ELYSIAN SILVER HEELS MINES, INC.
BOX 400
IDAHO SPRINGS, COLORADO 80452

October 15, 1970

TELEPHONE: 567-2881
AREA CODE: 303

Mr. Harold Kirkemo
Chief, Office of Mineral Exploration
United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Dear Mr. Kirkemo: Re: OME 6824 (Gold)

Thank you for your informative letter and for providing an opportunity to clean up certain points objected to or at variance in our application.

In explanation of Paragraph #2 of your letter pertaining to the east end line of Grand Union Placer and adjacent claims thereto, we not only own the Tarryall Placer but also have a Patent of the Montag Placer, enclosed herewith marked Exhibit A(1), reserving the Mineral Rights in Iron Hill Placer, shown on the map 10" x 8 1/2" enclosed herein under Exhibit A(2).

Paragraph #3 has been given the consideration suggested in your letter in a thorough manner. Moreover, we would not consider any drilling project whatever unless it went to bedrock.

In succeeding Paragraph #4 on top of Page 2 regarding "Rights in the Land to be explored," these have been clearly established by Abstract of a merchantable title vested in Charles P. Gresser, signed hereto, as sole owner, but recently assigned to above company. No interest is shared with other parties. No stock has been sold. Neither will there be any conflict with other parties. The drilling expected to be done would lie well within our boundaries.

Beginning with a perfunctory investigation of Silver Heels Mine during the summer of 1953, I made preparations to find out all about it. It has taken me eight years to put this property together, "prospecting" it claim by claim with hundreds of assays taken, assisted by four men to do the manual labor.

In support of Paragraph #5, second on Page 2, I am enclosing an assay map compiled by Al Hack, E.M., Denver, and one by Moenke, showing the results of testing and drilling done by several parties, with a concise and succinct description of the latter's methods used.

1. The Juniper Oil Co., a small company, during their tenure of lease, May 1959 to October 1959, put down some pits an average of 14 feet, not any exceeding 21 feet, then leased a small placer machine motor, gasoline powered, with a capacity of 2 to a maximum of 5 tons per day. But they were

in such a hurry to get with it that they rented a larger motor using a 2" pipe in place of the 1", running 10 tons p.d. of material through that little placer machine and sluice boxes. Their engineer, a friend out of a job, with no experience in placer mining (as I learned later), they wanted to do something for him. Not being able to stand the slaughter any longer I terminated the lease and actually paid them to get off. It is a wonder that they recovered any values at all. The samples taken were mainly from the North Star Placer, (just below my cabin); the Montgomery Placer clear up to the West end; the Cogy Mazie Placer; Oh Promise Me Placers C & B; the Neil Placer; the Silver Heels Placer; and from only the West half of the Grand Union Placer. The men told me they counted as many as 300 "colors." But by the time they got into the plastic bag for assaying, very little of it remained. No logs were kept and the "location" of the pits was by driving down a little stake with the respective number written on it. The average value recovered was $1.11 per ton.

2. Cleveland Cliffs Iron Company, from October 1961 to September 1962, very successful in their own field, but would employ none other than their own men excepting operating the drill. They decided on a Churn Drill with a 4" pipe by Boyles Bros., based at Salt Lake City, Utah, with a branch at Denver, to do the drilling. I concurred. But during the very first forenoon the operator lost the shoe to the pipe. My protestations availed me nothing. However, the worst that could have happened was that the engineer in charge of the drilling project was their iron man - he knew absolutely nothing about gold, much less about a placer. My complaints to the Cliffs Co. that their man (Adair by name) was inexperienced and incompetent was answered that he had been making examinations for them satisfactorily for a number of years. No distinction was made between precious metals and iron.

There being a high water level below ground, most of the tests were more or less contaminated with little or no concern as to depth, all coming up in a slurry allowing for no study of either geology or metallurgy. Several engineers consulted were in accord that probably 50% of the values were recovered. In most cases they didn't know whether they drilled to bedrock or through it.

Results: No logs were being kept. The average value recovered was $1.94 per ton. By mutual consent Cleveland Cliffs and I agreed to terminate the lease.

3. McCulloch Oil Co. of California, Jan. 31, 1963, to June 21, 1967. The engineer in charge, J. B. O'Malley, Jr., having no experience in the construction and assembly of a Placer Milling Plant, made a horrible mess of it, consuming a full year's time plus $650,000. As might be expected, the McCulloch people and myself were utterly disillusioned. Now, O'Malley is not without ability. Unbeknown to McCulloch and myself he had three other projects of similar proportions going simultaneously, thus dissipating any chance of success he might have had. All of them wound up total failures.

There had been an agreement providing for exploration to bedrock, channels along the creek and on banks; then to build a pilot plant of 250 tons capacity per day. All of this was ignored. Instead, they began to construct a milling plant of 2,000 tons capacity per day predicated on a process of recovery, the result of laboratory bench work (for which I had paid). However, during

the construction of the mill, fourteen long trenches were being dozed to provide material for a 50,000 ton stockpile. McCulloch had the mill dismantled and shipped to Aspen, Colorado.

THE RESULTS of the various trenches showed an average value of $3.50 per ton. Thereafter McCulloch made no serious effort for several years to carry on a program of either exploration or mining. I terminated the lease with a big financial loss. McCulloch, however, was able to "write it off."

William F. Moenke, E.M.

Also enclosed is a Report by Wm. F. Moenke, E.M. U. Wy., with a major in geology. He was affiliated with me from May, 1958, to August, 1962, and conducted an examination of Silver Heels Mine for three succeeding summers, usually for about five months. He would stay at the guest cabin adjacent to mine - my doing the cooking for both of us. (Also other engineers had a go at it for short periods.)

The property has been extensively examined and recommended. But somehow I have not been able to have one of them go to bedrock or do metallurgical research. The property has been frightfully mishandled. For that reason I shopped around for the most suited.

Drilling Equipment

1. Boyles Bros. I would not have again, besides they are too expensive.

2. I thoroughly checked out Becker Drilling Co. equipment accompanied by an engineer and in consultation with others. Their letter to me and material quotations are enclosed herein. After considerable investigation I decided against using this drill, a rotary with hammer action, although it would be cheaper.

3. Oscar McShane, Superintendent of Drilling Operation. Last spring (during May) Mr. Oscar McShane, of San Francisco, Calif., was recommended to me as one of the best drill men in the U. S. I made a special trip out there for a conference with him and was satisfied that he is the man and to use a keystone drill. I subsequently learned that there is not more than a half dozen competent drill men in the whole U.S.A. The cost of this drilling and service is higher than that of the Becker Drill. But there is little difference between McShane's and the Boyles Bros. equipment. We feel that true samples for testing purposes are more important than cost or time.

4. Drill Holes
With reference of the number of holes that should be drilled or its limitations thereof, taking Mr. Moenke's extensive examination of the whole project into account, this could possibly be best resolved by the geologist through further study of Moenke's report and its practicable application in the field. Any drilling for placer testing should be extensive enough to warrant some kind of estimate of the values contained in the gravels.

Research Institute of the School of Mines

In view of the many disappointments I have had at Silver Heels Mines, I felt I

should have the Research Institute of the School of Mines to participate in the Exploration Project. However, after careful consideration in all its aspects, I came to the conclusion that it would, after all, be a duplication of supervision; second, add materially to the cost.

No Agreement with the Research Institute has been signed and none is contemplated.

David L. Evans, Geologist

Regarding David L. Evans, there is no committment of engagement for his services, especially this project, and he has been so advised.

However, inasmuch as there are some highly competent geologists in your own Department here, would it be possible to designate one from Federal Center to collaborate with us? I most certainly should welcome such an arrangement.

Again, may I assure you that I appreciate the opportunity to present to you a history of the true facts of the Silver Heels Mine.

Sincerely,

ELYSIAN SILVER HEELS MINES, INC.

Charles P. Gresser

Charles P. Gresser

CPG:eg

Enc.

Exhibit A (2)

Abstract Office: M-147 ENTRY No. 74 Recorder's Office: 32-409

United States of America

P A T E N T
G. L. O. #34425
Min. Cert. #4614

to

Dated: Oct. 3, 1901
Rec'd: June 24, 1904

G. A. Montag

That certaining mining claim or premises designated by the Surveyor-General as Lot No. 12669, known as the MONTAG placer mining claim, embracing a portion of Secs. 10 and 11, T. 8 S. R. 77 W., 6th P. M., Tarryall Mining District, Park County, Colorado,

(described by metes and bounds); "Expressly excepting and excluding from these presents all that portion of the ground hereinbefore described embraced in mining claim or Surv. No. 12537; containing 38.465 acres of land more or less.

SUBJECT, nevertheless, to the following conditions and stipulations:

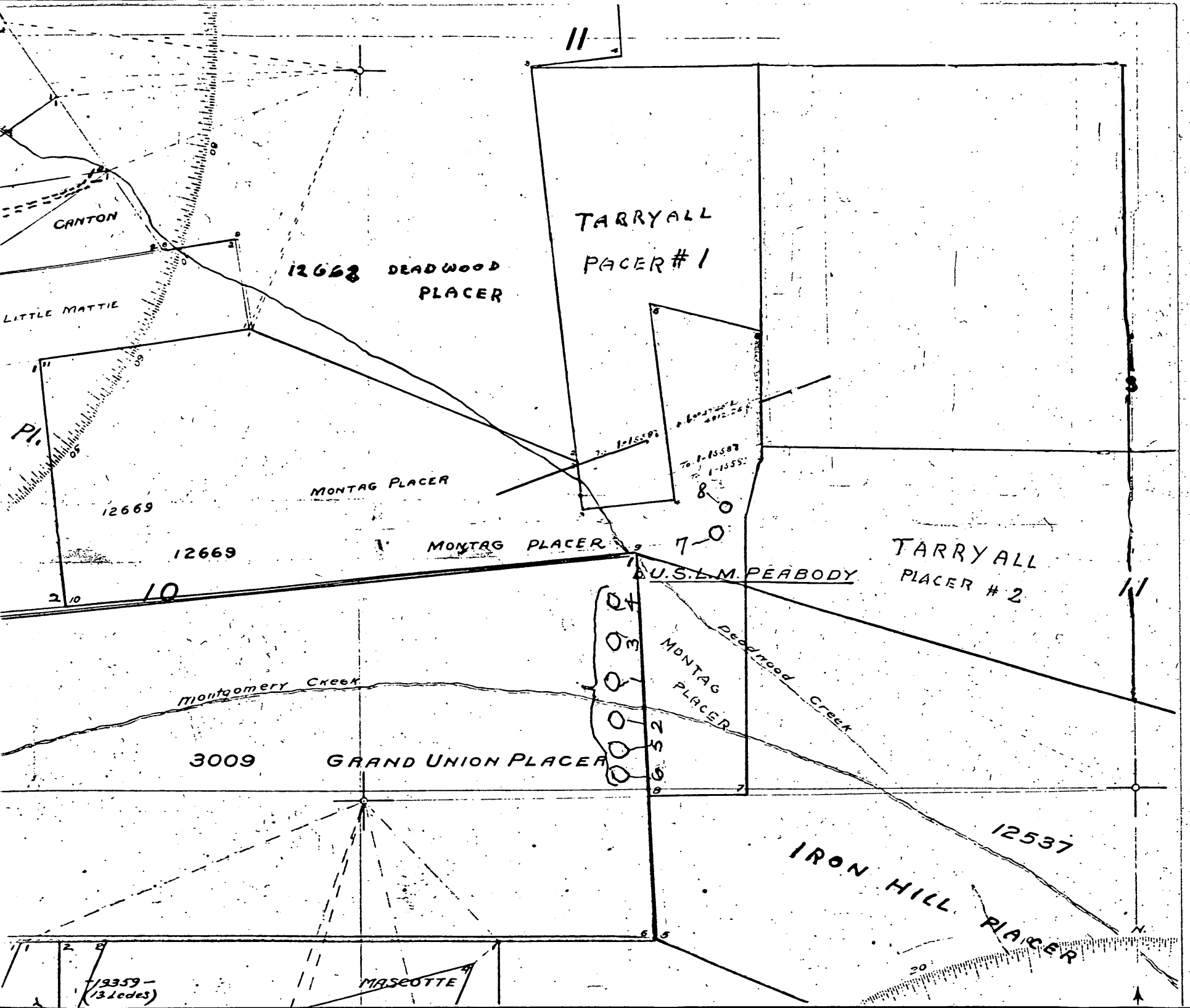
1. That the grant hereby made is restricted in its exterior limits to the boundaries of said mining premises and to any veins or lodes of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposits, which may have been discovered within said limits, subsequent to and which were not known to exist on May 17, 1899.

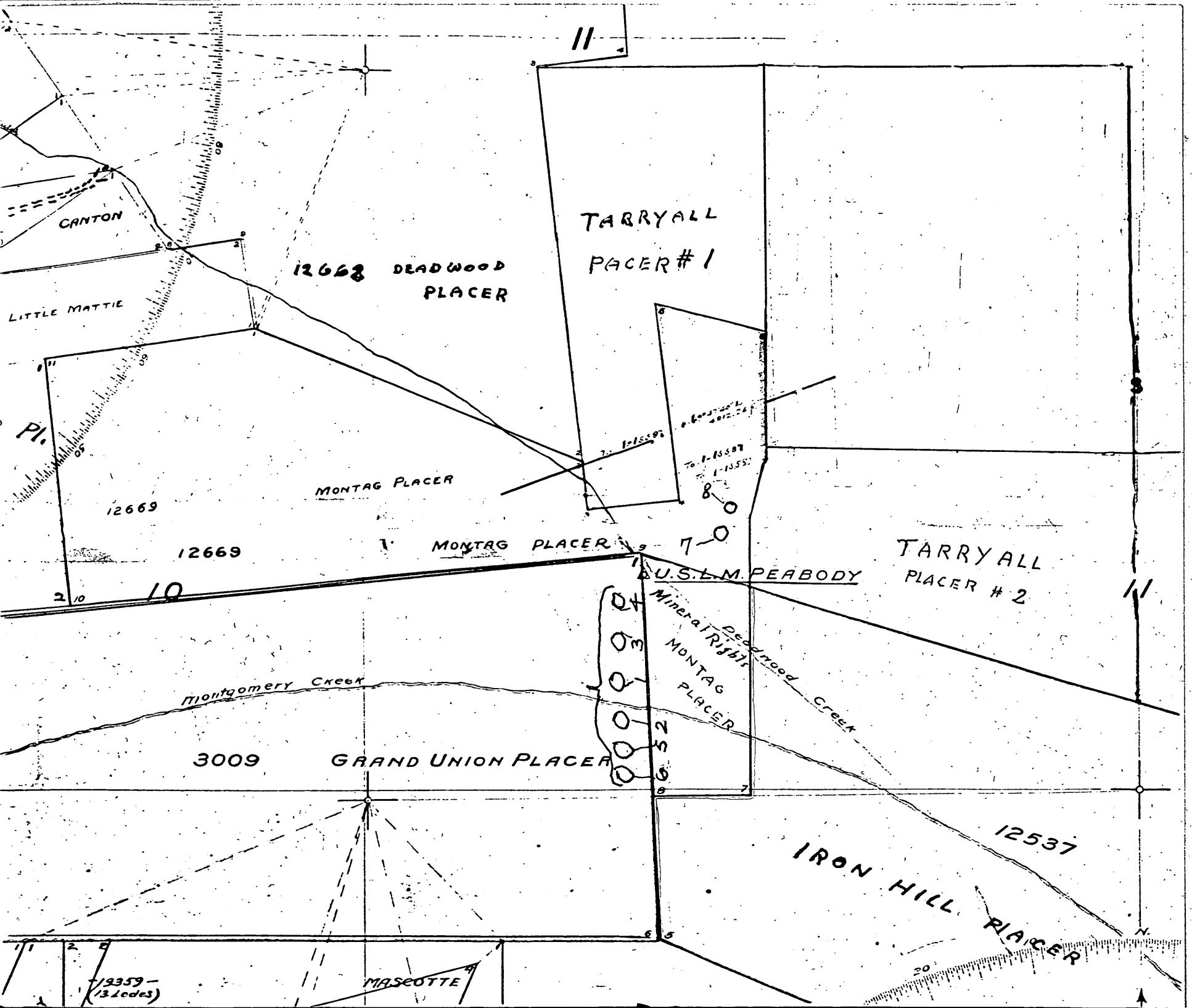
2. That should any vein or lode of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposits, be claimed or known to exist within the above described premises at last named date, the same is expressly excepted and excluded from these presents.

3. That the premises hereby conveyed may be entered by the proprietor of any vein or lode of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper or other valuable deposits, for the purpose of extracting and removing the ore from such vein, lode or deposit, should the same, or any part thereof, be found to penetrate, intersect, pass through or dip into the mining ground or premises hereby granted.

4. That the premises hereby conveyed shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs and decisions of courts, and there is reserved from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States.

5. That in the absence of necessary legislation by Congress, the Legislature of Colorado may provide rules for working the mining claim or premises hereby granted, involving easements, drainage and other necessary means to the complete development thereof.


11
TARRYALL
PLACER #1
CANTON
12668 DEADWOOD
PLACER
LITTLE MATTIE
Pl.
MONTAG PLACER
12669
12669
MONTAG PLACER
10
U.S.L.M. PEABODY
TARRYALL
PLACER #2
11
Deadwood Creek
MONTAG
PLACER
Montgomery Creek
3009
GRAND UNION PLACER
12537
IRON HILL PLACER
12359-
(13 Lodes)
MASCOTTE


11
CANTON
LITTLE MATTIE
12668 DEADWOOD PLACER
TARRYALL PLACER #1
Pl.
MONTAG PLACER
12669
12669
MONTAG PLACER
U.S.L.M. PEABODY
TARRYALL PLACER #2
10
11
Mineral Rights
MONTAG PLACER
Deadwood Creek
Montgomery Creek
3009 GRAND UNION PLACER
12537
IRON HILL PLACER
12359 — (13 Lodes)
MASCOTTE

OME 6824.
Silver Heels Mines

ELYSIAN SILVER HEELS MINES, INC.
P. O. Box 400
Idaho Springs, Colorado 80452

OME-6824
Silver Heels Mines

becker

November 20th, 1969

Mr. Charles Gresser
Box 400
Idaho Springs, Colorado 80452

Dear Mr. Gresser:

Your request for information pertaining to the Becker equipment is much appreciated. We welcome the opportunity to become acquainted. Enclosed are brochures along with other descriptive literature pertaining to the Becker Hammer Drill.

I have also taken the liberty of sending you brochures covering our latest unit, the Becker CSR (Center Sample Rotary) Drill. You will find this drill is most suitable for drilling bedrock formations, whereas, the hammer drill is designed for drilling and sampling all alluvial and unconsolidated formations.

The work in which you presently have in mind seems like an ideal application for our equipment.

All of our drilling equipment is available under contract agreements in the U.S.A., whereby we will supply all equipment and personnel for a specific drilling job. The Becker drills are also available for purchase and lease.

We sincerely hope this literature will be helpful to you in accessing our drills. If there is anything in this literature that is not clear to you now or at anytime, it will please us if you will contact us about it. We lookforward to hearing from you again.

Yours very truly,

W. R. Becker

WRB:bb

BECKER MANUFACTURING AND DRILLING INC., 8145 East 39th Avenue, Denver, Colorado 80207 • Phone (303) 388-0829

becker

MR. CHARLES GRESSER

ESTIMATED PERFORMANCE AND COSTING USING THE BECKER HAMMER DRILL AND 6 5/8"OD x 4 7/16"ID DOUBLE WALL DRIVE PIPE.

ASSUMPTION

Average hole depth	64 feet
No. of holes	100
Approximate alluvial footage	6,400 feet

COST OF DRILLING

	@ 30'/hour	@20'/hour	@15'/hour
MOBILIZATION & DEMOBILIZATION	$ 300.00	$ 300.00	$ 300.00
TRAVELLING TO & FROM DRILL SITE			
24 days @ 1 hr/day @ $30.00/hr	720.00		
36 days @ 1 hr/day @ $30.00/hr		1,080.00	
47 days @ 1 hr/day @ $30.00/hr			1,410.00
DRILLING AND SAMPLING			
216 hrs. @ $46.00/hr	9,936.00		
324 hrs. @ $46.00/hr		14,904.00	
423 hrs. @ $46.00/hr			19,458.00
FOOTAGE DRILLED			
6,400 feet 2 $2.00/foot	12,800.00	12,800.00	12,800.00
AUXILIARY AIR COMPRESSOR			
Mobilization & Demobilization	460.00	460.00	460.00
Rental - 29 days	701.50		
Rental - 43 days		1,196.00	
Rental - 57 days			1,403.00
Fuel @ 5 gal/hr @ 20c/gal	216.00	324.00	423.00
TOTAL COSTS	$25,133.50	$31,064.00	$36,254.00
COST PER FOOT	$ 3.93	$ 4.85	$ 5.66

NB

No allowances for standby time have been included in this estimate.

No rotary tri-cone rock bit drilling has been included in this estimate.

becker

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NB

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No rotary tri-cone rock bit drilling has been included in this estimate.

becker

Transportation for the compressor from Denver to the drill site and return to Denver is expected to cost approximately $400.00. Fuel consumption for the compressor will be from 5 to 8 gallons per hour.

M. FUELS AND LUBRICANTS: Becker will supply all necessary fuels and lubricants for the drilling equipment.

N. SAMPLING: Becker will provide a cyclone and buckets for collecting the samples. Mr. Gressor will be responsible for logging the soil formations as well as bagging, marking and handling the samples, however, the Becker crew will assist whenever convenient. Mr. Gresser will supply sample bags and/or containers.

O. ACCOMODATIONS: Becker will be responsible for providing food and lodging for the Becker personnel.

P. BREAKDOWN: No charges will be made for the time drilling operations are suspended due to breakdown of the Becker equipment.

Q. DRILL REPORT APPROVAL: Becker will complete a daily drill report each day summarizing the days activities. Mr. Gressor or his authorized representative will approve this report by signing. Upon signing, the quantities of the report shall become binding on both parties.

R. PAYMENT: All invoices rendered are due upon receipt. A 1% per month interest charge will apply to all balances remaining unpaid on the 10th of the month following receipt of invoice.

S. COMMENCEMENT: Depending on the snow conditions at the drill site, drilling is expected to start the latter part of May, 1970.

Becker will be pleased to undertake this work at the following rates:

1. MOBILIZATION AND DEMOBILIZATION: For the equipment and personnel at the rate of $1.50 per mile. Computation of mileage shall be the lessor distance from Denver, Colorado, or nearest available source to the first drill location and from the last drill location to Denver, Colorado, or the next nearest job location.

2. TRAVELLING: For time driving to and from drill site each day the rate of $30.00 per hour will apply.

3. DRILLING AND SAMPLING: At the rate of $46.00 per hour plus $2.00 per lineal foot drilled using the double wall drive pipe and $46.00 per hour plus $2.50 per lineal foot drilled using a rotary tri-cone rock bit. The hourly rate will apply from start of shift until that shift is complete with the exception of breakdown time.

4. STANDBY: (Awaiting instructions from client, towing, etc., which is beyond the control of Becker) At the rate of $46.00 per hour.

BECKER DRILLS INC.

By J. R. Becker

72875

7. COST ESTIMATE SUMMARY

Also No. 6

2750' $34,375 $38,500

Drill 50 holes with Churn Drill to bedrock, average 55 feet, 7 1/2 inch OD by 6 inch ID, $12.50 per ft. to $14.00	$36,525. = approx av. $13.25 between $14/ft.
Resident Superintendent, 2 mos. @ $75. per day plus $16. per day expenses = $960 = $4500 = $5560 total	4,550.
D-8 Dozer, 2 mos. @ $2,500. per mo.; rental for access road	5,000.
Lubrication and fuels for dozer	1,800.
Dozer Operator, 2 months @ $700. per mo.	1,400.
Loader for loading the 6-inch cores, lease 1 mo. @ $350.	350.
Operator for loader, 1 mo. @ $635.	635.
Dragline and operator, 2 weeks @ $30. per hr. for access road	2,500.
Pickup truck - lease 2 months @ $500. per mo.	1,000.
Operator for pickup, 2 months @ $500. per mo.	1,000.
Assaying cores, 250 @ $6. ea.	1,500.
Office and General Administrative Expenses, 2 mos. @ $500. per month	1,000.
Analysis and Evaluation of cores	1,250.
Geologist final report	1,000.
Hauling: including Churn Drill (12 tons), Oil, Gas, Insurance and Taxes (Social Security)	4,490.
TOTAL	$64,000.

Churn Drill needed for

Time required about two months

EXHIBIT NO. 7

BREAKDOWN OF APPLICANT'S MONTHLY COSTS:

Drill 25 holes with Churn Drill to bedrock, average 55 feet, 7 1/2 Inch OD by 6 Inch ID, $12.50 per ft. to $14.00	$18,260.
Resident Superintendent:	
This employee will supervise all phases of the project; he will direct all office and business activities he will direct all field activities, including surveying and geological mapping. He will supervise daily advance measurements and the locating and logging of drill holes. He will direct the preparation of samples, including cores, for assay. He will direct the preparation and execution of survey progress and geological maps. He will make periodic visits to the project to check all performance work specifications. He will have a liason position between OME engineers and the applicant. He will be in charge of all technical matters, including periodic reports.	2,275.
D-8 Dozer	2,500.
Lubrication and fuels for dozer	900.
Dozer Operator	700.
Loader for loading the 6-inch cores, lease 1 mo. @ $350.	350.
Operator for loader, 1 mo. @ $635.	635.
Dragline and operator, 2 weeks @ $30. per hr. for access road	2,500.
Pickup truck, lease per mo.	500.
Operator for pickup per mo.	500.
Assaying cores, 250 @ $6. ea.	750.
Office and General Administrative Expenses, per mo.	500.
125 Ore Sacks @ .84 ea.	105.
Hauling: including Churn Drill (12 tons), Oil, Gas, Insurance and Taxes (Social Security)	2,245.
TOTAL ESTIMATED APPLICANT'S MONTHLY COSTS	$32,720.

REPORT ON THE

SILVER HEELS GROUP OF PLACER CLAIMS

ELYSIAN SILVER HEELS PROPERTIES

By W. F. MOENKE, E. M.
Reg. Prof. Eng.

SEPT. 1959
July 1961

OME REPORT 6824

Submitted by:
Charles P. Gresser, October 29, 1970

TO = Charles Gresser
Box 400
Idaho Springs, Colorado
80452

REPORT ON THE

SILVER HEELS GROUP OF PLACER CLAIMS

BEAVER-TARRYALL MINING DISTRICT

PARK COUNTY, COLORADO

By W. F. MOENKE E. M.
Reg. Prof. Eng.

Sept. 1959

LOCATION:

The Silver Heels group of placer claims is located in sections 9, 10, 15 and 16, T8S, R77W in northwestern Park County, Colorado. More particularly, the claims cover the lower north slope of Mt. Silver Heels and the headwaters of Montgomery Creek. See attached map for details.

Como, an old railroad town with a population of about 50 people, is connected with this property by a graded road, the distance being eight and one-half miles. Como is 80 miles from Denver and 8 miles from Fairplay, the county seat of Park County.

Markets, Timber and Power:

All mining equipment and supplies are obtainable in Denver, Colorado. Dimension lumber can be obtained from local saw mills and mine timber is available on the property.

Most convenient power will be gasoline or diesel.

IMPROVEMENTS:

Graded roads cover practically the entire property and good commercial cars can negotiate the grades. However, a jeep is the most practical car for all around use.

A 12 x 36 foot, well constructed cabin with guest room is located on The Star of the North placer claim at about the center of the property and a few feet from Montgomery Creek where water is available the year round for domestic and placer purposes.

There are many shallow shafts and tunnels over the entire property which give information as to the depth and kind of ground material in the placer area. These openings show the original rock from which, by erosion and glaciation, the placer ground was derived.

PROPERTY:

The property consists of the following:

PATENTED CLAIMS

Montgomery placer	U.S. Survey #15700	133.7 ac.
The Star of the North	" 16205	20.0
Grand Union Placer	" 3009	127.0
Morning Star	" 17903	10.0
Neil-north half	" 17745	5.0
	Total patented	295.7 ac.

UNPATENTED CLAIMS

Silver Heels placer A		18.5 ac.
Silver Heels placer B		154.0
Silver Heels placer C		10.0
Oh Promise Me placer A		20.0
Oh Promise Me placer B		13.0
Cogy Mazie placer		18.0
Lucky Strike placer		20.0
Bull of the Woods		20.0
	Total unpatented	273.5 ac.
	GRAND TOTAL	569.2 ac.

GEOLOGY:

The geology of the Silver Heels property and the surrounding area is well described in the following U.S.G.S. publications:

U.S.G.S. Bulletin #928A by Singewald
U.S.G.S. Bulletin #955 by Singewald

Colorado Geological Survey #31 by Muilenburg

These publications are available in the Denver Public Library and should be consulted for more detailed geology than will be given in this report.

The following is a brief description of the rocks, minerals and geological events of the Silver Heels property:

The oldest host rocks, consisting of shales, sandstones and limestones, were laid down in the ocean waters during the Pennsylvania-Permian era. These beds were tilted up with the creation of the Rocky Mountains and at present the beds dip at about 40 degrees to the east and the strike is northeasterly. During late cretaceous and early Tertiary time monzonite porphyry layers were intruded between the above mentioned layers of shales, sandstones and limestones. This not only made the host rock brittle but caused openings through which the later mineralizing solutions permeated and deposited the ores. Later during Tertiary time a quartz monzonite blowout occurred practically in the middle of the area now occupied by the Silver Heels property. Mineralizing solutions followed this blowout and filled the openings with chalcopyrite, pyrite, lead and zinc ores. Gold and silver is found in all the ores.

About 5 square miles just north of Mt. Silver Heels are thusly mineralized. There are many good sized veins crossing one another but probably most minerals are disseminated throughout the entire mass of 5 square miles. The pyrite and chalcopyrite which contain the gold and silver has been highly oxidized, thus releasing the gold and silver and oxidizing the pyrite to hematite and limonite which gives the red and yellow colors of the rocks so prominently exposed on the north side of Mt. Silver Heels and the surrounding area.

To disintegrate and move these rocks with the minerals there occurred two periods of glaciation: first the Illinois and later the Wisconsin glacier. Both glaciers covered approximately the same area. Remains of the Illinois glacier such as terminal moraines were obliterated by the later Wisconsin glacier. However the outwash from the earlier Illinois glacier is found scattered for many miles over South park and has been placered for gold. The rocks in the Illinois glacier are more highly decomposed and disintegrated than those of the Wisconsin glacier. The Illinois glacier, having produced gold in past placering, no doubt left considerable gold in the ground covered by the Silver Heels property.

There are 8 terminal moraines left by the Wisconsin glacier, scattered over a distance of 3-1/2 miles from Mt. Silver Heels to the Fortune placer, being 3 miles down Tarryall Creek from the Star of the North placer. The Fortune placer was probably the largest in the area and the rock material apparently in the terminal moraine came all from

the north side of Mt. Silver Heels. The Peabody placer consisted of the outwash from the Fortune area. Going up Tarryall Creek there are 3 smaller terminal moraines as far as the junction of the Deadwood and Montgomery creeks. Two placers, the Hausclaus and the Ironwood, operated in this area. From the junction of the Montgomery and Deadwood creeks up Montgomery Creek and ground covered by the Silver Heels property there are remains of 4 terminal moraines, the last or most westerly is on the east line of the Star of the North placer claim.

The rock material of the moraines consists of much decomposed and fine material derived from the Pennsylvania-Permian formations of shales, sandstones and epidote vein material which in many assays shows more than an ounce of gold. Most of the boulders are of monzonite porphyry, well rounded from wear and are less than 50% of the total material. It appears that most of the original mineralization took place in the softer Pennsylvania-Permian rocks and with its almost complete disintegration much free gold is released.

From the foregoing it is apparent that with 8 movements of the glaciers over the area in Montgomery gulch much gold must have been removed from the rocks and left deposited in the present bed rocks. Much of the Montgomery Creek bed is composed of soft shales and sandstone which acted as a gold catcher.

The Liebelt and Deadwood placers were worked up Deadwood Creek. The Liebelt material consisted of terminal moraine material brought down from the area north of Montgomery Creek. The Deadwood placer was in the outwash from the Liebelt. The Liebelt placer is reported to have been a gold producer. From surface inspection the material in the Liebelt placer came from the same source as is now found on the slopes north of Montgomery Creek and now covered by part of the Silver Heels property.

The placer ground covered by the Silver Heels property is divided into three classes:

1. The stream bed rock extends from the east line of the Grand Union placer up Montgomery Creek for 6000 feet to the west line of Cogy Mazie claim. The average width is 450 feet and depth is about 13 feet. Using these figures a conservative estimate gives placer material of 1,400,000 C.Y. The stream bed rock from west line of Cogy Mazie to the junction of Purgatory Creek with Montgomery Creek shows an area of 2600 feet in length, 100 feet average width, and test holes show a depth of about 10 feet. The placer material in this area amounts to about 100,000 C.Y.

2. Terminal moraines: There are 4 terminal moraines up Montgomery Creek covered by the Grand Union, Cogy Mazie, Oh Promise B, Neil, Silver Heels Placer C and eastern part of The Star of the North placer claims. An estimate of the placer material amounts to about 2,000,000 C.Y.

The north portion of the Montgomery placer, Silver Heels placers A and B, Morning Star and Oh Promise Me placer A cover the north slope of Montgomery gulch. The placer material here is sloughed off material from terminal moraines. Material from this area made up the Liebelt placer ground and the outwash from the Liebelt was mined in the Deadwood placer. These past successful operations should help to prove the potential value of this particular area.

3. The Fan-shaped outwash from the erosion of Amethyst gulch, as shown on the map and which is covered by the Star of the North placer, should be considered as a great flume 3000 feet long in which the rock was ground up and then thrown in one huge pile without much sorting-out of the gold. This worn down material was at first caught up behind the large terminal moraine a few hundred feet east of the cabin, and from inspection not much of the material was washed down Montgomery Creek. In other words, all the gold transported down Amethyst Gulch should still be in this fan-shaped outwash. That portion of the Star of the North south of the line joining the corners #6 and #3 is full of large boulders and should not be considered placer ground. The material in this fan-shaped deposit has a very yellowish color, is very much decomposed and most of it is apparently from the Pennsylvania-Permian shales and sandstone. This deposit has been washed down from the Amethyst gulch by snow and rain water after the glaciers had vanished. Estimates are that the glaciers existed about 30,000 years ago, so the snow and rain waters have had a long time in which to work on this deposit. Estimated placer material is about 1,200,000 C.Y.

The placer ground on the Lucky Strike and Bull of the Woods claims should be classed with the above fan-shaped deposit, as it is material washed from the north slope of Mt. Silver Heels. Estimated placer material in these two claims is about 600,000 C.Y.

PLACER TESTS:

For several months a bulldozer was used to make roads and cuts while a backhoe dug holes for sampling.

The locations of the samples are shown on the map together with values in cents per cubic yard. The samples were panned down so that only black sand (magnetite) remained. Mercury was used to pick up the gold.

For this report locations for samples were selected with the purpose of giving the most representative values with the least cost and to see if a general trend of such values could be established in accordance with expectations. Obtaining such promising values as can be noted - no attempt was made to get an independent sample of the lowest 5 feet over the bed rock or a few feet in the bed rock. 4 backhoe holes and two pits have proven that the stream bed is not less than 10 feet in depth. With much of the bed rock consisting of the softer Pennsylvania-Permian rocks it can be assumed that good gold values will be found in them and thus enhance the values as shown on the map. The terminal moraines mentioned before, while being pushed ahead of the glaciers, no doubt left much gold on the bed rock.

From past experience, when testing the sampling shown on the map or if testing is made to find average values for placering, the following suggestions are made: Most of the samples can be obtained by hand, digging holes in the sides of the banks exposed by running water. This is true especially where cuts through the terminal moraines are found. In the creek bed proper and in the fan-shaped deposit on the Star of the North a backhoe with about 18 foot depth and on caterpillar tracks would be sufficient. A drag line bucket on caterpillar tracks could also be used. It doesn't seem necessary to dig pits to establish average values on this property, thus eliminating costly test pitting. By using a backhoe or drag line a further suggestion is made that testing of ground can be made with a long-tom rocker instead of panning. If panning of samples is done be sure to have an experienced panner. A few of them are available in the area.

Sampling to date shows there is only a foot or two of worthless overburden material thus lessening expense in placering. Some of the area on the Montgomery, The Star of the North, Lucky Strike and Bull of the Woods has been logged and the larger trees have been removed. The remaining trees should not give much trouble while placering.

Samples

As shown on the map the following samples were taken and tested. Original material was panned until only black sand (magnetite) remained. Gold was picked up with mercury.

Sample No.	Cents per Cu. Yd.	Remarks
A	28	From 10 foot churn drill hole 150 ft. N. E. from Link house. Sloppy mud. Value probably low. Bed rock depth not less than 10 feet.
B	14	20 feet N. W. of sample A. 2 foot cut in creek bed mixed with terminal material from cut in bank 50 ft. S. E. of sample A.
C	32	From backhoe hole in creek bed 75 ft. W. of old mill foundation. Average of 10 ft. bed rock. Hole shows upper 5 ft. stream gravel. The 6 inches of peat moss and lower 5 ft. a compact blue clay. Blue clay shows .01 to .02 oz. gold by assay without panning.
E	5	300 ft. down creek from mill foundation, So. side of Montgomery Creek, 8 ft. above creek, near base of large terminal moraine.
EA	49	100 ft. So. of E and 40 ft. higher near top of moraine.
H	62	100 ft. So. of backhoe cut W. of beaver dam on Grand Union Top of creek bed N. side. Several nuggets match head size.
Q	66	Mont. placer, 500 feet W. of bridge, old 10 ft. pit, average of dump. Bed rock sample.

Sample No.	Cents per Cu. Yd.	Remarks
S	51	Mont. Pl. - 150 W. of sample Q. Near bottom of bank. Nuggets.
T	55	Mont. Pl. - 150 ft. W. of sample S. Bottom of fan-shaped wash. Little nuggets.
V	40	Lucky Strike. Near N. end line. Eroded material from the north slope of Mt. Silver Heels.
51	59	Star of the North pl. - 100 ft. E. of bridge, cut in S. bank. Bottom of outwash mat.
M	110	Cogy Mazie-4 ft. so. side of creek, 150 ft. E. of old Cogy Mazie tunnel.
64	111	Grand Union-red bank N. of road to Link House. This sample is from natural layer of Penn.-Permian formation in place. Rock is highly oxidized and crumbled. This is a sample of original rock from which placer material is derived. It was panned with value as given.
53	974	Silver Heels placer C-200 ft. east of bridge, So. bank cut. Lower part of fan-shaped mat.
Xa	158	Silver Heels Pl. C-Across creek from old Vickery mill. This is fan-shaped material.
W	81	Oh Promise Me Pl. B-100 ft. So. of creek at break of slope.
53A	148	Star of the North-50 ft. W. of old Vickery mill, So. bank cut.

Sample No.	Cents per Cu. Yd.	Remarks
54	10	Montgomery Pl. -N65 deg. W from cabin and 75 ft. downhill from lumber road to lumber cabin. No. of creek, slough 75 ft. above creek.
56	23	Mont. pl. - SW of sample 54 300 ft. from sample 54. North slope slough material.
57	13	Mont. Pl. - north of Mont. Pl. south line near Cor. #1 of Lucky Strike. Top of fan-shaped mat.
60	133	Star of the North Pl. - from old 10 ft. pit 50 ft. from bridge NW. Average of 10 foot stream bed.
61	47	Mont. Pl. -150 ft. W. of bridge, cut in So. bank. This is bottom of fan-shaped material.
55	80	Neil claim-cut in So. bank. This is part of fan-shaped material.
71	85	Cogy Mazie-75 ft. down from old tunnel, so. side bank cut about 6 ft. above flume of creek bed.
65	750	Mt. Pl. -200 ft. So. of creek near Cor. #3 of Mont. Pl. -Cut on top of fan-shaped material.
66	8	Mont. Pl. - about 600 ft. N. E. from lumber cabin, a hollow road cut.
77	21	Grand Union Pl. -from 8 ft. cut on top of terminal moraine a few hundred ft. W. of beaverdam. This is terminal moraine material.

Sample No.	Cents per Cu. Yd.	Remarks
78	32	Cogy Mazie Pl.-So. bank 6 ft. above old flume and midway between samples nos. 71 and M.
79	20	Grand Union-So. side of creek bank and 50 ft. W. of sample 77.
80	44	Grand Union-From old backhoe pit, blue clay forming the lower 5 ft. of creek bed. Original material assays .01 to .02 oz. per ton without panning, and is considered all free gold. This is considered a check on the 44/Cy as panned.
63	38	Grand Union Pl. from bank south of old mill foundation. Depth 2 ft. Terminal moraine material.
25A	15	Silver Heels Placer B - at end of new road or NE end line of Morning Star claim-Hole 6 ft. deep. Terminal moraine material.
26A	9	Silver Heels Pl. B-300 ft. NE of sample 25A. Terminal moraine mat. 30 inch hole.
27	882	Silver Heels pl. B - 300 ft. NW of sample 26A. 30 inch hole, moraine material.
28	13	Silver Heels pl. B-300 ft. NE of sample 27. 44 inch hole. Terminal moraine material.
27A	30	30 inch deep - 200 ft. west of sample 27. Silver Heels placer B.

Sample No.	Cents per Cu. Yd.	Remarks
29	47	Near creek in gulch, 2 ft. depth. See map. Silver Heels placer B.
30	18	Silver Heels Placer B. 100 ft. west of sample 29. Depth 30 inches.
34	4	Silver Heels placer B. 100 ft. west of sample 30. 2 ft. into bank, 14 inches above creek level.
35	167	Silver Heels placer B. 150 ft. SE of sample 29 in timber, 2 ft. depth.

CONCLUSIONS AND RECOMMENDATIONS

The foregoing description of the property and the results of sampling as detailed and shown on the map are the result of several months of field examination by the author of this report. Not only was the placer ground in question examined in detail but also the area from which the placer material was derived. One particular feature discovered in this examination was that the placer material was derived mostly from a great mass of soft rock thoroughly impregnated with minerals. A further discovery was several good sized fissure veins crossing one another. This makes for uniform placer material so that the two largest placers, the Fortune and Liebelt placers obtained all their production from glacier terminals. Other terminal moraines derived from fissure veins hundreds of feet apart and with no mineralization in the rocks between the veins usually cannot be placered economically, the values being too scattered and uncertain. The Silver Heels property has not only the unusual characteristic of having terminal moraines, which from examination and tests to date, prove that they can be placered economically, but it also has stream bad material which has been sorted out by running waters. In addition it has a fan-shaped deposit or outwash from Amethyst gulch which seems to be in a class by itself and which, from tests to date can be the best placer material of this property.

For the sake of distinction the placer ground has been divided into 3 classes as follows:

CLASS #1

Stream bed from the east line of the Grand Union Placer to the junction of the Purgatory and Montgomery creeks:

1,400,000 Cu. Yds. with an average of 7 bed rock samples amounting to 56 cents per cu. yd.

CLASS #2

a. Terminal moraines in Montgomery creek proper. There are 4 such moraines, the largest is located just west of the Link house, the next largest just east of the cabin with two smaller ones in between.

2,000,000 cu. yds. with 53 cents per Cy. from 9 samples applicable to this material.

b. Terminal moraine material north of Montgomery creek and covered by Silver Heels placers A and B, Morning Star, Oh Promise Me placer A, with a total of about 220 acres.

5,000,000 Cu. Yds. with an average value of 31 cents per Cu. Yd. from 11 samples...but does not include sample 27 which showed a value of $8.82 per Cu. Yd.

CLASS #3

a. Fan-shaped portion included in the Star of the North north of the line connecting Cor. #3 and Cor. #6 of the Star of the North and that portion of Silver Heels placer C, Neil, Oh Promise Me placer B, north of the line connecting Cor. #3 of the Star of the North and the southwest of Cor. #3 of the Cogy Mazie placer.

1,200,000 Cu. Yds. with an average of 76 cents per Cu. Yd. of 7 samples,omitting sample 65 with $7.50 per Cu. Yd. and sample 53 with $9.74 per Cu. Yd.

b. Lucky Strike and Bull of the Woods claims. The placer material is similar to that of the Star of the North placer adjacent to the east.

600,000 Cu. Yds. with only one sample of 40 cents per Cu. Yd. as shown on map.

The above quantities are considered conservative. The values given are derived from averaging the samples applicable to the 3 different classes of placer ground as explained above. While the average values given may not be considered as being the average for the quantities as estimated, nevertheless they give an approximate value which, from all placering experience of the past, should not change much with more testing. In fact the average values shown should be enhanced if tests on the lowest 5 feet above bed rock and the soft bed rock itself is tested. Future testing should be done as outlined on page 6 of this report.

The following examples are given for information:

1. Abstract from Bureau of Mines, Information Circular #7013 by E. D. Gardner and T. Allsman, dated 1938

Pipe sampling, 4 inch dia. - average depth 14 ft.	19 cts/CY
Pit sampling	21.8 "
Actual placering	25 "

Placering was done with movable land plant. The cost was 11.9 cents per cu. yd. Capacity was 75 cu. yds. per hour.

2. A 1958 report by the Natomas Co. of California is as follows:

Total Cu. Yd.	13,435,762
Return per Cu. Yd.	9.01 cts.
Operating Cost	7.89 cts.
Depreciation and Depletion .	0.89 cts.
Total Cost.	8.78 cts.
Net return.	0.23 cts.

Large floating dredges were used.

The foregoing description with accompanying map should give a pretty thorough idea of the potential value of the Silver Heels property. A preliminary one-day field inspection will give a better understanding and is suggested for anyone interested.

The Placer ground has rather steep slopes in parts making for short hauls and easy disposing of tailings. The water is convenient as Montgomery creek runs perennially through the middle of the more promising area. Dams, if necessary can be built with little cost. Not many boulders will exceed 12 inches. The fineness of the gold will be from .850 to .900. Assays show the balance to bemostly silver.

No detailed investigation has been made as to the placering equipment that should be used. A movable land plant is suggested. Excavating machinery can be a shovel, drag line or tractor shovel. A complete layout will cost from $50,000 to $100,000, depending upon whether used or new equipment is purchased. Good second hand equipment is suggested. This lowers the first capital cost and allows for experimenting with not too high an outlay of capital in the beginning. If operations are successful and values as shown to date are upheld, new equipment may be purchased from operations. There is more open space than necessary for about two to three operations on the Silver Heels property. This would reduce costs considerably. Capacity suggested is 2000 to 4000 Cy per day.

An estimate of the cost per Cu. Yd. of placering depends upon many things, such as experienced management and labor, condition of the placer ground which here is favorable, plenty of water which is available, good values which tests to date show to be commercial even if the price of gold is not increased. No need of building a camp for labor. Men would rather live in Como or Fairplay. The ownership of the Silver Heels property is all in control of one individual.* It appears from all the favorable factors as enumerated above that the cost of placering per Cu. Yd. will range from 12 cents but not exceeding 25 cents.

In conclusion, every factor is present to assure a successful operation of the Silver Heels property.

Respectfully submitted,

W. F. Moenke E. M.
Reg. Prof. Engineer
Sept. 1959

cost
(24-36¢ mined)
1970

* CHARLES GRESSER
IDAHO SPRINGS
COLORADO

SILVER HEELS PLACER

ADDITIONAL SAMPLING AND TESTS DURING 1960

By W.F.Moenke E.M. Sept. 1960

The following sampling was made to cover more area than in the report dated Sept.1959 and several holes were dug to bed rock allowing sampling of the lower material.

The following data shows results of the 1960 sampling:

Sample No.	Cents per Cu.Yd.	Remarks
G1	44	75' feet NW of bridge-Moraine
G4	26	Grand Union-350' east of Cor. #3-Material north of Mont.crk.
G6	23	In front of Uhl's cabin.Mat. same as G4.
G7	33	350' W.of cor.#2-material same as G4.
G11	33	300' NW of old mill foundation. Mat. from north of Mont. creek.
G13A	33	100 ' west of beaber dam.Moraine material.
G25	116	100' west of broken down cabin so.side of Mont.crk. 350' east of Grand Union cor.#4.
G30	49	300' west of gararge,so.side of Mont.crk. Fan material from Amethyst gulck.
G38	120	200' SW of Grand Union cor#2. North side creek material.
G39	149	Grand Union,north side crk. 300 ' west of beaver dam.
G40	384	Silver Heels placer C,No.side road fork to cabin from main road.Mat. from bottom of 15 ft. hole.This is bed rock material.

Sample No.	Cents per Cu.Yd.	Remarks
G13	33	Silver Heels placer B-naer cor. #18.Side slope material.3' deep.
G32	5	Grand Union-200' so. Of creek-cut# 5 Ft. deep.
G36	91	Silver Heels placer B-450 ' NW of cor.#19. 2 ft.cut.
G37	13	Grand Union, average of hole mat. Moraine mateial.
G15	68	Grand Union-same hole as G37-Mat. from bottom of 17 ft.hole.
G16	12	Grand Union,200 ' west of old mill fdn. 10' hole average.Mor.
G24	16	Grand Union,400' east of Grand Union cor.#4-so.side creek.

The above sampling of that area north of Montgomery creek seem to enhance the values as estimated in Sept.1960 report.They also show the values to be quite uniform which should make placer operation less expensive. The other important information gained from the above sampling are the definite bed rock samples #40 on Silver Heels placer C and sample #G15 on Grand Union east of old mill fd n. Sample #40 gave $3.84 per C.Y. and Sample G15 shows 68 cts. per C.Y..Both of these samples show higher values than surface and average pit tests which seem to prove that bed rock values will probably prove to be better than the values shown on the map.

Respectfully submitted

W.F. Moenke

W.F.Moenke E.M.
Reg. Prof. Eng.

Sept.1960

PRELIMINARY REPORT ON THE

DEADWOOD, IRON MT. & LIEBELT PLACER & LOUISE LODE CLAIM

BEAVER - TARRYALL MINING DISTRICT

PARK COUNTY, COLORADO

BY W. F. MOENKE, E.M.,
Dec., 1960.

NOTE:-

It is recommended that the report and map of the Silver Heels property, which adjoins this property on the west and south, be consulted when studying this report since the geological conditions and placer material are similar. All data concerning geology and values as expressed in the Silver Heels report can be applied to this property. In this report all of the 5 patented claims, also including the unpatented claims, for brevity's sake, will be referred to as the "Deadwood property."

The enclosed map shows the location of the claims of the Deadwood property and vicinity with its physical features.

The names and areas of the above claims follow:

Deadwood placer	U.S.	Sur. #	12668	103,530	acres	
Montag "	"	"	12669	44.830	"	
Iron Mt. "	"	"	2939	51.638	"	
Liebelt "	"	"	5236	41.873	"	
Louise Lode	"	"	12655	6.556	"	248.427

Unpatented claims:

Tarryall placer # 1	16.5	acres	
Tarryall placer # 2	137.6	"	
Tarryall placer # 3	70.0	"	
Tarryall placer # 4	90.0	"	321.1
	Total acres		569.5

The patented Deadwood property covers practically all of Deadwood creek from its junction with Montgomery creek and most of Little French gulch to the west. The total creek-bed distance is about 2 miles. The property covers all of the valuable placer material on both sides of the above creeks and is similar to the material north of Montgomery creek of the Silver Heels property.

The unpatented claims to the east of the Deadwood property, amounting to several hundred acres, appear to contain placer material deposited by the same Wisconsin glacier. These should therefore be investigated to determine the value and quantity of the placer material. Some placer mining has been done in the southwest quarter of Sect. 12, T 8 S,R 77 W. where a cut about 1000 feet long and more than 100 feet in width was made. And, while its values could not be ascertained - it is apparent that so much work would not have been performed unless the placer material had been profitable. Also a small cut has been placered

in the northwest I-quarter , which is traversed by the road to the Silver Heels property.

However, much more work was done on the Deadwood, Iron Mt. and Liebelt placers. For reference, USGS Bulletin 955-d states that "next to the Fortune placer these properties were second in total gold production." Nothing definite is known as to their values per Cu. Yd. But evidently, it must have been of commercial value at the then prevailing price of gold at $20 /oz. All work was done by hand with sluices. Mr. Fred Liebelt, one of the owners, states that bed-rock was never worked owing to water and that the values were scattered - which means that placering, to be profitable, must be done on a large scale. A graded road allows access to practically all parts of the Deadwood property.

SUMMARY:-

The creek-bed area is quite narrow when compared to Montgomery creek. Therefore, it is quite probably that values in the creek-bed will be higher than those so far found in the Silver Heels property. The Montag placer contains the north end of the terminal moraine just west of the Link house on the Grand Union placer. A further advantage of the Deadwood property is that, it will double the available water for the Silver Heels property. Thus it appears that operating both properties at the same time will eventually prove to be the more economical. Assuming an average depth of only ten feet - the patented Deadwood property should contain not less than 3,000,000 Cy. Yds. of placer material.

It is recommended that several tests be made on these properties as well as on the unpatented claims in the spring of 1961. Inasmuch as the placer material deposited on the Deadwood properties came from the same mineralized area of the Wisconsin glacier as that of Silver Heels, the Deadwood property should prove to be similar in values as has been proven to date on the Silver Heels property.

Respectfully submitted,

W. F. Moenke

W. F. Moenke, E.M.,
Reg. Prof. Eng.

CHARLES GRESSER
IDAHO SPRINGS
COLORADO

Denver 18, Colorado
1416 Downing St.
Jan. 11, 1961

Silver Heels: Placer Property

A. The last estimate made for quantities of placer material and approximate values was shown in my report and map, dated Sept. 1959. See that report for details. The estimate for convenience follows:

Class #1-Stream bed material------	1,500,000	Cy. at	56 cts./Cy
Class #2-Montgomery creek and	2,000,000	" "	53 "
north of creek----------	3,500,000	" "	51 "
Class #3-North of the-Cogy Mazie	1,200,000	" "	76 "
Lucky Strike and Bull of the Woods	600,000	" "	40 "
	8,800,000	"	
	or 14,080,000	Tons	

Note: 1 ton -- 2000 lbs.
1 C.Y.-- 3200 " -bank measure.

B. The above estimates were made before any holes had been made to arrive at an average depth of the placer material. The values were obtained by averaging values as explained in the Sept., 1959 report. It should be noted that the values were from surface material not more than 4 feet in depth.

The new estimate made during 1960 gives a better idea of quantity of placer material and its value. About 70 holes, 5 to 20 feet in depth, were dug and 12 samples, numbered M1 to M13 were taken. These samples represent the lower 5 feet of the pits. The results of this sampling is shown on Sheet #7 which see. The sheet shows the following:

Average value by assay of raw material ------ $56.62/ton ERROR
" " " amalgamation ---------- 5.86/T
Per cent by amalgamation 10.4%

It is assumed before more testing that much of the gold is locked up in the iron oxides and sulphides. Further testing will prove this.

coarse material values per ton can be increased at a very small cost.

INTERIM REPORT ON SILVER HEELS PROPERTY

By W.F.MOENKE E.M. March 15,1961

On Sept.28,1960 twele samples were taken and tested by Process Engineers,Inc.See report by Process Engineers,Inc. dated Jan.20,1961 for results.The sample numbers are M1 to M13 as shown on map dated Febr.2,1961.

Samples No.M2 (total value $74.85/ton) and sample No.M4 (total vaue $214.50/ton) are from the creek bed. Sample No.M7 (total value $4.55/ton),M12(total value $69.90/ton and sample No.M.3(total value $307.60/ton) show high values on the north side of Montgomery creek. The other samples show an average of $1.60/ton.

The above sampling and that taken in prior years as shown on the map are not sufficient to prove any amount of placer material with definite values to justify equipment for placer operations.Tests by Process Engineers, Inc.show that about 10% of the total value of the high grade material can be amalgamated while the low grade material about 50% can be expected to be amalgamated. No doubt this can beimproved by grinding the material before amalgamating.This still has to be tested.

The next procedure is to make a test on the balance of dug pits similarly to those samples mentioned above.This will give a more definite picture of the area tested.

However,with the high values shown for samples M2,M4,M12 and M13, con sideration should be given to more tests in these areas for it is quite possible to prove thousand of tons of this high grade material which can be shipped direct to smelters.There certaily is no need for any processing equipment for ores that run over $100 per ton.

Having in mind the sampling of all the pits and testing the high grade areas,the following program is recommended:

1. Sample all the material removed from the pits by cross-sectioning the material so as to get an average of the pit or take 5 foot samples directly from the pits which will give better information as to what depth the values exist.

2. Test the area in the vicinity of samples Nos.M12 and M13. This test can be done digging pits or preferably by cutting channels with a bulldozer which would allow better sampling and,also,have the material ready to be loaded on trucks in the event values are high enough to allow direct shipping to the smelter.With this program in view it is apparent from tests made to date that by screening out the coarse material values per ton can be increased at a very small cost.

More tests should be made in the area of Samples M2 and M4. In my opinion, since these samples are in creek bed material, the values could prove to be more consistant. However, the first test for these values should be made in the vicinity of samples M12 and M13 because this area is more accessible and could furnish more material for amount oftesting to be made.

In the matter of shipping ore directly to the smelters I have investigated the costs as fo llows:

Shipping to U.S.Smelting and Refining co, Tooele, Utah.

	Ton(2000 lbs.)
Hauling from property to Buena Vista	$5.00
Freight to Utah--	$13.73-$50 value
	$18.05-$100 "

Note; The D & RG RY. is trying to reduce the rates so as make the following rates: $8.55-$50 value
$11.05-$100 value.

Smelting charges is not known until a s ample is given to the smelter for analysis but should not exceed $15./ton

The total expense will amount to about $35 to $40 per ton.

Ores can, also, be shipped to American Smelting and Refining Co., El Paso, Texas where smelting costs, are about $15 per ton but freight will be $22,60 per ton of $100 values and $28.60 per ton of $800 value. Other costs should be about the same as for Utah.

In conclusion with the above described program, it is quite possible to develop direct shipping ore with small expense. It is necessary to make more tests before any placer equipment can be considered, so the recommended tests must be made. The values for the high samples are for material i n place so that with screening out about 25% the values per ton of shipping ore can easily be increased.

Respectfully submitted

W.F.Moenke E.M.
Reg .Prof.Eng.

Denver 18,Colorado
1416 Downing st.
July 15,1961

Mr. Charles Gresser
Idaho Springs
Colorado.

Dear Mr. Gresser:

I am attaching two prints of the Silver Heels property,dated July 13,1961, on which are shown in red the values per ton as obtained by amalgamation and in green the total value per ton by assay of the original material. You will note the total value by assay is higher than that obtained by amalgamation.Those values shown in red should be enhanced if this material is assayed for total values.The past tests show that approximately 50% of the total values can be recovered by amalgamation.

Values,also,vary considerably when sampling in 10 lb. or 100 lb.lots of the same hole.A typical example is Hole G38 near cor.2 of Grand Union claim. A pan ful or about 15 lbs. gave $0.75 by amalgamation while a bulk test of 100 lbs. showed $7.35 per ton by amalgamation and $307.60 total value by assay. An examination of the map shows similar variations for other samples.

Also,tests to date show better and more reliable results in bulk lots of several hundred pounds. On Jan.1961 a bulk sample of about 1100 lbs. consisting of samples M1-M13 gave a total value of $56.62 per ton, of which $5.86 was by amalgamation. Another test of 769.75 lbs. consisting of samples 1-10,dated April 25-28, 1961 and samples 1-41,dated May 22-23,1961,gave a total value by assay of $10.31 per ton. 80% of this $10.31 is in the minus 3/4 and plus 1/4 mesh material which will have to be ground finer to release the gold.

The above bulk tests show that, when actual field operations are performed, commercial values are fairly certain. For this reason I do not recommend more sampling for the time being.

It, also, appears at this stage of testing that not less than 10,000,000 tons have been, more or less, proven to be of values that will justify the beginning of placer operations. The actual equipment necessary will have to swait until Process Engineering, Inc. have completed their tests which are now in progress. It seems that much of the gold can be obtained by the conventional placer process consisting of trommel screening and riffles which is a cheap process and the balance of the gold material must be ground finer and gold extracted by some gravity method.

Very truly yours

W F Moenke

W.F.Moenke E.M.

(From Moenke's Report)
July 26, 1962

No.	Cu. Yd.	Per Ton
A	.28	.19
B	.14	.09
C	.32	.21
E	.05	.03
EA	.49	.33
H	.62	.41
Q	.68	.45
S	.51	.34
T	.55	.37
V	.40	.27
51	.59	.39
M	1.10	.73
64	1.11	.74
53	9.74	6.45
XA	1.58	1.05
W	.81	.54
53A	1.48	.98
54	.10	.07
56	.23	.15
57	.13	.09
60	1.33	.89
61	.47	.31
55	.80	.53
71	.85	.57
65	7.50	5.00
66	.08	.05
77	.21	.14
78	.32	.21
79	.20	.13
80	.44	.29
63	.38	.25
25A	.15	.10
26A	.09	.06
27	8.22	5.90
28	.13	.09
27A	.30	.20
29	.47	.31
30	.18	.12
34	.04	.03
35	1.67	1.13

No.	Cu.Yd.	Per Ton
C1	.44	.29
C4	.26	.17
C6	.23	.15
C7	.33	.22
C11	.33	.22
C13A	.33	.22
C25	1.16	.78
C30	.49	.33
C38	1.20	.80
C39	1.49	1.00
C40	3.84	2.56
C13	.33	.22
C32	.05	.03
C36	.91	.61
C37	.13	.09
C15	.68	.45
C16	.12	.08
C24	.16	.11
S.H.S.Pl.B	9.25	6.17
Gr.U.Pl.	12.35	8.24
Gr.U.Pl.	5.35	3.57
	84.17	56.50
	Av. = 1.379	Av. = .926

SILVER HEELS MINES ASSAY MAP

per ton - compiled by Al Hack, P.E.
10/12/64

$ .14	$ .93	$ 2.65	$ 1.58	$ 7.50
.28	.05	.38	.28	.31
.14	.07	2.40	.38	14.65
.10	5.68	5.94	.57	36.40
.10	1.17	.10	.13	10.19
.18	1.67	.16	1.67	.48
1.11	3.31	.73	.47	10.85
1.11	1.01	1.12	.18	.07
.73	9.92	.58	.12	.18
.73	30.07	1.08	.40	.13
.62	2.56	1.51	.03	.19
.93	1.36	.80	.32	5.50
.99	.39	1.10	1.67	1.82
1.02	.25	.69	1.05	.01
.94	.80	.20	.08	.55
.03	.28	1.46	.43	$779.71 ÷ 40 =
6.15	8.86	.58	.06	19.49 p.t. average
.30	2.00	1.08	.39	
.44	1.87	1.58	.78	
.09	1.16	.38	.58	
.20	.06	.14	10.00	
.55	1.03	.20	.30	
.24	.62	2.50	12.70	
.32	.60	.43	4.20	
.41	414.70	.06	4.80	
58	2.50	1.78	1.20	
1.63	.97	.02	4.05	
20.25	.25	1.33	9.30	
9.00	.60	7.00	6.67	
3.81	.40	9.74	.08	
5.20	2.50	.93	.05	
3.09	1.02	1.00	.34	
.57	2.65	2.40	.32	
.13	4.05	1.48	4.70	
		1.5[illegible]		
		.36		
		.38		

SILVER HEELS MINES MAGNETIC MAP
with assays of Liebelt Group - per ton

Charles E. Melby
Nov. '64 to Sept. '65

$23.28	$ 1.83	$ 1.92
10.93	4.36	.48
7.75	12.13	.04
.02	.72	1.92
.44	.32	18.20
6.15	.44	3.10
5.94	.08	2.10
2.10	3.37	.76
3.62	7.70	5.11
5.35	3.60	3.03
2.73	1.16	8.16
8.09	.04	.92
1.02	6.58	.20
3.47	3.08	.05
10.92	.76	.80
2.84	.04	7.70
17.15	113.34	5.60
2.91	1.16	4.36
2.46	2.91	2.63
2.50	3.05	.44
5.60	7.70	.04
23.03	.74	.08
9.00	.06	.96
6.83	3.13	578.80 ÷ 40 =
95.76	.80	14.47 per ton average
27.16	.04	
12.08	3.13	
9.70	6.63	
6.93	1.92	
3.50	.12	

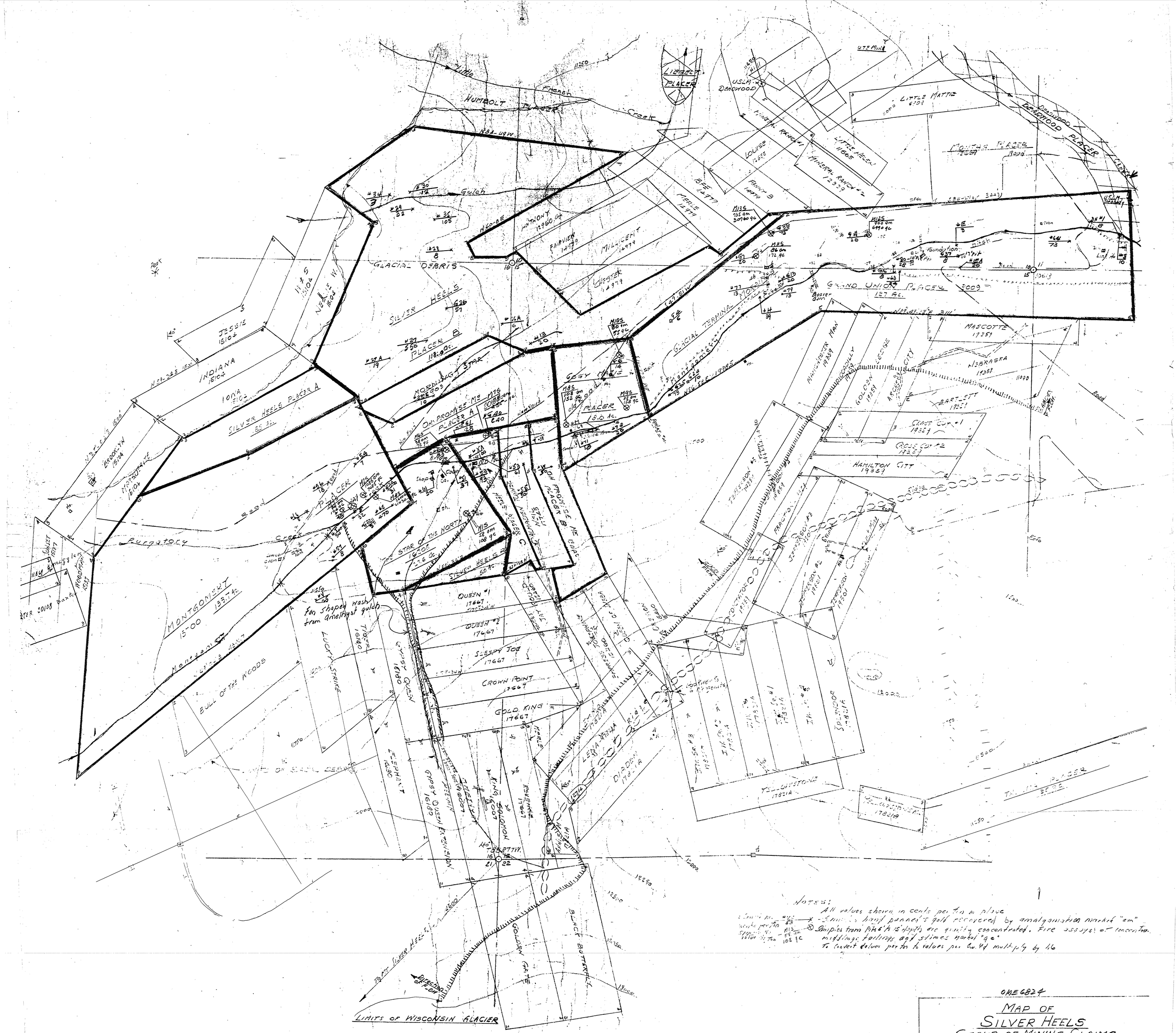
SILVER HEELS MINING COMPANY

SUMMARY OF CYANIDE TESTS

EXHIBIT K
(Revised)
3/19/62

SAMPLE	CALCULATED GOLD HEAD (Oz/Ton)	RECOVERY % AT — HOURS 12	24	72	RECOVERABLE VALUE ($/Ton)	TOTAL VALUE ($/Ton)
June Composite-Roasted	0.19	0	3.60	78.80	5.20	6.60
April-May Composite	0.09	6.30	12.61	56.77	1.84	3.24
April-May Composite-Roasted	0.06	9.46	14.19	18.93	0.41	2.16
2J	0.03	10.16	30.54	30.54	0.31	1.01
5J	0.02	0	0	12.74	0.10	0.80
6J	0.026	11.29	11.29	22.58	0.20	0.90
10J	0.03	10.16	10.16	30.54	0.31	1.01
2J Roasted	0.98	0.60	8.93	16.37	5.60	34.30
5J Roasted	0.20	1.40	81.60	90.20	6.43	7.13
6J Roasted	0.023	12.74	12.74	12.74	0.10	0.80
10J Roasted	0.14	0	16.50	92.90	4.59	4.94
6J	0.065	62.40	71.30	84.70	1.94	2.29
M2S	3.80	72.00	76.70	83.40	113.00	133.00
M4S	5.00	0.20	34.10	72.10	136.50	175.00
M12S	4.70	60.90	65.10	69.10	116.20	164.50
M13S	6.93	31.10	53.10	60.70	150.15	242.55

PROCESS ENGINEERS, INC.
4426 Vine Street
Denver 16, Colorado



NOTES:
All values shown in cents per ton in place
Samples from Pits 6' to 15' depths are gravity concentrated. Fire assays of concentrates, middlings, tailings and slimes marked "qc"
To convert values per ton to values per cu. yd. multiply by 1.6

ONE 6824

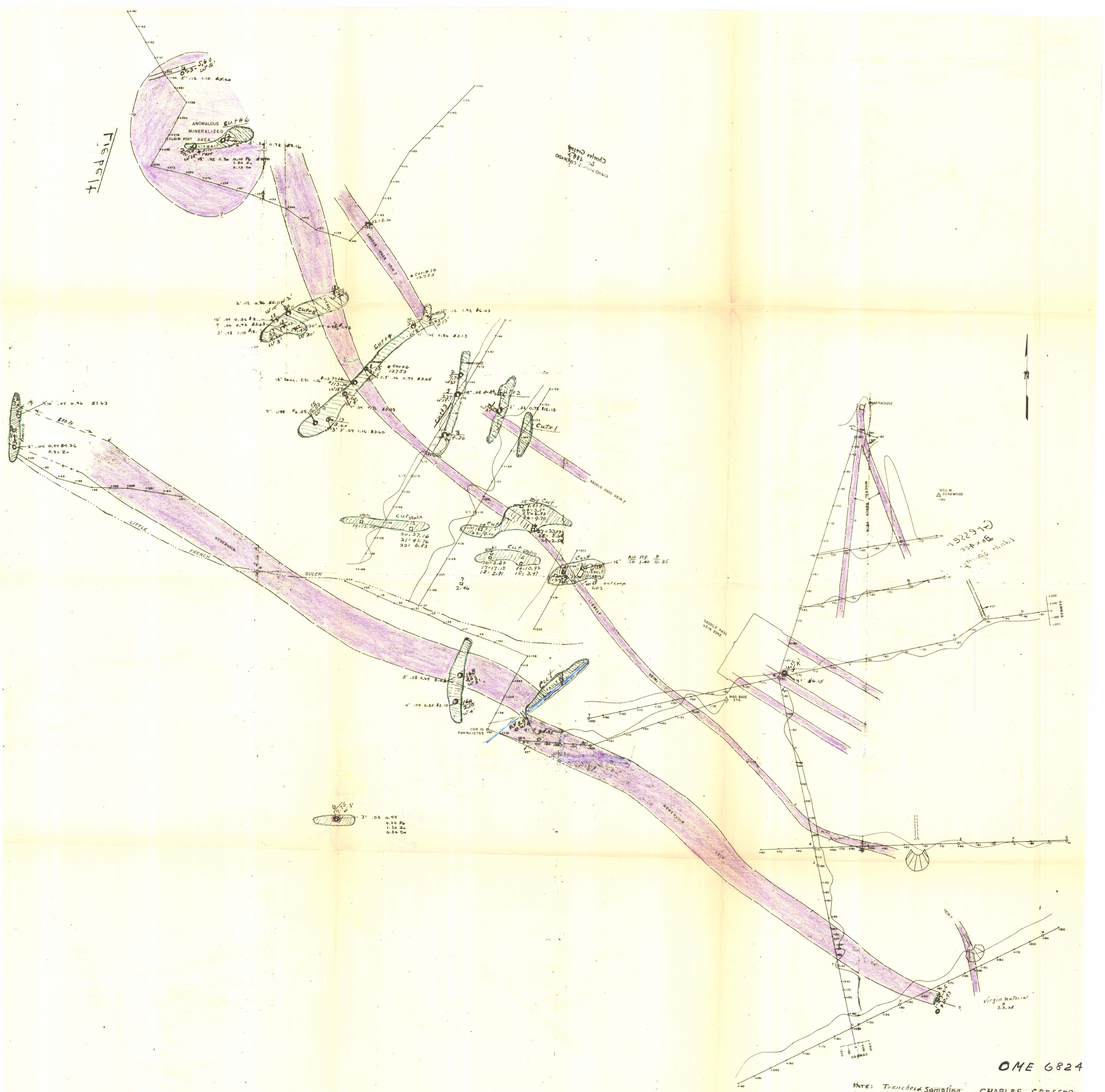
MAP OF SILVER HEELS GROUP OF MINING CLAIMS

PARK COUNTY COLORADO

SCALE 1" = 300 FT. JUNE 1958

W.F. MOSNIKE E.M. REG. PROF. ENG.

G1



NOTE: Trenches & Sampling by Charles Gresser

Assays: Width 3' | oz Au .04 | oz Ag 1.16 | $ Value 3.60

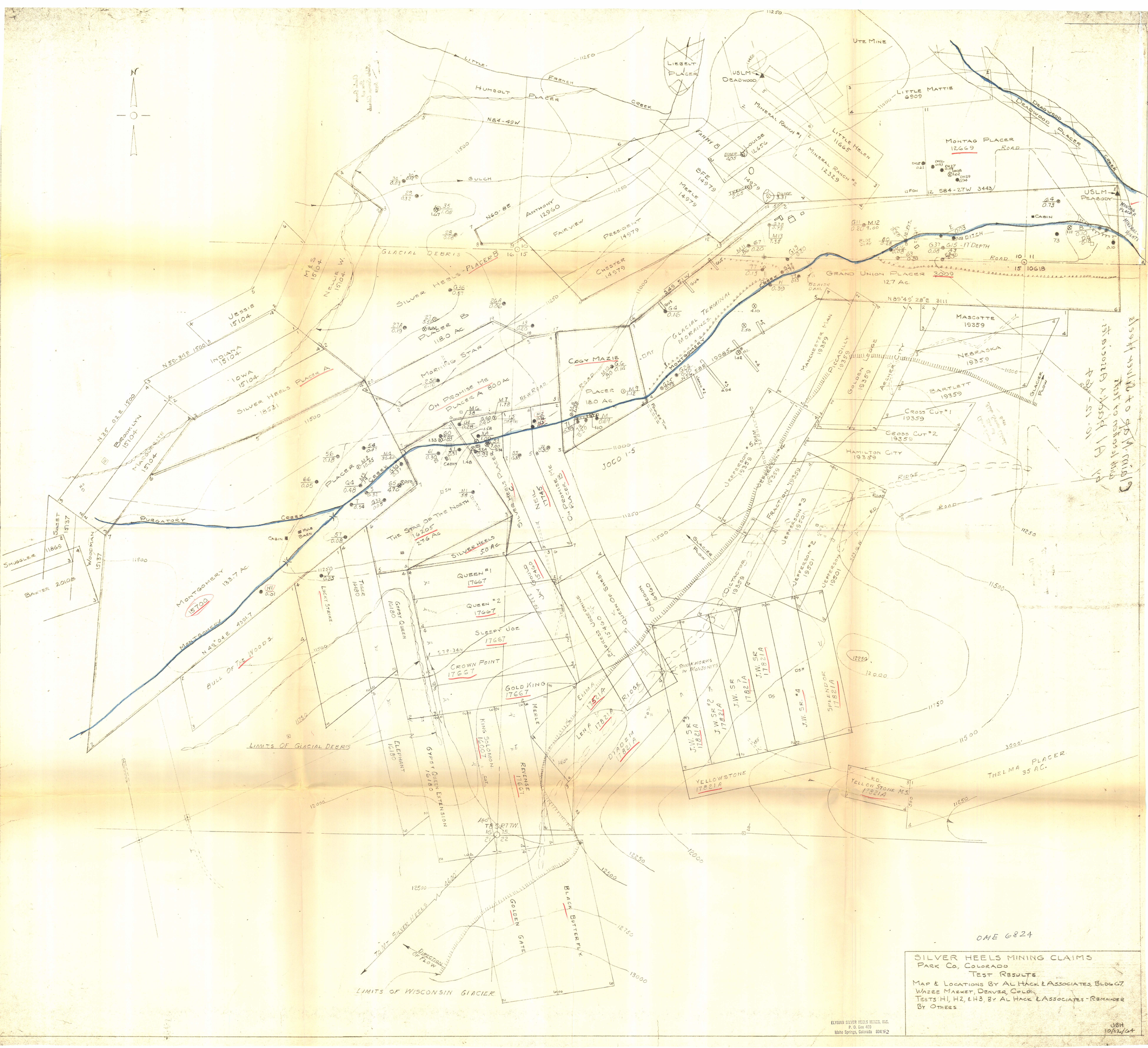
Assays by: George Treadgold Idaho Springs

CHARLES E. MEL BYE
Geological Engineer

CHARLES GRESSER
MAGNETIC MAP
SILVERHEELS PROPERTY
PARK COUNTY, COLORADO

Scale 1" = 100'

November, 1964
Rev. September, 1965


N
Little French Creek
Humbolt Placer
Liebelt Placer
USLM Deadwood
Ute Mine
Little Mattie 6909
Deadwood Placer Creek
Mineral Ranch #1
Mineral Ranch #2 12329
Little Helen 11665
Fanny B
Louise 12656
Montag Placer 12669
Road
USLM Peabody
Montag Placer
Wilson-Rights
Gulch
N60-8E
Anthony 12960
Fairview
President 14979
Merle 14979
Chester 14979
Glacial Debris
Silver Heels-Placer B
Placer B 118.0 Ac.
Morning Star
Jessie 15104
Indiana 15104
Iowa 15104
Silver Heels Placer A 18531
Brooklyn 15104
Manchester 15104
Sunset 15137
Woodman 15137
Smuggler 11865
Baxter 20108
Purgatory Creek
Cabin
Mule Barn
Montgomery 15700
Montgomery 133.7 Ac.
Bull of the Woods
On Promise Me Placer A 800 Ac.
Placer 18.0 Ac.
Cogy Mazie
Joco 1-5
Glacial Terminal Moraines
Grand Union Placer 3009 127 Ac.
Beaver Dam
Ditch
Cabin
Mascotte 19359
Nebraska 19359
Bartlett 19359
Cross Cut #1 19359
Cross Cut #2 19359
Hamilton City 19359
Golden Edge
Piccadilly 19359
Manchester 19359
Jefferson #3 19501
Jefferson #2 19501
Jefferson #1 19501
Fraction 19359
Victoria 19359
Oregon
Queen of Sheba
Glacier Flow
Stockworks in Monzonits
Ridge
J.W. SR 17821A
J.W. SR #2 17821A
J.W. SR #3 17821A
J.W. SR #4
Splendor 17821A
Yellowstone 17821A
Yellow Stone M.S. 17821A
Thelma Placer 35 Ac.
The Star of the North 16205 27.6 Ac.
Silver Heels 5.0 Ac.
Queen #1 17667
Queen #2 17667
Sleepy Joe 17667
Crown Point 17667
Gold King 17667
Lucky Strike
Tiger 16180
Gypsy Queen 16180
Elephant 16180
Gypsy Queen Extension 16180
King Solomon 16007
Revenge 17667
Emma 17821A
Lena 17821A
Diadem 17821A
Merle
Golden Gate
Black Butterfly
Limits of Glacial Debris
Limits of Wisconsin Glacier
To Mt. Silver Heels
Direction of Flow
T5S-R77W
N84-49W
N59-34E 1500
N35-02E 1500
N49-04E 4351.7
S79-34W
N89°49' 28"E 3111
S84-27W 3443
Elysian Silver Heels Mines, Inc.
P. O. Box 400
Idaho Springs, Colorado 80452
OME 6824
Silver Heels Mining Claims
Park Co, Colorado
Test Results
Map & Locations By Al Hack & Associates, Bldg 67
Wazee Market, Denver, Colo.
Tests: H1, H2, & H3, By Al Hack & Associates - Remainder
By Others
JBH
10/12/64