EXTRA COPY
D M E A
RECEIVED JUN 20 1958
CODE

June 19, 1958
Re: DMEA 9061
Murray-Shenandoah Corp.
Silver Lake Mine
San Juan County, Colorado
$802,741 Lead-Zinc-Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

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

Subject: Review of application

The applicant requests assistance in searching for the downward extension of the junction zone of two ore-bearing vein systems, the Silver Lake and New York. Due to the angle of intersection and dips of the veins a plunging intersection zone results.

To reach the assumed intersection at the working Main level, a 1260-foot drift is proposed. The drift would be a continuation of a drift on the Shepherd vein, which in part, follows the Silver Lake dike. By convenient bending the dike and proposed drift reach a point near where that is taken to be the far western extension of the Silver Lake vein was drifted upon/the Last Chance Tunnel level. The last 190 feet of the drift, as presumed, should be in the junction zone of the Silver Lake and New York veins, the assumed locus of good ore shoots.

By a long raise, 365 feet, the drift would be connected with the Unity tunnel level and intermediate levels from the raise would explore and develop the ground between levels. Diamond drilling and rehabilitation work are also proposed.

According to the longitudinal projection compiled in April 1958, which accompanies the application, stoping was done above and below the Unity Tunnel in the junction zone of the Silver Lake and New York veins. The stope below the level, as pictured, is small and probably was reached by a winze. Above the level are several stopes at various elevations up to 800 feet above the Unity Tunnel. As shown, about 12% of the zone has been stoped.

The applicant assumes 50% of the zone to be explored will be productive, basing its figures on experience in another

part of the Silver Lake vein. The grade of the presumed downward extension, by implication, is based on the results of sampling in a stope as shown in Figures 3 and 4. The values in dollars are taken to represent two strands of a vein, 1.6 feet and 4.6 feet thick with a 3.8-feet barren streak between. The whole 10 feet of vein material is figured to contain the following "absolute metal content".

Au	0.238 oz./ton
Ag	8.04 " "
Pb	3.1%
Cu	1.6%
Zn	1.0%

The gross value is figured to be $12.50 per ton, at 1903 prices. Obviously at present day prices such material would be good ore.

I read Figures 3 and 4 differently, although I can only guess what the "A" samples of Figure 3 represent. Perhaps they do represent a strand and the other figures another strand 3.8 feet away but I take the 'A' set to be samples of a high grade streak in the 4.6 feet vein. At the top of stope as shown on Figure 4 and longitudinal section the vein has contracted in length and thickness, and presumably stoping probably stopped in April 1904, not to be resumed although stoping was done in 1906 in nearby small stopes.

I assume there are values in the floor of the drift below the stope, but judging by the size of the stope from Level No. 10, the mineralization is patchy, as suggested by the stoping above the Unity Tunnel level.

If, as I see it, the vein thickness is perhaps at most 4.6 feet where worked in the 235 - 241 stope instead of 10 feet, and the productiveness of the junction zone is 12% instead of 50%, the proposed project lessen interest. Perhaps there are supportable reasons for the applicant's optimistic presumptions.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

cc: DMRA (3)
O.M. Bishop
Director's reading
Branch reading
Chron. file
Docket file

NENelson/mm
G-MB-6-19-58

EXTRA COPY
DMEA
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June 19, 1958
Re: DMEA 5061
Marcy-Shenandoah Corp.
Silver Lake Mine
San Juan County, Colorado
$202,741 Lead-Zinc-Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

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

Subject: Review of application

The applicant requests assistance in searching for the downward extension of the junction zone of two ore-bearing vein systems, the Silver Lake and New York. Due to the angle of intersection and dips of the veins a plunging intersection zone results.

To reach the assumed intersection at the working Main level, a 1280-foot drift is proposed. The drift would be a continuation of a drift on the Sheixner vein, which in part, follows the Silver Lake dike. By convenient bending the dike and proposed drift reach a point near where what is taken to be the far western extension of the Silver Lake vein was drifted upon at the Last Chance Tunnel level. The last 190 feet of the drift, as presumed, should be in the junction zone of the Silver Lake and New York veins, the assumed locus of good ore shoots.

By a long raise, 565 feet, the drift would be connected with the Unity tunnel level and intermediate levels from the raise would explore and develop the ground between levels. Diamond drilling and rehabilitation work are also proposed.

According to the longitudinal projection compiled in April 1958, which accompanies the application, stoping was done above and below the Unity Tunnel in the junction zone of the Silver Lake and New York veins. The stope below the level, as pictured, is small and probably was reached by a winze. Above the level are several stopes at various elevations up to 800 feet above the Unity Tunnel. As shown, about 12% of the zone has been stoped.

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part of the Silver Lake vein. The grade of the presumed downward extension, by implication, is based on the results of sampling in a stope as shown in Figures 3 and 4. The values in dollars are taken to represent two strands of a vein, 1.6 feet and 4.6 feet thick with a 3.8-foot barren streak between. The whole 10 feet of vein material is figured to contain the following "absolute metal content".

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Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

cc: DMEA (3)
O.M. Bishop
Director's reading
Branch reading
Chron. file
Docket file
NENelson/mm
G-MD-6-19-58

MASTER COPY
DMEA
JUN 20 1958
DATE | NAME | CODE

June 19, 1958
Re: DMEA 5061
Murvy-Shenandoah Corp.
Silver Lake Mine
San Juan County, Colorado
$202,741 Lead-Zinc-Copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

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

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N. E. Nelson

N. E. Nelson

cc: DMEA (3)
Q.M. Bishop
Director's reading
Branch reading
Chron. file
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NENelson/mm
Q-MD-6-19-58

Form MF-103
Revised Oct. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R0388
Approval expires June 30, 1958

5061

RECEIVED JUN 16 1958 DMEA

APPLICATION FOR AID IN AN EXPLORATION PROJECT

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

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

Marcy-Shenandoah Corporation
Jarvis Building
Durango, Colorado

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA-5061
Date Received: 6-16-58
Government Participation %:
Region: III
Division Code: 500

BUSINESS ORGANIZATION (Check one)

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

State in which firm is organized: Delaware

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
S. Stokes Tomlin, Jr.,	Jarvis Bldg., Durango, Colorado,	President
Edward M. Barge,	Jarvis Bldg., Durango, Colorado,	Vice President
Robert M. Schell,	3233 Mathieson Dr., N.E., Atlanta, Ga.,	Secretary
Robert R. Snodgrass,	262 Spring St., Atlanta, Ga.,	Treasurer

Mineral(s) for which you wish to explore: Lead, zinc, copper, silver and gold

Estimated Cost of Project: $ 202,741.00

LOCATION OF PROPERTY

Name	County	State
Animas Mining District	San Juan	Colorado

GENERAL INSTRUCTIONS

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

CERTIFICATION

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

5/15/58
Dated

S. Stokes Tomlin
BY *(Signature)*

President
Title

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

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

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

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

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

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

2. *Physical Description:*

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

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

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

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

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

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

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

3. *Accessibility of Project:*

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

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

4. *The Exploration Project:*

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

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

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

5. *Experience:*

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

6. *Estimate of Costs:*

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

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

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

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

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

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

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

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

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

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

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

* * * * *

INT.-DUP. SEC., WASH., D.C. 25960

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

INDEX

1. (a,b,c)

Exploration projects all in the Silver Lake Group of Claims, owned by American Smelting & Refining Company and under Lease to Marcy-Shenandoah Corporation for 20 years. Copy of Lease is attached and lists all mining claims in the Silver Lake Group.

List of Marcy-Shenandoah Claims attached.

Copies of letters from ASARCO regarding additional claims enclosed

The project maps show the claims where exploration work will be performed.

1. (d) - Not applicable

2. (a,b,c,d,e,f) - See other pages

2. (g) - Not applicable

3. (a) Please notify E. A. Larson at the Silverton Office, The Marcy-Shenandoah Mill, a few days before BMEA representative is to arrive, so that John Holmgren, Mine Supt., and Edward M. Barge. Engineer, will be on hand for the Mine inspection.

(b) Shipping and supply point is Silverton, Colorado, a distance of two miles from Mill and lower Tramway terminal.

4. (a) See other pages

(b) No access road required. A Jeep road is in fair condition and can be used in the summer months. We have to depend on our Aerial Tramway for year-around operation, for transporting miners, supplies and ore.

(c) The Main Level Drifting project should be started early in September. The Raise project to proceed when drifting is completed. Drifting on 200 and 400 levels, after raise is completed. See 6 (b,c).

5. John Holmgren, Mine Superintendent for the Shenandoah-Dives Mining Company for many years will supervise the underground work. Mr. Edward M. Barge will do the engineering and geological work. E. A. Larson will be in the Silverton Office, and will make up the BMEA monthly reports.

Experienced Miners, Electrician, Shop & Maintenance men, (former Shenandoah employees)are available.

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

INDEX CONTD.

6. (a) Not applicable

(b,c,d,e,f) - See other pages

(g) Covered in foregoing items

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

1 (a,b)

(copied from Lease, recorded in Book 185, Page 59, Jan. 9, 1958)

The following patented lode and placer mining claims in the Animas Mining District, San Juan County, Colorado, owned by the American Smelting & Refining Company, and leased to Marcy-Shenandoah Corporation on January 1st, 1958 for a period of twenty (20) years.

Claim	Survey No.	Claim	Survey No.
Adams Placer	15143	Exploit	12946
Algiers	11469	General Garfield Lodge	828
Alexandria	14024A	Genoa Lode	14024
Ann Harris Placer	11596	George Hasse Lode	9852
Argentine Lode	11380A	Growler	16476
Argentine Mill Site	11380B	Galicya Boy	13139
Arabian Boy	6994	General Hale	14066
American Boy 2/3	7244	General Marritt	14030
Blair Placer	841	General Miles	14066
Big Giant Extension Lode	14320	Gretchen	2163A
Big Giant Lode	1156A	Grip	6647
Barbedoes	14036	Helena Roux Lode	9852
Bear	280	Hillside	12946
Black Diamont	4811	Home Stake	5471
Buckeye	232	Illinois Lode	14019
Buckeye # 2	7896	Iowa	480
Cairo Lode	11469	Jeannette Roux Placer	11596
Contention Lode	14320	Jaffa	12122A
Cremorne Lode	827	J.E. Ward Millsite	9888
Carolina	5569A	Jocks	14163
Club	12978	J. W. Collins	6561
Cub	12193	Key	13065
Demosthenes	14196	Lightning Attracting	16476
Dreadnaught	14320	Louville Mill Site	5529B
Dandy Am'd	7896A	Lake Shore	13064
Dump	9843A	Lake Side	12818
Ellida	16476	Last Chance	9284
Esther Allen Lode	8801	Last Chance	12193
Elk	12977	Last Chance Am'd	7896
Emma	238	Louville	5529
Eckley Cox	14066	Marcia L. Lode	8801A
Essex Street	9106A	Marcia L. Millsite	8801B
Essex Street or Whale Millsite	9106B	Maxwell Mill Site	5530B
Manilla	14030	M.D. Thatcher Placer	17699
Maxwell	5530A	Rivington Street	9003A
		Rochester	4764

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

1 (a,b)

Claim	Survey No.	Claim	Survey No.
Melville	12353	Round Mountain	5110A
Nevada	8530A	Royal	6198A
Nevada Extension	8497	Royal Tiger #1	769
New York City	9104	Royal Tiger	48
North Star Extension	7772	Scranton City #2 Lode	16476
Potomac Lode	457	Scranton City Lode	15426
Professor Winkler Millsite	9842B	Silver Star Lode	681
Pomuco Am'd	7896	Seymour	96
Pompeii	404	Silver Lake	2164A
Professor Weisback	11469	Silver Lake Spur	6994
Professor Percy	14066	Smyrna	12122A
Professor Stelzner	7568	Solstice	5571
Professor Wedding	11469	Stag	6646
Professor Zeuner	11469	Twentieth Century	16476
Pyramid #3	14220	Tiger Extension #2	14036
Pyramid #2	14220	Titusville	403
Pyramid	2461	Vienna Placer	14057
Republic Lode	1158	Whale	4764
Riverside Lode	8801	White Diamond	13011
Rochester Mill Site	8692	Tiger Mill Site	13749B
Ruby Placer #1	654	Millsite #1	424
Ruby Placer #2	655	Millsite #2	425

The following claims are being picked up by ASARCO to be added to the above list:

Freiburg	*	14047
Galena	*	11448
Last Chance	*	11448
Badger	*	11448
Argentine Mill Site		11380B
Essex Street Mill Site		9106B
J.E. Ward Mill Site		9858
North Star Extension		7772
Professor Newberry		14046

* All development will be on these claims. Government royalty or lien will apply only to these 4 claims.

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

1 (c)

Name of Claim	Mining District	Survey No.
Und.½ of Gold Bug Mill Site	Animas	14393
"S" Mill Site	"	20407
Buena Vista	"	14012
Gold	"	14012
Band Placer	"	11596
Peter Placer	"	11596
C.H. & H.V.B. Mill Sites	"	20594
Mayflower	"	1568
Mayflower #2	"	16551
Koroki	"	17788
Togo	"	17788
Terrible	"	272
Slide	"	1331
Yellow Jacket	"	311
Dives Fraction	"	20059
North Star	"	297
Huntington	"	15351
G.H.M.	"	20564)
B.S.G.	"	20564)
J.R.W.	"	20564)
C.A.C.	"	20564)
E.C.W. Mill Site	"	20595B)
H.M. Mill Site	"	20595B)
N.N. Mill Site	"	20595B)
M.B. Mill Site	"	20595B)
Tract A of T.H.W. Mill Site	"	20595B)
Tract B of T.H.W. Mill Site	"	20595B)
Mountain Quail	"	1157A
Gold Bug	"	14393

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

EXTRA COPY
D M E A
RECEIVED JUN 16 1958

DATE	INITIALS	CODE

1 (c)

January 31, 1958

Mr. Robert K. Wyman
Treasurer, San Juan County
Silverton, Colorado

SILVER LAKE GROUP
DELINQUENT TAXES

Dear Sir:

Enclosed is American Smelting and Refining Company's check No. 6992 in favor of the Treasurer, San Juan County, Silverton, Colorado, in the amount of $191.59.

This check is for the redemption of delinquent taxes on the following claims for 1956 and for payment of taxes on these claims for 1957:

Argentine Mill Site
Essex Street Mill Site
J. E. Ward Mill Site
North Star Extension
Last Chance

Yours truly,

J. P. FROST

JPF:bm
Encl. - Check

cc: S.Stokes Tomlin, Jr.

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

1 (c)

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April 9, 1958

Mr. Robert K. Wyman, Treasurer
San Juan County
Silverton, Colorado

Dear Mr. Wyman:

I understand that we are in arrears on taxes for the following claims:

Freiburg	11047
Galena	11448
Last Chance	11448

Would you please advise what it would cost to bring us up to date on these claims, say, if payment were made by June 1st of this year.

Yours truly,

J. P. FROST

JPF:bm
cc: S.S.Tomlin,Jr.

MARCY-SHENANDOAH CORPORATION
JARVIS BUILDING
DURANGO, COLORADO

2 (a,b) Mining operations started in 1887. By 1899 there were 35,000 feet of workings. The property was purchased by American Smelting and Refining Company in 1901. Milling during the years 1890-1902 was done at Silver Lake. From 1903-1906 milling was transferred to a new location on the Animas River. The mill burned in 1906 but was rebuilt. Mining and milling continued until the big flu epidemic of 1918. In 1936 ASARCO started exploration from a lower level. The property was leased to the Shenandoah-Dives Mining Company in 1942 who mined and milled the ore from the Silver Lake Mines until their closing in 1953. That same year a D.M.E.A. program was started to develop ore on the southwestern margins of the property. In 1955 this project was abandoned, no commercial ore having been found. In 1957 Shenandoah-Dives Mining Company was merged into a new corporation calling itself Marcy-Shenandoah Corporation who obtained a 20-year renewable lease from ASARCO. Figure 2 shows the general area covered in this application and Figure 1 a more detailed map of some of the underground workings.

2 (c) Mine production records are lacking for the years 1887-1901 inclusive. However, stope maps, dumps, and tailings estimate indicate at least 400,000 tons production prior to 1902. Bureau of Mines records show a production of 360,000 tons 1902-1906 inclusive and 270,000 tons 1907-1918 inclusive. From 1942-1953 inclusive the Shenandoah-Dives Mining Company produced about 550,000 tons from the Silver Lake Unit of ASARCO. Total production from the Silver Lake Mines 1887-1953 inclusive, therefore, approximates 1,580,000 tons.

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2 (d) Proven commercial ore reserves are nil. However, mineralized material of lower grade with a gross metal value at today's prices of less than $10.00/ton are considerable. C. A. Chase, former general manager of Shenandoah-Dives Company, after completing the "O" Raise on the Silver Lake Vein, projected several million tons of this low-grade material. In addition he saw another several million tons of similar grade available by extending the "Letter G" project.

2 (e) All of the known ore bodies in the general area are grouped along radial fissures bordering the southern edge of the Silverton Caldera. The Silver Lake Mines include some of the most productive of these veins. Mineralization is a complex assemblage of gold, silver, lead, copper, and zinc. The average tenor is low. The aggregate of all the veins probably have an average width of 6 feet, productive length of 10,000 feet and grade of .04 oz. Au/ton, 1.0 oz. Ag/ton, 1.0% Pb, .5% Cu, and .3% Zn. However, the relative metal values vary considerably within the vein systems. Higher gold values were reported in the upper parts of Silver Lake Basin. Little oxidation of the sulfide minerals has occurred because of the recent glaciation and vigorous mechanical erosion taking place today.

Higher grade ore shoots do occur sporadically, sometimes near vein intersections, sometime in favorable rock facies of the Burns Quartz Latite, or sometimes for unpredictable causes. Most of the development has taken place in the Burns Quartz Latite. This is the predominant rock from altitudes of 11,600' to 13,000'. That mineralization extends to deeper levels is attested by the adjacent Mayflower Mine which produces

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2 (e) contd.

in the underlying Eureka Rhyolite from an interior shaft from 10,800' to 11,200' elevation. However, in the Silver Lake Vein, where it follows walls of a porphyry dike, it makes no difference whether the country rock is Burns Latite or Eureka Rhyolite. Openings in the dike are determined by the irregularities in the walls and are especially favorable where the dip steepens.

400'

?

2 (f) Old stope maps of the Silver Lake Mines were examined and compiled. Figures 3 and 4 are assay maps of the Silver Lake Level No. 9, parallels 235-241. Dollar values are given as per 1903 price quotations. Figure 4 shows the pinching of the ore shoot as the intersection of the Silver Lake and New York veins is approached.

Average grade of 360,000 tons of ore produced from all parts of the Silver Lake Mines 1902-1906 inclusive (U.S. Bureau of Mines) was:

Au	.147	oz/ton
Ag	5.03	oz/ton
Pb	1.9%	
Cu	1.0%	
Zn	_____?	

Although the Zn content was not assayed, later work by Shenandoah-Dives Mining Company show a ratio of Pb to Zn of about 3:1. Therefore, we can estimate about .6% Zn content during the years 1902-1906. In order to determine the relative metal contents represented in Figure 3, the above assays were used to interpolate figures from dollars/ton to assay values.

The weighted average values (1903 values) in Figure 3 give a footwall streak averaging 1.6' thick of $30.50/ton and a hanging-wall streak averaging 4.6' thick of $20.15/ton. Assuming a barren interval of 3.8' between, we

1.6
3.8
10.0

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2 (f) contd.

obtain a weighted average of 10' thickness having a gross metal value in 1903 of $12.50/ton.

Interpolating the assay values for this 10' interval, we obtain the following absolute metal contents:

Au	.238	oz/ton
Ag	8.04	oz/ton
Pb	3.1%	
Cu	1.0%	
Zn	1.0%	

The tonnage that can be expected is now calculated. As can be seen by Figure 5, the ore shoot has a dip of 55° and a rake along the intersection of the two veins. The calculated height of the ore shoot between the proposed drift and Silver Lake Level No. 9 is therefore about 770'. With an average drift length of 260' and width of 10' we have a possible 167,000 tons @ 12 cu. ft/ton. However, a 50% productive factor was found to be true by the Shenandoah-Dives Mining Company in later work on other portions of the Silver Lake Vein. Therefore, we can assume the reserves to be developed by this work to be about 83,500 tons of the above grade. Of course, additional reserves above the Silver Lake Level No. 9 will also be made available. This will likely amount to another 80,000 tons. An unknown plus factor to be added is the exploration by drilling or x-cut of the New York Vein (see Figure 6).

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4 (a) Figures 5 and 6 show the proposed work. All drift is to be $8\frac{1}{2}' \times 8\frac{1}{2}'$. The raise is to be $6' \times 14'$. Diamond drill stations will be prepared as operations permit. Details to be handled later. It is advisable to allow some freedom of planning in case geological conditions change. As can be seen in Figure 6 faulting will cause some uncertainties. No water problems are anticipated and the ground is solid.

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6 (b,c)

EXPLORATION - DRIFTING

1,280 ft. Main Level
280 ft. X-Cut, 200 level, after raise is completed
240 ft. " 400 " " " " "
1,800 ft. Total Drifting & X-Cutting

7 month project - 6 day work week

	260 ft. month	Total 1,800 ft.
Labor		
Miners & Helpers @ $17.00/ft.	$ 4,370.00	$30,600.00
Supervision	750.00	5,250.00
Shift Bosses	500.00	3,500.00
Electrician	600.00	4,200.00
Shop - sharpening	425.00	2,975.00
Engineer - Geologist	400.00	2,800.00
Tram, 2 shifts, transporting men & supplies	950.00	6,650.00
Office	375.00	2,625.00
Haulage, nipping & Compressor	900.00	6,300.00
Payroll Taxes	492.00	3,444.00
Liability Insurance	333.00	2,331.00
Explosives & Elec. Caps	1,430.00	10,010.00
Electric Power	1,600.00	11,200.00
Drill Steel & Bits	598.00	4,186.00
Track & Ditch	650.00	4,550.00
Air, Water & Vent. Pipe	780.00	5,460.00
Diamond Drilling 840 ft.	420.00	2,940.00
TOTALS	$15,573.00	$109,021.00

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6 (b,c) contd.

EXPLORATION RAISE

550 ft. - 7 month project

55 degree incline

	78 ft. /month	Total 550 ft.
Labor		
Miners & Helpers @ $35.00/ft.	$ 2,730.00	$19,250.00
90 ft. Station Cutting	180.00	1,260.00
Supervision	750.00	5,250.00
Shift Boss	500.00	3,500.00
Hoistman	800.00	5,600.00
Electrician	600.00	4,200.00
Shop - sharpening - M&R Drills	500.00	3,500.00
Engineer - Geologist	400.00	2,800.00
Tramway, 2 shifts, transport. men & supplies	950.00	6,650.00
Office	375.00	2,625.00
Haulage, nipping & Compressor	500.00	3,500.00
Payroll Taxes	435.00	3,045.00
Liability Insurance	294.00	2,058.00
Explosives & Caps	390.00	2,730.00
Electric Power	1,600.00	11,200.00
Drill Steel & Bits	179.00	1,253.00
Timber, Plank & Ladders	292.00	2,044.00
Air, Water & Vent. Pipe	215.00	1,505.00
TOTALS	$11,690.00	$81,970.00

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6 (c)

SUPPLIES ON HAND

1800 ft. Track, 52 lb. Rail & Splice Bars	$2,052.00
7 tons 1" Q.O. Drill Steel	3,150.00
1100 lbs. 1-1/8" Rd. Drill Steel	151.00
1000 ft. 2/0 Meter Lead Cable	803.00
534 ft. 5000 Volt 1/0 Power Cable	726.00
9600 lin. ft. Timber	1,238.00
417 pcs. Lagging	439.00
26000 Bd. Ft. 6" x 8" Fir	3,600.00
1400 Bd. Ft. Ladder Stock	270.00
2200 Bd. Ft. Plank (fir)	365.00
Total	$12,794.00

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6 (d)

MINE EQUIPMENT
April 1, 1958

	ELECTRIC PLANT:			
	Steel Sub-station at Mill, 3 - 250 K.V.A. Transformers, Switches, Lightning Arresters, 15 ft. above ground on hillside		30,000.00	
	Power Line to Mine, 2 miles - 17000 volt		7,800.00	
	Transformers at Mine, 3 - 200's		9,000.00	
	Transformers Underground 3 - 50's		2,500.00	
	2500 volt Underground Cable, 7,320 ft. @ $2.20		16,104.00	
	Trolley Wire, Hangers, Switches, 8,087 ft. @ $ .40		3,235.00	
	200 H.P., 125 KW, 250 volt, Synchronus Motor Generator Set complete with Switches		7,500.00	
	75 H.P., 75 KW, 250 volt, Motor Generator Set		2,500.00	
1	2080 cu.ft. C. P. Compressor and 200 H.P. Motor		18,500.00	
1	80 H.P. - 9 ton Locomotive		13,000.00	
1	62 H.P. - 8 ton Locomotive		12,000.00	
	Electric Shop, Lamps, Spare Armatures & Equipment		6,500.00	
				128,639.00
	MINE:			
	Phones Lines and Signals		1,000.00	
	8,187 ft. Track - 30 gauge - 45# & 52# Rail @ $1.93		15,800.00	
(	1,160 ft. 8" Airline @ $2.94	$ 3,410.00)		
(	3,990 ft. 6" Airline @ $2.32	9,250.00)		
(	2,507 ft. 4" Airline @ $1.31	3,280.00)		
	7,657 ft. Air Line		15,940.00	
	6,980 ft. 2" Waterline @ $.45		3,140.00	
	677 ft. 1" Waterline @ $.21		142.00	
7	75 cu. ft. Cars		6,000.00	
8	105 cu. ft. Cars and Dumpers		14,000.00	
1	Eimco Mucking Machine (New)		5,000.00	
1	Eimco Muching Machine (Used)		2,000.00	
1	2 - Column Jumbo		1,000.00	
	Shop Equipment		4,000.00	
	Dry Room Equipment		1,000.00	
	Engineering Equipment and Supplies		1,500.00	
	Mine Timber Shed and Tools		4,000.00	
	2/5 Value of Mine Boardinghouse, Heating Plant, Living Quarters, Kitchen, Engineering Office		10,000.00	
	1,800 ft. 20 H.P. Ingersoll Rand Blower and Vent Pipe		2,600.00	
	Drills, Hose, Couplings, Oilers necessary for complete Project (12.5 months)		6,500.00	
				93,622.00
	2 miles Aerial Tramway - Steel Tower Construction 80/ton/hr.			150,000.00
	Total All,			$ 372,261.00

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6 (e,f)

REHABILITATION: ESTIMATED COSTS - SURFACE WORK

Repairs to damaged power line, caused by snow slides	$ 150.00
Power & Labor to dry out and test all electrical equipment (Compressor, Locomotives, Generators, Ventilating Blower, etc.,)	1,600.00
Move Mucking Machine & small generator set, from Mill to Mine	400.00
Clean up caved area of upper Tram Terminal, oil Tram Cables and rolling stock	350.00
Construct incline skip track & skip, install hoist, to handle supplies from upper tramway to Mine timber shed on Main Level--this in the place of the stub tramway, which will allow room for a waste dump on our main level trestle between Timber shed and Mine Hotel Building. Repair trestle and construct dumping arrangement for handling waste	2,000.00
	4,500.00

UNDERGROUND

Repairs to trolley line, portal to 3220 co-or., replacing some timber, picking up small caves	750.00
Mucking, picking up caves and timbering in the 3220 East drift to the Ventilating blower station	1,250.00
Install pipe, trolley from 3220, west to face (approx. 1400 ft) where EMEA project will start	500.00
Install Ventilating blower, at junction of two drifts, about 400 ft. from face; install power line from 3220 to Ventilating blower; install vent pipe from blower to face	1,000.00
Cleaning out and picking up caves and replace necessary timber on Base level between crusher bins and tramway	1,250.00

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6 (e,f) contd.

Cleaning out and replacing bad timber in crushing plant	1,250.00
Pick up cave and retimber at 12 co-or on main level, where large generator set is at present inaccessible	1,250.00
	7,250.00
Grand Total	$ 11,750.00

Mercy-Shenandoah Corporation, Jarvis Building, Denver, Colorado

6.

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1(c)

MINING LEASE

THIS MINING LEASE, entered into as of this 1st day of January, 1958, regardless of the actual time of signing and acknowledgment, between AMERICAN SMELTING AND REFINING COMPANY, a New Jersey Corporation, lessor, and MERCY-SHENANDOAH CORPORATION, a Delaware Corporation, lessee.

WITNESSETH

Article 1. Description of Property. The lessor represents that it is the owner of the following patented lode and placer mining claims in the Animas Mining District, San Juan County, Colorado:

Claim	Survey No.	Claim	Survey No.
Adams Placer	15143	Exploit	12946
Alghero	11469	General Garfield Lode	828
Alexandria	14424A	Genoa Lode	14024
Ann Harris Placer	11593	George Mace Lode	9852
Argentine Lode	11380A	Grevier	16476
Argentine Mill Site	11380B	Galicya Bay	13139
Arabian Bay	6974	General Hale	14066
American Bay 2/3	7244	General Merritt	14030
Blair Placer	841	General Miles	14066
Big Giant Extension Lode	14320	Gretchen	2163A
Big Giant Lode	1156A	Grip	6647
Barbarossa	14036	Halcon Rock Lode	9852
Bear	260	Hillside	12946
Black Diamond	4811	Home Stake	5471
Buckeye	232	Illinois Lode	14019
Buckeye #2	7896	Iowa	420
Cairo Lode	11469	Jeannette Rock Placer	11596
Contention Lode	14320	Jeffa	12122A
Crescent Lode	827	J. E. Ward Millsite	9858
Caroline	5569A	Jocko	14163
Club	12976	J. W. Collins	6561
Cub	12193	Key	13065
Dermotheus	14196	Lightning Attracting	16476
Dreadnought	14320	Laville Mill Site	5529B
Dandy Ann'd	7896A	Lake Shore	13064
Dump	9843A	Lake Side	12818
Ellida	16476	Last Chance	9264
Esther Allen Lode	8801	Last Chance	12193
Elk	12977	Last Chance Ann'd.	7896
Emma	238	Laville	5529
Ashley Con	14066	Marcia L. Lode	8801A
Essex Street	9106A	Marcia L. Millsite	8801B
Essex Street or Whale Millsite	9106B	Maxwell Mill Site	5530B
		M. D. Thatcher Placer	17699

Claim	Survey No.	Claim	Survey No.
Manila	[illegible]	Silverton Street	[illegible]
Maxwell	5530A	Rochester	4764
Melville	12353	Round Mountain	5110A
Nevada	6530A	Royal	6198A
Nevada Extension	8497	Royal Tiger #1	769
New York City	9104	Royal Tiger	[illegible]
North Star Extension	7772	Scranton City #2 Lode	16476
Polaris Lode	457	Scranton City Lode	15426
Professor Winder Millsite	[illegible]	Silver Star Lode	681
Pemuco [illegible]	[illegible]	[illegible]	96
Rosebell	[illegible]	Silver Lake	[illegible]
Professor Melsbuck	11469	Silver Lake Spur	6994
Professor Percy	14066	Smyrna	12122
Professor Stelzner	7560	Solstice	5571
Professor Redding	11469	Stag	6646
Professor Zeuner	11469	Twentieth Century	16476
Pyramid #3	11220	Tiger Extension #2	11436
Pyramid #2	11220	Titusville	403
Pyramid	2461	Vienna Placer	14657
Republic Lode	1150	Whale	4764
Riverside Lode	8801	White Diamond	13011
Rochester Mill Site	8592	Tiger Mill Site	17969B
Ruby Placer #1	654	Millsite #1	424
Ruby Placer #2	655	Millsite #2	425

and is also the owner of the following unpatented lode mining claims in the same district and county:

American Girl, location certificate recorded in Book 172 at p. 36[illegible]
Lorraine " " " " " 172 " p. 359

records of said San Juan County.

The following claims, commonly referred to as the Aspen group, are presently under lease to GRANT G. GIFFORD, by lease dated October 1, 1955:

Name	U. S. Survey No.	Name	U. S. Survey No.
Aspen	199	Prosper	1997A
Chloride	411	San Juan	15112
Legal Tender	753	Sediment	15112
Mammoth	449	River	15112
McGregor	423	New York	15112
Susquehanna	447	Washington	15112
LaPlata	19479		

Lessor hereby assigns said lease of October 1, 1955 to lessee for such time as this agreement of January 1, 1958 remains in force and effect, and if said lease upon the Aspen group should be cancelled, forfeited or terminated, then and in such event, said Aspen group shall automatically be

included in this agreement.

Article 2. Grant of Lease. The lessor, in consideration of the royalties herein reserved and the covenants herein to be performed by the lessee and the further consideration of Ten Dollars ($10.00) paid by lessee to lessor, receipt of which is hereby acknowledged, does hereby lease, let and demise, unto the lessee, its successors and assigns, all the above described property.

Article 3. Term of Lease. The term of this lease shall be Twenty (20) years from the date hereof unless extended or sooner terminated in the manner hereinafter provided.

Article 4. Extension of Lease. At the expiration of the original term of twenty (20) years, the lessee may at its option, if this lease shall then be in effect and the lessee shall not be in default and shall be diligently complying with the work provisions of this lease, have an extension for an additional period of ten (10) years. Lessee shall exercise said option by notifying the lessor in writing at least sixty (60) days prior to the date the lease would otherwise expire.

Article 5. Possession and Control of Property. The lessee shall have, and it is hereby given and granted, the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and every part thereof, and, during the term of this agreement, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, mine, operate, use, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom; and to erect, construct, maintain, use and operate thereon and therein buildings, structures, machinery and equipment. The time, nature, location and extent of such or any

or all mining or mining operations and the cessation and resumption thereof shall be at the sole discretion of the lessee.

Article 6. Manner of Work. The lessee agrees to cause all work, development and mining to be done in a careful and minerlike manner and to conform in all respects with the mining laws and regulations of the State of Colorado.

Article 7. Work Requirements. Beginning January 1, 1960, lessee shall expend Eighteen Thousand Dollars ($18,000.00) each and every calendar year for any of the purposes of Article 5 hereof, in, upon or for the benefit of the demised premises, and if in any such calendar year lessee shall fail to expend Eighteen Thousand Dollars ($18,000.00), it shall, within 30 days thereafter pay to lessor the difference between $18,000.00 and the amount actually spent during such year. Any amounts spent in excess of $18,000.00 in any such year may be credited against the amounts required to be expended in the subsequent two calendar years. Similarly, any amounts so spent before January 1, 1960, may be credited against the amounts required to be expended in the two years subsequent to January 1, 1960.

In the event lessee shall give notice of its intention to surrender this lease as hereinafter provided, it shall expend money or pay the penalty for failing to do so, proportionately for the then current year, but from or after the date of the notice it shall be relieved of all further expenditures or penalties.

Article 8. Royalties. Lessee shall pay to lessor royalties on ores mined and removed from the demised premises in accordance with the schedules set forth below:

a) On ores milled by lessee

2% of net returns on all ore with net returns up to $5.00 per ton
3% of net returns on all ore with net returns over $5.00 to and including $7.50 per ton

4% over $ 7.50 to and including $10.00 per ton
5.5% over $10.00 to and including $12.50 per ton
7% over $12.50 to and including $15.00 per ton
8.5% over $15.00 to and including $17.50 per ton
10% over $17.50 to and including $20.00 per ton
11.5% over $20.00 to and including $22.50 per ton
13.0% over $22.50 to and including $25.00 per ton
14.5% over $25.00 to and including $27.50 per ton
16.0% of net returns on all ore with net returns over $27.50

b) Definition of Net Mill Returns on Ore Milled by Lessee

Net mill returns on ore milled by lessee, in accordance with sub-paragraph (a) of this article, shall mean the calculated net value per dry ton of crude ore based on the calculated net smelter value of the concentrates produced from any ore so milled, exclusive of premium metal payments and government subsidies, less transportation costs from mill to smelter. The factors to be used in determining such net mill returns shall be smelter schedules, metal prices, and mill recoveries and ratios of concentration. Smelter schedules so employed shall be those currently applicable to the treatment of the concentrates covered hereby. Metal prices to be so employed shall be the average prices for the month in question as quoted in the sources referred to in the applicable smelter schedules. Mill recoveries and ratios of concentration shall be those shown by mill records. Lessee shall weigh and sample mine run ore before treatment in accordance with good mining practice, and the methods used must be approved by lessor.

c) Premium Payments or Government Subsidies

In the event any premium metal payments or government subsidies are paid on any ore mined from the demised premises, then, unless prohibited or limited by law or government regulation, lessee shall pay to lessor a percentage of such premium metal payment or government subsidy equal to the royalty percentage applied upon the net mill or smelter returns of such ore as determined in paragraphs (b) and (d) of this article.

d) Nonmetallic Ores

In the event lessee should sell any ores, or minerals extracted from them, which ores or minerals are of the type which are not ordinarily purchased by smelters, including but not limited to barite ores or such minerals as manganese minerals, then the lessee shall pay lessor royalties as set forth in sub-paragraph (a) above, with, in the case of raw ores sold, "net returns" being the F.O.B. mine price paid therefor, and in the case of such ores or minerals concentrated by lessee, "net returns" shall be calculated in a manner similar to that outlined in sub-paragraph (b) above, except that the price of the concentrates shall be that actually received F.O.B. mill by lessee.

e) Royalty Settlement Date

Royalty settlements shall be made by lessee on or before the 25th day of each and every calendar month during the term of this agreement for all mill or other returns received during the preceding calendar month. Each settlement shall be accompanied by a duplicate liquidation or settlement sheet on all ores or concentrates sold as contemplated under sub-paragraph (d) and a duplicate calculation sheet showing how royalties are computed on all ores milled by lessee.

f) Ores Milled by Others Than Lessee. In the event ores mined by lessee shall be milled by others other than lessee, then the lessee shall pay lessor royalties as set forth in sub-paragraph (a) of this article and "net returns" shall be calculated as provided in sub-paragraph (b) of this article, except that in calculating such returns, there shall be subtracted transportation costs from mine to mill in addition to transportation costs from mill to smelter.

g) Smelter Ores

In the event metallic ores mined by lessee are sold directly to a smelter, lessee shall pay lessor the royalties set forth in sub-paragraph (a) of this article and "net returns" shall be the f.o.b. mine price of said ores.

Article 10. Royalty Due United States Government. Under the terms of an exploration contract made between Shenandoah-Dives Mining Company and the United States of America, acting through the Department of the Interior, Bureau Minerals Exploration Administration, Docket No. DMEA 2991, dated June 26, 1953, and terminated as of May 29, 1954, the Government has a lien on production from the demised premises until the amount advanced by the Government has been repaid or until June 26, 1963, whichever occurs earlier. Repayment is to be by means of royalties on ores produced from the demised premises, as set forth in said contract. Lessee hereby agrees to pay to the government the required royalties as they become due, and to hold harmless the lessor for any claim or damages on account of failure so to pay said royalties.

Article 11. Use of Adjacent Properties. The 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 controlled by lessee and to remove ores, waste, water and other materials from such other properties and to carry on general mining operations pertaining to such other properties on the surface 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 kept separate from ores extracted and removed from any other properties.

Article 12. Reports and Inspection. Lessee's maps and records of all mining operations upon the demised premises pertinent to the computation of royalties, shall be available for lessor's inspection upon request, but not more often than once each month; and the lessor may enter said property at all reasonable times for the purpose of inspecting the same, and lessee shall facilitate such inspection in every reasonable way, but lessor shall enter upon said demised property at lessor's own risk and so as not to hinder unreasonably the operations

of lessee; and the lessee shall indemnify and hold harmless the lessee from any damage, claim or demand by reason of injury to or the presence of the lessee or the lessee's officers, agent, representatives, licensees, or guests or any of them on the demised premises or approaches thereto. If this agreement is terminated for any reason, lessee shall, within 3 months following such termination, furnish lessee with all factual geologic, engineering and assay maps and sections of the demised premises, which shall include the location, direction and attitude of all exploratory drill holes drilled by lessee. Lessee shall also furnish copies of geologic and assay logs of such exploratory drill holes.

Article 13. Taxes. a) The lessee shall be charged with all general property taxes assessed as a nonproducing mine against the lessee's ownership in the demised premises during the term of this lease, and with taxes assessed as a producing mine as a result of lessee's operation of the demised premises. To this end, beginning with January, 1958, lessee shall during January of each year this lease is in effect, deposit with lessee at its Salt Lake Office, an amount equal to the taxes which would be assessed as a nonproducing mine upon the demised premises, based on the tax rate for that year. In addition, lessee shall authorize the smelters and ore purchasers who purchase ores, concentrates, or minerals to deduct one and one-half percent (1.5%) of the net purchase price of all such material sold from the demised premises or from lessee's mill, and remit such amounts directly to lessee at its Salt Lake Office. In case any lot or lots of concentrates or ores sold contain no material derived from the demised premises, the smelter or ore purchaser shall not be required to remit such percentage of the net purchase price for such lot or lots. From the amounts so deposited by lessee and deducted by the smelters or ore purchasers, lessee shall pay the general property taxes before they become delinquent. It is understood that taxes based on assessment as a producing mine do not fall due until the second year after the year

in which production is had. Promptly after the amount of such taxes is determined, lessor shall remit to lessee any excess of monies so deposited and received from smelters and ore purchasers, or bill lessee for any deficiency.

b) Lessor shall be charged with its proportion, based on the royalties hereinabove reserved, of taxes based on assessment as a producing mine, and of any production, severance or similar or other excise taxes, and, except in the case of taxes based on assessment as a producing mine, lessee shall advance such proportion and be reimbursed therefor.

c) The lessee shall pay before they are delinquent all taxes levied or assessed against any and all personal property, machinery and equipment placed upon said demised premises by the lessee during the term of this lease.

Article 14. State and Federal Laws. Lessee shall comply with the Workmen's Compensation Laws of Colorado and with Social Security, Unemployment Insurance and all other state and federal laws relating to lessee's operations and shall save lessor harmless from any claim for damages or liability by reason thereof.

Article 15. Protection from Liens and Damages. The lessee shall keep the demised premises and the whole and every part thereof free and clear of liens for labor done or work performed upon the demised premises or materials furnished to it for the development or operation thereof under this lease while the same is in force and effect, and will save and keep harmless the lessor from all costs, loss or damage which may arise by reason of injury to any persons employed by the lessee in or upon the demised premises or any part thereof, or, except as provided in Article 12 hereof, which may arise by reason of injury to any persons or damage to any property as the result of any work or operations of the lessee or of its possession and occupancy of the demised premises. A lien upon the property shall not constitute a default if the lessee in good faith disputes the validity of the claim, in which event the existence of the lien

shall constitute a default only from and after the validity of the lien has been adjudicated.

Article 16. Unavoidable Delays. If the lessee is unable to perform any of the terms or covenants of this lease except the payment of royalties, rentals and taxes, by reason of damage or delay resulting from disaster, labor disturbances, shortage of labor, strikes, lockouts, force majeure or act of God, or from any regulations or restrictions of any governmental agency, or on account of any eventuality beyond the reasonable control of lessee, the lessee shall be excused from performance during the period of such prevention, and shall be excused from payments in lieu of work during such period.

Article 17. Forfeiture Clause. The failure of the lessee to make or cause to be made any of the payments herein provided for or to keep or perform any agreement on its part to be kept or performed according to the terms and provisions of this agreement, shall, at the election of the lessor, work a forfeiture hereof; provided, however, that in the event of a default on the part of the lessee, and the election of the lessor to terminate this agreement on account thereof, the lessor shall give to the lessee a written notice of its intention to declare a forfeiture of this agreement and to terminate the same on account thereof, specifying the particular default or defaults relied upon by it, and the lessee shall have sixty (60) days after receipt of such notice in which to make good such default or defaults, in which event, there shall be no forfeiture therefor; and provided further, that in the case of default in the payment of royalties or the deposit due for taxes, referred to in Article 13(a) hereof, lessee shall have only five (5) days after receipt of such notice in which to make good such default or defaults. Waiver or failure to give notice of a particular default or defaults shall not be construed as condoning any subsequent default.

Article 18. Cancellation. Notwithstanding any provision herein to the contrary, the lessee may at any time upon 30 days' written notice to the lessor, cancel and terminate this lease. Upon such cancellation and termination of this lease, the lessee shall be under no further obligation of whatsoever kind or nature to the lessor, except for the making of payments which have already accrued at the date of such cancellation and termination. Work requirements or payments in lieu thereof, specified in Article 6 hereof, shall cease upon the date such notice is given.

Article 19. Surrender of Property. In the event of a valid forfeiture, cancellation or other termination of this lease, the lessee shall surrender to the lessor peaceable possession of the demised premises and shall deliver to lessor a written relinquishment thereof.

Article 20. Removal of Equipment. The lessee shall have and is hereby given and granted six months after a valid forfeiture, cancellation or other termination of this agreement to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all machinery, track fixtures, and equipment erected or placed in or upon said property by it, provided that such right of removal shall not extend to buildings, machinery foundations, and underground tracks, and mine timbers in place unless lessor shall have given its previous written consent thereto. If lessee is hampered by snowdrifts, washouts, inclement weather, or other climatic conditions, from completing the removal of said equipment within the time specified, then the lessor agrees to extend the time by a reasonable period if requested by the lessee.

Article 21. Notices. Any notices required or permitted to be given to the lessor hereunder shall be considered as delivered forty-eight (48) hours after the same shall have been deposited in the United States mail, duly regis-

tered, with postage thereon prepaid. All notices given hereunder shall be addressed to the respective addresses given below:

If to lessor, Attention Mining Department
120 Broadway
New York 5, New York

and

600 Crescent Building
Salt Lake City 1, Utah

and if to lessee, Jarvis Building
Durango, Colorado

Said addresses for receiving notices may be changed by either party upon two (2) days previous written notice to the other party.

Article 22. Assignment. Lessee may sublease any part or parts of the demised premises, provided that such sublease or subleases shall automatically terminate upon the termination of this agreement, but lessee may not assign this agreement without the written permission of lessor first had and obtained.

Article 23. Inurement. These presents shall inure to the benefit of and be binding upon the respective successors and assigns of the parties hereto.

Article 24. Construction. Titles to the respective articles hereof shall not be deemed a part of this lease but shall be regarded as having been used for convenience only.

IN WITNESS WHEREOF this agreement is executed as of the day and year first above written.

AMERICAN SMELTING AND REFINING COMPANY

ATTEST:

Secretary

By _____
Vice President

Lessor

MARCY-SHENANDOAH CORPORATION

ATTEST

Asst Secretary

By _____
President

Lessee

STATE OF NEW YORK)
) ss
CITY AND COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 2nd day of January A.D. 1958 by A. A. Brown, Vice President of the American Smelting and Refining Company, lessor.

My commission expires:

Witness my hand and official seal.

CLARE A. BAIONE
Notary Public, State of New York
No. 24-0133975 Qualified in Kings Co.
Cert. filed in New York County
Commission Expires March 30, 1959

CLARE A. BAIONE
942 East 37th Street
Brooklyn 10, N. Y.

Notary Public

STATE OF COLORADO)
) ss
COUNTY OF LA PLATA)

The foregoing instrument was acknowledged before me this 14th day of December A.D. 1958 by S. Stokes Tomlin Jr., President of the Marcy-Shenandoah Corporation, lessee.

My commission expires: March 24, 1959

Witness my hand and official seal.

Gladys L. Heatwole
Notary Public

FIGURE 3

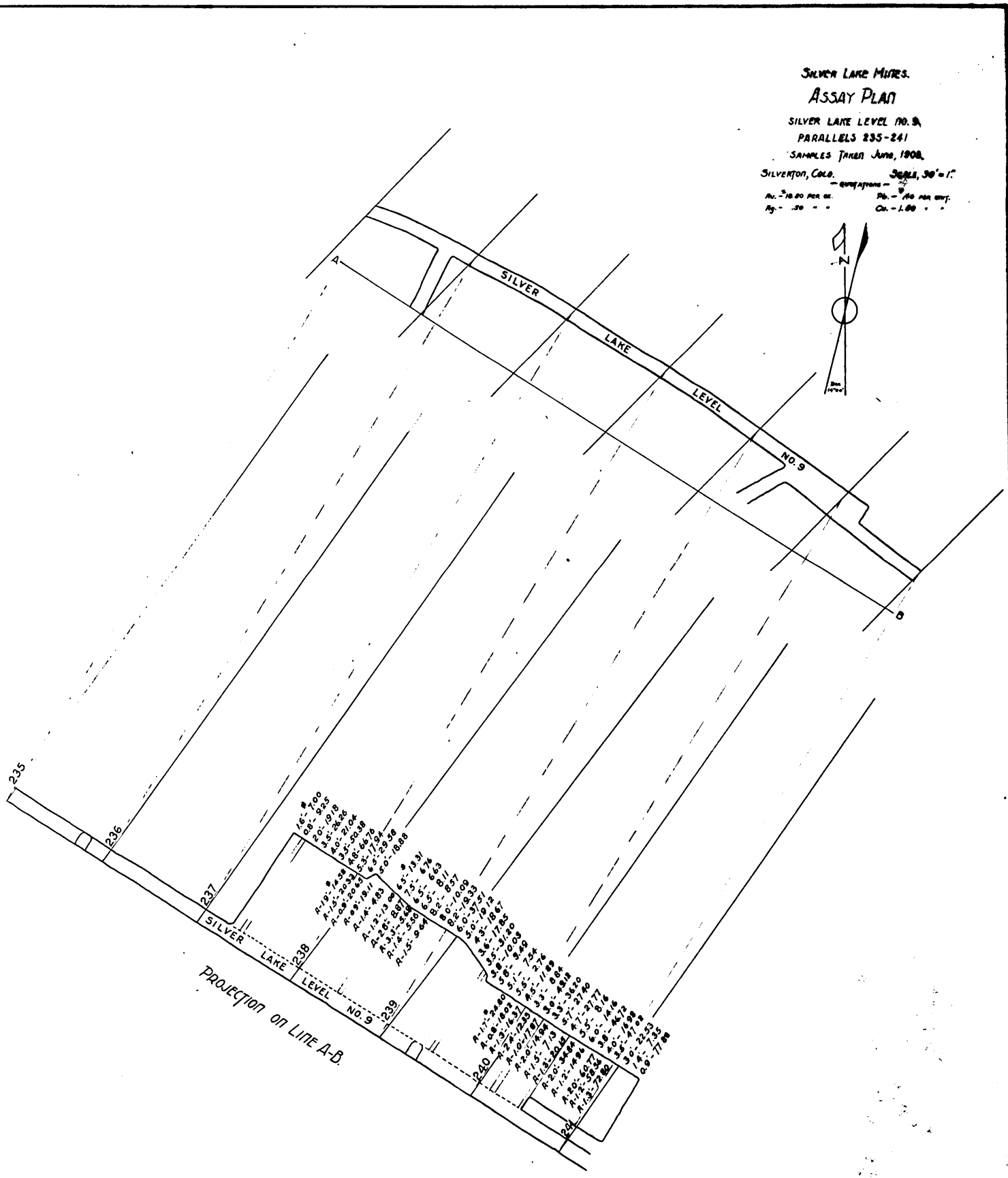
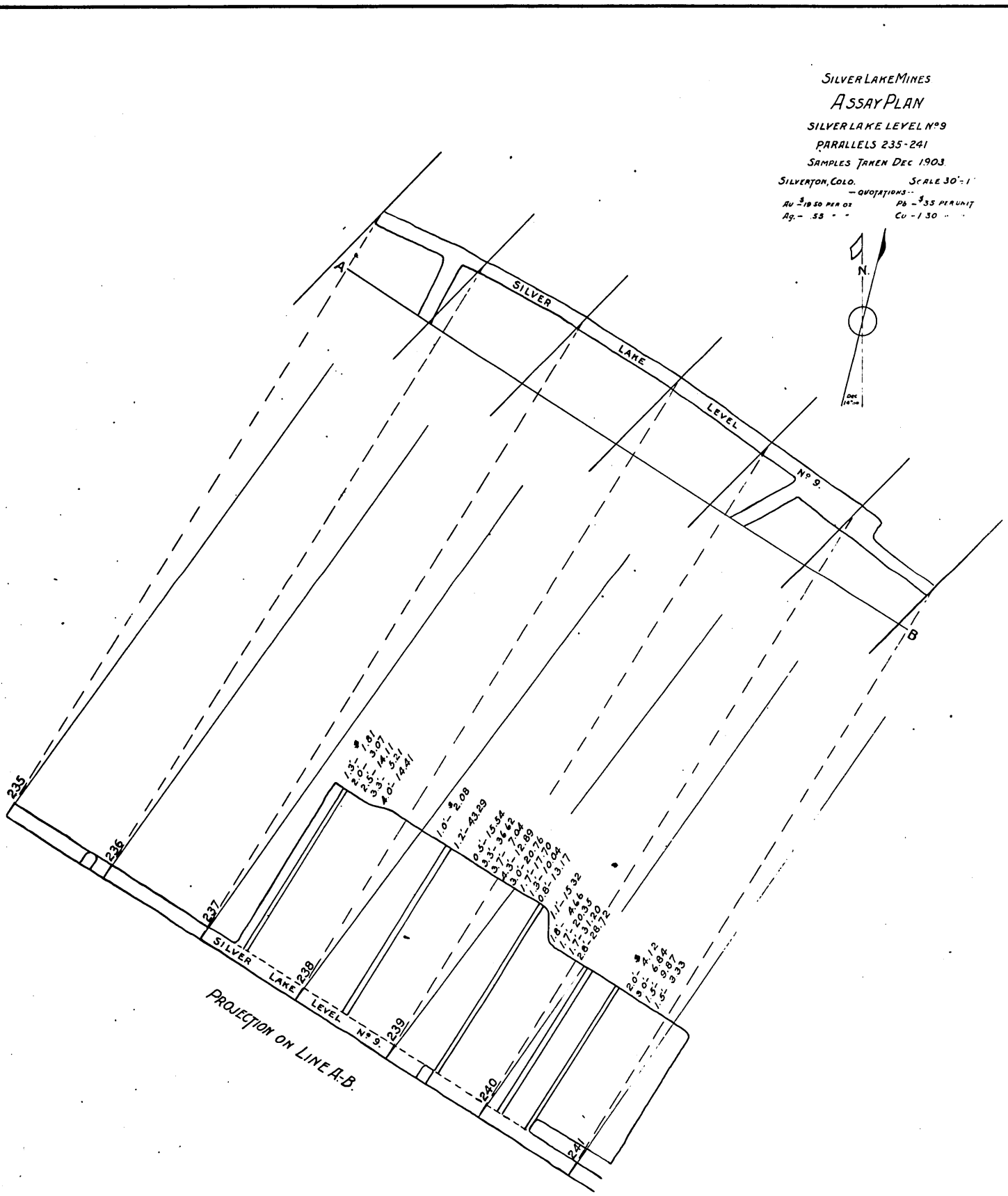

SILVER LAKE MINES.
ASSAY PLAN
SILVER LAKE LEVEL NO. 9
PARALLELS 235-241
SAMPLES TAKEN JUNE, 1908.
SILVERTON, COLO.
SCALE, 30' = 1"
— QUALITY —
Au. - $18.00 PER OZ.
Ag. - .50 " "
Pb. - .40 PER UNIT.
Cu. - 1.00 " "
N
SILVER LAKE LEVEL NO. 9
A
B
235
236
237
238
239
240
241
PROJECTION ON LINE A-B.

FIGURE 4


SILVER LAKE MINES
ASSAY PLAN
SILVER LAKE LEVEL No 9
PARALLELS 235-241
SAMPLES TAKEN DEC 1903
SILVERTON, COLO.
SCALE 30'=1"
— QUOTATIONS —
AU $19.50 PER OZ
AG — .55 " "
PB — $35 PER UNIT
CU — 1.30 " "
N.
A
B
SILVER LAKE LEVEL No 9.
235
236
237
238
239
240
241
$ 1.81
1.3'- 3.07
2.0'- 14.11
2.5'- 3.21
4.0'- 14.41
1.0'- $ 2.08
1.2'- 43.29
0.5'- 15.54
3.3'- 36.62
3.7'- 7.04
4.3'- 12.89
3.0'- 20.76
1.7'- 17.70
1.3'- 10.04
0.8'- 13.17
1.1'- 15.32
1.8'- 4.66
1.7'- 20.35
1.7'- 31.20
2.8'- 28.72
$ 4.12
2.0'- 6.84
2.5'- 9.87
1.5'- 3.33
PROJECTION ON LINE A-B.

EXTRA COPY
DMEA
RECEIVED JUN 25 1958

DATE	INITIALS	CODE

AMENDMENT TO MINING LEASE

THIS AMENDMENT TO MINING LEASE made and entered into as of this 10th day of May, 1958, regardless of the actual times of signing and acknowledgment by and between AMERICAN SMELTING AND REFINING COMPANY, a New Jersey Corporation, lessor, and MARCY-SHENANDOAH CORPORATION, a Delaware Corporation, lessee,

W I T N E S S E T H

THAT, WHEREAS, on January 1, 1958, lessor gave and granted unto the lessee that certain Mining Lease, recorded in the records of San Juan County, Colorado in Book 185, Page 59, letting and demising unto the lessee the Adams Placer, U. S. Survey No. 15143 and other claims therein set forth, all situate in the Animas Mining District, San Juan County, Colorado; and

WHEREAS, lessor is also seized and possessed of the following patented lode mining claims situate in said mining district and county:

Badger	U. S. Survey No. 11448
Freiberg	U. S. Survey No. 14047
Galena	U. S. Survey No. 11448
Last Chance	U. S. Survey No. 11448
Prof. Newberry	U. S. Survey No. 14046

and it is the desire of lessor and lessee as of this date to add and include in said lease the above claims, subject to the terms of said lease;

NOW, THEREFORE, in consideration of the premises and of the sum of One Dollar ($1.00) and other good and valuable considerations to lessor paid by lessee, receipt of which is hereby acknowledged, and of the terms and covenants of said lease to be henceforth applicable also to said claims, it is agreed as follows:

Article 1. Additional Claims. Said Mining Lease of January 1, 1958 is hereby amended to include, in addition to the other property therein demised, the following patented lode mining claims:

Badger	U. S. Survey No. 11448
Freiberg	U. S. Survey No. 14047
Galena	U. S. Survey No. 11448
Last Chance	U. S. Survey No. 11448
Prof. Newberry	U. S. Survey No. 14046

effective as of this date.

Article 2. Otherwise No Change. Except as above amended, said Mining Lease of January 1, 1958, and all articles and provisions thereof shall be and remain in full force and effect.

IN WITNESS WHEREOF lessor and lessee have executed this agreement as of the day and year first above written.

AMERICAN SMELTING AND REFINING COMPANY

ATTEST

Assistant Secretary

By Simon D. Strauss
Vice President

Lessor

MARCY-SHENANDOAH CORPORATION

ATTEST

Secretary

By S. Stokes Tomlin
President

Lessee

STATE OF NEW YORK)
) ss
CITY AND COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 11th day of June A.D. 1958 by S.D.Strauss, Vice President of the American Smelting and Refining Company, lessor.

My commission expires: March 30, 1960.
Witness my hand and official seal.

W. Thomas Reed
Notary Public
W. THOMAS REED
Notary Public, State of New York
No. 31-8519150
Qualified in New York County
Commission Expires March 30, 1960

STATE OF COLORADO)
) ss
COUNTY OF LA PLATA)

The foregoing instrument was acknowledged before me this 26th day of May A.D. 1958 by S. Stokes Tomlin, Jr., President of the Marcy-Shenandoah Corporation, lessee.

My commission expires: My Commission Expires March 24, 1959
Witness my hand and official seal.

Gladys J. Heatherington
Notary Public

EXTRA COPY
DMEA
RECEIVED JUN 25 1958

DATE	INITIALS	CODE

AMENDMENT TO MINING LEASE

THIS AMENDMENT TO MINING LEASE made and entered into as of this 10th day of May, 1958, regardless of the actual times of signing and acknowledgment by and between AMERICAN SMELTING AND REFINING COMPANY, a New Jersey Corporation, lessor, and MARCY-SHENANDOAH CORPORATION, a Delaware Corporation, lessee,

W I T N E S S E T H

THAT, WHEREAS, on January 1, 1958, lessor gave and granted unto the lessee that certain Mining Lease, recorded in the records of San Juan County, Colorado in Book 185, Page 59, letting and demising unto the lessee the Adams Placer, U. S. Survey No. 15143 and other claims therein set forth, all situate in the Animas Mining District, San Juan County, Colorado; and

WHEREAS, lessor is also seized and possessed of the following patented lode mining claims situate in said mining district and county:

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NOW, THEREFORE, in consideration of the premises and of the sum of One Dollar ($1.00) and other good and valuable considerations to lessor paid by lessee, receipt of which is hereby acknowledged, and of the terms and covenants of said lease to be henceforth applicable also to said claims, it is agreed as follows:

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Freiberg	U. S. Survey No. 14047
Galena	U. S. Survey No. 11448
Last Chance	U. S. Survey No. 11448
Prof. Newberry	U. S. Survey No. 14046

effective as of this date.

Article 2. Otherwise No Change. Except as above amended, said Mining Lease of January 1, 1958, and all articles and provisions thereof shall be and remain in full force and effect.

IN WITNESS WHEREOF lessor and lessee have executed this agreement as of the day and year first above written.

AMERICAN SMELTING AND REFINING COMPANY

ATTEST

Assistant Secretary

By Simon D. Strauss
Vice President

Lessor

MARCY-SHENANDOAH CORPORATION

ATTEST

Asst Secretary

By S. Stokes Tomlin Jr.
President

Lessee

STATE OF NEW YORK)
) ss
CITY AND COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 11th day of June A.D. 1958 by S.D.Strauss, Vice President of the American Smelting and Refining Company, lessor.

My commission expires: March 30, 1960.
Witness my hand and official seal.

W. Thomas Reed
Notary Public
W. THOMAS REED
Notary Public, State of New York
No. 31-8519150
Qualified in New York County
Commission Expires March 30, 1960

STATE OF COLORADO)
) ss
COUNTY OF LA PLATA)

The foregoing instrument was acknowledged before me this 26th day of May A.D. 1958 by S. Stokes Tomlin, Jr., President of the Marcy-Shenandoah Corporation, lessee.

My commission expires: My Commission Expires March 24, 1959
Witness my hand and official seal.

Notary Public

EXTRA COPY
DMEA
RECEIVED JUN 25 1958

DATE	INITIALS	CODE

AMENDMENT TO MINING LEASE

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NOW, THEREFORE, in consideration of the premises and of the sum of One Dollar ($1.00) and other good and valuable considerations to lessor paid by lessee, receipt of which is hereby acknowledged, and of the terms and covenants of said lease to be henceforth applicable also to said claims, it is agreed as follows:

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Prof. Newberry	U. S. Survey No. 14046

effective as of this date.

Article 2. Otherwise No Change. Except as above amended, said Mining Lease of January 1, 1958, and all articles and provisions thereof shall be and remain in full force and effect.

IN WITNESS WHEREOF lessor and lessee have executed this agreement as of the day and year first above written.

AMERICAN SMELTING AND REFINING COMPANY

ATTEST

Assistant Secretary

By S. D. Strauss
Vice President

Lessor

MARCY-SHENANDOAH CORPORATION

ATTEST

Secretary

By S. Stokes Tomlin
President

Lessee

STATE OF NEW YORK)
) ss
CITY AND COUNTY OF NEW YORK)

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My commission expires: March 30, 1960.
Witness my hand and official seal.

W. Thomas Reed
Notary Public

W. THOMAS REED
Notary Public, State of New York
No. 31-8519150
Qualified in New York County
Commission Expires March 30, 1960

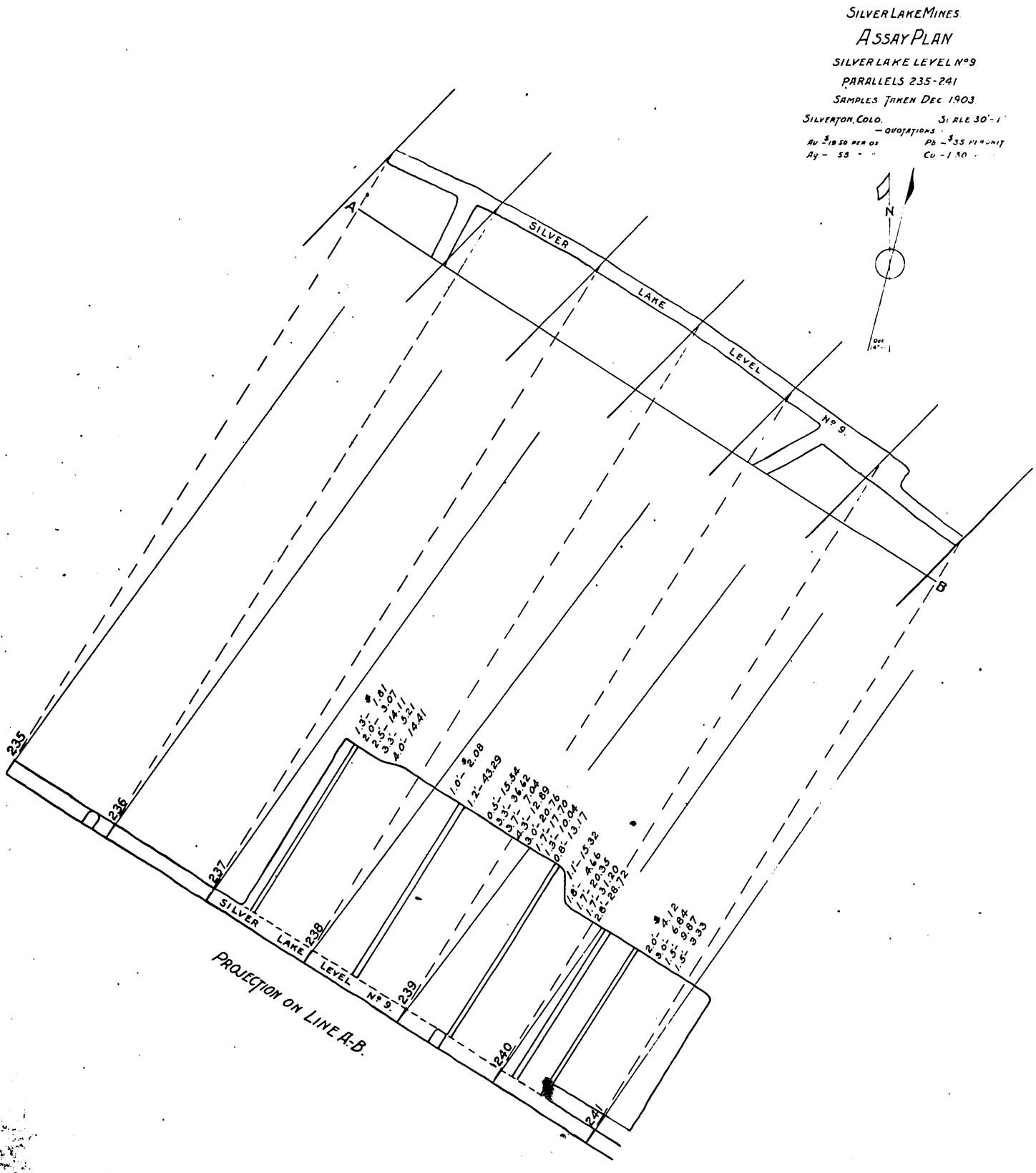
STATE OF COLORADO)
) ss
COUNTY OF LA PLATA)

The foregoing instrument was acknowledged before me this 26th day of May A.D. 1958 by S. Stokes Tomlin, Jr., President of the Marcy-Shenandoah Corporation, lessee.

My commission expires: [illegible] Expires March 21, 1959
Witness my hand and official seal.

Notary Public

FIGURE 4


SILVER LAKE MINES
ASSAY PLAN
SILVER LAKE LEVEL Nº 9
PARALLELS 235-241
SAMPLES TAKEN DEC 1903
SILVERTON, COLO.
SCALE 30'-1"
— QUOTATIONS —
Au $18.50 PER OZ
Ag - 55 " "
Pb - $35 PER UNIT
Cu - 1.30 " "
N
DEC 14°
A
B
SILVER LAKE LEVEL Nº 9
235
236
237
238
239
240
241
1.3'- $1.81
2.0'- 3.07
2.5'- 14.11
3.3'- 5.21
4.0'- 14.41
1.0'- $2.08
1.2'- 43.29
0.5'- 15.54
3.3'- 36.62
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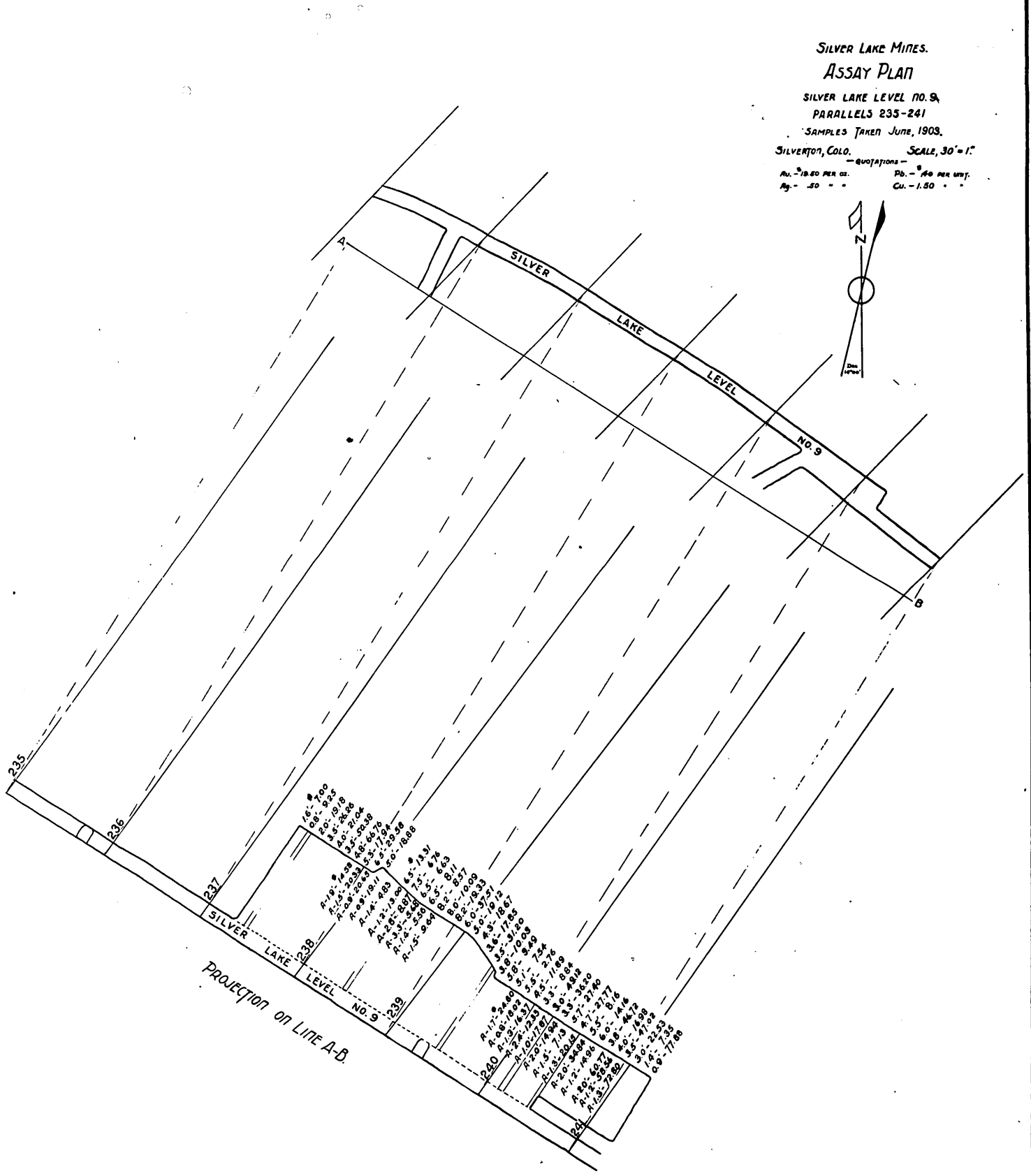
1.7'- 20.35
1.7'- 31.20
2.8'- 28.72
2.0'- $4.12
2.0'- 6.84
1.5'- 9.87
1.5'- 3.33
PROJECTION ON LINE A-B.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 16 1958
CODE

FIGURE 3


SILVER LAKE MINES.
ASSAY PLAN
SILVER LAKE LEVEL NO. 9.
PARALLELS 235-241
SAMPLES TAKEN JUNE, 1903.
SILVERTON, COLO.
SCALE, 30' = 1"
— QUOTATIONS —
AU. - $18.60 PER OZ.
AG. - .50 " "
PB. - $.40 PER UNIT.
CU. - 1.50 " "
N
A
B
SILVER LAKE LEVEL NO. 9
235
236
237
238
239
240
241
PROJECTION ON LINE A-B.

DMEA
13 1958

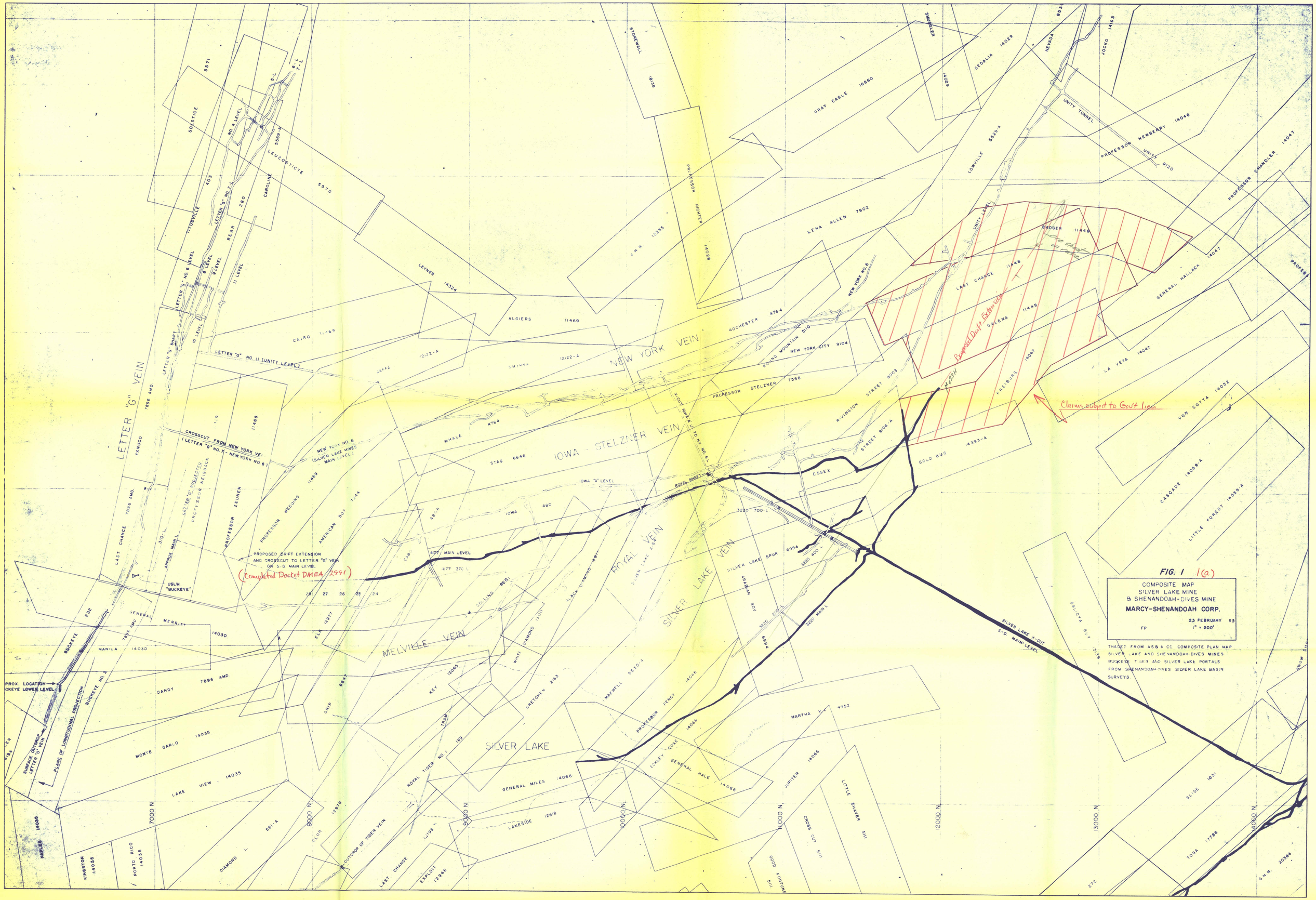


FIG. 1 1(a)

COMPOSITE MAP
SILVER LAKE MINE
& SHENANDOAH-DIVES MINE
MARCY-SHENANDOAH CORP.

23 FEBRUARY 53
FP 1" = 200'

TRACED FROM ASB & RCC COMPOSITE PLAN MAP SILVER LAKE AND SHENANDOAH-DIVES MINES BUCKEYE, TIGER AND SILVER LAKE PORTALS FROM SHENANDOAH-DIVES SILVER LAKE BASIN SURVEYS

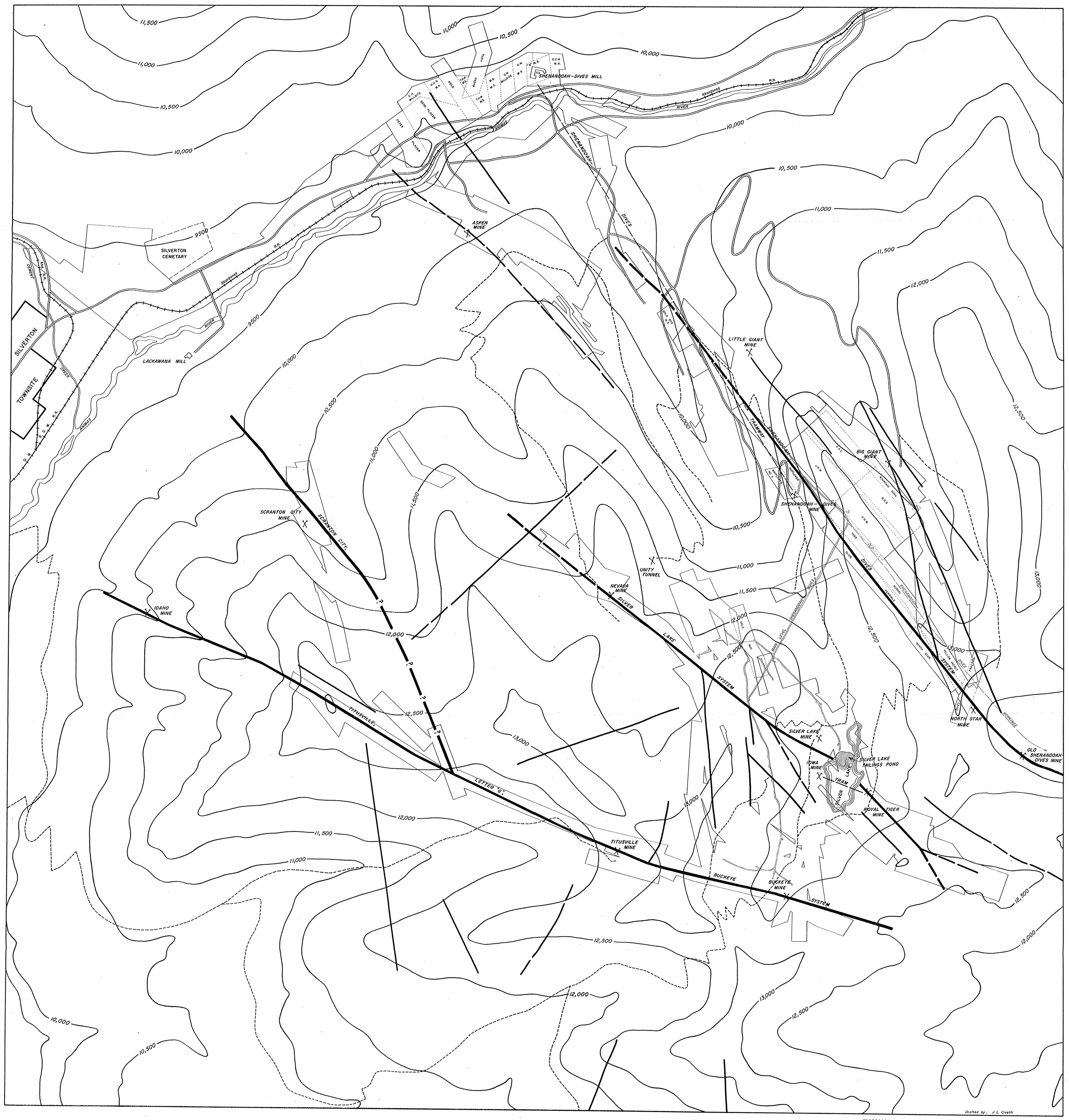


FIG. 2

MARCY-SHENANDOAH——ASARCO AREA MAP

TOPOGRAPHY BY FRANK TWEEDY & ARTHUR STILES (1895-1900)
ECONOMIC FEATURES BY F. L. RANSOME (1899-1900)
CLAIMS FROM ASARCO MAP
TUNNELS FROM SHENANDOAH-DIVES CO. MAP (1953)

APPROXIMATE SCALE: 1" = 600'
OCTOBER, 1957

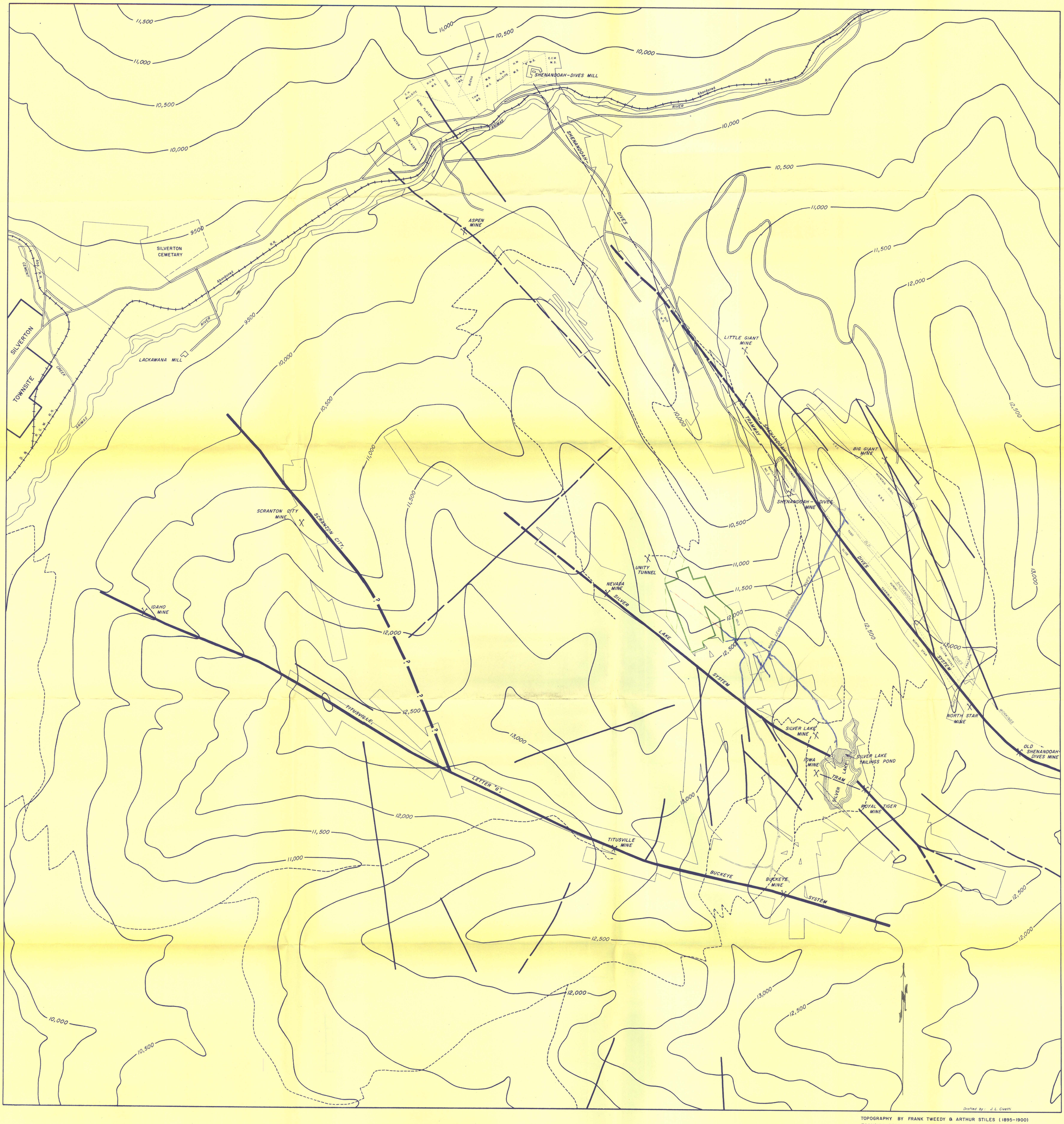
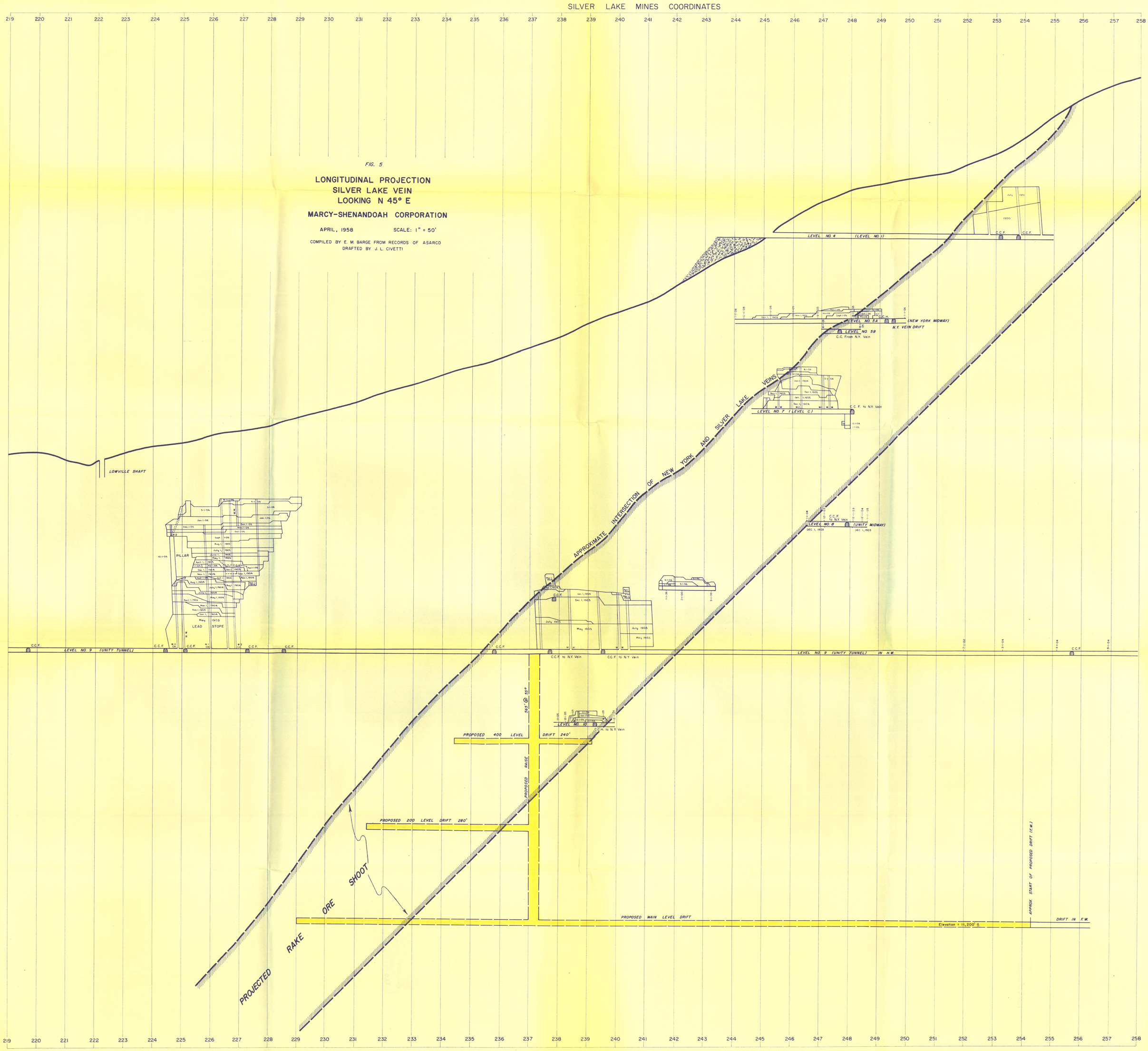


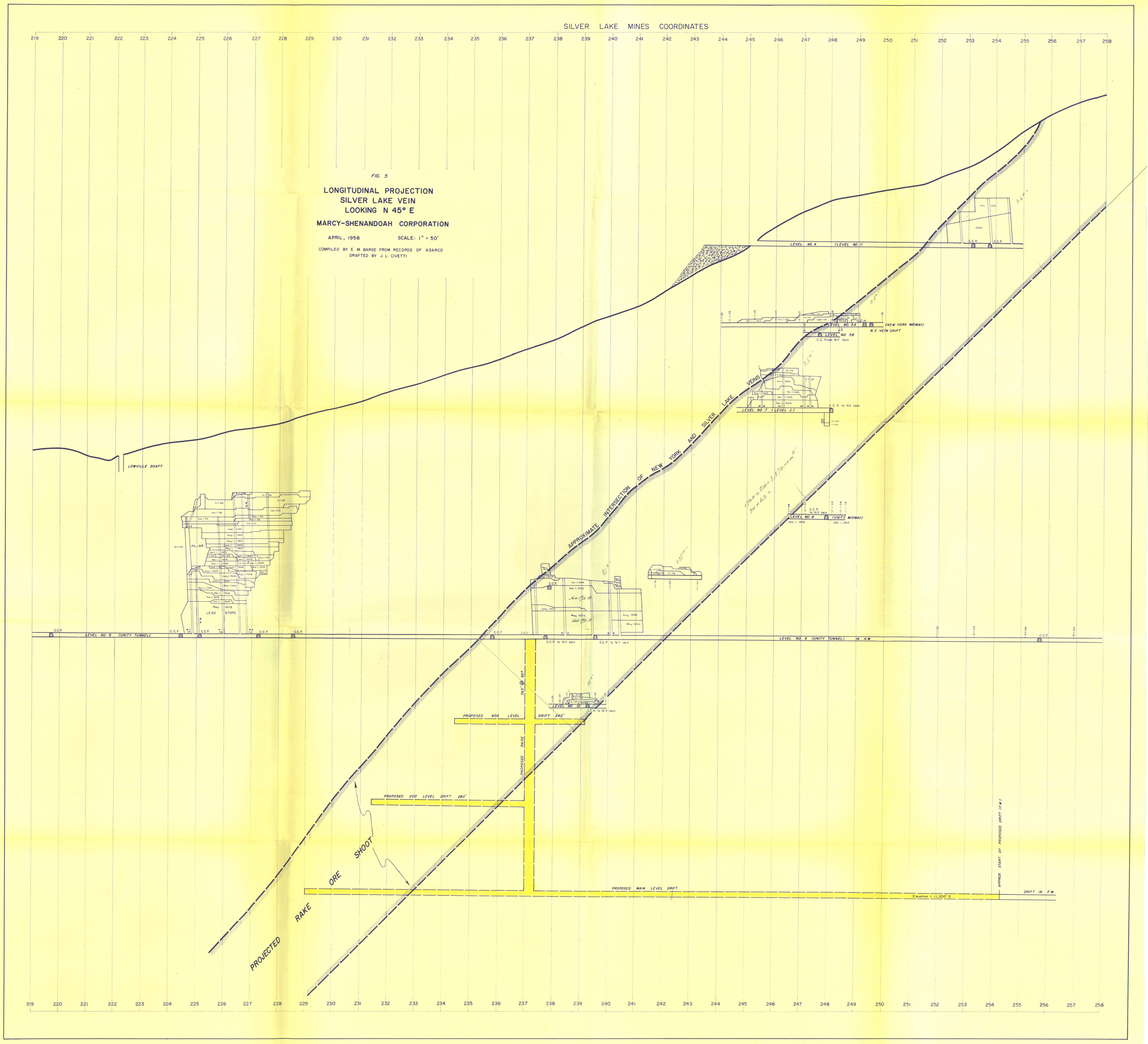
FIG. 2

MARCY-SHENANDOAH——ASARCO AREA MAP

TOPOGRAPHY BY FRANK TWEEDY & ARTHUR STILES (1895-1900)
ECONOMIC FEATURES BY F. L. RANSOME (1899-1900)
CLAIMS FROM ASARCO MAP
TUNNELS FROM SHENANDOAH-DIVES CO. MAP (1953)

APPROXIMATE SCALE: 1" = 600'
OCTOBER, 1957


SILVER LAKE MINES COORDINATES
219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258
FIG. 5
LONGITUDINAL PROJECTION
SILVER LAKE VEIN
LOOKING N 45° E
MARCY-SHENANDOAH CORPORATION
APRIL, 1958
SCALE: 1" = 50'
COMPILED BY E. M. BARGE FROM RECORDS OF ASARCO
DRAFTED BY J. L. CIVETTI
LEVEL NO. 4 (LEVEL NO. 1)
C.C.F.
LEVEL NO. 5A
(NEW YORK MIDWAY)
N.Y. VEIN DRIFT
LEVEL NO. 5B
C.C. From N.Y. Vein
LEVEL NO. 7 (LEVEL C)
C.C.F. to N.Y. Vein
LEVEL NO. 8 (UNITY MIDWAY)
DEC. 1, 1903
LOWVILLE SHAFT
PILLAR
LEAD
STOPE
APPROXIMATE INTERSECTION OF NEW YORK AND SILVER LAKE VEINS
LEVEL NO. 9 (UNITY TUNNEL)
LEVEL NO. 9 (UNITY TUNNEL) IN H.W.
C.C.F. to N.Y. Vein
LEVEL NO. 10
C.C.H. to N.Y. Vein
565' @ 55°
PROPOSED RAISE
PROPOSED 400 LEVEL DRIFT 240'
PROPOSED 200 LEVEL DRIFT 280'
PROPOSED MAIN LEVEL DRIFT
Elevation = 11,200' ±
APPROX. START OF PROPOSED DRIFT (F.W.)
DRIFT IN F.W.
PROJECTED RAKE ORE SHOOT


SILVER LAKE MINES COORDINATES
219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258
FIG. 5
LONGITUDINAL PROJECTION
SILVER LAKE VEIN
LOOKING N 45° E
MARCY-SHENANDOAH CORPORATION
APRIL, 1958
SCALE: 1" = 50'
COMPILED BY E. M. BARGE FROM RECORDS OF ASARCO
DRAFTED BY J. L. CIVETTI
LEVEL NO. 4 (LEVEL NO. 1)
C.C.F.
LEVEL NO. 5A
(NEW YORK MIDWAY)
N.Y. VEIN DRIFT
LEVEL NO. 5B
C.C. From N.Y. Vein
LEVEL NO. 7 (LEVEL C)
C.C.F. to N.Y. Vein
LEVEL NO. 8 (UNITY MIDWAY)
DEC. 1, 1903
LOWVILLE SHAFT
PILLAR
LEAD STOPE
APPROXIMATE INTERSECTION OF NEW YORK AND SILVER LAKE VEINS
LEVEL NO. 9 (UNITY TUNNEL)
LEVEL NO. 9 (UNITY TUNNEL) IN H.W.
LEVEL NO. 10
C.C.H. to N.Y. Vein
PROPOSED 400 LEVEL DRIFT 240'
PROPOSED RAISE
PROPOSED 200 LEVEL DRIFT 280'
PROPOSED MAIN LEVEL DRIFT
Elevation = 11,200' ±
APPROX. START OF PROPOSED DRIFT (F.W.)
DRIFT IN F.W.
PROJECTED RAKE ORE SHOOT

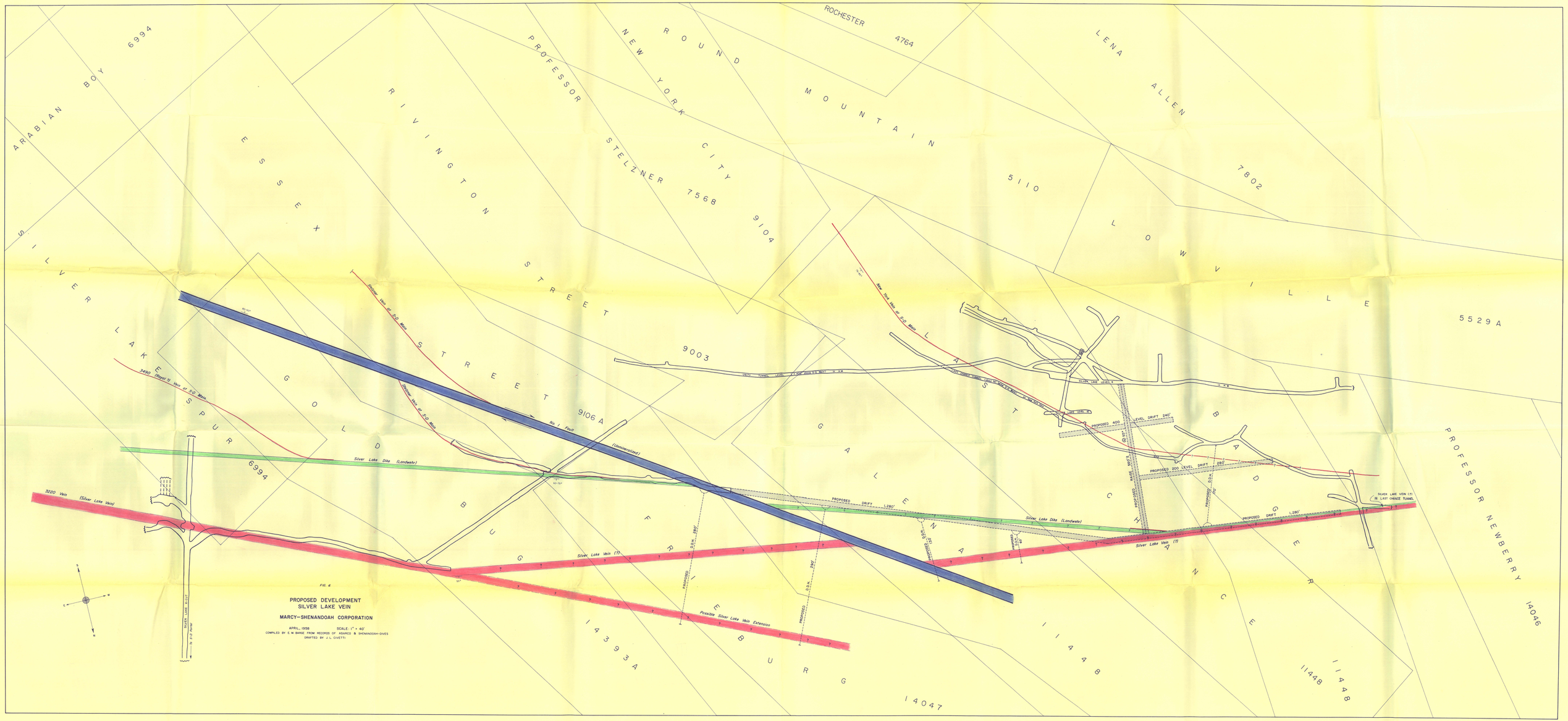


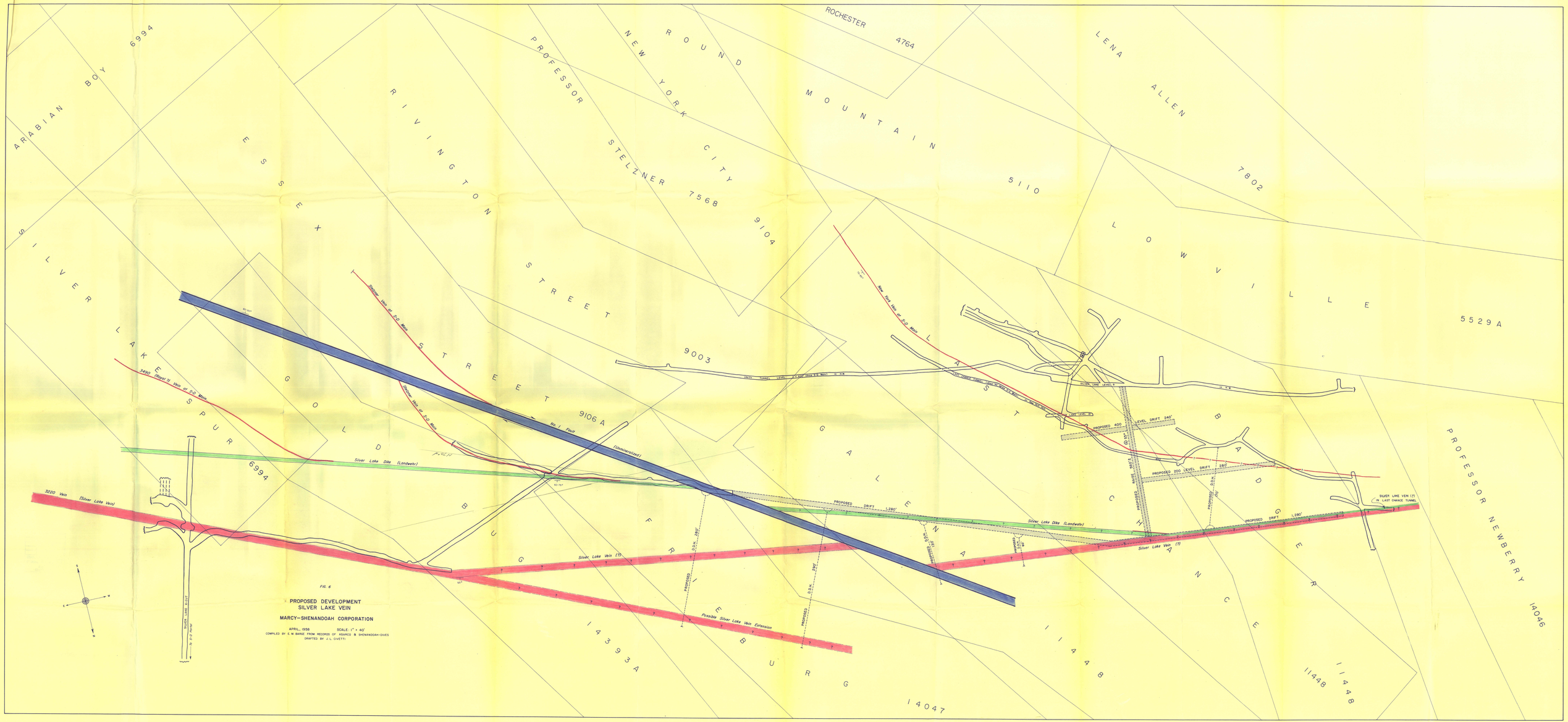
FIG. 6

PROPOSED DEVELOPMENT
SILVER LAKE VEIN

MARCY-SHENANDOAH CORPORATION

APRIL, 1958 SCALE: 1" = 40'

COMPILED BY E.W. BARGE FROM RECORDS OF ASARCO & SHENANDOAH-DIVES
DRAFTED BY J.L. CIVETTI


ARABIAN BOY 6994
SILVER LAKE SPUR 6994
ESSEX
RIVINGTON STREET
PROFESSOR STELZNER 7568
NEW YORK CITY 9104
ROUND MOUNTAIN 5110
ROCHESTER 4764
LENA ALLEN 7802
LOWVILLE 5529 A
PROFESSOR NEWBERRY 14046
GOLD BUG 14393 A
FREEBURG 14047
GALENA 11448
CHANCE 11448
11448
9003
9106 A
STREET
3490 (Level 'B') Vein at S.O. Mtn.
Silver Vein at S.O. Mtn.
New Vein at S.O. Mtn.
No. 1 Fault
(Uncorrelated)
Silver Lake Dike (Landwehr)
3220 Vein (Silver Lake Vein)
Silver Lake Vein (?)
Possible Silver Lake Vein Extension
PROPOSED DRIFT 1,280'
PROPOSED 400 LEVEL DRIFT 240'
PROPOSED 200 LEVEL DRIFT 280'
PROPOSED RAISE 50'±
PROPOSED 50'±
SILVER LAKE VEIN (?) IN LAST CHANCE TUNNEL
SILVER LAKE SHAFT
No. 2 P.S. Panel
FIG. 6
PROPOSED DEVELOPMENT
SILVER LAKE VEIN
MARCY-SHENANDOAH CORPORATION
APRIL, 1958
SCALE: 1" = 40'
COMPILED BY E.M. BARGE FROM RECORDS OF ASARCO & SHENANDOAH-DIVES
DRAFTED BY J.L. CIVETTI