Relative to timbered or untimbered drifts or crosscuts, it is recommended that all such work be included on an untimbered basis and that the footage of drift timbering be included as a separate item.

Enclosed also are the following:

1. The original and one copy of a letter dated May 16, 1958, from S. K. Brechay, General Manager, United Park City Mines Company, to Mr. Stephen R. Wilson suggesting that a ceiling be established at the 7,000 foot elevation mark on the [illegible] block.

2. Two copies of drilling bids from E. J. Longyear Company.

3. Two copies of drilling bids from Boyles Bros. Drilling Company.

4. Two copies of drilling bids from the R. S. McClintock Company.

5. Eight extra copies of Figures 2, 6, and 8 for use in the contract.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosures

PMC:bh

cc: Harshman
DMEA/DFC
DMEA/SLC
Docket
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
MAY 29 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

INTERMOUNTAIN
EXPERIMENT STATION

REGION III

May 28, 1958

1600 EAST 1ST SOUTH STREET
SALT LAKE CITY, UTAH

EXTRA COPY
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| DATE | | CODE |
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Memorandum

To: E. N. Harshman, Acting Executive Officer, DMEA Field Team, Region III

From: Supervising Mining Engineer

Subject: Docket No. DMEA-4996 (Lead-zinc), United Park City Mines Co. (Daly West area), Summit and Wasatch Counties, Utah

Enclosed are 10 copies of an engineering and geologic report covering examination of the subject property for appraisal of a request for DMEA assistance. The report was prepared by P. V. Fillo and F. B. Moore. Also included is the Routing Control sheet. The application has been retained in this office.

The report was assembled by Fillo after receipt of a rough draft of Moore's section of the report. Figures 1 and 2 to be attached to copies of the report, and 10 extra prints of figure 2 for possible use in a contract, are enclosed. Figures 3, 4, 5, 6, 7, 8, and 9 have been prepared by Moore and are to be attached to copies of the report in Denver.

Three copies each of diamond drilling bids, submitted to the applicant by Boyles Bros. Drilling Co., E. J. Longyear Co., and R. S. McClintock Co., are enclosed. Also included are three copies of a letter, dated May 16, 1958, from S. K. Droubay, General Manager, United Park City Mines Co., wherein he discusses reasons for his request to allow an upper limit for the proposed DMEA block.

The applicant has applied for a loan of $351,973.66 to explore the downward extension of the Judge-Daly West fissure systems within formations underlying the Weber quartzite. The examiners recommend that the applicant be granted a loan to perform work under a slightly revised program consisting of 5,500 feet of drifting and crosscutting and 10,000 feet of diamond drilling, with allowance for 12 diamond-drilling stations. The estimated total cost of the recommended program is $349,708.45.

Stephen R. Wilson

Stephen R. Wilson

Enclosures
cc: J. B. Clemmer

Reviewed by
DMEA OPERATING COMMITTEE

(Date)

UNITED PARK CITY MINES CO.
DALY WEST UNIT
SUMMIT AND WASATCH COUNTIES, UTAH
DMEA-4996
Lead-Zinc

# Engineering and Geologic Report

By Paul V. Fillo
Mining Engineer
Bureau of Mines

and

Frank B. Moore
Geologist
Geological Survey

May 28, 1958

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED PARK CITY MINES CO.
DALY WEST UNIT
SUMMIT AND WASATCH COUNTIES, UTAH

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ILLUSTRATIONS


Fig. 1. Location map, United Park City Mines Co., Daly West unit, Summit and Wasatch Counties, Utah
Fig. 2. Property map
Fig. 3. Map showing ore bodies and veins in Daly West area, Wasatch County, Utah (Plate 6)
Fig. 4. Longitudinal section showing ore bodies along the Middle vein, Daly West-Judge area, Wasatch County, Utah
Fig. 5. Geologic map of the Daly West 1200 level, Daly West area, Wasatch County, Utah (Plate 5)
Fig. 6. Geologic map of the Daly West 2100 level showing recommended exploration (Plate 1)
Fig. 7. Geologic section I-A, Daly West area, etc. (Plate 2)
Fig. 8. Geologic section II-A, Daly West area (Plate 3)
Fig. 9. Geologic section III-A, Daly West area (Plate 4)

## INTRODUCTION

United Park City Mines Co., Star Route, Heber, Utah, applied April 25, 1958, to Defense Minerals Exploration Administration for assistance in exploring lead-zinc mineralization in the downward extension of the Judge-Daly West fissure systems. The blocked area involved in the application consists of approximately 364 acres under patented lode claims.

Examination of the property was made May 8, 1958, by Frank B. Moore of the Geological Survey and P. V. Fillo of the Bureau of Mines. The examining team was accompanied by S. K. Droubay, general manager of United Park City Mines Co., and Marvin Barnes, company geologist.

The applicant has proposed exploratory work consisting of the following: 3,000 feet of crosscutting, 2,500 feet of drifting, and 5,000 feet of diamond drilling from 6 drilling stations.

The estimated cost of the project is $351,973.66, and Government participation at 50 percent amounts to $175,986.83. The applicant estimates that 25 months will be required to complete the work.

## LOCATION, TOPOGRAPHY AND CLIMATE

The mine office of United Park City Mines Co. is located at Keetley, Utah, in the Park City district, approximately 35 miles southeast of Salt Lake City. The company also has a geological office in Park City, 26.7 miles southeast of Salt Lake City by way of U. S. Highway 40 and 40 Al. (fig. 1).

The project area lies on the east slope of the Wasatch Mountains at an altitude of 8,500 feet. The block of ground proposed for subordination to the Government is located in the S. 1/2, sec. 29, T. 2 S., R. 4 E., Salt Lake Base and Meridian, Summit and Wasatch Counties, Utah.

Summer months in the area are short and cool, followed by autumn and winter months of low temperatures and heavy snowfalls.

Vegetation in the area includes evergreens, cottonwoods, and aspens. Springs and water courses cut by underground workings yield a constant supply of water the year around.

OWNERSHIP AND EXTENT

Patented mining property, proposed for inclusion in a DMEA contract, is described as follows:

Government tie: Beginning at Cor. No. 1, from which the corner common to Sections 29, 30, 31 and 32, T. 2 S., R. 4 E., Salt Lake Meridian, a granite stone 6 x 10 in., 14 in. above ground, marked 5 notches on E edge and 1 notch on S edge, bears S. 21° 43' W 2052.0 ft.; running thence South 3937.0 ft. to Cor. No. 2, thence S. 55° 21' E., 1111.8 ft. to Cor. No. 3, thence S. 41° 19' W., 75.3 ft. to Cor. No. 4, thence S. 55° 55' E., 293.8 ft. to Cor. No. 5, thence
S. 49° 45' E., 235.4 ft. to Cor. No. 6, thence S. 51° 32' W. 586.8 ft. to Cor. No. 7, thence S. 36° 47' E., 612.2 ft. to Cor. No. 8, thence N. 51° 10' E., 1493.5 ft. to Cor. No. 9, thence N. 51° 49' E., 812.1 ft. to Cor. No. 10, thence N. 67° 09' E., 451.0 ft. to Cor. No. 11, thence N. 36° 30' W., 605.1 ft. to Cor. No. 12, thence N. 45° 00' W., 1147.8 ft. to Cor. No. 13, thence N. 50° 22' E., 767.5 ft. to Cor. No. 14, thence

N. 67° 41' E., 20.2 ft. to Cor. No. 15, thence N. 50° 00' W., 190.1 ft. to Cor. No. 16, thence N. 47° 05' E., 798.5 ft. to Cor. No. 17, thence S. 86° 30' E., 267.4 ft. to Cor. No. 18, thence S. 47° 30' W., 100.0 ft. to Cor. No. 19, thence S. 86° 45' E., 278.0 ft. to Cor. No. 20, thence N. 47° 05' E., 488.7 ft. to Cor. No. 21, thence N. 37° 15' W., 199.0 ft. to Cor. No. 22, thence N. 00° 23' E., 1331.4 ft. to Cor. No. 23, thence West 4007.0 ft. to Cor. No. 1, and place of beginning; including an area of 364.739 acres. (Cors. Nos. 2 to 22 inclusive are on the southerly boundary of the United Park City Mines Co. property.)

The above ground is believed adequate to protect the Government's interest in the event a contract is drawn.

The applicant, in a letter dated May 16, 1958, has asked that an upper vertical limit be placed on the proposed project block, at an elevation of 7,000 feet above sea level. This will allow a vertical distance of approximately 600 feet above the 2100 level for conduct of the proposed exploratory work. The operator, on company account, plans to enter areas of known ore around some of the old stopes in the Weber quartzite. The request appears reasonable.

## HISTORY AND PRODUCTION

In 1869 lead-silver deposits were discovered in the Park City district. The principal ores mined in the early days were galena and lead carbonate ores in limestone. High-grade silver ore occurred intermittently.

The Daly West mine is 2 miles south-southeast of Park City, near the head of Empire Canyon. The property was first worked in 1882 at

the western extension of the Ontario lode veins. Production of the mine totals approximately 3,400,000 tons of ores containing silver, lead, and zinc which was mined from the Judge-Daly West fissures. The mineralization occurs in fissures that are extensions of the Ontario mine ore bodies.

The company is presently working on the main drain-tunnel level of the Daly West 2100 level, where a recent discovery of ore was made along the Back Ledge vein.

## GEOLOGY

Sedimentary rock units in the Park City district range in age from lower Paleozoic to Jurassic; however, the stratigraphic section below the Pennsylvanian Weber quartzite is not well known. In the Daly West-Judge area, as well as in the southeast part of the district, limited underground exploration below the Weber quartzite has been done in the past few years. The section given below is based, in part, on such recent work and, in part, on the section as established in the adjoining Cottonwood-American Fork district.

Stratigraphy of the Park City District

(Formations below the Humbug are based on data from the Cottonwood-American Fork district)

| | Formation | Lithology | Thickness (in feet |
|---|---|---|---|
| Jurassic | (Nugget ss. | Light colored sandstone with interbedded red shale | -- |
| Triassic(?) | (Ankareh sh. | Red shale, locally sandy with interbedded coarse gray sandstones | 1,225 |

| | Formation | Lithology | Thickness (in feet) |
|---|---|---|---|
| Triassic | Thaynes fm. | Limestone with sandstone and shale. A stratum of red shale (the Midred) separates the more calcareous upper portion from a more sandy lower portion. | 1,150 |
| | Woodside sh. | Shale, mainly red, partly altered to green; fine-grained, thin bedded. | 700 |
| Permian | Park City fm. | Limestone with interbedded quartzite, sandstone, and shale. | 700 |
| Pennsylvanian | Weber quartzite | Pale gray to white, thick bedded quartzite, with interbedded limy sandstone and thin limestone. | 1,500-2,000 |
| | Morgan fm. | Pale gray limestone in 1-2 foot beds. Pink cherty fossils. | 350 |
| Mississippian | Doughnut fm. | Thin-bedded black limestone, locally cherty and highly fossiliferous | 250-350 |
| | Humbug fm. | Interbedded tan sandstone or quartzite and dark gray limestone. | 400 |
| | Deseret ls. | Medium- to thick-bedded dark gray to black limestone and dolomite, locally cherty. | 800 |
| | Madison ls. | Thin-bedded dark gray limestone. | 450 |
| | Jefferson dolomite | (Upper) Pale gray massive dolomite. (Lower) Dark gray massive dolomite. Both locally vuggy, thin basal bed of sandstone or gritty siltstone. | 120 |
| | | Unconformity | |
| Cambrian | Maxfield ls. | Oolitic, pisolitic, speckled, or wavy-bedded limestone. Thin- to thick-bedded. | 0-1,000 |
| | Ophir fm. | (Upper) Fine-grained limy sandstone | (160) |
| | | (Middle) Wavy-bedded gray limestone | ( 40) |
| | | (Lower) Green micaceous shale | (200) |
| | Tintic quartzite | Massive tan quartzite | 1,000 |

Diorite and quartz diorite porphyry intrude the sediments as dikes, sills, and irregular masses. The centers of intrusion are south and east of the Daly West-Judge area; however, several dikes and sills have been encountered in the workings near the Daly West shaft.

The sedimentary rocks have been folded into a broad north-northeast-plunging anticline, the axis of which lies a short distance east of the town of Park City. Most of the mines, including the Daly West and Judge, are on the west flank (fig. 2).

A series of pre-mineral faults or fissure zones, trending slightly north of east, cut the western flank of the anticline in that part of the district containing the most productive mines. The movement along these faults is normal and, in part, post mineral.

In the Daly West-Judge area the sedimentary rocks dip about 30° to the northwest, reflecting the general effect of the Park City anticline. As shown by the Judge mine workings above the levels to be explored, the beds locally are warped into a broad synclinal fold which plunges gently northwest. The replacement deposits of the Judge and Daly West mines formed along the flanks and trough of the syncline where cut by major fissure zones.

The fissure zones include the well-known Ontario-Daly zone and, immediately to the south, the productive Back Ledge, Roll, Middle, and Back fissures (figs. 6, 7, 8, 9). All strike northeasterly and dip steeply southeast except the Ontario-Daly, which dips steeply northwest. With the exception of the Daly and Back fissures, which

have displacements of 500 and 200 feet, respectively, the displacement along the fissures is less than 100 feet.

## ORE DEPOSITS

The Daly West mine contains deposits of both lode and bedded type. To date most of the production from the mine has come from the Permian Park City formation above the Pennsylvanian Weber quartzite. For the past few years, however, ore has been produced at the nearby Ontario mine from upper beds of the Mississippian Humbug formation about 800 feet stratigraphically below the Weber quartzite. At the Daly West mine, lode-type lead-zinc-silver ore also has been discovered in beds at or below the base of the Weber quartzite along the Back Ledge vein.

The ore bodies in the Daly West-Judge area occur as bedded replacements in the Jenney (lower) and 920 (upper) horizons of the Park City formations (fig. 4); along the Daly fault, lode ore occurred in the Park City and other formations. Individual ore bodies have been mined for lengths of several thousand feet and bed out in places as much as 100 feet from the fissures (fig. 3). The fissures, other than the Daly, have been productive as follows: (1) the Back Ledge vein, productive through the Weber formation in the area east and southeast of the Daly West shaft; (2) the Roll, productive above the Weber in the area between the Daly West and Judge shafts; (3) the Middle vein system, productive above the Weber over a total length of about 5,000 feet; and (4) the Back vein, productive for a total length of about 2,000 feet. The operators estimate that in the Daly West-Judge area the combined production of the Back Ledge, Roll, Middle, and Back veins exceeds that from the Daly vein.

The Daly West ore is valued chiefly for its silver, lead, and zinc content. Copper and gold are present in small quantities. Galena and sphalerite are the principal ore minerals, with some tetrahedrite and chalcopyrite. Quartz and pyrite form the gangue. Silver occurs in galena, pyrite, tetrahedrite, and sphalerite. The zone of oxidation is shallow and the usual secondary minerals found near the surface are not present at depth.

The overall average grade of more than 4 million tons of ore produced from the Daly West and Judge mines is: 8.7 percent lead, 4.7 percent zinc, and 0.02 ounce gold and 12.0 ounces of silver per ton. Ore from the 2100 level on the Back Ledge vein, which is currently being mined, averages 7.5 percent lead, 9.0 percent zinc, and 0.03 ounce gold and 7.0 ounces of silver per ton. Although no definite conclusions can be drawn from one ore body compared to many, a few factors may be noted. The increase in zinc content at depth is to be expected. The lead content holds up surprisingly well. What appeared to be a high pyrite content in the 2100 level ore is, according to the operators, rather common at higher levels, thereby discounting apparent evidence of vertical zoning.

## PROPOSED EXPLORATION AND COSTS

The applicant proposes to explore the Middle and Back veins on and below the 2100 level in the area southwest of the Daly West shaft. The applicant estimates that 2,500 feet of crosscutting is needed to reach the two target veins with 1,500 feet of drifting on the Middle and 1,000 feet of drifting on the Back vein necessary to properly explore the two

veins. An additional 500 feet of crosscutting will be needed for laterals. Because at the 2100 level in this area both veins are expected to cut Weber quartzite, the applicant proposes to drill 5,000 feet of diamond-drill holes to test for bedded deposits along the two veins in the favorable Humbug formation 800 to 1,000 feet stratigraphically below. In reaching the target area the Back Ledge vein will be followed westerly for several hundred feet and the Roll vein will be intersected. These veins present secondary targets which could be explored if conditions warrant.

The following costs of the proposed work were estimated by the applicant:

| | |
|---|---|
| Crosscutting, 6' x 9' with 12" x 24" ditch (untimbered), 2,750 feet at $46.198 per foot | $127,044.76 |
| Drifting, 8' x 9' with 12" x 24" ditch (timbered), 2,500 feet (timbered drift) 250 feet (timbered crosscut) 2,750 feet at $57.92 per foot | 159,283.49 |
| Diamond drilling, 5,000 feet at $11.378 per foot | 56,890.00 |
| 6 diamond drill stations, size 6' x 8' x 10' with 6' x 6' x 25' raise, cost per drill station | 8,755.41 |
| Total estimated cost | $351,973.66 |
| Government participation at 50 percent | $175,986.83 |

The estimated work schedule is as follows:
(25 working days per month)

Schedule I

Crosscutting, 2,750 feet (untimbered)
5 feet per shift, 10 feet per day ---------- 11 months

Schedule II (drifting and crosscutting to be done simultaneously)

Drifting, 2,500 feet (timbered)
Crosscutting, 250 feet (timbered)
4 feet per shift, 8 feet per day

Schedule III

5,000 feet of diamond drilling

Schedule IV

6 drill stations, 6' x 8' x 10', and
6' x 6' x 25' raise

Schedules II, III, and IV ---------- 13.75 months

Total ---------- 24.75 months

The above work and cost schedule for drifting and crosscutting appears to be reasonable. The cost of diamond drilling is high and can be accomplished at a lower rate per foot.

## RECOMMENDED EXPLORATION AND COSTS

The applicant's proposed program appears to be sound and, with minor modifications, is recommended for approval. The one unfavorable factor is the rather large stratigraphic distance of the exploratory drifts above the target Humbug horizon. The possibility of deepening the Daly West shaft was discussed with the applicant, but for operational reasons and because of the cost involved, such a program was not favored. In fact, the applicant had previously worked up this type of exploratory program, but discarded it in favor of the present proposal.

Near the starting point of the proposed exploration, good-grade ore is currently being mined along the Back Ledge vein in places where one wall is limestone. However, positive identification of the limestone has not been made because of an inconsistency near the base of the Weber. It is tentatively classed as part of the lower Weber, but may be the Morgan, which underlies the Weber. If it is Morgan, distances to the Humbug may be shorter than anticipated.

The limited drifting along the Back Ledge vein, possible drifting along the Roll vein, and the drifting along the Middle and Back vein will be done in areas where the Weber-Morgan limestone is expected to form one or both walls.

In reference to the drilling program, the stratigraphic control for the formations below the Weber quartzite is based on the following factors: The New Park Mining Co. at the Mayflower mine, 2 miles to the east, has explored the sedimentary rocks to the middle of the Deseret formation, which is stratigraphically below the Humbug. United Park City Mines Co., in the Ontario mine, 1 mile to the northeast, has been mining ore for several years from the upper Humbug formation. In the adjoining Cottonwood-American Fork district, 6 miles to the west, the sedimentary rocks through the Cambrian Ophir formation have been explored by numerous underground workings. Because limestones traditionally are one of the more consistent formations, and because many of the Paleozoic limestones (i.e., Humbug) can be correlated over large areas in Utah, projections of the section from nearby areas can reasonably be made. In addition, the section to a point near the base of the Doughnut has been tentatively established by a diamond drill hole near the bottom of the Daly West shaft (fig. 9).

The probability that the various fissures will be present at depth varies with the individual fissure. The Back vein is a strong, well-defined fissure which can be projected to depth with considerable confidence. The Middle vein system consists of several branches associated with porphyry. Because of its long lateral extent of over 5,000 feet,

it, too, can be expected to continue at depth. The Back Ledge fissure, explored on the 2100 level, is, from evidence above, expected to weaken to the west. The Roll vein, in general weaker than the others, may not extend to the exploration depths.

The drill holes, in general, will be drilled adjacent to the Middle and Back fissures and the ore bodies can be expected to bed out for 50 to 75 feet from the fissures. The drill holes should cut the favorable Doughnut formation and the favorable upper part of the Humbug, which may require depths of 1,000 feet in places. Because it is believed that more information may be required than 6 holes can give, and that by increasing the drilling a better balance can be gained between dead work and active exploration, it is recommended that the diamond drilling footage be increased from 5,000 to 10,000 feet. The drifting, although not completely dead work, is in a horizon secondary in importance to the lower beds.

The positions, bearings, and inclinations of the drill holes are to be determined from the results of drifting.

It appears there is an excellent chance of discovering significant quantities of lead-zinc ores in down-dip extensions of known ore bodies, and it is recommended that the application for DMEA assistance be approved and that the following program and estimated costs be allowed:

## Estimated Work Schedule

(25 work days per month)

Schedule I

Crosscutting, 2,750 feet (untimbered)
5 feet per shift, 10 feet per day ---------- 11 months

Schedule II (Drifting and crosscutting to be done simultaneously)

Drifting, 2,500 feet (timbered)
Crosscutting, 250 feet (timbered ---------- 13.75 months

Schedule III

10,000 feet of diamond drilling
20 feet per shift

Schedule IV

12 drill stations, 6' x 8' x 10', and
6' x 6' x 25' raise

Schedules III and IV ---------- 2 months
26.75 months

Schedules II, III, and IV will be worked simultaneously in order to complete the work in the specified period.

## Estimated Cost

Schedule I

2,500 feet untimbered crosscut 6' x 9'; with 12" x 24" ditch,
250 feet stub crosscut, 6' x 9'

| | | Total | Cost/foot |
|---|---|---|---|
| Independent contracts | none | | |
| Labor | | $ 62,474.91 | $22.718 |
| Supervision | | 5,815.80 | 2.114 |
| Operating materials and supplies | | 42,306.02 | 15.384 |
| Power | | 6,182.00 | 2.248 |
| Water | no charge | | |
| Fuel | no charge | | |
| Operating equipment | | 1,625.80 | .591 |
| Rehabilitation and repairs | none | | |
| New buildings | none | | |
| Miscellaneous | | 8,640.23 | 3.142 |
| Total cost | | $127,044.76 | $46.197 |

## Schedule II

2,500 feet timbered drift 8' x 9'; with 12" x 24" ditch,
250 feet stub crosscut, 6' x 9'

| | | Total | Cost/foot |
|---|---|---|---|
| Independent contracts | none | | |
| Labor | | $75,427.13 | $27.428 |
| Supervision | | 7,269.76 | 2.643 |
| Operating materials and supplies | | 56,832.43 | 20.666 |
| Power | | 7,727.50 | 2.810 |
| Water | no charge | | |
| Fuel | no charge | | |
| Operating equipment | | 1,688.51 | .614 |
| Rehabilitation and repairs | none | | |
| New buildings | none | | |
| Miscellaneous | | 10,338.16 | 3.759 |
| Total cost | | $159,283.49 | $57.92 |

## Schedule III

10,000 feet diamond drilling, BX size

| | Total | Cost/foot |
|---|---|---|
| Independent contract | $60,000.00 | $ 6.00 |
| Power for compressor | 5,150.00 | .515 |
| Total cost | $65,150.00 | $ 6.515 |

## Schedule IV

12 diamond drill stations, 6' x 8' x 10' (25' raise 6' x 6')

| | | Total | Cost/station |
|---|---|---|---|
| Independent contracts | none | | |
| Labor | | $ 9,541.62 | $795.135 |
| Supervision | | 888.24 | 69.263 |
| Operating material and supplies | | 4,637.72 | 386.476 |
| Power | | 944.16 | 78.680 |
| Water | no charge | | |
| Fuel | no charge | | |
| Operating equipment | | 206.30 | 17.191 |
| Rehabilitation and repairs | none | | |
| New buildings | none | | |
| Miscellaneous | | 1,292.78 | 10.773 |
| Total cost | | $17,510.82 | $1,357.518 |

0.983 per cubic foot

Assays

| | |
|---|---|
| Drifting, 400 samples at $4.50 per sample---------- (Lead, zinc, gold, silver) | $ 1,800.00 |
| Diamond drilling, 200 samples at $4.50 per sample-- (Lead, zinc, gold, silver) | 900.00 |
| Estimated total cost ---------- | $371,689.07 |
| Government participation at 50 percent ---------- | $185,844.53 |

The above schedules show a summation of the project costs. The application contains detailed and complete estimated cost figures. These figures have been carefully studied and the basic costs are found to be fair and accurate.

The applicant has based the total cost of drifting on the necessity of 100 percent timber requirement. However, the application includes a statement that of a total of 2,438 feet of drifting and crosscutting completed on the 2100 level southeast from the Daly West shaft, only 270 feet required timbering. Little, if any, timber is needed in crosscutting. It is believed, therefore, that the above estimate under Schedule II can be reduced in total cost, inasmuch as all drifts will not require timber.

Approximately 1,100 feet of the above total of 2,438 feet of drifting and crosscutting may be considered drifting. A total of 270 feet of the 1,100 feet of drifting, or 24.5 percent, required timber. Based on this percentage, it appears logical to reduce the timbering requirements under the above Schedule II to 625 feet of drifting instead of 2,500 feet. This will result in a reduction per foot of $57.92 -- $46.197, or $11.723 for 1,875 feet of drifting under the above Schedule II. The total cost under this schedule will be reduced

by 1,875 x $11.723, or $21,980.62. The revised total cost under this schedule will then be $159,283.49 -- $21,980.62, or $137,302.87. This procedure will result in a total project cost of $349,708.45.

The application includes an estimated cost of $11.378 per foot for diamond drilling with the bit size not specified. This cost is high. At the time this report was prepared, the applicant had received one bid for performance of the diamond drilling. This bid is based on $6.00 per foot for BX size. Although the charges against diamond drilling, such as reaming, casing, or standby costs, may result, the operator has agreed to have the work performed by a subcontractor at a cost of $6.00 per foot plus compressor power of $0.515 per foot. This cost is shown in the above estimate under Schedule III.

## CONCLUSIONS AND RECOMMENDATIONS

Several limestone formations underlying the Pennsylvanian Weber quartzite have recently been found favorable for ore deposition in the Park City district. The proposed program is designed to explore two of these limestone formations beneath an area from which ore valued at more than $11,000,000 was produced from 1893 to 1906 in beds above the Weber quartzite. Newly discovered ore bodies are expected to be chiefly bedded replacement type, although some lode ore may also be anticipated. The discovery of such ore bodies at these horizons will open up large new areas for further exploration and greatly increase the ore reserves of the Park City district.

Because there appears to be sound geologic reasons for expecting significant ore deposits in the area to be explored, it is recommended that the application as modified above be approved.

JUL 18 1958

Mr. S. K. Droubay, General Manager
United Park City Mines Company
Heber, Utah

Re: Docket No. DM--4996 (Lead-Zinc)
United Park City Mines Company
Daly West Area
Salt Lake, Summit and Wasatch
Counties, Utah

Dear Mr. Droubay:

I have your letter of July 14 regarding the cited application. If pending legislation for continuance of Government aid in exploration should be enacted, you certainly should feel free to re-apply for such assistance.

With reference to the denial of your application, while all reviewers were unanimous in their opinion, we did regret having to take such action. I may say that the underlying reason was the uncertainty as to the actual detailed structure and stratigraphy in the immediate target area, plus some concern as to the desirability of the proposed method of attack.

When we set up a very large program, involving 5500 feet of mine openings and thousands of feet of diamond drilling, upon a basic geologic uncertainty we are actually compounding the inherent exploratory hazard. Nevertheless, it is my impression that the reviewers felt that worth while targets may exist and that, had the time interval not been so short, you might have been able to present additional evidence to demonstrate the possible locations of such targets.

In any event, should new legislation be enacted, and you should care to re-apply under the regulations pertaining thereto, you may be sure that I would be glad to ask the Field Team to co-operate with you in working out a satisfactory plan for exploration of the Daly West Area.

Sincerely yours,

C. O. Wittendorf

Administrator

WHGriswold/er 7/18/58
Rewritten (7/16 & 18/58)
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Killsgaard, USGS
Region III (2)
Chron.

UNITED
PARK CITY MINES
COMPANY

GENERAL OFFICE [illegible] STAR

July 14, 1958

Mr. C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration
U. S. Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA-4996 (Lead-Zinc)
United Park City Mines Company
Daly West Area

Dear Mr. Mittendorf:

This will acknowledge your letter of June 26, 1958, advising us that our application for exploration aid had been denied because, in the opinion of your staff, the project was not sufficiently promising to justify Government participation.

This action on the part of the Government is exceedingly disappointing to us, especially the reason given for turning down the application. We had solicited the council of five geologists of outstanding reputation who are familiar with lead-zinc replacement deposits, on the merits of this program. This was done before submitting it for DMEA aid. These geologists are all independent of the United Park City Mines Company geological department, and all of them concurred with our own geological staff in that the project is a sound geological risk.

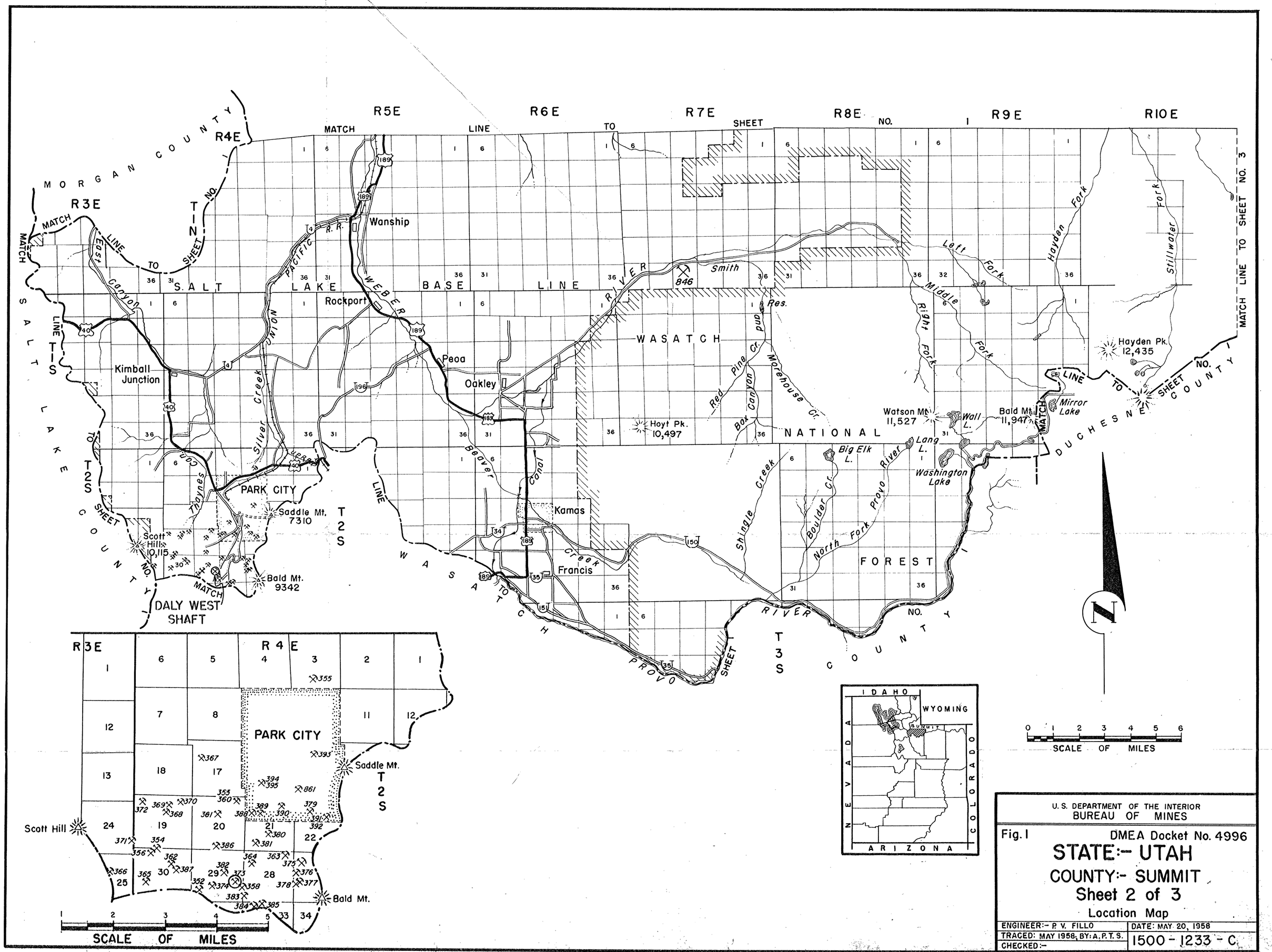
I am sorry that the members of your organization could not agree with the findings of our own consulting staff who recommended that we spend our money to process this development project. In any event, I thank you for the consideration that you have given us.

If it would be practical I would like to furnish more detailed geological information and re-submit the application under the new bill that we all expect to become law and which will continue to grant exploration aid to the domestic mining industry.

Sincerely yours,

S. K. Droubay
General Manager

SKD:ncn




U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1

DMEA Docket No. 4996

# STATE:- UTAH

## COUNTY:- SUMMIT

## Sheet 2 of 3

Location Map

| | |
|---|---|
| ENGINEER:- P. V. FILLO | DATE: MAY 20, 1958 |
| TRACED: MAY 1958, BY: A.P.T.S. | 1500 - 1233 - C |
| CHECKED:- | |