MEMORANDUM OF CALL

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MESSAGE

Paul Hagaman

H.W.C. Crommel Congressional

Report on the Decorations and Distribution on a Tungsten Mine site in the Chrome Mining District Chiffee Colo

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1953		

63-109

STANDARD FORM 63 (Rev. 8-76)
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FPMR (41 CFR) 101-11.6

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STANDARD FORM 63 (Rev. 8-76)
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PI

South

Building 20 - Federal Center
Denver 25, Colorado

July 10, 1962

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: OME-6202 (Colo)
The Juber Mining Company
(Sec. 4, 8, 9, 16, and 17.
T. 9N., R. 92 W., 6th P.M.)
Moffat County, Colorado

Enclosed are the original and two copies of my Report of Examination of the subject property.

Denial of the application is recommended because exploration of the property probably would not result in a significant discovery.

Original signed by

T. N. Rosale

Attachments
HMC/lm
cc Mineral Resources DFC
OME -6202 ✓
Chron

Marathon Gold . . . . . Continued fr

the majority of the tonnage will come from the monazite, the xenotime represents a significant portion of the total value.

Both monazite and xenotime are utilized extensively in both the military and commercial sectors. Specific applications include the manufacture of television picture tubes, lasers, radar x-ray screens, magnetic bubble memories, radiation shielding windows, cathode-ray tube face-plates, electromagnets, fluid cracking catalysts, special steels, polishing powders, cast iron additives, lighter flints and ceramics.

Rhone-Poulenc, the world's largest producer of separated rare earths, recently opened a $50 million production plant in Freeport, Texas. When in full production, Rhone-Poulenc's Texas facility will double its present rare earth oxide manufacturing capabilities, responding to growing demands in the United States and elsewhere for the rare earths.

Farnsworth said Marathon's discussions with Rhone-Poulenc have taken place over the past 18 months, culminating in a site and ore body review by Rhone-Poulenc geologists.

Participants in the mining venture include the publicly-traded Marathon; Centennial, a privately-held company which owns 54 percent of Marathon; and Hampton Gold Mining Areas PLC, a London-based firm which entered a joint venture with Centennial and Marathon on their holdings last November.

Development plans call for Marathon, Centennial and Hampton to undertake two joint ventures which would develop three mine[illegible] three 10,000 ton-per-da[illegible] mills over the course of the project.

Exploration in progress has indicated that the three mine sites may contain in excess of three million ounces of gold. If mining proves to be commerically viable at the sites, three mills will be constructed and gold production at a rate in excess of 210,000 ounces a year could be expected.

The Board of Directors and Management of Marathon Gold Corporation and Centennial Gold Corporation are discussing a potential merger of the two companies. A decision concerning the potential merger is expected to be announced in the near future.

For further information contact: Orin J. Farnsworth, Marathon Gold Corporation, (303) 824-8213.

ontana Department , detailing plans for k Project, five northeast of Noxon.

ASARCO estimates it will quire 2½ years of study by he state and Forest Service before a permit is issued for the mine. Constructing the mine would require about three more years.

Erskine said that during construction and development, an estimated 300 people would be employed, while total jobs expected at full production would be 350 to 375.

Erskine said the Rock Creek Project would be similar to ASARCO's Troy Project 17 miles south of Troy, which has employed up to 340 workers.

The Rock Creek Project would operate for an estimated 29 years, 12 more than the 17 listed originally for the nearby Troy Project.

Erskine said most jobs in the new mine would probably go to local residents. "If a person can operate a skidder, we an easily teach him to operte mining equipment," he aid.

transfer crushed rock to a surface plant at 3,900 feet of elevation.

Surface development outside the Cabinet Wilderness would include a coarse ore stockpile with geodome roof covering, a secondary crusher building, fine ore bin, mill building, other buildings and fuel and water storage tanks, as well as a power substation.

The waste rock, or tailings, would be moved in a water slurry form through a gravity flow pipeline to an impoundment area expected to be located near Montana 200, the company said.

The concentrate produced by processing the ore would be trucked to a Burlington Northern siding at Noxon for shipment to one of ASARCO's smelters. The company has smelters at East Helena in Montana, and at Tacoma, Washington; El Paso, Texas; and Hayden, Arizona.

Getting permits for the project will involve a full-scale environmental impact study, ASARCO officials predict.

cated one mile north of the mine, is designed to process 500 tons of ore per day. Annual gold production from the McBean Mine will exceed 20,000 ounces per year. The operation has about 80 employees.

"Inco Limited has been looking forward to this day for some time," said Walter Curlook, Inco's executive vice-president. "Ventures such as the McBean Mine create new wealth, not just locally, but

We've Put It All Together

198

WESTER

MININ

DIRECTOR

THE COLORADO MINING ASSOCIATION

James H. Rice
Chairman of the Board

David R. Cole
President

Office of Coal Information & Policy
410 Denver Hilton Office Bldg. ■ 1515 Cleveland Place
Denver, Colorado 80202
(303) 534-1181

ANNUAL INDIVIDUAL MEMBERSHIP $30.00

MSHA Publishes Notice On Revised Regulations

WASHINGTON, D.C. — The Labor Department's Mine Safety and Health Administration (MSHA) has published a notice of availability of preproposal drafts of revisions of four parts of Title 30 of the Code of Federal Regulations (CFR), governing health and safety in mining.

The notice of the draft proposals appeared in the Federal Register of Tuesday, June 5, 1984, and would be applicable to equipment used in underground mines.

In one draft proposal of 30 CFR Part 15, technical and performance requirements are established for explosives as well as approval requirements for the "sheathed explosive unit" recently developed by the U.S. Interior Department's Bureau of Mines.

A second draft proposal of 30 CFR Part 16 would update, clarify and reorganize the existing regulations for the approval of stemming devices. The existing approval provisions, which are primarily for asbestos stemming, would be deleted and replaced with specifications and requirements for the approval of water stemming bags. The manufacture of asbestos stemming has been discontinued because of potential health hazards. As an alternative, plastic bags filled with water have been developed for use as stemming devices.

A third preproposal draft would set forth approval requirements for instantaneous and short-delay electric detonators. These requirements are related to such items as electrical resistance, sensitivity to extraneous sources of electricity, electrical current requirements, and protection against arcing. They address the reliability of the detonators and their compatibility with the performance of permissible blasting units that are required to be used in underground coal mines.

The fourth prepoposal draft would update and revise the existing regulations in 30 CFR Part 25 for approval of blasting units. It would reorganize the approval requirements for blasting units into technical and performance requirements and delete the existing provisions for 10-shot blasting units. A significant new performance requirement in the preproposal draft would recognize advances in technology by establishing a new category of permissible blasting units for firing more than 20 short-delay electric detonators.

All four preproposal drafts contain provisions for quality control during manufacture and post-approval product audits conducted by MSHA.

A public conference on the preproposal drafts will be held in Pittsburgh, Pennsylvania, on July 11, 1984 at 9 a.m. Written comments on the drafts must be received on or before August 10, 1984.

Requests for and comments on the preproposal drafts should be sent to the Office of Standards, Regulations and Variances, MSHA, Room 631, Ballston Tower #3, 4015 Wilson Blvd., Arlington, VA 22203; telephone (703) 235-1910.

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July 4, 1984

THE MIN

THE VOICE

27 WEDNESDAY,

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USGS
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AVERAGE WEEKLY CLOSING PRICE
Handy & Harman

GOLD **$370.88**

SILVER ..... **$ 8.38**

(Weekly Metal Prices — Page 11)

Monazite - thorium (Ce, La) PO_4
Rare Earth

Marathon Gold May Sell Ore To French Firm

xenotime Joker Mine OMF 6 2 02

CRAIG, CO — Marathon Gold Corp. (NASDAQ: MGLD), as Joint Venture Operator for its venture with Hampton Gold Mining Areas PLC of the United Kingdom announced that Rhone-Poulenc Chemcials Co., headquartered in Paris, France, intends to purchase a minimum of 4,000 tons a year of monazite and xenotime from Marathon's northwest Colorado venture when it begins commerical operation.

Based on U.S. Bureau of Mines data, the proposed Marathon Gold development, when completed, would be one of the largest single sources of monazite and xenotime in the world.

Present sources of these resources include Australia, Brazil, India, Malaysia, Sri Lanka and Thailand.

Rhone-Poulenc has announced intentions to purchase a minimum of 4,000 and a maximum of 8,000 tons of monazite and xenotime per year from the venture at the world market price under a three-year contract which could be renewed annually thereafter.

Marathon President Orin J. Farnsworth said, "While we project a mine life of up to 20 years, the revenues from the monazite and xenotime sales alone in the first three years should range between $12 and $21 million, depending on the grades of ore being produced.

"The fact that we have significant monzite and xenotime deposits on our properties, in addtion to our gold deposits, carries major implications for the U.S. economy. There is no other major source of monazite and xenotime in the United States, and bringing this resource to market will create a new industry to serve this country's high-tech companies," he added. Marathon is now separating gold in the laboratory by leaching samples of concentrates obtained from the Joker Plant.

Farnsworth said the Rhone-Poulenc agreement is economically significant in that it moves Marathon and its joint venture partners a step closer to full-scale gold production. Establishing a market for the monazite and xenotime, which is recovered with the gold as a by-product, not only reduces the direct cost of producing an ounce of gold, but also may increase the size of the potential gold ore body that may be mined profitably.

A conservative estimate of the rare earth by-products pegs the value of 4,000 tons of monazite and xenotime concentrates, assuming current prices, at $4.5 million. Annual production at that rate would offset 20 to 30 percent of the company's projected direct operating costs of its first proposed large-scale gold milling plant.

A more optimistic estimate translates to $7.2 million in revenues a year, or 40 percent of a mill's annual operating costs. Even though

(Continued on Page 6)

NUEXCO

EXCHANGE VALUE EXPRESSED IN SELECTED PRODUCER & CONSUMER CURRENCIES[1]

Country (currency)	per lb. U_3O_8 in Concentrates			per kg. U in Concentrates		
	This Month (May 31, 1984)	Last Month (Apr. 30, 1984)	12 Months Ago (May. 31, 1983)	This Month (May 31, 1984)	Last Month (Apr. 30, 1984)	12 Months Ago (May 31, 1983)
Australia (dollar)	19.74	19.30	26.60	51.33	50.18	69.17
Belgium (comm. franc)	986.66	973.14	1,181	2,565	2,530	3,070
Canada (dollar)	22.97	22.73	28.90	59.72	59.10	75.13
Finland (markka)	102.84	101.66	128.63	267.36	264.30	334.40
France (franc)	148.91	147.43	176.96	387.13	383.27	460.05
FRG (mark)	48.51	48.01	59.02	126.12	124.82	153.43
Italy (lira)	29,963	29,697	35,075	77,897	77,206	91,186
Japan (yen)	4,107	4,020	5,589	10,677	10,452	14,529
Netherlands (guilder)	54.72	54.12	66.44	142.25	140.69	172.73
South Africa (rand)	22.73	22.12	25.28	59.09	57.50	65.71
Spain (peseta)	2,728	2,696	3,264	7,087	7,010	8,485
Sweden (krona)	143.49	141.21	176.69	373.05	367.11	459.36
Switzerland (franc)	40.12	39.64	48.88	104.31	103.05	127.07
UK (pound)	12.81	12.66	14.65	33.29	32.90	38.08
US (dollar)	17.75	17.75	23.50	46.15	46.15	61.09

SOURCE: NUEXCO, Monthly Report on the Nuclear Fuel Market, No. 190, June 1984, Menlo Park, CA
Contact: Tom Boyden or Wes Miller (415) 854-1510

DMA 1405

FARNSWORTH URANIUM DEPOSIT

MOFFAT COUNTY, COLORADO

DMA DOCKET 1405X

Geology

By Truman H. Kuhn, Geologist
U. S. Geological Survey

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FARNSWORTH URANIUM DEPOSIT
MOFFAT COUNTY, COLORADO

INTRODUCTION

A. J. Farnsworth of Craig, Colorado, has applied for a $75,000.00 loan (DMA Docket 1405X) to explore for uranium on his placer property located in sections 4 and 9, T. 9 N., R. 92 W., Moffat County, Colorado. This property formerly was known as the Housel gold placer mine.

The ~~placer~~ property, consisting of the Friend Ship, Pardner, Magpie, Sage Hen, Pal, and Grey Hound Leases, is located at an elevation of approximately 7,000 feet near the headwaters of Housel Gulch. It is about 19 airline miles northwest of Craig, Colorado. The property can be reached by following Moffat County Roads 3 and 5 northwest of Craig to Iron Springs Divide, 24 miles from town. From this point, the road to the placer turns northeast along the old Meeker and Rawlins stage coach road for an additional 1.6 miles where a less improved road branches to the east. The cabin on the Farnsworth property is 0.6 mile from the stage coach road and 26 miles, by road, from Craig.

The property was examined on August 22, 1951, accompanied by A. J. Farnsworth. It was also visited on May 17, 1950, by C. A. Rasor, geologist for the Atomic Energy Commission, Grand Junction, Colorado, accompanied by Mr. Marie Farnsworth, wife of A. J. Farnsworth.

GENERAL GEOLOGY

The property is located in a relatively flat region near the center of a large exposure of ~~Lower Eocene~~ sandstones and conglomerates of the

lower Eocene

Wasatch formation. Gold placers have been worked in this area, and according to H. S. Gale in Gold placer deposits near Lay, Routt County (now Moffat County), Colorado, U. S. Geological Survey Bulletin 340, pages 84-95, 1908, the gold-bearing sands now occur as scattered bars or terraces originally deposited on an old eroded Wasatch land surface. The deposition of the bars and terraces preceeded the cutting of the present stream channels and relatively little concentrations of gold have taken place along the existing creek beds.

URANIUM

All workings and prospect pits and trenches were examined with a Geiger counter and no significant radioactivity was detected.

In addition to the Geiger survey, one pit on the east side of Housel Gulch, ~~and~~ apparently on the Pal Lease, was sampled. Mr. Farnsworth stated that this was the only pit that "had a chance of containing uranium." The assay results are:

Sample No.	Average depth in feet	U %	eU %	Description
-	2	-	-	Recent soil
3	3	0.000	0.003	Sandstone and conglomerate, black and red iron oxides coating some of the grains
2	2	0.001	0.002	Sandstone grains almost completely coated and, in part, cemented by black iron and manganese oxides
1	2	0.001	0.003	Sandstone grains in part coated by red iron oxide

C. A. Rasor, Atomic Energy Commission geologist, in a report dated May 31, 1950, stated that in October 1949, Mrs. Marie Farnsworth submitted

two samples to the Atomic Energy Commission at Grand Junction. These two samples supposedly were taken from previous placer operations on the Farnsworth property near Housel Gulch. One sample was composed of fine-grained black sand, apparently a placer concentrate, and the other was a sample of conglomerate. Mr. Rasor examined the black sand and determined that 20 per cent was magnetite and the remaining black grains probably were ilmenite. The rest of the sand was made up of red grains believed to be garnet and yellow grains believed to be monazite. The fine-grained concentrate was assayed by the Atomic Energy Commission (Sample No. 11152) and found to contain 0.87 per cent equivalent U_3O_8. The conglomerate (Sample No. 11153) assayed 0.014 per cent equivalent U_3O_8. According to Mr. Rasor, the Farnsworths were notified that the equivalent U_3O_8 assay represented a thorium content from the monazite and not a uranium content.

Mr. Rasor visited the property on May 17, 1951, and reported:

"Although a Geiger was carried to every test pit and hole, no radioactivity was recorded above the background count."

GOLD

The property was not examined for gold, however, the gold content in the samples taken for uranium was determined and they assayed:

Sample No.	Depth ft.	Gold oz.
3	3	
2	2	
1	1	

This was not submitted in DMA Docket 1405 Report

CONCLUSIONS AND RECOMMENDATIONS

On the Farnsworth property near Housel Gulch, Moffat County, Colorado, gold-bearing sands and gravels occur as scattered bars or terraces originally deposited on an old eroded Wasatch land surface. These sands have been placered for gold, and in addition to gold, contain magnetite, ilmenite, garnet, and monazite.

Since it has not been demonstrated that any uranium exists on the Farnsworth property, it is recommended that the application for a $75,000.00 loan to explore for uranium be denied.

Gold placer claims
Moffat Co Colorado
Farnsworth Usom
(Placer Gold
US Geo Bull 340

GOLD PLACER DEPOSITS NEAR LAY, ROUTT COUNTY, COLO.

By Hoyt S. Gale.

INTRODUCTION.

The existence of gold-bearing sands and gravels in a field of considerable extent in the central portion of Routt County, Colo., and adjacent parts of Wyoming, has been known for a number of years. These gold placer deposits are said to have been first discovered in 1887 in the northern part of the district, on Fourmile Gulch, and also in Dry Gulch, about 20 miles west of Baggs, Wyo., both localities near Little Snake River. Interest in the field seems to have begun about that date and to have continued more or less actively down to the present time.

The district in which these deposits occur lies west of the Elkhead Mountains, north of Yampa or Bear River, and east of the lower course of Little Snake River, along whose valley near the Colorado-Wyoming line the most extensive developments have been made. Only the southern portion of the territory thus outlined is directly concerned in the present report.

The following report is the result of observations made in the early part of July, 1907, by the author, who was at that time engaged in a study of the geology and an examination of coal lands in the fields south of this district. Especial acknowledgment is due to Mr. A. G. Wallihan, of Lay, for the locations of the claims shown on the map (Pl. I), and for assistance during the progress of the work and information concerning former prospecting in the field. The author is personally familiar only with that part of the field which lies south of the Iron Springs divide, and all statements and inferences concerning the deposits north of that line or lying in the Snake River drainage basin are based on the reports of others, interpreted from a general knowledge of the whole region.

A brief description of the territory and developments along Little Snake River prior to 1895 is given in an article by E. P. Snow.[a] In

[a] Fourmile placer fields of Colorado and Wyoming: Eng. and Min. Jour., vol. 60, 1895, pp. 102–105.

1901 a dredge was set up in Timber Lake Gulch, 10 miles south of Baggs, Wyo., and operated with some success for four years, but it is now lying idle. It is said that about $70,000 was cleared up during that time, but that work was suspended with the exhaustion of the richer ground. A dry washer outfit was set up in Timber Lake Gulch (T. 10 N., R. 92 W.) during the summer of 1903. It was claimed that the machine made $20 per day on ground averaging 75 cents per yard, when the dirt was perfectly dry. The rainy season of that year prevented continuous work.[a] Recent reports state that a ditch is being constructed from Slater Creek to carry water to the Iron Springs divide, and that pipe to cover a distance of about 2 miles has been purchased and hauled into the country.[b]

In 1905 a dredge was installed in the valley of Lay Creek, on the south side of the Iron Springs divide. Since that time a small area (about 10 acres) has been worked over. Most of the delay or failure to achieve immediate results has been due, it is said, to minor difficulties in the operation of machinery and the management of the rather scanty water supply. A recent report states that the Blevins property, controlling the dredge and some 480 acres of placer filings about 7 miles north of Lay post-office, has been sold for $100,000. It is also stated that an active revival of operations in the neighboring tracts is under way, and that considerable development work is promised in this southern part of the field during the coming season.

DESCRIPTION.

The territory west of the Elkhead Mountains is a broad stretch of rolling prairie of moderate relief and monotonous topography. Geographically it may be defined as a roughly triangular area lying between Little Snake and Yampa rivers. These streams furnish the chief water supply of the district, although its eastern margin is more or less readily accessible to their tributary headwaters on the western flanks of the Elkhead Mountains. The climate, although not that of a true desert, is exceedingly dry, with but little rainfall during the summer and it is said but little snow in winter. Springs are scarce throughout the region and settlement is consequently scattering and confined chiefly to the river valleys.

The region is traversed by several well-known roads which afford access from the Union Pacific Railroad in southern Wyoming to the settlements along Yampa River in Colorado. The freighting route from Rawlins to Craig and Hayden passes through the eastern part of the district, and also furnishes the present means of communica-

[a] Information from Mr. John H. Marks, of Denver.
[b] Information from Messrs. L. Calvert and J. W. Cavendor, of Baggs, Wyo.

tion with the placer fields. A daily stage is run from Rawlins to Dixon and Baggs, on the Little Snake, whence connecting routes extend into Colorado. An old road that was formerly a regularly traveled stage route passes diagonally through the placer districts, running to the southwest from Baggs by way of Lay, and thence southward toward Meeker. This and the old Thornburgh wagon road were formerly the best-known routes of travel through this region, being the principal means of access to the Union Pacific Railroad from a large territory to the south in Colorado before the advent of the railroad lines on Grand River. Many minor wood and hauling wagon roads meander across the prairie hills and valleys, so that the region is fairly accessible in almost any part.

GENERAL GEOLOGY.

Precise knowledge concerning the structure and stratigraphy of the field as a whole is somewhat meager. It lies within the territory mapped by the Fortieth Parallel Survey, and is described in that Survey's reports and its geology mapped in the atlas accompanying them. The rocks are classed with the groups there denoted as Green River and Vermilion Creek[a] of the Eocene. The following description of the district is given by S. F. Emmons, the geologist who visited that region.[b]

> To the north and west of Fortification Peak[c] extends a low, rolling country, covered with soft, earthy material of a prevailing red color, in which no outcrops are visible. The character of the soil, however, shows that it is probably made up of decomposed beds of the Vermillion Creek Eocene. These beds are found exposed on the western face of the Elkhead Mountains, at the baylike indentation between Mount Weltha and Navesink Peak, where they consist of coarse, red sandstones, with intercalated beds of reddish and cream-colored clays and arenaceous marls. The limits of these beds are not well defined, on account of the character of the surface in this region, but their connection can be traced, over the broad plains to the west, to characteristic outcrops, in such a manner that there can be little doubt as to the horizon to which they belong. Though they present here little difference of angle with the underlying Cretaceous beds, they are probably unconformable, as they are seen to be to the westward, and the lowest beds of the series can not therefore be definitely determined. On the little Snake River they are represented by yellow, coarse, gritty sandstones containing casts of *Melania*.

Recent investigations in territory adjoining this field, both north and south of the area under discussion, tend to corroborate the general statements of these earlier reports; but, as might naturally be expected, some details of the areal distribution of these strata were generalized or overlooked entirely in the first general maps.

[a] "Vermilion Creek" is equivalent in part at least to the Wasatch as used by the Hayden Survey, and the latter name, which has priority and established usage, has been adopted for these beds by the Geological Survey.

[b] King, Clarence, Rept. U. S. Geol. Explor. 40th Par., vol. 2, 1877, p. 187.

[c] Now better known as Cedar Mountain, situated about 6 miles northwest of Craig.

As described by Emmons the whole field is underlain by sedimentary strata of loosely consolidated or readily disintegrated material. The beds observed at outcrop are variable in composition, including marls of red or variously colored and banded appearance; loose coarse-grained sandstone or sandy beds, white or of darker weathered hues; and banks of more regularly bedded shale exposed here and there. At some places the varicolored beds of marl that commonly distinguish the Wasatch ("Vermilion Creek" of King) are exposed in great scars or badland washes.

Considerable areas of beds distinctly more recent than the Tertiary strata already described are present along the southern margin of the district here considered. These deposits consist of soft, friable material, made up largely of rounded quartz grains more or less consolidated by calcareous cement, with few harder consolidated strata. They are everywhere of a chalky-white appearance. They extend eastward as far as Cedar Mountain, whose summit is composed of these beds protected by an overlying cap of basalt. They correspond to the strata of the "Browns Park group" as described by Powell and others, and are markedly unconformable on all the older strata. They occur invariably in essentially horizontal position, with every appearance of having been deposited in a lake basin of late Tertiary or possibly more recent age. Although these beds at another locality are described very briefly, and with much doubt as to their age, in the Fortieth Parallel reports, they are there included with the Green River group as shown on that geologic map. They appear not to have been recognized at that time as occurring in the territory east of Little Snake River. C. A. White,[a] who afterward studied this region, described their eastward extension and regarded these beds as equivalent to the latest Eocene strata exposed south of the Uinta Mountains, although his reasons for this assumption are not clear, and now seem to have been unwarranted by the facts.

The whole region is covered to a greater or less extent with a scattered drift whose origin seems intimately connected with the source and history of the present gold deposits. This drift is described in more detail in the following paragraphs, as it forms the material of the bars or terraces from which the gold is now derived.

The only igneous rocks that are known to occur within the field are the basaltic intrusives and outflows, which are at least as recent as late Tertiary. These basalts are of very moderate extent on the open prairies, being confined chiefly to the higher summits and ridges of the Elkhead Mountains to the east. A prominent dike known as the "Rampart" extends westward from these foothills of that range, cutting the Tertiary strata a few miles beyond the Craig-

[a] On the geology and physiography of a portion of northwestern Colorado and adjacent parts of Utah and Wyoming: Ninth Ann. Rept. U. S. Geol. Survey, 1889, p. 691.

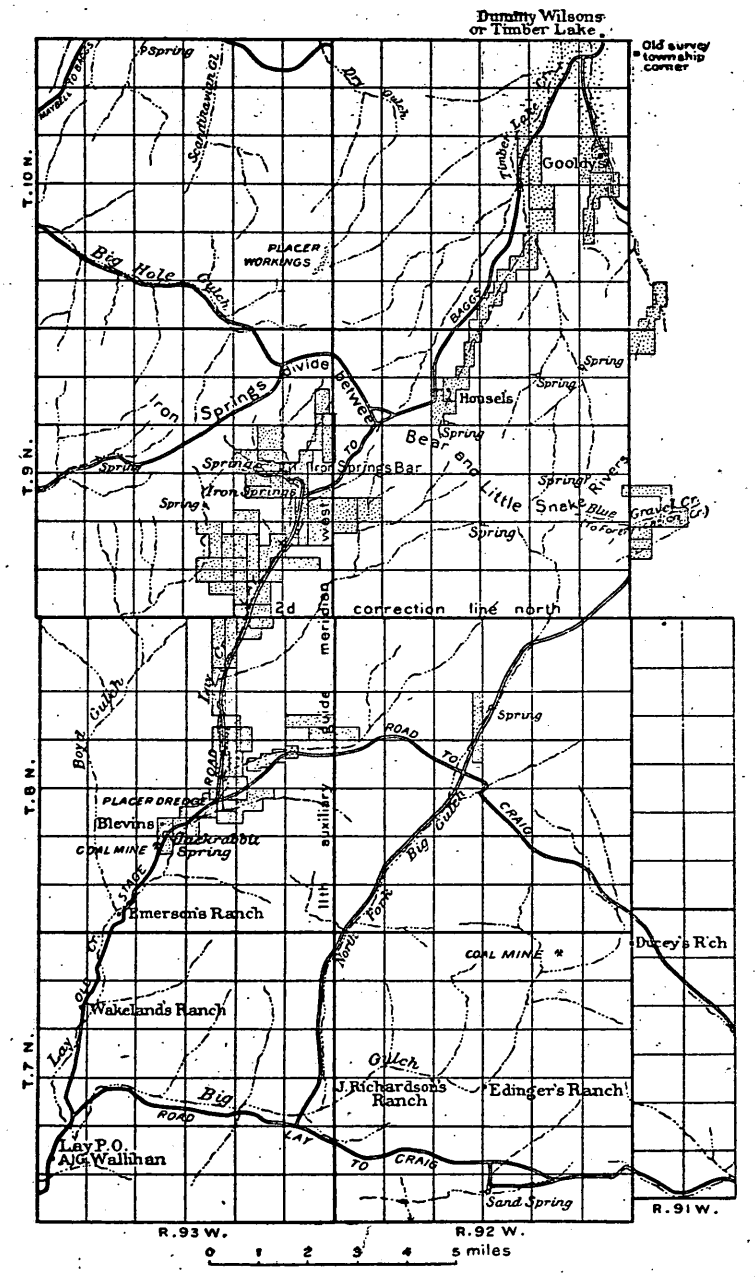
Rawlins stage road. Fortification Butte, or Cedar Mountain, an isolated peak on the southeast margin of the district, is capped by this basalt.

The geologic structure of the whole district is exceedingly simple. The strata occupy a broad synclinal trough or basin, over the greater part of which the beds lie approximately horizontal. At the southern margin of the basin the beds are tilted rather abruptly, rising over the Axial Basin anticline, just south of the placer field here described. This broad structural basin is considered as a southeastward continuation of the great structural depression known as the Green River Basin of Wyoming. The Bridger and Washakie basins as described by King are also subdivisions of this larger structural feature.

DISTRIBUTION OF AURIFEROUS DEPOSITS.

The map accompanying this report (Pl. I) is intended to outline the approximate extent and distribution of the more valuable ground as shown by the claims that have been filed on within the region. It can be seen at a glance that these claims are distributed along the drainage channels of the larger dry washes heading from the Iron Springs divide. A study of the ground itself, however, reveals the fact that the richest deposits lie on a bar or terrace ranging from 20 to 100 or more feet above the present creek bottom.

The Blevins dredge is now situated near the south end of the placer filings. A mile or so farther downstream Lay Creek enters a narrower valley cut in the tilted beds of harder and geologically older strata, and the upper bar is not readily distinguished below that point. The dredge stands on ground 20 or 30 feet above the level of the stream channel. Northward from this point along the main channel of Lay Creek the upper bench or bar rises more steeply than the stream grade itself. At Iron Springs the bar is about 70 feet above the creek and springs. As seen from its own level this bench appears to represent a former valley much broader than that of the modern drainage channels. Remnants of approximately the same elevation may be traced across the gulches to the flanks or tops of neighboring ridges. North of the Iron Springs bar the topography of the old valley level and of the main divide beyond is broad and open, a rolling, sagebrush-covered prairie. So far as can be gathered from reports of those who have prospected in the field, the gold-bearing gravels are distributed almost universally over all of this territory. It is stated on reliable authority that "pay" ground is found even on the highest summits of the main divide, and in fact pretty generally over all of that high ground. It also appears, from the selection of the located claims, that the most promising values are found on or near the so-called "bars," which as stated are thought to represent former drainage valleys. Although the sand and char-



MAP SHOWING PLACER CLAIMS NEAR LAY, ROUTT COUNTY, COLO.

Dotted areas represent claims adjusted to the resurvey.

acteristic gravels are found in the bottoms of the present streams, it seems probable that these materials are only reworkings from the higher deposits and they do not appear to be as rich as the original ground itself. Colors have been found in the bed of the creek lower down on its course, as, for instance, at Lay post-office, but not of sufficient value to attract attention. It is therefore assumed that, for the most part, modern drainage channels represent a concentration of too small a portion of the gold-bearing uplands to show important values, or else that much of the gold that may have been washed into those channels has passed on downstream, and possibly has been largely carried away.

It is probable that the auriferous deposits in the Little Snake drainage basin have the same history and origin as those in the southern part of the field. This is indicated in the following paragraph, which is quoted from the report of the Fourmile placer fields previously cited:

> The gravel beds are not, as is usually the case, in the various gulches, but form the mesa or upland and cover the entire country, the bed rock of the gravel being from 10 to 150 feet above the valley through which the streams flow to Snake River.

COMPOSITION OF AURIFEROUS DEPOSITS.

The beds composing the bars consist largely of loose white or light-colored quartz sand, in places containing coarser gravels and even larger, perfectly rounded pebbles and bowlders. Clear, glassy quartz grains, however, form by far the chief constituent of the sand. The gravel contains some clay which becomes evident on mixture with water, and clay also occurs in layers or beds somewhat irregularly distributed. Here and there it is more or less stained with iron, which gives it a rusty-brown or yellow color. More consolidated layers of conglomeratic material occur, evidently cemented by iron, but these are thought to be of local nature and of comparatively recent origin, having been derived from ferruginous deposits similar to the slimes now accumulating about the characteristic iron springs of the region. At some places, especially along the upper or head-water portions of the bars, and more particularly noticed near the Iron Springs divide, the material contains a variety of coarser pebbles or bowlders. A study of these pebbles shows them to have been derived from the following rocks:

- Red quartzite.
- White quartzite and hard sandstone.
- Conglomeratic quartzite (rare).
- White vein quartz.
- Jet black chert.
- Chert of various colors, some of it fossiliferous.
- Gneissoid granitic or felsitic rock.
- Crystalline granitic rocks (rare).
- Pegmatite.
- A feldspathic porphyry, with fine red or gray groundmass.
- Silicified wood in waterworn fragments.

The character of this material is significant, denoting as it does its origin in the older formations of the Uinta and Rocky Mountain uplifts. Lower down the valleys, notably in the ground where the Blevins dredge is now situated, the coarser pebbles are more rare and the sand is very white and of a fairly uniform grain.

BED ROCK AND DISTRIBUTION OF PAY STREAKS.

No clearly defined bed rock can be traced from place to place among the prospects that show pay dirt. In places it is pointed out to be a coarse white sand, while the overlying pay dirt is composed of similar though more clayey material, the latter probably constituting the true bed rock which has served for the retention of the gold. At other places the bed rock is said to be a mottled clay of irregular pink and blue-gray patches underlying the sand or gravel pay dirt. Evidence seems to indicate that the agency which has served to retain the gold is the clay, which occurs either in the form of well-defined beds or mixed in certain layers of the gravel. The clay readily separates in water, however, and does not interfere with the recovery of the gold in washing.

To judge from the descriptions given of values and pay streaks in a number of pits and trenches visited in the vicinity of the Iron Springs bar, as well as the present shallow digging policy at the dredge, it seems a warrantable conclusion that the values are irregularly distributed in depth throughout the body of the gravel or sand-bar deposits. Although it would thus not be strictly true to state that the values are uniformly distributed throughout the gravel, any project for the recovery of the gold will probably have to consider the handling of practically the whole of that material from top to bottom, inasmuch as the values seem as likely to be found at the grass roots as they are to occur at any definite horizon lower down.

CHARACTER OF THE GOLD.

The gold from this ground is said to be very pure, ranging from 885 to 935 in fineness, and bringing between $19 and $20 an ounce. It is of very fine grain, in small, well-rounded nuggets which are estimated to average about 1,000 to the cent. On magnification, the grains are seen to be well worn and of a rounded or nugget form rather than in flakes. An examination of some of this gold under the microscope showed a few copper-colored or reddish grains. The color was apparently contained only in cavities in the irregular grains and looked like an iron rust or stain. The statement has been made that a portion of the gold seems to be coated so that it is not amalgamated in the riffles of the dredge. No direct evidence of this condition could be obtained, however, and the suggestion is urged rather

that the wooden riffles of the dredge are probably not well adapted to the work at that place, and may for that reason fail to hold the gold.

The final concentrates that remain with the gold are notably free from the heavy black minerals such as magnetite, ilmenite, etc. In some small samples that were obtained by panning, these dark constituents formed scarcely a third of the concentrates, the remainder being made up largely of garnet and a number of clear colorless minerals. Among the latter were noted many small, perfectly formed crystals of zircon.

ORIGIN OF THE GOLD.

The gold-bearing sands and gravels appear to have been the latest deposits laid down in the region. No direct evidence is now at hand to fix the geologic time of their deposition, but they are seen to cover the eroded surface of all other recognized formations. They seem to have preceded the cutting of the present stream channels and to have been scattered widely over an older land surface which somewhat resembled that of the present day.

The occurrence of the auriferous deposits so far removed from areas of granitic rocks in place, to which it is natural to turn as the source of such material, has been the cause of much conjecture relating to their origin. The wide distribution of the gold-bearing beds over summits, divides, and valleys alike makes the determination of the means of their transportation and deposition still more complicated. Were the deposits grouped along present or past channels of the principal rivers flowing from the Park or Gore Range, it would be easy to assume that that region was the source of the material and that these streams constituted the transporting agency.

These deposits have been discussed by White in the reports of the Hayden Survey, and they are probably related or equivalent to the scattered drift denominated the Bishop Mountain conglomerate by Powell, in the report on the Uinta Mountains, and the Wyoming conglomerate by King, Emmons, and Hague, in the reports of the Fortieth Parallel Survey. The most complete discussion is given by White, who concludes that the deposition of these beds may have been contemporaneous with that of the great northern glacial drift, and suggests that they were of glacial origin. By Powell and Emmons they are believed to have been of subaerial origin, resulting chiefly from the action of rains and streams, or, according to Emmons, representing littoral or shore deposits.

The sources from which the pebbles have been derived are not difficult to trace in a general way. The wide extent of the territory thus defined, however, leaves quite as much doubt as to the actual situation of the vein deposits from which the gold has been derived.

The greater part of the pebbles are fairly characteristic of the older formations exposed along the main uplifts of the Uinta Mountains. The red and white quartzites and conglomeratic pebbles of the same class are readily distinguished as identical in composition with the "Uinta" quartzite of Powell, which forms the core and highest portion of that range. The various chert pebbles, some fossiliferous or stained in bright colors of red and yellow, as well as the black chert, are with almost equal certainty derived from the Carboniferous limestones exposed along the flanks of the same mountain range. Here and there pebbles of the limestone itself are also found. The derivation of the red or gray feldspar porphyry is more in doubt. A few granitic rocks, such as the granite, pegmatite, and related types, seem almost as certainly to have come from the other direction, or the Park Range of the Rocky Mountain system on the east. King describes some hornblendic and metamorphic rocks at the northeast end of the Uinta Range, but it is thought that no such rocks as granite or pegmatite are known there.

The sources and general trend of all the drainage of this region would more readily explain the transportation of materials from the Rocky Mountains to the east than from the Uinta Range to the west. In fact, the gravel and bowlder deposits that cap some of the elevated mesas along Yampa River are composed almost entirely of granitic rocks of such composition that they are certainly derived from the headwater streams in the Rocky Mountains. So far as is known to the author, very little gold has ever been reported from the rocks of the Uinta Range—a fact which would also tend to support the theory that most of that metal has come from the east.

It is of interest to note in this connection that a corresponding outspread of gravel and bowlders of almost identical composition, consisting of materials apparently derived from the same sources, must have taken place near the close of Cretaceous time. Evidence of this is now afforded by an extensive and continuous bed of conglomerate, marking an unconformity in the uppermost Cretaceous strata of the region, and possibly representing the orographic disturbances which produced the adjoining mountain ranges. The outcrop of this conglomerate bed may be found in the hills south of the placer field. It crosses Lay Creek near Emerson's ranch, the bowlder bed occurring immediately above a huge white sandstone stratum which dips beneath creek level at that place. The same beds may be traced continuously eastward, passing south of Cedar Mountain and crossing Fortification Creek about 2½ miles north of Craig. To the west they extend continuously for several miles to the point where they pass beneath and are concealed by the overlying "Browns Park beds." This conglomerate has been prospected to some extent, but does not appear to have attracted much attention. It might be expected to

carry values somewhat similar to those of the more recent gravel deposits, but its occurrence is limited to the narrow outcrop of that particular bed.

PROSPECTS AND DEVELOPMENT.

In 1905 a dredge was installed just above Jack Rabbit Spring, and in September of that year started operation on what is known as the Blevins property. This dredge has been worked intermittently since that date and now (August, 1907) stands near the middle of the N. ½ sec. 22, T. 8 N., R. 93 W. An area of approximately 10 acres has been worked over. The season is said to last from about April 1 until about the middle of October, after which the work is likely to be interrupted by freezing.

The water supply is rather meager, coming from Jack Rabbit Spring about one-half mile below (southwest of) the dredge. The channel of Lay Creek is normally dry and apparently no attempt has ever been made to store the winter run-off; in fact, such a project may not be feasible on account of the scant precipitation. A steam pump has been placed at the spring and the whole available water supply is raised and carried by pipe line and ditch to the working ground. When the dredge was first started much difficulty was experienced in holding the water to float the boat, but it is stated that as the dredge has advanced toward higher ground there has been a smaller seepage and less trouble from this cause. The engines at both dredge and pump are supplied with fuel from a conveniently located coal bank, which has been opened expressly for that purpose. The coal is an excellent bed nearly 12 feet thick, without seams or partings and with a good roof. It outcrops at the side of the gulch just below the spring and is readily accessible, wagons being driven directly to the face of the entry for loading. The coal, a good subbituminous grade, of lighter weight than some of the coals of the Yampa field, slacks rapidly, but burns well and gives a satisfactory heat.

The gravel bar at the dredge is low, probably 20 or 30 feet above the level of the stream channel. The pay gravel is composed almost entirely of a loose white sand with very little coarser material. Apparently no especial effort has been made to reach bed rock in the dredging ground, the digging having reached, as estimated, only 5 or 6 feet below the top of the ground. Very little appears to be known as to the nature of the underlying bed rock at that place. This is doubtless due to its rather indefinite nature, as explained on another page.

Above or north of the Blevins dredge the most important group of claims in the field south of the Iron Springs divide lies near what is known as the Iron Springs bar, in the east half of T. 9 N., R. 93 W.

The claims are located on a somewhat irregular bench or high terrace averaging 70 feet or more above the present stream channel. The bar just east of Iron Springs is about a mile long from north to south and a quarter of a mile in width, sloping southward at a grade of about 60 feet to the mile. Benches corresponding to this level appear on the neighboring ridges. The sand and gravel deposits to the north are said to rise even to the summit of the main divide. The irregular sage-covered plain affords too poor exposures for satisfactory tracing of these beds.

In sec. 14, T. 9 N., R. 93 W., a small reservoir just below the spring marks the site of some past development work. Claims here are said to have been first located by a Mr. Scrivener, who washed the narrow gulch bottom with a sluice, using the water from the spring. The claims were later taken up by a Mr. Lahr, who discovered pay gravel in the banks, and drifted in 100 feet from the bottom of the gulch, being able, it is stated, to make his living from the washings in the meantime. This drift evidently reached a depth of 30 feet or perhaps considerably more below the sand or gravel cap rock, and this fact may be taken to indicate that the gold will be found down to considerable depths in some parts of the field. The claims were later dropped and are now in other hands. An old gasoline engine used to pump the water for sluicing stands at the place. This property is said to have contained some rich pay streaks.

VALUE OF THE GROUND.

It may be assumed that the site selected for the operation of the dredge is as favorable a locality as any other in the field. Estimates made by one of the interested persons placed the value of the ground already worked over, as from 25 cents to several dollars per cubic yard. It was said on the same authority that the dredge was then standing on ground that would yield $2.40 per cubic yard.

A series of tests were conducted by Mr. Wallihan on material obtained near the Iron Springs bar, but are hardly complete enough to be considered thoroughly representative of the field. Test pans were taken from various prospects in that vicinity. The pits themselves have been dug more or less at random over the placer ground. They vary somewhat in size, at least one of them reaching a depth of 15 feet or more.

The sample taken in each case was a stricken pan containing 20 pounds of dry material. This was then panned, all of the black sands and gold being saved and the concentrates being sent to Denver for assay. The following results have been calculated from the returns of these assays, on the assumption that one cubic yard of ground will weigh 1½ tons. A set of twelve such assays showed a range in value

from 1.6 to 63.7 cents per cubic yard. The average amount of black sand was found by the same tests to be 1 ton in 368 tons of material.

It is thought, however, that the samples taken for testing are not in every case representative or an average of the whole thickness exposed in the pit. This is probably true of those samples which show the higher values, as these are very likely to have been shoveled from some particular part of the pit thought to contain the pay streaks. If this is so, allowance should be made to obtain the average grade of all the material handled.

UNITED STATES
DEPARTMENT OF THE INTERIOR
STEWART L. UDALL, SECRETARY

OFFICE OF MINERALS EXPLORATION
REGION III

DOCKET NO. OME-6202

THE JOKER MINING COMPANY

Sec. 4, 8, 9, 16, and 17
T. 9 N., R. 92 W., 6th P.M.

MOFFAT COUNTY, COLORADO

Gold

Examination Report

By

T. M. Romslo, Mining Engineer, Bureau of Mines

July 1962

GMR-6202
THE JOKER MINING COMPANY
Moffat County, Colorado

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OME-6202

THE JOKER MINING COMPANY
Moffat County, Colorado

INTRODUCTION, SUMMARY AND CONCLUSIONS

The Joker Mining Company applied for Governmental financial aid in exploration for gold on a property situated in the southern part of the Fourmile placer fields, Moffat County, Colorado. The application was received by the Office of Minerals Exploration and was assigned Docket Number OME-6202, December 7, 1961. The proposed exploration would be done in two stages, and would cost an estimated total $27,655.00. Stage I would consist of the drilling and sampling of 50 holes. Under Stage II, large samples of gravels found to contain $1.00 or more in gold would be obtained and tested in a pilot plant. The application was referred to the Field Office, Region III after attempts to obtain specific data concerning hole locations, drilling procedures, and costs were unsuccessful.

Field investigations, which were delayed until the property was clear of snow, were made by the writer May 16, 1962.

Gold placer deposits in the southern part of the Fourmile placer fields were first discovered in 1891 by Mr. Hugh Morrison. Numerous small operators, using sluices, rockers, and power equipment to work the gravels, were active in the district to 1906. Since 1906, the deposits have been worked intermittently for short periods by prospectors and small operators. The Applicant's property has been intermittently explored by numerous trenches and pits, a 225-foot long tunnel and a 110-foot deep test hole. Gold was found only in four

trenches, and sluicing of gravel from two of the trenches yielded about 150 ounces gold. Other gold production consisted of 2.7 ounces recovered during a mill test made on 33 cubic yards of gravel from one of the trenches. The total gold production from the district is unknown, but possibly does not exceed a few tens of thousand ounces.

The entire Fourmile District is underlain by Tertiary Wasatch sediments consisting of lenticular beds of sand and gravel interlayered with silt and silty clay. They crop out in the northern portion of the district. In the southern portion of the district, the Wasatch formation is overlain by a thick mantle of Recent sediments except along the deepest modern drainage channels. Deposits of placer gold are confined to the Wasatch formation. On the Applicant's property, the deposits crop out at a few places along the slopes of a gulch. They occur as narrow and thin channels of sand and gravel in a common erosional surface of an old flood plain. According to the Applicant, spot sampling and panning has indicated that the deposits contain about $1.50 gold per cubic yard of sand and gravel. Similar deposits which have been mined in other parts of the district yielded $0.20 to $1.00 gold per cubic yard.

It is concluded that exploration of the Applicant's property would not be expected to result in a significant discovery. Additional placer deposits that may be present, probably do not contain appreciable amounts of gold. If present, the deposits probably are small and sporadically distributed at average depths of not less than 50 feet below the surface. Neither exploration nor exploitation of such

deposits would be economically practicable.

Denial of the application is recommended.

LOCATION, ACCESSIBILITY AND PHYSICAL FEATURES

The Applicant's property is in the southern part of the Yampa placer fields of Colorado and Wyoming. It is situated near the head of Hensel Gulch in portions of Secs. 4, 8, 9, 16, and 17, T.9N., R.92W., 6th Principal Meridian, Moffat County, Colorado (figs. 1 and 2).

The property is approximately 20 miles northeast of Craig, Colorado, a town on U. S. Highway No. 40 and State Highway No. 13. It is readily accessible by automobile from Craig, by traveling approximately 5 miles north on State Highway No. 13, and thence 19 miles northwesterly on graded county roads to the old Hacker and Rawlins stage coach road. Proceed 1.6 miles northwesterly on the latter road to an access road that branches eastward. The access road is then followed 0.6 miles to a cabin, the only building at the property.

The property lies in a gently rolling area on the north flank and near the crest of the northwest trending Great (or Iron Springs) Divide. The area is drained principally through Hensel Gulch, a tributary to Timberlake Creek which flows northward to the Little Snake River. Altitudes in the area range from a maximum of about 7150 feet along the Divide, to a minimum of about 6850 feet in Hensel Gulch where it crosses the northern boundary of the Applicant's property. Gold placer workings are situated along the banks of Hensel Gulch (fig. 3).

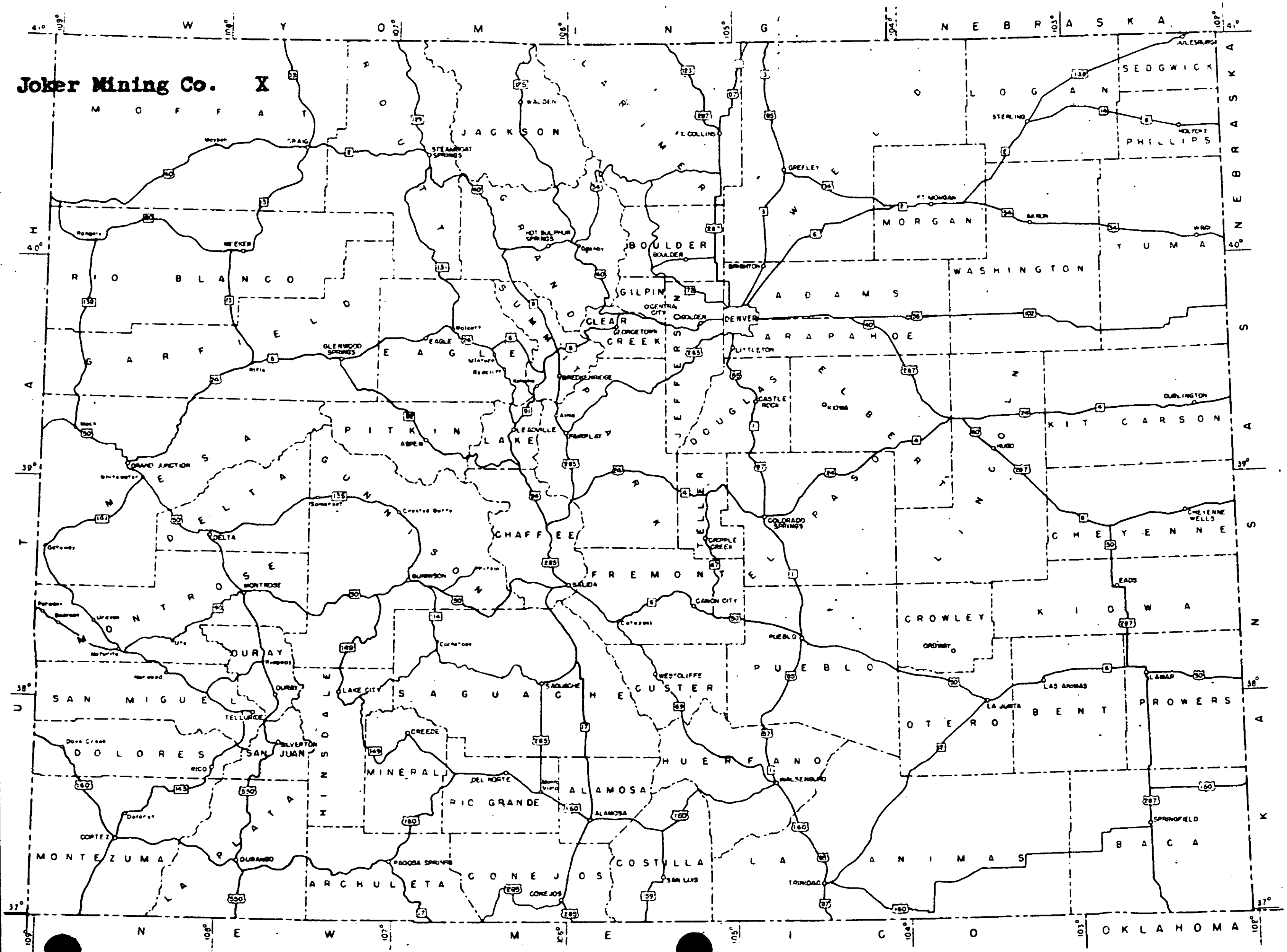


Fig. 1 General Location Map, The Joker Mining Co., Moffat County, Colorado GMX-6202 (Gold)

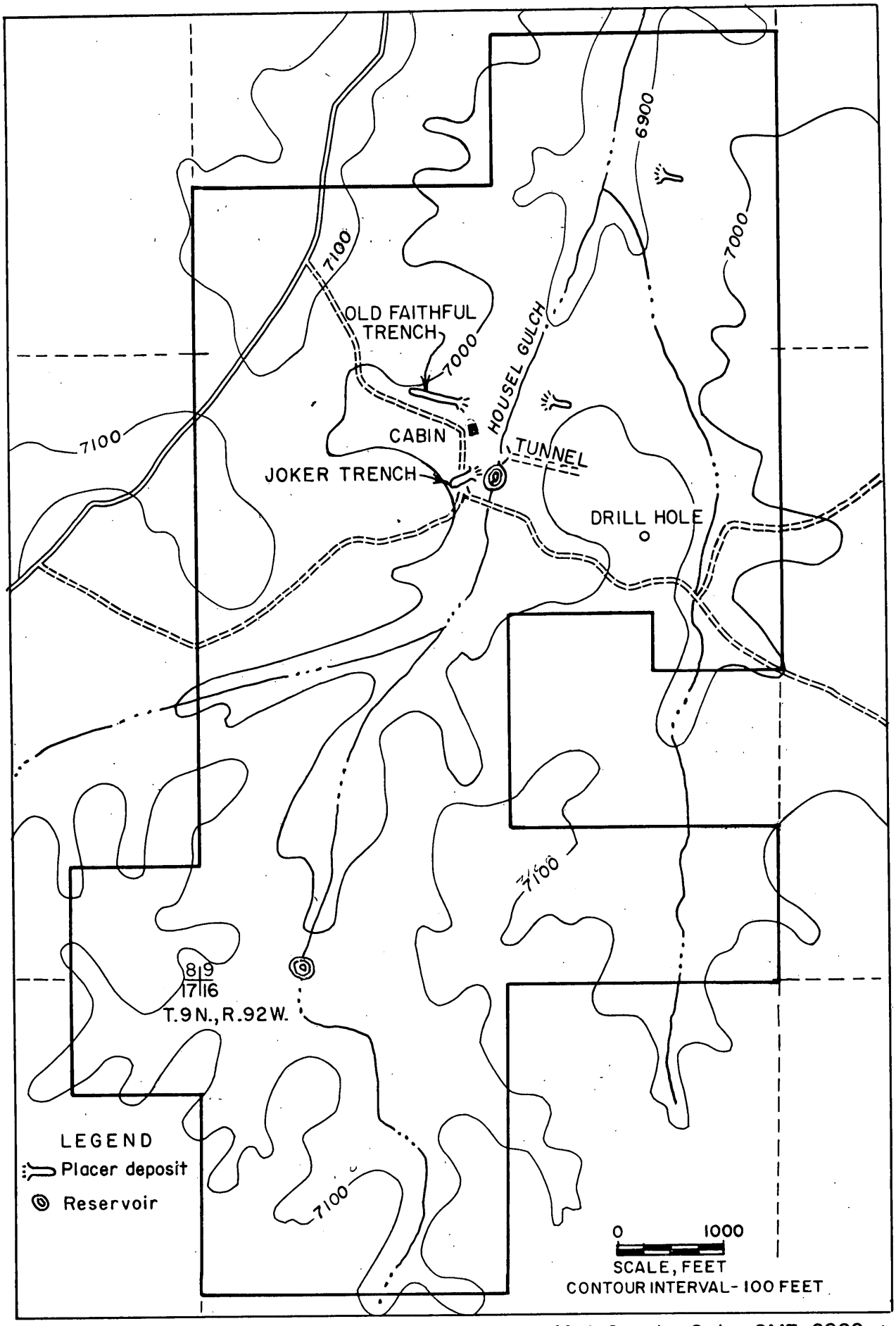


Figure 3 Property map, The Joker Mining Co., Moffat County, Colo. OME-6202 (Gold)

HISTORY AND PRODUCTION

Gold placer deposits were first discovered in the southern part of the Fourmile placer fields in 1891 by Mr. Hugh Morrison[1]. In 1895 numerous small operators worked with sluices and rockers ground containing $0.20 to $1.00 gold per cubic yard, and at least 200 people were prospecting and locating new ground[2]. In 1901, a dredge was installed in Timber Lake Gulch, 10 miles south of Baggs, Wyoming, and operated with some success for four years. A dry-washer, installed in the same gulch in 1903, operated only for a few short periods when the dirt was perfectly dry. In 1905 a dredge was installed in the valley of Lay Creek, and was operated intermittently for less than one year. Since 1906 the fields have been worked for short periods only by prospectors and small operators. Power equipment was used at a few properties.

The total gold production from the Fourmile and Lay districts is unknown. Recorded production from these two fields and the Mahns Peak district total 8,195 ounces for the period 1891 to 1923[3]. Possibly one-half of the 8,195 ounces came from the Mahns Peak district. From 1923 to 1941 the recorded production from the Fourmile and Lay district

1/ Snow, E. P., The Fourmile Placer Fields of Colorado and Wyoming Vol. 60, E. & M. J., August 3, 1895, pp. 102-104.

2/ Gale, Hoyt S. Gale, Gold Placer Deposits Near Lay, Routt County (now part of Moffat County, Colorado,) U.S.G.S. Bull. 340 1907 pp. 84 and 85.

3/ Mineral Resources, U.S.G.S. and Minerals Yearbooks U.S.B.M.

is a total 2295 ounces. Of the 2304 ounces, 62 ounces was produced from 1923 to 1931, and 2231 ounces was produced from 1932 to 1941. Recorded production since 1941, is confined to the period 1956 to 1961 when it totalled 11 ounces.

The Applicant's property has been explored for gold mainly by Mr. O. J. Farnsworth. Starting in 1934, a 12-foot deep shaft was put down, and a 225-foot tunnel was driven from the bottom of the shaft. From 1937, when the tunnel was completed, to 1961, a 110-foot deep hole was churn drilled and numerous pits and trenches were excavated. Samples from the pits and trenches were tested for uranium by the AEC in 1950 and by the DMEA (Docket DMA-1405) in 1951. They contained no uranium.

Mr. Farnsworth reported that sluicing of gravels from two trenches, the Joker and the Old Faithful, yielded about 150 ounces of gold, and that gold values were found in two other trenches. Also, that no gold was found by the tunnel, the drill hole, and the other pits and trenches. Metallurgical testing of 33 cubic yards of gravel from the Joker trench reportedly yielded 2.705 ounces gold and 0.16 ounces silver a ton. A 1000-pound sample also was tested. It contained an estimated recoverable $0.60 gold a cubic yard.

PRESENT STATUS

The property has been inactive since trenching operations were complete and all equipment was removed in September 1961.

A cabin is the only structure erected on the property.

The property has been explored mainly by the previously mentioned tunnel, drill-hole and trenches. The tunnel is inaccessible, and the trenches are partially filled with debris that obscurs the major portions of the reported mineralized zones.

EXTENT AND OWNERSHIP OF THE PROPERTY

The Joker Mining Co.'s property consists of a 998-acre tract of land (fig.3). The tract includes 418 acres in the Applicant's 11 unpatented placer claims, 160 acres in a State Mineral lease, and 320 acres of leased private land.

The Joker Mining Company, 460 Barclay Street, Craig, Colorado is a State of Colorado partnership consisting of the following persons:

A. W. Duke, 149 Bank St., Smyrna, Ga.

J. L. Chambers, Powder Springs Rd., Marietta, Ga.

A. J. Farnsworth, Craig, Colo.

O. J. Farnsworth, Craig, Colo.

L. M. Blankenship, Craig, Colo.

D. C. Blankenship, Craig, Colo.

GEOLOGY AND ORE DEPOSITS

The entire district is underlain by unconsolidated and loosely-cemented sedimentary strata of typical flood plain deposition. Sediments of the Tertiary Wasatch formation crop out in the northern part of the district. To the south, the Wasatch formation is overlain by Recent sediments except along the slopes of the deeper drainage channels (fig. 2).

The Recent sediments consist largely of loosely-cemented quartz grains. The Wasatch sediments, which locally contain gold, consist of lenticular beds of sand and fine gravel interlayered with thin beds of silt and silty clay. The sand and gravel beds are grey to yellowish in color except locally where stained a reddish-brown by iron and manganese oxides. The silt and clay lenses range in color from grey to reddish-grey.

Structurally, the strata occupy a broad synclinal trough or basin, and are essentially horizontal on the Applicant's property.

Placer gold is present at a few widely spaced places on the Applicant's property (fig. 3). It occurs principally in flat lying lenses of iron-stained gravels, and is deposited along buried drainage channels. Stratagraphically, the channels appear to be confined to a thin zone near the top of the Wasatch formation. The channels are reportedly 3 feet to 20 feet in width, a few inches to 6 feet thick, and have been followed as much as 300 feet by trenches.

The average gold value of the gravels is unknown. Small-scale wet pansering and metallurgical testing has been done on gravels from the Johar trench. Gravels from other trenches have been sluiced and panned, but no detailed sampling has been done. The Applicant claims that their tests indicated the average value would approximate $1.50 a yard. The Denver Equipment Co. tested a 1000-pound sample and a 30-cubic yard sample of gravel from the Johar trench, and recovered $0.60 and $3.15 gold per cubic yard, respectively.

PROPOSED EXPLORATION

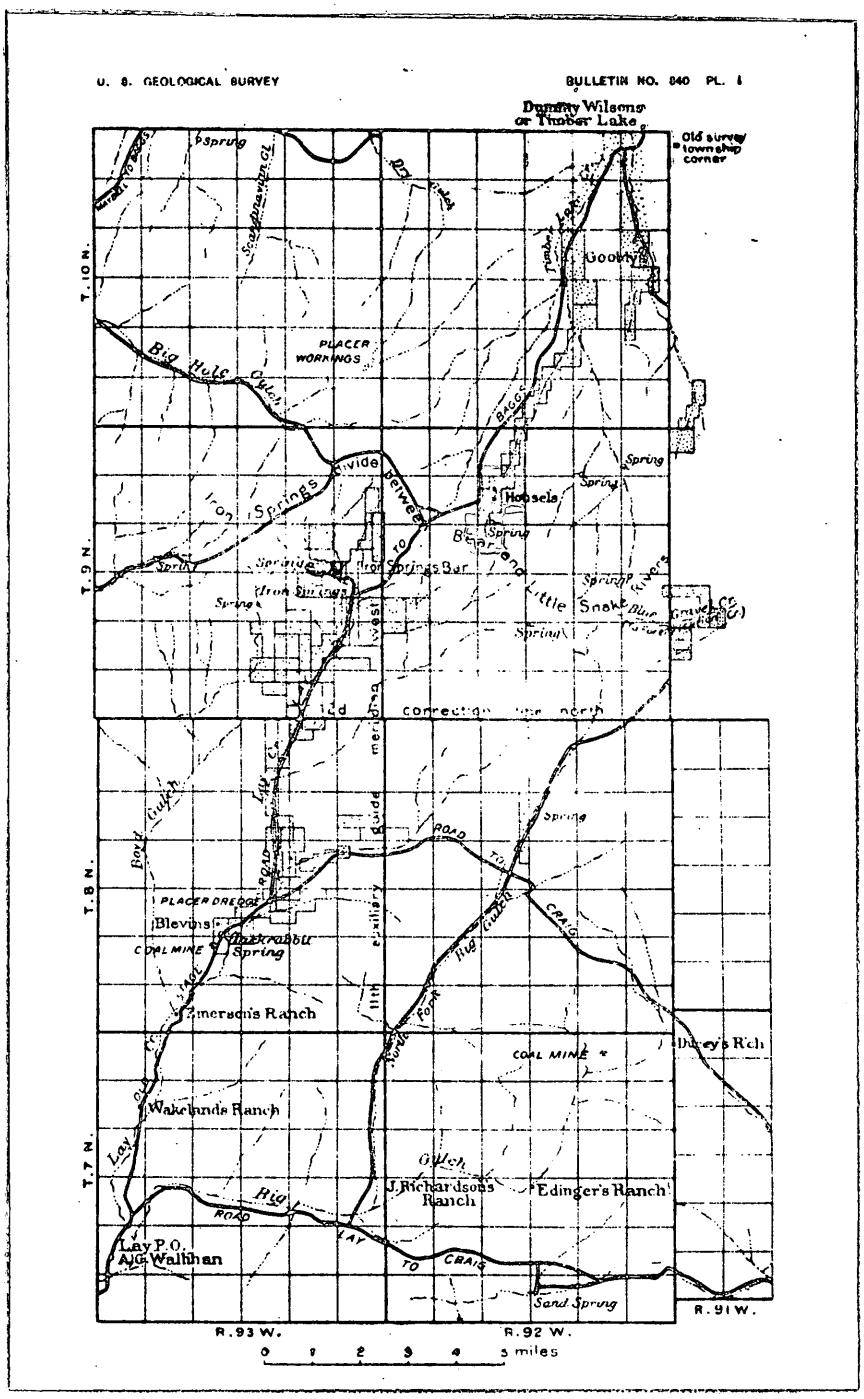
The proposed project was separately discussed with Mr. L. M. Blankenship and Mr. D. G. Blankenship, at Craig, Colorado, and with Mr. A. J. Farnsworth who was present during the examination. The discussions were confined to generalities because no maps or specific plans were available. The proposed 30 holes would be drilled at widely spaced sites in areas paralleling the drainage channels. The areas include the known placer deposits and other exploratory works which are located approximately as shown on figure 3.

Drill-hole samples would be panned, and zones found to contain gold values of $1.00 or more per cubic yard would be further tested. The additional testing would envolve large-scale sampling with a dragline or other suitable equipment, and pilot-plant testing of the samples.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded from the foregoing information that exploration of the Applicant's property would not be expected to result in a significant discovery. Placer deposits may be present, but individually they probably do not contain appreciable amounts of gold. If present, the deposits probably are small and sporadically distributed at average depths of not less than 30 feet below the surface. Neither exploration nor exploitation of such deposits would be economically practicable.

Denial of the application is recommended.



Southern Portion Fourmile Placer Fields
Colorado and Wyoming

Dotted areas - Claim areas in 1907
Red area - Applicant's property

GME-6202

Fig. 2 LOCATION MAP, THE JOKER MINING CO., MOFFAT COUNTY, COLO.