and color. Epidote alt. more
942	953	10	100	intense than above w/ some very areas of epidote
953	961	8	100	Chlorite and argillaceous alt. continue. Small amounts
961	966	5	100	of finely disseminated pyrite
966	973	7	100	
973	982	9	100	987-1034.5 San Juan breccia color a greenish-grey. Epidote
982	986	4	100	alteration w/ occasional small vugs and seams. Small amounts
986	987	1	90	of argillaceous alt. Rock is fractured w/ fractures
987	996	9	100	containing calcite xls and clayey material. Very small
996	1000	4	100	amounts of finely disseminated pyrite
1000	1006	6	100	
1006	1015	9	90	#1034.5 - BX ROD USED FOR CASING AX CORE BEGINNS.
1015	1020	5	100	
1020	1023	3	100	
1023	1027.5	4.5	90	
1027.5	1034.5	7	100	

Graphic log
Scale 1" = 20'



Hole No. 3

Bob Rogers

VITRO MINERALS CORPORATION
Drill Log

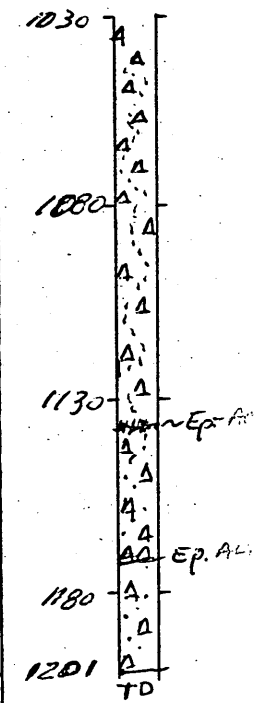
Project: ICE LAKE
County:
State:
Claim:
Page 1 of

Date Started: 9/6/69
Date Completed:
Logged By: G.V. AMBARIANTZ
Type Drill: DIAMOND – LYCOMING DIESEL
Hole Size: AX WL
Contractor: S & H.

Hole No.: 3
Coord: N, E
Collar Elev.:
Total Depth: 1201
Bearing:
Inclination:

From	To	Thick-ness	% Core Recovery	Geologic description and remarks
1034.5	1036	1.5	90	→ # Start AX WL.
1036	1041	5	90	
1041	1051	10	50	987-1201 San Juan Fm, breccia color purplish-green. Disseminated pyrite with ep alteration and occasional qtz and calcite seams. Moderate argillic alteration in places.
1051	1056	5	100	
1056	1063	7	80	
1063	1070	7	25	
1070	1072	2	25	
1072	1075	3	100	1134-1137 Strong ep and arg alt.
1075	1081	6	100	1171-1172 Strong ep. alt.
1081	1088	7	100	
1088	1096	8	100	
1096	1100	4	100	
1100	1105	5	100	
1105	1111	6	95	
1111	1112	1	75	
1112	1115	3	33	
1115	1132	17	90	
1132	1137	5	80	
1137	1146	9	90	
1146	1150	4	50	
1150	1156	6	150	

Graphic log
Scale 1" = 50



Hole No. 3

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 3
Page ____ of ____

From	To	Thick-ness	% Core Recovery	Geologic description and remarks	Graphic log Scale 1" = ____
1156	1160	4	100		
1160	1166	6	90		
1166	1176	10	110		
1176	1181	5	90		
1181	1186	5	100		
1186	1189	3	100		
1189	1195	6	100		
1195	1201	6	100	1201 BOTTOM.	

Hole No. ____

HOLE No. 4 + 4W

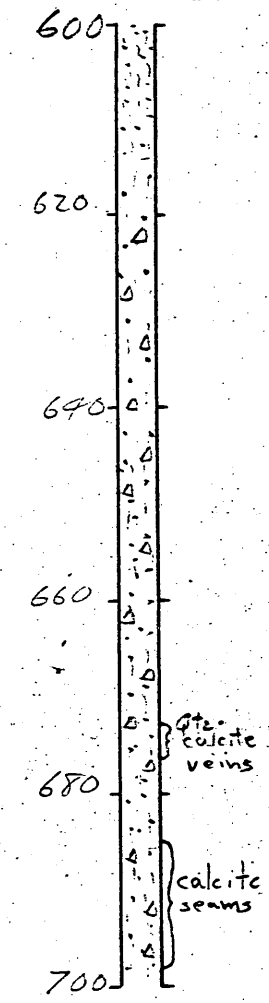
Aug 18, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 4
Page 7 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
600	602	2	80	600-612 San Juan - altered grey w/ fragments
602	604	2	60	indistinct. Rock has been silicified and altered
604	609	5	100	causing presence of some clay material. Fine dis-
609	613	4	80	seminated pyrite common throughout. Core badly
613	618	5	80	broken
618	621	3	100	611-614 Strong zone of clay alteration
621	628	7	100	
628	630	2	85	614-619½ San Juan tuff - greyish-green. Small fragments
630	638	8	100	to 1/4" altered to clay. Occasional masses of fine pyrite
638	643	5	100	grains. Also disseminated grains
643	648	5	100	
648	657	9	100	619½-646 San Juan tuff. Color is greyish-green
657	659	2	100	Epidote alteration w/ small amounts of chlorite
659	665	6	30	alt. Small amounts of disseminated pyrite
665	670	5	100	Rock has been slightly leached
670	672	2	100	
672	681	9	90	646-685 San Juan tuff breccia, a light grey-green in color
681	687	6	100	Epidote and chlorite alteration w/ some epidote
687	691	4	65	seams < 1/16" Occasional seams of calcite. Some
691	695	4	80	leaching of the rock. Pyrite common in disseminated
695	697	2	100	grains and occasional thin veinlets < 1/16"
697	698	1	100	672.5-675.5 Qtz-calcite veins every 6-18". Thickness
698	703	5	95	1/4" to 1" — No metallics other than pyrite
				685-703 San Juan breccia fragments to 3" Color grey green
				Chlorite + epidote alt. Occasional calcite seams < 1/16"
				Some leaching. Pyrite common in disseminated
				grains and scattered grain masses

Graphic log
Scale 1" = 20



Hole No. 4

Rivers

VITRO MINERALS CORPORATION
Drill Log

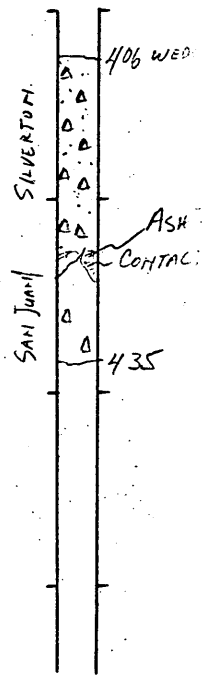
Project: Ice Lake
County: San Juan
State: Colorado
Claim: Lucy #2
Page 1 of

Date Started: 8/24/69 wedge set. 8/25/69
Date Completed:
Logged By: G.P. Ambrianiz
Type Drill: Diamond - Wyoming diesel
Hole Size: Bx WL
Contractor: S & H

Hole No.: 4W (W) whipstock.
Coord: N, E
Collar Elev.: WEDGE SET AT 406'
Total Depth:
Bearing: S 48 E
Inclination: -51°

From	To	Thickness	% Core Recovery	Geologic description and remarks
406	416	10	100	406-427 Silverton Volcanic group, dark
416	426	10	100	greenish green tuff & breccia with
426	436	10	100	angular to subangular fragments.
				Mod chl-ep alt / Fine to medium
				green disseminated Py.
				427-429 Silverton - San Juan Contact.
				Base of Silverton ash fall tuff with 1/4"
				Qtz, py stringers. Hard to find crown
				disseminated py. Mod ep-chl alt.
				# Contact between Silverton and San Juan
				is marked by a red oxidized zone about
				1/4" thick. This oxidized zone marks a surface
				of non-deposition and the top of the San Juan.
				429-435 San Juan formation. dark green to
				purplish tuff breccia similar to /
				overlying Silverton tuff breccia
				Mod ep-chl alt but an abundance
				of disp py.

Graphic log
Scale 1" = 20'



Hole No. 4W

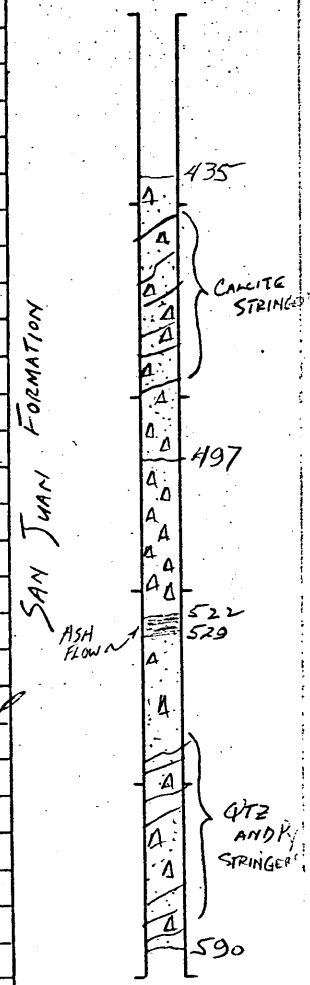
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Hole No. 4u
Page 2 of ___

Drill Log

From	To	Thickness	% Core Recovery	Geologic description and remarks
436	446	10	100	435-497 San Juan formation, purple-green
446	449	3	90	welded tuff with marked absence of
449	459	10	90	breccia fragment. Abundance of
459	472	13	75	disseminated py with grain size
472	476	4	95	ranging from very fine to course.
476	486	10	100	Mod chl-ep-arg alt
486	496	10	110	450-485 marked by an abundance of
496	506	10	110	Calcite stringers.
506	516	10	100	
516	521	5	100	497-522 San Juan formation, purplish-grey tuff
521	528	7	25	breccia. Breccia fragment subangular
528	531	3	50	to rounded, some of the fragments are
531	535	4	75	selectively replaced by py and ep.
535	539	4	100	Much of the py is oxidized. Fine to course
539	544	5	90	grain py disseminated throughout.
544	549	5	100	
549	552	3	100	522-529 San Juan Formation, purple-grey ash
552	561	9	90	very friable with fine grain diss py
561	568	7	25	mod. arg and chl-ep alt.
568	570	2	75	
570	574	4	90	529-590 San Juan Formation, purple-grey welded
574	576	2	100	tuff. Breccia fragments absent
576	578.5	2.5	80	529½-590, abundance of qtz and py stringers
578.5	581	2.5	80	with some of the stringers having a
581	593	12	25	combination of the two, also some of the
593	595	2	25	stringers have an oxide Cu stain
595	598	3	33	from chalcopyrite.
598	600	2	10	
600	602	2	25	

Graphic log
Scale 1" = 40'



Hole No. 4u

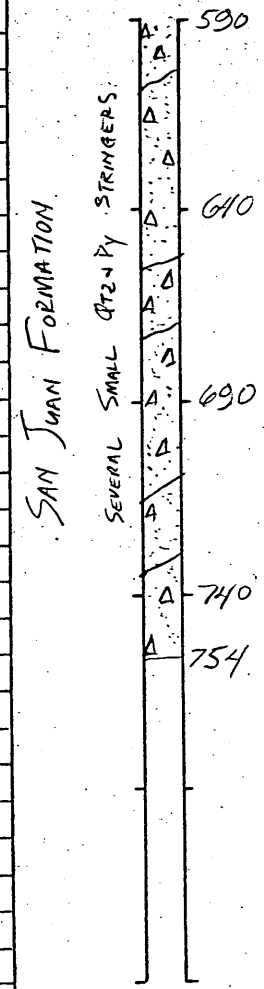
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 4W
Page 3 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
602	610	8	15	590-623 San Juan Formation, ash tuff
610	611	1	100	with diss py.
611	615	4	50	
615	616	1	65	623-754 San Juan Formation, purple-green
616	617	1	85	tuff breccia; breccia fragments increase
617	618	1	85	in size from 690. Several small qtz
618	619	1	50	and py stringers encountered. Mod
619	623	4	75	ep-chl alt. diss py throughout.
623	625	2	100	
625	626	1	150	
626	630	4	90	
630	632	2	100	
632	638	4	100	
638	641	3	100	
641	645	4	125	
645	649	4	100	
649	659	10	100	
659	666	7	100	
666	674	8	100	
674	677	3	100	
677	687	10	100	
687	691	4	90	
691	699	7	100	
699	704	5	90	
704	709	5	90	
709	719	10	100	
719	729	10	100	
729	737	8	110	
737	754	17	100	

Graphic log
Scale 1" = 50'



Hole No. 4W

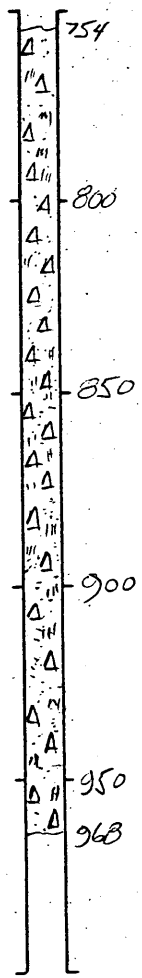
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Hole No. 4W
Page 4 of ___

Drill Log

From	To	Thick-ness	% Core Recovery	Geologic description and remarks
754	759	5	90	754-968 San Juan Formation Tuff breccia
759	769	10	100	same as above. Mod'ly-chl alt.
769	779	10	100	dess py.
779	789	10	80	
789	799	10	100	
799	809	10	100	
809	819	10	90	
819	829	10	80	
829	831	3	100	
831	839	8	110	
839	845	6	100	
845	848	3	100	
848	858	10	100	
858	878	20	95	
878	888	10	100	
888	899	11	100	
899	909	10	100	
909	919	10	100	
919	926	7	90	
926	936	10	100	
936	942	6	110	
942	943	1	0	
943	945	2	80	
945	950	5	100	
950	952	2	100	
952	957	5	120	
957	959	2	100	
959	964	5	100	
964	968	4	100	

Graphic log
Scale 1" = 50'



Hole No. 4W

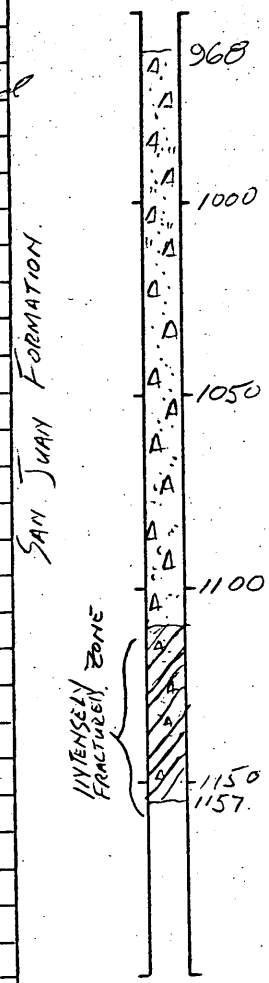
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Hole No. 4W
Page 5 of ___

Drill Log

From	To	Thickness	% Core Recovery	Geologic description and remarks
968	978	10	100	968-1157 San Juan Formation - purple tuff
978	988	10	100	breccia. Same as above.
988	998	10	100	
998	1006	8	100	1122-1157 - San Juan Formation intensely fractured
1006	1012	6	100	to the bottom of hole.
1012	1014	2	110	
1014	1019	5	100	
1019	1029	10	110	
1029	1037	8	100	
1037	1043	6	100	
1043	1051	8	80	
1051	1057	6	90	
1057	1064	7	100	
1064	1069	5	100	
1069	1072	3	100	
1072	1073	1	100	
1073	1077	4	100	
1077	1084	7	100	
1084	1088	4	75	
1088	1091.5	3.5	100	
1091.5	1093	1.5	100	
1093	1098	5	80	
1098	1108	10	100	
1108	1117	9	100	
1117	1118	1	50	
1118	1122	4	50	
1122	1125	3	100	
1125	1136	11	100	
1136	1143	7	100	

Graphic log
Scale 1" = 50'



Hole No. 4W

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 4W
Page 6 of ___

From	To	Thick-ness	% Core Recovery	Geologic description and remarks	Graphic log Scale 1"= ___
1143	1153	10	100		
1153	1157	4	100		

Hole No. 4W

HOLE No. 6

VITRO MINERALS CORPORATION
Drill Log

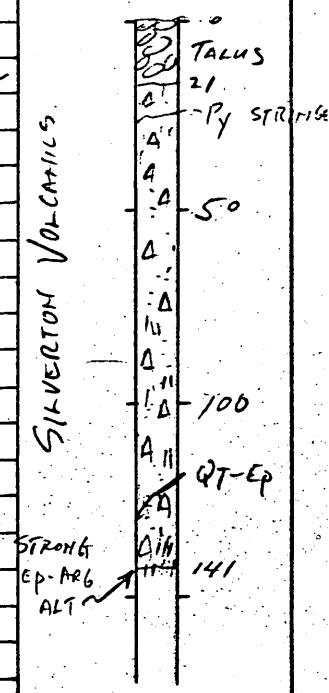
Project: Ice Lake
County: San Juan
State: Colorado
Claim: Tracy #2
Page 1 of

Date Started: 9/6/69
Date Completed: 10/27/69
Logged By: G.P. AMBARIANTZ
Type Drill: Diamond-Lyoming Diesel
Hole Size: BX WL
Contractor: S & H.

Hole No.: 6A
Coord: N, E
Collar Elev.: 12,710
Total Depth: 710
Bearing: N
Inclination: -50°

From	To	Thickness	% Core Recovery	Geologic description and remarks
0	40	40		NX casing.
0	21	21	0	0-21 Talus no recovery
21	26	5	80	
26	36	10	100	21-141 Silverton Volcanic group. greenish-grey
36	38	2	90	tuff breccia. Breccia fragments angular to
38	45	7	95	subangular, range in size from 2 feet to
45	54	9	100	1/16". Selective replacement of breccia fragments
54	60	6	100	by epidote and Pyrite
60	65	5	100	26-1/4" Pyrite stringer
65	73	8	100	
73	81	8	100	131- Qtz and Ep stringers-
81	91	10	100	
91	96	5	100	137-141 Strong ep and argillic alt.
96	101	5	90	
101	104	3	100	
104	109	5	100	
109	114	5	75	
114	124	10	100	
124	134	10	100	
134	141	7	100	

Graphic log
Scale 1" = 50



Hole No. 6

VITRO MINERALS CORPORATION

SUBSIDIARY OF

EARTH RESOURCES COMPANY

Project: Ice Lake

Assay Log

Hole No.: 6

Page ____ of ____

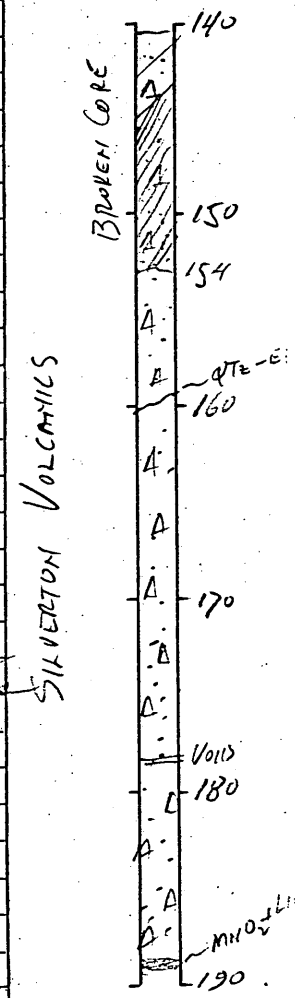
Sample	From	To	Thickness	CORE % Cu	% Pb	% Zn	Au oz/ton	Ag oz/ton		SLUDGE OR DUST					
4259	196	197	1	0.020	0.010	0.11	<0.005	0.02							
4260	197	197.5	0.5	0.015	0.020	0.070	<0.005	0.02							
4261	197.5	206	8.5	0.023	0.12	0.17	0.005	0.24							
4262	206	208	2	0.30	4.22	6.29	0.25	19.6							
4263	208	210	2	0.029	0.13	0.23	0.01	0.56							
4264	210	212	2	0.024	0.037	0.098	0.02	0.24							
4265	212	214	2	0.022	0.074	0.095	0.01	0.20							
4266	214	216	2	0.050	0.036	0.076	0.02	0.24							
4267	220	220.5	0.5	0.024	0.010	0.055	0.01	0.10							
4268	220.5	221	1.5	0.043	0.029	0.21	0.06	0.47							
4269	221	222	1	0.039	0.046	0.22	0.02	0.23							

VITRO MINERALS CORPORATION
Drill Log

Hole No. 6
Page 2 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
141	145	4	100	142-154 Silverton Volcanic group welded tuff
145	152	7	100	greyish with finely disseminated Pyrite
152	154	2	80	Core broken.
154	161	7	90	
161	171	10	100	154-286 Silverton Volcanic group Tuff breccia
171	181	10	90	Same as above.
181	188	7	110	160 1/4" Qtz and py stringers
188	196	8	110	178-179 — 8" Void limonite stain marks top
196	206	10	20	of void space. Qtz stringers persist
206	208	2	25	below void space.
208	216	8	25	187-189 - Marked with MnO2 and limonite stain.
216	220	4	0	196-197 Bleached contact of Vein with Silverton
220	222	2	25	Volcanics
222	226	4	100	197- Vein material, Qtz and dark mineral
				which is unidentifiable.
				206-208 Vein material, Massive Qtz, sphalerite
				galena and pyrite. Solid core. 8"
				216-220 Open void, no recovery
				220-222 Vein consists of Qtz, py limonite and MnO2
				222-223 Bleached contact with Silverton Volcanics
				# Vein starts at 197 and persists to 222
				Vein width estimated between 20' to 25'

Graphic log
Scale 1" = 10



Hole No. 6

VITRO MINERALS CORPORATION

SUBSIDIARY OF

EARTH RESOURCES COMPANY

Project: ICE LAKE

Assay Log

Hole No.: 6

Page ____ of ____

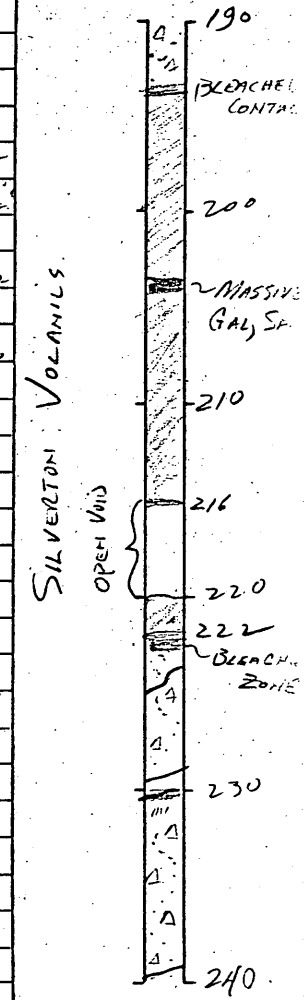
				CORE						SLUDGE OR DUST					
Sample	From	To	Thickness	% Cu	% Pb	% Zn	Au oz/ton	Ag oz/ton							
4277	242	246	4	0.024	0.027	0.18	0.005	0.05							
4270	269	271	2	0.015	0.009	0.022	0.01	0.05							
4271	271	273	2	0.015	0.007	0.015	0.02	0.77							
4272	273	274	1	0.018	0.009	0.022	0.01	0.06							
4273	274	275	1	0.024	0.38	0.65	0.03	0.14							
4274	275	276	1	0.013	0.12	0.19	0.01	0.04							
4275	276	277	1	0.014	0.10	0.13	0.005	0.07							
4276	277	299	2	0.022	0.22	0.56	0.005	0.10							

VITRO MINERALS CORPORATION
Drill Log

Hole No. 6
Page 3 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
226	236	10	100	226-227 1/4" Qtz, sphal, gal, tetrahedrite stringer
236	246	10	90	
246	258	12	75	229 Qtz stringer with limonite stain
258	266	8	100	230 2" bleached zone with a stringer of Qtz, Py and Tetra
266	276	10	100	
276	286	10	100	239-240 1/4" stringer Qtz limonite Mn Calcite
				241-242 1/4" stringer Tetra, Qtz with limonite stain
				243 Qtz stringer
				246 2" veinlet, sugary Qtz, tetra w/ some silver
				250-260 Numerous stringers 1/4" to 1" thick
				266-286 Bleached zone with numerous Qtz stringers
				274-274.5 Veinlet, sugar qtz, sphal, gal tetra
				276 1/2" stringer Qtz, sphal, gal, tetra
				278 1/2" stringer Qtz, sphal, gal, tetra
				279 1" stringer Qtz, sphal, tetra
				280-280.5 two 1/2" stringers of Qtz, sphal, tetra
				285- 1/2" stringer MnO2, limonite stain
				* Hole cemented at 286. cement set at 199 where drilling starts. At 224 hole is deflected 15" in vein. 224-285 is essentially same as above. Logging starts at 285

Graphic log
Scale 1" = 10'



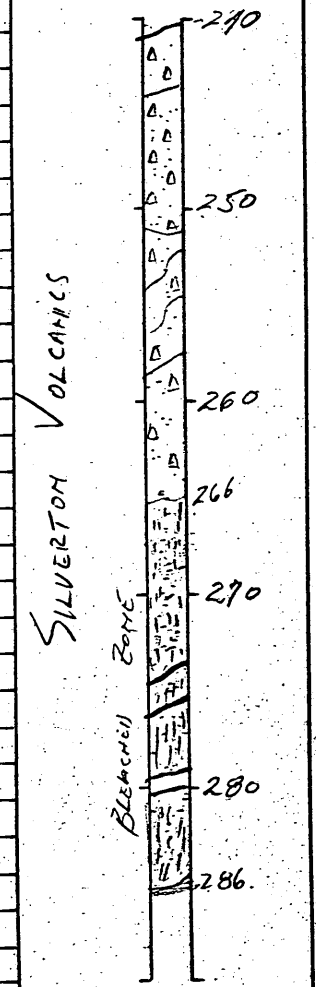
Hole No. 6

VITRO MINERALS CORPORATION
Drill Log

Hole No. 6
Page 4 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
286	296	10	100	286-383 Silverton Volcanic Series, gray green
296	306	10	100	moderate ep and arg alteration.
306	316	10	100	Py disseminated throughout. Py and Qtz
316	326	10	100	stringers abundant!
326	336	10	100	321 Ep and Qtz stringers
336	346	10	100	324 Same as above.
346	356	10	100	336 - From this point to the base of the
356	366	10	100	Silverton Series the Breccia fragments
366	376	10	100	become larger
376	378	2	50	
380	382	2	0	366-369 Strong Py alt.
382	386	4	100	
386	396	10	110	382-383 Core broken. Strong Py and arg alt.
396	406	10	100	
416	427	11	75	380 - Contact not distinct between Silverton
427	437	10	20	Volcanic group and San Juan Formation
				427-437 San Juan Formation - Core broken
				poor recovery. Stringers of Qtz and ep
				at 425

Graphic log
Scale 1" = 10'



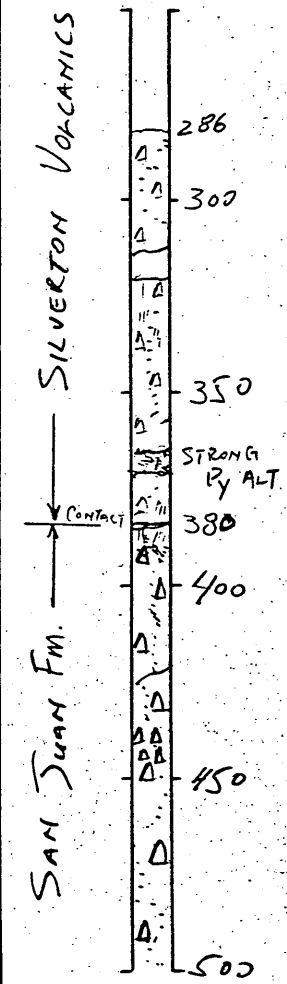
Hole No. 6

VITRO MINERALS CORPORATION
Drill Log

Hole No. 6
Page 3 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
437	446	9	50	441-448 Strong ep alt.
446	456	10	80	
456	466	10	100	448-710 San Juan Formation purplish
466	476	10	100	green. Mod to strong argillic alt
476	486	10	100	does py throughout.
486	496	10	90	
496	506	10	100	710 Bottom.
506	516	10	100	
516	522	6	100	
522	524	2	100	
524	526	2	100	
526	536	10	100	
536	546	10	100	
546	556	10	100	
556	566	10	100	
566	576	10	125	
576	586	10	100	
586	596	10	100	
596	606	10	100	
606	616	10	100	
616	626	10	100	
626	636	10	100	
636	646	10	100	
646	656	10	100	
656	666	10	100	
666	676	10	100	
676	686	10	100	
686	696	10	100	
696	706	10	100	
706	710	4	100	

Graphic log
Scale 1" = 50'



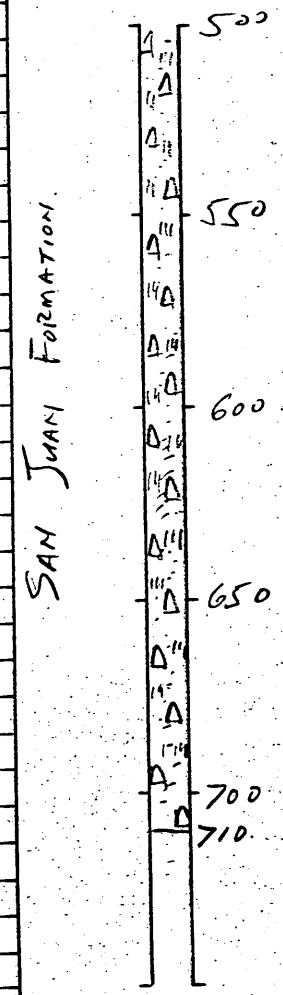
Hole No. 6

VITRO MINERALS CORPORATION
Drill Log

Hole No. 6
Page 6 of ___

From	To	Thick-ness	% Core Recovery	Geologic description and remarks

Graphic log
Scale 1" = 50'



Hole No. 6

HOLE No. 7

July 15, 1969

VITRO MINERALS CORPORATION
Drill Log

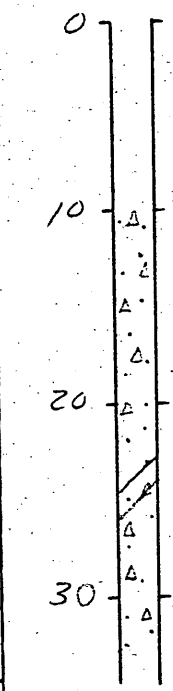
Project: Ice Lake
County: San Juan
State: Colorado
Claim: Vitro No. 10
Page 1 of

Date Started: July 10, 1969
Date Completed:
Logged By: R.J. Rogers
Type Drill: Diamond & Lycoming Diesel
Hole Size: BXWL
Contractor: Spague & Henwood

Hole No.: 7
Coord: N, E
Collar Elev.: 12,920'
Total Depth:
Bearing: N 83° 45' E
Inclination: -76° (at collar)

From	To	Thickness	% Core Recovery	Geologic description and remarks
0	10	10	0	0-10 NX casing set - no core recovery
10	17	7	100	
17	21	4	100	10-32 Silverton formation - lithic tuff breccia;
21	29	8	100	color - purplish-grey; fragments, up to 10" and greyish-
29	32	3	70	green in color. Some epidote alteration of matrix.
32	42	10	100	Fragments more intensly epidotized. Some large
				fragments are vuggy. Small amounts of fine
				disseminated pyrite, some slightly oxidized. Occasional
				grain masses of pyrite which are oxidized.
				Fractured zone from 23.5 - 25 with Fe oxide and
				small amounts of Mn staining along fractures

Graphic log
Scale 1" = 10'



Hole No. ___

pyrite epidote / Fractures

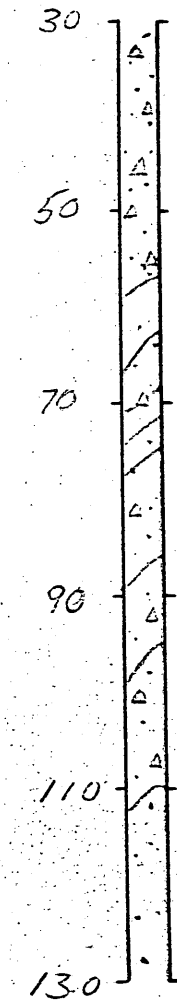
July 13, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 2 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
42	52	10	10	37-58.5- Silverton formation. Similar to above.
52	62	10	100	Some brownish-purple fragment. Vuggy oxidized
62	72	10	100	fragments. Possibly a slight increase in amount of
72	82	10	100	pyrite, which is slightly oxidized.
82	92	10	100	
92	102	10	100	42-52- tube mis-latched. ground core
102	112	10	100	
112	122	10	100	58.5-77 Silverton formation, rock same as above
				Possibly slight decrease in oxidate. Pyrite also
				slightly decreased. Fractured zone with Fe oxide
				Mn staining and chlorite along fractures. Fractures
				intersect core from 20-30°
				77-115 Silverton formation - purplish-grey. Some
				vuggy breccia fragments. Occasional fractures stained
				as those above. Very small amounts of disseminated
				pyrite. Scattered grain masses and stringers of
				oxidized pyrite. Very small amounts of epidote.
				diminishing with depth.
				95-115 Small amounts of a finely disseminated
				black mineral possibly metallic. In both breccia
				fragments and matrix. Jul, 79 - This mineral is now
				believed to be hematite.

Graphic log
Scale 1" = 20'



Hole No. 7

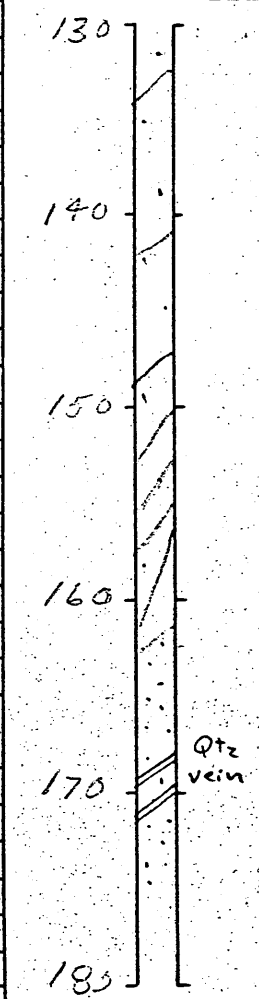
July 15, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 3 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
177	130	8	100	115-147 Silverton breccia; purple-grey becoming
130	137	7	100	slightly greenish with depth. No visible epidote
137	147	10	100	alteration. Occasional fractures intersecting core
147	157	10	100	at various angles. Most are stained by Fe oxide.
157	167	10	100	Some contain qtz with possible chlorite. Have
167	177	10	100	little to no disseminated pyrite. Rare "blotches" to
				1/4" of oxidized pyrite. Small amounts of a dissemin-
				ated black mineral which may be metallic. It is
				slightly decreasing in abundance with depth
				177-124.5 Hueco area
				147-163 Silverton breccia greenish purple-grey
				Fractured zone - all fractures with some Fe oxide
				staining. Amount of staining variable. Chlorite(?)
				along most fractures. Little to no disseminated
				pyrite. Occasional blotches of oxidized pyrite, to
				1 1/4". Very small amounts of possible metallic
				black mineral decreasing with depth. It seems
				to favour breccia fragments. Polished probably hematite
				163-175 Silverton breccia color same as above. Occasional
				fractures stained as above. Marked increase in amount of
				pyrite disseminated through rock. Very small amounts of
				the black mineral which may be hematite
				169.5 Crystalline qtz vein 1 in thick containing sphalerite
				170' Pyrite veins

Graphic log
Scale 1" = 10'



Hole No. 7

Rogers

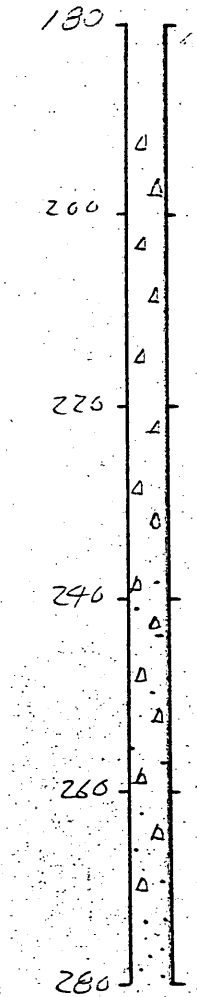
July 22, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 4 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
177	187	10	100	175-193 Silverton breccia with color remaining the same.
187	197	10	100	Occasional Fe oxide stained fractures. No pyrite. Hematite(?)
197	207	10	100	disseminated throughout some of which is oxidized.
207	217	10	100	183' Qtz vein 1/2" thick with no minerals
217	227	10	100	
227	233	6	100	193-237 Silverton breccia color a greyish green with areas
233	243	10	100	of a purplish brown. Epidote alteration begins abruptly
243	253	10	100	at 193'. Some chlorite alteration is found with it. Some
253	261	8	100	seam of epidote thin. Rock is porous. No visible
261	267	6	100	pyrite. Hematite continues as above.
267	277	10	100	"
277	285	8	100	237-273 Silverton breccia color becoming a more uniform
				greyish green. Epidote & chlorite alteration remaining
				the same. Occasional seams of epidote. Disseminated
				pyrite throughout and varying in amount from area to area
				"Little to no hematite". Rock continues to be porous
				273-295- Silverton breccia color a greenish grey. Fragments
				less distinct. Silicified zone, dense. Little to no
				epidote or chlorite alteration. Disseminated pyrite
				throughout "
				287-292 Area greener in color. Not as strongly
				silicified. Epidote alteration

Graphic log
Scale 1" = 20'



Hole No. 7

Pasers.

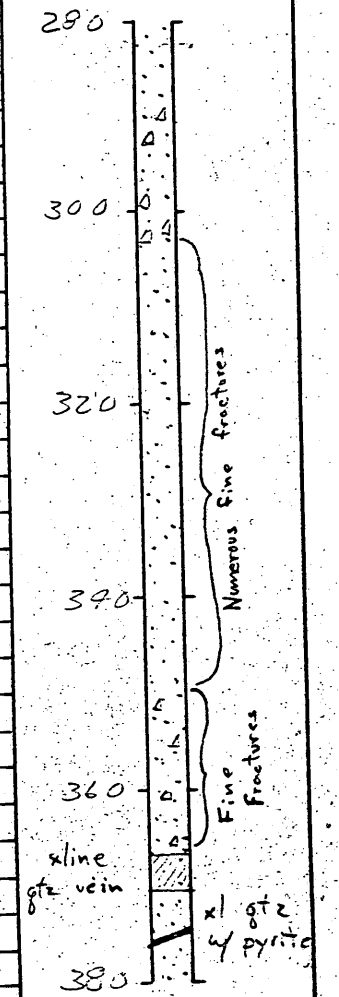
July 25, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 5 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
280	287	7	100	282-304 Silverton breccia color a greyish-green. Fragments
287	297	10	100	distinct. Chlorite + epidote alteration? Some breccia
297	307	10	100	fragments strongly epidotized. Slight silicification
307	317	10	100	Small amounts of disseminated pyrite
317	321	4	100	
321	331	10	100	304-350 Silverton breccia color a greenish grey.
331	341	10	100	Fragments indistinct in places. Rock has been silicified,
341	351	10	100	the intensity varies from area to area. No visible epidote or
351	357	6	100	chlorite alteration. Occasional thin qtz seams.
357	365	8	100	Disseminated pyrite common throughout. Numerous
365	370	5	90	fine fractures throughout. Occasional vuggy areas
370	376	6	60	
376	378	2	50	350-367 - Silverton breccia, color a grey-green. Fragments
				indistinct in places. Some epidote and chlorite
				alteration. Silicification of the rock. Disseminated pyrite
				common. Occasional grain masses to 1/2" that favor
				breccia fragments. Small fracture from 2" to 12" apart
				359-367 Several qtz veins to 1/8" thick
				367-370 Crystalline quartz and silicified rock
				fragments grey in color. Porous, vuggy zone. Fe oxide
				stainings throughout. Large amounts of disseminated pyrite
				and certain masses of pyrite in silicified rock. Qtz
				veins contain some pyrite and a dark mineral which is
				probably sphalerite.

Graphic log
Scale 1" = ___



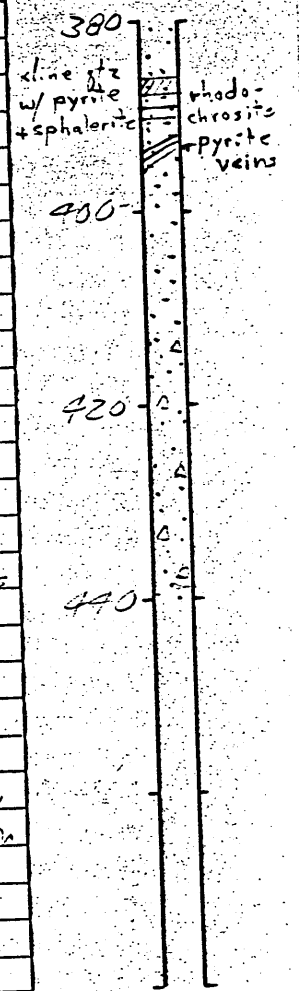
Hole No. 7

Hole No. 7
Page 6 of ___

VITRO MINERALS CORPORATION
Drill Log

From	To	Thickness	% Core Recovery	Geologic description and remarks
378	387	9	50	375 - 386 Highly altered zone bleached a light grey. Rock
387	392	5	80	has undergone silicification and argillaceous alteration
392	397	5	100	Rock is soft and crumbly. Disseminated pyrite
397	407	10	100	throughout.
407	417	10	100	378' Qtz vein approx. 3" thick containing some
417	427	10	100	pyrite Qtz xline. Fe oxide staining
427	437	10	100	355 - 387.5 xline qtz vein containing pyrite and
				sphalerite(?). Fe oxide staine
				387.5 - 390 Small (1") xline qtz veins. Clay-like-mud
				Small (to 1/2") areas of rhodochrosite. Pyrite
				390 - 394 Silicified rock solid. Bleached light green-
				grey. Pyrite common in form of thin vein, grain masses
				and disseminated grains. Occasional qtz veins to 1/8"
				thick
				394 - 415 Silverton breccia color greenish-grey. Fragments
				indistinct. Rock has been silicified. Vuggy areas
				Common disseminated pyrite. Thin (to 1/16") qtz veins
				with random directions of orientation
				415 - 441. Silverton breccia color a brownish-purple to a
				greyish-green. Fragments distinct. Rock not as strongly
				silicified as above. Some chlorite and epidote alteration
				Common disseminated pyrite xls to 3/32". Occasional grain
				masses of pyrite. Qtz veins to 1/8" some with small
				amounts of pyrite.
				416 - 420 One continues thin qtz vein < 1/8" thick

Graphic log
Scale 1" = 20



Hole No. 7

Geo Rogers

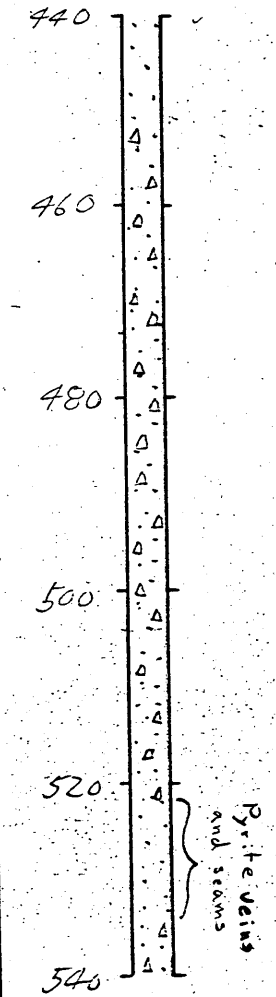
July 28, 1989

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 7 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
437	445	8	100	441-451.5 Silverton breccia, color a greenish-grey.
405	450	5	80	The rock has been silicified. Fragments indistinct
450	457	7	100	Small amounts of chlorite alteration — no epidote
457	466	9	100	Disseminated pyrite common. Thin qtz veins (<1/8")
466	477	11	100	6 to 18 in. apart.
477	487	10	100	444-445 Bleached light grey rock is soft
487	497	10	100	448.5-550.2 - Bleached light grey. Rock is soft w/
497	507	10	100	clay like material
507	517	10	100	
517	520	3	100	451.5-473 Silverton breccia color patchy brownish-purple to
520	527	7	100	greenish-green Fragments small and poorly outlined.
527	537	10	100	Chlorite and epidote alteration throughout. Disseminated
				pyrite common
				473-522 Silverton breccia - color greenish-green with small areas
				of brownish-purple. Becoming more uniform greyish-green w/ depth.
				Fragments more distinct, larger and more common becoming
				smaller from 510-522. Chlorite and epidote alteration.
				Disseminated pyrite common. Occasion thin qtz veins some
				containing pyrite. At 520.5' - 1/2" qtz vein w/ no mineral
				522-533 Silverton breccia - color a light greenish grey. Fragments
				are very common making up >75% of rock. Pyrite in a "net-
				work" of thin veinlets and seams between fragments. Some
				disseminated pyrite in fragments

Graphic log
Scale 1" = 20'



Hole No. 7

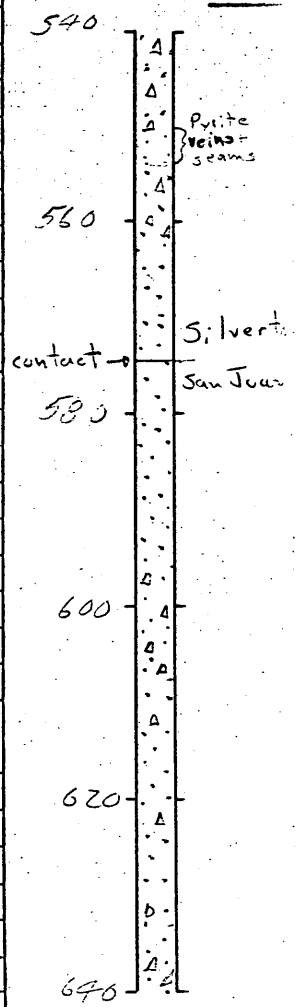
July 28, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 8 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
537	547	10	100	533-550 Silverton breccia color grey-green and brownish-
547	557	10	100	purple. Fragments less common than above. Chlorite
557	567	10	100	and epidote alteration. Occasional qtz veins. Disseminated
567	572	5	100	pyrite common
572	577	5	100	
577	587	10	100	550-553.5 Identical to 522-533 rock
587	597	10	100	
597	607	10	100	553.5-563 Silverton breccia color a greenish green and
607	610	3	65	brownish purple. Epidote + chlorite alteration. Disseminated
610	617	7	100	pyrite common. Some grain masses of pyrite. Occasional
617	627	10	100	fractures
627	637	10	100	
				575' Believed to be contact between San Juan and Silverton
				Hard to identify due to alteration + silicification
				563-589 Silverton + San Juan color purple-greenish grey
				Fragments indistinct in many places. Rock has been
				silicified. Pre-silicification chlorite. Disseminated
				pyrite. Grain masses of pyrite. Very thin (<1/32") qtz veins
				some w/ pyrite
				589-596 San Juan breccia color purplish-brown and greenish-grey
				Rock strongly silicified. Disseminated pyrite common
				596-608 Rock similiar to above (589-596) with the
				addition of epidote alteration. Disseminated pyrite common

Graphic log
Scale 1" = 20'



Hole No. 7

Rob Rogers

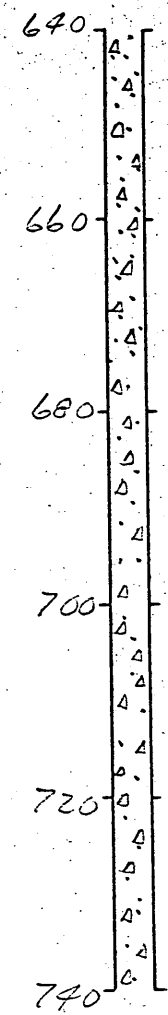
July 29, 1969 + Aug 15, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 9 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
637	647	10	100	608-633 San Juan breccia color various shades of grevish-green
647	657	10	100	Fragments indistinct in places. Rock has been silicified. Small
657 -	667	10	100	amounts of chlorite + epidote. Occasional thin etc veins
667	677	10	100	Disseminated pyrite common. Occasional grain masses of
677	687	10	100	pyrite
687	697	10	100	
697	707	10	100	633-675 San Juan breccia color a grevish green
707	717	10	100	Fragments a dark grevish-green. Chlorite and epidote
717	727	10	100	alteration fairly strong. Epidote in thin seams and
727	737	10	100	surrounding some fragments. Disseminated pyrite is
				common throughout in grains to 1/16 inch.
				675-719 San Juan breccia. Rock identical as above
				with the exception of pyrite. There is slightly less
				pyrite in this section than the above one
				719-740 San Juan breccia color a grevish-green w/
				fragments usually darker in color. Epidote alteration
				w/ some fragments strongly epidotized. Occasional
				thin epidote seams. Chlorite alt. Some
				argillaceous alt. Pyrite disseminated throughout.

Graphic log
Scale 1" = 20'



Hole No. 7

B6 Rogers

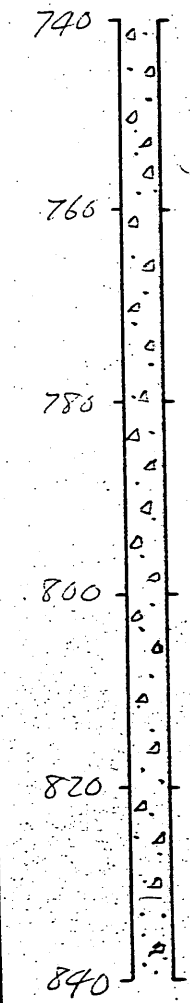
Aug 19, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 1A of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
737	747	10	100	740-832 San Juan breccia color a greyish-green to a
747	756½	9½	100	greenish-grey. Fragments darker than matrix. Rock
756½	757	½	100	fairly uniform w/ nothing out of the ordinary. Epidote +
757	767	10	100	chlorite alt. Some fragments strongly epidotized —
767	777	10	100	others surrounded by an epidote "rind". Some
777	787	10	100	argillaceous alteration. Disseminated pyrite
787	797	10	100	throughout w/ some grains in form of "x"s. Bare
797	807	10	100	strait masses of pyrite.
807	817	10	100	
817	827	10	100	
827	837	10	100	

Graphic log
Scale 1" = 20'



Hole No. 7

D. L. Rivers

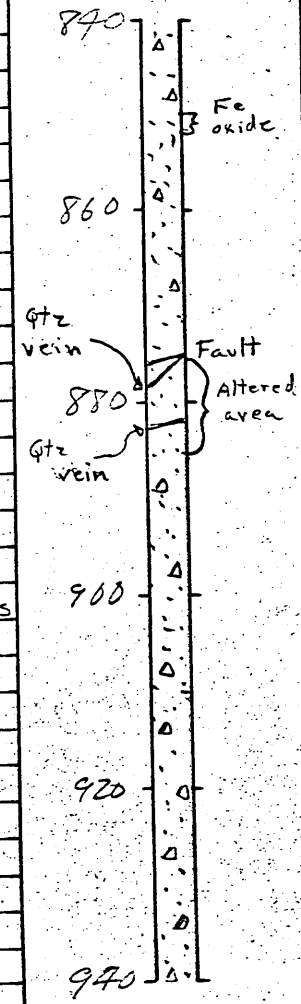
Aug 21, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 11 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
837	847	10	100	832-910 San Juan breccia color - grey. Fragments
847	857	10	100	poorly distinct. Small amount of epidote alteration
857	867	10	100	Rock has been silicified. Disseminated pyrite
867	877	10	100	abundant. Occasional thin (< 1/16") semi-massive pyrite
877	882	5	100	Occasional thin (< 1/4") qtz seams scattered
882	886	4	100	throughout w/ random orientation. Scattered small
886	896	10	100	fractures some stained w/ iron oxide
896	906	10	100	850.5-852 Highly altered w/ clay like material
906	916	10	100	and Fe oxide staining. Several fractures
916	926	10	100	875.5 Small fault
926	936	10	100	875.5 - 886.5 Area of grey leach and argillaceous
936	946	10	100	alteration. Most intense around 876.5 and 886
				876-877 Xline qtz vein 1in. thick intersecting core
				at low angle — Nonmetallics
				882.5 Xline qtz. vein 1 in thick intersecting
				core at steeper angle. Several pyrite grains
				910-951 San Juan breccia, color greenish-grey. Fragments
				more distinct than above. Increase in the amount of epidote
				alt. Some chlorite alteration. Rock slightly silicified.
				Occasional thin qtz, calcite and epidote seams all
				less than 1/8". Disseminated pyrite slightly less
				abundant than above. Rare thin veins of pyrite <
				1/16"

Graphic log
Scale 1" = 20'



Hole No. 7

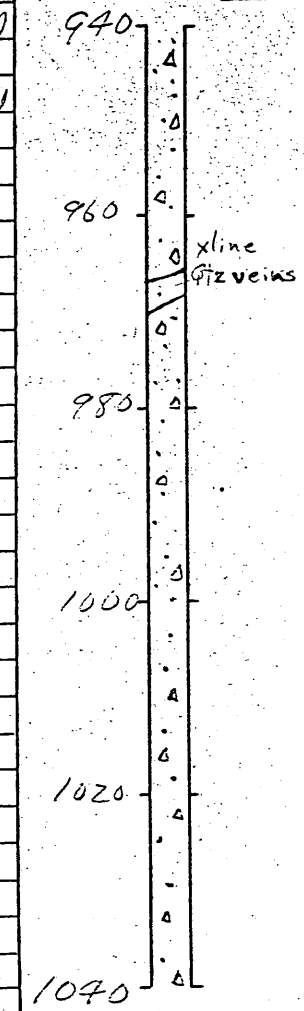
Aug 21 + 25, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 12 of ___

From	To	Thickness	% Core Recovery	Geologic description and remarks
946	956	10	100	951-982 San Juan breccia color greenish grey. Fragments
956	966	10	100	less distinct than above. Epidote alt w/ many scattered
966	976	10	100	grains of epidote. Small amounts of chlorite alt. Several
976	986	10	100	thin (<1/8")' qtz veins w/ random orientation. Disseminated
986	991	5	100	pyrite common w/ xls to 1/8".
991	997	6	100	965.5 - 966.25 Xline qtz vein 1/2" thick. Calcite xls
997	1002	5	100	etched barite(?), pyrite xls (1/8") and chalcopyrite (1/4")
1002	1007	5	100	in vein.
1007	1017	10	100	967.5 - 968 Qtz vein, xline. Thickness 1/4" Small
1017	1027	10	100	pyrite xls, 1/16"
1027	1037	10	100	"
				982-1005 San Juan breccia color green-grey. Large
				breccia fragments >6" in diameter w/ plagioclase
				phenocrysts. Small amounts of epidote as scattered
				grains and veins. Some chlorite alt. Small amounts
				of finely disseminated pyrite.
				"
				1005-1043 San Juan breccia color grey-green w/
				areas of brown-purple. Fragments also small to 3/4"
				Occasional widely-spaced fractures. Small amounts
				of epidote and chlorite. Very small amounts of finely
				disseminated pyrite. Small amounts of disseminated
				hematite(?)

Graphic log
Scale 1" = 20'



Hole No. 7

Bob Rogers

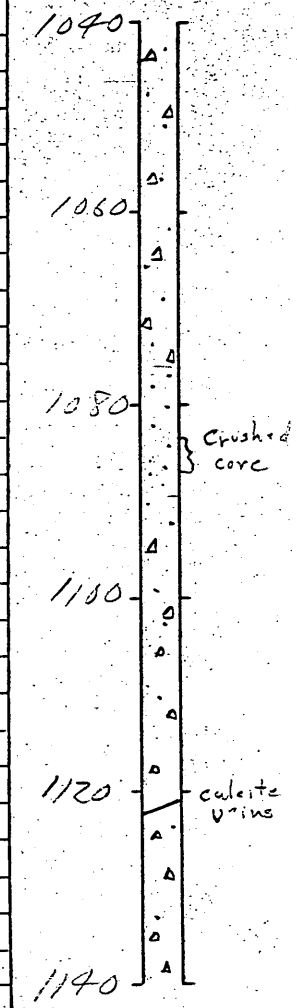
Aug 25, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 12 of

From	To	Thickness	% Core Recovery	Geologic description and remarks
1037	1047	10	100	1043-1076 San Juan breccia color grey-green Fragments
1047	1057	10	100	as above. Increase in amount of epidote from above
1057	1065	8	100	Epidote seams, 1/16" thick. Some w/ qtz. Thin qtz
1065	1075	10	100	seams also occasionally appear. Some chlorite alt.
1075	1084	9	100	Small amounts of disseminated pyrite
1084	1087	3	100	"
1087	1097	10	100	1076-1090 San Juan breccia color a greenish-grey
1097	1107	10	100	Fragments indistinct. Fractures filled w/ clay film
1107	1117	10	100	1088 Qtz seam 3/16" thick. Little thru epidote
1117	1127	10	100	and chlorite alt. Disseminated pyrite
1127	1137	10	100	1082.5-1084.5 Core badly broken
1137	1147	10	100	[illegible]
				1090-1103 - San Juan color a grey-green. Fragments
				indistinct. Small amounts of epidote & chlorite alt.
				Rock dense. Very small amounts of pyrite
				disseminated through rock "
				1103-1151 San Juan color a greenish-grey w/ purplish
				tints. Fragments vary widely in color many lighter
				in color than matrix. Epidote and chlorite
				alteration. Little to no very finely disseminated
				pyrite. Small amounts of a finely disseminated
				black mineral probably hematite.
				1122-1122.5 Calcite veins one to 1/2" thick.
				Slightly pinkish in color. Cast in calcite
				" "

Graphic log
Scale 1" = 20'



Hole No. 7

Bob Rogers

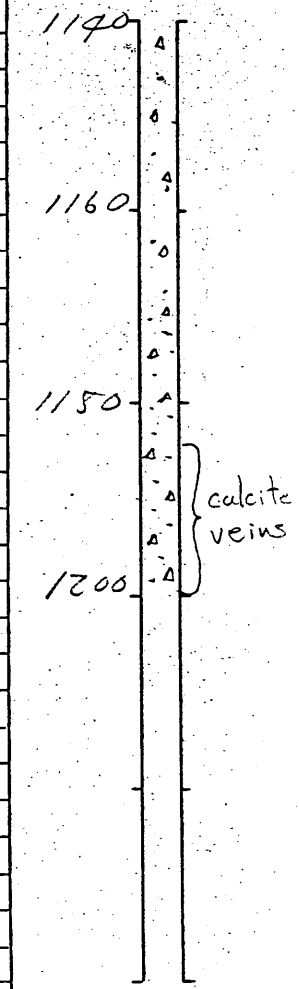
Sept 4, 1969

VITRO MINERALS CORPORATION
Drill Log

Hole No. 7
Page 14 of 14

From	To	Thickness	% Core Recovery	Geologic description and remarks
1147	1157	10	100	1151-1173 San Juan breccia color greenish-grey
1157	1167	10	100	darker than above. Fragments larger than above
1167 -	1177	10	100	and less distinct Chlorite + epidote alt. Epidote
1177	1187	10	100	not abundant. Small amounts of finely disseminated
1187	1195	8	100	pyrite.
1195	1200	5	100	1171.5 - Calcite vein - 1/2" thick
				1173 - 1200 San Juan breccia color a light grayish
				green. Fragments poorly distinct. 1178'-1178'
				rock is porous. Epidote alt more common
				than above. Some chlorite alt. Finely dis-
				seminated pyrite more common than above
				1183-1200' Calcite veins to 1/2" thick some
				w/ xline qtz and clay
				Hole terminated at 1200'

Graphic log
Scale 1" = 20'



Hole No. 7

Bob Rogers

6/4/71

Mr. Schnelzer requests copies of following until !.

Plate I on Ophir, Colo
SE/4 Telluride Quadrangle
N 37 45 - W 107 45 / 7.5
1955

Topographic and Geologic Map
of the
Lee Lake Basin Area
San Juan and San Miguel Co's Colo.
Based largely on Aerial Photo Study

Engineering - Geological Report
OME 6689
Lee Lake Project
October 1, 1970

1st 9 pages only

Drawing 1" = 400'
Date Oct 1, 1970
Location San Juan Co. Colo
Surface Trace Map of
Diamond Drill Holes

2114 CURTIS STREET

TELEPHONE 623-1852

CHARLES O. PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS

DENVER, COLORADO 80205

Folio 9747

Date July 23, 1970.

Earth Resources Co.,
720 Equitable Bldg.,
Denver, Colorado. 80202
Attention: Mr. Tom Sharp.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
Purchase Ore No. 5289								
Sample #1-	0.02	0.62	~ 285-286 SLUDGE DDH#613					
#2-	0.01	0.63	~ 293-301 SLUDGE DDH#68					

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit _____

Charge $ 5.00

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

ROOT & SIMPSON, INC.
METALLURGICAL CHEMISTS AND ASSAYERS
PHONE 244-3223 DENVER, COLORADO 80218
ADDRESS P.O. BOX 18329

ESTABLISHED 1902

CARL H. ROSS
PRESIDENT AND TREASURER

Assayed for Vitro Minerals: Att: Thomas I. Sharps

	No. 1	No. 2
Gold Oz. per ton	0.001	0.001
Silver " " "	0.34	0.30
Copper percent	0.032	0.032
Zinc percent	0.29	0.29
Lead percent	0.21	0.22
Arsenic percent	0.009	0.002
Iron percent	3.2	3.5
Nickel percent	0.006	0.005
Rubidium percent	0.02	0.017
Barium percent	0.26	0.42
Strontium percent	0.014	0.016
Titanium--percent	0.18	0.33
Zirconium percent	0.018	0.019
Columbium percent	0.005	0.002
Manganese percent	1.7	0.25
Yttrium percent	0.014	0.011

Spectographic Analysis of Sludge Samples From DDH #6B.

Charges: $ 31.00

Signed Root & Simpson, Inc.

2114 CURTIS STREET

TELEPHONE 623-1852

CHARLES O. PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS

DENVER, COLORADO 80205

Folio 9759

Date August 4, 1970.

Vitro Minerals Corp.,
720 Equitable Bldg.,
Denver, Colorado. 80202
Attention: Thomas Sharpe.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT (WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
DIAMOND MINE GRAB SAMPLES.								
#4815	0.01	0.10	GOUGE ZONE					
#4816 "	0.04	3.00	GOUGE ZONE NEAR VEIN					
#4817	0.06	8.60	VEIN MATERIAL FROM LARGEST STOPE					

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit _____

Charge $ 7.50

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

ROOT & SIMPSON, INC.
METALLURGICAL CHEMISTS AND ASSAYERS
PHONE 244-3223 DENVER 1, COLO.
ADDRESS P. O. BOX 2069

ESTABLISHED 1902

CARL H. ROSS
PRESIDENT AND TREASURER

Sept. 30, 1970

Assayed for: Earth Resources

/TERVAL	Lot No.	Oz. Gold Per ton	Oz.Silver Per ton	Lead Percent	Copper Percent	Zinc Percent
65-267 Core Fragments	6-B-1	0.04	6.84	39.00	0.5	14.3
67-268	6-B-2	0.01	0.02	0.22	None	None
68-270	6-B-3	0.01	0.88	0.15	None	None
7-282 Core Fragments	6-B-4	0.005	0.2	0.1	None	None
2-283.5	6-B-5	0.005	0.17	0.1	None	None
3.5-285	6-B-6	0.005	0.15	0.1	None	None
5-287	6-B-7	0.005	0.13	0.05	None	None
7-292	6-B-8	0.005	0.3	0.06	0.01	None
2-297	6-B-9	0.005	0.11	0.1	0.01	None
7-299	6-B-10	0.005	0.04	0.05	None	None
9.5-321.5	6-C-1	0.005	0.2	0.1	0.01	None
.5-322	6-C-2	0.001	None	0.4	0.07	1.0
2-323	6-c-3	0.005	0.24	0.4	0.05	0.5
4-325	6-C-4	0.005	0.32	0.2	0.1	None
5-326.5	6-C-5	0.005	0.37	0.2	0.06	None
6.5-327	6-C-6	0.02	1.15	0.35	0.22	0.35
7-329.5	6-C-7	0.005	0.43	0.18	0.15	None
9.5-332	6-C-8	0.005	0.68	0.3	0.2	None
2-334	6-C-9	0.005	0.56	0.55	0.12	None
1-336	6-C-10	0.005	0.3	0.25	0.09	None
7-338.5	6-C-11	0.001	None	0.16	0.08	None

Charges: $ 304.50

Signed Root & Simpson, Inc.

DDH#68

VITRO MINERALS CORPORATION
Drill Log

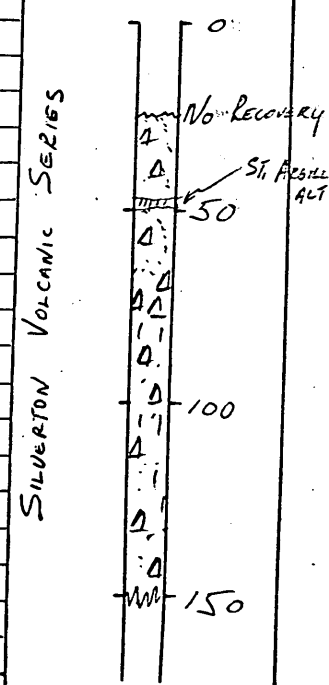
Project: ICE LAKE
County: SAN JUAN
State: COLORADO
Claim: LUCY #2
Page 1 of 3

Date Started: 7/2/70
Date Completed: 7/16/70
Logged By: G.P. ARRAGIANITZ
Type Drill: S+H 40C-LYCOMING DIESEL
Hole Size: BX WIRELINE
Contractor: SPRAGUE & HENWOOD

Hole No.: 6B
Coord: N, E
Collar Elev.: 12710 (EST)
Total Depth: 301'
Bearing: N 28°E
Inclination: -67°

From	To	Thickness	% Core Recovery	Geologic description and remarks
0	25	25	0	0-12 NX Casing
25	35	10	99	0-29 BX Casing
35	39	4	98	0-25 plugged with rock bit no recovery
39	47	8	99	
47	52	5	99	25-200 Silverton Volcanic group
52	57	5	99	greenish-grey tuff breccia. Breccia
57	67	10	95	fragments angular to subangular range
67	73	6	99	in size from 2' to 1/16". Selective repl
73	80	7	89	of breccia fragments by ep and py.
80	87	7	99	
87	97	10	95	46-50 Bleached zone - strong argillic
97	107	10	98	alteration. Also numerous stringers
107	117	10	99	of py and qtz @ various angles.
117	127	10	99	
127	137	10	99	80-82 Moderate to strong ep alteration.
137	147	10	95	
147	157	10	99	201-202 1/4" gouge zone @ approx 50°
157	167	10	99	
167	177	10	99	207-208 Fracture zone
177	187	10	99	
187	197	10	95	

Graphic log
Scale 1" = 50'



Hole No. 6B

Project: ICE LAKE

VITRO MINERALS CORPORATION
Assay Log

Hole No.: 6B
Page 1 of 1

Sample	From	To	Thickness	CORE Au OZ/TON	CORE Ag OZ/TON	CORE Pb %	CORE Cu %	CORE Zn %		SLUDGE OR DUST Au OZ/TON	SLUDGE OR DUST Ag OZ/TON				
6B-1	265	267	2	0.04	6.84	39.00	0.5	14.3							
6B-2	267	268	1	0.01	0.02	0.22	NONE	NONE							
6B-3	268	270	2	0.01	0.88	0.15	NONE	NONE							
6B-4	277	282	5	0.005	0.20	0.10	NONE	NONE							
6B-5	282	283.5	1.5	0.005	0.17	0.10	NONE	NONE							
6B-6	283.5	285	1.5	0.005	0.15	0.10	NONE	NONE							
6B-7	285	287	2	0.005	0.13	0.05	NONE	NONE							
6B-8	287	292	5	0.005	0.30	0.06	0.01	NONE							
6B-9	292	297	5	0.005	0.11	0.01	0.01	NONE							
6B-10	297	299	2	0.005	0.04	0.05	NONE	NONE							
#1-SLUDGE	285	286	1							0.02	0.62				
#2-SLUDGE	293	301	8							0.01	0.63				

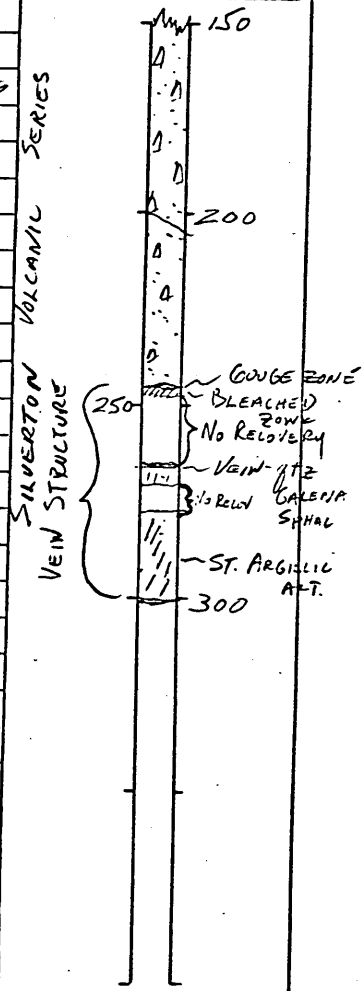
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6B
Page 2 of 3

From	To	Thickness	% Core Recovery	Geologic description and remarks
197	207	10	95	218.5 ~ 1/4" stringer of covellite, chalcopy & pyrite
207	213	5	99	intersected @ 45°
213	213.5	0.5	99	
213.5	217	3.5	99	219 ~ 1/4" stringer of qtz tetrahedrite intersected
217	227	10	99	@ 85°
227	237	10	99	
237	245	8	99	245 Gouge zone several inches thick
245	247	2	90	
247	249.5	2.5	10	246 Qtz stringer intersected @ 45°
249.5	257	7.5	0	
257	265	8	0	247-249.5 Bleached wall rock of vein.
265	267	2	10	
267	268	1	99	249.5-257 No recovery - possible gouge zone
268	269	1	10	
269	270	1	30	257-265 No recovery
270	277	7	0	
277	282	5	10	265-267 Vein material consists of qtz, galena
282	283.5	1.5	33	sphalerite, tetrahedrite, rhodonite and
283.5	285	1.5	99	rhodochrosite > 20% Combined Pb-Zn
285	286	1	0	
286	287	1	99	267-268 Massive sugar Qtz w/ disseminated
287	292	5	30	sphalerite and galena. MnO2 stain on qtz
292	297	5	20	<5% Combined Pb-Zn
297	299	2	20	268-270 Fragmented vein material
299	301	2	15	same as above. <2% Pb-Zn Combined
				270-277 No recovery possible gouge zone

Graphic log
Scale 1" = 50



Hole No. 6B

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6B
Page 3 of 3

From	To	Thick-ness	% Core Recovery	Geologic description and remarks	Graphic log Scale 1"= ____
				277-283 Trace vein w/ < 2% Combined Pb-Zn to intensely altered Silverton Volcanic series. The volcanics has strong argillic and pyritic alteration.	
				283-285 Vein material w/ < 2% Combined Pb-Zn to altered Volcanics same as above.	
				285-286 - No recovery but a small sludge sample was taken from remains in the core barrel	
				286-301 Intensely altered Volcanics Silverton Group w/ small gouge zones Volcanic rock tending to become more silicified	
				301 ~ BX Core barrel sheared off 2' from the top. The top 2' of the core barrel and approx 8' of the last drill steel were filled with sludge. This sludge was sampled.	

Hole No. 6B

DDH#62

VITRO MINERALS CORPORATION
Drill Log

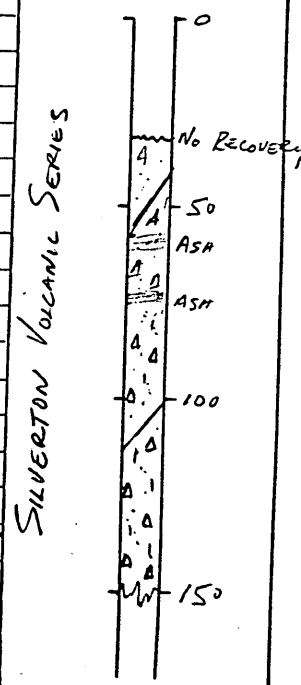
Project: Ice Lake
County: San Juan
State: Colorado
Claim: Lucy #2
Page 1 of 4

Date Started: 7/27/70
Date Completed: 8/26/70
Logged By: G.P. Ambariantz
Type Drill: S+H 40-Lycoming Diesel
Hole Size: NX Wireline
Contractor: Sprague + Henwood

Hole No.: 6C
Coord: _____ N, _____ E
Collar Elev.: 12710 (EST)
Total Depth: 407
Bearing: N 20° E
Inclination: -67

From	To	Thickness	% Core Recovery	Geologic description and remarks
0	31	31	0	0-31 Plugged with rock bit no recovery.
31	37	6	50	0-29 4" pipe used for casing
37	39	2	50	
39	44	5	40	31-57 Silverton Volcanic group.
44	47	3	66	grey-green tuff breccia. Breccia fragments angular
47	57	10	90	to subangular, range in size from 2' to 1/16"
57	66.5	9.5	75	in diameter. Selective replacement of breccia
66.5	67	0.5	60	fragments by cp and py.
67	77	10	105	
77	87	10	90	46 - Qtz stringer intersected @ 60°
87	97	10	20	
97	107	10	95	57-77 Silverton Volcanic group - interbedded
107	117	10	95	ash flow tuff, Burns Latite and tuff breccia
117	127	10	105	
127	136	9	90	115-116 Four fractures intersected @ 50°
136	146	10	95	
146	167	21	95	187-188 Qtz and py stringer intersected @ 85-90°
167	177	10	95	
177	187	10	100	190-195 Qtz and py stringer 1/4" intersected
187	207	20	95	@ 85 to 90°.
207	212	5	90	

Graphic log
Scale 1" = 50'



Hole No. 6C

Project: ICE LAKE

VITRO MINERALS CORPORATION
Assay Log

Hole No.: 6C
Page 1 of 1

				CORE						SLUDGE OR DUST					
Sample	From	To	Thick-ness	Au OZ/TON	Ag OZ/TON	PB %	Cu %	Zn %							
6C-1	319.5	321.5	2	0.005	0.2	0.1	0.01	NONE							
6C-2	321.5	322	0.5	0.001	NONE	0.4	0.07	1.0							
6C-3	322	323	1	0.005	0.24	0.4	0.05	0.5							
6C-4	324	325	1	0.005	0.32	0.2	0.10	NONE							
6C-5	325	326.5	1.5	0.005	0.37	0.2	0.06	NONE							
6C-6	326.5	327	0.5	0.02	1.15	0.35	0.22	0.35							
6C-7	327	329.5	1.5	0.005	0.43	0.18	0.15	NONE							
6C-8	329.5	332	2.5	0.005	0.68	0.3	0.02	NONE							
6C-9	332	334	2	0.005	0.56	0.55	0.12	NONE							
6C-10	334	336	2	0.005	0.30	0.25	0.09	NONE							
6C-11	337	338.5	1.5	0.001	NONE	0.16	0.08	NONE							

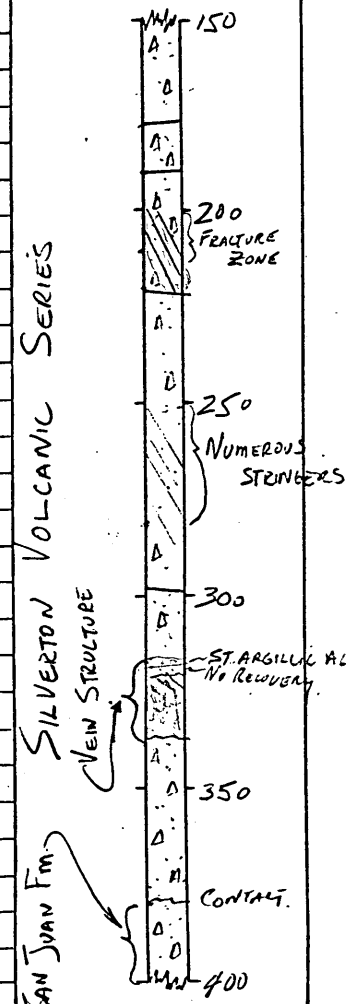
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6C
Page 2 of 4

From	To	Thickness	% Core Recovery	Geologic description and remarks
212	227	15	90	211-220 Fractured zone w/ gouge intersected
227	237	10	85	@ 60-70°. Iron oxide staining in gouge zones.
237	247	10	80	
247	257	10	95	217-218 Fracture w/ gouge intersected @ 85-90°
257	267	10	95	
267	277	10	90	235-250 Numerous fractures encountered @ 75-90°
277	287	10	95	
287	298	11	80	250-277 Numerous stringers intersected @
298	306	8	80	75-85°
306	312	6	110	
312	316	4	99	298 - Fracture intersected @ 85°
316	317	1	85	
317	318	1	10	316-318 - Silverton Series w/ strong argillic
318	319.5	1.5	0	alteration and fracturing
319.5	321.5	2.0	95	
321.5	323	1.5	99	318-319.5 - No Recovery
323	325	2	10	
325	326.5	1.5	40	319.5-321.5 - Silverton Series w/ strong argillic
326.5	327	0.5	95	alteration, most py alt. 1 gouge seams
327	329.5	2.5	140	intersected @ 45°
329.5	332	2.5	95	
332	334	2	99	321.5-323 altered Silverton Series same as
334	336	2	99	above w/ vein material consisting
336	337	1	0	of sugar qtz, galena & sphalerite.
337	338.5	1.5	85	Combined Pb-Zn < 1%.
338.5	339.5	1	95	
339.5	341.5	2	95	322 - Qtz stringer 1/2" wide intersected @ 80°
341.5	344.5	3	90	322.5 Gouge & zone intersected @ 80°
344.5	345.5	1	99	post qtz clean.

Graphic log
Scale 1" = 50'



Hole No. 6C

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6C
Page 4 of 4

From	To	Thickness	% Core Recovery	Geologic description and remarks	Graphic log Scale 1"= ____
				341.5 - 1" Stringer of Qtz intersected @ 75-80°	
				349 Qtz stringer inter @ 75°	
				336-381 Silverton Volcanic group.	
				381-407 San Juan Formation - purple tuff breccia w/ mod sp-py alt.	
				387 Qtz stringer inter @ 75°	
				397-407 Numerous fracture planes @ 45-75°.	

Hole No. 6C

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6C
Page 3 of 4

From	To	Thickness	% Core Recovery	Geologic description and remarks
345.5	349.5	4	99	323-325 - Sugar Qtz w/ iron oxide and minor
349.5	357	7.5	110	staining, py, galena & sphal. Combined Pb-Zn < 2%
357	374	17	95	
374	381	7	95	325-326.5 Same as above
381	387	6	95	
387	396.5	9.5	99	326.5-327 Sugar Qtz w/ carbonate, py
396.5	397	0.5	99	gal & sphal. Combined Pb-Zn < 1%
397	407	10	99	Fault breccia & gouge, fracture planes @ 75°
				327-329.5 Altered Silverton Series w/
				sugar qtz and disseminated sulfides
				Combined Pb-Zn < 2%
				328 - Gouge zone intersected @ 87°
				329 Qtz stringer intersected @ 75°
				329.5 Stringer intersected @ 15°
				329.5-334 Altered Silverton Series as above
				332 Qtz stringer intersected @ 3°
				333 Qtz stringer intersected @ 80°
				334-335 Gouge zone w/ iron oxide, minor
				qtz and carbonate mineralization
				335-336 Altered Silverton Series
				336-337 - No Recovery
				337-338.5 Altered Silverton Series
				338.5 Qtz stringer intersected @ 80°

Graphic log
Scale 1" = 50'

Mar 400
407 - BOTTOM

Hole No. 6C

VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 6C
Page 4 of 4

From	To	Thickness	% Core Recovery	Geologic description and remarks	Graphic log Scale 1"= ____
				341.5 - 1" Stringer of Qtz intersected @ 75-80°	
				349 Qtz stringer inter @ 75°	
				336-381 Silverton Volcanic group.	
				381-407 San Juan Formation - purple tuff breccia w/ mod ep-py alt.	
				387 Qtz stringer inter @ 75°	
				397-407 Numerous fracture planes @ 45-75°.	

Hole No. 6C

VITRO MINERALS CORPORATION
Drill Log

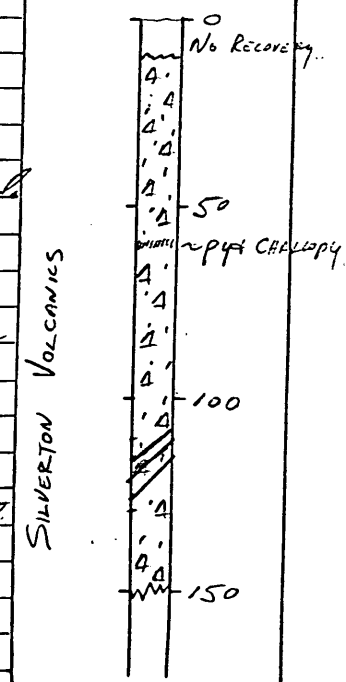
Project: ICE LAKE
County: SAN JUAN
State: COLORADO
Claim: ST. ANTHONY
Page 1 of 3

Date Started: 7/1/70
Date Completed: 8/30/70
Logged By: G.P. AMBARIANTZ
Type Drill: S+H 40C – LYCOMING DIESEL
Hole Size: 0–509' BXWL 509–588 NXWL
Contractor: SPRAGUE & HENWOOD

Hole No.: 2B
Coord: _____ N, _____ E
Collar Elev.: 12900' (EST)
Total Depth: 588'
Bearing: N 72° 30' E
Inclination: –53°

From	To	Thickness	% Core Recovery	Geologic description and remarks
0	7	7	0	0–8 NX casing
8	9	1	0	0–9 plugged with rock bit no recovery
9	11	2	90	
11	15	4	99	9–30' Silverton Series possibly the Burns
15	19	4	99	Latite, grey in color with moderate py and
19	29	10	95	epidotization also containing numerous
29	30	1	50	stringers of qtz and py. Feldspars argillized
30	33	3	99	limonite after py.
33	40	7	95	
40	46.5	6.5	99	30–130 Silverton Series, greenish-grey tuff
46.5	50.5	4.5	90	breccia. Breccia fragments angular to subangular
50.5	59	9.5	99	range in size from 2' to 1/16". Selective
59	66	7	95	replacement of breccia fragments by epidote
66	70.5	4.5	99	and pyritic alteration.
70.5	75.5	5	99	
75.5	80.5	5	99	59–60 Intense argillic alt. w/ disseminated
80.5	90.5	10	99	py and chalcopy.
90.5	100.5	10	99	
100.5	110.5	10	99	
110.5	120	9.5	95	
120	125	5	99	

Graphic log
Scale 1" = 50'



Hole No. 2B

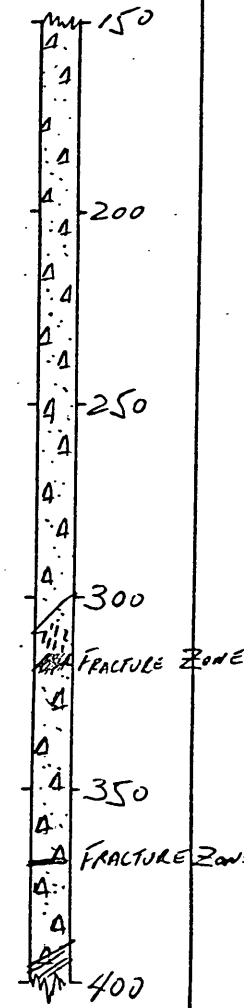
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 213
Page 2 of 3

From	To	Thickness	% Core Recovery	Geologic description and remarks
125	130	5	115	110.5-130 Numerous fractures intersected
130	140.5	10.5	90	@ 45°-50°
140.5	150.5	10	95	
150.5	160.5	10	99	130-240 Silverton Volcanic Series,
160.5	170	9.5	95	grey-green tuff breccia w/ mod argillic
170	180	10	115	weak ep and py alteration
180	190	10	95	
190	200	10	99	239 two parallel fractures intersected @
200	210	10	99	45°
210	220	10	99	
220	230	10	98	240-300 Silverton Volcanic Series
230	240	10	98	same as above.
240	250	10	95	
250	260	10	95	300-310 Fractures intersected @ 45-30°
260	270	10	95	
270	280	10	99	310 Intense argillic alteration w/ mod
280	282	2	75	ep & py alt.
282	290	8	95	
290	300	10	95	319- Fractured rock
300	310	10	95	
310	320	10	90	340-350 Silverton Volcanic series
320	330	10	95	tuff breccia purplish-green w/ mod
330	340	10	95	alteration; strong ep alt
340	350	10	95	
350	360	10	95	369-370 Fracture zone
360	370	10	95	
370	378	8	85	
378	388.5	10.5	90	
388.5	396	7.5	90	

Graphic log
Scale 1" = 50'



Hole No. 213

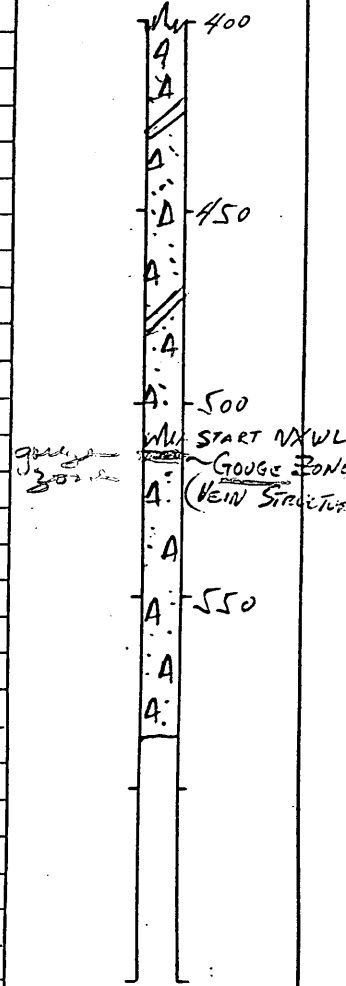
VITRO MINERALS CORPORATION SUBSIDIARY OF EARTH RESOURCES COMPANY

Drill Log

Hole No. 213
Page 3 of 3

From	To	Thickness	% Core Recovery	Geologic description and remarks
396	400.5	4.5	95	396-400.5 Numerous fractures intersected
400.5	409	8.5	95	@ 45-70° most of which contain
409	415	6	85	iron oxide and manganese oxide
415	420.5	5.5	95	staining
420.5	430	9.5	99	
430	440	10	95	420-430
440	450	10	95	422 Series of parallel fractures intersected
450	460	10	99	@ 45°
460	470.5	10.5	95	426 Two parallel fractures inter @ 60°
470.5	480.5	10	99	
480.5	509	28.5	95	300-440 Silverton Volcanic series
509	515.5	6.5	85	purple-green tuff breccia w/ mod sp
515.5	588	72.5	85	py and argil alt.
				475 Two parallel fractures intersected
				@ 45° each contains iron oxide
				staining
				509 Marks the end of BKW core
				Hole reamed NKW to 509.
				509 marks the beginning of NX drilling
				509-511 Gouge zone w/ qtz stringer. This
				could possibly be the vein structure.
				440-588 Silverton Volcanic Series
				Same as above.
				515.5-588 - Core boxes dropped by helicopter
				core was measured and logged

Graphic log
Scale 1" = 50'



Hole No. 213

LEASE AND AGREEMENT

THIS LEASE AND AGREEMENT, made and entered into this 14th day of JUNE, 1968, by and between Edward E. ~~Kingrey~~ KINGERY, Conservator of the Estates of James Donald Crouch, Jr. and Sandra Jurgens, Mental Incompetents, First Party, hereinafter referred to as LESSOR, and VITRO MINERALS CORPORATION, a Delaware corporation, Second Party, hereinafter referred to as LESSEE.

W I T N E S S E T H:

WHEREAS, the Lessor is the owner of a certain interest in mining claims, hereinafter described, and desires to join in a program with the owners of the other interests in said claims and other owners of adjacent or contiguous mining property, in the same general area as Lessor's mining claim interests, in forming a consolidated group of mining properties, sufficient in magnitude and character for a practical economic program of exploration, development and mining, and

WHEREAS, the Lessee is also the owner of adjacent or contiguous mining property interests and is engaged in the business of organizing the consolidation of groups of mining properties for the express purpose of making arrangements with mining operations, for economic development of such properties, and does such work at Lessee's sole expense.

NOW, THEREFORE, Lessor in consideration of the royalties hereby reserved and the covenants and promises herein to be performed by Lessee, and in further consideration of TEN DOLLARS ($10.00) in hand paid Lessor by Lessee, receipt of which is hereby acknowledged, does, by these presents, lease, demise and let unto

Lessee, for all mining purposes, all Lessor's right, title and interest in and to certain lode mining claims and property, all situate in the Ice Lake Mining District, San Juan County, Colorado, named and described as follows:

> An undivided one-ninetieth (1/90) of the Lucy, Lucy No. 2, May Band and Lelia, U. S. Mineral Survey No. 13372, comprising 32.27 acres, more or less.

TO HAVE AND TO HOLD said premises and property, for a period of ten (10) years from and after the "date of entry", as hereinafter referred to, with right of Lessee to extend and renew said Lease and Agreement, for two (2) additional succeeding ten (10) year periods, upon sixty (60) days notice, in writing, prior to the date of expiration of any such period, and if it is in effect at the end of the thirty (30) years, to automatic extension thereafter, so long as any one of the consolidated properties is being operated and maintained as a producing mine or is maintained in a standby status for such operation pending improvements in economic conditions - unless sooner terminated in the manner hereinafter provided - subject to the following terms and conditions, to-wit:

(1) That Lessee shall undertake, at its sole expense, and with due diligence, to obtain leases and agreements on any other undivided interests in the claims above described and on other mining claims and property in the same general area as the demised premises.

When, and if, Lessee shall have obtained such leases and agreements, as Lessee, in Lessee's sole judgment, shall deem necessary to form a consolidated group of mining claims and properties, hereinafter called the "Consolidated Properties", for a practical

and economic mining exploration and development program; and when Lessee shall have completed the necessary arrangements for such program, Lessee, shall forthwith, take possession of the demised premises and notify Lessors in writing of the date thereof, called herein "date of entry". Any other properties or interests within the Project Area:

> Sections 18, 19 and 30, Township 41 North, Range 8 West, and Sections 13, 14, 23, 24 and 25, Township 41 North, Range 9 West, in San Juan and San Miguel Counties, Colorado

may be added to the "Consolidated Properties" by the Lessee or its successor in interest at any time or times following the date hereof, whether before or after the "date of entry". If Lessor has not received notice of "date of entry" before November 30, 1969, Lessor may thereafter terminate this Agreement pursuant to Paragraph 8 hereof.

Prior to the "date of entry", Lessee may, and is hereby given the right, subject to the provisions of Paragraphs 6 and 7 hereof, and at its sole risk and option, to do geological, engineering, exploration and examination work on the demised premises, including such work as opening old workings for examination and sampling and doing diamond drilling. Receipt by Lessor of notice of "date of entry" shall not be required from the date of the beginning of such work to the date of its completion, provided that Lessor is given notice of the beginning of such work and notice when such work has been completed.

Subject to the provisions of Paragraphs 8 and 9 hereof, within the eighteen (18) months period after "date of entry", the Lessee shall have expended at any place or places Lessee may choose

or select, upon, or for, the "consolidated properties", the sum of not less than TWENTY-FIVE THOUSAND DOLLARS ($25,000.00) in constructing access roads, mine buildings, purchasing and installing machinery and equipment, exploration, development and other mining work (general office overhead expenses excepted), including work theretofore or thereafter done of the character referred to in the immediately preceding paragraph on or for any of the "consolidated properties", and thereafter, shall expend in that behalf, at least an average of FIVE THOUSAND DOLLARS ($5,000.00) per month until a total of ONE HUNDRED THOUSAND DOLLARS ($100,000.00), shall have been spent, including the previously mentioned TWENTY-FIVE THOUSAND DOLLARS ($25,000.00) to be spent within the first eighteen (18) months after "date of entry", and prior thereto in diamond drilling, etc., as above mentioned.

Subject to the provisions of Paragraphs 8 and 9 hereof, beginning with the next calendar month, eighteen (18) months after the "date of entry", Lessee agrees to pay Lessor a minimum advance royalty calculated as follows:

In any month that sufficient ore is not produced and removed from the property interest herein demised, to earn the Lessor the minimum sum, under the royalties provided in Paragraph 3, hereof, equivalent to Lessor's pro rata undivided interest in a total sum of THIRTY-TWO DOLLARS ($32.00) per month, the Lessee agrees to pay Lessor in addition, for such month, the difference between the sum actually earned from royalties for ore produced and shipped from the demised property in said pro rata sum. Such additional payments in excess of the amount of actual earned royalty shall constitute a cumulative payment credit against that portion of the actual earned royalty payments, thereafter becoming due in excess of said

monthly minimum royalty sum and when any earned royalty payment exceeding the minimum is to be made, said credit shall be absorbed by applying it to amounts of such earned royalty payments in excess of the minimum amount.

(2) That Lessee shall perform all mining operations on the demised property in a workmanlike manner and shall keep proper maps and records of all mining operations upon the demised property and shall make same available for Lessor's inspection upon request, but not more often than once each month, together with any records kept of diamond or churn drill holes, and all such other reasonable information concerning the operations of the demised property as Lessors may from time to time request; and shall also permit Lessor to enter into and upon any part of said demised property at reasonable times, for the purpose of inspecting, surveying, assaying and sampling the same, and shall facilitate such inspection and surveys in every reasonable way, but Lessor shall enter upon said demised property at Lessor's own risk, and so as not to hinder unreasonably, operations of Lessee.

(3) That Lessee shall pay Lessor royalties on Lessor's interest, in all ores extracted and removed from the demised property as follows:

> For ore of net return value of $10.00 per ton or less, two and one-half per cent (2½%) of the net return value.
>
> For ore of a net return value in excess of $10.00 per ton, a percentage equivalent to one-fourth (1/4) of the net return value up to a maximum of ten per cent (10%); for example, ore of $20.00 net return value would carry a royalty of one-fourth (1/4) of $20.00 or five per cent (5%).
>
> Royalties to apply to nearest whole dollar amount. If net return value is $19.25, royalty would be four and three-fourths per cent (4-3/4%), if $20.75, royalty would be five and one-quarter per cent (5-1/4%).

The above royalties are based upon a full and complete ownership in the demised premises. As to ownership in the demised premises less than the entire interest, the royalty shall be paid only in the proportion which Lessor's interest bears to the full and entire interest in said premises.

If the ore is sold to a mill, or smelter, the net return value shall be determined by deducting transportation costs to the mill, or smelter, from the net mill, or smelter, returns as the case may be; if the ore is milled at the mine by Lessee's facilities, before shipment to a smelter, the net return value shall be determined by deducting transportation costs (between mine mouth and mill and between mill and smelter) and milling costs from the smelter returns, but in no instance shall the Lessee's milling costs deducted be in excess of $3.50 per wet ton of ore treated. (For the purposes of this paragraph, milling costs shall include all costs that could be deducted in computing federal income taxes [including reasonable depreciation and amortization of other capital and deferred costs], except state or local income taxes and except operating loss carry forwards or carry backs.) For gold bullion and amalgam shipped and sold to the United States Mint, Denver, Colorado, net returns shall be determined by deducting the milling costs as provided above and the cost of shipping the bullion, or amalgam, from the net mint return. Milling costs shall be prorated between products if more than one concentrate product is made in accordance with mutual metallurgical procedures and in the case of amalgamation, the costs of this procedure will be added to the actual milling costs.

All ores or concentrates shall be sold to the person or corporation who will return in settlement the highest price therefor.

All ores or concentrates shall be shipped or transported in the name of the Lessee, but duplicate settlement sheets shall be furnished to the Lessor. All royalties shall be paid to the Lessor by the Lessee and the purchaser of ores or concentrates shall have no responsibility therefor. Production royalties shall become due when payment for ores or concentrates is received by the Lessee from the purchaser. All computations and accountings with respect to the amount of production royalty due shall be made on a quarterly basis. Within thirty days after the end of each calendar month, the Lessee shall make a provisional payment to the Lessor based on estimates with respect to such month; and within sixty days after the end of each calendar quarter, the Lessee shall send to the Lessor a final statement for such quarter, accompanied by payment of any additional production royalty due for such quarter. In the event that such final statement indicates that the total provisional payments for such quarter have exceeded the amount actually due for such quarter, the Lessee may apply the amount of such overpayment against the amount of the provisional payment for any later month or months or may request that the amount of such overpayment be promptly refunded to the Lessee by the Lessor. The amount of each provisional payment shall not be less than the minimum royalty provided for in the last paragraph of Section 1 hereof, except as such amount may be reduced by offsetting overpayments appearing from a previous final quarterly accounting.

(4) That Lessee shall have the right to remove ores, wastes, water and other materials from the demised premises and to carry on general mining operations pertaining to the demised premises by means of shafts and workings on other properties in which

the Lessee or any successor in interest has an interest; and to remove ores, wastes, water and other materials from such other properties and to carry on general mining and milling operations pertaining to such other properties on the surface of, or through shafts and workings, on the demised premises. Lessee shall have the right to commingle for milling purposes ore mined from the demised premises, but until weighed and sampled all ore extracted and removed from the demised premises shall be distinctly marked and shall be kept separate from ores extracted or removed from any other property. The full metal content of ore derived from the demised premises shall be calculated as follows: The total pounds of metal contained in all ore fed to the mill during any calendar month, whether or not such ore is derived from the demised premises, shall be calculated from tonnage and grade measurements made between the crusher and the flotation sections of the mill. The total pounds of contained metal thus calculated shall be multiplied by a fraction, the numerator of which is the total pounds of metal contained in the ore derived from the demised premises and sent to the mill during the same calendar month, calculated from tonnage and grade measurements made before commingling of said ore with the other ores, and the denominator of which is the total pounds of metal contained in all ore derived from all properties (including the demised premises) and sent to the mill during the same calendar month, calculated from tonnage and grade measurements before commingling. The percentage of recovery from ore mined from the demised premises shall be assumed to be the percentage of recovery for the entire mill operations for such month.

(5) That Lessee shall pay all general property taxes assessed as a non-producing mine against the Lessor's ownership in the demised premises beginning with the taxes for 1968, payable January 1, 1969, and prorated to the date of termination, but Lessor shall be charged with the Lessor's proportion, based on the royalty hereinabove reserved, of taxes based on an assessment as a producing mine and of any production, severance or other excise taxes, and Lessee shall advance the payment for such taxes to be reimbursed therefor from payments due Lessor from Lessee.

(6) That during the performance of all work on the demised premises Lessee shall have complied in all respects with the Workmens Compensation Laws of the State of Colorado, shall continuously carry all necessary insurance to protect Lessee and Lessee's employees against liability for industrial accidents, and to save Lessor harmless from liability therefor; and Lessee shall, in Lessee's operations on the demised premises, comply with Social Security Unemployment insurance, and all other State and Federal laws, relating to mining, the condition of said premises, employment, and taxes; and Lessee shall save Lessor harmless from any claim for damages or liability by reason of Lessee's operations on the demised premises; and this agreement shall not create, and in no event shall be construed as, a partnership between Lessee and Lessor, and Lessor shall in no event be held liable for any occurrence in, on, or about the demised premises developing out of Lessee's operations.

(7) That after "date of entry", Lessee shall keep the demised property and every part thereof, free and clear and any and all labor and material liens and encumbrances during term of this lease, and at all times, that Lessee shall be working thereon, shall keep posted in a conspicuous place on demised property, in

the name of and on behalf of, Lessor, a written or printed notice setting forth the fact that said demised property is leased to, and is being operated by Lessee, and that the interest of Lessor therein shall not be subject to liens for services, labor, material or supplies rendered, furnished or used in connection with said demised property or the mining operations of Lessee hereunder.

(8) That in case Lessee fails to perform any of the terms or conditions herein provided on Lessee's part to be performed, it shall be lawful for Lessor, at Lessor's option, to declare this lease terminated and of no effect thereafter, and with or without process of law, to enter upon, and take possession of, the demised property; provided, however, that Lessor shall first give Lessee notice in writing of Lessee's failure to perform, and Lessor's election to terminate this lease, and Lessee shall have sixty (60) days after said notice, to remedy said default, and upon failure or refusal by Lessee within said sixty (60) days period to remedy said claimed default, then all Lessee's rights hereunder shall thereupon cease and terminate.

(9) That Lessee may voluntarily surrender this lease at any time, by giving to Lessor not less than fifteen (15) days' written notice of surrender, and upon such voluntary surrender, all rights, liabilities and obligations of the parties hereto including the work obligations set out in the 4th paragraph of Section (1) hereof shall cease and terminate, except the obligation of Lessee to make any payments to Lessor that shall theretofore have accrued hereunder.

(10) In the event of valid forfeiture, surrender or other termination of this lease and agreement, the Lessee will immediately

surrender peaceable possession of said demised premises and the whole and every part thereof to the Lessor. The Lessor shall have, and is hereby given and granted a reasonable period of time, not less than three (3) months after a valid forfeiture, surrender or other termination of this lease, to remove from said demised premises all machinery, tools and equipment placed in or upon the demised premises by Lessee. In the event of a termination of this lease by the Lessor, or its surrender by Lessee, all payments theretofore received by Lessor or made by Lessee including those for taxes and work done by Lessee shall be considered as liquidated damages, and there shall be no further liability on the part of the Lessee.

(11) That each of the parties hereto is hereby given the right and privileges of selling, transferring, or assigning the respective rights, privileges and interests as set forth in this lease and agreement, and that Lessee shall have the right to sub-lease any part of said demised property, subject to the terms of this agreement, but in such event Lessee shall be liable for acts of any such sub-leases.

(12) That is the Lessee shall be delayed at any time in performance of Lessee's agreements hereunder by reason of labor disturbances, strikes, severe weather conditions, governmental orders or regulations, fires, casualties affecting the leased property, a mill operated by the Lessee or the mill or smelter to which ore or concentrates are shipped, or if such mill or smelter refuses to accept concentrates or ore, then in any of these events, such delay shall not be deemed a breach of this lease, and during any time Lessee is so delayed, Lessee shall be excused from the performance thereof until the cause of such delay is removed, and normal operations resumed.

(13) That Lessor agrees that at time of execution of this agreement, Lessor has not previously conveyed or granted the subject property, ~~Lessor holds title to, and is in possession of the property herein demised, and the same shall be upon "date of entry", free and clear from all former grants, bargains, sales, liens or encumbrances of any kind created by Lessor,~~ and that there shall be no delinquent taxes, and Lessor agrees to furnish Lessee such abstracts, deeds, or other evidence of title as may be in Lessor's possession, and upon request of, under direction of, and at expense of Lessee, Lessor agrees to have abstracts brought down to date, and take such steps as may be necessary to perfect Lessor's title, including quieting same, if necessary.

(14) That any written notice which either party herein may give the other party in accordance with the provisions hereof, may be given by serving such notice personally upon such other party, or by depositing such notice in the registered United States mail, with postage prepaid and addressed to such other party at the last address furnished by such party to the other and such notice shall be deemed to have been given at the time it shall be deposited.

(15) This Lease and Agreement and the terms and provisions hereof shall inure to the benefit of and be binding upon the parties hereto, and their heirs, executors, administrators, successors and assigns; provided that in the event of any assignment or other transfer of the interest of the Lessor (by contract, the laws of descent and distribution or otherwise) the Lessee shall not be obligated to make payments, furnish statements, information or reports, or give notices to, or permit inspections by, or otherwise recognize as Lessor, more than one person acting as representative on behalf of all persons entitled to any part of the Lessor's interest hereunder. In the event that all such persons succeeding to any part

of the Lessor's interest hereunder fail to designate one person to act as their representative as aforesaid, the Lessee may treat as such representative for all purposes the original Lessor (or the survivor of the original Lessors if more than one) or the personal representative of the last survivor of the original Lessors.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in duplicate as of the day and year first above written.

LESSOR:

Edward E. Kingery

Edward E. ~~Kingrey~~ KINGERY as Conservator of the Estates of James Donald Crouch, Jr. and Sandra Jurgens, Mental Incompetents.

LESSEE:

VITRO MINERALS CORPORATION

By W B Hall

~~Vice~~ President

ATTEST:

Secretary

0.00

WESTERN EXPLORATION & MANAGEMENT CO.
609 17th ST. DENVER 2, COLO.

LEASE AND AGREEMENT

THIS LEASE AND AGREEMENT, made and entered into this 15th day of January, 1960 by and between Manley S. Nolen, first party, hereinafter referred to as Lessor and Western Exploration & Management Co., a Colorado corporation, second party, hereinafter referred to as Lessee.

WITNESSETH:

WHEREAS, the Lessor is the owner of a certain interest in mining claims, hereinafter described and desires to join in a program with the owners of the other interests in said claims and other owners of adjacent or contiguous mining property, in the same general area as Lessor's mining claim interests, in forming a consolidated group of mining properties, sufficient in magnitude and character for a practical economic program of exploration, development and mining, and --

WHEREAS, the Lessee is also the Owner of adjacent or contiguous mining property interests and is engaged in the business of organizing the consolidation of groups of mining properties for the express purpose of making arrangements with mining operations, for economic development of such properties, and does such work at Lessee's sole expense.

NOW THEREFORE, Lessor in consideration of the royalties hereby reserved and the covenants and promises herein to be performed by Lessee, amd in further consideration of One ($1.00) dollar in hand paid Lessor by Lessee, receipt of which is hereby acknowledged, does, by these presents, lease, demise and let unto Lessee, for all mining purposes, all Lessor's right, title and interest in and to certain lode mining claims and property, all situate in the Ice Lake Mining District, San Juan County, Colorado, named and described as follows:

An undivided 1/30(one-thirtieth) of the Lucy, Lucy No.2 May Band and Lelia. U.S.Mineral Survey No.13372, comprising 32.27 Acres more or less.

TO HAVE AND TO HOLD said premises and property, for a period of ten (10) years from and after the "date of entry, as hereinafter referred to, with right of Lessee to extend and renew said Lease and Agreement, for two (2) additional succeeding ten (10) year periods, upon sixty (60) days notice, in writing, prior to the date of expiration of any such period, ~~and if it is in effect at the end of the thirty (30) years, to automatic extension thereafter, so long as the consolidated properties are being operated and maintained as a producing mine~~ - unless sooner terminated in the manner hereinafter provided - subject to the following terms and condition to-wit:

(1) That Lessee shall undertake, at its sole expense, and with due diligence, to obtain Leases and Agreements on any other undivided interests in the claims above described and on other mining claims and property in the same general area as the demised premises.

When, and if, Lessee shall have obtained such Leases and Agreements, as Lessee, in Lessee's sole judgment, shall deem necessary to form a consolidated group of mining claims and properties, hereinafter called the "consolidated properties", for a practical and economic mining exploration and development program; and when Lessee shall have completed the necessary arrangements for such program, Lessee, shall forthwith, take possession of the demised premises and notify Lessor in writing of the date thereof, called herein "date of entry". If Lessor has not received notice of "date of entry" before November 30, 1962, Lessor may thereafter, terminate this agreement pursuant to paragraph 8 hereof.

Prior to the "date of entry", Lessee may, and is hereby given the right, subject to the provision of paragraphs 6 and 7 hereof, and at its sole risk and option, to do geological engineering, exploration and examination work on the demised premises, including such work as opening old workings for examination and sampling and doing diamond drilling.

Subject to the provisions of paragraph 8 and 9 hereof, within the eighteen (18) months period after "date of entry", the Lessee shall have expended at any place or places Lessee may choose or select, upon, or for, the "consolidated properties", the sum of not less than twenty-five ($25,000) thousand dollars in constructing access roads, mine buildings, purchasing and installing machinery and equipment, exploration, development and other mining work (general office overhead expenses excepted), including work that may have been done as provided in the immediately preceding paragraph; and thereafter, shall expend in that behalf, at least an average of five-thousand ($5000)dollars per month until a total of one-hundred thousand ($100,000) dollars, shall have been spent, including the previously mentioned twenty-five ($25,000) dollars to be spent within the first eighteen (18) months after "date aof entry", and prior thereto in diamond drilling, etc., as above mentioned.

Subject to the provisions of paragraph 8 and 9 hereof, beginning with the next calendar month, eighteen (18) months after the "date of entry", Lessee agrees to pay Lessor a minimum advance royalty calculated as follows

In any month that sufficient ore is not produced and removed from the property interest herein demised, to earn the Lessor the minimum sum, under the royalties provided in paragraph 3, hereof, equivalent to Lessor's pro rata undivided interest in a total sum of $32.00 per month, the Lessee agrees to pay Lessor in addition, for such month, the difference between the sum actually earned from royalties for ore produced and shipped from the demised property and said pro rata sum. Such additional payments in excess of the amount of actual earned royalty shall constitute a cumulative payment credit against that portion of the actual earned royalty payments, thereafter becoming due in excess of said monthly minimum royalty sum and when any earned royalty payment exceeding the minimum is to be made, said credit shall be absorbed by applying it to amounts of such earned royalty payments in excess of the minimum amount.

(2) That Lessee shall perform all mining operations on the demised property in a workmanlike manner and shall keep proper maps and records of all mining operations upon the demised property and shall make same available for Lessor's inspection upon request, but not more often than once each month, together with any records kept of diamond or churn drill holes, and all such other reasonable information concerning the operations of the demised property as Lessor may from time to time request; and shall also permit Lessor to enter into and upon any part of said demised property at reasonable times, for the purpose of inspecting, surveying, assaying and sampling the same, and shall facilitate such inspection and surveys in every reasonable way, but Lessor shall enter upon said demised property at Lessor's own risk, and so as not to hinder unreasonably, operations of Lessee.

(3) That Lessee shall pay Lessor royalties, on Lessor's interest in all ores extracted and removed from the demised property as follows:

> For ore of a net return value of $10.00 per ton or less, 2-1/2% of the net return value.
>
> For ore of a net return value in excess of $10.00 per ton, a percentage equivalent to 1/4 of the net return value up to a maximum of 10%; for example, ore of $20.00 net return value would carry a royalty of 1/4 of $20.00 or 5%.
>
> Royalties to apply to nearest whole dollar amount. If net return value is $19.25, royalty would be 4-3/4%, if $20.75, royalty would be 5-1/4%.

If the ore is sold to a mill, or smelter, the net return value shall be determined by deducting transportation costs to the mill, or smelter, from the net mill, or smelter, returns as the case may be; if the ore is milled at the mine by Lessee's facilities, before shipment to a smelter the net return value shall be determined by deducting transportation costs to the mill, or smelter, from the net mill, or smelter, returns as the case may be; if the ore is milled at the mine by Lessee's facilities, before shipment to a smelter the net return value shall be determined by deducting transportation costs and milling costs from the smelter returns

but in no instance shall the Lessee's milling cost deducted be in excess of three dollars fifty cents ($3.50) per wet ton of ore treated. For gold bullion and amalgam shipped and sold to the United States Mint, Denver, Colorado, net returns shall be determined by deducting the milling costs as provided above and the cost of shipping the bullion, or amalgam, from the net mint return. Milling costs shall be prorated between products if more than one concentrate product is made in accordance with usual metallurgical procedures and in the case of amalgamation the costs of this procedure will be added to the actual milling costs.

All ores or concentrates shall be sold to the person or corporation who will return in settlement the highest price therefor. All ores or concentrates shall be shipped or transported in the name of the Lessee and settlement therefor shall be made by the smelter, mill or other ore purchasing agency; duplicate settlement sheets shall be furnished to each party and instructions for apportioning payments shall be furnished the smelter, mill, or purchasing agency by Lessee so that the royalty thereon is paid direct to Lessor, and the remainder to Lessee.

(4) That Lessee shall have the right to remove ores, waste, water and other materials from the demised premises, and to carry on general mining operations pertaining to the demised premises by means of shafts and workings on other properties of the consolidated group and to remove ores, waste, water and other materials from other properties and to carry on general mining operations pertaining to such other properties on the surface of, or through shafts and workings on, the demised premises, but until weighed and sampled, all ores, extracted and removed from the demised premises, shall be distinctly marked and shall be kept separate from ores extracted or removed from any other property.

(5) That Lessee shall pay all general property taxes assessed as a non-producing mine against the Lessor's ownership in the demised premises beginning with the taxes for 1959, payable January 1, 1960, and prorated

to the date of termination, but Lessor shall be charged with the Lessor's proportion, based on the royalty hereinabove reserved, of taxes based on an assessment as a producing mine and of any production, severance or other excise taxes, and Lessee shall advance the payment for such taxes to be reimbursed therefor from payments due Lessor from Lessee.

(6) That during the performance of all work on the demised premises Lessee shall have complied in all respects with the Workmens Compensation Laws of the State of Colorado, shall continuously carry all necessary insurance to protect Lessee and Lessee's employees against liability for industrial accidents, and to save Lessor harmless from liability therefor; and Lessee shall, in Lessee's operations on the demised premises, comply with Social Security, Unemployment insurance, and all other State and Federal laws, relating to mining, the condition of said premises, employment, and taxes; and Lessee shall save Lessor harmless from any claim for damages or liability by reason of Lessee's operations on the demised premises; and this agreement shall not create, and in no event shall be construed as, a partnerahip between Lessee and Lessor, and Lessor shall in no event be held liable for any occurrence in, on, or about the demised premises developing out of Lessee's operations.

(7) That after "date of entry", Lessee shall keep the demised property and every part thereof, free and clear and any and all labor and material liens and encumbrances during term of this lease, and at all times, that Lessee shall be working thereon, shall keep posted in a conspicuous place on demised property, in the name of and on behalf of, Lessor, a written or printed notice setting forth the fact that said demised property is leased to, and is being operated by Lessee, and that the interest of Lessor therein shall not be subject to liens for services, labor, material or supplies rendered, furnished or used in connection with said demised property or the mining operations of Lessee hereunder.

(8) That in case Lessee fails to perform any of the terms or con-

ditions herein provided on Lessee's part to be performed, it shall be lawful for Lessor, at Lessor's option, to declare this lease terminated and of no effect thereafter, and with or without process of law, to enter upon, and take possession of, the demised property; provided, however, that Lessor shall first give Lessee notice in writing of Lessee's failure to perform, and Lessor's election to terminate this lease, and Lessee shall have sixty (60) days after said notice, to remedy said default, and upon failure or refusal by Lessee within said sixty (60) days period to remedy said claimed default, then all Lessee's rights hereunder shall thereupon cease and terminate.

(9) That Lessee may voluntarily surrender this lease at any time, by giving to Lessor not less than fifteen (15) days' written notice of surrender, and upon such voluntary surrender, all rights, liabilities and obligations of the parties hereto shall cease and terminate, except the obligation of Lessee to make any payments to Lessor that shall theretofore have accrued hereunder.

(10) In the event of valid forfeiture, surrender or other termination of this lease and agreement, the Lessee will immediately surrender peaceable possession of said demised premises and the whole and every part thereof to the Lessor. The Lessor shall have, and is hereby given and granted a reasonable period of time, not less than three (3) months after a valid forfeiture, surrender or other termination of this lease, to remove from said demised premises all machinery, tools and equipment placed in or upon the demised premises by Lessee. In the event of a termination of this lease by the Lessor, or its surrender by Lessee, all payments theretofore received by Lessor or made by Lessee including those for taxes and work doen by Lessee shall be considered as liquidated damages, and there shall be no further liability on the part of the Lessee.

(11) ~~That in consideration of the Lessee having fully complied with all the terms and conditions of this lease and agreement, the Lessor~~

hereby gives Lessee the right and option to purchase the property interest herein demised at any time during the first ten (10) year period of the lease following the "date of entry", at a full purchase price of One thousand seventy ($1,070.00) dollars, with all the royalty or other payments paid to Lessor by Lessee, prior to date of purchase, applying as a credit against this purchase price, and Lessor agrees upon payment of the purchase price, they will deliver to Lessee a quit-claim deed conveying all Lessor's right, title and interest in and to the property purchased, and upon request of Lessee to place said executed deed in escrow for delivery to Lessee if and when this purchase option is exercised, and purchase price as above provided, paid to Lessor.

A further condition of this option is that if the lease herein given is terminated by forfeiture under the terms hereof, then such termination shall operate to terminate and cancel this option and release the Lessor from any further obligation hereunder.

(12) That each of the parties hereto is hereby given the right and privileges of selling, transferring, or assigning the respective rights, privileges and interests as set forth in this lease and agreement, and that Lessee shall have the right to sublease any part of said demised property, subject to the terms of this agreement, but in such event Lessee shall be liable for acts of any such sub-leases.

(13) That is the Lessee shall be delayed at any time in performance of Lessee's agreements hereunder by reason of labor distrubances, strikes, severe weather conditions, governmental orders or regulations, fires, casualties affecting the leased property, a mill operated by the Lessee or the mill or smelter to which ore or concentrates are shipped, of if such mill or smelter refuses to accept concentrates or ore, then in any of these events, such delay shall not be deemed a breech of this lease, and during any time Lessee is so delayed, Lessee shall be execused from the performance thereof untilthe cause of such delay is removed, and

normal operations resumed.

(14) That Lessor agrees that at time of execution of this agreement, Lessor holds title to, and is in possession of, the property herein demised, and the same shall be, upon "date of entry", free and clear from all former grants, bargains, sales, liens or encumbrances of any kind created by Lessor, and that there shall be no delinquent taxes, and Lessor agrees to furnish Lessee such abstracts, deeds, or other evidence of title as may be in Lessor's possession, and upon request of, under direction of, and at expense of Lessee, Lessor agrees to have abstracts brought down to date, and take such steps as may be necessary to perfect Lessor's title, including quieting same, if necessary.

(15) That any written notice which either party herein may give the other party in accordance with the provisions hereof, may be given by serving such notice personally upon such other party, or by depositing such notice in the registered United States mail, with postage prepaid and addressed to such other party at the last address furnished by such party to the other and such notice shall be deemed to have been given at the time it shall be deposited.

(16) This lease and the terms and provisions hereof shall insure to the benefit of and be binding upon, the parties hereto, their heirs, executors, administrators, successors, and assigns.

This agreement cancels and succeeds all previous agreements, and constitutes the only agreement between the parties.

IN WITNESS WHEREOF, the Parties hereto have executed this agreement in duplicate as of the day and year first above written.

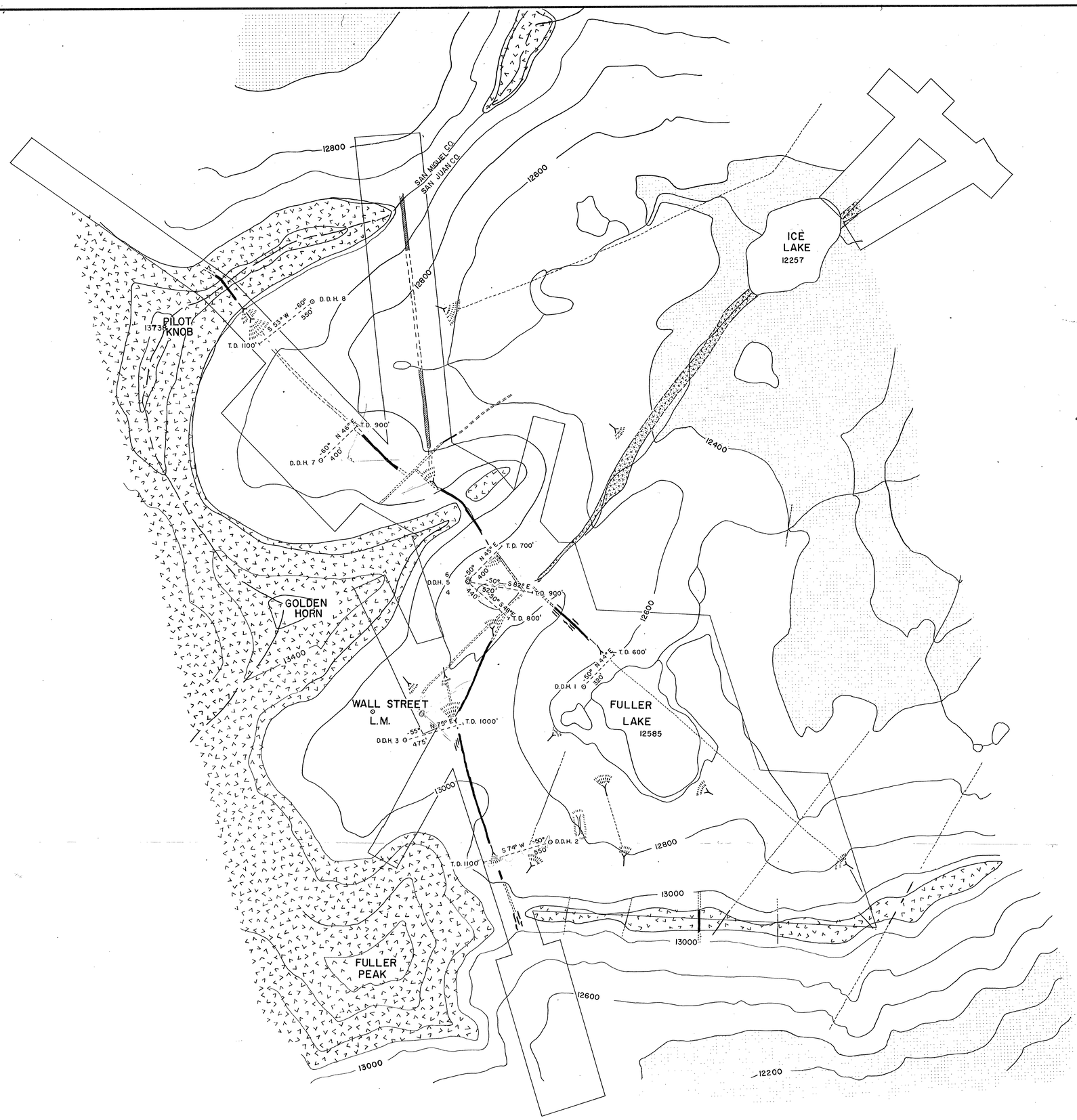
Manley S. Nolen
Manley S. Nolen Lessor

WESTERN EXPLORATION & MANAGEMENT CO.

V.L. Board
V.L.Board, President Lessee.

ATTEST:

H. Sherman Berge
H. Sherman Berge, Asst. Sec'y.



N

400 300 200 100 0 400 800

SCALE 1"=400'

LEGEND AND EXPLANATION

- POTOSI VOLCANIC GROUP
- HORNBLENDE DELLENITE DIKE
- SILVERTON VOLCANIC GROUP
- SAN JUAN FORMATION

NUMBER o——DIP / HORIZONTAL DISTANCE TO VEIN——BEARING——TOTAL DEPTH

——— CLAIM OUTLINE

CONTOUR INTERVAL: 200'

PLATE V

VITRO CORPORATION OF AMERICA

PROPOSED D.D.H. LOCATION MAP

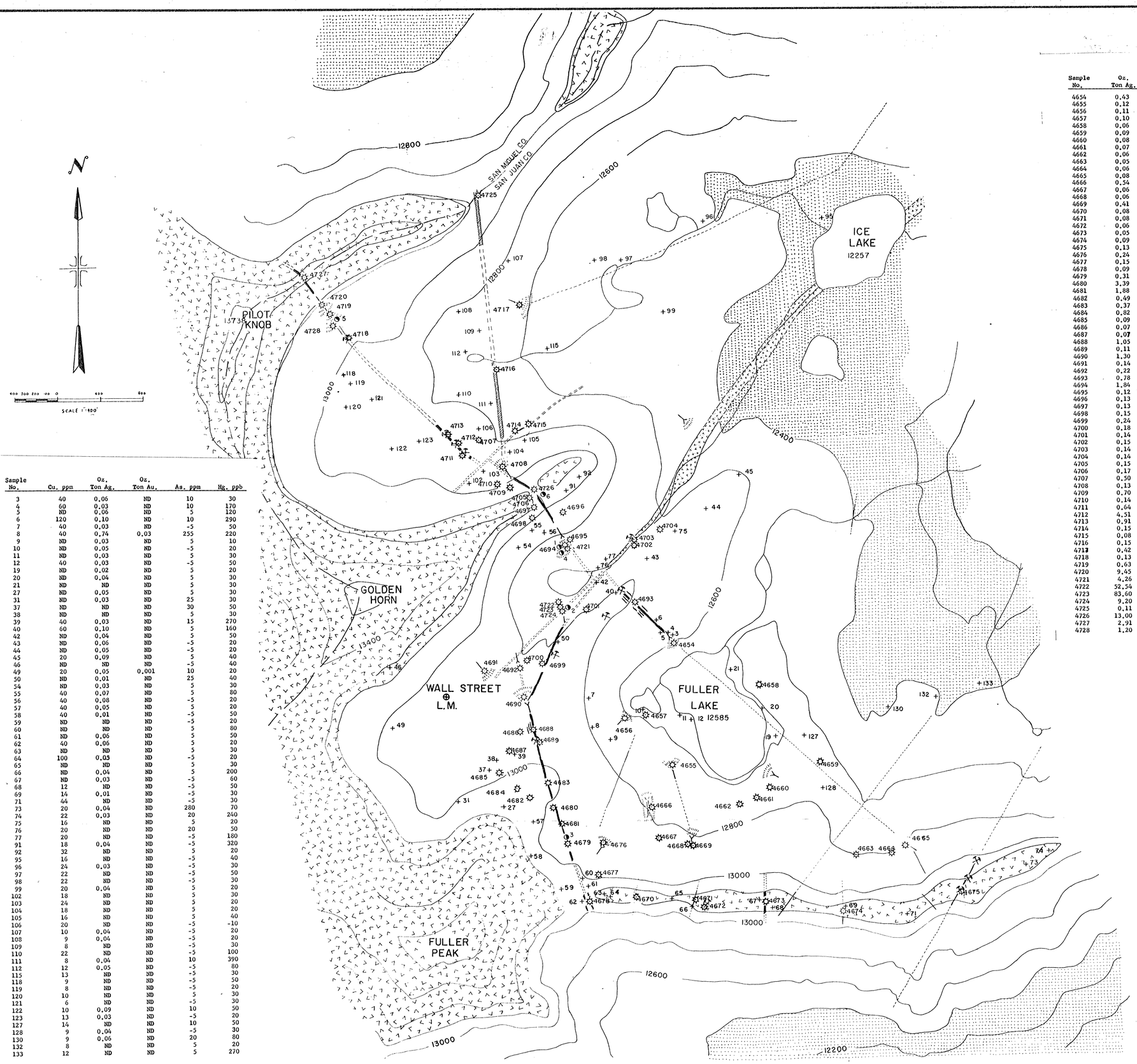
LUCY LAST HOPE VEIN AREA

UPPER ICE LAKE BASIN

SAN JUAN COUNTY, COLORADO

SCALE: 1" = 400'

DECEMBER, 1967



Sample No.	Cu. ppm	Oz. Ton Ag.	Oz. Ton Au.	As. ppm	Hg. ppb
3	40	0.06	ND	10	30
4	60	0.03	ND	10	170
5	ND	0.06	ND	5	120
6	120	0.10	ND	10	290
7	40	0.03	ND	-5	50
8	40	0.74	0.03	255	220
9	ND	0.03	ND	5	10
10	ND	0.05	ND	-5	20
11	ND	0.03	ND	5	30
12	40	0.03	ND	-5	50
19	ND	0.02	ND	5	20
20	ND	0.04	ND	5	30
21	ND	ND	ND	5	30
27	ND	0.05	ND	5	30
31	ND	0.03	ND	25	30
37	ND	ND	ND	30	50
38	ND	ND	ND	5	30
39	40	0.03	ND	15	270
40	60	0.10	ND	5	160
42	ND	0.04	ND	5	50
43	ND	0.06	ND	-5	20
44	ND	0.05	ND	-5	20
45	20	0.09	ND	5	40
46	ND	ND	ND	-5	40
49	20	0.05	0.001	10	20
50	ND	0.01	ND	25	40
54	ND	0.03	ND	5	30
55	40	0.07	ND	5	80
56	40	0.08	ND	-5	20
57	40	0.05	ND	5	20
58	40	0.01	ND	-5	50
59	ND	ND	ND	-5	20
60	ND	ND	ND	5	80
61	ND	0.06	ND	5	50
62	40	0.06	ND	5	20
63	ND	ND	ND	5	30
64	100	0.05	ND	-5	20
65	ND	ND	ND	5	30
66	ND	0.04	ND	5	200
67	ND	0.03	ND	-5	60
68	12	ND	ND	-5	50
69	14	0.01	ND	-5	30
71	44	ND	ND	-5	30
73	20	0.04	ND	280	70
74	22	0.03	ND	20	240
75	16	ND	ND	5	20
76	20	ND	ND	20	50
77	20	ND	ND	-5	180
91	18	0.04	ND	-5	320
92	32	ND	ND	5	20
95	16	ND	ND	-5	40
96	24	0.03	ND	-5	30
97	22	ND	ND	-5	50
98	22	ND	ND	-5	30
99	20	0.04	ND	5	20
102	18	ND	ND	5	30
103	24	ND	ND	5	20
104	18	ND	ND	5	20
105	16	ND	ND	5	40
106	20	ND	ND	-5	-10
107	10	0.04	ND	-5	20
108	9	0.04	ND	-5	20
109	8	ND	ND	-5	30
110	22	ND	ND	-5	100
111	8	0.04	ND	10	390
112	12	0.05	ND	-5	80
115	13	ND	ND	-5	30
118	9	ND	ND	-5	50
119	8	ND	ND	-5	20
120	10	ND	ND	5	30
121	6	ND	ND	-5	30
122	10	0.09	ND	10	50
123	13	0.03	ND	-5	20
127	14	ND	ND	10	50
128	9	0.04	ND	-5	30
130	9	0.06	ND	20	80
132	8	ND	ND	5	20
133	12	ND	ND	5	270

Sample No.	Oz. Ton Ag.	Oz. Ton Au.	Mn. ppm	Cu. ppm	Pb. ppm	Zn. ppm	Te. ppm	As. ppm	Hg. ppb
4654	0.43	0.004	6,280	150	750	374	ND	10	160
4655	0.12	0.002	1,162	52	362	388	5.5	-5	390
4656	0.11	0.002	1,046	52	426	282	4.0	-5	30
4657	0.10	0.001	1,420	74	506	330	4.5	105	190
4658	0.06	ND	840	46	368	244	3.5	-5	190
4659	0.09	0.004	1,146	94	536	172	5.0	-5	70
4660	0.08	0.002	992	44	474	644	7.5	-5	290
4661	0.07	0.005	766	94	500	84	5.0	50	400
4662	0.06	ND	1,012	48	404	190	6.0	5	370
4663	0.05	ND	1,464	52	372	152	6.5	5	220
4664	0.06	ND	874	48	336	128	3.0	-5	100
4665	0.08	ND	1,028	40	450	290	6.0	20	260
4666	0.54	0.006	506	48	346	170	3.0	10	320
4667	0.06	0.005	1,490	42	346	512	2.5	-5	80
4668	0.06	0.003	1,112	52	424	164	3.5	-5	80
4669	0.41	0.011	32,240	538	5,966	2,072	6.5	5	190
4670	0.08	0.003	162	42	362	144	6.0	-5	230
4671	0.08	0.005	216	66	530	118	6.0	-5	160
4672	0.06	0.005	552	58	460	226	5.0	-5	60
4673	0.05	0.003	516	60	480	156	ND	-5	150
4674	0.09	0.006	368	56	332	116	2.5	-5	300
4675	0.13	0.006	680	48	344	124	14.0	15	140
4676	0.24	0.007	796	46	394	96	8.5	5	210
4677	0.15	0.006	14,100	86	472	130	7.5	15	110
4678	0.09	0.005	334	58	496	142	9.0	-5	100
4679	0.31	0.102	3,392	74	484	372	9.0	20	220
4680	3.39	0.93	14,680	160	934	262	10.0	10	60
4681	1.88	0.245	440	142	886	164	10.5	45	230
4682	0.49	0.012	1,620	88	526	236	10.5	170	180
4683	0.37	0.103	11,720	80	448	96	10.5	5	130
4684	0.82	0.015	44,700	76	1,598	1,706	11.0	20	110
4685	0.09	0.006	2,800	274	808	1,606	8.0	-5	50
4686	0.07	0.005	386	54	422	36	11.5	5	60
4687	0.07	0.006	930	50	484	112	10.5	5	360
4688	1.05	0.014	10,400	72	386	114	6.0	25	130
4689	0.11	0.006	13,760	94	516	114	6.5	25	370
4690	1.30	0.026	3,476	104	730	256	9.0	25	170
4691	0.14	0.005	1,366	58	368	122	8.0	-5	280
4692	0.22	0.007	2,924	88	520	318	10.0	30	370
4693	0.78	0.013	22,500	222	1,528	516	7.5	25	210
4694	1.84	0.11	2,880	2,800	1,860	19,560		30	280
4695	0.12	0.006	1,174	38	260	168		-5	100
4696	0.13	0.005	942	42	200	108		-5	30
4697	0.13	0.005	1,172	82	280	174		-5	110
4698	0.15	0.008	1,138	78	260	96		5	290
4699	0.24	0.005	146	56	400	752		80	240
4700	0.18	0.004	1,250	116	340	182		40	100
4701	0.14	0.004	1,490	40	240	198		5	150
4702	0.15	0.005	1,758	44	440	174		15	390
4703	0.14	0.003	1,392	102	380	112		-5	150
4704	0.14	0.002	6,500	66	440	288		30	270
4705	0.15	0.003	862	102	320	64		-5	80
4706	0.17	0.011	1,372	62	220	20		-5	80
4707	0.50	0.004	7,160	86	300	84		-5	70
4708	0.13	0.004	1,384	38	180	116		20	90
4709	0.70	0.006	40,050	580	404	13,340		25	110
4710	0.14	0.004	1,342	38	240	154		5	180
4711	0.64	0.006	16,600	130	720	826		20	120
4712	4.51	0.067	5,830	166	116	532		40	170
4713	0.91	0.009	28,700	574	8,000	4,500		95	140
4714	0.15	ND	774	70	340	124		5	160
4715	0.08	ND	612	46	120	68		5	190
4716	0.15	ND	614	36	140	32		5	270
4717	0.42	0.010	3,390	122	880	708		90	250
4718	0.13	0.009	1,124	66	240	8		-5	120
4719	0.63	0.028	81,750	414	1,660	734		45	140
4720	9.45	1.215	77,500	1,362	8,500	1,350		-5	170
4721	4.26	0.044	5,600	2,172	12,000	15,800		110	170
4722	52.54	0.093	290	7,060	10,500	2,500		450	250
4723	83.60	0.027	504	15,040	25,000	11,850		640	240
4724	9.20	0.027	302	1,126	2,860	568		150	420
4725	0.11	ND	196	36	140	12		5	240
4726	13.00	2.53	686	2,248	10,000	424		125	330
4727	2.91	0.005	19,250	372	2,880	250		25	50
4728	1.20	0.014	106,000	1,692	6,500	1,950		-5	170

PLATE IV

LEGEND AND EXPLANATION

TERTIARY:
- POTOSI VOLCANIC GROUP
- HORNBLENDE DELLENITE DIKE
- SILVERTON VOLCANIC GROUP
- SAN JUAN FORMATION

4567 SAMPLE LOCATION AND NUMBER

+123 PETROGRAPHIC SAMPLE LOCATION AND NUMBER

MINERALIZED VEIN, DASHED WHERE INFERRED

VEIN, MINOR MINERALIZATION AT SURFACE

FISSURE, MINERALIZED, DASHED WHERE INFERRED

ADIT WITH DUMP

VERTICAL SHAFT

U.S. LOCATION MONUMENT

SHEETING NOTED IN BEDROCK

TRENCH WITH DUMP

PROSPECT PIT

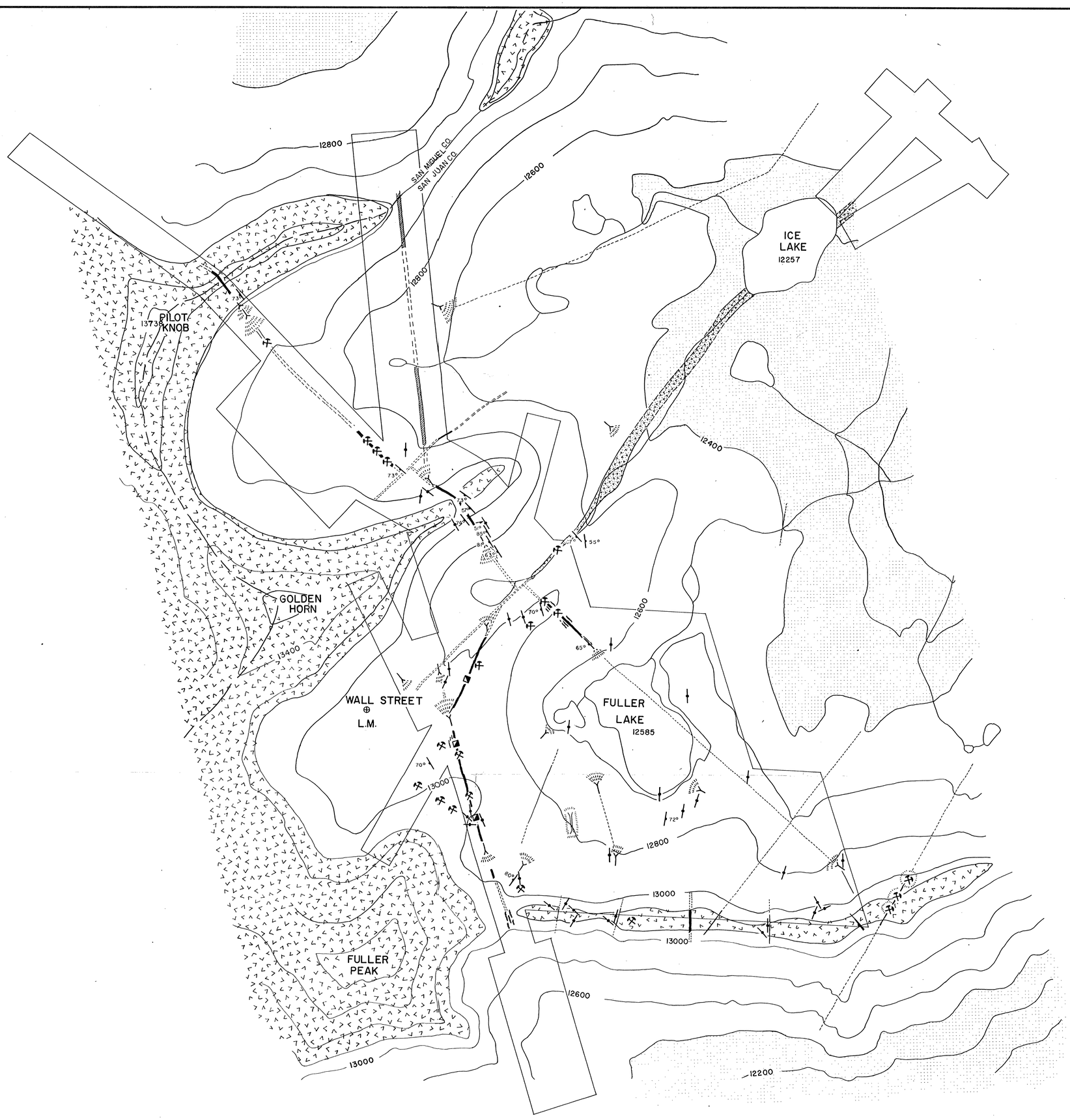
MINERAL SAMPLE TAKEN FOR PARAGENETIC STUDY

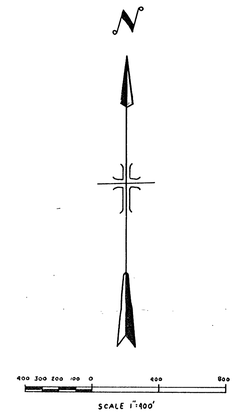
VITRO CORPORATION OF AMERICA

SAMPLE LOCATION MAP

LUCY-LAST HOPE VEIN AREA
UPPER ICE LAKE BASIN
SAN JUAN COUNTY, COLORADO

SCALE: 1" = 400'
DECEMBER, 1967





LEGEND AND EXPLANATION

TERTIARY

- POTOSI VOLCANIC GROUP
- HORNBLENDE DELLENITE DIKE
- SILVERTON VOLCANIC GROUP
- SAN JUAN FORMATION

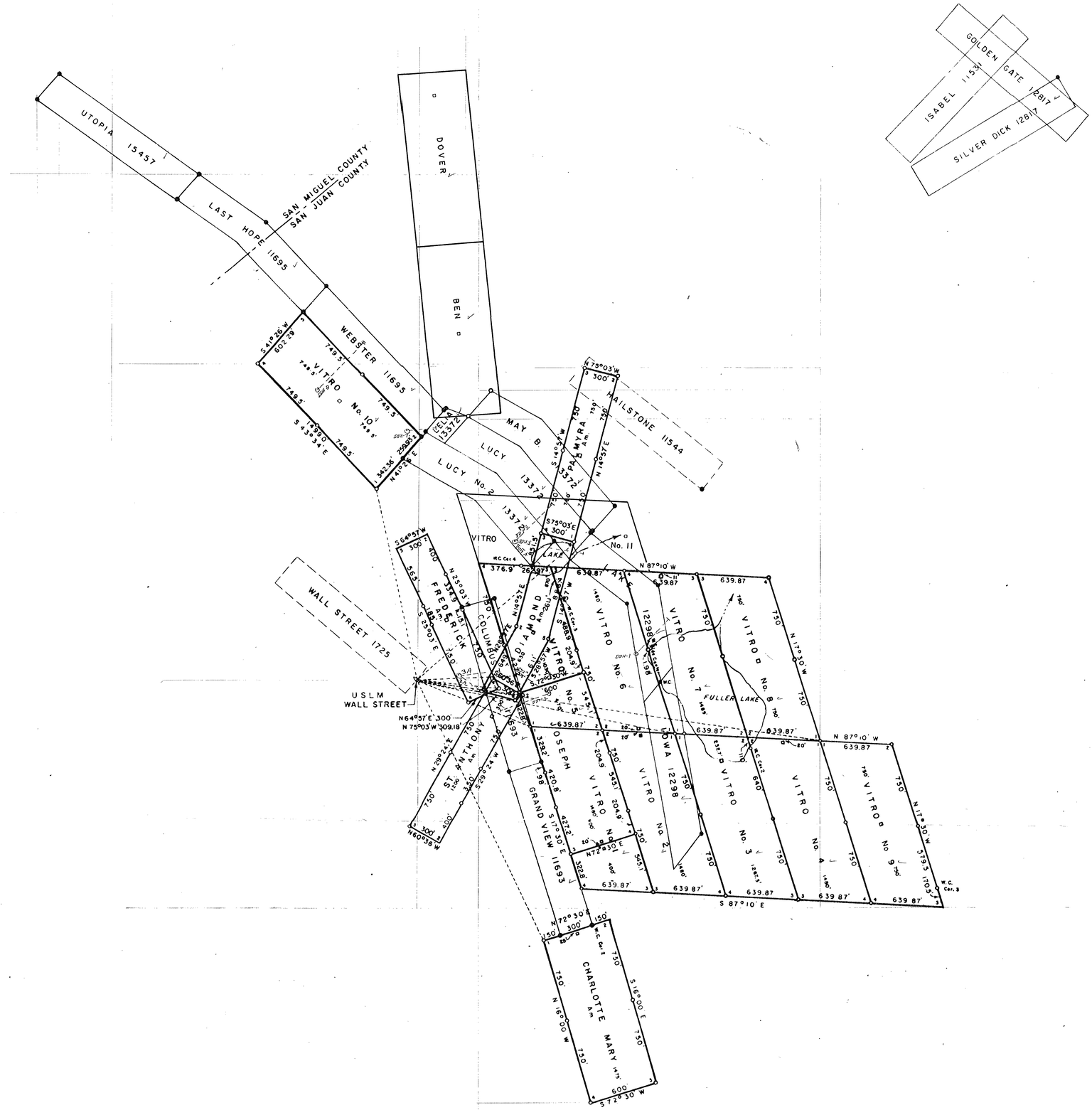
- MINERALIZED VEIN, DASHED WHERE INFERRED
- VEIN, MINOR MINERALIZATION AT SURFACE
- FISSURE, MINERALIZED, DASHED WHERE INFERRED
- VERTICAL JOINT PATTERN
- JOINT PATTERN WITH DIP INDICATED
- SHEETING NOTED IN BEDROCK
- ADIT WITH DUMP
- TRENCH WITH DUMP
- VERTICAL SHAFT
- PROSPECT PIT
- U.S. LOCATION MONUMENT
- CONTOUR INTERVAL: 200'
- OUTLINE OF CLAIM BLOCK

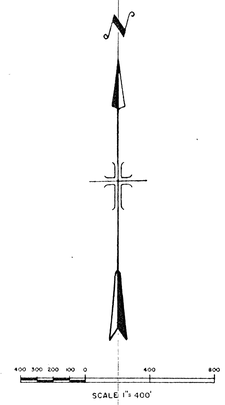
PLATE III

VITRO CORPORATION OF AMERICA

GEOLOGIC MAP OF THE
LUCY-LAST HOPE VEIN AREA
UPPER ICE LAKE BASIN
SAN JUAN COUNTY, COLO.
NOV, 1967

MAPPED & DRAWN: SHARPS TRACED: ENGSTROM





TIES TO UNPATENTED CLAIMS

Corner 1	Diamond to U.S.L.M. Wall Street		N 80°08' W 579.59'
"	Frederick	"	N 84°01' W 732.77'
"	Charlotte Mary	"	N 25°59' W 2562.83'
"	St. Anthony	"	N 82°07' W 942.08'
"	Palmyra	"	S 48°58' W 1848.89'
"	Joseph	"	S 87°30' W 1478.41'
"	Vitro No 1	"	N 87°04' W 1087.83'
"	Vitro No. 2	"	N 77°56' W 2331.59'
"	Vitro No 3	"	N 77°56' W 2331.59'
"	Vitro No 4	"	N 81°12' W 3600.71'
"	Vitro No. 5	"	N 67°04' W 1087.83'
"	Vitro No. 6	"	N 77°56' W 2331.59'
"	Vitro No. 7	"	N 77°56' W 2331.59'
"	Vitro No. 8	"	N 81°12' W 3600.71'
"	Vitro No. 9	"	N 81°12' W 3600.71'
"	Vitro No. 10	"	S 11°52' E 1715.75'

NOTES

- ● Patented Claim Corners Found
- o Unpatented Claim Corners Set
- □ Discovery Monuments Set

Bearings based on true Meridian from Solar Observations.

Modified by addition of Dover, Ben and Vitro No. 11 claims on November 24, 1967.

Thomas L. Sharpe

I, J Boyd Peterson do hereby certify that this plat was plotted from notes of a field survey made by me and completed August 12, 1967.

J. Boyd Peterson
Registered Land Surveyor
No. 5837

PLATE II

WESTERN ENGINEERS, INC.
CLAIM MAP
FOR
VITRO CORPORATION OF AMERICA
90 PARK AVENUE - NEW YORK, N.Y. 10016
LOCATED IN
UNSURVEYED T41N R9W N.MEX. P.M.
SAN JUAN & SAN MIGUEL COUNTIES, COLORADO

SURVEYED J.B.P. DRAWN J.B.P. TRACED J.B.P.
GRAND JUNCTION, COLO. Dwg. 1466-1 9/18/67