SCAN COVER SHEET ONLY

U.S. v. ASARCO

DOCUMENT CONTROL FORM: PRIVILEGED DOCUMENT

(Staple to Original Privilege Document or to copy of privilege document)

Repository Name: USGS

Repository Location: SPOKANE, WASHINGTON

File Bates Number: USGSPO 0000761

File Owner: N. Eades

File Location: DOI - SOL, WASH DC

Document Date: 5/56

Document Title: Field team final report Region 1, NW District Golconda lead mines contract IDM-E475 (with attached maps)

Document Author: E. Erickson J. Quinlan

Original Document Attached: Y (N)

If not attached, Original Document Current Location
(must be segregated from other documents)

Type of Privilege:

ACC WP (CBI) DP (PI) Other

Reviewer:

STATUTORY PRIVILEGE OF CONFIDENTIAL BUSINESS & PROPRIETARY INFO

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FIELD TEAM, REGION I
Northwest District

FINAL REPORT

Contract Idm-E475

by

Eric G. Erickson
Mining Engineer
U. S. Bureau of Mines

James J. Quinlan
Geologist
U. S. Geological Survey

GOLCONDA LEAD MINES
Insurance Building
Wallace, Idaho

Docket No.:	DMEA-2637
Commodity:	Lead-Zinc
Contract date:	January 14, 1953
Termination date:	November 23, 1954

GOLCONDA MINE
Lelande and Hunter Mining Districts
Shoshone County, Idaho

Spokane, Washington

May 1956

CONTENTS

	Page
INTRODUCTION	1
Summary	1
Recommendations	2
LOCATION AND ACCESSIBILITY	2
PROPERTY	2
History	3
GEOLOGY	4
THE PROJECT	7
Ore Reserves	11
Exploitation Possibilities	13
Summary of Factual Data	14
Discussion of Conclusions	14

ILLUSTRATIONS

Plate		
1	Map showing geology of Golconda adit level and other adit levels in immediate vicinity, Golconda Mine, Shoshone County, Idaho, Scale 1" = 1000'	In pocket
2	800 & 1000 & 1150 Levels, Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket
3	1200 & 1400 Levels, Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket
4	1600 Level, Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket
5	1800 Level, Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket
6	Plane of Section is North on 5500 E. Coord., Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket
7	Vert. Longitudinal Projection, Golconda Mine, Shoshone County, Idaho. Scale 1" = 50'	In pocket

FINAL REPORT

GOLCONDA LEAD MINES
Golconda Mine
Lelande and Hunter Mining Districts
Shoshone County, Idaho

Contract Idm-E475

* * * *

INTRODUCTION

This report describes an exploration project at the Golconda mine, Shoshone County, Idaho. The project was conducted jointly by Golconda Lead Mines, an Idaho corporation and Defense Minerals Exploration Administration.

Summary

The project was undertaken to test the Golconda vein on the 1800 level east of the area under the Main ore body which was tested in 1931 and in particular to test the area under an ore body which was found in the eastern part of the 1000 level in 1948.

Contract work completed consisted of 2,035.7 feet of drifting and crosscutting and 259 feet of diamond drilling. Besides authorized contract work the company on its own account completed 55 feet of drift rehabilitation, 77 feet of raising on the vein, 32 feet of doghole raising, and 925 feet of long-hole drilling in the DMEA exploration area. Contract work was done on a unit cost basis at a total cost of $84,390.70 of which the Government's share was 50 percent or $42,195.35.

Project work adequately tested the Golconda vein on the 1800 level. The vein tested was of only minor economic interest, and the company abandoned the level on completion of project work. In all, about 15,000 tons of marginal and submarginal ore were

indicated by project work. Of this 15,000-ton reserve 3,300 tons are in a structure similar to those being mined, under leasing systems, in other portions of the mine and by other operators in the Coeur d'Alene district.

Recommendations

A certification of discovery has been issued as a result of exploration work on the 1800 level.

Government participation in further exploration is not warranted at this time. Company geologic work might demonstrate the presence of major exploration targets of which Government participation would be warranted.

LOCATION AND ACCESSIBILITY

48 N.

The Golconda mine is in sec. 30, T. 38 N., R. 5 E., B.M., Lelande and Hunter Mining Districts, Shoshone County, Idaho. It is about 2 miles east of Wallace, Idaho. The portal of the Main Adit level (1000 level) is on the north side of a valley traversed by the South Fork of the Coeur d'Alene River and adjacent to U. S. Highway 10 and the Wallace branch line of the Northern Pacific Railroad. The altitude of the portal is about 3,025 feet; altitudes on the property range from 2,900 to 4,700 feet.

The terrain in the vicinity of the property is of sharp relief and is covered with a moderately heavy growth of vegetation and thick overburden; thus many of the geologic features are obscured. The winters are severe, and snowfall is heavy. The nearness of the property to the highway makes it readily accessible throughout the year.

PROPERTY

The Operator's property rights as listed in the contract include the following patented mining claims:

Claim name	Number
Klondike	2215
Raymond	2885
Lead	2991
Juneau	2215
Snowflake	2215
Manhattan Extension	3192

The Operator owns all the above-listed claims with the exception of the Manhattan Extension which is held by lease.

History

The mining properties in the vicinity of the Golconda mine were first prospected before 1900. Shortly after 1900 mining properties owned by Hector Mining Co., Ltd., Mayflower Mining & Development Co., and the Square Deal Mining & Milling Co. were consolidated into what is presently known as the Golconda mine. The Square Deal Co., incorporated in 1906, still exists as an independent company although the stock is controlled by the Golconda Lead Mines.

The main 1000 level crosscut was driven 5,130 feet between the years 1900 and 1920 through the efforts of the Mayflower and Hector companies. The two companies continued until 1926 when the property of the Hector Mining Co., Ltd., and use of the Mayflower 1000 level crosscut were leased to N. C. Sheridan, A. H. Featherstone, and associates of Wallace, Idaho. The structure known as the Golconda vein was explored and developed.

The Golconda Lead Mines was incorporated on January 18, 1927, and development including drifting and sinking the north shaft 200 feet was completed during 1927. A 200-t.p.d. mill was completed by August 1928 to mill the ore. The Mayflower property was acquired, and the north shaft was deepened to the 1400 level. A south shaft raised from the 1400 level in 1929, and in 1930 this shaft was deepened to the 1800 level.

Development of the property on the 1000, 1400, and 1600 levels was more or less intermittent from 1931 through 1946. The 1000 level was explored easterly during the period 1947-50. A winze was sunk on an ore shoot found near the face of the east drift on the 1000 level, and some development work and stoping was done. The total underground development as of 1951 exceeded 22,000 feet. A small production, mostly by lessees, has been maintained to the present time. During 1953-54, 2,035.7 feet of drifting and 259 feet of core drilling was completed under a DMEA exploration project contract.

The company is presently opening the 1600 level and plans on drifting easterly to the ore shoot indicated on the 1800 level and mined on the 1000 level and 1150 sublevel.

The mine workings have a vertical extent of about 1,000 feet and about 2,400 feet along strike. The mine has seven levels, namely, 800, 1000, 1150, 1200, 1400, 1600, and 1800. The vertical

level interval is not standard and ranges from 110 to 190 feet. The mine workings, for the most part, require timber support, and due to the heavy ground considerable maintenance is necessary.

The dead-end workings are ventilated by electric-driven fans and 12-inch galvanized tubing. Workings below the 1000 level are drained by intermittent operation of electric pumps.

The surface plant comprises five frame buildings used for compressor house, shop, 20-man change house, office, and motor barn. The buildings are in good condition. A 1,000 c.f.m. compressor, 75 h.p. D.D. electric hoist, a 4½-ton and a 2½-ton battery motor are the major equipment items. The mine is also equipped with mine cars, drills, electric fans, repair shop equipment, electric cap lamps, and sundry mine equipment. A 200-t.p.d. modern flotation mill is located on the property. Although the mine production is small, the mill is kept in more or less continuous operation by the volume of custom milling.

GEOLOGY

The general geology of the Coeur d'Alene district has been described in the following:

Ransome, F. L., and Calkins, F. C., 1908, Geology and ore deposits of the Coeur d'Alene district, Idaho: U. S. Geol. Survey Prof. Paper 62.

Umpleby, J. B., and Jones, E. C., 1923, Geology and ore deposits of Shoshone County, Idaho: U. S. Geol. Survey Bull. 732.

The general geology in the vicinity of the Golconda mine is best shown on a map prepared by R. E. Wallace, A. B. Griggs, and S. W. Hobbs, Geologic map and structure sections of the Mullan and vicinity Quadrangle, Idaho: U. S. Geol. Survey Open File map, 1953.

The country rock of the Coeur d'Alene district consists principally of quartzites and argillites of the Precambrian Belt series that have been folded, faulted, and intruded by granitic stocks and dikes of various types. The Belt series in the district consist, from the bottom up, of the Prichard, Burke, Revett, St. Regis, Wallace, and Striped Peak formations. The series has an exposed total thickness of 23,000 feet.

The largest structural feature of the Coeur d'Alene district is the Osburn fault. This fault crosses the district in a west-northwesterly direction and is believed to have a post-ore strike-slip component of movement of about 16 miles, the south block having moved west relative to the north block.

The productive veins of the Coeur d'Alene district are localized along definite parallel zones or belts that, for the most part, trend slightly more northwest than the trend of the Osburn fault. In all, seven distinct belts and an eighth less perfect-developed belt are recognized. Two of the seven distinct belts lie south of the Osburn fault, and the others lie north of the fault. The eighth and less perfect-developed belt lies just north of the Osburn fault and is essentially parallel to it. The Golconda mine is near the western end of this eighth belt that extends from just west of Wallace to a point east of Mullan, a distance of over 6 miles. The Golconda and Lucky Friday mines are the only properties along this belt that have had any significant production, but likely prospects along the belt include the Alice, United Lead-Zinc, and Sisters.

Plate 1 accompanying this report shows the geology of the principal adit level workings in the vicinity of the Golconda mine and illustrates the general geologic setting of the deposit. It will be noted that the principal workings lie within a block of ground bounded on the south by the Osburn fault and on the north by the Golconda fault. Within the vicinity of the Golconda mine the Osburn fault strikes N. 80° W. and appears to be essentially vertical. The Golconda fault also strikes N. 80° W., and available information suggests that it dips steeply northeastward. The block of ground between these two faults is highly shattered and folded. Numerous late normal faults within this block as well as a few later reverse faults offset the Golconda vein a few to a few tens of feet.

The slightly metamorphosed sedimentary rock exposed in the Golconda workings within the block of ground between the Osburn and Golconda faults are a part of the upper section of the Prichard formation and the overlying Burke formation. That part of the Prichard formation exposed in the workings consists of dark-colored argillites interbedded with gray to white quartzites that are similar to the relatively thin-bedded quartzites of the overlying Burke formation. Although these rocks are highly contorted, the general regional trend of the formations is northward and the regional dip eastward at a moderate angle.

Hydrothermal bleaching of the metasediments is apparent at many places throughout the mine. Sideritization and "silicification" are prominent in areas adjacent to veins and some faults. The quartzitic rocks appear to be much more susceptible to bleaching than the dark-colored argillites.

The principal ore-bearing structure of the mine is the Golconda vein. The position of this vein in relation to the major structures in the area is shown on plate 1. The detailed geology of the vein and adjacent area is shown on the company's 50-scale

geologic level maps, copies of which also accompany this report. Plate 2 shows the geology of the 800, 1000 (Adit Level), and 1150 levels; plate 3, the geology of the 1200 and 1400 levels; plate 4, the geology of the 1600 level; and plate 5, the geology of the 1800 level.

The Golconda vein strikes approximately east except for a short section in the western area of the mine where it strikes N. 75° E. It dips 50°-75° S., averaging about 60° S. (pl. 6, geologic cross section of the vein through coordinate 5500 E.). The vein occurs within a highly sheared and shattered fault zone. The geologic map of the 1800 level, plate 5, illustrates the nature of this zone and shows the contorted nature of the bedding within the zone. Although it is not possible to accurately determine the movement along this fault, geologic mapping on the 1000 level shows that it is a reverse fault having a strike-slip component of movement of approximately 1,000 feet (pl. 1). The Golconda vein is cut off by the Golconda fault in the eastern part of the mine on the 1000 level. Work to the east of the Golconda fault has failed to locate the vein.

Although locally small ore lenses occur at many places along the Golconda vein, most of the ore is confined to two separate and distinct bodies or shoots. These bodies, designated as the Golconda Main and East ore shoots, are best illustrated on the company's vertical longitudinal projection of the Golconda vein, plate 7 accompanying this report. Both ore shoots rake toward the east. The Main ore shoot has been mined from about 50 feet above the 800 level to the 1600 level with the greater part of the ore occurring in the block of ground between the 1000 and 1400 levels. Between the 1000 and 1400 levels the length of the ore shoot ranges from about 350 to 500 feet. The East ore shoot has been mined from about 50 feet above the 1000 level to the 1150 level. This ore shoot is about 300 feet long. Within these two ore shoots the vein is reported to average 4 to 5 feet in thickness and consists of argentiferous galena and sphalerite in a quartz-siderite gangue. The ore in many places is sheared and contorted and even gougelike.

In addition to the Golconda vein, several other smaller veins have been found on the property. The most important of these is the Mayflower vein, which is immediately north of the Osburn fault. Over 2,500 feet of drifting was completed along this vein on the 1000 level, but the workings are now inaccessible (pl. 1). Several irregular pods of ore are reported to have been found along this vein, but the intense shattering and shearing made it difficult to follow the ore for more than a few or a few tens of feet.

THE PROJECT

The project was undertaken to test the Golconda vein on the 1800 level east of the area under the Main ore shoot and, in particular, to test the area under the East ore body which was found on the 1000 level in 1948. The company had conducted exploration on the 1800 level under the Main ore shoot in 1931 but had abandoned the level prior to the finding of the East ore shoot on the 1000 level. Company maps (pls. 3 and 7) also indicated that the 1400 level workings which were driven about 1932 extended into the area under the rake of the East ore shoot. An adequate geologic record of the nature of the vein exposed in the workings under Main and East ore shoots was not available when the company presented its application and the workings were inaccessible. It appeared quite possible, however, that a part of the 1400 level workings under the East ore shoot was not on the vein or that exploration had not been extended far enough eastward to test all possibilities in the area. The cost of rehabilitating the 1400 level, however, precluded opening it up to examine the area under the eastern ore shoot. Although it was apparent that early work under the two ore shoots had proved disappointing, there was no sound geologic reason on the basis of available information to suggest that all ore bottomed above the 1800 level or that other ore bodies might not be found on this level. Under the circumstances and in the light of finding a sizable ore body in the eastern area of the mine on the 1000 level it was believed that testing of the eastward extension of the Golconda vein on the 1800 level was warranted.

At the time the company presented its application, the shaft to the 1800 level was being rehabilitated and the company expected to have the 1800 level rehabilitated so that drifting under the proposed contract could start from the old east drift face (pl. 5). The contract, dated January 14, 1953, allowed 16 months for the completion of work and provided for 1,500 feet of drifting to test the Golconda vein on the 1800 level east of the area previously explored; two 200-foot raises to test any ore bodies found during the course of exploration; and 2,000 feet of diamond drilling to test the walls of the drift for offset segments of the vein or possible parallel structures. Because of unforeseen circumstances and conditions it was necessary to modify the work program.

In all, the contract was amended six times; five of the amendments, that is, Nos. 1, 2, 4, 5, and 6, directly affected the work, whereas, one of the amendments, that is, No. 3, excluded from royalty payments certain reserve blocks and dumps that were known to exist prior to the contract but which inadvertently had not been excluded from the contract when it was prepared.

Amendment No. 1 was made because considerable difficulty was experienced in rehabilitating the 1800 level to the old east drift face, and contract work could not start from this face as scheduled. The amendment allowed an additional 30 days or a total of 120 days after the date of the contract in which to start work and changed the contract so that the 1,500 feet of proposed drifting would start at a point determined by the Government. This permitted the use of contract funds in driving a crosscut around a cave that blocked the east drift about 180 feet west of the old face.

As work progressed, it became apparent that more than 1,500 feet of drifting and crosscutting would be required to test the vein adequately on the 1800 level. An additional 537.5 feet of drifting and crosscutting was provided for by Amendments No. 4 and 6. Amendments No. 4 and 6 permitted the use of all or part of the contract funds originally intended for raising and a part of the funds originally intended for extra timbering for additional drifting and crosscutting. Because of certain unavoidable delays and heavy ground contract work could not be completed in the 16 months originally allowed, therefore, Amendment No. 5 was made allowing a 24-month period in which to complete the work. In addition, Amendment No. 2 was prepared to allow the company to drive doghole raises or crosscuts, in lieu of short diamond drill holes, to test the immediate walls of the drift. Although the company completed one doghole raise prior to the effective date of the amendment, no more doghole workings were required.

Thus, as amended, the contract in affect provided for 2,037.7 feet of drifting and crosscutting to test the Golconda vein on the 1800 level and 2,000 feet of diamond drilling or, where applicable, doghole raises or crosscuts to test drift walls for offset segments of the vein or possible parallel structures.

Contract work was started May 12, 1953, and completed August 31, 1954. Contract work completed included 2,035.7 feet of drifting and crosscutting and 259 feet of diamond drilling. Besides approved contract work, the company on its own account completed 55 feet of drift rehabilitation, 77 feet of raising on the vein, 32 feet of doghole raising, and 925 feet of long-hole drilling in the DMEA exploration area during this period. This work is shown on plate 5 accompanying this report.

The details of the geology exposed by the DMEA work are shown on the geologic map of the 1800 level (pl. 5). It will be noted that the vein zone is highly contorted, sheared, broken, and cut by numerous transverse faults. The vein within the shear zone is in places quite strong and distinct, but in other places it feathers out into a weak and indistinct structure. Many of the transverse faults offset the vein a few to a few tens of feet. Because

of problems arising from the feathering out of the vein, offsetting of the vein along transverse faults, and heavy ground conditions, it was not always possible to follow the vein with the exploration heading.

After 45 feet of drifting the vein was cut by a fault. The company believed the drift was entering a zone of small faults that had both right- and left-hand throws and following each vein segment would be very difficult.

It was, therefore, decided to crosscut northeastward on bearing to try to pick up the vein east of this zone. This work, however, failed to locate the vein as expected, but it did prospect an area for about 150 feet in the footwall of the vein (pl. 5). Work was then undertaken to locate the vein south of the drift, which was done, and the vein was followed eastward for about 330 feet to a point about 10 feet west of Survey Station 1814A.

In the vicinity of Survey Station 1814A the vein appeared to be feathering out, and it also was cut by a number of transverse faults. As it would be very difficult to follow the vein through such a section and inasmuch as the area under the East ore shoot was still some 700 to 800 feet east, it was decided to drive the drift on bearing, testing the vein by drill holes from the drift as work progressed. The drill holes failed to disclose a favorable structure so drifting was continued on bearing for about 780 feet to a point near Survey Station 1822 where the vein was again picked up. The Operator then followed the vein eastward for about 100 feet where a heavy flow of water was encountered at the face. This large inflow of water caused the clay within the vein zone to swell, giving rise to an extremely heavy ground condition, and the heading had to be temporarily abandoned. When work was resumed, the last 140 feet of drift was caved, and it appeared advisable to drive a crosscut around the caved area rather than rehabilitate the old heading. This runaround crosscut started at a point near Survey Station 1821A and continued about 240 feet east where a large fault was cut (pl. 5). Although not recognized at the time, the hanging-wall zone of this fault had been cut at the face of the main drift heading where the large flow of water was encountered. Crosscutting and long-hole drilling east of the fault failed to locate the vein so the project work was terminated by mutual agreement.

The company correlates the large fault encountered in the drift and the runaround crosscut with the Golconda fault which is exposed on the 1000 level. This correlation, however, may not be valid. In order to correlate the two, it is necessary to assume that the Golconda fault dips about 60° SW., whereas, available evidence in the upper part of the mine suggests that it dips steeply northeastward, and the fault exposed in the runaround crosscut dips steeply southwestward.

The results of the work were disappointing. Although the Operator milled approximately 1,250 tons of development rock from the DMEA exploration heading and an additional 300 tons from a company raise in the exploration area, the grade was very low. All rock milled came from three marginal or submarginal ore shoots. Two of these shoots are immediately east of the area under the Main ore body and the third in the area under the East ore body.

The first shoot is about 50 feet in length and extends from a point 15 feet east of Survey Station 1811A to a point about 5 feet east of Survey Station 1812A (described in the Operator's Final Report as from Survey Station 1811A + 5 for 60 feet). Within this area the vein ranges in width from 1 to 2.5 feet and contains excellent zinc values. Three samples taken across the vein in this area averaged 1.83 feet in width 3.1 ounces of silver per ton, 3.56 percent lead, and 22.45 percent zinc. The Operator milled approximately 280 tons of development rock from this area. Car samples of this rock averaged 0.57 ounce of silver per ton, 0.63 percent lead, and 4.73 percent zinc.

The second shoot is about 90 feet in length and extends from a point 40 feet east of Survey Station 1813A to a point 130 feet east of this station (described in the Operator's Final Report as from Survey Station 1813A + 55 feet for 90 feet). On the level within this area the vein varies in width from less than a foot to over 4 feet. Eight samples taken across the vein in this area averaged 1.71 feet in width, 4.57 ounces of silver per ton, 7.74 percent lead, and 23.24 percent zinc. The Operator milled approximately 515 tons of development ore from the level in this area. Car samples of this ore averaged 0.64 ounce of silver per ton, 0.91 percent lead, and 5.21 percent zinc. A raise (pl. 6) was driven on company account near the western margin of the second shoot. This raise follows the vein for a distance of 77 feet. Sublevel drifts were driven 15 feet east and west from the top of the raise. Cut samples of the vein taken from the last 40 feet of the raise averaged 1.9 feet in width, 2.12 ounces of silver per ton, 4.16 percent lead, and 21.73 percent zinc. The Operator reports approximately 300 tons of ore from the raise were milled. Available car samples indicate that this ore averaged about 0.5 ounce silver, 1.4 percent lead, and 7.6 percent zinc.

The third shoot is about 100 feet in length and extends from a point 25 feet west of Survey Station 1822A to the main east drift face (described in the Operator's Final Report as 110 feet long between Survey Station 1821A + 42 feet and 1823 + 23 feet). The vein in this third area is strong but low grade. The principal vein is about 7 feet wide and contains appreciable amounts of gouge and quartz. Stringers and irregular lenses of sphalerite with subordinate amounts of galena occur throughout the vein; however, they

appear to be more numerous in the footwall portion. The only cut sample taken in the area was taken by a DMEA representative. This sample 7.3 feet wide assayed 0.2 ounce of silver per ton, 0.3 percent lead, and 8.4 percent zinc. The Operator milled approximately 450 tons of development ore from this area. Car samples of this ore averaged 0.26 ounce of silver per ton, 0.40 percent lead, and 3.01 percent zinc.

Ore Reserves

It is difficult to assign a tonnage estimate to the marginal and submarginal ore shoots found on the 1800 level because there is little information as to the vertical continuity of ore within them. The one raise within the limits of the second ore shoot, however, does show that the ore continues at least to the top of the raise or 77 feet above the level. Although the 1600 level workings extend into the area up dip from the first and second ore shoots, these workings are inaccessible; company maps, however, show several raises and sublevel workings off the 1600 level in the vicinity where these shoots would project through. For these reasons it appears logical to assume for the purpose of reserve calculation that the first and second ore shoots extend to the 1600 level which on the dip of the vein would be about 150 feet.

The third shoot which is very low grade and of little economic importance presents a very different problem. True, this shoot is in an area down rake from the large East ore body on the 1150 level, but it is not prudent to connect the two, particularly, in that the 1400 level workings also extend under the East ore body. There is, however, very little geologic information on the nature of the vein for the easternmost 250 feet of the 1400 level, and it may even be that a part of these workings are not on the vein. Under the circumstances it appears best for the purpose of reserve calculation to assume that the third ore shoot also extends to the 1600 level.

Tabulated below are the reserve blocks:

Block I (First Ore Shoot)

Location: 15 feet east of Survey Station 1811A to 5 feet west of Survey Station 1812A

Length of shoot indicated on 1800 level - 50 feet

Width of shoot indicated on 1800 level - 1.8 feet

Tons shoot would contain if continuous to 1600 level - 1,200

Grade based on cut samples on 1800 level - 3.1 ounces silver, 3.6 percent lead, and 22.5 percent zinc

Block II (Second Ore Shoot)

Location: 40 feet east of Survey Station 1813A to 130 feet east of Survey Station 1813A

Length of shoot indicated on 1800 level - 90 feet

Width of shoot indicated on 1800 level - 1.7 feet

Tons shoot would contain if continuous to 1600 level - 2,100

Grade based on cut samples on 1800 level - 4.6 ounces silver, 7.7 percent lead, and 23.2 percent zinc

Block III (Third Ore Shoot)

Location: 25 feet west of Survey Station 1822A to Main East drift face

Length of shoot indicated on 1800 level - 100 feet

Width of shoot indicated on 1800 level - 7 to 10 feet

Tons shoot would contain if continuous to 1600 level - 11,600

Grade based on development rock samples on 1800 level - 0.3 ounce silver, 0.4 percent lead, and 3.0 percent zinc

Summary

Indicated ore

Block	Tons	Oz.Ag	%Pb	%Zn
I	1,200	3.1	3.6	22.5
II	2,100	4.6	7.7	23.2
		Submarginal rock		
III	11,600	0.3	0.4	3.0

There is also some ore on the margins of old stopes in the levels above the 1800 level. It is difficult to estimate the tonnage and grade of the ore remaining, but it is not large.

Exploitation Possibilities

The Operator has abandoned the 1800 level drifts, at least for the present time, and is opening the 1600 level east workings. He plans to mine the fringes of the old stopes on the 1600 level and may extend the level easterly. The grade of the ore being mined by lessees from the fringes of the old stopes on the 1600 level has averaged about 5.5 percent lead, 8.0 percent zinc, and 4.0 ounces of silver per ton. Unless the ore grade shows an improvement when encountered by the extension of the 1600 level drift, it cannot be mined below this level at the present prices mainly because of the rehabilitation necessary to open the 1800 level drifts, high maintenance cost, and the high ratio of zinc to lead in the ore. Lead concentrates net about 70 percent of the gross metal value whereas zinc concentrates net about 50 percent of the gross value. Eighty-five percent of the silver is in the lead concentrates as almost all the silver is associated with the lead ore.

The mine production record, according to data furnished by the Operator, started in 1927, and through December 31, 1955, a total of 340,145 dry short tons had been mined. The grade, based on recovered metal, was 3.845 ounces of silver per ton, 5.4 percent lead, and 3.81 percent zinc. A total of 1,307,901 ounces of silver, 36,719,126 pounds of lead, and 25,902,719 pounds of zinc were recovered. There were also an estimated 250,000 pounds of copper recovered.

Recent sustained mine production for the period 1948 to December 31, 1955, was 43,363 dry tons of ore that contained 6.27 percent lead, 2.77 percent zinc, and 6.07 ounces of silver per ton based on recovered content. The crude ore produced 3,679.75 tons of lead concentrates and 1,836.30 tons of zinc concentrates. An over-all recovery of 95, 92, and 95 percent is made of the lead, zinc, and silver, respectively. The 1948-55 production had a net smelter worth of $21.94 per ton, freight deducted. The actual direct milling cost, not including depreciation, was about $2.00 per ton, and the custom rate is from $3.00 to $4.00 per ton, depending on the quantity and character of the ore.

The majority of the recent production is made by lessees who pay 17½ percent royalty. The company furnishes the compressed air and maintains the major items of equipment. The lessees pay other costs including milling. The large amount of "dead work", the high mining costs due to necessary ground support and selective mining, and the small isolated reserves allow the lessees only a small profit which is reported to be somewhat better than a day's pay mining. The Operator has found that he cannot mine these isolated fringe reserves profitably by company operation.

Summary of Factual Data

Following is a tabulation of the completed work items approved, number of units, unit cost, and total cost:

Work item	No. units approved	Unit cost (foot)	Total cost
Drifting (regular timber)	2,035.7 ft.	$41.00	$83,463.70
(Extra timber allowance)	30.0 ft.	$ 5.00	150.00
Core drilling	259.0 ft.	$ 3.00	777.00
Total approved cost			$84,390.70

Total amount of contract	$90,000.00
Government's share at 50 percent	$45,000.00
Total amount expended	$84,390.70
Government's participation	$42,195.35
Total amount unexpended	$ 5,609.30
Government's share unexpended	$ 2,804.65
Royalty payments received	$ 584.09

There was no equipment purchased under the contract.

The main factor affecting the drifting cycle was the continuous maintenance necessary to keep the drifts open. The badly broken and sheared ground induced extreme pressures on the timbers, causing them to fail, and in places the ground under the track would heave. Temporary repairs were made continually, but it was necessary to stop work in the heading periodically and make extensive repairs.

Discussion of Conclusions

Despite the heavy ground conditions, problems arising from the feathering out of the vein in places, and offsetting of the vein along transverse faults, project work was carried out in a workmanlike manner by a competent Operator. The Operator is to be commended for the excellent geologic and assay map (pl. 5) that was kept of the DMEA workings.

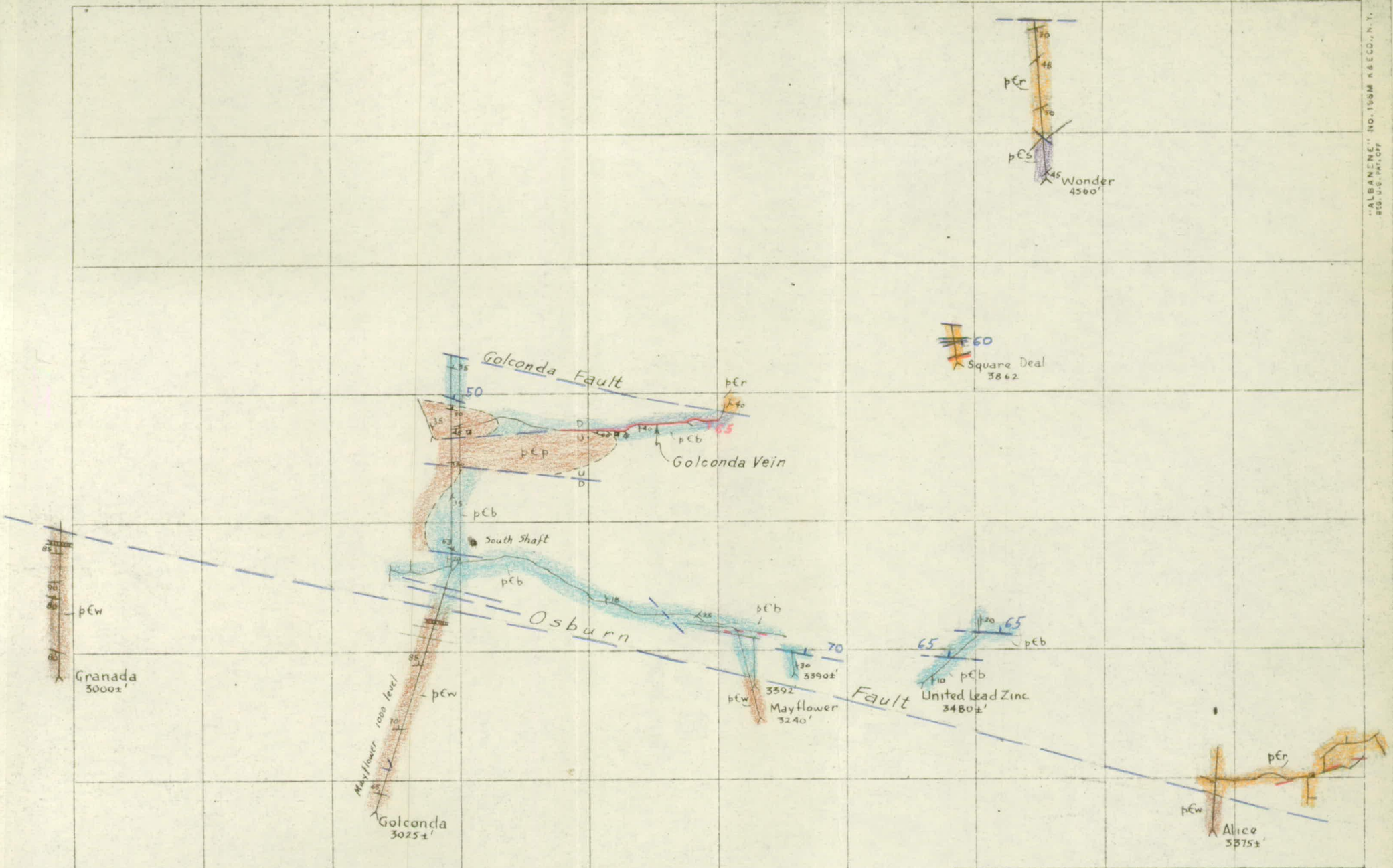
Project work adequately tested the vein on the 1800 level. Although some marginal and submarginal ore was found, the results of project work were very disappointing.

Although the vein on the 1800 level proved disappointing, there is no evidence to suggest that ore bottoms on or above this level. It is entirely conceivable that good ore shoots may occur at greater depth, but considering the disappointing results of exploration on the 1800 level, the cost of testing the vein at greater depth is not commensurate with the risks involved.

It would have been well to have drilled several long diamond drill holes in the eastern part of the 1800 level working to test for possible parallel veins and for the possible offset segment of the vein east of the large fault exposed in the runaround crosscut. Such drilling would be of a long-shot nature, but it would still be sound exploration considering the block of virgin ground that would be tested. As the level has been abandoned, it will probably be too costly to reopen it at a future time to consider such a drilling project; however, the Operator is reopening the 1600 level and plans to extend it eastward. Drilling could be performed at this intermediate horizon.

Admittedly, the future of the Golconda mine is not too promising. It may be possible to recover some ore from the margins of old stopes for a short period of time, but if the mine is to continue to operate, it will be necessary to find a new ore body. The chances of finding a new ore body, however, appear slim. It is possible that testing of the vein on the 1000 level west of the present workings might prove worth while. At best, however, this target area is highly speculative, and it is questioned whether exploration to test it is warranted. The company is at present interested in uranium prospecting and development outside the Coeur d'Alene district, and it is believed that the management feels, and probably justifiably so, that funds can better be spent toward this end than trying to find a new ore body at the Golconda mine at this time. Geologic work by the company may demonstrate the presence of suitable exploration targets at the property, but at present further major exploration with or without Government participation is not warranted.

Enclosures
Distribution:
DMEA(4)
USBM(5)
USGS(SRO)
Docket
Quinlan



MAP SHOWING GEOLOGY OF
GOLCONDA ADIT LEVEL AND OTHER ADIT
LEVELS IN IMMEDIATE VICINITY

GOLCONDA MINE

SHOSHONE COUNTY, IDAHO

Scale: 1" = 1000'

PLATE I

Adopted from unpublished U.S.G.S. map
prepared by U.S.G.S. Coeur d'Alene Project 1952

"ALBANENE" NO. 166M K&E CO., N.Y.
MADE IN U.S.A.

SCAN COVER SHEET ONLY

U.S. v. ASARCO

DOCUMENT CONTROL FORM: PRIVILEGED DOCUMENT

(Staple to Original Privilege Document or to copy of privilege document)

Repository Name USGS

Repository Location SPOKANE, WASHINGTON

File Bates Number: USGSPO 0000761

File Owner: N. EADES

File Location: DOI - SOL, WASH DC

Document Date: 11/5/64

Document Title: EXPLORATION PROJECT CONTRACT FOR GOLCONDA LEAD MINES

Document Author: ——

Original Document Attached: Y (N)

If not attached, Original Document Current Location
(must be segregated from other documents)

Type of Privilege:

ACC WP (CBI) DP (PI) Other

Reviewer:

STATUTORY PRIVILEGE OF CONFIDENTIAL BUSINESS & PROPRIETARY INFO

RECEIVED
BUREAU OF MINES
NOV 5 1954
SPOKANE, WASH.

EXPLORATION PROJECT CONTRACT
GOLCONDA LEAD MINES
DOCKET No. DMEA-2637 Idm E475

FINAL REPORT

Introduction

The purpose of exploration work on Project Contract Idm E475, Golconda Lead Mines, Wallace, Idaho, was to explore on the 1,800 level, the possible downward and eastward extension of the main vein system. The principal target was the rake projection of the vein below and east of the 1,150 winze level. In 1948 a new ore shoot was developed from above the 1,000 level down to the 1,150 winze level. During the period, 1948-1952, production from this area aggregated 29,000 tons with net smelter returns of approximately $760,000.00. The ore values were largely in lead and silver, with minor amounts of zinc. A program was initiated by the company to unwater the main shaft and reopen the 1,800 level in February, 1952. Application was made for a DMEA loan in June, 1952. DMEA Contract Idm 475 for $90,000.00, with the Government paying 50%, was signed in January, 1953.

Progress Summary

The Golconda main shaft had been allowed to fill with water in 1943. Due to the labor shortage during World War II, maintenance work was limited. As all workings of the mine are in unstable ground, requiring timber and regular repair, the shaft station caved. Work to rehabilitate the shaft station was started in March, 1952. Unwatering was started in July and completed to the 1,800 level in November, 1952. The 750 feet of old workings on this level were so badly caved that almost complete retimbering and in some cases, spileing was required. Progress was slow and expensive. By the end of April, 1953, only 600 feet had been reopened. As 150 feet still remained to be opened to reach designated starting point for DMEA project, this agency was contacted. It was agreed that the project could be expedited by running a new lateral to by-pass remaining caved workings. This was done during May and June, 1953. The old drift face was reached early in July.

Drifting to the east along the vein structure was carried on with two contract shifts. The first 60 feet followed a weak vein structure with subcommercial ore values. Cross faulting terminated mineralization at Sta. #1809 + 35 feet. Drifting was continued in a northeasterly direction for several rounds. Long holes drilled to the south failed to pick up conclusive evidence of a vein off-set in that direction. Drifting was then continued in a northeasterly direction for 270 feet to Sta. 1814 + 17 feet to explore for the possible downward continuation of vein structure indicated from 1,400 and 1,600 levels above. No mineralization was encountered.

Cuttings from long holes previously drilled to the south were re-examined. Although no lead or zinc sulfides were observed, enough quartz to indicate a possible vein was found. On September 3, 1953, a

side swipe was started at Sta. #1810-A. The drift was then advanced about 50 feet to Sta. 1811-A + 5 feet, where weak sulfides of lead and zinc were encountered. In the next round, a well defined vein structure, carrying a 1.0-foot highgrade sphalerite stringer, was cut. This was followed for about 60 feet to Sta. #1812A + 5 feet at which point cross faulting again terminated mineralization.

Drifting was continued eastward along a weak, indefinite vein structure. A 30-foot doghole raise was driven in the south wall, to test for possible parallel structure, at Sta. 1812A + 50 feet. Nothing was found, so drifting was continued eastward to Sta. #1813A + 55 feet. At this point, another ore shoot with a 1.0' highgrade sphalerite stringer was encountered. For the next 90 feet this narrow, highgrade stringer continued until it weakened and turned into the north wall against cross-faulting. Long holes were drilled into both walls, without finding any additional mineralization. All ground penetrated was weak Prichard argillite that required close timbering. Some areas exhibited swelling characteristics that necessitated relieving of the timber at frequent intervals. The expense of repair work added substantially to the drifting cost.

With the principal target still to the east, drifting was continued in an easterly direction. A strong fault was encountered at Sta. #1815 + 80 feet. At this point, Burke quartzite was in fault contact with Prichard formation. No vein structure was in evidence, so drifting was pushed ahead to Sta. #1817. About 25 feet back from the face, a diamond drill station was prepared. Diamond Drill Hole #1803 was drilled to the north, a distance of 134 feet. Very weak mineralization from 79 to 86 feet suggested a possible vein structure. Drifting eastward was resumed on December 28, 1953, and continued through January, 1954, to Sta. #1819 + 25. The last 150' in this section was through wet, heavy, swelling ground. Much time was lost through timber failure. During the month of February, 1954, only 30 feet advance was made in the face. The balance of the time was spent removing broken timber and cutting down the drift floor, which, in places, came up as much as two feet.

During the time repair work was being carried on, Diamond Drill Hole #1804 was drilled 125 feet on a bearing N. 15°E. Nothing of economic importance was cut in this hole.

Drifting was resumed about March, 1954. At Station #1820, bearing was changed to No. 55°E. On April 10, 1954, a well defined vein structure was cut at Station #1822. This structure was followed approximately 100 feet to a point where it was apparently cut off by faulting. A heavy flow of water from the vein footwall in the face caused timber failure. Timber could not be replaced as fast as it broke, so this section of drift was abandoned. Long holes 1W, 2W, and 3W were drilled between Sta. #1821 and #1822, to check vein structure to the west. Mineralization in that direction as indicated by sludge samples, became weaker.

As water flow had reached pump capacity, extra pumps had to be installed. While this was in progress, a two cap raise was driven

77 feet on ore shoot at Station #1813A + 45 feet. The ore grade and width was similar to that opened along the drift.

Early in June, 1954, a lateral to go around caved workings was started at Station #1821A. This heading was driven almost due east to Station 1824, and then turned northeast. The fault in the face at Station #1823 + 25 feet was again cut at Station 1824 + 65 feet. Drifting was continued into the footwall to Station #1825. Long Holes 5W, 6W, 7W and 8W were drilled without locating any vein structure. The drift was turned southeast and run an additional 75 feet. Long Holes 9W, 10W and 11W were drilled without encouraging results. Work was discontinued August 28, 1954.

Work on this project included: 2,035.7 feet of drifting; 32 feet dog hole raise; 77 feet of two cap-double joker chute raise; 925 feet of longhole drilling; and 259 feet of diamond drilling.

Geologic Summary

Prichard formation rocks of the Belt Series are exposed from the 1,800 shaft station to Station #1815 + 80', where they are in fault contact with the Burke formation (See 50 scale 1,800 Level Plan). The Prichard formation is largely thin bedded black argillite and gray argillaceous quartzite interbedded with lesser amounts of light gray and gray-green impure quartzite. The Belt Series, Burke formation, consists of medium thick beds of light gray and gray-green impure quartzites, with short sections of gray to white, nearly pure quartzites. It forms the country rock from the above fault contact to the face at Station #1826 + 50'. A lamprophyre dike of uncertain attitude is exposed from 1,800 shaft station to survey Station #1802 + 150'.

Regional dip is easterly at a low angle. However, the beds have been strongly contorted and flexed into many small folds, some of which are complexly broken and faulted. Several strong, normal faults with northwesterly strike dip northeasterly at high angles. Probably they branch from the major Paymaster fault to the north. In general the structural pattern is similar to that observed at the 1,000 level.

Rock alteration is apparent throughout the mine. Sericitization is dominant and widespread, in places, to a high degree. Sideritization and silicification are less extensive but very prominent in areas adjacent to veins and some faults. Pyritization is irregularly distributed throughout. Quartzite rocks appear to be much more susceptible to alteration than do the black argillites.

The Golconda vein is exposed between Survey Station #1809 + 0' and Survey Station #1813A + 150' for a strike length of 325 feet. It strikes easterly and dips between 60° and 80° south. At Survey Station #1813A + 150' the vein weakens and swings into northwall. No continuation was found by longhole drilling. The vein is narrow and discontinuous with two short, lowgrade ore shoots exposed. The first, measured from Survey Station #1811A + 5', is 60 feet in length; the second, measured from Survey Station 1813A + 55', is 90 feet long. A weakly mineralized and indefinite vein structure connects these two shoots.

Ore minerals are predominantly sphalerite with minor galena and pyrite confined to one narrow highgrade stringer. Quartz is main gangue mineral. An ore shoot 110 feet long was exposed between Survey Station #1821A + 42' and #1823 + 23'. This section, marked by a strong shear 10 feet in width, contains sphalerite and minor galena and pyrite in seams, stringers, lenses and pods with a quartz gangue. This exposure is terminated at Survey Station #1822 + 90' by strong fault. Additional drifting and extensive longhole drilling failed to pick up any vein structure to the east. Projected and estimated position of any vein structure between Survey Stations #1814A and #1822 has been penetrated by longholes and diamond drill holes without significant results.

The project has adequately accomplished its objectives. The vein structure in coming down to the 1,800 level, has become weaker. Ore widths and shoot lengths have decreased, together with ore mineral values. Further down dip exploration does not appear justified. Results do not preclude the possibility of unknown veins to the south and east. However, such targets are highly speculative.

Ore reserves

No measured or blocked out ore has resulted from this project. The narrow ore widths and short ore shoots, together with marginal grade and heavy ground conditions does not permit profitable mining at present metal prices (11 1/2¢ Zn., 15¢ Pb.).

Sampling results are summarized as follows:

Ore Shoot No. 1 - 60 feet long, Sta. #1811A + 5 -- 1811A + 65
Average ore width 1.8', Average grade 3.1 oz. Ag., 3.6% Pb., 22.5% Zn.
(Above from face channel cuts)

Drift width 9.0', Average grade 0.55 oz. Ag., 0.6% Pb., 4.75% Zn.
(Above from 155 car grab samples)

Ore Shoot No. 2 - 90 feet long, Sta. #1813A + 55 -- 1813A + 145
Average ore width 1.7', Average grade 4.6 oz. Ag., 7.7% Pb., 23.2% Zn.
(Above from face channel cuts)

Drift width 9.0', 0.90 oz. Ag., 1.50% Pb., 4.60% Zn.
(Above from 274 car grab samples)

All drift ore from Ore Shoot No. 1 and Ore Shoot No. 2 was combined in Mill Run #1 - 1,800 level, with the following results: 796 Dry tons; Average head assay, 0.6 oz. Ag., 1.03% Pb., 4.28% Zn.

Raise on Ore Shoot No. 2 - 77 feet, 2 caps, 2 joker chutes
Average raise width 5.0', Car grab samples approximately 300 tons
Average length 11.0', Average 0.84 oz. Ag., 1.33% Pb., 7.5% Zn.

Ore Shoot No. 3, 110' long, Sta. #1821A + 42 -- 1823 + 23'
Average drift width 9.0', Average grade 0.27 oz. Ag., 1.43% Pb., 3.10% Zn.
First 65' Sampled (Above from 242 car grab samples)

All ore from raise and drift ore shoot #3 was combined in Mill Run #2 - 1,800 level, with following results:

800 Dry Tons; Average head assay, 0.9% Pb., 5.0% Zn. Net smelter returns from the above mill lots totalled $11,681.86, making the value per ton for the ore approximately $7.32.

Conclusions

The project has adequately explored the designated target areas. Three short ore shoots of marginal grade ore (September, 1954 metal prices.) have been discovered. A raise driven on the best ore shoot indicates that about the same grade ore continues upward for 77 feet, where it is again cut off by faulting. Heavy ground conditions throughout the mine preclude the profitable mining of any ore discovered. Unknown veins may exist to the south and east, but such targets are highly speculative.

SCAN COVER SHEET ONLY

U.S. v. ASARCO

DOCUMENT CONTROL FORM: PRIVILEGED DOCUMENT

(Staple to Original Privilege Document or to copy of privilege document)

Repository Name USGS

Repository Location SPOKANE, WASHINGTON

File Bates Number: USGSPO 0000761

File Owner: N. EADES

File Location: DOI - SOL, WASH DC

Document Date: 10/29/52

Document Title: SHORT FORM CONTRACT BETWEEN DMEA AND GOLCONDA LEAD MINES IN THE AMOUNT OF $90,000.

Document Author: R. WALLACE H. RENO

Original Document Attached: Y (N)

If not attached, Original Document Current Location
(must be segregated from other documents)

Type of Privilege:

ACC WP (CBI) DP (PI) Other

Reviewer:

STATUTORY PRVILEGE OF CONFIDENTIAL BUSINESS & PROPRIETARY INFO

Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D. C.~~
1201 North Division St.
Spokane 2, Washington

October 29, 1952

MEMORANDUM

To: DMEA Field Team, Region II

From: R. E. Wallace, Geologist, U. S. Geological Survey, and
H. T. Reno, Mining Engineer, U. S. Bureau of Mines

Subject: Golconda Lead Mines, Shoshone County, Idaho
Docket No. DMEA 2637 (lead-zinc)

RECOMMENDATION

It is recommended that the DMEA enter into a short form contract with the Applicant in the amount of $90,000. The applicant is prepared to furnish one-half of this amount.

EXAMINATION

Wallace conferred with the Operators on September 8, 1952. He had studied the geology of the mine and district in 1951; therefore no new examination was necessary. Reno examined the active workings and discussed the proposed project with Mr. Wray Featherstone, October 16, 1952.

LOCATION AND ACCESSIBILITY

The Golconda mine is in the Coeur d'Alene mining region in Lelande and Hunter district of Shoshone County, Idaho, 2-1/2 miles east of Wallace, Idaho in Sec. 30, T. 38 N., R. 5 E. The main portal on the 1000 foot level is adjacent to a branch of the Northern Pacific Railroad and to U. S. Highway No. 10, both of which follow the valley of the South Fork of the Coeur d'Alene River.

PROPERTY

The property consists of six patented lode mining claims as follows:

Claim	Patent No.
Klondike	2215
Raymond	2885
Lead	2991
Juneau	2215
Snowflake	2215
Manhattan Extension	3192

Geologist

All claims except the Manhattan Extension No. 3192 are owned by the applicant. The Manhattan Extension claim is owned by the Square Deal Mining and Milling Co., Limited.

The project, as proposed, might find veins that apex on Square Deal ground. Therefore, one copy of the applicant's agreement with the Square Deal Mining and Milling Co. covering the Manhattan Extension claim and six signed copies of Form MF-203, "Owner's Consent to Lien", are attached.

The maximum amount of the Government's lien is to be filled in on Form MF-203.

The proposed contract should exclude ore mined above the 1150-foot level west of coordinate line 6000E from that liable for repayment to the Government.

WORKINGS AND FACILITIES

The mine has approximately 23,000 feet of workings (see applicant's map) but only slightly more than 5000 feet are accessible. The 1200, 1400, and 1600 foot levels are inaccessible and in such shape that it would cost more to rehabilitate them than to drive new openings. The main haulage way on the 1000 foot level and the East drift are open; present mining is in the vicinity of the East winze where the 1150 foot level is accessible. The South shaft is being rehabilitated by the company.

In the crosscuts the ground stands fairly well although it is heavy in all of the drifts. Soon after a drift is excavated and timbered, the ground takes an initial squeeze which must be relieved. This squeeze slowly decreases; after a month or two the drifts can be kept open by cleaning up the muck that comes through the lagging.

The drifts must be advanced through cross faults by either booming a set ahead or by spiling. The sill through these areas squeezes upward and must be lowered about once a year in order to maintain headroom.

The practice has been to drive a high section drift, timber with 10 - 12 inch round posts and caps, lag the back with 3 inch dimension fir, and lag the sides with 4 - 6 inch split cedar. This procedure has proved satisfactory and economical considering the bad ground.

The company operates a 200 ton mill which mills Golconda ore and also provides a custom-milling service for other mines in the district.

PAST OPERATION AND PRODUCTION

The Golconda Mine has been in operation intermittently since 1927. According to Gerwel's report on the mine and company records it has produced 325,438 dry tons containing 1,227,609 ounces of silver, 295,659 pounds of copper, 34,851,070 pounds of lead and 24,431,848 pounds of zinc. 3.77 oz. 107,089 # lead 75.0737

Following is the production record to date:

Year	Dry Tons	Year	Dry Tons
1927	887	1940	2,641
1928	22,342	1941	5,964
1929	65,567	1942	6,756
1930	17,500	1943	4,571
1931	16,209	1944	585
1932	18,614	1945	0
1933	33,758	1946	0
1934	57,792	1947	0
1935	17,643	1948	3,525
1936	6,140	1949	7,342
1937	9,819	1950	6,672
1938	4,375	1951	2,883
1939	5,629	1952(to date)	8,234

COMPETENCE OF OPERATOR

The operators are experienced in mining in the Coeur d'Alene region and have carried on successful mining operations in the past.

GEOLOGY

The Golconda mine has produced principally from ore bodies in a shear zone which strikes almost east and dips 45-55 degrees to the south. Stope sections suggest a rake of the ore bodies to the east. Vein matter is chiefly argentiferous galena in a quartz-siderite gangue.

The main shear zone diverges to the west from the Golconda fault which strikes slightly north of west. The Osburn fault, forming a 300-foot wide sheared and shattered zone, lies approximately 1100 feet south of the vein on the 1000-foot level and approximately parallels the Golconda fault.

The block of ground between the Osburn fault and the Golconda fault is highly shattered and folded. Numerous late normal faults displace the ore bodies a few feet to a few tens of feet. The ore is in places gouge-like, and may be twisted and contorted with the enclosing country rock.

The country rock consists of metasediments, principally quartzites and argillites, some of which are metamorphosed to phylites and schists. These metasediments belong principally to the Burke and Prichard formations of the pre-Cambrian Belt series.

In addition to the main vein system numerous other mineralized zones have been discovered. Immediately north of the Osburn fault several irregular pods of ore have been found, but the general high intensity of shattering and faulting made it difficult to follow any for more than a short distance. Northeast of the main vein in Square Deal property other pods of mineralized rock have been found.

The Golconda claims are in what might be called the heart of the Coeur d'Alene region. The known presence of veins at numerous places within the claims gives promise of additional ore being found by exploration on the property.

PROPOSED WORK

As shown on the applicant's map and stope sections, the present exploration project is aimed at prospecting the downward and eastward extensions of the main vein system by extending the drift on the 1800-foot level 1500 feet. This drift will probe for ore bodies east of the main ore body and will be 300 feet below the ore now being mined on the 1150-foot level and 650 feet below ore which was mined near the eastern end of the East drift on the 1000-foot level.

Ten 200-foot diamond drill holes are provided for two purposes: (1) to test for possible parallel veins, and (2) to prospect for offset segments of the vein.

Inasmuch as data obtained on the 1000 and 1150-foot levels would be too far above to afford safe correlation, two 200-foot raises are provided to explore the vertical component of any ore found.

Inasmuch as the applicant is now rehabilitating the shaft and 1800-foot level and will have completed this work within 60 days, it is proposed to start the project at the present face of the 1800 level drift. Work done prior to this will be for the account of the applicant.

Detailed estimates of drifting and raising costs and a proposed short form contract are attached. Attention is directed to the proposed increase in drifting cost of $5.00 per linear foot through transverse fault area. This cost is based on the applicant's experience in faulted areas on the upper levels. It is believed to be conservative.

CONCLUSIONS

The Golconda property is worthy of extensive additional exploration work as it lies in one of the more promising areas of the Coeur d'Alene mining districts. Assistance from DMEA will allow a more continuous and forceful program than the company is able to undertake on its own.

Exploration under the proposed contract represents only a part of that warranted, but represents about all that the company wishes to pursue at this time.

R. E. Wallace, Geologist
U. S. Geological Survey

H. T. Reno, Mining Engineer
U. S. Bureau of Mines

Orig. and 3 - Wash.
Wash., USBM (2)
USGS (2)
DMEA
R/O
M/D
HTR/vf

DMCA

U.S. v. ASARCO

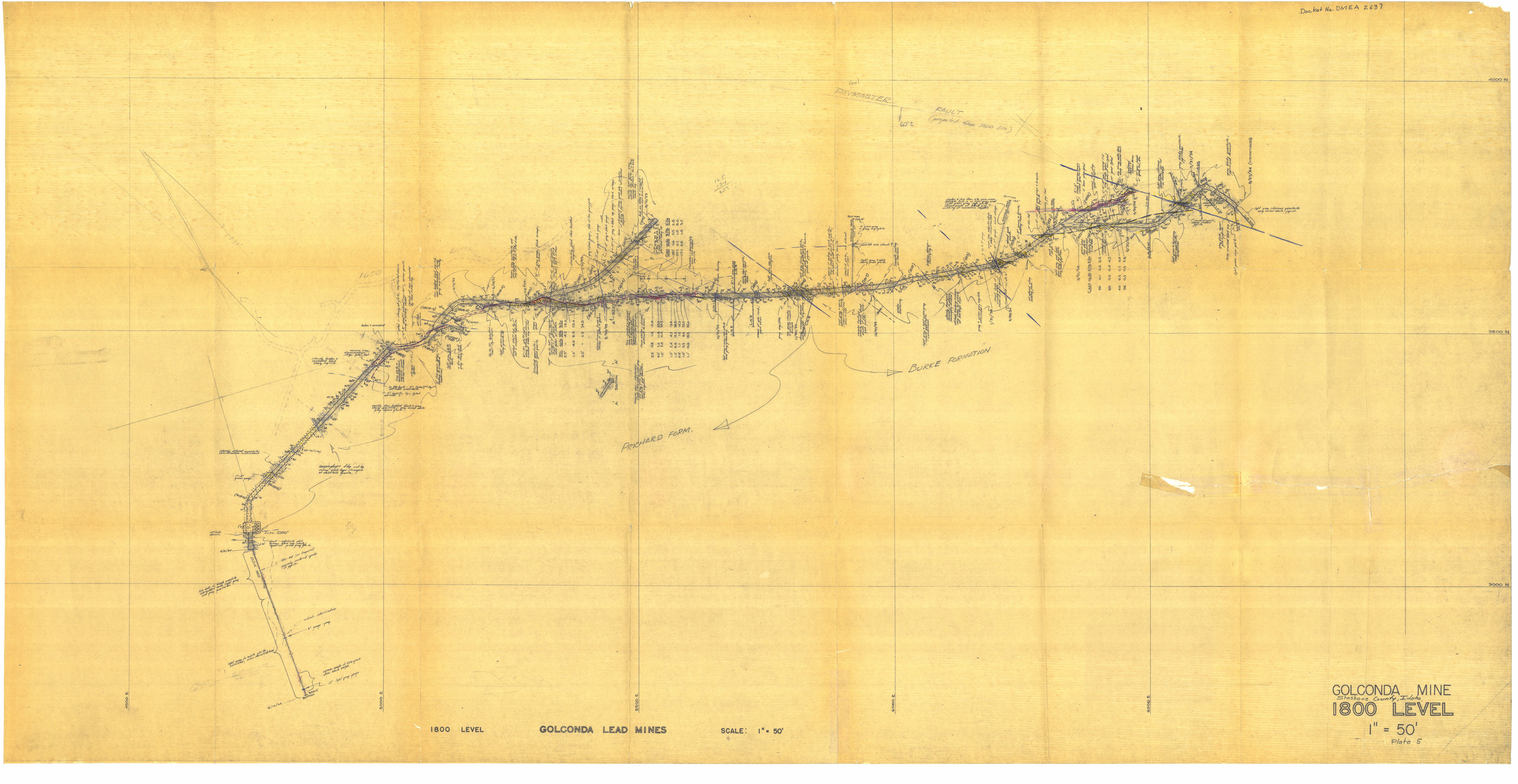
~~July~~ Aug 1 __, 1996

THIS FILE HAS BEEN SEALED
BY THE
U.S. DEPARTMENT OF JUSTICE

DO NOT ADD OR REMOVE ANYTHING

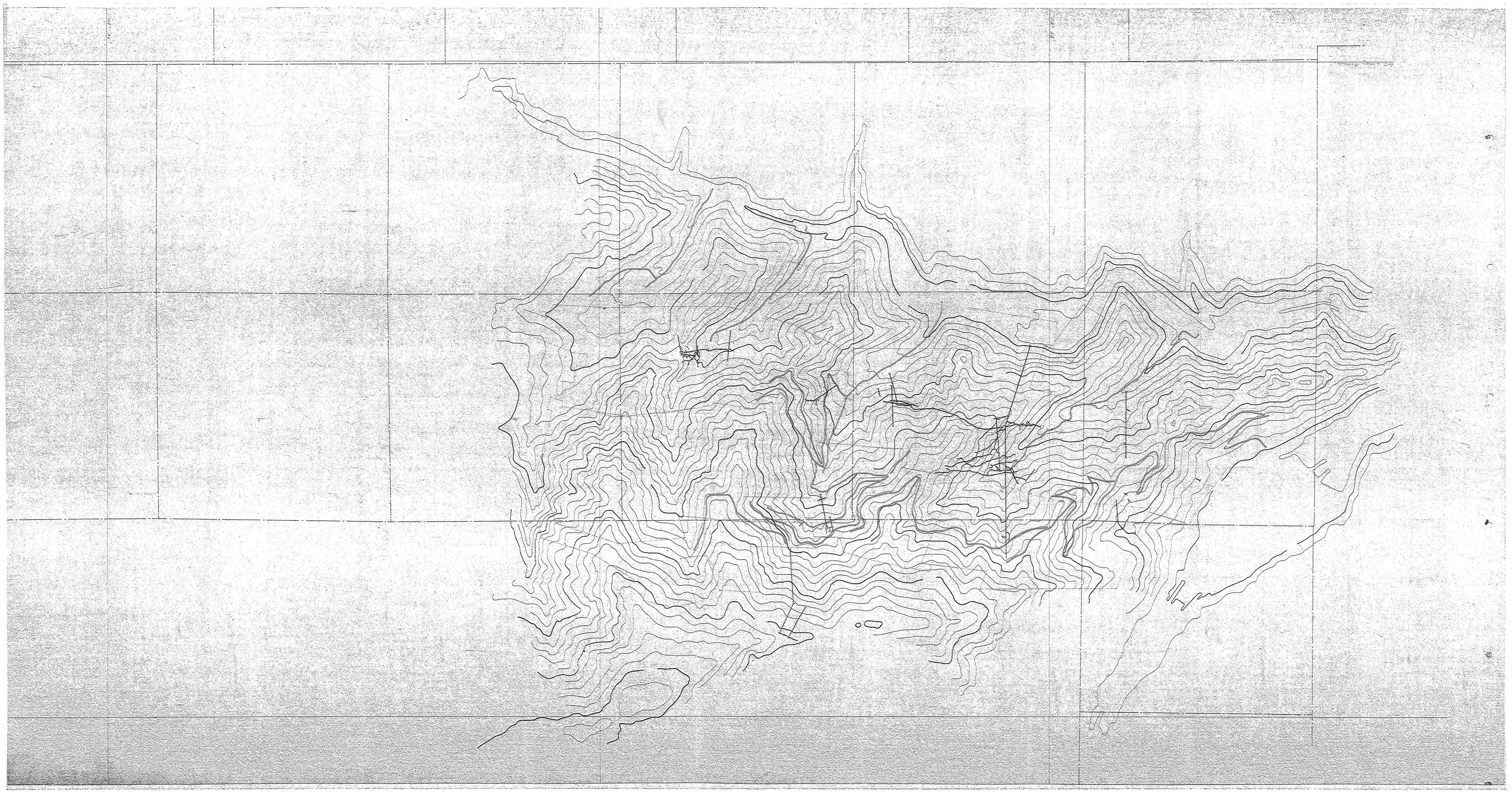
T6A

Docket No. DMEA 2637

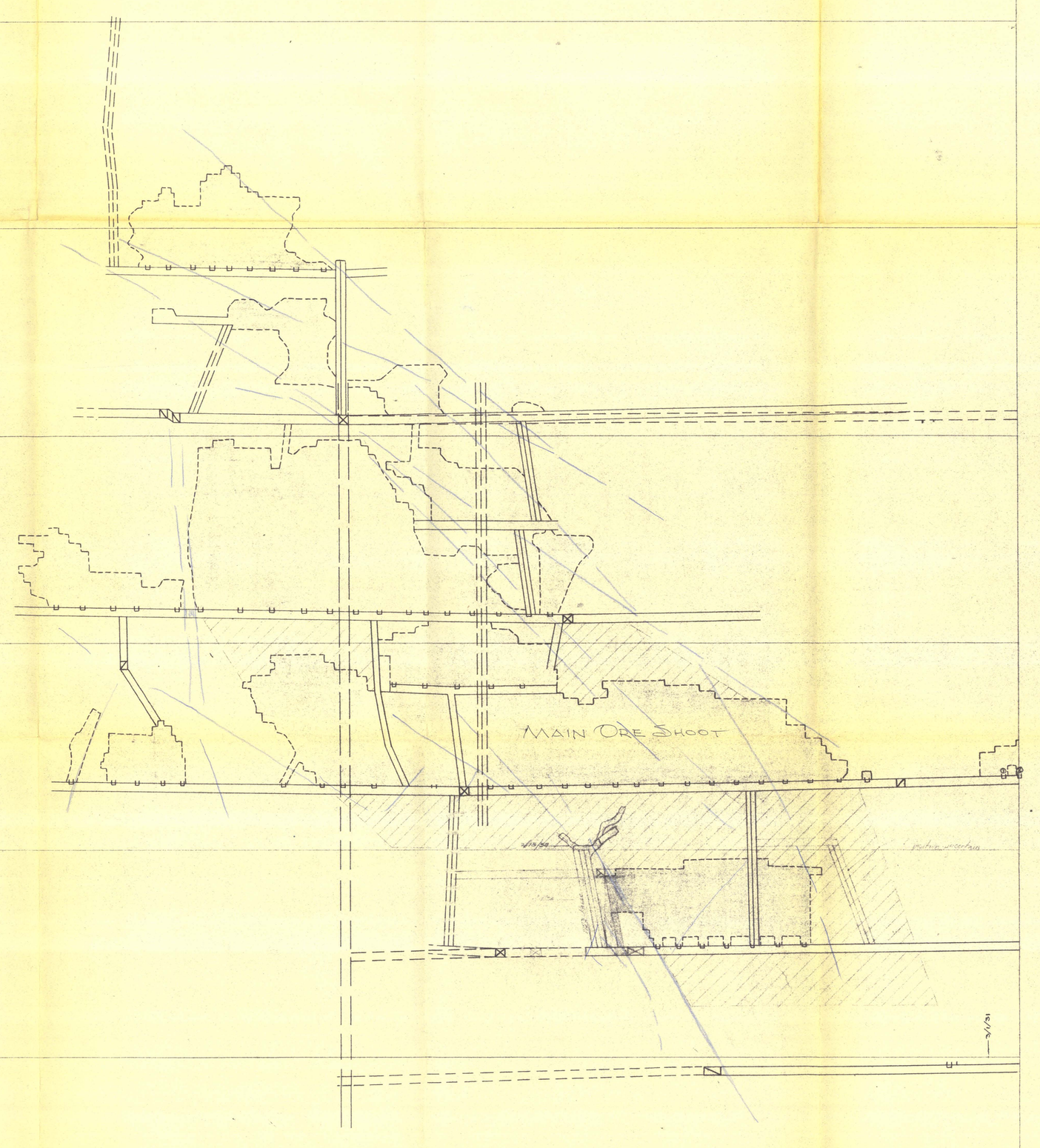


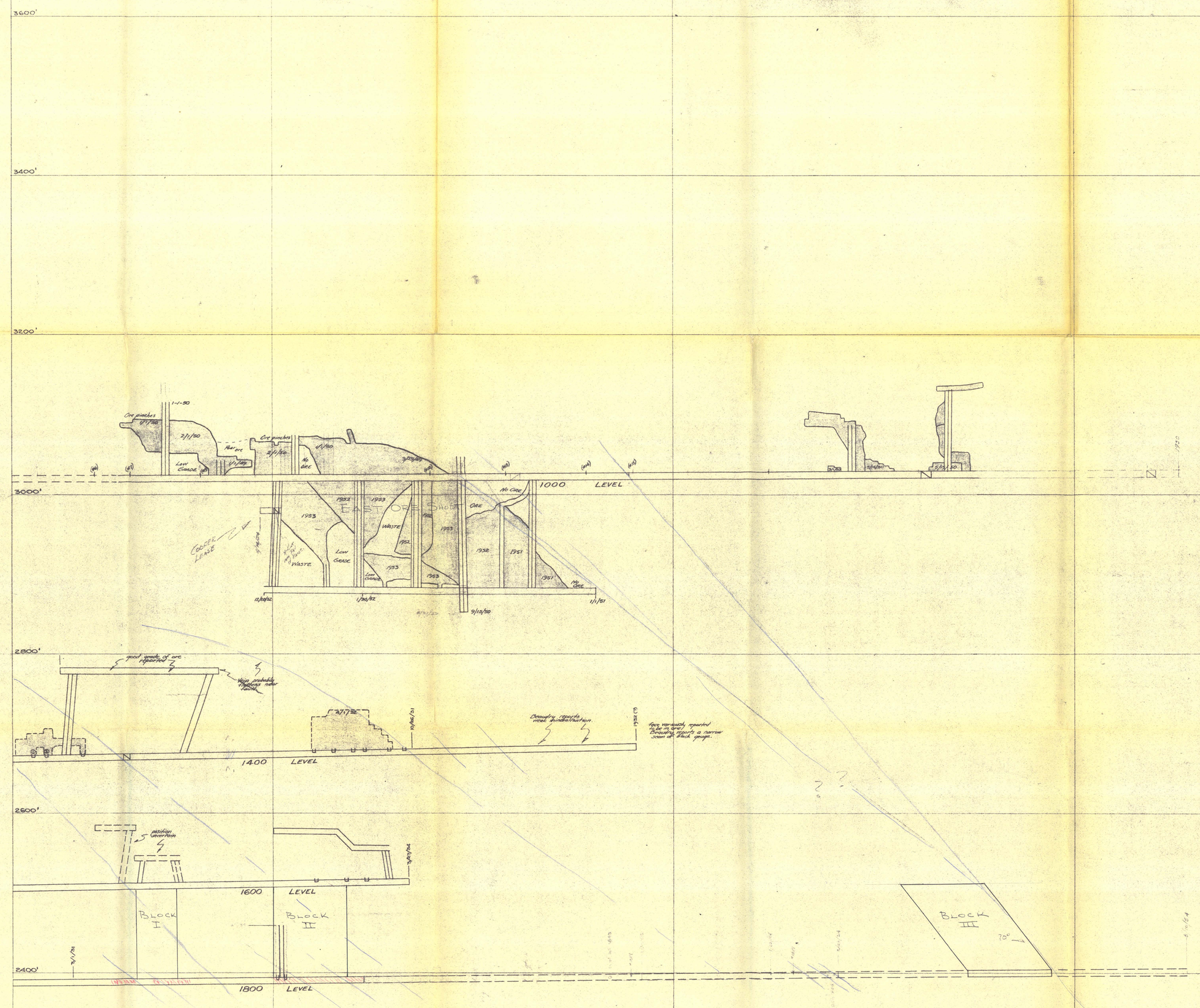
1800 LEVEL GOLCONDA LEAD MINES SCALE: 1" = 50'

GOLCONDA MINE
Shoshone County, Idaho
1800 LEVEL
1" = 50'
Plate 5



Docket No. D.M.E.A. 2657





PLANE OF PROJECTION N. 75° E. 5175 E. 4500 N.

GAP — change in plane of projection

PLANE OF PROJECTION EAST 5175 E

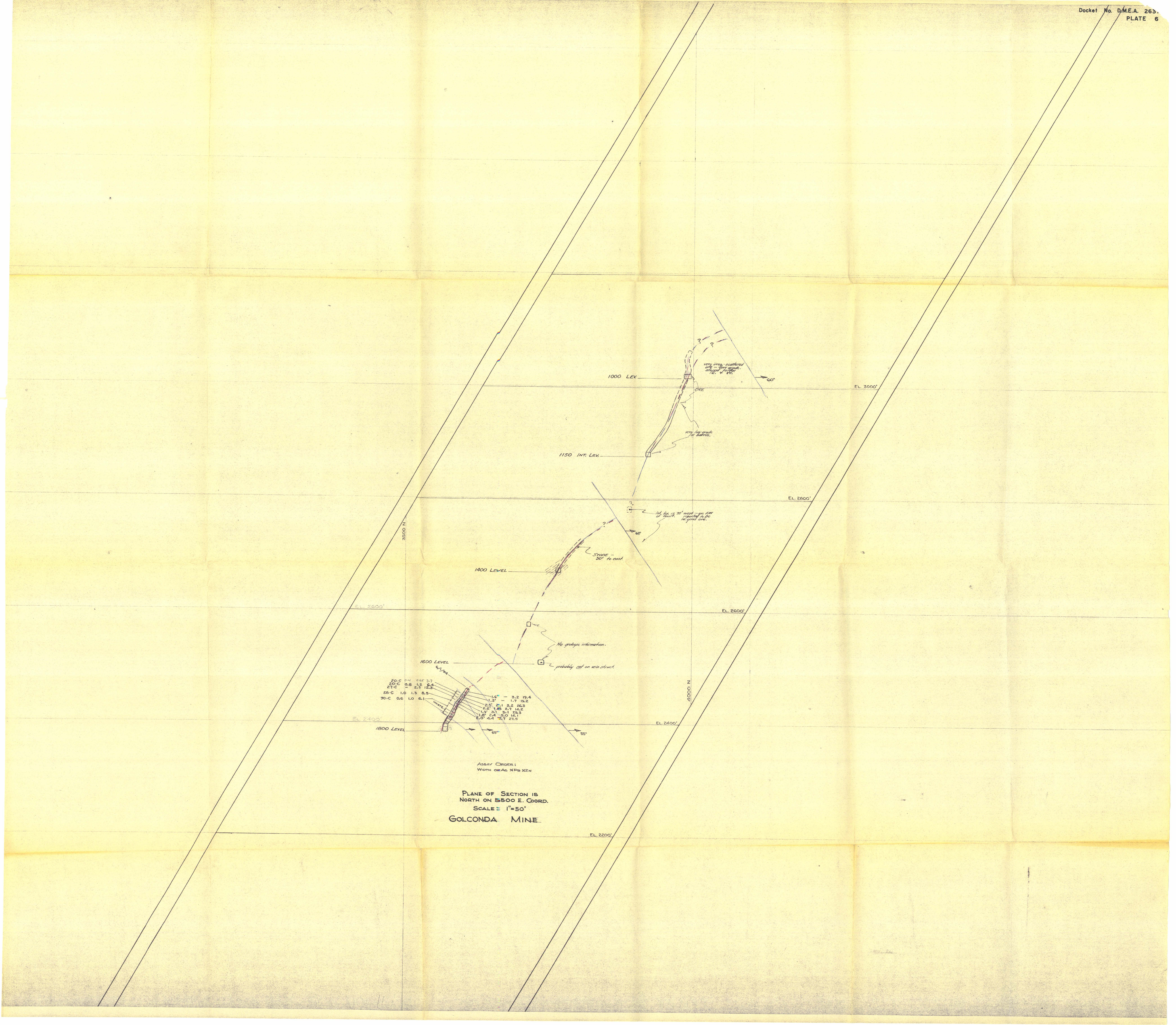
5550 E

GOLCONDA MINE
VERT. LONGITUDINAL PROJ.

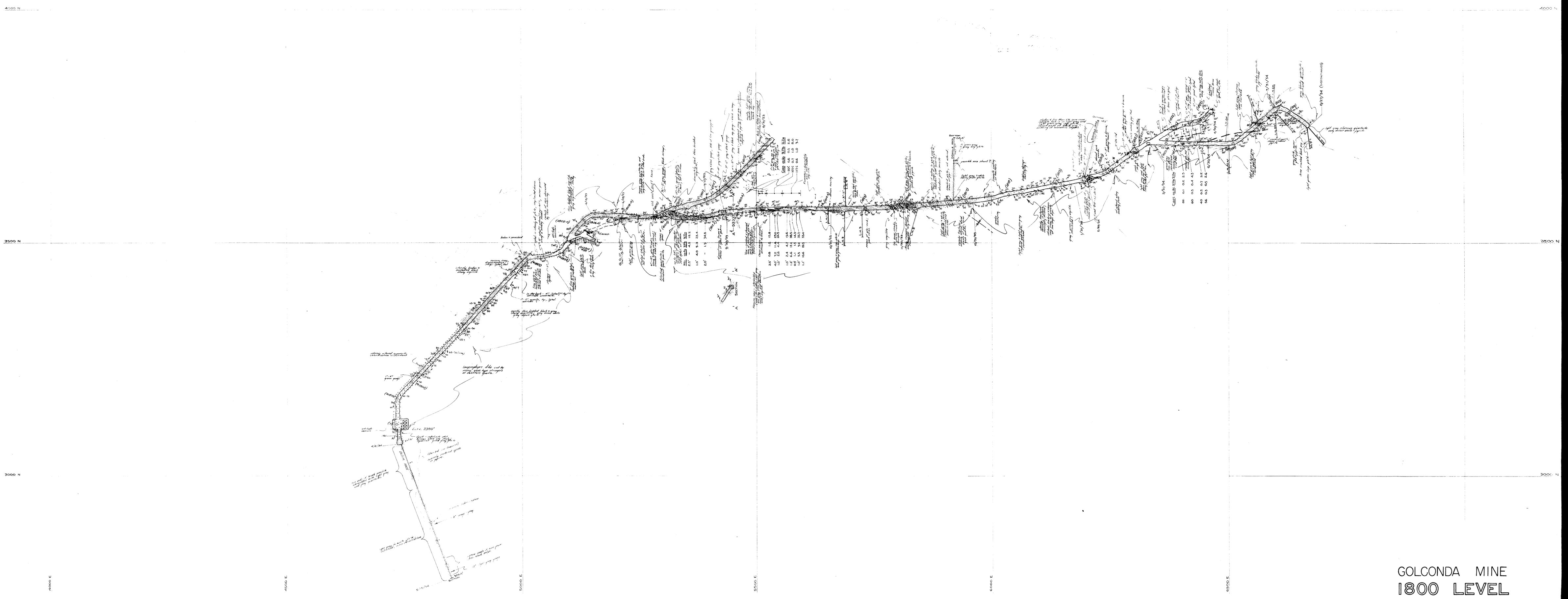
1" = 50'

SHOSHONE COUNTY, IDAHO

PLATE 7


1000 LEV.
1150 INT. LEV.
1400 LEVEL
1600 LEVEL
1800 LEVEL
EL. 3000'
EL. 2800'
EL. 2600'
EL. 2400'
EL. 2200'
3500 N
4000 N
60°
65°
55°
Very irreg. scattered ore — fairly regular strike of vein.
ORE
Very irreg. grade for 100 ft.
Inf. for 13 70' west on FW of fault. reported to be the good ore.
Stope — 50' to east.
No geologic information.
probably cut on vein strict.
Z0-C 0.14 0.65 3.7
Z0-C 0.8 1.2 6.4
Z7-C — 2.5 12.5
Z8-C 1.0 1.3 8.5
30-C 0.6 1.0 6.1
1.6' — 3.2 19.4
1.3' — 1.7 19.2
2.5' 2.1 3.2 26.3
2.2' 1.85 2.7 14.2
1.9' 3.1 5.1 29.3
1.8' 2.4 5.0 14.1
2.0' 4.4 7.7 27.5
Assay Order:
Width ozAg %Pb %Zn
Plane of Section is
North on 5500 E. Coord.
Scale: 1"=50'
Golconda Mine

Docket No. D.M.E.A. 2637



1800 LEVEL GOLCONDA LEAD MINES SCALE: 1" = 50'

GOLCONDA MINE

1800 LEVEL

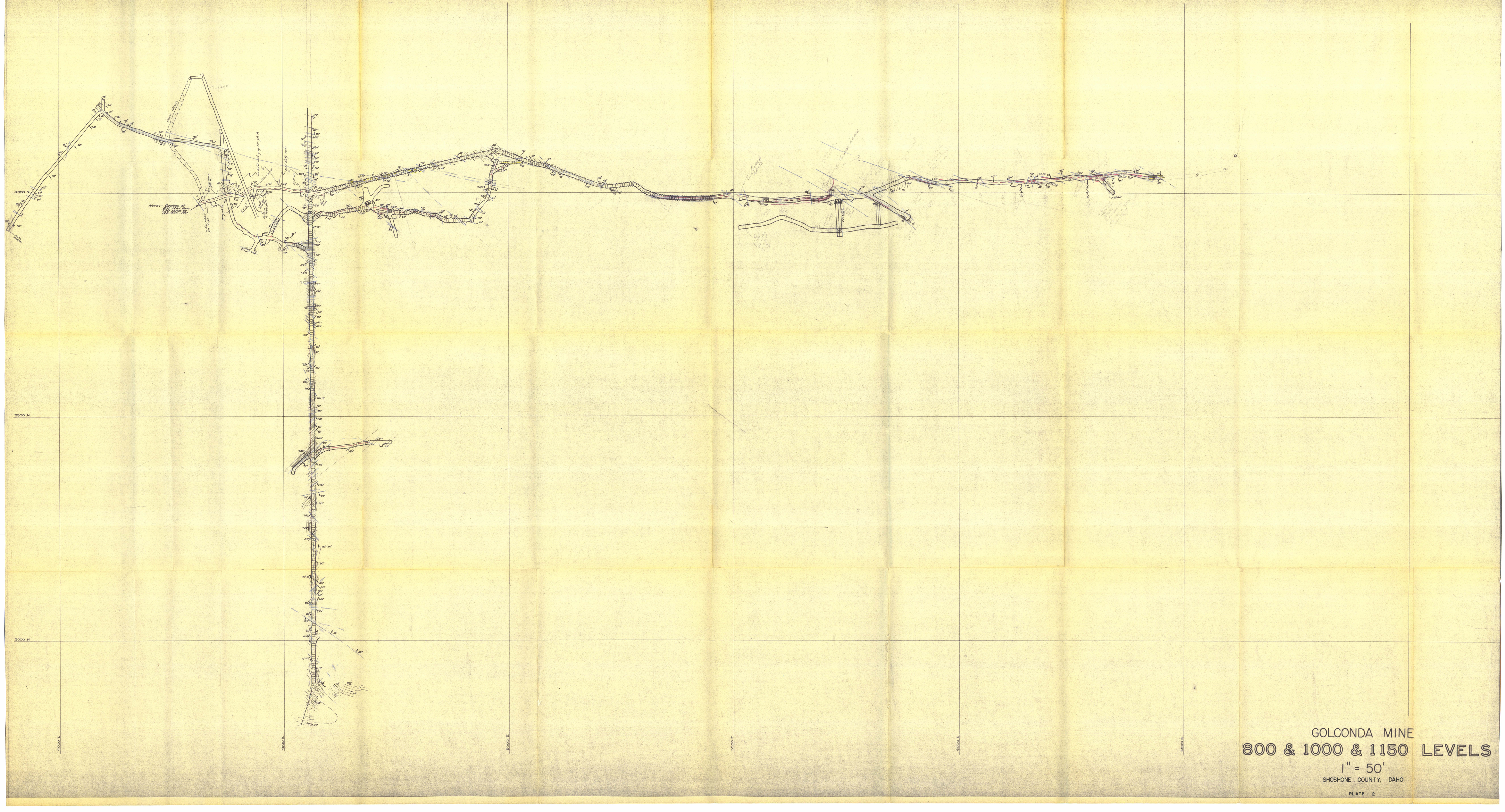
1" = 50'

SHOSHONE COUNTY IDAHO

PLATE 5

4000 N
3500 N
3000 N
4000 E.
4500 E.
5000 E.
5500 E.
6000 E.
6500 E.
1600' LEVEL
GOLCONDA MINE
1600 LEVEL
1" = 50'
SHOSHONE COUNTY IDAHO
PLATE 4

Docket No. D.M.E.A. 2637



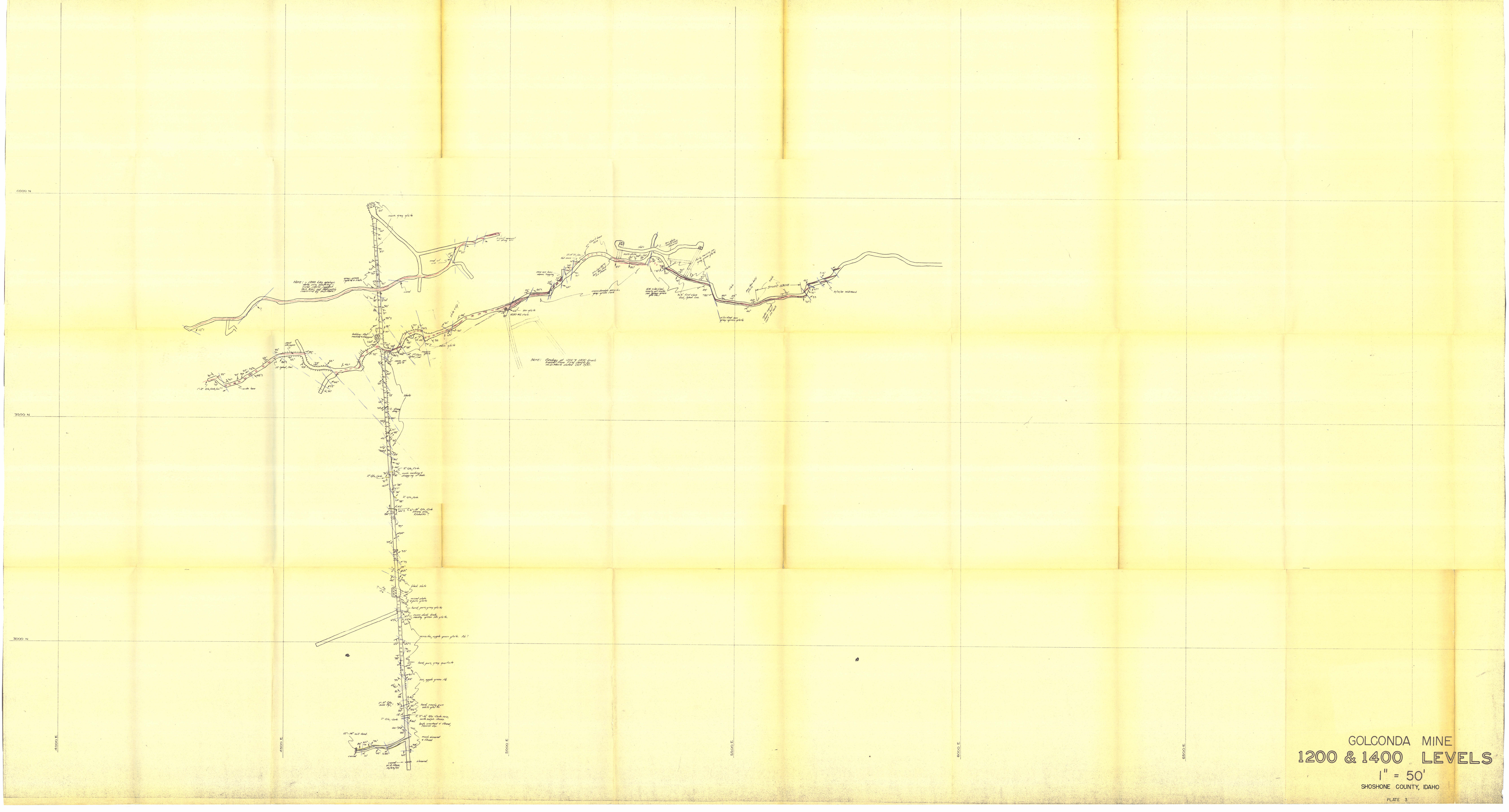
GOLCONDA MINE

800 & 1000 & 1150 LEVELS

1" = 50'

SHOSHONE COUNTY, IDAHO

PLATE 2


4000 N
3500 N
3000 N
4000 E.
4500 E.
5000 E.
5500 E.
6000 E.
6500 E.
GOLCONDA MINE
1200 & 1400 LEVELS
1" = 50'
SHOSHONE COUNTY, IDAHO
PLATE 3