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ROYAL GOLD, INC

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303/ 573-1660
FACSIMILE No. 303/595-9385

STANLEY DEMPSEY'S FACSIMILE:
(303) 233-8371 (RESIDENCE)

**** FACSIMILE TRANSMISSION ****

TO: Michel Orouin

FROM: Tom Loucks

PAGES TRANSMITTED: 26 (INCLUDING THIS COVER SHEET)

DATE: 1/8/92 TIME

FAX NUMBER 1-702-786-4549 OPERATOR

DESCRIPTION/MESSAGE: Here are some initial materials to provide you with an overview.

After you have reviewed, let's discuss what more I can provide.

Regards,

Tom

IF YOU HAVE ANY TROUBLE WITH THE TRANSMISSION, PLEASE CALL (303) 573-1660 DURING BUSINESS HOURS, AND (303) 232-3734 AFTER HOURS (STANLEY DEMPSEY RESIDENCE)

PROJECT: TREASURE KING

Revised 12/1/91

LOCATION: Longitude 112° 12' W
Latitude 34° 22' N

Commodity: Au

15 miles southeast of Prescott, Arizona, in Yavapai County

Description

The project has been permitted as an open pit heap leach gold operation with gold mineralization in a Precambrian greenstone setting, but is on hold awaiting firmer gold prices. Delineation of more tons at three new areas could lead to revised economics.

History

Resource Exploration and Development Company (REDCO) investigated significant gold mineralization in the central Arizona Proterozoic metavolcanics and developed a geologic model relating them to similar occurrences in Precambrian shield areas of Canada. They targeted a promising area, the Treasure King, and drilled it. REDCO's diamond drill holes indicated mineralization of at least 150,000 tons grading 0.075 oz gold/ton.

In 1990-1991, Royal identified three new areas with highly anomalous rock and soil gold geochemistry, all within the Shylock Fault Zone, a main tectonic feature in Central Arizona.

Holdings

In January 1987, Royal Gold, Inc., entered into an option agreement with REDCO to purchase the Treasure King. Royal exercised the option in December 1988. The property consists of 91 contiguous unpatented mining claims located in the Prescott National Forest. The location map shows the Treasure King claim block.

Obligations

REDCO is to receive a 10% net profits interest.

Environmental Factors

The property was permitted for a heap leaching operation of an appropriate size to handle the indicated tonnage. If an expanded operation is warranted, no significant permitting problems are expected by the Company.

Geology

The Treasure King deposit is contained in an iron-rich chert horizon within a metamorphic sequence of rocks. The Precambrian greenstone, in Arizona, specifically the Arizona Proterozoic volcanic terrain, is recognized as a major loci of gold occurrences that has many similarities to Precambrian gold producing terrains in other parts of the world.

The known deposit can be visualized as an elongated lens striking due north and dipping about 60-70 degrees to the west. The width of the zone varies from a few tens of feet to over 120 feet. The mineralization is contained within this larger horizon and is open-ended both to the north and south.

The known gold occurrence at Treasure King should be viewed as confirmation that the hydrothermal system is gold-bearing. Gold geochemistry is stronger and occurs over a broader area at the three new, untested targets. Much of the prospect is covered by a thin veneer of alluvium.

Mineralization

The gold mineralization is primarily metavolcanic- and volcanosediment-hosted and is attributed to volcanogenic processes of both epigenetic and syngenetic ore placement systems. Significant gold is evident (e.g. 1 oz/t) in areas characterized by ferruginous cherts and iron formation.

Mineral Inventory

Prior to the Company's involvement, REDCO developed approximately 150,000 to 500,000 tons of resource at 0.05 to 0.10 oz gold/ton on this property with 14 drill holes and surface sampling. Three Royal drilling programs in 1988 and 1989 defined the geologic resource using a 0.01 opt cut-off at 152,000 tons averaging 0.046 oz gold per ton.

Exploration Potential

The Treasure King deposit limits have not yet been determined. The existing resource is open both on strike and at depth, and geochemical reconnaissance work performed in 1990-1991 indicates the potential for three untested targets south of the one previously identified. Royal believes that the property has potential for Malartic-type shear zone-hosted mineralization (aug. 0.12 oz gold/ton)

Exploration Activities

In 1987, seven sampling trenches were completed indicating gold mineralization in the footwall structure. Five additional holes were drilled to better define the limits of the deposit. The results produced conflicting assay data, thought to be related to sample preparation and reduction.

After Royal took over management of the exploration program, eight reverse-circulation holes were drilled in January 1988. A large sample was taken to minimize assay variance relating to sample preparation. Results from these tests suggested that there was upside potential for the calculated reserve grade. A second round of Royal drilling was completed in December 1988 consisting of 10 reverse circulation holes totalling 1,780 feet. This program was designed to better define the geological reserves. But in early 1989, further drilling limited the Treasure King deposit to 152,000 tons averaging 0.046 opt gold.

Activities in 1990-91 included geochemical sampling programs to determine the potential for gold mineralization to the south and southwest of the recognized deposit. Three newly recognized altered areas are characterized by anomalous gold geochemistry with assays (supported by re-assaying) as high as 0.75 opt gold on rock chip samples from large volumes of rock. Soil lines carry gold values of tens to hundreds PPB.

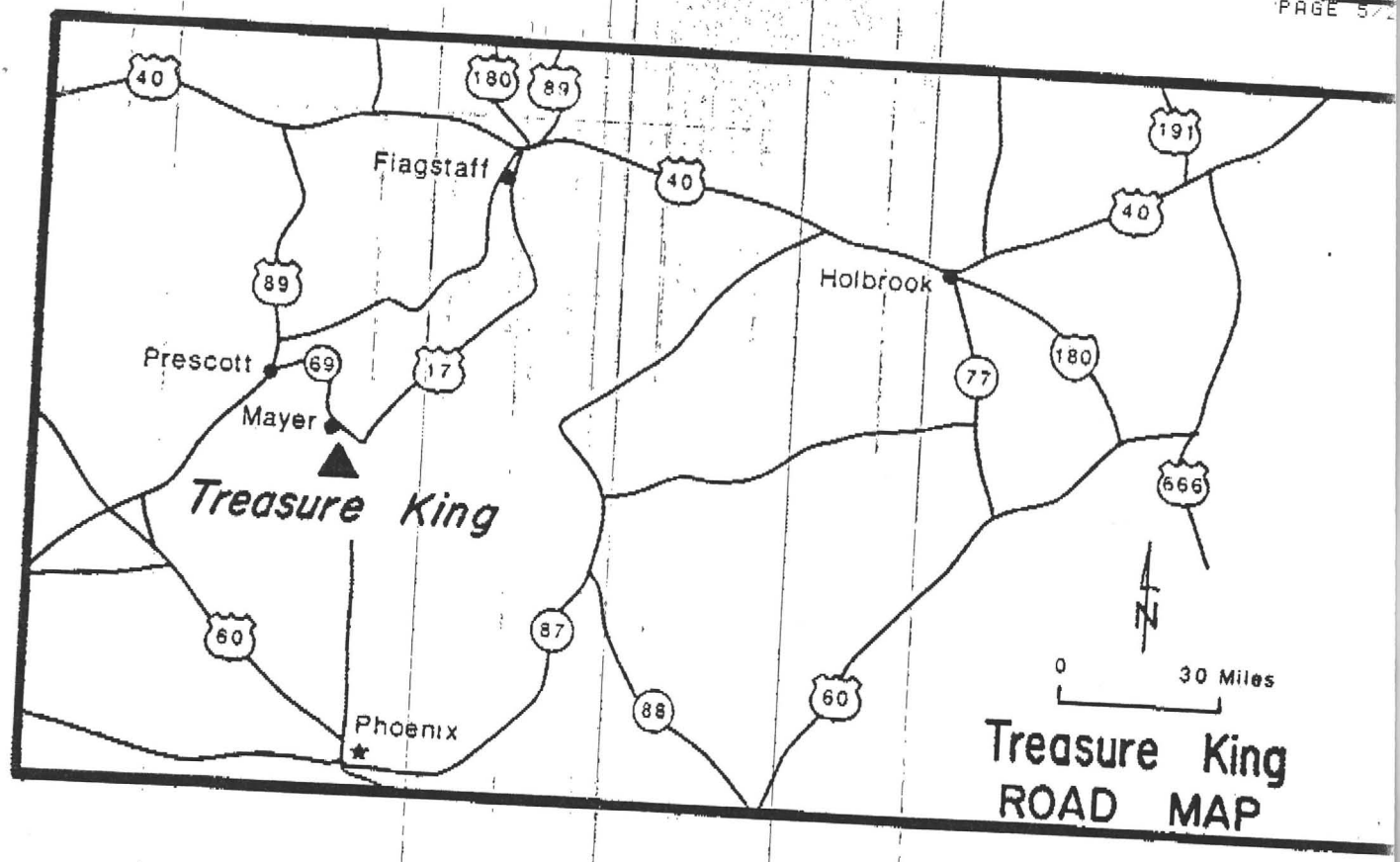
Metallurgy

Based on the results obtained during bottle-roll metallurgical tests, the ore is amenable to conventional cyanide leaching. And, based on further metallurgical studies, the Company estimates gold recoveries of approximately 75% will be obtained. The ore must be crushed and amalgamated, but low chemical consumption is expected.

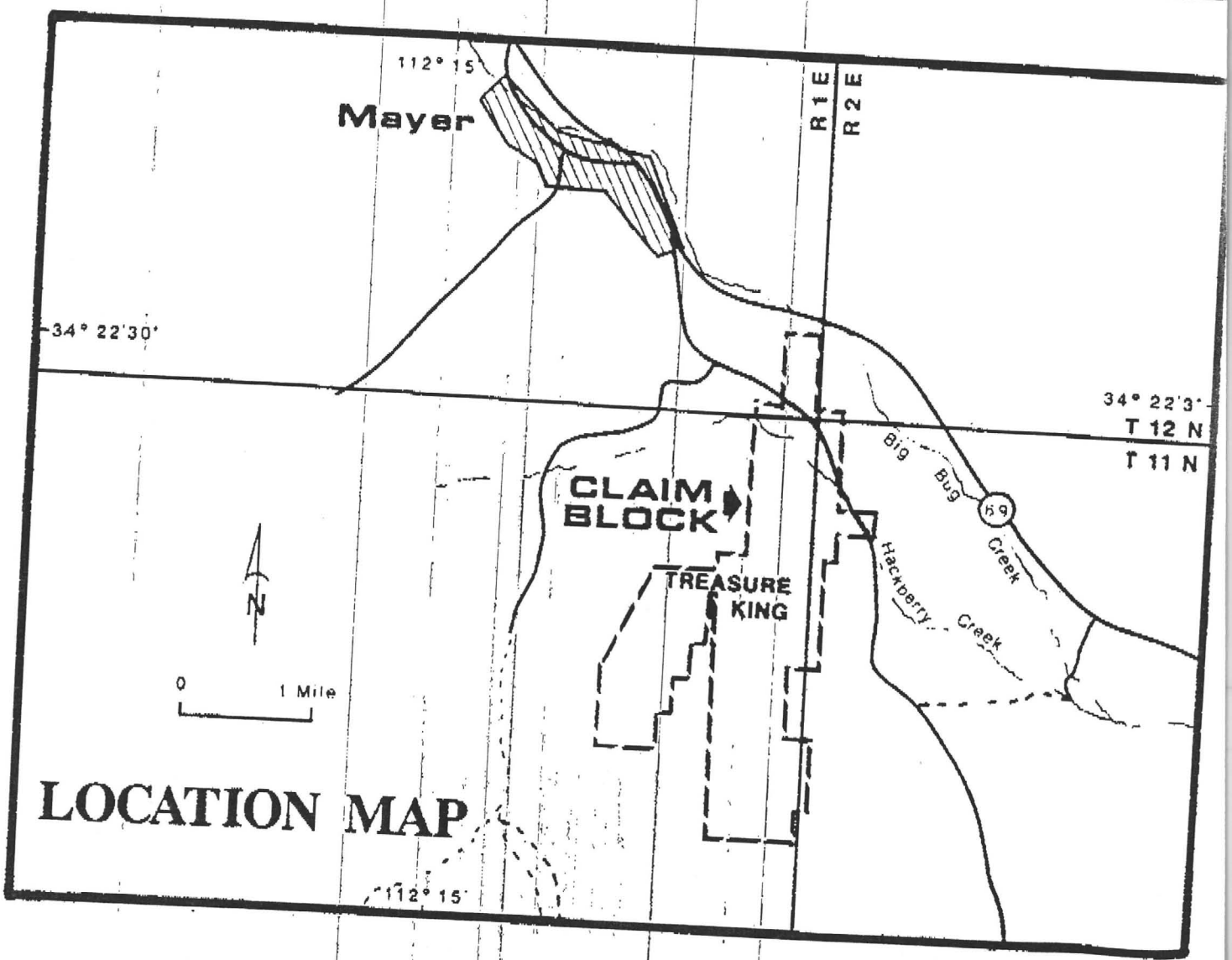
Contacts

Stanley Dempsey

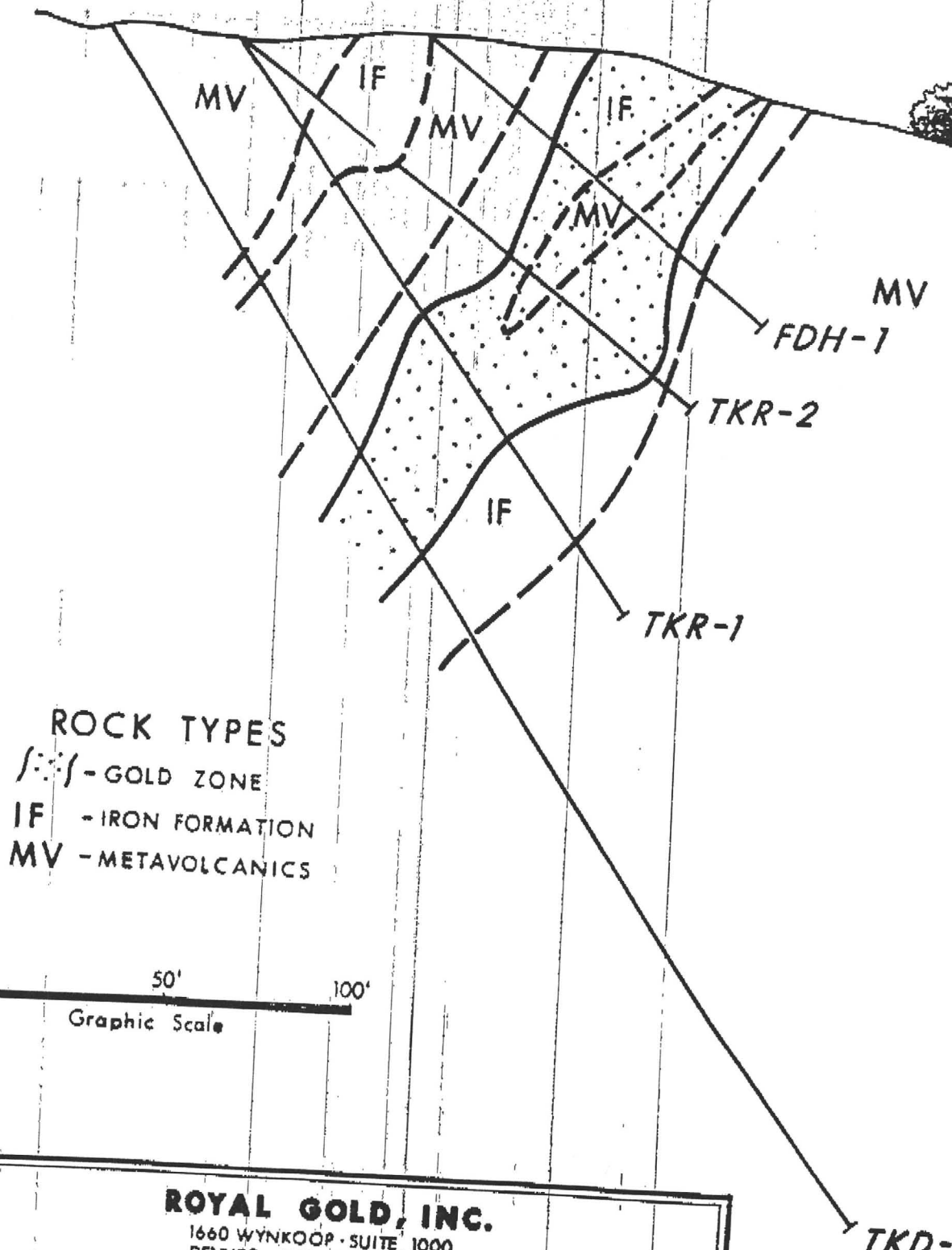
Royal Gold, Inc.
1660 Wynkoop Street, Ste 1000
Denver, CO 80202
(303) 573-1660



Treasure King
ROAD MAP



LOCATION MAP



ROCK TYPES

∫∴∫ - GOLD ZONE

IF - IRON FORMATION

MV - METAVOLCANICS

0' 50' 100'

Graphic Scale

ROYAL GOLD, INC.

1660 WYNKOOP · SUITE 1000
DENVER, COLORADO 80202

TREASURE KING/MAYER AREA

YAVAPAI COUNTY, ARIZONA

EAST · WEST CROSS SECTION

LOOKING TO NORTH

DATE: MAY 16, 1988

DRAWN BY: D.M.

To: Stanley Dempsey
Edwin Peiker

September 5, 1991

From: Thomas A. Loucks

Re: Treasure King Update

Royal Gold's two recent exploration programs at Treasure King have led to the discovery of three new gold-bearing sites on the property. These programs entailed reconnaissance mapping and geochemical sampling as part of 1989-1990 and 1990-1991 assessment work requirements. All three areas have stronger and broader gold geochemistry and alteration patterns than does Treasure King, so we can be hopeful that our requirement of more tons for a successful project may have been identified. Recognition of the newest zone has led Richard Nielson, our consulting geologist, to conclude that we may have a Malartic-type shear zone target located along the Shylock Fault, a major Arizona tectonic feature which passes through the mineralized area at Treasure King.

We need to identify a partner with capital to test these new areas. As many U.S. companies are concentrating on Carlin-type models, I suggest we focus our marketing efforts on those who will be more likely to understand the greenstone-terrane/shear zone model applicable here. Rayrock is very active with geophysics and a major drilling program on strike to the north of us.

Gold mineralization at Treasure King is characterized as a Precambrian greenstone setting. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Abundant gold-bearing iron formation lies interbedded with the volcanic rocks.

Drilling at Treasure King has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a tabular resource open to the north, south, and at depth. This resource is too small to recover costs of putting a mine into production, although work to date suggests the "ore" would yield an operating profit. More tons are needed.

Gold mineralization at the new sites is hosted by the same favorable geologic unit as that which hosts Royal's Treasure King deposit. The gold content in outcrop has returned assays exceeding 0.3 ounces gold per ton at several locations on large samples and in general exceeds levels observed at Treasure King (the grade at Malartic is 0.12 oz gold/ton). Further, because gold-bearing, hydrothermally altered rocks at each of the new sites extend over areas broader than Treasure King, the exploration potential looks quite favorable.

Nielsen's analogy to Malartic is significant because it means the broader mineralized zones located along the shear zone east and south of Treasure King may indeed have much larger potential. His report will be available September 16th or so.

To: Files

October 9, 1991

From: Thomas A. Loucks

Re: Treasure King Assessment Work, 1990-1991

Summary

Gold mineralization at Treasure King is associated with banded iron formation ("BIF") in Precambrian greenstone located along the Shylock Fault, a major tectonic lineament traversing central Arizona. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Gold-bearing iron formation lies interbedded with the volcanic rocks.

Exploration drilling has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a steeply dipping tabular resource open to the north, south, and at depth at the Treasure King mine. More tons are needed for an economically viable operation; thus, the emphasis has been to identify new targets which could be tested in conjunction with deeper or on-strike drilling at Treasure King.

The 1989-1990 work program resulted in recognition of two more larger zones of anomalous gold geochemistry located south of Treasure King along the Shylock Fault system, and this season's work program resulted in recognition of a third untested gold target. Noting that the four recognized zones of gold mineralization occur within the Shylock Fault zone, Richard Nielson, our consulting geologist, concludes that the Treasure King property may host a Malartic-type shear zone-hosted gold target.

Messrs. Peiker and Loucks carried out the 1990-1991 assessment work program on August 12-15, 1991. The program consisted of a geochemical sampling project designed with two objectives in addition to that of holding the property: 1) search for new areas of mineralization within the claim block; 2) expand RGI's knowledge of soil sampling at Treasure King for use in future exploration efforts at the property.

The program was successful in identifying the new "East Main" target zone and in demonstrating that gold-in-soil is useful for identifying gold-bearing targets. No new targets were found in the Lost Pick claim group, however.

Recommendations

Three areas for follow up have been identified. Royal should attempt to farm the property out to add the most value at the least expense to Royal, and work commitments should be obtained which guarantee that drilling of these targets be achieved.

I. Geology (Plate 1)

The geology of the Treasure King property has been previously described by Steininger (1988), REDCO (1986), by Anderson and Blacet (1972), and was summarized in RGI's report on assessment work last year (Loucks, 1990). A generalized geologic map after REDCO is presented as Plate 1.

Briefly, a steeply dipping, north-northeast trending sequence of felsic to intermediate composition metavolcanics underlies the Treasure King deposit and the geochemically anomalous Main Shaft, East Main, and South Shaft target areas. Iron formation (iron-bearing chert) is interbedded with and generally conformable to the steeply dipping sequence of metavolcancics; locally, the iron formation is strongly banded, contains more than the usual content of specular hematite, and contains concentrations of gold.

All of the identified mineralized areas lie within the Shylock Fault zone, a major tectonic zone passing through this part of Arizona (plate 1). Recognition of the apparent relationship of gold-mineralized areas to this structure has led Richard Nielsen to suggest there may be potential for gold deposits like Malartic - considerably larger than the one found to date at Treasure King.

Interbedded unconsolidated sediments and basaltic volcanics of Tertiary-Quaternary age unconformably overlie the Precambrian rocks at Treasure King. These rocks form postmineral cover at Treasure King and overlie much of the area between the Main Shaft and Treasure King mineralized areas and also crop out again to the south of the South Shaft.

Mineralized and adjacent barren Precambrian rocks are thus exposed in windows through younger postmineral rocks. In some locations, only small mineralized outcrops occur, with alluvium and younger rocks obscuring extensions of mineralization.

II. Mineralization

Gold's exact mode of occurrence at Treasure King is unknown. Anomalous gold most commonly occurs within iron formation but also within schist, and its content rises with the density of quartz veining. Some pyrite casts have been observed. We also note that most workings are located on or near a deformed schist-iron formation contact, suggesting that structure and stratigraphic controls may be important to mineralization and ore deposition. Thus, it is believed that gold mineralization is related to a younger period of silicification and mineralization that post dated lithification.

In addition to numerous prospect pits, there has been previous underground mining at Treasure King, as evidenced by three shafts, one adit, and limited (?) underground workings. The amount and tenor of previous production is unknown.

The shafts have all been sunk on iron formation-schist contacts and are generally steeply inclined, following the contact, although limited drifting has emphased the schist as host rock.

II. Geochemical Sampling Methodology (Sample Locations: Plate 2)

This year's sampling program is an extension of last season's, and last year's report goes into greater deal on the methodology devised at that time. Objectives this year were to 1) run soil lines across projected extensions of known gold mineralization to determine if the projected gold-bearing horizons could be detected; 2) sample new and additional outcrops of iron formation; 3) collect stream sediment samples below the Lost Pick claim group in an effort to determine if there were gold anomalies worthy of follow-up.

III. Geochemical Results (Plates 3-4)

Sample results from Cone Geochemical are tabulated at the back of the report. Last year's work indicated that gold and arsenic are the principal elements of use in gold exploration at Treasure King. Gold assays were performed by fire assay with an AA finish. Arsenic assays are geochemical analyses performed by AA.

Rock Geochemistry

Of seventeen rock chip samples collected, all but two contained detectable gold (Appendix); however, those collected from the Lost Pick claims were not of particular interest and, when coupled with our visual observations, lead to the conclusion that the Lost Pick area is not as interesting as Treasure King, and claims to be trimmed may be taken from the Lost Pick group.

Of the remaining rock chip samples, those from iron formation at the new East Main area, located about one-half mile east of the Main Shaft, are highly anomalous: five out of six contained in excess of 250 ppb gold, and two of these samples contained in excess of 2,000 ppb gold (#96, 97 from the East Main area).

Sample	Assay in PPB Gold	Converted to Ounces
96	3,500 ppb	0.10 oz gold/ton
97	2,050 ppb	0.06 oz gold/ton

Soil Geochemistry

Soil sample lines were run across the projection of gold mineralization, as identified in rock, and samples were taken at various intervals from B or C horizon soils. The soil mantle is quite thin at Treasure King, and holes were rarely dug over several inches deep.

Line	Location	Sample Spacing	# Samples	Samples Analyzed
1	South Shaft	10 feet	13	7, alternating
2	South Shaft	10 feet	13	7, alternating
3	East Main	10 feet	7	7, 100%
4	Main Shaft	100 feet	11	7, alternating

The center point of lines 1-3 was located where blind mineralization was inferred to lie; these lines are short and, now that we can see results were positive, these lines should be extended and also more widely used on the property. On line 4, the line crosses inferred mineralization at "X." See plates 2-4.

For discussion, it may be easier to examine all of the soil results on one page as presented in the appendix. The key observations are:

- Gold is detectable in all soil samples collected
- Gold is elevated approximately where the soil line crosses inferred mineralization.
- Arsenic correlates fairly well with gold and thus is generally higher over inferred mineralization (although without more data it could be difficult to argue that the mineralized zone would be clearly identified from arsenic data in the absence of gold data).
- Soil line 4 trends downhill so elevated gold results below sample #4-3 may be contaminated, although samples 4-9 and 4-10 show lower levels. If contamination is not a problem, then the zone appears fairly wide (200 feet or more).
- Both lines 1 and 2 at the South Shaft should be extended until samples attain background gold concentrations. It would appear that the South Shaft mineralized zone could be 100 feet wide (because gold is >50 ppb) if samples containing less than 50 ppb gold on the edges of lines 3 and 4 are significant.
- Line 3 should be extended but in particular to the east where values remain high (>100 ppb).

Stream Geochemistry

Results of stream sediment sampling did not yield any indications of new areas for follow-up. In particular, the select "high grade" (by visual estimate) cobble samples - #91-92, where attractive looking float was collected, yielded some of the lowest results on the property.

Vein Geochemistry

The Main Shaft appears to have been sunk on the projection of a goethitic vein. We channel-sampled the vein (#93) and collected several individual specimens (#94A-D), all of which returned disappointing gold results. No base metal assays were run, although we may have observed some smithsonite.

Two samples of gossan taken from workings developed on iron formation at the new East Main target contained detectable gold, one in fact containing 36000 ppb or 1.04 opt gold.

Conclusions

1) In addition to the Main and South Shaft areas identified for follow-up last season, we have added the East Main area as another target deserving of testing.

2) Gold soil geochemistry appears to serve well to identify inferred mineralization and could thus be used to direct a drill program if advance sampling were desired.

3) Testing these three targets could consume considerable capital for a company of Royal's size. In spite of Mr. Nielsen's thoughts that the prospect bears analagous characteristics to Malartic, we should farm the project out, preferably retaining a royalty to preserve some upside in the event Mr. Nielsen proves correct.

References

Anderson, C.A. and P. M. Blacet, 1972, Geologic map of the Mayer Quadrangle, Yavapai County, Arizona: U.S. Geological Survey Map GQ-996.

REDCO, 1986, Precambrian gold exploration program, Yavapai County, Arizona, unpublished company report, 34 p.

Steininger, Roger G., 1988, Geology and gold reserves at the Treasure King deposit and surrounding properties, Yavapai County, Arizona, September 10, report prepared for Royal Gold, Inc., 6 p.

Field/Lab #	Map #	Au (ppb)	As (ppm)	Sample Type	Remarks	Location
1	81	-1	1	Schist	Chl, qv	Lost Pick
2A	82A	15	24	Stream sediment		Lost Pick
2B	82B	7	18	Stream sediment		Lost Pick
3A	83A	43	14	Stream sediment w/ mt		Lost Pick
3B	83B	7	22	Stream sediment wo/ mt		Lost Pick
4	84	-1	3	Schist, chl-ser w/hem		Lost Pick
5	85	5	1290	Gossan float		Lost Pick
6	86	130	27	Schist	Chl, qv	Lost Pick
7	87	4	33	Schist	Chl, MnO	Lost Pick
8	88	9	73	Iron Fm	Hem, qv	Lost Pick
9	89	-1	-1	Iron Fm	Hem, qv	Lost Pick
10	90	48	11	Iron Fm	Hem, qv	Lost Pick
11	91	3	99	Select cobble stream sed		Lost Pick
12	92	2	166	Select cobble stream sed		Lost Pick
13	93	3	5	Channel sample goethite vein		Main shaft
14A	94A	9	6	Goethite vein		Main shaft
14B	94B	45	13	Goethite vein	w/ quartz	Main shaft
14C	94C	7	9	Goethite vein		Main shaft
14D	94D	4	6	Goethite vein	w/ hematite	Main shaft
15	95	6	7	Iron Fm		East Main Target
16	96	3500	218	Iron Fm		East Main Target
17	97	2050	14	Iron Fm		East Main Target
18A	98A	34	7	Gossan	hematite rich	East Main Target
18B	98B	36000	356	Gossan	reddish, black	East Main Target
18C	98C	297	2	Iron Fm	pyrite casts	East Main Target
18D	98D	384	4	Iron Fm	pyrite casts	East Main Target
18E	98E	257	12	Iron Fm	qv, hem, vuggy	East Main Target
19	99	64	6	Iron Fm		Main shaft
20	100	10	-1	Iron Fm		South Mesa Area
21	101	69	4	Iron Fm	Blocky, wk qv	South Mesa Area
22	102			Calcite vein, not assayed		South Mesa Area

Field/Lab #	Map #	Au (ppb)	As (ppm)	Sample Type	Remarks	Location
Soil Line #1: Midway between South Shaft and pit to N Sampled at 10-foot intervals, assayed alternate samples						
1 -	6E	176	17	Soil		South Shaft Area
1 -	4E	262	18	Soil		South Shaft Area
1 -	2E	118	20	Soil		South Shaft Area
1 -	C	142	14	Soil		South Shaft Area
1 -	2W	55	16	Soil		South Shaft Area
1 -	4W	25	16	Soil		South Shaft Area
1 -	6W	70	24	Soil		South Shaft Area
Soil Line #2: Center point at drill hole collar Sampled at 10-foot intervals, assayed alternate samples						
2 -	6E	31	15	Soil		South Shaft Area
2 -	4E	43	17	Soil		South Shaft Area
2 -	2E	48	18	Soil		South Shaft Area
2 -	C	39	14	Soil		South Shaft Area
2 -	2W	86	13	Soil		South Shaft Area
2 -	4W	58	8	Soil		South Shaft Area
2 -	6W	50	11	Soil		South Shaft Area
Soil Line #3: Taken at new East Main target area Sampled at 10-foot intervals						
3 -	3E	120	7	Soil		East Main Area
3 -	2E	46	8	Soil		East Main Area
3 -	1E	253	14	Soil		East Main Area
3 -	C	256	13	Soil		East Main Area
3 -	1W	117	14	Soil		East Main Area
3 -	2W	154	8	Soil		East Main Area
3 -	3W	42	4	Soil		East Main Area
Soil Line #4				Samples @ 100-foot intervals		
4 -	1	3	12	Soil		Main Shaft Area
4 -	3	2	8	Soil		Main Shaft Area
4 -	X	83	11	Soil:	where vein projects	Main Shaft Area
4 -	5	108	13	Soil:	nearby vein outcrop	Main Shaft Area
4 -	7	418	15	Soil		Main Shaft Area
4 -	9	48	13	Soil		Main Shaft Area
4 -	10	9	10	Soil		Main Shaft Area

To: Files

From: Thomas A. Loucks

November 20, 1990

Re: Treasure King Assessment Work, 1989-1990

Summary

Gold mineralization at Treasure King is characterized as a Precambrian greenstone setting. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Abundant gold-bearing iron formation lies interbedded with the volcanic rocks.

Drilling at Treasure King has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a steeply dipping tabular resource open to the north, south, and at depth.

The 1989-1990 assessment work program at Treasure King consisted primarily of a geochemical sampling project to test the potential for gold mineralization to the south and southwest of the recognized deposit. The program consisted of limited sampling throughout the claim block and denser sampling at Treasure King and in two areas with visible alteration and denser quartz veining.

The program was successful in that the two altered areas are characterized by anomalous gold geochemistry as well as pathfinder elements copper and arsenic. These areas are referred to as the Main Shaft and the South Shaft areas and contain as much as 0.32 opt gold in outcrop. It may be significant that higher gold contents are detectable at these two areas than at Treasure King.

Other assessment work included mounting barbed wire fences around mine openings at the Main shaft.

Recommendations

Two areas for follow up have been identified and a third area requires further reconnaissance work. Royal should attempt to farm the property out in order to get the most work done with the least expense to Royal, and drilling should be used to test the broken ridgeline which hosts the newly identified targets.

Further geologic work would include detailed mapping, sampling, and drill target definition at the Main Shaft and South Shaft areas. Detailed sampling is warranted where the two outcrops containing 10,000 ppb gold occur, and follow-up reconnaissance is needed on the Lost Pick claims where quartzites were found to contain in excess of 300 ppb gold.

Check assays should be run on the two 10,000 ppb samples. It would be preferable to obtain splits of the rejects from Bondar Clegg and to run new assays, rather than rerunning the same pulps.

I. Geology (Plate 1)

The geology of the Treasure King property has been previously described by Steininger (1988), REDCO (1986), and by Anderson and Blacet (1972). A generalized geologic map after REDCO is presented as Plate 1.

A steeply dipping, north-northeast trending sequence of felsic to intermediate composition metavolcanics underlies the Treasure King deposit and the geochemically anomalous Main Shaft and South Shaft target areas. This highly deformed siliceous and mineralized horizon is thought to be the same as that hosting Phelps Dodge's massive, polymetallic sulfide deposits at Jerome, located some thirty miles to the north.

Below and above this sequence the volcanics are more mafic in composition, and there is also a thick Precambrian sedimentary sequence, characterized by metaquartzites, located to the west of Treasure King.

Numerous "dikes" of iron formation (iron-bearing chert) are interbedded with and generally conformable to the steeply dipping sequence of metavolcancics; being resistant, they stand out as ridge formers in this part of Arizona. Locally, these iron formations are strongly banded, contain more than the usual content of specular hematite, and contain highly anomalous gold.

Interbedded unconsolidated sediments and basaltic volcanics of Tertiary-Quaternary age unconformably overlie the Precambrian rocks at Treasure King. These rocks form postmineral cover at Treasure King and overlie much of the area between the Main Shaft and Treasure King mineralized areas and also crop out again to the south of the South Shaft.

Mineralized and adjacent barren Precambrian rocks are thus exposed in windows through younger postmineral rocks. In some locations, only small mineralized outcrops occur, with alluvium and younger rocks obscuring extensions of mineralization.

II. Mineralization

Gold's exact mode of occurrence at Treasure King is unknown. Anomalous gold most commonly occurs within iron formation but also within schist, and its content rises with the density of quartz veining. We also note that most workings are located on or near a deformed schist-iron formation contact, suggesting that structure

	Gold (ppb)	As (ppm)	Cu (ppm)	Hg (ppb)
Weakly altered rocks (Background)				
Schist	nd	4-8	7-122	190- 980
Iron Formation	nd-8	4-6	0- 8	170- 250
Main Shaft Area				
Schist	nd-528	3-26	0-559	160-3610
Iron Formation	31-10000	2- 7	40-114	0- 840
Stream Sediment	nd	11	55	780
South Shaft Area				
Schist	nd-542	3-54	1-370	130 -550
Iron Formation	6-10000	6-117	0- 88	0-1330
Stream Sediment	47	15	29	220
Select cobble	5	15	12	140

Gold (Plate 3): There is clearly no doubt that Treasure King is a gold-bearing system; most samples contain detectable gold and thus are very encouraging for further, more detailed work.

The gold content of iron formation is generally higher than that in schist, which matches results of drilling to date. Two very encouraging rock chip samples contained 10,000 ppb (0.32 opt). Treasure King showed up in both stream sediment and select cobble sampling as did the South Shaft area.

It is perhaps significant that gold geochemistry is in general higher at the South and Main Shaft areas than it is in surface rock samples collected at Treasure King.

Arsenic (Plate 4): The arsenic content of gold-anomalous rocks at Treasure King is not particularly high, yet nevertheless areas of >12 ppm arsenic are roughly coincident with Treasure King as well as the South and Main Shaft areas, whereas background may be <8 ppm.

Copper (Plate 5): Copper oxides often occur on fractures where prospect pits indicate historic workings. The overall distribution of samples indicates there may be a slightly higher level of copper (i.e., >20 ppm) associated with prospective areas such as Treasure King, the Main Shaft, and the South Shaft areas. On the other hand, copper levels are low enough that they are not thought to cause concern for heap leaching.

Other Elements: Chemical analyses for lead, zinc, mercury and antimony did not provide useful results for identifying gold targets, although some of the higher mercury values did occur at the South and Main Shaft areas.

Titanium content can often be used in altered rocks to determine the mafic content of the rock. Titanium analyses were run on

method and/or B) other areas were anomalous.

4) Select cobble samples: This sampling method is biased toward high grade sampling but has been highly successful elsewhere. Stream cobbles or cobble chips representing the "best looking rocks" may serve to identify drainages with anomalous geochemistry. Other samples designed to yield similar information were

5) Dump grab samples: - limonite, managanese oxides, and sulfides.

6) Vein chip samples: quartz-tourmaline veins, some with copper oxides.

III. Geochemical Results

Sample results from Bondar-Clegg are tabulated at the back of the report along with comments on analytical methodology and detection limits.

Two rock chip samples of iron formation analyzed by AA contained 10,000 ppb gold (#5 from the Main Shaft, #25 from the South Shaft). Bondar-Clegg re-ran these with the following fire assay results:

Sample	Check Assay #1	Check Assay #2
5	0.760 opt gold	1.065 opt gold
25	0.540 opt gold	0.618 opt gold

Orientation study

Results of sampling at Treasure King and from unaltered appearing rocks are compared with the Main and South Shaft areas below. Gold is the most useful element. Arsenic and copper show elevated levels where gold is present, but the presence of gold does not necessarily correlate with high arsenic or copper.

Elements such as zinc, mercury, lead do not appear to be useful as indicators of gold mineralization at Treasure King, although some high values were obtained in some instances.

Treasure King	Gold (ppb)	As (ppm)	Cu (ppm)	Hg (ppb)
Schist	nd-161	5-17	0-55	180- 520
Iron Formation	67-370	14-16	0	110- 220
Stream sediment	20	27	59	290
Select cobble	117	9	nd	250

and stratigraphic controls may be important to mineralization and ore deposition. Thus, it is believed that gold mineralization is related to a younger period of silicification and mineralization that post dated lithification.

In addition to numerous prospect pits, there has been previous underground mining at Treasure King, as evidenced by three shafts, one adit, and limited (?) underground workings. The amount and tenor of previous production is unknown.

The shafts have all been sunk on iron formation-schist contacts and are generally steeply inclined, following the contact, although limited drifting has emphased the schist as host rock.

II. Geochemical Sampling Methodology (Sample Locations: Plate 2)

Diverse sample types were collected in this program with several objectives: ascertaining the geochemical signature at Treasure King itself, ascertaining background levels of different elements in several widely occurring rock types, and identifying new areas of anomalous gold geochemistry. It is recognized that the number of samples collected for orientation or background information purposes is small, and thus the inferences drawn are just that - inferences - these are not statistically rigorous conclusions.

1) Orientation samples: Collected at the Treasure King deposit to determine the signature of the known deposit in rock, soil, and stream sediment geochemistry. Whereas we have prior information from several programs by other geologists, we judged it useful to resample the deposit to assure that sampling methods would be comparable between the orientation samples and samples in outlying areas.

2) Rock chip samples: By far the greatest number of samples were comprised of chips from broad areas designed to represent large volumes of rock, albeit the aggregate sample typically weighed about 1-2 pounds. Samples represent a number of rock types: schist and iron formation predominate, and - again for base line information - samples were collected from both altered and unaltered-appearing rocks.

3) Stream sediment samples: Drainages in the Treasure King area are of moderate grade, and thus much of the material in stream beds probably is locally derived. Nevertheless we collected samples of sand from coarser gravel sites; these samples were not screened or segregated by size. Similar samples were collected at Treasure King.

It is important in gold exploration to know if the rocks represent a "gold-bearing" system. Several methods of "high grading" were used to determine whether A) Treasure King was detectable by this

samples of schist to ascertain whether altered chlorite schist could be easily distinguished from sericite schist, in particular the more felsic, quartz rich host rocks at the Main and South shaft areas. Results were variable (some chlorite schist has lower titanium content than felsic schists) and thus not promising.

High boron content associated with areas of massive quartz veining support the conclusion that the black mineral occuring with the quartz may be tourmaline.

IV. Areas for Follow Up

Clearly two broad areas of gold-anomalous rock have been identified at the Main Shaft, 6,000 feet south of Treasure King, and at the South Shaft, located about 12,000 feet south of Treasure King. In addition, two samples of what may be an orthoquartzite contain in excess of 300 ppb gold on the Lost Pick claims.

Main Shaft: The Main Shaft area is underlain by Precambrian felsic volcanics and interbedded-to-cross-cutting iron formation. It differs from Treasure King and the South Shaft in that

- The shaft itself and adjacent drifts are predominantly hosted by schist, whereas Treasure King's shaft and the South Shaft are clearly sunk on the iron formation-schist contact. Nevertheless, gold in schist at this locality assayed <18 ppm vs. up to 10,000 ppm in iron formation;
- The hillslope where samples #65-71 were collected is stained red and stands out as a color anomaly on the Treasure King property (Figure 1). Unfortunately, none of these six samples contained detectable gold, and the significance of the color anomaly is not known.

The schist to the south of the Main shaft is in some locations (e.g. samples #65-71) quite strongly veined by "micro" quartz veinlets (<1/4"), possibly indicating a period of silicification separate from that of the coarser veins found with gold bearing iron formation. This finely veined schist is present near the South Shaft as well but has not been observed at Treasure King. The iron-stained ridge is broken by a stream channel but otherwise trends south to the South Shaft.

South Shaft: The South Shaft area is geologically similar to the Main Shaft: Precambrian felsic volcanics and interbedded-to-cross-cutting iron formation are the host rocks. The South Shaft is similar to Treasure King by virtue of its very red, banded iron formation with strong development of specular hematite on fractures. The sample that ran 10,000 ppb was collected at the collar of the South Shaft.

The schist on the hilltop located southwest of the South shaft is in some locations (e.g. samples #39-47) quite strongly veined by "micro" quartz veinlets (<1/4"), even more so than at the Main Shaft. Sample #39 contains 188 ppb gold (detectable but <.01 opt).

Lying between the Main and South Shaft target areas, sample #36 is gold-bearing schist (197 ppb) from a hillcrest. The crude topographic continuity of the ridge line extending south from the Main Shaft, through this hill, and then on to the South Shaft area may indicate a much larger gold target than has been identified based on present data.

Lost Pick: While doing reconnaissance work in the Lost Pick claim group, two hematitic samples of what appears to be an orthoquartzite were collected on hillcrests on the west side of the property (#72,73). Both contained in excess of 300 ppb gold. Time did not permit further work in this area.

Future Work: More detailed work is warranted to

1) learn whether there is gold-bearing iron formation underlying the red-stained ridge at the Main Shaft.

2) determine whether the schists are anomalous in the old workings at the Main Shaft (or if not, what were the workings driven on?).

3) to follow up the area (sample #5) of 10,000 ppb gold in iron formation located northeast of the shaft.

4) learn whether gold-bearing schists and iron formation occur between the two target areas and whether the South and Main Shaft targets are similar to Treasure King in size potential or larger.

5) enlargen the reconnaissance program on the Lost Pick claims.

References

Anderson, C.A. and P. M. Blacet, 1972, Geologic map of the Mayer Quadrangle, Yavapai County, Arizona: U.S. Geological Survey Map GQ-996.

REDCO, 1986, Precambrian gold exploration program, Yavapai County, Arizona, unpublished company report, 34 p.

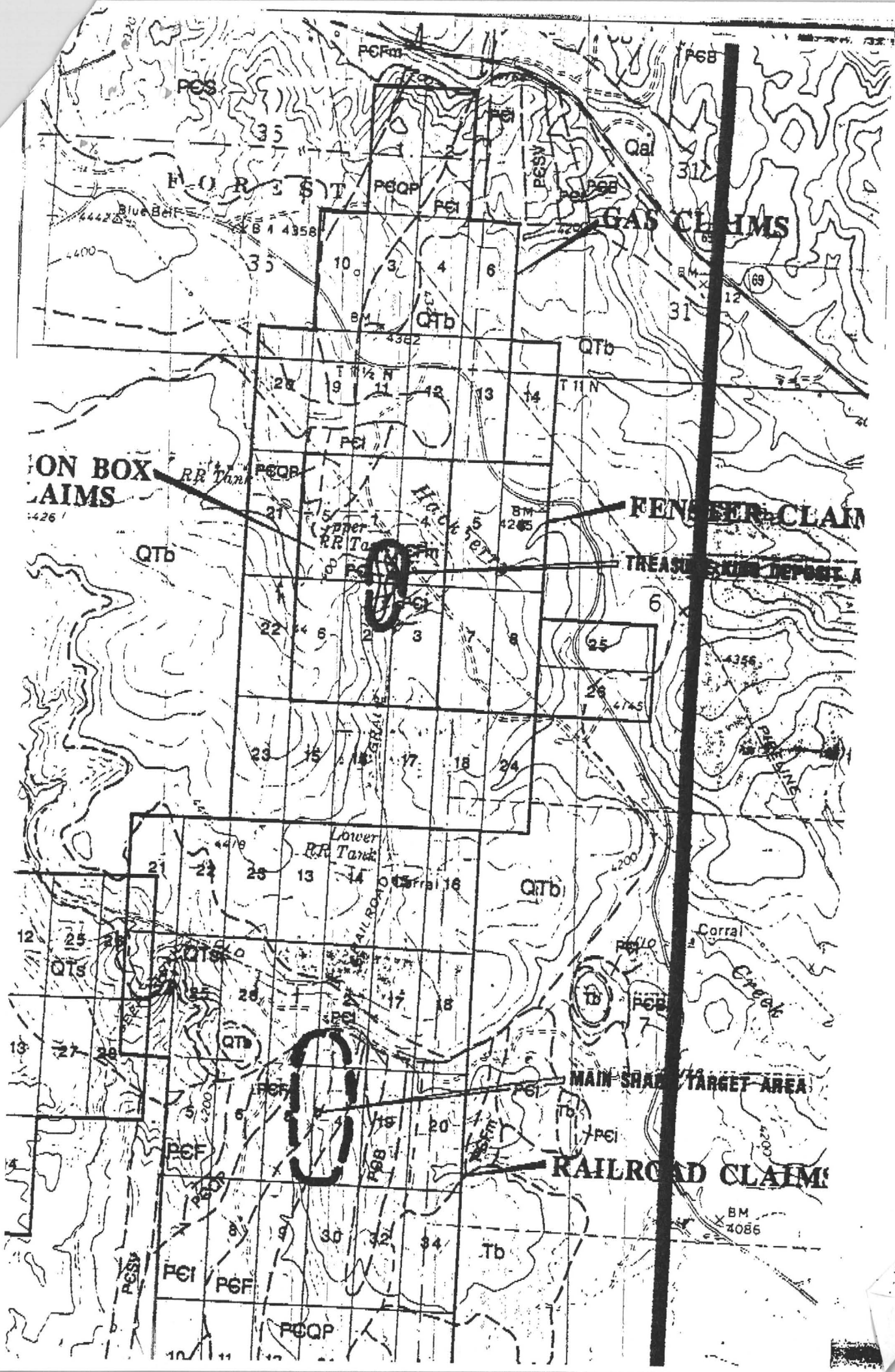
Steininger, Roger G., 1988, Geology and gold reserves at the Treasure King deposit and surrounding properties, Yavapai County, Arizona, September 10, report prepared for Royal Gold, Inc., 6 p.

Sample #	Au (ppb)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppb)	Cu (ppm)	Zn (ppm)	Ti (%)	B ppm	Sample Type	Remarks	Location
R2 - 1	528	0.4	6.8	2.3	1100	599	29			Qtz vnd schist		Main shaft
R2 - 2	487	0.9	7.5	2.7	780	2521	529			Qtz vein		Main shaft
R2 - 3	230		4.6	1.0	250	52	-1			Qtz vein		Main shaft
R2 - 4	1062		7.3	1.2	170	114	30			Qtz vnd Fe fm		Main shaft
R2 - 5	10000		5.8	2.0	840	14	18			Qtz vnd Fe Fm		Main shaft
R2 - 6	31		6.1	1.5	160	47	21			Qtz vnd Fe Fm		Main shaft
R2 - 7	37		4.6	4.1	180	5	-1			Qtz vein		Main shaft
R2 - 8	40		2.7	0.6		30	-1			Fe fm		Main shaft
R2 - 9	17		2.7	8.8	160	115	85	0.24		Chl schist		Main shaft
R2 - 10	-5		4.9	4.8	200		69	0.24		Ser schist		Main shaft
R2 - 11	6		14.0	1.9	130		50			Iron fm/schist		Main shaft
R2 - 12	653		5.6	3.5		25	21			Qtz vein, Mno		Railroad #12
R2 - 13	370		16.0	1.0	110		18			Fe fm		Treasure King
R2 - 14	32		14.0	2.4	410	55	58	0.17		Ser schist		Treasure King
R2 - 15	12		4.9	1.4	180	7	49	0.12		Ser schist		Treasure King
R2 - 16	155		23.0	3.3	610	110	107			Soil		Treasure King
R2 - 17	161		11.0	1.0	280		23	0.07		Schist		Treasure King
R2 - 18	67		14.0	1.6	220		19			Fe Fm		Treasure King
R2 - 19	38		17.0	1.6	520	4	52	-0.01		Schist		Treasure King
R2 - 20	-5		8.5	9.3	380	38	94	0.06		Schist		Treasure King
R2 - 21	-5		8.4	6.9	130		4			Iron Fm		Railroad #8
R2 - 22	-5		4.9	3.7	210		28	0.53		Schist		Railroad #8
R2 - 23	120		4.8	1.8		4	18			Iron Fm	BIF	Railroad #9
R2 - 24	-5		1.5	1.1	150	23	22	0.13		Ser schist		Railroad #9
R2 - 25	10000	0.9	117.0	2.3	1330	66	30			Iron Fm		South shaft
R2 - 26	67		4.2	1.4	340	40	107	0.19		Schist		South shaft
R2 - 27	3177	0.3	94.0	2.0	680		21			Qtz vnd Fe Fm		South shaft
R2 - 28	542		21.0	2.5	360	52	41	0.03		Ser schist		South shaft
R2 - 29	47		15.0	4.2	220	29	79			Stream sed		South shaft
R2 - 30	-5		19.0	4.2	200		22			Selct Cbbl		South shaft
R2 - 31	-5		15.0	1.5	140	12	22		10600	Qtz vein	Tourm	South shaft
R2 - 32	-5		4.6	17.0	310	182	118	0.56		Schist	Chl	South shaft
R2 - 33	-5		3.4	1.7	210	3	29	0.02		Schist		South shaft
R2 - 34	18		37.0	6.0	550	131	179	0.18		Qtz vnd schist		South shaft
R2 - 35	180		21.0	1.9	190	88	21			Qtz, Fe Fm		South shaft
R2 - 36	97		5.0	1.9	140	6	22	0.05		Schist		South shaft
R2 - 37	-5		5.4	1.6	210		22			Iron fm		Railroad #33
R2 - 38	-5		4.1	0.9	170	8	17			Iron fm		Railroad #33
R2 - 39	188		54.0	3.3	240	370	54	0.16		Schist		South shaft
R2 - 40	-5		3.5	2.4		9	23			Rhy tuff		South shaft

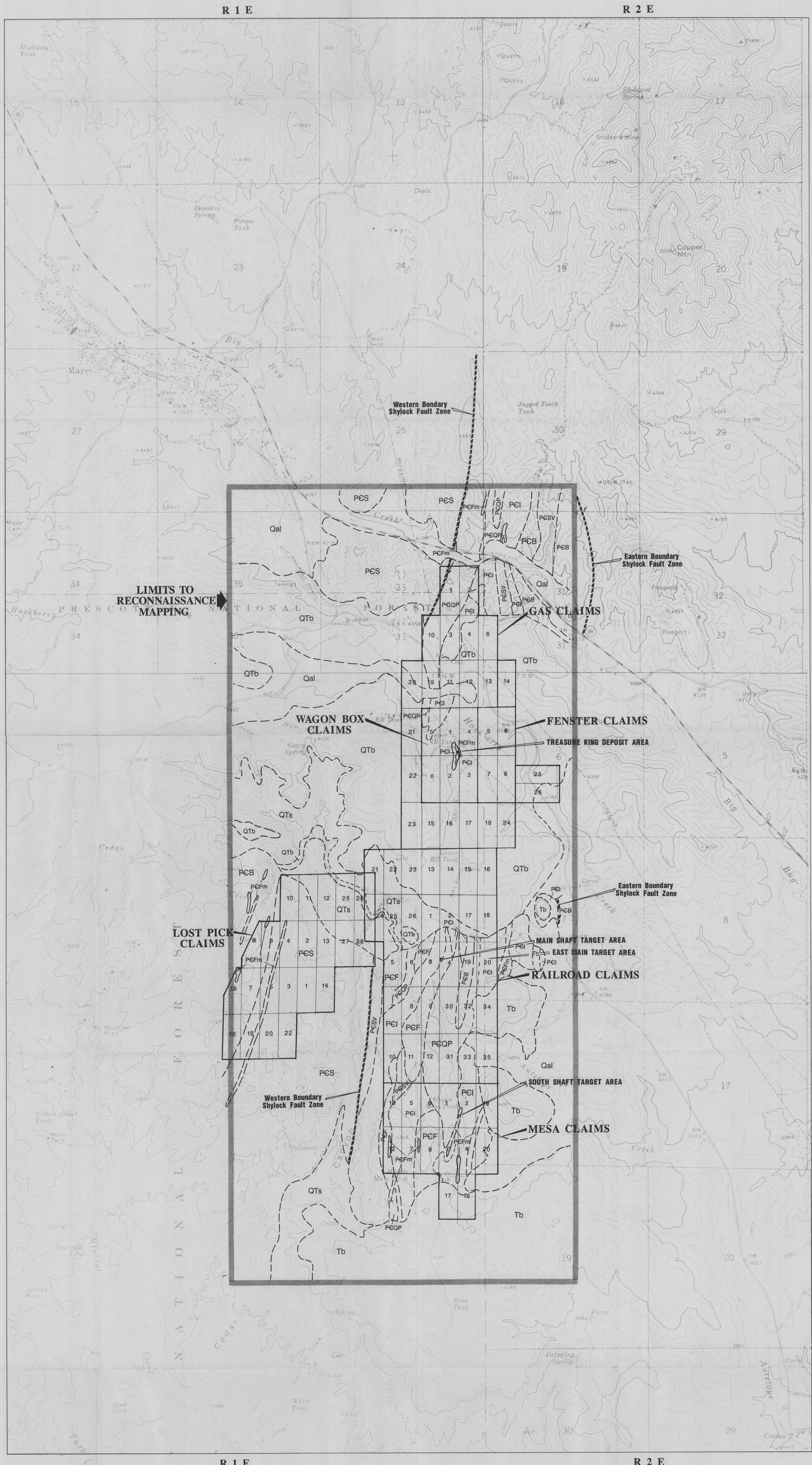
R2 - 41	6		7.4	1.6	280		17			Iron Fm			South shaft
R2 - 42	18		15.0	3.5	160	40	76			Fault bx			South shaft
R2 - 43	26		39.0	1.2	450	27	48			Schist			South shaft
R2 - 44	-5		3.5	1.1	130	1	24	-0.01		Schist			South shaft
R2 - 45	4003	0.4	12.0	1.4	390		22			Iron Fm			South shaft
R2 - 46	465		6.1	1.5			18			Qtz vnd Fe Fm			South shaft
R2 - 47	-5		2.6	2.7	170	4	21	-0.01		Ser schist			South shaft
R2 - 48	217	0.2	10.0	4.9	180	89	22			Qtz vnd Fe Fm			Mesa #7
R2 - 49	93		11.0	1.5	200		22			Iron Fm			Mesa #7
R2 - 50	8		6.2	3.9	250		22			Iron Fm			Mesa #5
R2 - 51	-5		3.5	20.0	980	122	59	0.90		Chl schist			Mesa #5
R2 - 52	248	0.6	7.2	1.5	480	271	21		3227	Qtz vn	Tourm, CuOx		Mesa #5
R2 - 53	10		10.0	5.2	210	13	87			Stream sed			W Rail
R2 - 54	-5		4.0	1.2	200	4	27			Fe Fm, qv			AUF #29
R2 - 55	-5		8.0	2.3	190	7	58	0.04		Schist			AUF #1
R2 - 56	508	1	10000.0	108.0	8090	5583	605			Dump grab			Starnock Mine
R2 - 57	-5	0.3	67.0	1.1	490	180	79	0.16		Ser schist			Starnock Mine
R2 - 58	62		112.0	8.0	146	110	86			Dump grab			AUF #17

Sample #	Au (ppb)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppb)	Cu (ppm)	Zn (ppm)	Ti (%)	B ppm	Sample Type	Remarks	Location
R2 - 59	-5		29.0	2.5	500	28	88	0.23		Ser schist		AUF #16
R2 - 60	3633	60	2230.0	1670.0	50000	2590	12075			Limonite at mine		AUF #16
R2 - 61	4340	5.7	71.0	15.0	2170	5233	93		1528	Dump grab		GAS #1
R2 - 62	34	0.5	26.0	20.1	3610	74	183	0.15		Schist		Main shaft
R2 - 63	-5		4.8	2.8	300	37	29			Rhyolite		Main shaft
R2 - 64	-5		11.0	5.2	780	55	85			Stream sed		Main shaft
R2 - 65	-5		13.0	2.2	330		9			Iron Fm		Red Hill
R2 - 66	-5		12.0	4.8	310	30	84			Stream sed		Red Hill
R2 - 67	-5		3.1	1.8	270	8	29	0.08		Ser schist		Red Hill
R2 - 68	-5		5.6	1.5	220	14	58	0.05		Ser schist		Red Hill
R2 - 69	-5		6.4	1.1	120	20	28	0.06		Ser schist		Red Hill
R2 - 70	-5		11.0	1.3	140	14	58	0.04		Ser schist		Red Hill
R2 - 71	-5		4.6	1.6	220	13	29	0.05		Ser schist		Red Hill
R2 - 72	332	0.7	18.0	2.3	450	37	-1			Quartzite		Pick claims
R2 - 73	398		6.4	2.7	620		19			Quartzite		Pick claims
R2 - 74	20		27.0	0.6	290	59	91			Stream sed		Treasure King
R2 - 75	117		9.2	1.8	250		23			Select cobble		Treasure King
R2 - 76	-5	0.7	20.0	5.4	1570	66	209			Iron Fm		Blue Bell
R2 - 77	-5		3.9	0.9	210	21	59	0.01		Schist		Blue Bell

R2 - 78	56	80.0	2.2	620	50	62	Iron Fm	Hwy Roadcut
R2 - 79	-5	5.8	1.8	130	10	88	Iron Fm	Hwy Roadcut
R2 - 80	43	26.0	1.1	1360	105	25	Iron Fm	Hwy Roadcut


PCFm
PCS
PCI
Qal
PCQP
PCSV
PCB
PCF
FOREST
GAS CLAIMS
Blue Bell
4358
4400
35
31
10
3
4
6
QTb
4382
T 11½ N
T 11 N
9
11
12
13
14
ON BOX
CLAIMS
RR Tank
Upper RR Tank
Hackberry
BM 4265
FENNER CLAIM
TREASURE KING DEPOSIT A
22
2
3
7
8
25
26
4356
4345
23
15
17
18
24
Lower RR Tank
Corral
QTs
Creek
MAIN SHAFT TARGET AREA
RAILROAD CLAIMS
BM 4086
30
32
34
Tb

EASI FILE CORP. IRVINE, CA EFH36
TREASURE KING | 9/90
Gen. Geologic Map | Plate 1



EXPLANATION

GEOLOGIC UNITS

Qal	Quaternary Alluvium
QTb	Quaternary/Tertiary Basalt
QTs	Quaternary/Tertiary Sediments

PRECAMBRIAN ROCKS

PCFm	Iron Formation
PCSV	Siliceous Volcanic Rocks
PCQP	Quartz Porphyry
PCF	Felsic Volcanic Rocks
PCI	Intermediate Volcanic Rocks
PCB	Basic Volcanic Rocks
PCS	Sedimentary Rocks

Approximate Boundary Shylock Fault Zone (USGS Map GQ-996)

SCALE 1"=1000'
0 1000 2000 Feet

ROYAL GOLD INC.

TREASURE KING PROJECT
Yavapai County, Arizona

GENERALIZED GEOLOGIC MAP
Data after REDCO, 1986

10/1991 **PLATE 1**

TREASURE KING PROJECT

Yavapai County, Arizona

GENERALIZED GEOLOGIC MAP

Data after HEDCO, 1988

PLATE 1

ROYAL GOLD INC.

SCANNED 5/2010 NSN

EXPLANATION

GEOLOGIC UNITS

Qal	Quaternary alluvium
QTp	Quaternary/Tertiary basalt
QTs	Quaternary/Tertiary sediments
PCTm	Iron Formation
PCSV	Siliceous Volcanic Rocks

PRECAMBRIAN ROCKS

PCp	Quartz Porphyry
PCf	Felsic Volcanic Rocks
PCi	Intermediate Volcanic Rocks
PCB	Basic Volcanic Rocks
PCS	Sedimentary Rocks

Approximate boundary
Shylock Fault Zone
Image Map GO-8881

SCALE 1:4000

R 1 E

R 2 E

T 12 N

T 11 N

MESA CLAIMS

SOUTH SHAFT TARGET AREA

RAILROAD CLAIMS

EAST MAIN TARGET AREA

MAIN SHAFT TARGET AREA

Shylock Fault Zone
Eastern Boundary

TREASURE KING DEPOSIT AREA

KENSLER CLAIMS

MACON BOX CLAIMS

LOST PICK CLAIMS

MAPPING RECONNAISSANCE LIMITS TO

Shylock Fault Zone
Western Boundary

Base Geologic Map

TREASURE KING

date

EASI FILE CORP. IRVINE, CA EFH36
TREASURE KING 9/90
Arsenic Samples
Plate 4

R 1 E

R 2 E

T 12 N

T 11 N

PRESCOTT NATIONAL FOREST

GAS CLAIMS

WAGON BOX CLAIMS

FENSTER CLAIMS

TREASURE KING DEPOSIT AREA

LOST PICK CLAIMS

MAIN SHAFT TARGET AREA

RAILROAD CLAIMS

SOUTH SHAFT TARGET AREA

MESA CLAIMS

SAMPLE LEGEND

- ■ Rock chip
- ○ Stream sediment or soil
- ● Select stream cobble
- ◇ Vein chip
- ▽ Dump grab

Generalized area of > 12 ppm arsenic

SCALE: 1"=1000'

0 1000 2000 Feet

ROYAL GOLD INC.

TREASURE KING PROJECT

Yavapai County, Arizona

ARSENIC (ppm)

9/1990

PLATE 4

SCANNED 5/2010 NJN

EASI FILE CORP. IRVINE, CA EFN35

TREASURE KING 9/92
Sample Locations (of in claim group) Plate 2

R 1 E R 2 E

T 12 N

T 11 N

PRESCOTT NATIONAL FOREST

GAS CLAIMS

WAGON BOX CLAIMS

FENSTER CLAIMS

TREASURE KING DEPOSIT AREA

LOST PICK CLAIMS

EAST MAIN TARGET AREA

RAILROAD CLAIMS

MAIN SHAFT TARGET AREA

SOUTH SHAFT TARGET AREA

MESA CLAIMS

SOIL LINE 1 T-50'

SOIL LINE 2 T-50'

SOIL LINE 3 T-50'

SOIL LINE 4 T-250'

SAMPLE LEGEND

- ■ Rock chip
- ○ Stream sediment or soil
- ● Select stream cobble
- ◇ Vein chip
- ▽ Dump grab

SCALE: 1"=1000'

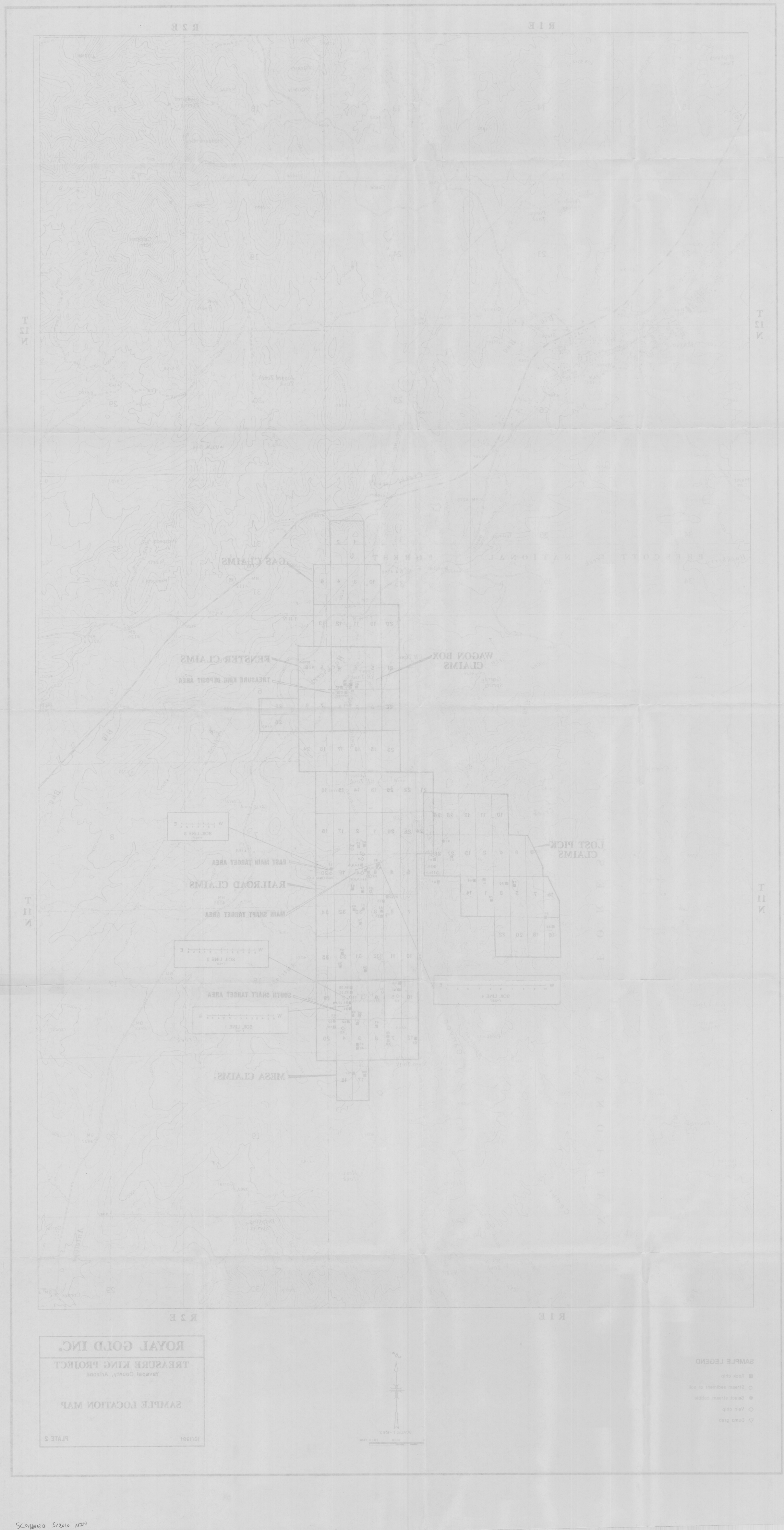
0 1000 2000 Feet

ROYAL GOLD INC.

TREASURE KING PROJECT
Yavapai County, Arizona

SAMPLE LOCATION MAP

10/1991 **PLATE 2**



SCANNED 5/2010 NJN

N

12
N

GAS CLAIMS

WAGON BOX CLAIMS

FENSTER CLAIMS

TREASURE KING DEPOSIT AREA

LOST PICK CLAIMS

EAST MAIN TARGET AREA

RAILROAD CLAIMS

MAIN SHAFT TARGET AREA

SOUTH SHAFT TARGET AREA

MESA CLAIMS

SOIL LINE 4
1"=250'

SOIL LINE 3
1"=50'

SOIL LINE 2
1"=50'

SOIL LINE 1
1"=50'

T 11 N

T 11 N

R 1 E

R 2 E

SAMPLE LEGEND

- ■ Rock chip
- ○ Stream sediment or soil
- ● Select stream cobble
- ◇ Vein chip
- ▽ Dump grab

☐ Generalized area of broadly detectable gold

SCALE: 1"=1000'
0 1000 2000 Feet

ROYAL GOLD INC.

TREASURE KING PROJECT

Yavapai County, Arizona

GOLD (ppb)

10/1991

PLATE 3

SCANNED 5/2010 NJN

CAMBIOR USA, INC.

January 20, 1992

Thomas Loucks
ROYAL GOLD INC.
1660 Wynkoop Street
Denver, CO 80202

RE: Treasure King Property
Yavapai County, Arizona

Dear Tom:

We have had an opportunity to review the Treasure King data package prepared for Cambior.

It appears that the property and the most southerly target are of merit, however Cambior does have some concerns regarding the ultimate tonnage potential. For this reason we have elected not to pursue our evaluation of the Treasure King property.

We appreciate your efforts in rapidly assembling the data package and thank you for considering Cambior as a possible partner.

May I wish you a pleasant holiday on your upcoming trip to Europe.

Sincerely,

CAMBIOR USA, INC.

Michel Drouin
Exploration Manager

MD:lat

230 South Rock Blvd., Suite 23, Reno, Nevada 89502-2345
702-786-5189 Fax 702-786-4549

ROYAL GOLD, INC.

1660 Wynkoop Street
Suite 1000
Denver, CO 80202
Office: 303/573-1660
Facsimile No. 303/595-9385

****** F A C S I M I L E T R A N S M I S S I O N ******

To: M. Michel Drouin

From: Thomas A. Loucks

Pages Transmitted: 1 (Including this cover sheet)

Date: 01/09/92 Time: 02:00 PM

Fax Number (702) 786-4549 Operator _____

I have prepared a package for your geologist to take to Reno. Please let us know whom to contact and then I will ask him whether he wants to come by or have it delivered.

In the package I enclose some summary pages of reports relating to mining and metallurgy of the original Treasure King deposit. I enclose these principally to demonstrate that the surface ore we drilled at the north end of the 14,000 foot trend (at "Treasure King" itself) is leachable with 75-80% recovery and that the deposit would yield an operating profit even today.

What's needed is a lot more tons, and that we feel is the attraction of the several additional targets (plus covered zones) that remain to be tested.

There are seventeen new "EM" claims that run south along the east margin of the property - these show on the map in the confidentiality agreement but are not shown on the geochem/geology plates we will be sending.

We appreciate Cambior's looking at this and if we can provide additional information or arrange a tour please let me know.

PROJECT: TREASURE KING Revised 12/1/91

LOCATION: Longitude 112° 12' W
Latitude 34° 22' N

Commodity: Au

15 miles southeast of Prescott, Arizona,
in Yavapai County

Description

The project has been permitted as an open pit heap leach gold operation with gold mineralization in a Precambrian greenstone setting, but is on hold awaiting firmer gold prices. Delineation of more tons at three new areas could lead to revised economics.

History

Resource Exploration and Development Company (REDCO) investigated significant gold mineralization in the central Arizona Proterozoic metavolcanics and developed a geologic model relating them to similar occurrences in Precambrian shield areas of Canada. They targeted a promising area, the Treasure King, and drilled it. REDCO's diamond drill holes indicated mineralization of at least 150,000 tons grading 0.075 oz gold/ton.

In 1990-1991, Royal identified three new areas with highly anomalous rock and soil gold geochemistry, all within the Shylock Fault Zone, a main tectonic feature in Central Arizona.

Holdings

In January 1987, Royal Gold, Inc., entered into an option agreement with REDCO to purchase the Treasure King. Royal exercised the option in December 1988. The property consists of 91 contiguous unpatented mining claims located in the Prescott National Forest. The location map shows the Treasure King claim block.

Obligations

REDCO is to receive a 10% net profits interest.

Environmental Factors

The property was permitted for a heap leaching operation of an appropriate size to handle the indicated tonnage. If an expanded operation is warranted, no significant permitting problems are expected by the Company.

Geology

The Treasure King deposit is contained in an iron-rich chert horizon within a metamorphic sequence of rocks. The Precambrian greenstone, in Arizona, specifically the Arizona Proterozoic volcanic terrain, is recognized as a major loci of gold occurrences that has many similarities to Precambrian gold producing terrains in other parts of the world.

The known deposit can be visualized as an elongated lens striking due north and dipping about 60-70 degrees to the west. The width of the zone varies from a few tens of feet to over 120 feet. The mineralization is contained within this larger horizon and is open-ended both to the north and south.

The known gold occurrence at Treasure King should be viewed as confirmation that the hydrothermal system is gold-bearing. Gold geochemistry is stronger and occurs over a broader area at the three new, untested targets. Much of the prospect is covered by a thin veneer of alluvium.

Mineralization

The gold mineralization is primarily metavolcanic- and volcano-sediment-hosted and is attributed to volcanogenic processes of both epigenetic and syngenetic ore placement systems. Significant gold is evident (e.g. 1 oz/t) in areas characterized by ferruginous cherts and iron formation.

Mineral Inventory

Prior to the Company's involvement, REDCO developed approximately 150,000 to 500,000 tons of resource at 0.05 to 0.10 oz gold/ton on this property with 14 drill holes and surface sampling. Three Royal drilling programs in 1988 and 1989 defined the geologic resource using a 0.01 opt cut-off at 152,000 tons averaging 0.046 oz gold per ton.

Exploration Potential

The Treasure King deposit limits have not yet been determined. The existing resource is open both on strike and at depth, and geochemical reconnaissance work performed in 1990-1991 indicates the potential for three untested targets south of the one previously identified. Royal believes that the property has potential for Malartic-type shear zone-hosted mineralization (aug. 0.12 oz gold/ton)

Exploration Activities

In 1987, seven sampling trenches were completed indicating gold mineralization in the footwall structure. Five additional holes were drilled to better define the limits of the deposit. The results produced conflicting assay data, thought to be related to sample preparation and reduction.

After Royal took over management of the exploration program, eight reverse-circulation holes were drilled in January 1988. A large sample was taken to minimize assay variance relating to sample preparation. Results from these tests suggested that there was upside potential for the calculated reserve grade. A second round of Royal drilling was completed in December 1988 consisting of 10 reverse circulation holes totalling 1,780 feet. This program was designed to better define the geological reserves. But in early 1989, further drilling limited the Treasure King deposit to 152,000 tons averaging 0.046 opt gold.

Activities in 1990-91 included geochemical sampling programs to determine the potential for gold mineralization to the south and southwest of the recognized deposit. Three newly recognized altered areas are characterized by anomalous gold geochemistry with assays (supported by re-assaying) as high as 0.75 opt gold on rock chip samples from large volumes of rock. Soil lines carry gold values of tens to hundreds PPB.

Metallurgy

Based on the results obtained during bottle-roll metallurgical tests, the ore is amenable to conventional cyanide leaching. And, based on further metallurgical studies, the Company estimates gold recoveries of approximately 75% will be obtained. The ore must be crushed and amalgamated, but low chemical consumption is expected.

Contacts

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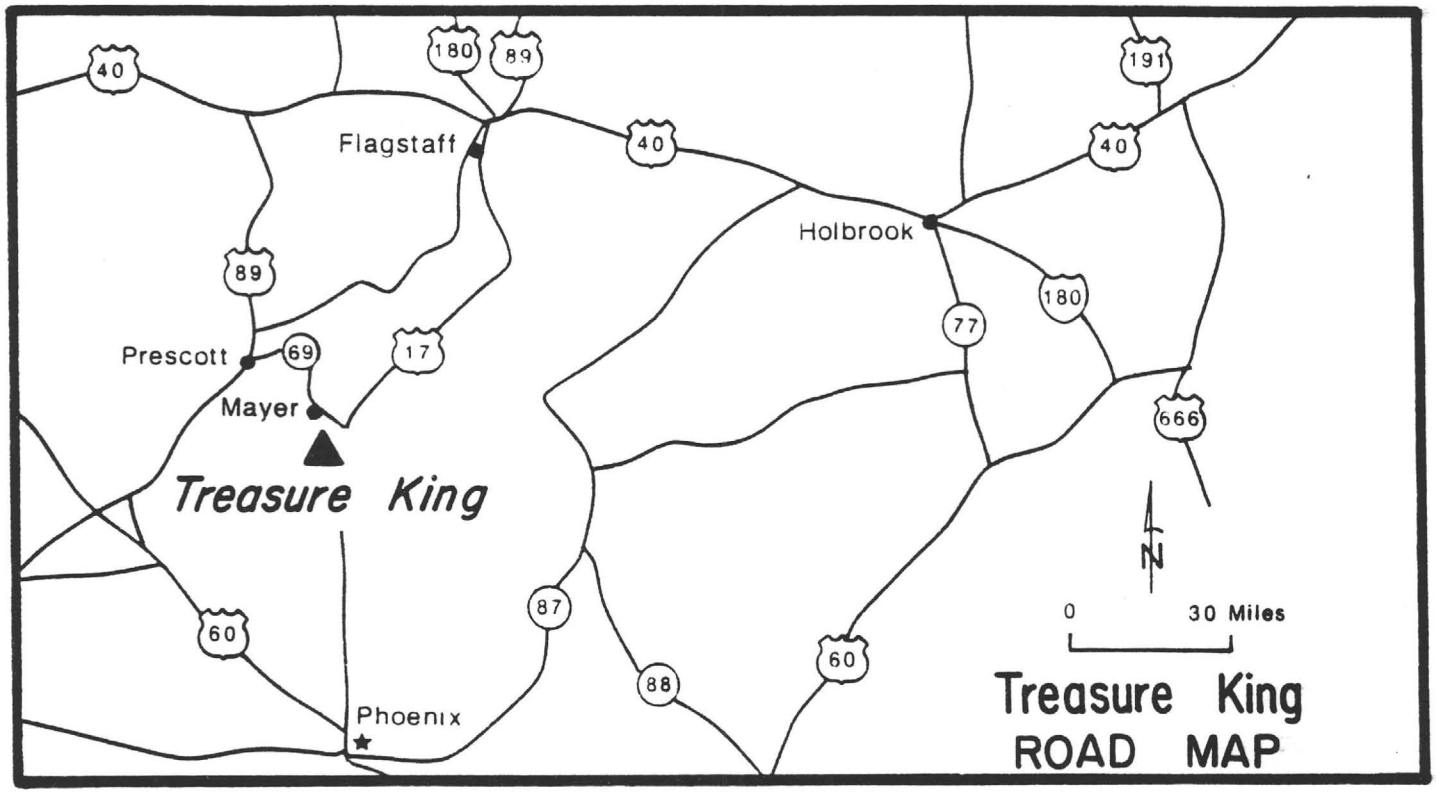
(303) 573-1660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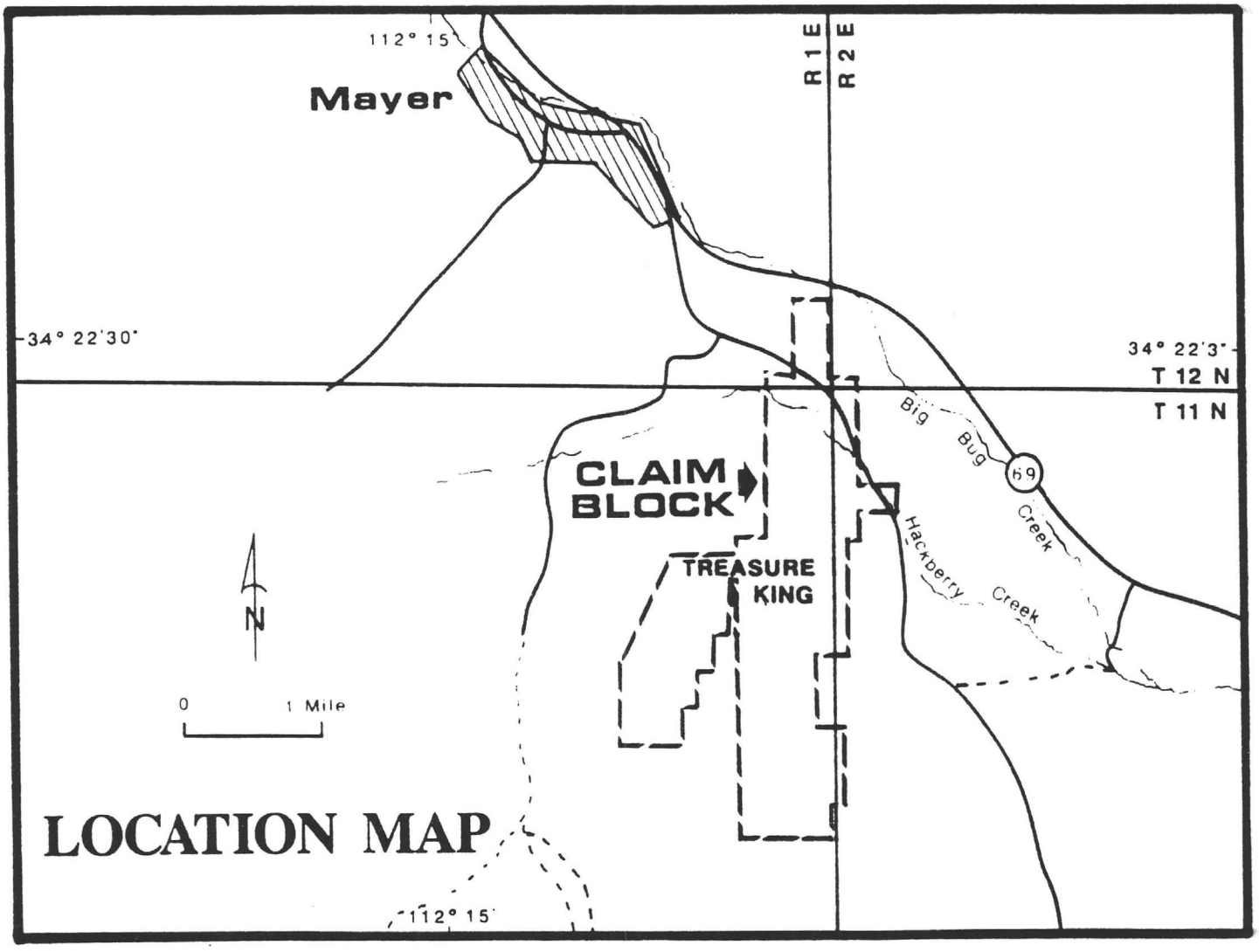
ROAD MAP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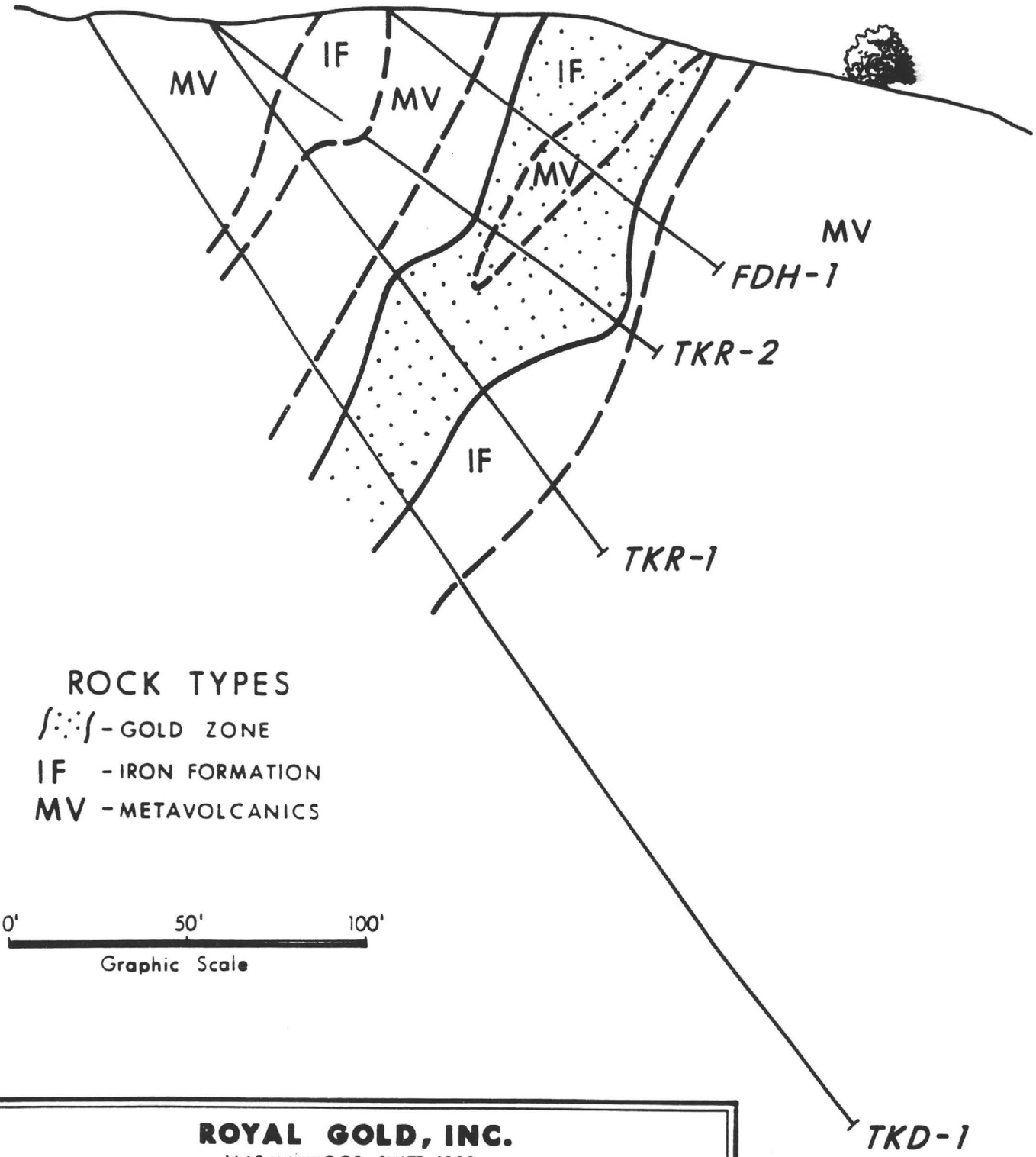


ROCK TYPES

∫∴∫ - GOLD ZONE

IF - IRON FORMATION

MV - METAVOLCANICS

0' 50' 100'

Graphic Scale

ROYAL GOLD, INC.

1660 WYNKOOP · SUITE 1000
DENVER, COLORADO 80202

TREASURE KING/MAYER AREA

YAVAPAI COUNTY, ARIZONA

EAST · WEST CROSS SECTION

LOOKING TO NORTH

DATE: MAY 16, 1988 DRAWN BY: D.M.

To: Stanley Dempsey
Edwin Peiker

September 5, 1991

From: Thomas A. Loucks

Re: Treasure King Update

Royal Gold's two recent exploration programs at Treasure King have led to the discovery of three new gold-bearing sites on the property. These programs entailed reconnaissance mapping and geochemical sampling as part of 1989-1990 and 1990-1991 assessment work requirements. All three areas have stronger and broader gold geochemistry and alteration patterns than does Treasure King, so we can be hopeful that our requirement of more tons for a successful project may have been identified. Recognition of the newest zone has led Richard Nielson, our consulting geologist, to conclude that we may have a Malartic-type shear zone target located along the Shylock Fault, a major Arizona tectonic feature which passes through the mineralized area at Treasure King.

We need to identify a partner with capital to test these new areas. As many U.S. companies are concentrating on Carlin-type models, I suggest we focus our marketing efforts on those who will be more likely to understand the greenstone-terrane/shear zone model applicable here. Rayrock is very active with geophysics and a major drilling program on strike to the north of us.

Gold mineralization at Treasure King is characterized as a Precambrian greenstone setting. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Abundant gold-bearing iron formation lies interbedded with the volcanic rocks.

Drilling at Treasure King has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a tabular resource open to the north, south, and at depth. This resource is too small to recover costs of putting a mine into production, although work to date suggests the "ore" would yield an <u>operating</u> profit. More tons are needed.

Gold mineralization at the new sites is hosted by the same favorable geologic unit as that which hosts Royal's Treasure King deposit. The gold content in outcrop has returned assays exceeding 0.3 ounces gold per ton at several locations on large samples and in general exceeds levels observed at Treasure King (the grade at Malartic is 0.12 oz gold/ton). Further, because gold-bearing, hydrothermally altered rocks at each of the new sites extend over areas broader than Treasure King, the exploration potential looks quite favorable.

Nielsen's analogy to Malartic is significant because it means the broader mineralized zones located along the shear zone east and south of Treasure King may indeed have much larger potential. His report will be available September 16th or so.

To: Files October 9, 1991

From: Thomas A. Loucks

Re: Treasure King Assessment Work, 1990-1991

Summary

Gold mineralization at Treasure King is associated with banded iron formation ("BIF") in Precambrian greenstone located along the Shylock Fault, a major tectonic lineament traversing central Arizona. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Gold-bearing iron formation lies interbedded with the volcanic rocks.

Exploration drilling has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a steeply dipping tabular resource open to the north, south, and at depth at the Treasure King mine. More tons are needed for an economically viable operation; thus, the emphasis has been to identify new targets which could be tested in conjunction with deeper or on-strike drilling at Treasure King.

The 1989-1990 work program resulted in recognition of two more larger zones of anomalous gold geochemistry located south of Treasure King along the Shylock Fault system, and this season's work program resulted in recognition of a third untested gold target. Noting that the four recognized zones of gold mineralization occur within the Shylock Fault zone, Richard Nielson, our consulting geologist, concludes that the Treasure King property may host a Malartic-type shear zone-hosted gold target.

Messrs. Peiker and Loucks carried out the 1990-1991 assessment work program on August 12-15, 1991. The program consisted of a geochemical sampling project designed with two objectives in addition to that of holding the property: 1) search for new areas of mineralization within the claim block; 2) expand RGI's knowledge of soil sampling at Treasure King for use in future exploration efforts at the property.

The program was successful in identifying the new "East Main" target zone and in demonstrating that gold-in-soil is useful for identifying gold-bearing targets. No new targets were found in the Lost Pick claim group, however.

Recommendations

Three areas for follow up have been identified. Royal should attempt to farm the property out to add the most value at the least expense to Royal, and work commitments should be obtained which guarantee that drilling of these targets be achieved.

I. **Geology** (Plate 1)

The geology of the Treasure King property has been previously described by Steininger (1988), REDCO (1986), by Anderson and Blacet (1972), and was summarized in RGI's report on assessment work last year (Loucks, 1990). A generalized geologic map after REDCO is presented as Plate 1.

Briefly, a steeply dipping, north-northeast trending sequence of felsic to intermediate composition metavolcanics underlies the Treasure King deposit and the geochemically anomalous Main Shaft, East Main, and South Shaft target areas. Iron formation (iron-bearing chert) is interbedded with and generally conformable to the steeply dipping sequence of metavolcancics; locally, the iron formation is strongly banded, contains more than the usual content of specular hematite, and contains concentrations of gold.

All of the identified mineralized areas lie within the Shylock Fault zone, a major tectonic zone passing through this part of Arizona (plate 1). Recognition of the apparent relationship of gold-mineralized areas to this structure has led Richard Nielsen to suggest there may be potential for gold deposits like Malartic - considerably larger than the one found to date at Treasure King.

Interbedded unconsolidated sediments and basaltic volcanics of Tertiary-Quaternary age unconformably overlie the Precambrian rocks at Treasure King. These rocks form postmineral cover at Treasure King and overlie much of the area between the Main Shaft and Treasure King mineralized areas and also crop out again to the south of the South Shaft.

Mineralized and adjacent barren Precambrian rocks are thus exposed in windows through younger postmineral rocks. In some locations, only small mineralized outcrops occur, with alluvium and younger rocks obscuring extensions of mineralization.

II. Mineralization

Gold's exact mode of occurrence at Treasure King is unknown. Anomalous gold most commonly occurs within iron formation but also within schist, and its content rises with the density of quartz veining. Some pyrite casts have been observed. We also note that most workings are located on or near a deformed schist-iron formation contact, suggesting that structure and stratigraphic controls may be important to mineralization and ore deposition. Thus, it is believed that gold mineralization is related to a younger period of silicification and mineralization that post dated lithification.

In addition to numerous prospect pits, there has been previous underground mining at Treasure King, as evidenced by three shafts, one adit, and limited (?) underground workings. The amount and tenor of previous production is unknown.

The shafts have all been sunk on iron formation-schist contacts and are generally steeply inclined, following the contact, although limited drifting has emphased the schist as host rock.

II. Geochemical Sampling Methodology (Sample Locations: Plate 2)

This year's sampling program is an extension of last season's, and last year's report goes into greater deal on the methodology devised at that time. Objectives this year were to 1) run soil lines across projected extensions of known gold mineralization to determine if the projected gold-bearing horizons could be detected; 2) sample new and additional outcrops of iron formation; 3) collect stream sediment samples below the Lost Pick claim group in an effort to determine if there were gold anomalies worthy of follow-up.

III. Geochemical Results (Plates 3-4)

Sample results from Cone Geochemical are tabulated at the back of the report. Last year's work indicated that gold and arsenic are the principal elements of use in gold exploration at Treasure King. Gold assays were performed by fire assay with an AA finish. Arsenic assays are geochemical analyses performed by AA.

Rock Geochemistry

Of seventeen rock chip samples collected, all but two contained detectable gold (Appendix); however, those collected from the Lost Pick claims were not of particular interest and, when coupled with our visual observations, lead to the conclusion that the Lost Pick area is not as interesting as Treasure King, and claims to be trimmed may be taken from the Lost Pick group.

Of the remaining rock chip samples, those from iron formation at the new East Main area, located about one-half mile east of the Main Shaft, are highly anomalous: five out of six contained in excess of 250 ppb gold, and two of these samples contained in excess of 2,000 ppb gold (#96, 97 from the East Main area).

Sample	Assay in PPB Gold	Converted to Ounces
96	3,500 ppb	0.10 oz gold/ton
97	2,050 ppb	0.06 oz gold/ton

Soil Geochemistry

Soil sample lines were run across the projection of gold mineralization, as identified in rock, and samples were taken at various intervals from B or C horizon soils. The soil mantle is quite thin at Treasure King, and holes were rarely dug over several inches deep.

Line	Location	Sample Spacing	# Samples	Samples Analyzed
1	South Shaft	10 feet	13	7, alternating
2	South Shaft	10 feet	13	7, alternating
3	East Main	10 feet	7	7, 100%
4	Main Shaft	100 feet	11	7, alternating

The center point of lines 1-3 was located where blind mineralization was inferred to lie; these lines are short and, now that we can see results were positive, these lines should be extended and also more widely used on the property. On line 4, the line crosses inferred mineralization at "X." See plates 2-4.

For discussion, it may be easier to examine all of the soil results on one page as presented in the appendix. The key observations are:

- Gold is detectable in all soil samples collected
- Gold is elevated approximately where the soil line crosses inferred mineralization.
- Arsenic correlates fairly well with gold and thus is generally higher over inferred mineralization (although without more data it could be difficult to argue that the mineralized zone would be clearly identified from arsenic data in the absence of gold data).
- Soil line 4 trends downhill so elevated gold results below sample #4-3 may be contaminated, although samples 4-9 and 4-10 show lower levels. If contamination is not a problem, then the zone appears fairly wide (200 feet or more).
- Both lines 1 and 2 at the South Shaft should be extended until samples attain background gold concentrations. It would appear that the South Shaft mineralized zone could be 100 feet wide (because gold is >50 ppb) if samples containing less than 50 ppb gold on the edges of lines 3 and 4 are significant.
- Line 3 should be extended but in particular to the east where values remain high (>100 ppb).

Stream Geochemistry

Results of stream sediment sampling did not yield any indications of new areas for follow-up. In particular, the select "high grade" (by visual estimate) cobble samples - #91-92, where attractive looking float was collected, yielded some of the lowest results on the property.

Vein Geochemistry

The Main Shaft appears to have been sunk on the projection of a goethitic vein. We channel-sampled the vein (#93) and collected several individual specimens (#94A-D), all of which returned disappointing gold results. No base metal assays were run, although we may have observed some smithsonite.

Two samples of gossan taken from workings developed on iron formation at the new East Main target contained detectable gold, one in fact containing 36000 ppb or 1.04 opt gold.

Conclusions

1) In addition to the Main and South Shaft areas identified for follow-up last season, we have added the East Main area as another target deserving of testing.

2) Gold soil geochemistry appears to serve well to identify inferred mineralization and could thus be used to direct a drill program if advance sampling were desired.

3) Testing these three targets could consume considerable capital for a company of Royal's size. In spite of Mr. Nielsen's thoughts that the prospect bears analagous characteristics to Malartic, we should farm the project out, preferably retaining a royalty to preserve some upside in the event Mr. Nielsen proves correct.

References

Anderson, C.A. and P. M. Blacet, 1972, Geologic map of the Mayer Quadrangle, Yavapai County, Arizona: U.S. Geological Survey Map GQ-996.

REDCO, 1986, Precambrian gold exploration program, Yavapai County, Arizona, unpublished company report, 34 p.

Steininger, Roger G., 1988, Geology and gold reserves at the Treasure King deposit and surrounding properties, Yavapai County, Arizona, September 10, report prepared for Royal Gold, Inc., 6 p.

Field/Lab #	Map #	Au (ppb)	As (ppm)	Sample Type	Remarks	Location
1	81	-1	1	Schist	Chl, qv	Lost Pick
2A	82A	15	24	Stream sediment		Lost Pick
2B	82B	7	18	Stream sediment		Lost Pick
3A	83A	43	14	Stream sediment	w/ mt	Lost Pick
3B	83B	7	22	Stream sediment	wo/ mt	Lost Pick
4	84	-1	3	Schist, chl-ser	w/hem	Lost Pick
5	85	5	1290	Gossan float		Lost Pick
6	86	130	27	Schist	Chl, qv	Lost Pick
7	87	4	33	Schist	Chl, MnO	Lost Pick
8	88	9	73	Iron Fm	Hem, qv	Lost Pick
9	89	-1	-1	Iron Fm	Hem, qv	Lost Pick
10	90	48	11	Iron Fm	Hem, qv	Lost Pick
11	91	3	99	Select cobble stream sed		Lost Pick
12	92	2	166	Select cobble stream sed		Lost Pick
13	93	3	5	Channel sample	goethite vein	Main shaft
14A	94A	9	6	Goethite vein		Main shaft
14B	94B	45	13	Goethite vein	w/ quartz	Main shaft
14C	94C	7	9	Goethite vein		Main shaft
14D	94D	4	6	Goethite vein	w/ hematite	Main shaft
15	95	6	7	Iron Fm		East Main Target
16	96	3500	218	Iron Fm		East Main Target
17	97	2050	14	Iron Fm		East Main Target
18A	98A	34	7	Gossan	hematite rich	East Main Target
18B	98B	36000	356	Gossan	reddish, black	East Main Target
18C	98C	297	2	Iron Fm	pyrite casts	East Main Target
18D	98D	384	4	Iron Fm	pyrite casts	East Main Target
18E	98E	257	12	Iron Fm	qv, hem, vuggy	East Main Target
19	99	64	6	Iron Fm		Main shaft
20	100	10	-1	Iron Fm		South Mesa Area
21	101	69	4	Iron Fm	Blocky, wk qv	South Mesa Area
22	102			Calcite vein, not assayed		South Mesa Area

Field/Lab #	Map #	Au (ppb)	As (ppm)	Sample Type	Remarks	Location
1	81	-1	1	Schist	Chl, qv	Lost Pick
2A	82A	15	24	Stream sediment		Lost Pick
2B	82B	7	18	Stream sediment		Lost Pick
3A	83A	43	14	Stream sediment	w/ mt	Lost Pick
3B	83B	7	22	Stream sediment	wo/ mt	Lost Pick
4	84	-1	3	Schist, chl-ser	w/hem	Lost Pick
5	85	5	1290	Gossan float		Lost Pick
6	86	130	27	Schist	Chl, qv	Lost Pick
7	87	4	33	Schist	Chl, MnO	Lost Pick
8	88	9	73	Iron Fm	Hem, qv	Lost Pick
9	89	-1	-1	Iron Fm	Hem, qv	Lost Pick
10	90	48	11	Iron Fm	Hem, qv	Lost Pick
11	91	3	99	Select cobble	stream sed	Lost Pick
12	92	2	166	Select cobble	stream sed	Lost Pick
13	93	3	5	Channel sample	goethite vein	Main shaft
14A	94A	9	6	Goethite vein		Main shaft
14B	94B	45	13	Goethite vein	w/ quartz	Main shaft
14C	94C	7	9	Goethite vein		Main shaft
14D	94D	4	6	Goethite vein	w/ hematite	Main shaft
15	95	6	7	Iron Fm		East Main Target
16	96	3500	218	Iron Fm		East Main Target
17	97	2050	14	Iron Fm		East Main Target
18A	98A	34	7	Gossan	hematite rich	East Main Target
18B	98B	36000	356	Gossan	reddish, black	East Main Target
18C	98C	297	2	Iron Fm	pyrite casts	East Main Target
18D	98D	384	4	Iron Fm	pyrite casts	East Main Target
18E	98E	257	12	Iron Fm	qv, hem, vuggy	East Main Target
19	99	64	6	Iron Fm		Main shaft
20	100	10	-1	Iron Fm		South Mesa Area
21	101	69	4	Iron Fm	Blocky, wk qv	South Mesa Area
22	102			Calcite vein, not assayed		South Mesa Area

Field/Lab #	Map #	Au (ppb)	As (ppm)	Sample Type	Remarks	Location
Soil Line #1:	Midway between South Shaft and pit to N					
	Sampled at 10-foot intervals, assayed alternate samples					
1 -	6E	176	17	Soil		South Shaft Area
1 -	4E	262	18	Soil		South Shaft Area
1 -	2E	118	20	Soil		South Shaft Area
1 -	C	142	14	Soil		South Shaft Area
1 -	2W	55	16	Soil		South Shaft Area
1 -	4W	25	16	Soil		South Shaft Area
1 -	6W	70	24	Soil		South Shaft Area
Soil Line #2:	Center point at drill hole collar					
	Sampled at 10-foot intervals, assayed alternate samples					
2 -	6E	31	15	Soil		South Shaft Area
2 -	4E	43	17	Soil		South Shaft Area
2 -	2E	48	18	Soil		South Shaft Area
2 -	C	39	14	Soil		South Shaft Area
2 -	2W	86	13	Soil		South Shaft Area
2 -	4W	58	8	Soil		South Shaft Area
2 -	6W	50	11	Soil		South Shaft Area
Soil Line #3:	Taken at new East Main target area					
	Sampled at 10-foot intervals					
3 -	3E	120	7	Soil		East Main Area
3 -	2E	46	8	Soil		East Main Area
3 -	1E	253	14	Soil		East Main Area
3 -	C	256	13	Soil		East Main Area
3 -	1W	117	14	Soil		East Main Area
3 -	2W	154	8	Soil		East Main Area
3 -	3W	42	4	Soil		East Main Area
Soil Line #4				Samples @ 100-foot intervals		
4 -	1	3	12	Soil		Main Shaft Area
4 -	3	2	8	Soil		Main Shaft Area
4 -	X	83	11	Soil:	where vein projects	Main Shaft Area
4 -	5	108	13	Soil:	nearby vein outcrop	Main Shaft Area
4 -	7	418	15	Soil		Main Shaft Area
4 -	9	48	13	Soil		Main Shaft Area
4 -	10	9	10	Soil		Main Shaft Area

To: Files November 20, 1990

From: Thomas A. Loucks

Re: Treasure King Assessment Work, 1989-1990

Summary

Gold mineralization at Treasure King is characterized as a Precambrian greenstone setting. Host rocks are highly deformed, siliceous metavolcanics altered by amphibolite facies metamorphism to quartz sericite and chlorite schists. Abundant gold-bearing iron formation lies interbedded with the volcanic rocks.

Drilling at Treasure King has defined a 152,000 ton gold deposit averaging 0.046 opt gold in a steeply dipping tabular resource open to the north, south, and at depth.

The 1989-1990 assessment work program at Treasure King consisted primarily of a geochemical sampling project to test the potential for gold mineralization to the south and southwest of the recognized deposit. The program consisted of limited sampling throughout the claim block and denser sampling at Treasure King and in two areas with visible alteration and denser quartz veining.

The program was successful in that the two altered areas are characterized by anomalous gold geochemistry as well as pathfinder elements copper and arsenic. These areas are referred to as the Main Shaft and the South Shaft areas and contain as much as 0.32 opt gold in outcrop. It may be significant that higher gold contents are detectable at these two areas than at Treasure King.

Other assessment work included mounting barbed wire fences around mine openings at the Main shaft.

Recommendations

Two areas for follow up have been identified and a third area requires further reconnaissance work. Royal should attempt to farm the property out in order to get the most work done with the least expense to Royal, and drilling should be used to test the broken ridgeline which hosts the newly identified targets.

Further geologic work would include detailed mapping, sampling, and drill target definition at the Main Shaft and South Shaft areas. Detailed sampling is warranted where the two outcrops containing 10,000 ppb gold occur, and follow-up reconnaissance is needed on the Lost Pick claims where quartzites were found to contain in excess of 300 ppb gold.

Check assays should be run on the two 10,000 ppb samples. It would be preferable to obtain splits of the rejects from Bondar Clegg and to run new assays, rather than rerunning the same pulps.

I. Geology (Plate 1)

The geology of the Treasure King property has been previously described by Steininger (1988), REDCO (1986), and by Anderson and Blacet (1972). A generalized geologic map after REDCO is presented as Plate 1.

A steeply dipping, north-northeast trending sequence of felsic to intermediate composition metavolcanics underlies the Treasure King deposit and the geochemically anomalous Main Shaft and South Shaft target areas. This highly deformed siliceous and mineralized horizon is thought to be the same as that hosting Phelps Dodge's massive, polymetallic sulfide deposits at Jerome, located some thirty miles to the north.

Below and above this sequence the volcanics are more mafic in composition, and there is also a thick Precambrian sedimentary sequence, characterized by metaquartzites, located to the west of Treasure King.

Numerous "dikes" of iron formation (iron-bearing chert) are interbedded with and generally conformable to the steeply dipping sequence of metavolcancics; being resistant, they stand out as ridge formers in this part of Arizona. Locally, these iron formations are strongly banded, contain more than the usual content of specular hematite, and contain highly anomalous gold.

Interbedded unconsolidated sediments and basaltic volcanics of Tertiary-Quaternary age unconformably overlie the Precambrian rocks at Treasure King. These rocks form postmineral cover at Treasure King and overlie much of the area between the Main Shaft and Treasure King mineralized areas and also crop out again to the south of the South Shaft.

Mineralized and adjacent barren Precambrian rocks are thus exposed in windows through younger postmineral rocks. In some locations, only small mineralized outcrops occur, with alluvium and younger rocks obscuring extensions of mineralization.

II. Mineralization

Gold's exact mode of occurrence at Treasure King is unknown. Anomalous gold most commonly occurs within iron formation but also within schist, and its content rises with the density of quartz veining. We also note that most workings are located on or near a deformed schist-iron formation contact, suggesting that structure

	Gold (ppb)	As (ppm)	Cu (ppm)	Hg (ppb)
Weakly altered rocks (Background)				
Schist	nd	4-8	7-122	190- 980
Iron Formation	nd-8	4-6	0- 8	170- 250
Main Shaft Area				
Schist	nd-528	3-26	0-559	160-3610
Iron Formation	31-10000	2- 7	40-114	0- 840
Stream Sediment	nd	11	55	780
South Shaft Area				
Schist	nd-542	3-54	1-370	130 -550
Iron Formation	6-10000	6-117	0- 88	0-1330
Stream Sediment	47	15	29	220
Select cobble	5	15	12	140

Gold (Plate 3): There is clearly no doubt that Treasure King is a gold-bearing system; most samples contain detectable gold and thus are very encouraging for further, more detailed work.

The gold content of iron formation is generally higher than that in schist, which matches results of drilling to date. Two very encouraging rock chip samples contained 10,000 ppb (0.32 opt). Treasure King showed up in both stream sediment and select cobble sampling as did the South Shaft area.

It is perhaps significant that gold geochemistry is in general higher at the South and Main Shaft areas than it is in surface rock samples collected at Treasure King.

Arsenic (Plate 4): The arsenic content of gold-anomalous rocks at Treasure King is not particularly high, yet nevertheless areas of >12 ppm arsenic are roughly coincident with Treasure King as well as the South and Main Shaft areas, whereas background may be <8 ppm.

Copper (Plate 5): Copper oxides often occur on fractures where prospect pits indicate historic workings. The overall distribution of samples indicates there may be a slightly higher level of copper (i.e., >20 ppm) associated with prospective areas such as Treasure King, the Main Shaft, and the South Shaft areas. On the other hand, copper levels are low enough that they are not thought to cause concern for heap leaching.

Other Elements: Chemical analyses for lead, zinc, mercury and antimony did not provide useful results for identifying gold targets, although some of the higher mercury values did occur at the South and Main Shaft areas.

Titanium content can often be used in altered rocks to determine the mafic content of the rock. Titanium analyses were run on

method and/or B) other areas were anomalous.

4) Select cobble samples: This sampling method is biased toward high grade sampling but has been highly successful elsewhere. Stream cobbles or cobble chips representing the "best looking rocks" may serve to identify drainages with anomalous geochemistry. Other samples designed to yield similar information were

5) Dump grab samples: - limonite, managanese oxides, and sulfides.

6) Vein chip samples: quartz-tourmaline veins, some with copper oxides.

III. Geochemical Results

Sample results from Bondar-Clegg are tabulated at the back of the report along with comments on analytical methodology and detection limits.

Two rock chip samples of iron formation analyzed by AA contained 10,000 ppb gold (#5 from the Main Shaft, #25 from the South Shaft). Bondar-Clegg re-ran these with the following fire assay results:

Sample	Check Assay #1	Check Assay #2
5	0.760 opt gold	1.065 opt gold
25	0.540 opt gold	0.618 opt gold

Orientation study

Results of sampling at Treasure King and from unaltered appearing rocks are compared with the Main and South Shaft areas below. Gold is the most useful element. Arsenic and copper show elevated levels where gold is present, but the presence of gold does not necessarily correlate with high arsenic or copper.

Elements such as zinc, mercury, lead do not appear to be useful as indicators of gold mineralization at Treasure King, although some high values were obtained in some instances.

	Gold (ppb)	As (ppm)	Cu (ppm)	Hg (ppb)
Treasure King				
Schist	nd-161	5-17	0-55	180- 520
Iron Formation	67-370	14-16	0	110- 220
Stream sediment	20	27	59	290
Select cobble	117	9	nd	250

and stratigraphic controls may be important to mineralization and ore deposition. Thus, it is believed that gold mineralization is related to a younger period of silicification and mineralization that post dated lithification.

In addition to numerous prospect pits, there has been previous underground mining at Treasure King, as evidenced by three shafts, one adit, and limited (?) underground workings. The amount and tenor of previous production is unknown.

The shafts have all been sunk on iron formation-schist contacts and are generally steeply inclined, following the contact, although limited drifting has emphased the schist as host rock.

II. Geochemical Sampling Methodology (Sample Locations: Plate 2)

Diverse sample types were collected in this program with several objectives: ascertaining the geochemical signature at Treasure King itself, ascertaining background levels of different elements in several widely occurring rock types, and identifying new areas of anomalous gold geochemistry. It is recognized that the number of samples collected for orientation or background information purposes is small, and thus the inferences drawn are just that - inferences - these are not statistically rigorous conclusions.

1) Orientation samples: Collected at the Treasure King deposit to determine the signature of the known deposit in rock, soil, and stream sediment geochemistry. Whereas we have prior information from several programs by other geologists, we judged it useful to resample the deposit to assure that sampling methods would be comparable between the orientation samples and samples in outlying areas.

2) Rock chip samples: By far the greatest number of samples were comprised of chips from broad areas designed to represent large volumes of rock, albeit the aggregate sample typically weighed about 1-2 pounds. Samples represent a number of rock types: schist and iron formation predominate, and - again for base line information - samples were collected from both altered and unaltered-appearing rocks.

3) Stream sediment samples: Drainages in the Treasure King area are of moderate grade, and thus much of the material in stream beds probably is locally derived. Nevertheless we collected samples of sand from coarser gravel sites; these samples were not screened or segregated by size. Similar samples were collected at Treasure King.

It is important in gold exploration to know if the rocks represent a "gold-bearing" system. Several methods of "high grading" were used to determine whether A) Treasure King was detectable by this

samples of schist to ascertain whether altered chlorite schist could be easily distinguished from sericite schist, in particular the more felsic, quartz rich host rocks at the Main and South shaft areas. Results were variable (some chlorite schist has lower titanium content than felsic schists) and thus not promising.

High boron content associated with areas of massive quartz veining support the conclusion that the black mineral occuring with the quartz may be tourmaline.

IV. Areas for Follow Up

Clearly two broad areas of gold-anomalous rock have been identified at the Main Shaft, 6,000 feet south of Treasure King, and at the South Shaft, located about 12,000 feet south of Treasure King. In addition, two samples of what may be an orthoquartzite contain in excess of 300 ppb gold on the Lost Pick claims.

Main Shaft: The Main Shaft area is underlain by Precambrian felsic volcanics and interbedded-to-cross-cutting iron formation. It differs from Treasure King and the South Shaft in that

- The shaft itself and adjacent drifts are predominantly hosted by schist, whereas Treasure King's shaft and the South Shaft are clearly sunk on the iron formation-schist contact. Nevertheless, gold in schist at this locality assayed <18 ppm vs. up to 10,000 ppm in iron formation;

- The hillslope where samples #65-71 were collected is stained red and stands out as a color anomaly on the Treasure King property (Figure 1). Unfortunately, none of these six samples contained detectable gold, and the significance of the color anomaly is not known.

The schist to the south of the Main shaft is in some locations (e.g. samples #65-71) quite strongly veined by "micro" quartz veinlets (<1/4"), possibly indicating a period of silicification separate from that of the coarser veins found with gold bearing iron formation. This finely veined schist is present near the South Shaft as well but has not been observed at Treasure King. The iron-stained ridge is broken by a stream channel but otherwise trends south to the South Shaft.

South Shaft: The South Shaft area is geologically similar to the Main Shaft: Precambrian felsic volcanics and interbedded-to-cross-cutting iron formation are the host rocks. The South Shaft is similar to Treasure King by virtue of its very red, banded iron formation with strong development of specular hematite on fractures. The sample that ran 10,000 ppb was collected at the collar of the South Shaft.

The schist on the hilltop located southwest of the South shaft is in some locations (e.g. samples #39-47) quite strongly veined by "micro" quartz veinlets (<1/4"), even more so than at the Main Shaft. Sample #39 contains 188 ppb gold (detectable but <.01 opt).

Lying between the Main and South Shaft target areas, sample #36 is gold-bearing schist (197 ppb) from a hillcrest. The crude topographic continuity of the ridge line extending south from the Main Shaft, through this hill, and then on to the South Shaft area may indicate a much larger gold target than has been identified based on present data.

Lost Pick: While doing reconnaissance work in the Lost Pick claim group, two hematitic samples of what appears to be an orthoquartzite were collected on hillcrests on the west side of the property (#72,73). Both contained in excess of 300 ppb gold. Time did not permit further work in this area.

Future Work: More detailed work is warranted to

1) learn whether there is gold-bearing iron formation underlying the red-stained ridge at the Main Shaft.

2) determine whether the schists are anomalous in the old workings at the Main Shaft (or if not, what were the workings driven on?).

3) to follow up the area (sample #5) of 10,000 ppb gold in iron formation located northeast of the shaft.

4) learn whether gold-bearing schists and iron formation occur between the two target areas and whether the South and Main Shaft targets are similar to Treasure King in size potential or larger.

5) enlargen the reconnaissance program on the Lost Pick claims.

References

Anderson, C.A. and P. M. Blacet, 1972, Geologic map of the Mayer Quadrangle, Yavapai County, Arizona: U.S. Geological Survey Map GQ-996.

REDCO, 1986, Precambrian gold exploration program, Yavapai County, Arizona, unpublished company report, 34 p.

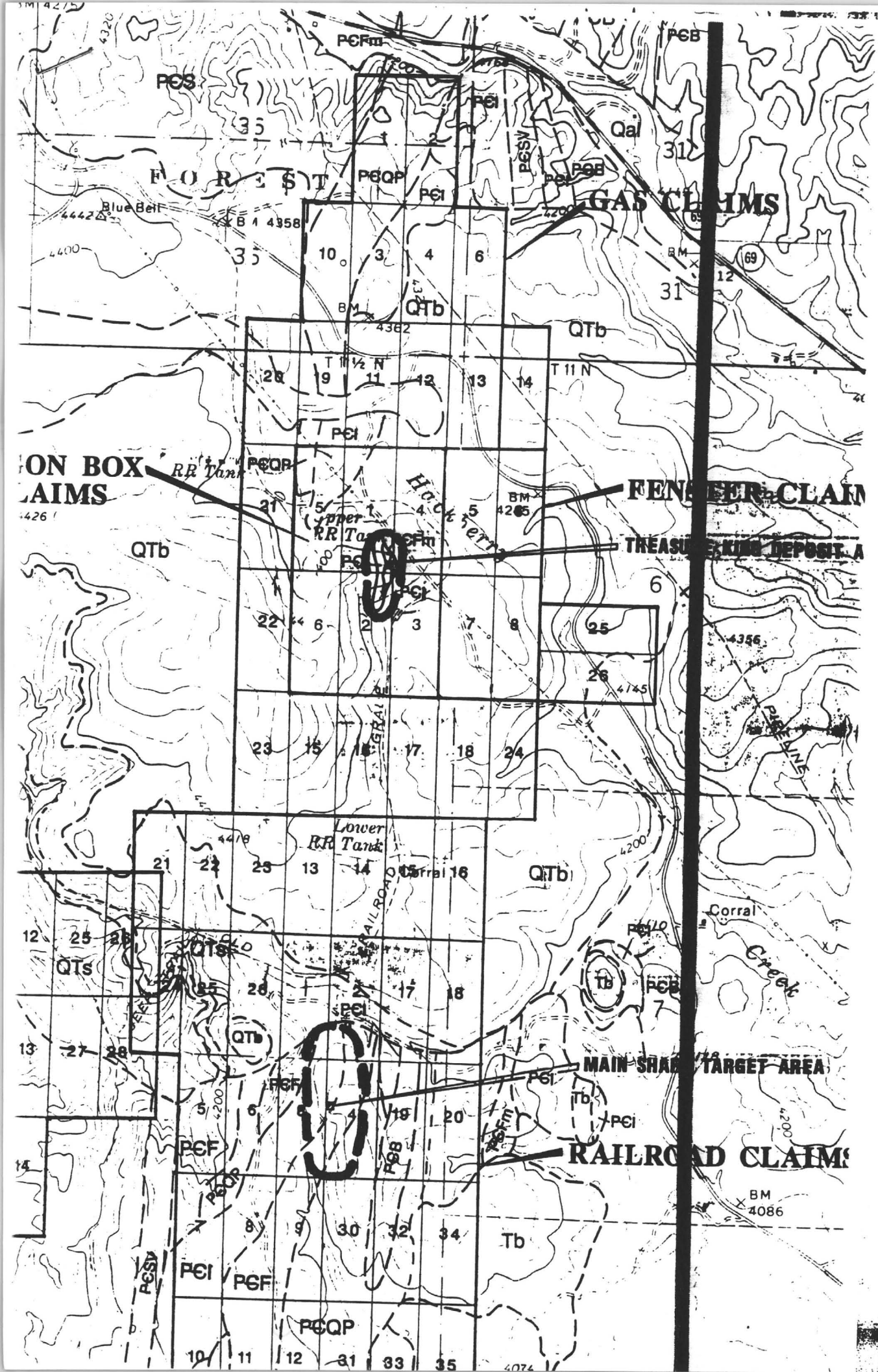
Steininger, Roger G., 1988, Geology and gold reserves at the Treasure King deposit and surrounding properties, Yavapai County, Arizona, September 10, report prepared for Royal Gold, Inc., 6 p.

Sample #	Au (ppb)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppb)	Cu (ppm)	Zn (ppm)	Ti (%)	B ppm	Sample Type	Remarks	Location
R2 - 1	528	0.4	6.8	2.3	1100	599	29			Qtz vnd schist		Main shaft
R2 - 2	487	0.9	7.5	2.7	780	2521	529			Qtz vein		Main shaft
R2 - 3	230		4.6	1.0	250	52	-1			Qtz vein		Main shaft
R2 - 4	1062		7.3	1.2	170	114	30			Qtz vnd Fe Fm		Main shaft
R2 - 5	10000		5.8	2.0	840	14	18			Qtz vnd Fe Fm		Main shaft
R2 - 6	31		6.1	1.5	160	47	21			Qtz vnd Fe Fm		Main shaft
R2 - 7	37		4.6	4.1	180	5	-1			Qtz vein		Main shaft
R2 - 8	40		2.7	0.6		30	-1			Fe Fm		Main shaft
R2 - 9	17		2.7	8.8	160	115	85	0.24		Chl schist		Main shaft
R2 - 10	-5		4.9	4.8	200		69	0.24		Ser schist		Main shaft
R2 - 11	6		14.0	1.9	130		50			Iron Fm/schist		Main shaft
R2 - 12	653		5.6	3.5		25	21			Qtz vein, Mno		Railroad #12
R2 - 13	370		16.0	1.0	110		18			Fe Fm		Treasure King
R2 - 14	32		14.0	2.4	410	55	58	0.17		Ser schist		Treasure King
R2 - 15	12		4.9	1.4	180	7	49	0.12		Ser schist		Treasure King
R2 - 16	155		23.0	3.3	610	110	107			Soil		Treasure King
R2 - 17	161		11.0	1.0	280		23	0.07		Schist		Treasure King
R2 - 18	67		14.0	1.6	220		19			Fe Fm		Treasure King
R2 - 19	38		17.0	1.6	520	4	52	-0.01		Schist		Treasure King
R2 - 20	-5		8.5	9.3	380	38	94	0.06		Schist		Treasure King
R2 - 21	-5		8.4	6.9	130		4			Iron Fm		Railroad #8
R2 - 22	-5		4.9	3.7	210		28	0.53		Schist		Railroad #8
R2 - 23	120		4.8	1.8		4	18			Iron Fm	BIF	Railroad #9
R2 - 24	-5		1.5	1.1	150	23	22	0.13		Ser schist		Railroad #9
R2 - 25	10000	0.9	117.0	2.3	1330	66	30			Iron Fm		South shaft
R2 - 26	67		4.2	1.4	340	40	107	0.19		Schist		South shaft
R2 - 27	3177	0.3	94.0	2.0	680		21			Qtz vnd Fe Fm		South shaft
R2 - 28	542		21.0	2.5	360	52	41	0.03		Ser schist		South shaft
R2 - 29	47		15.0	4.2	220	29	79			Stream sed		South shaft
R2 - 30	-5		19.0	4.2	200		22			Selct Cbbl		South shaft
R2 - 31	-5		15.0	1.5	140	12	22		10600	Qtz vein	Tourm	South shaft
R2 - 32	-5		4.6	17.0	310	182	118	0.56		Schist	Chl	South shaft
R2 - 33	-5		3.4	1.7	210	3	29	0.02		Schist		South shaft
R2 - 34	18		37.0	6.0	550	131	179	0.18		Qtz vnd schist		South shaft
R2 - 35	180		21.0	1.9	190	88	21			Qtz, Fe Fm		South shaft
R2 - 36	97		5.0	1.9	140	6	22	0.05		Schist		South shaft
R2 - 37	-5		5.4	1.6	210		22			Iron Fm		Railroad #33
R2 - 38	-5		4.1	0.9	170	8	17			Iron Fm		Railroad #33
R2 - 39	188		54.0	3.3	240	370	54	0.16		Schist		South shaft
R2 - 40	-5		3.5	2.4		9	23			Rhy tuff		South shaft

R2 - 41	6		7.4	1.6	280		17			Iron Fm		South shaft
R2 - 42	18		15.0	3.5	160	40	76			Fault bx		South shaft
R2 - 43	26		39.0	1.2	450	27	48			Schist		South shaft
R2 - 44	-5		3.5	1.1	130	1	24	-0.01		Schist		South shaft
R2 - 45	4003	0.4	12.0	1.4	390		22			Iron Fm		South shaft
R2 - 46	465		6.1	1.5			18			Qtz vnd Fe Fm		South shaft
R2 - 47	-5		2.6	2.7	170	4	21	-0.01		Ser schist		South shaft
R2 - 48	217	0.2	10.0	4.9	180	89	22			Qtz vnd Fe Fm		Mesa #7
R2 - 49	93		11.0	1.5	200		22			Iron Fm		Mesa #7
R2 - 50	8		6.2	3.9	250		22			Iron Fm		Mesa #5
R2 - 51	-5		3.5	20.0	980	122	59	0.90		Chl schist		Mesa #5
R2 - 52	248	0.6	7.2	1.5	400	271	21		3227	Qtz vn	Tourm, CuOx	Mesa #5
R2 - 53	10		10.0	5.2	210	13	87			Stream sed		W Rail
R2 - 54	-5		4.0	1.2	200	4	27			Fe Fm, qv		AUF #29
R2 - 55	-5		8.0	2.3	190	7	58	0.04		Schist		AUF #1
R2 - 56	508	1	10000.0	108.0	8090	5583	605			Dump grab		Starnock Mine
R2 - 57	-5	0.3	67.0	1.1	490	180	79	0.16		Ser schist		Starnock Mine
R2 - 58	62		112.0	8.0	146	110	86			Dump grab		AUF #17

Sample #	Au (ppb)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppb)	Cu (ppm)	Zn (ppm)	Ti (%)	B ppm	Sample Type	Remarks	Location
R2 - 59	-5		29.0	2.5	500	28	88	0.23		Ser schist		AUF #16
R2 - 60	3633	60	2230.0	1670.0	50000	2590	12075			Limonite at mine		AUF #16
R2 - 61	4340	5.7	71.0	15.0	2170	5233	93		1528	Dump grab		GAS #1
R2 - 62	34	0.5	26.0	20.1	3610	74	183	0.15		Schist		Main shaft
R2 - 63	-5		4.8	2.8	300	37	29			Rhyolite		Main shaft
R2 - 64	-5		11.0	5.2	780	55	85			Stream sed		Main shaft
R2 - 65	-5		13.0	2.2	330		9			Iron Fm		Red Hill
R2 - 66	-5		12.0	4.8	310	30	84			Stream sed		Red Hill
R2 - 67	-5		3.1	1.8	270	8	29	0.08		Ser schist		Red Hill
R2 - 68	-5		5.6	1.5	220	14	58	0.05		Ser schist		Red Hill
R2 - 69	-5		6.4	1.1	120	20	28	0.06		Ser schist		Red Hill
R2 - 70	-5		11.0	1.3	140	14	58	0.04		Ser schist		Red Hill
R2 - 71	-5		4.6	1.6	220	13	29	0.05		Ser schist		Red Hill
R2 - 72	332	0.7	18.0	2.3	450	37	-1			Quartzite		Pick claims
R2 - 73	398		6.4	2.7	620		19			Quartzite		Pick claims
R2 - 74	20		27.0	0.6	290	59	91			Stream sed		Treasure King
R2 - 75	117		9.2	1.8	250		23			Select cobble		Treasure King
R2 - 76	-5	0.7	20.0	5.4	1570	66	209			Iron Fm		Blue Bell
R2 - 77	-5		3.9	0.9	210	21	59	0.01		Schist		Blue Bell

R2 - 78	56	80.0	2.2	620	50	62	Iron Fm	Hwy Roadcut
R2 - 79	-5	5.8	1.8	130	10	88	Iron Fm	Hwy Roadcut
R2 - 80	43	26.0	1.1	1360	105	25	Iron Fm	Hwy Roadcut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Colorado School of Mines Research Institute

5920 McINTYRE STREET • GOLDEN, COLORADO 80403
PHONE (303) 279-2581 • TELEX 754211 • CSM Res Gldn

CSMRI

February 19, 1987

CSMRI Project NP-864063

Mr. Ed Peiker
Royal Gold Corporation
1660 Wynkoop Street
Suite 1000
Denver, Colorado 80202-1132

Dear Ed:

The Colorado School of Mines Research Institute (CSMRI) is pleased to present the rolling-bottle and "nugget" test data for the REDCO project. The objective of the tests was to determine the amenability of the ore sample to conventional cyanide leaching and to determine if the grade variability in the orebody could be associated with coarse or nugget gold. The scope of work included conducting conventional rolling-bottle tests on nine samples of ore and running separate fire assay tests on +100 mesh and -100 mesh samples. A listing of the samples obtained from REDCO is presented in Exhibit 1. The details of the rolling-bottle tests are presented in Exhibit 2.

CONCLUSIONS

Based on the results obtained during the rolling-bottle tests, the ore appears amenable to conventional cyanide leaching. The recoveries presented in Table 1 average over 80%. In addition, excellent agreement between CSMRI assayed and calculated heads indicated that variable assays can be avoided if sufficient care is taken in sample preparation and splitting. This indicates that there is very little nugget effect in the samples tested.

In addition, the screen data presented in Table 2 indicates that the gold is evenly distributed throughout the sample and that nuggets are not evident in the +100 mesh fraction. This data confirms the assay and leach information that careful sample preparation is probably the key to eliminating the sample assay variability.

This concludes the work conducted by CSMRI on the REDCO sample. If you have any questions or if I can be of further assistance, please do not hesitate to call.

Respectfully,

Gregory F. Chlumsky
General Manager - Operations

/psg

Attachment

REDCO – Eval + Econ

International Process Research Corporation

5906 McINTYRE STREET • GOLDEN, COLORADO 80403
PHONE (303) 279-2581 • TELEX 754211

July 12, 1988

IPRC Project 882049

Mr. Ed Peiker
President
Royal Gold
1660 Wynkoop Street
Suite 1000
Denver, Colorado 80202

Dear Mr. Peiker:

International Process Research Corporation (IPRC) has reviewed all the data we currently have on file for the REDCO Treasure King Project in Arizona. The objective of the review was to estimate the possible gold recovery from the orebody based on the preliminary data available to date. During our investigation, we reviewed the metallurgical data generated by Kappis-Cassidy and CSMRI on the project and all the drill-hole date available to IPRC.

Based on the preliminary metallurgical data available, IPRC currently believes that a heap-leach operation could achieve an overall gold recovery in the range of 75%. This is assuming the ore is crushed to a nominal -1/2 in. and agglomerated prior to being placed on a leach pad.

This concludes the work authorized to date. If you have any questions or if we can be of further assistance, please do not hesitate to call.

Respectfully,

Gregory F. Chlumsky
President

File REDCO

International Process Research Corporation

5906 McINTYRE STREET • GOLDEN, COLORADO 80403
PHONE (303) 279-2581 • TELEX 754211

August 13, 1987

IPRC Project NP-864063

Mr. Ed Peiker
Vice President
Royal Gold Corporation
1600 Wynkoop Street
Suite 1000
Denver CO 80202-1132

Re: Redco Sampling

Dear Ed:

Per our discussions, IPRC has reviewed the data we generated on the Redco project in Arizona. This data included specific tests designed to determine the presence of coarse native gold. In addition, we reviewed rolling bottle and carbon studies conducted by Kappers-Cassidy on the project and uranium reserve and drill hole map.

To date, from the metallurgical data available to IPRC, we find little or no evidence of a nugget effect or any reason to believe there may be a sampling problem based on coarse gold. We believe that if the samples are properly handled, blended, and split reasonably accurate assays should be obtainable.

If you have any questions or if we can be of further service, please do not hesitate to call.

Respectfully,

Greg

Gregory F. Chlumsky
President

/psg

FORMERLY
COLORADO SCHOOL OF MINES
RESEARCH INSTITUTE

To: E. W. Peiker January 3, 1989

From: R. C. Steininger

Subject: Treasure King Drilling

A second round of Royal Gold directed drilling was completed during December, 1988 to better define the geological reserves reported in my January, 1988 summary. This second program consisted of 10 reverse circulation holes totalling 1,780 feet. Significant assays from these holes are as follows.

Hole	Interval (ft)	Width (ft)	Average Grade (opt-Au)
TKR-9	115-130	15	0.093
TKR-10	80-90	10	0.023
TKR-10	115-125	10	0.020
TKR-11	90-100	10	0.035
TKR-12	60-80	20	0.067
TKR-14	85-110	25	0.026
TKR-15	65-80	15	0.031
TKR-16	150-175	25	0.057
TKR-18	95-105	10	0.113

Note: all intervals based on a 0.02 opt-Au cut-off.

The locations for all of the Royal drill hole can be found on the accompanying plan and sections.

As previously outlined, gold is closely associated with white quartz veins in a Precambrian hematite-silica iron formation. Neither the footwall phyllites or hanging wall metavolcanics contain significant gold.

The accompanying plan and section were used to generate a

geological reserve. Sections were contoured at 0.010, 0.015, and 0.020 ounces of gold per ton. Only the 0.02 opt cut-off was used to develop the following geological reserve.

Zone	Tonnage	Average Grade
North	124,000	0.065
South	44,000	0.065
Total	168,000	0.065

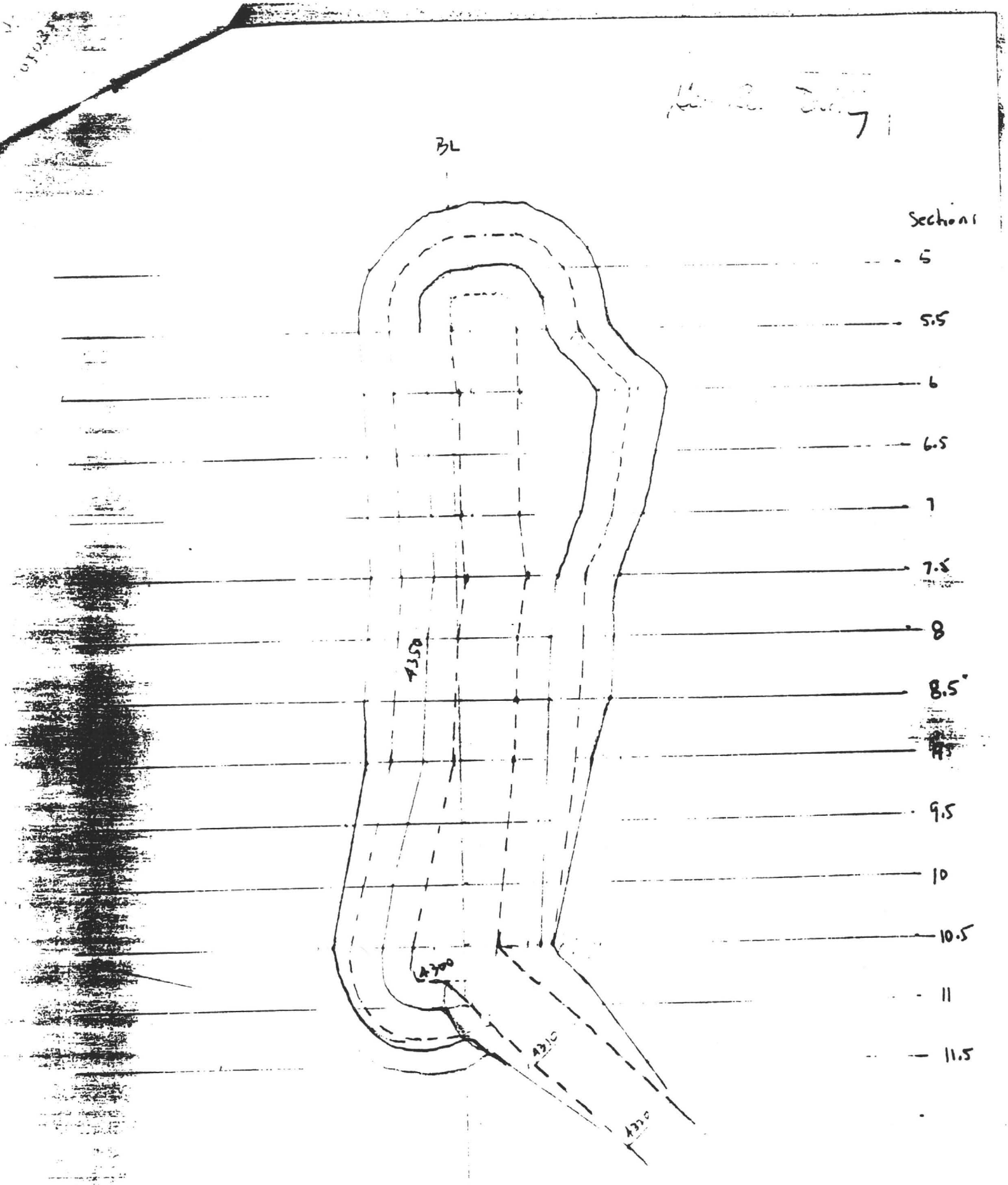
The tonnages were developed by planimetering each section and extending that area half-way to the next section, creating a volume. Drilling has not closed off mineralization either down dip or to the south, therefore the measurements were extended 50 feet in these directions. A tonnage factor of 12.5 cubic feet per ton was assumed. The average grade was calculated by using all of the assays within the 0.02 zones.

The results of the two drilling programs indicate continuity between drill holes on section and between sections. Generally, the gold mineralization is concentrated within the footwall portion of the iron formation.

If this project is viable it is important to start the exploration of the other targets during the first half of 1989 to insure a consistent flow of feed to the recovery plant. The exploration program is outline in my budget proposal of October 16, 1988. If exploration is not started this spring, there may not be sufficient time to identify, evaluate and permit other reserves before the Treasure King resource is depleted.

copy: R. McDougall

Roger Blong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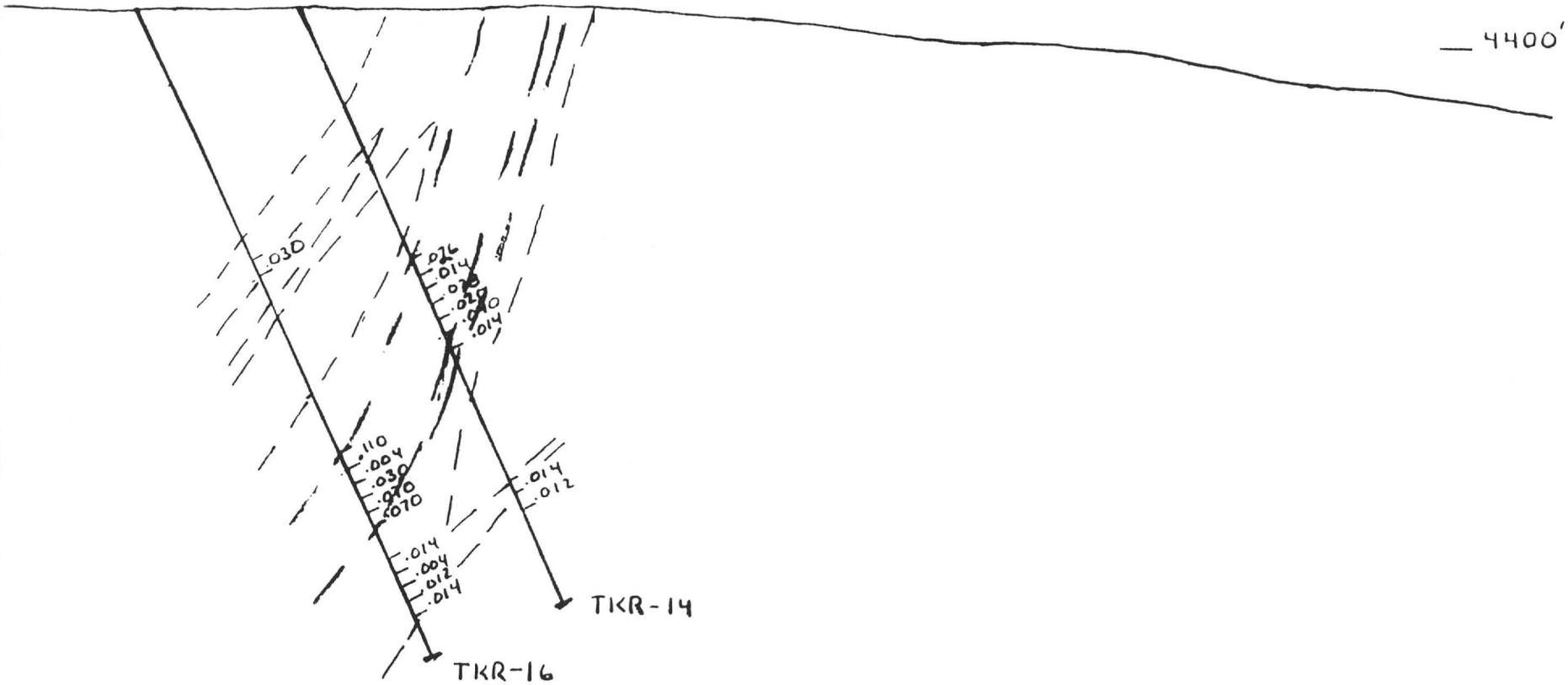
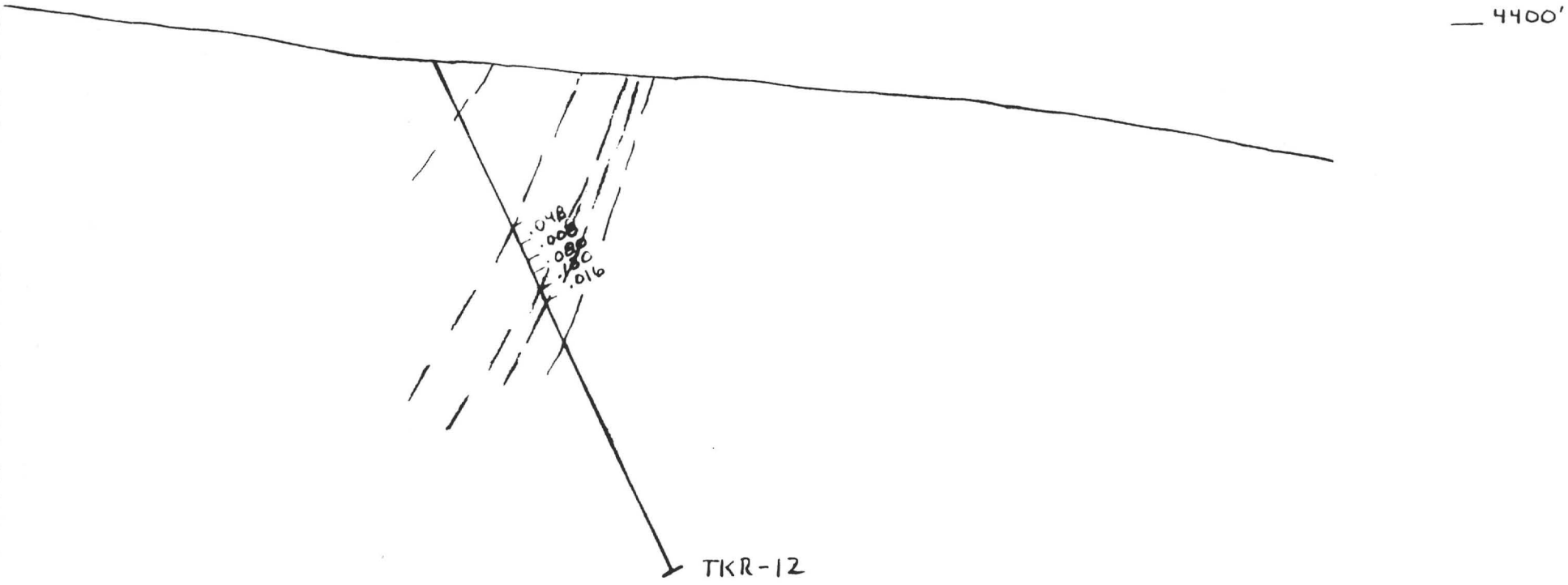
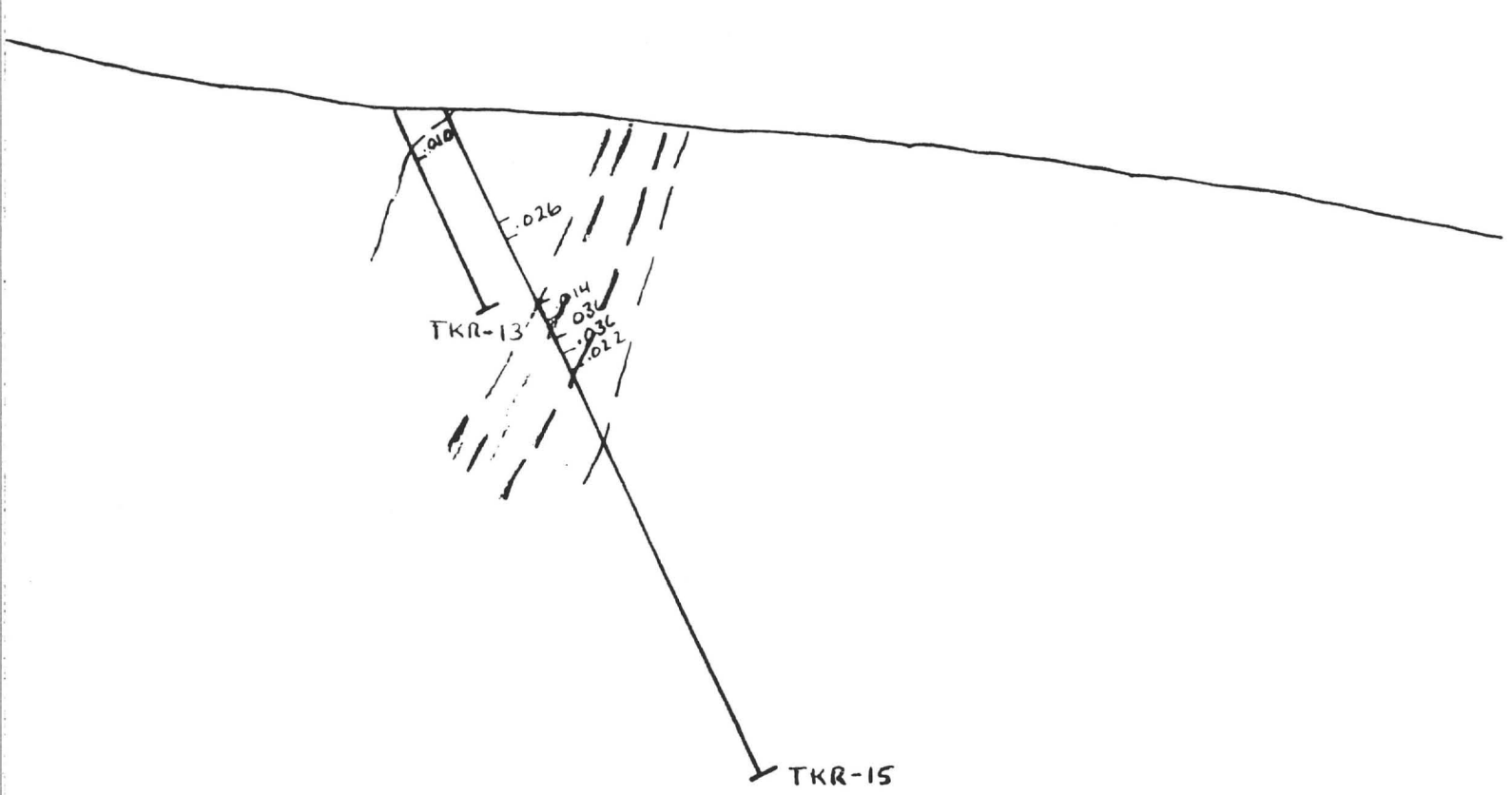


Section 5.5

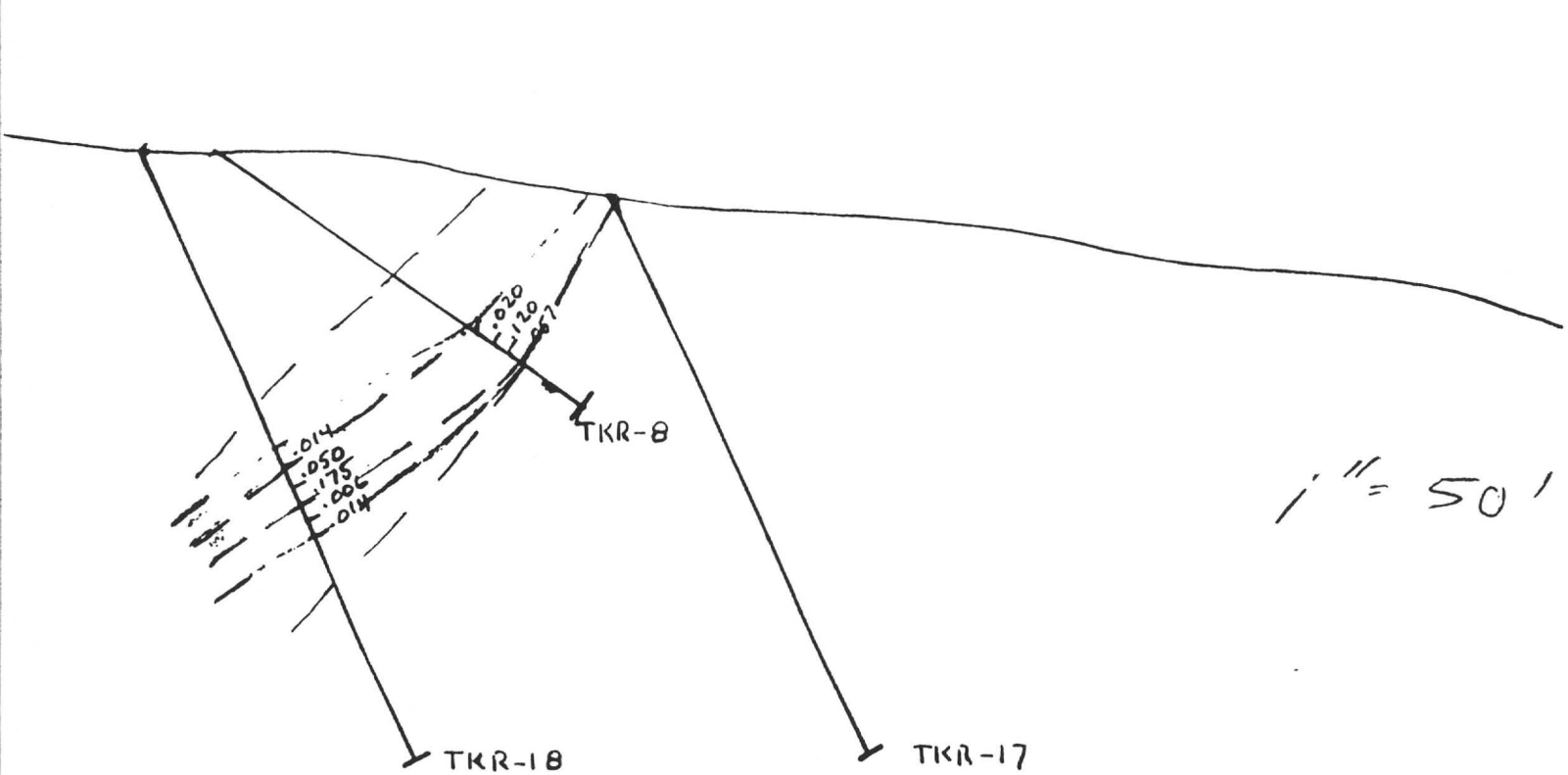
1" = 50'



Section 8.5



Section 9
1" = 50'



Section 10.5

11/88

TREASURE KING MINE
HEAP LEACH PROJECT

Prepared for

Royal Gold, Inc.

Prepared by:

Redford McDougall

TABLE OF CONTENTS

TREASURE KING

HEAP LEACH PROJECT

FEASIBILITY STUDY

November 10, 1988

1.0 Summary

This study presents capital and operating costs for a 45,000 ton per month heap leach operation at the Treasure King property in Arizona.

The costs are developed based on mining 525,000 tons of waste and 175,000 tons of ore. The ore will be crushed to minus 5/8 inches, agglomerated, and truck stacked to a height of twenty feet. These functions will be performed by a contractor. In this study, the crushing plant will be rented but operated and maintained by the mining contractor.

The ore will be leached at the rate of 1500 tons per day in a 45 day primary cycle and a 45 day secondary cycle. Washing the heaps with fresh water will begin immediately after the secondary leach.

Primary leaching will take four months. An additional two months are allowed for the final secondary leaching, washing and reclamation work.

The gold will be recovered from the pregnant solution with a portable Merrill Crowe zinc precipitation plant. The precipitate will be shipped to a refinery for final processing.

The appendix to this study contains four income projections as a function of gold price. The mining cost is the single largest expense and a thorough investigation should be conducted to find a competent contractor that can perform the work at a lower cost. Also, conveyor stacking should be examined as a possible means of reducing operating costs. The feasibility of conveyor stacking will depend on the exact location of the leach pad relative to the mine and crushing plant.

The conclusion from this study is that the operation can be installed for a total cost of $900,000 which includes a capital expenditure of $450,000 plus an additional $450,000 for working capital. The working capital requirement will be slightly higher if the mining contractor requires a deposit to cover mobilization costs and if market conditions necessitate an early purchase of a large quantity of cyanide.

At a gold price of $400 per ounce, the profit before taxes is estimated to be $530,000. At $425 per ounce, the profit will be approximately $700,000. These profit numbers do not include any preproduction costs or corporate management costs which will have to be deducted to determine the real profit.

Summaries of the capital and operating costs are presented in figures 1 and 2.

Figure 1

Treasure King Mine

45,000 Ton Per Month Heap Leach Project

Capital Costs

Item Number	Description	Page of Discussion	Cost
4.1	Permitting	8	$ 6,500
4.3	Leach Pad	9	114,100
4.6	Ponds	10	43,400
4.8	Recovery Plant	11	126,200
4.10	Heap Plumbing	12	35,400
4.12	Laboratory	13	26,000
4.13	Infrastructure	13	
	Road & Work Areas		15,000
	Parts Storage		5,000
	Fences		7,000
	Support Vehicles		30,000
	Support Facilities		20,000
	Water Supply		15,000
	Telephone		5,000
	Total Capital Costs		$448,600

Figure 2

Treasure King Mine

45,000 Ton Per Month Heap Leach Project

Operating Costs

Item Number	Operation	Page of Discussion	Cost per Ton
5.1	Labor	15	0.75
5.2	Mining/Crush/Stack	16	8.28
5.3	Crusher Rental	16	1.38
5.4	Process Reagents	17	1.51
5.5	Water & Leach Utilities	17	0.21
5.6	Sample Assays	18	0.02
5.7	Process Maintenance	18	0.02
5.8	Refining & Sales	18	0.28
5.9	G & A	18	0.10
5.10	Reclamation	19	0.14
	Total Operating Costs		12.69

REPORT ON THE
TREASURE KING PROPERTY
YAVAPAI COUNTY, ARIZONA

by

LANDY A. STINNETT
BEHRE DOLBEAR - RIVERSIDE, INC.

September 15, 1988

in cooperation with

ROYAL GOLD, INC.

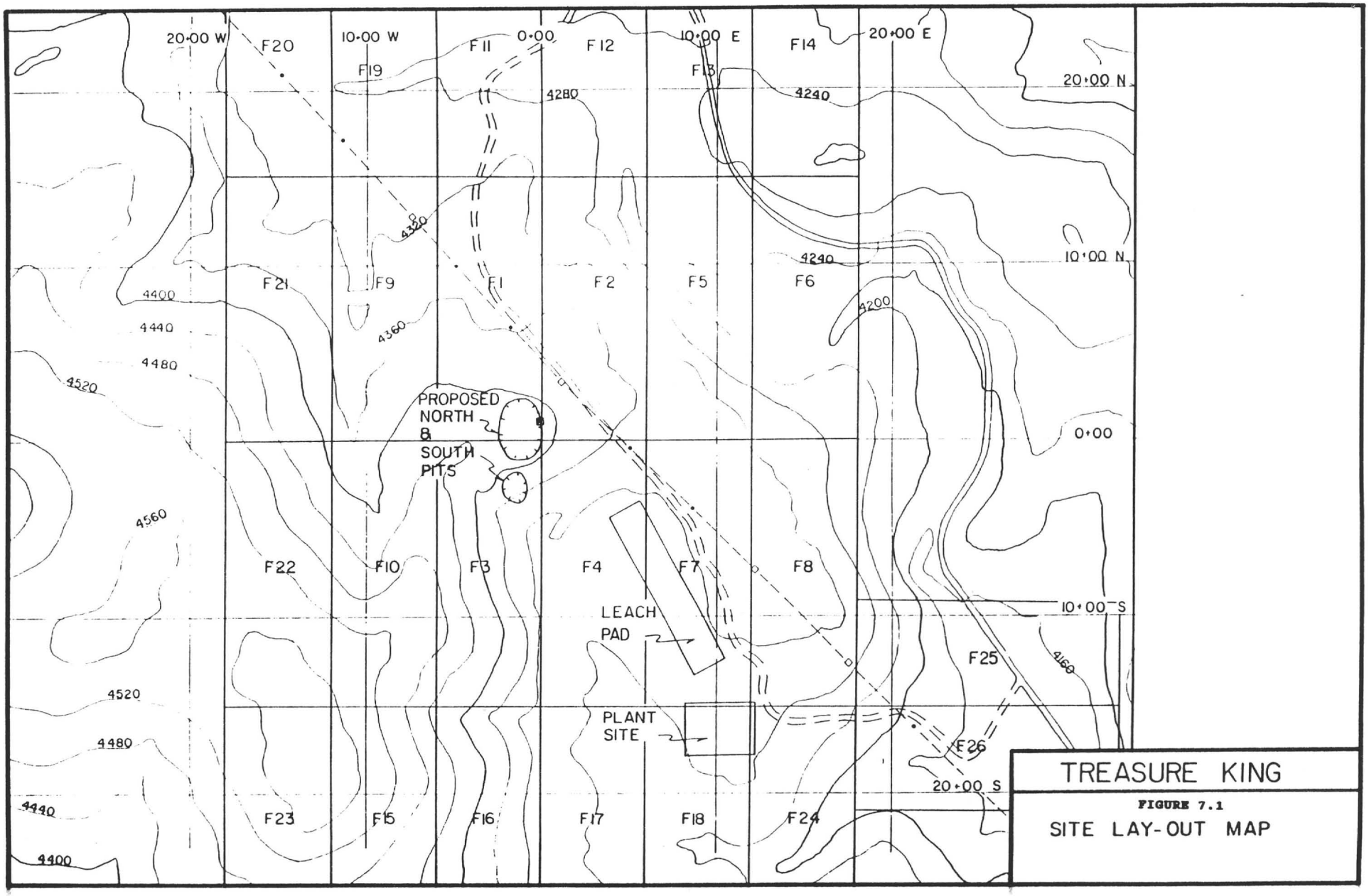
7.0 RESERVES AND PRODUCTION

Mineable reserves at Treasure King are currently estimated at 175,000 tons of drill indicated material. The estimated grade is 0.063 ounces gold per ton without giving allowance for mining dilution. Figures 7.1 and 7.2 show the proposed site layout with the 1988 drill hole locations.

Figures 7.3 and 7.4 illustrate selected cross-sections with drill holes and proposed pit outlines. It will be noted that drill holes in addition to the 1988 drilling are shown in the cross sections. No grade is shown for previous drill holes, but the drillholes are used to show the position of mineralized material.

The pit outlines are based on a maximum cross-sectional volumetric stripping ratio of 3:1. In addition, a 55-degree overall pit slope is assumed and a minimum pit width of 60 ft. is maintained.

The proposed production schedule calls for contract mining to begin in month eight of the project, and it is anticipated that mining will be completed in seven months. This allows for a modest combined mineralized/non-mineralized production rate of 70,000 tons per month. This is easily achievable with a small fleet of equipment.



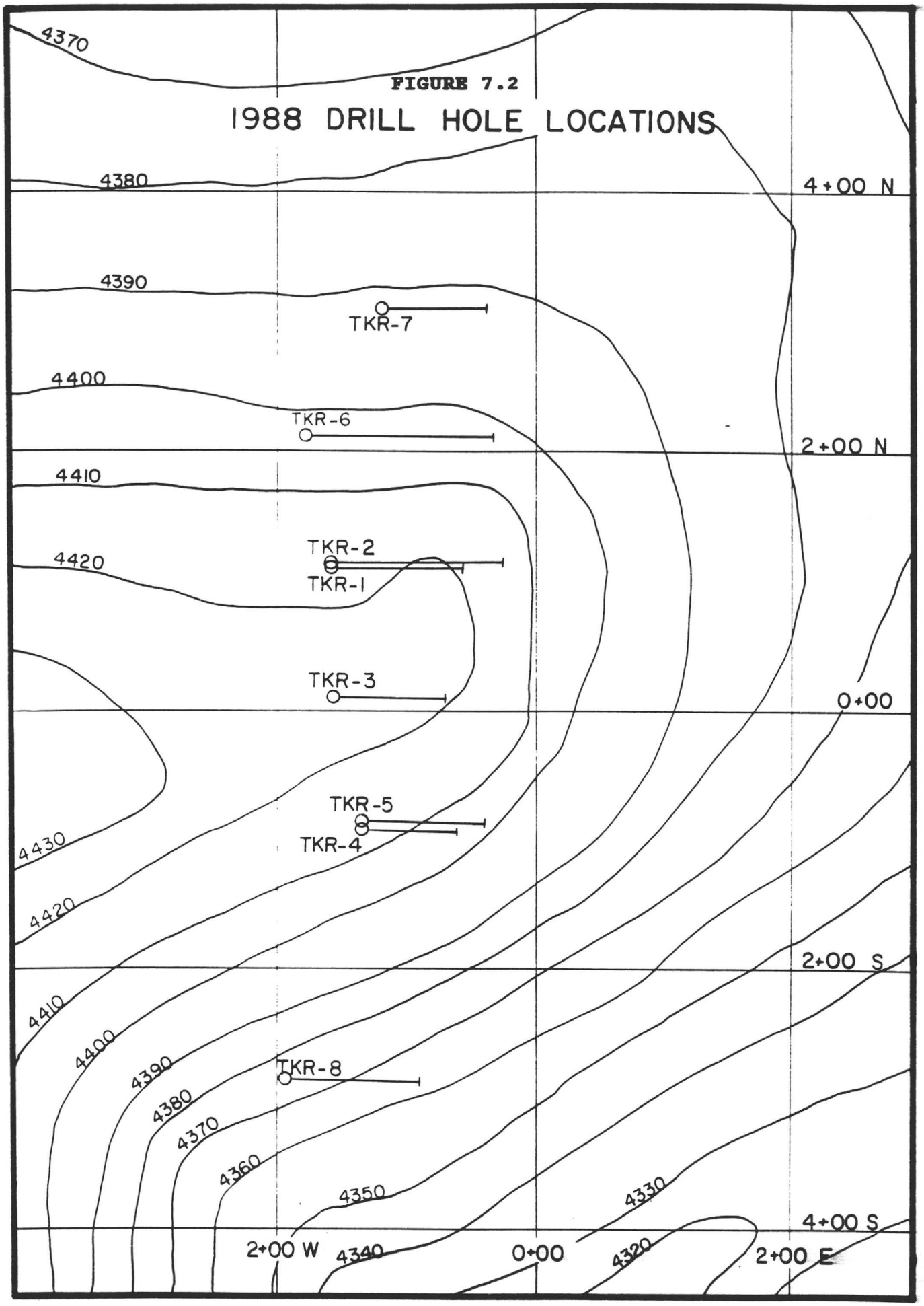
TREASURE KING

FIGURE 7.1

SITE LAY-OUT MAP

FIGURE 7.2

1988 DRILL HOLE LOCATIONS



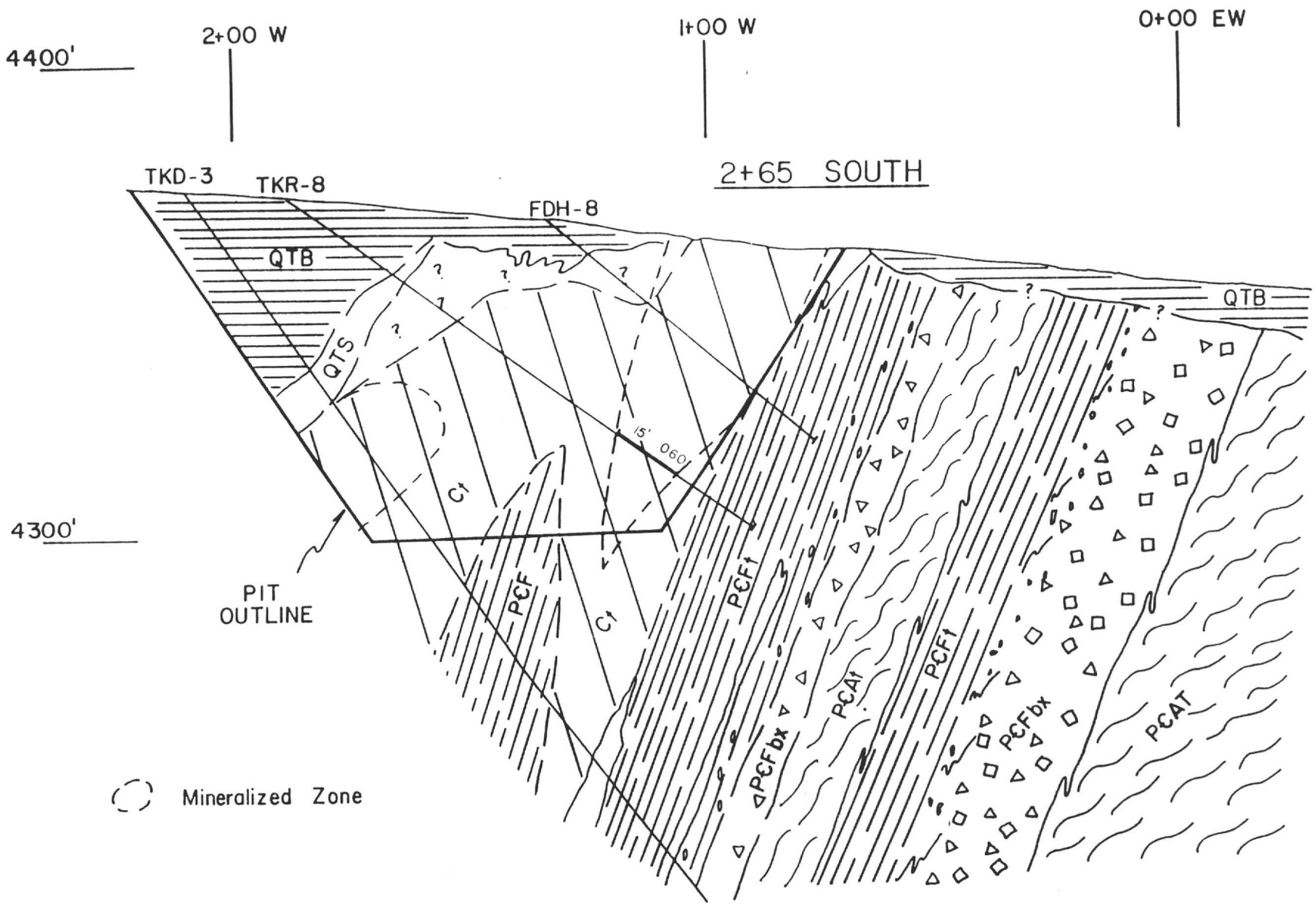


FIGURE 7.3
CROSS SECTION THROUGH TREASURE KING DEPOSIT

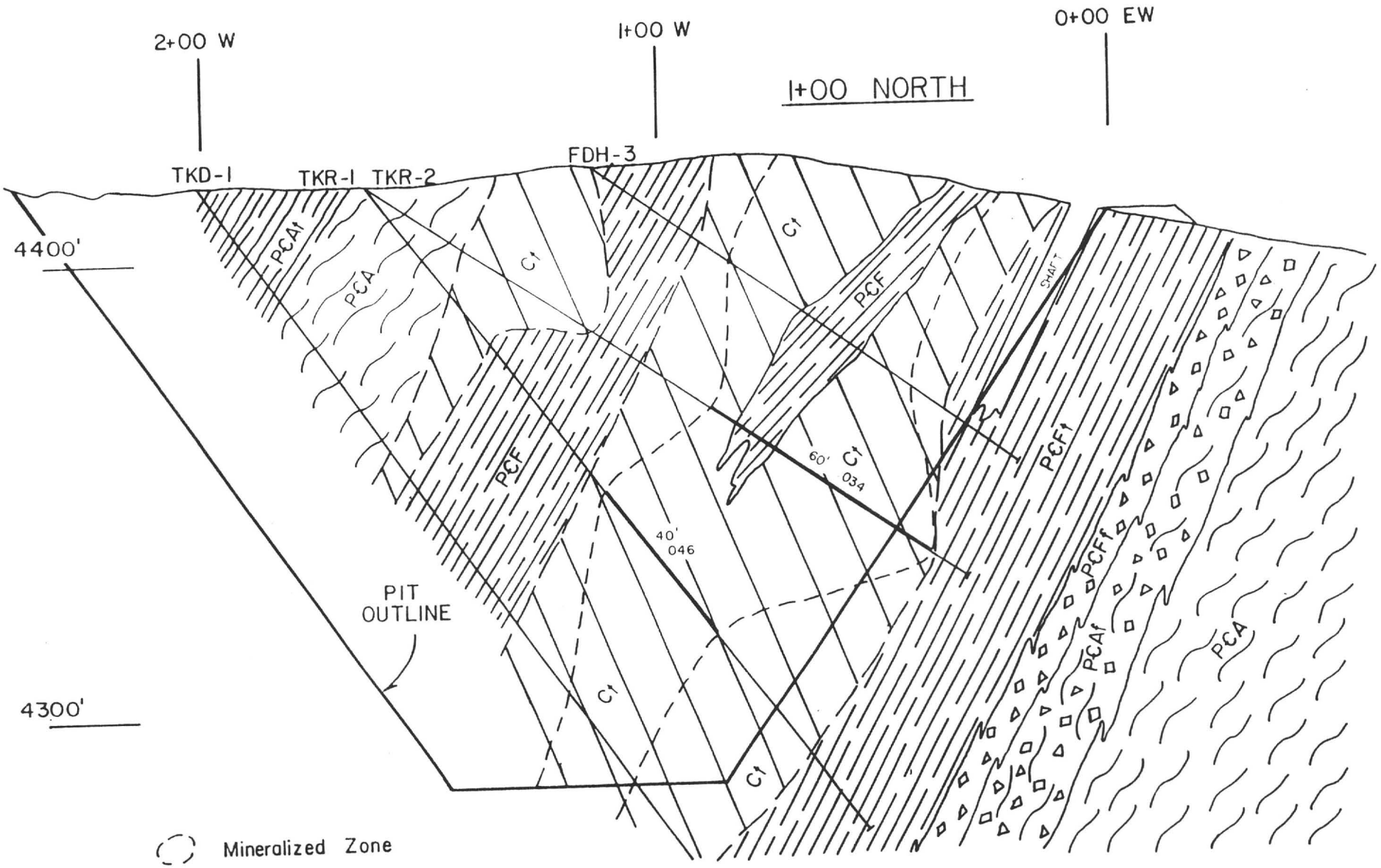


FIGURE 7.4
CROSS SECTION THROUGH TREASURE KING DEPOSIT

The open pits envisioned for the Treasure King property will be mined on a contract mining basis. The mining contractor will be responsible for drilling, blasting, loading and hauling all material. The material to be leached will also be crushed, sized, agglomerated if necessary, and loaded on the leach pad. It is projected that highway-type diesel trucks will be used to haul the material and that they will be loaded by a medium size front end loader. Individual trucks will be loaded and routed to the dump or crusher/leach pads according to the material loaded.

Several samples have been tested to determine the feasibility of heap leaching the Treasure King material. Table 7.1 summarizes the results of the leach tests conducted by REDCO. Based on previous experience with heap leaching projects, a recovery of 75% is estimated.

TABLE 7.1

REDCO Leach Test Summary

Sample No.	Drill Hole	Footage	REDCO Assayed Head Au oz/ton	CSMRI Assayed Head Au oz/ton	CSMRI Calculated Head Au oz/ton	Au Recovery %
1	4	40-43	Nil	0.009	0.014	92.60
2	4	43-46	0.022	0.045	0.047	85.00
3	6	25-28	0.070	0.179	0.172	59.20
4	6	28-31	0.012	0.032	0.036	83.20
5	6	31-34	--	0.041	0.046	91.30
6	7	37-40	0.011	0.073	0.072	83.30
7	7	40-43	0.068	0.045	0.044	63.50
8	8	49-52	0.073	0.110	0.106	83.00
9	8	52-55	0.017	0.048	0.050	82.00

The gold recovery method envisioned for the Treasure King property is heap leaching with carbon adsorption. The material to be leached is first crushed, sized and agglomerated if necessary, then loaded on the leach pad. The heap is then leached by sprinkling a barren cyanide solution on the top of the heap. The pregnant (gold bearing) solution is recovered in a drain system at the bottom of the heap. A typical leach cycle would be 30-50 days. The pregnant solution then goes to the process facility for gold recovery. Typical process facility unit operations are as follows:

- Adsorption
- Carbon thermal reactivation
- Pressure stripping
- Electrolysis
- Carbon acid washing
- Reagent makeup
- Retorting of cathodes for mercury removal
- Refining to Doré, and
- Refinery slag processing

A generic flowsheet is shown in Figure 7.5. Reagent consumption, leach cycle, and optimum crushing/grinding circuit size will be determined as a course of detailed metallurgical testing.

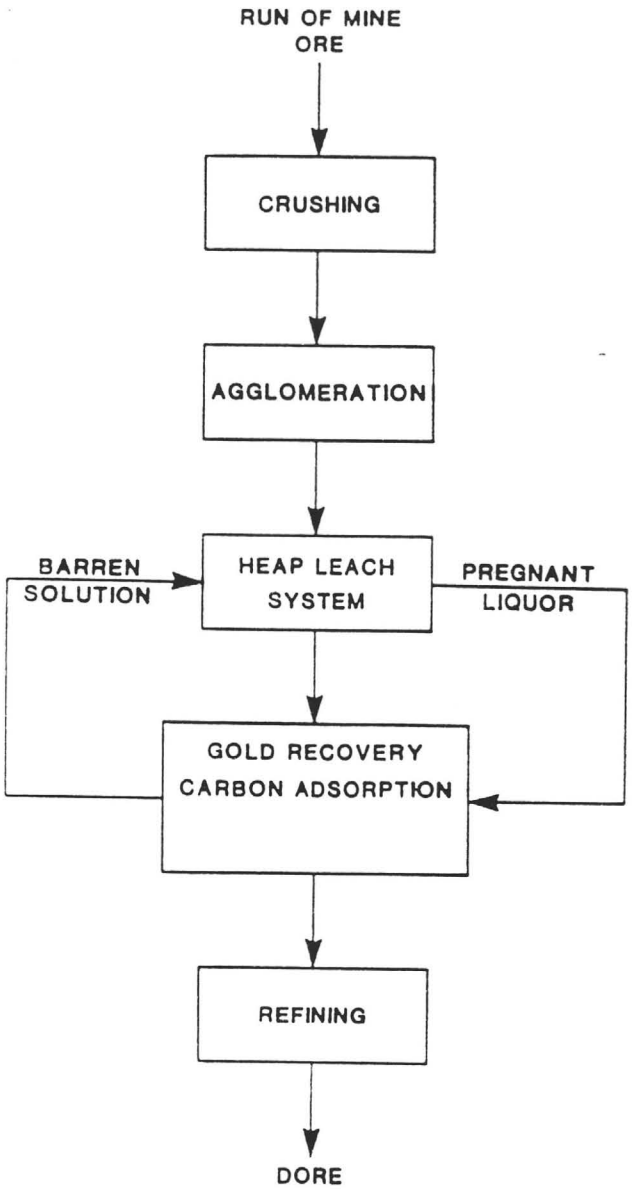


FIGURE 7.5

HEAP LEACHING FLOWSHEET

Mining costs will vary between leachable rock and waste due to the difference in tonnage factors of the mineralized and non-mineralized materials (10 ft^3/ton mineralized and 12 ft^3/ton non-mineralized). Table 7.2 summarizes a 1985 low-bid contract mining cost. At a volumetric stripping ratio of 3:1, the mining cost is $7.40/ton mineralized material ($4.40 mineralized material and $3.00 waste material).

TABLE 7.2

Treasure King Project

Estimate of Mining Costs

	MINERALIZED	WASTE
Drilling & Blasting	$1.70/ton	$1.10/$yd^3$
Loading	$0.75/ton	$0.75/$yd^3$
Transportation	$0.85/ton	$0.85/$yd^3$
Crushing & Sizing	$1.10/ton	N/A
	$4.40/ton	$2.70/$yd^3$

Plant operation costs are estimated to be $3.60 per ton of mineralized material. Table 7.3 summarizes the plant operation costs. These costs are based on a typical flowsheet and will vary depending on the exact process and flowsheet used in the final plant design.

TABLE 7.3

Treasure King Project

Estimate of Processing Costs

Leaching & Adsorption	$2.00 per ton mineralized material*
Stripping & Electrowinning	$0.25
Carbon Regeneration	$0.16
Smelting	$0.12
Laboratory	$0.17
Mill Overhead	$0.21
Power	$0.35
Mill Equipment	$0.34
	$3.60 per ton mineralized material

* does not include provision for agglomeration

Figure 7.6 plots the value of undiscounted cash flows vs. Average Grade of the deposit at an estimated tonnage of 175,000 tons of mineralized material. At a gold price of $430 per troy oz., the breakeven grade is 0.053 OPT. The estimated average grade of .063 OPT gives the project a positive valuation of approximately $500,000. The value will be improved by the addition of more tons to the estimated resource base and by an increase in the average grade of the deposit.

GEOCON, INC.
Exploration and Mining Geology

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Phone/FAX (303) 279-3118

RICHARD L. NIELSEN • CONSULTING GEOLOGIST

11 September 1991

M E M O R A N D U M

TO: T.A. Loucks, Royal Gold, Inc., Denver CO
FROM: R.L. Nielsen, Consulting Geologist, Evergreen, CO
SUBJECT: Treasure King gold mine area, Yavapai CO., AZ--
Review of 1991 assessment work

INTRODUCTION

The purpose of this memo is to summarize results of, and conclusions of exploration significance from the limited program of prospecting and geochemical sampling done by Royal Gold personnel to comply with 1991 assessment requirements. Discussion of the geologic setting, exposed mineralization, discovery potential and review of work done prior to 1991 are recorded in other reports available to the reader. Remarks that slightly modify conclusions and recommendations made in my report of 28 November 199Ø are given at the end of this memo. This writer is an independent consultant and has no equity interest in the properties discussed. My conclusions and recommendations are based upon data provided me for review.

WORK DONE IN 1991

A limited program of prospecting and geochemical sampling was done by Royal Gold personnel in August 1991. Samples were collected from the Railroad and Lost Pick claim groups. Geologic notes, sample descriptions and geochemical analyses of samples are attached.

Twelve rock chip samples of mineralized, altered or limonite-stained material from outcrops or "near outcrop" float were collected (Sample Nos. 81, 84, 86-9Ø, 95, 99, 1ØØ, 1Ø1, 1Ø2). Five rock chip samples of siliceous and quartz veined cherty iron formation are included in this group (93, 94a,b,c,d, 96, 97, 98a,b,c,d,e). Three select samples of mineralized float from stream channels were collected for analyses (85, 91, 92). Two stream-silt samples and soils collected along four soil sample lines complete the geochemical sampling picture.

Soil samples were collected at regular intervals along east-trending lines. Each sample came from three to five inches below the surface, and probably represents the lower part of the "B" or "C" horizons of the soil profile. The soil samples are thoroughly oxidized and represent weathered bedrocks or

residual soils. No evidence exists that significant amounts of transported material (eg. stream silt or wind-deposited sand) is included in the soil samples.

All samples, rock chip and soil, were crushed, pulverized, and split at the commercial analytical laboratory. The resulting pulp was analyzed for gold and arsenic by regular geochemical analytical techniques (see attached sheets form Cone Geochemical, Inc. for details).

Brief descriptions and location maps of samples together with analytical results are attached.

RESULTS

Sampling done in this 1991 program was concentrated in three areas on the property: (1) the Main Shaft target area on the Railroad clams; (2) the South Shaft target area on the Railroad claims: and (3) the Lost Pick claims. Rock chip and soil samples were collected from the first two areas, rock chip and stream samples were collected in the third area.

Main Shaft Target Area. One line of soil samples laid out across the presumed mineral trend near the Main Shaft (Soil Line No. 4) resulted in defining a 400 to 500-foot wide zone in which the soils provide anomalous gold values of 50 to 418 ppb. Results of last year's 1990 sampling show elevated gold values are confined to the exposed north-trending structure exposed near the Main Shaft. Soil sample data from the 1991 samples now show that elevated values extend about 400 feet farther west than previously measured. Part of the anomalous pattern may be produced by down slope lateral dispersion. However, inclined slopes are not steep and a significant part of the pattern of elevated values may be primary dispersion of gold values in bedrocks. These bedrocks mainly are chloritic schists derived from andesites. The elevated values may represent primary low grade gold mineralization scattered through the meta-andesite.

The most significant result of the 1991 program is discovery and definition of a new area of ore grade gold mineralization located on claim #20, a full 800 feet east of the known mineralizaton at the Main Shaft. Bedrocks in this new area are chlorite-sericite schists derived from andesite as well as bedded cherty iron formation. Selected samples of mineralized, quartz-veined iron formation in this newly discovered area gave gold values in the range of 34 to 36,000 ppb (the latter value exceeds 1.0 opt gold). These are the highest gold values obtained so far from samples collected from the property.

A soil sample line (Line No. 3) was laid out in the area of the new mineralization. This east-west line is about 120 feet

long and samples were collected at 10-foot intervals. Results show elevated gold values in 7 soil samples of 42 to 256 ppb over a width of 60 feet. These results suggest this new area of mineralization may have significant width.

According to the U.S.G.S. geologic map of the region (USGS Map GC-996), rocks showing these newly detected high gold values are the same rock type as those showing high values at the Main Shaft. Evidently the host rocks are disrupted and dislocated to a position 800 feet east by complex folding and faulting. A significant difference between the two areas of mineralization is that the new area of mineralization lies within the Shylock fault zone, a major regional fault in the Precambrian terrane of central Arizona. The Shylock fault presumably is of Precambrian age and is a major shear zone. The gold-bearing iron formation at the Main Shaft has been displaced into, and involved in the major shearing of the fault zone at the new area. The relation of ore-grade gold mineralization to major shear zones on the Railroad claims is remarkably similar to the setting of epigenetic structure-controlled gold mineralization found in Precambrian greenstone belts of the southern Canadian shield. This writer does not wish to suggest a direct analogy between the Shylock fault and ore-bearing shear zones such as the Cadillac-Malartic break of Quebec. However, the similarities of the two areas are striking.

Elevated gold values with significantly associated and elevated arsenic values is another similarity of the new area of mineralization with that found in Canadian camps.

More sampling and prospecting is recommended for this new area. The sample coverage, both soil and rock chip, should be extended farther east. Additional claims should be staked to cover the width of the Shylock fault zone.

South Shaft Target Area. Three rock chip sample (only two were analyzed) do not provide any significantly new information in this area. Two east-west soil geochemical sample lines were laid out presumably to test for width and extension of mineralization. Samples were collected and analyzed at 20-foot intervals for a distance of 120 feet on each line. Elevated gold values on Soil Line No. 1 were from 25 to 262 ppb for the entire length of the line. Soil Line No. 2 showed elevated gold values of 31 to 86 ppb, which must be considered to be weakly elevated. In summary, these new data in the South Shaft target area do not significantly enhance discovery potential in this part of the Railroad claim block, but suggest mineralization may have a significant width.

The west margin of the mile-wide Shylock fault zone runs through the South Shaft area. Elevated gold values up to 4000 ppb are found along the trend of the west margin of the fault

zone. I recommend more claims be staked to the east to the South Shaft area to cover entire inferred width of the Shylock fault zone.

Lost Pick Claims. Rock chip samples collected during the 1991 program obviously were designed to prospect for mineralization on this claim block. Results of this sampling are neutral. They neither enhance or restrict possible presence of mineralization.

This claim block is located so as to cover the contact between mafic meta-volcanic rocks and adjacent meta-sediments. Some chert and marbles are present in schists along this contact. The U.S.G.S. map shows some iron formation in the sediments along the contact. One sample of iron formation shows an elevated gold value at 337 ppb. In a very general way the sampling and work done so far on the Lost Pick claim group are neutral to discouraging.

SUMMARY OF RECOMMENDATIONS

Principal recommendation is to follow up on mineralization newly detected on Claim #20 of the Railroad block block with additional sampling and geologic prospecting. More lode mining claims should be staked on the east margin of the Railroad claim block so as to ensure claim coverage over the entire width of the mile-wide Shylock fault zone.

More soil sampling should be done along trend of known mineralization and along the trace of the Shylock fault zones, where hostrocks are not covered or concealed by post mineral or sedimentary cover.

Over all discovery potential on the property remains about the same, or arguably enhanced by discovery of gold-bearing iron formation in a major Precambrian shear zone. Potential exists for discovery of at near-surface lode deposit containing 50,000 to 100,00 ounces of recoverable gold with grades in the range of 0.05 to 0.10 opt gold. Potential also exists for discovery of underground ore with size up to 500,000 or more with grades in the range of 0.1 to 0.3 opt gold. The soil geochemical data suggest the mineralization may have greater width than previously inferred. High risk potential exists for a lode deposit deposit of relatively large size with the Shylock fault zone.

Respectfully submitted,

Richard L Nielsen

Richard L. Nielsen
Consulting Geologist

GEOCON, INC.
Exploration and Mining Geology

P.O. Box 2093 • Evergreen, CO 80439
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RICHARD L. NIELSEN • CONSULTING GEOLOGIST

28 November 1990

MEMORANDUM

TO: Thomas Loucks, Royal Gold, Inc., Denver, CO
FROM: R.L. Nielsen, Consulting Geologist, Evergreen, CO
SUBJECT: Treasure King gold mine area, Yavapai Co., AZ--
Review of data obtained from 1990 assessment work

AREA AND PROPERTY

The Treasure King mine area is a gold ore exploration property consisting of 119 unpatented lode mining claims located in the Prescott National Forest in northwest Arizona. The property lies adjacent to paved State Highway 49 and access from paved roads into the property is fair to good on gravel roads and dirt tracks. The area has a history of mining and is administered for multiple use. No unusual environmental problems are expected.

BACKGROUND

Production from the Treasure King mine is unknown. The small amount of underground workings are abandoned, caved and inaccessible. Most exploration activities of the past ten years have been focused on evaluation of ore potential at the Treasure King mine. REDCO of Reno acquired the property in the mid-1980's, and produced a geologic map, an airborne INPUT survey, ground geophysical surveys, geochemical sampling surveys and drilled some 13 rotary and diamond core holes near the mine. REDCO produced a promotional report emphasizing exploration targets and potential. According to the report this drilling indicates an in-place geologic reserve of 175,000 tons at 0.063 opt gold, containing somewhat less that 10,000 ounces of recoverable gold, located at the Treasure King mine.

Royal Gold acquired the property early in 1987, and Roger Steininger, a consultant, prepared a summary report based upon review of all available data. Steininger recognized a problem with reproduciblity of drill sample gold assays. These problems apparently were caused by poorly prepared assay samples from drill cuttings and from small non-representative samples of drill core. Further, visible coarse gold is observed and suggests a nugget effect is likely to be present. Thus, reserve estimates produced by REDCO are subject uncertainties implied by the above mentioned problems.

Royal Gold commissioned a summary report by Behre-Dolbear-Riverside, a consulting firm, and this report is a good third-party summary of past activities and land status. The report also includes a summary of work done and ore potential in the known exploration target areas of the property.

Thomas Loucks of Royal Gold visited the property in August 199Ø and carried out geologic and geochemical work partly to comply with assessment requirements. The work consisted mainly of rock chip sampling with supporting geological observations. Samples of unaltered rock units such as schists, iron formations and quartzite were collected. Representative samples of altered and mineralized jaspery cherts, schists and banded iron formations were collected. Select samples of quartz veins and mineralized material from dumps also were collected. All samples were analyzed for Au, Ag, As, Cu, Hg, Zn by usual geochemical techniques.

GEOLOGIC SETTING AND MINERALIZATIØN

Host rocks on the property are Precambrian schists and associated rocks that also host massive sulfide and gold vein mineralization in the region. Foliation in the host rocks strikes northerly and dips steeply west. Rock types consist of varous types of quartz mica-feldspar-amphibole schists, quartz-rich magnetite schists, and jaspery siliceous units. These rocks are believe to be metamorphosed sediments (mainly tuffs, quartzites, graywackes), felsic and andesitic volcanic units, ferruginous cherts and iron formations mainly of oxide facies.

Upper Cenozoic basalt flows partly cover Precambrian rocks on the property.

The property lies within a large "gold province" containing widespread placer gold, and many lode gold propects and small deposits. Gold has been a significant credit in base metal lode mines of the region.

Geologic setting of the region is typical of Precambrian greenstone belts. Abundant felsic metavolcanic rocks with meta-rhyolites suggest a high degree of differentiation assoicated with the ancient volcanic activity. Indeed, the alteration and metallization common in Precambrian rocks of the region are considered to be genetically related to late stages of the Precambrian volcanic activity. Strong structural deformation and shearing has prepared the rocks for epigenetic mineralization. Mobilization and concentration of precious metals may be related to the Precambrian tectonism and metamorphic changes in the rocks.

Lode gold mineralization on the property is closely associated with banded iron formation, especially iron formation that has been fractured and healed with quartz veinlets. Gold mineralization typically is low in contained sulfides.

Generally, rock chip samples of iron formation with stockworks quartz veinlets give assay values in the range XØØ to XØØØ PPB gold. Arsenic in the samples generally is elevated to more thatn 1ØØ PPM and mercury values are up to +1.Ø PPM. High aresenic values are spotty and do not provide a clear direct relationship to gold values. Values of Ag, Sb, Cu, and Zn are low and do not show a positive direct relation to gold content. Gold values in rock chips appear to be the most direct and reliable guide to presence and patterns of gold mineralization.

RESULTS AND RECOMMENDATIONS

Field evaluation and sampling done in 199Ø succeeded in outlining two potential target areas--both previously unrecognized. Each target areas is defined by spotty ore grade gold values mainly in quartz veinlets in jaspery ferruginous chert or iron formation, and in associated rhyolite. The Main Shaft Target Area located over an area containing old gold prospects is about 15ØØ feet north-south by 5ØØ feet east-west; elongate parallel to foliation. The South Shaft Target Area located about one mile farther south also over some old prospects, is about 3ØØØ feet north-south by 5ØØ to 8ØØ feet east-west. Most rock chip samples collected from each target area show detectable and anomalous gold values with some values exceeding 1.Ø PPM gold. This ore-grade mineralization appears to be associated with the fractured and quartz-veined iron formation in each target area.

The geologic setting and geochemical results suggest that further exploration activity likely may lead to discovery of at least one or two small to medium-sized deposits of gold ore amenable to open pit mining and relatively low cost heap leach extraction. Data suggest likely deposit size may contain 5Ø,ØØØ to 1ØØ,ØØØ ounces of recoverable gold with grades in the range of Ø.Ø5 to Ø.1Ø opt gold. Potential also exists for discovery of underground ore with size up to 1ØØ,ØØØ tons and grades in the range of Ø.1 to Ø.3 opt gold.

Further work is recommended to evaluate significance and ore potential of the target areas:

1. Check high gold assays by repeat analyses of samples at another lab. New pulp samples need to be prepared from rejects and run to check validity of some high assay values.

2. Additional detailed mapping and sampling should be done in the two target areas. The mapping can be done using an enlarged air photo as base, or using control by brunton and tape mapping method (1" = 50').

3. Mapping and additional surface sampling--perhaps a soil sample grid--should be done with follow-up by trenching. This should be done to help define drill targets.

Respectfully submitted,

Richard L. Nielsen

Richard L. Nielsen
Consulting Geologist

Notes by R. Nielsen Oct 1, 1990

Positive features

1) The area is a gold province with widespread placer gold, widespread gold prospects and deposits, gold has been a significant credit in base metal mines of the area.

2) favorable geologic setting.
   a) Precambrian "greenstone"
   b) Abundant felsic volcanic rocks, rhyolite suggest high degree of differentiation associated w/ some alteration
   c) Strong structural Deformation

3). favorable geochemical results
   a) So far rock-chip geochemical sampling seems the most reliable and effective method to define targets for possible ore

   b) Metal associations are favorable and attractive. ~~to~~ High gold samples are accompanied by low silver, antimony and base metals. arsenic highs are spotty.

Conclusions

1) Field evaluation and sampling done in 1990 succeeded in outlining two target area — not known before - defined by spotty ore grade values, associated with quartz veinlets in jaspery ferruginous chert, and in associated rhyolite.

2) Potential exists to discover and define ~~small to med~~ at least one or two, small to medium sized deposits, amenable to open pit mining and relatively low cost extraction. Potential for 50,000 to 100,000 oz contained gold, in near surface deposits is reasonable

3) Potential also exist for discovery of underground ore; grades in the 0.1 to 0.3 opt range; tonnage up to 100,000 tons.

4) Principal geologic features that appear to be controls for elevated values are:
   a) jaspery "iron formations" (rock type)
   b) stockworks or brecciated or strongly fractured areas in "iron formations" ~~ad~~ host, or rhyolites.

c) structures, shear zones, contacts of major rock units; breccia zones may form along contacts during folding because of strongly contrasting physical properties across contacts.

c) Rhyolite - may be favorable rock type for mzl.

Recommendations

1) check high assays by re-running for gold at another lab.

2) Carry out additional detailed mapping and sampling in the two anomalous target areas.
Map on enlarged air photos - or brunton and pace methods.
Map at 1" = 200'

3) Mapping may be followed by backhoe trenching.

Notes by RLN
Oct 1, 1990
Page 4

Geology -

Should mention here:

① Precambrian age - probably mid - late Proterozoic

② "Greenstone" characteristics - but abundant felsic meta volcanics and quartz eye meta rhyolites suggest volcanics are near the end stage of magmatic differentiation

③ Gold - a wide spread credit in vein fms and sulfide deposit, widespread placer activity.

④ Rocks strongly deformed, strong foliation

Geochemistry

① - Indicate what was done
How many with dup

Low sulfide - gold - rich rzl.
amenable to heap leach.
metallurgy may be good.

Yavapai

Royal Gold

Exploration at Royal's Treasure King property in Arizona has identified a gold resource of 175,000 tons averaging 0.063 ounces of gold per ton. The resource area being explored and developed is open on one end and at depth. Royal holds 179 unpatented mining claims and three state prospecting permits. Of special exploration potential is a group to the north which is adjacent to the old Binghampton Mine.

Royal Gold joined with Chipeta Mining Corporation, a wholly-owned subsidiary of Western Mining Corporation Holdings Limited of Melbourne, Australia, and Ouray Venturers, Inc., to rehabilitate the Camp Bird Mine and to carry out an exploration program. Royal holds a 19% interest in the Camp Bird Venture. Chipeta is the operator. The redevelopment program is directed toward segments of the property which are considered favorable for occurrence of gold mineralization similar to that mined in the past. Drilling has disclosed the presence of high grade gold mineralization in several veins within the property, and the venture is now working on a study of the feasibility of mining portions of one of the veins. The study is based upon extracting drill indicated gold mineralization through extensions of the present mine workings, using the shrink stope method of mining. The venture announced last week that it has exercised its right to extend its option to purchase the mine and that it will drive a cross-out to the mineralized zone and will drift on the zone to confirm its continuity and minability.

Mining Record, Nov. 2, 1988

9-5-00 Mining Record

AZ
CA-3
NV-2

ROYAL GOLD, INC

Engaged in mining, exploration and development at its gold properties in North America:

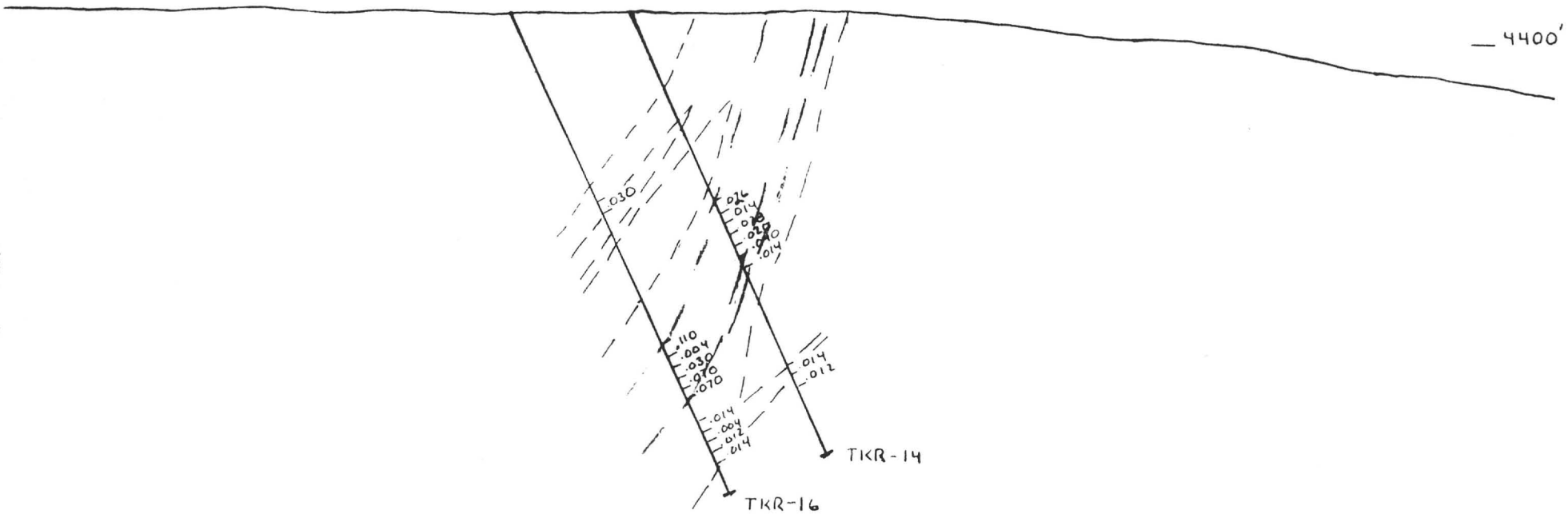
- Sixteen to One Mine, Sierra County, California
- Long Valley Project, Mono County, California
- Bob Creek Project, Eureka County, Nevada
- Crescent Valley Project, Lander County, Nevada
- Goldstripe Project, Plumas County, California
- Treasure King Project, Yavapai County, Arizona

Through affiliates, specialized financial and environmental services are provided to the mining industry.

We accept and appreciate property submittals.

Supports the American Mining Congress and its efforts on behalf of the mining industry.

1660 Wynkoop Street, Suite 1000, Denver, CO 80202
(303) 573-1660; Fax (303) 595-9385



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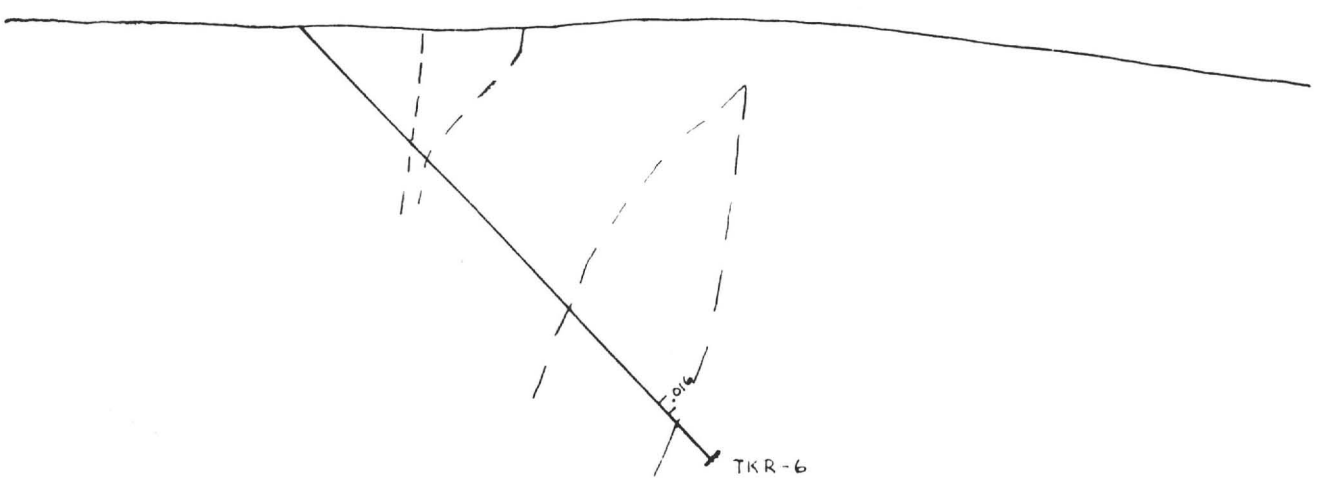

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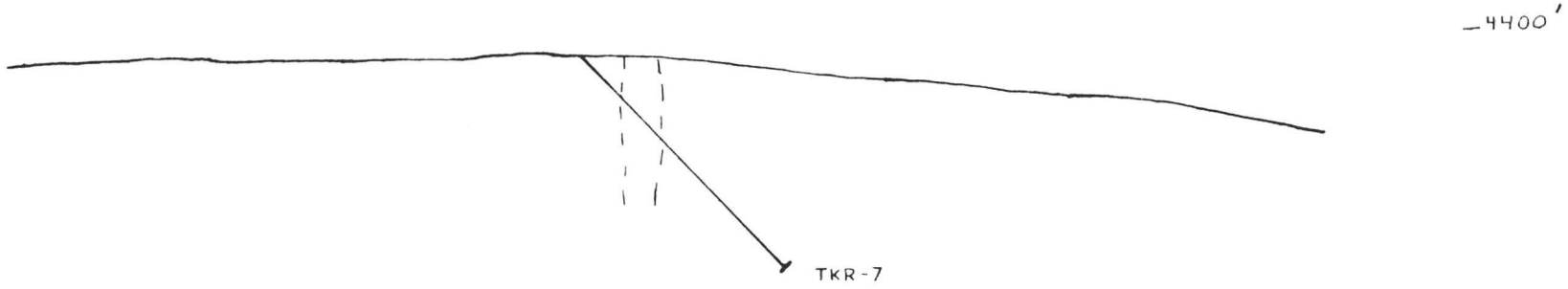

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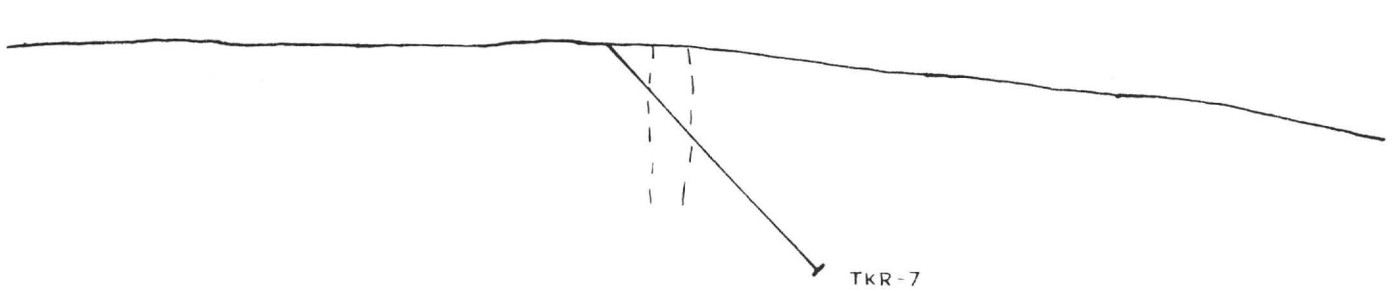

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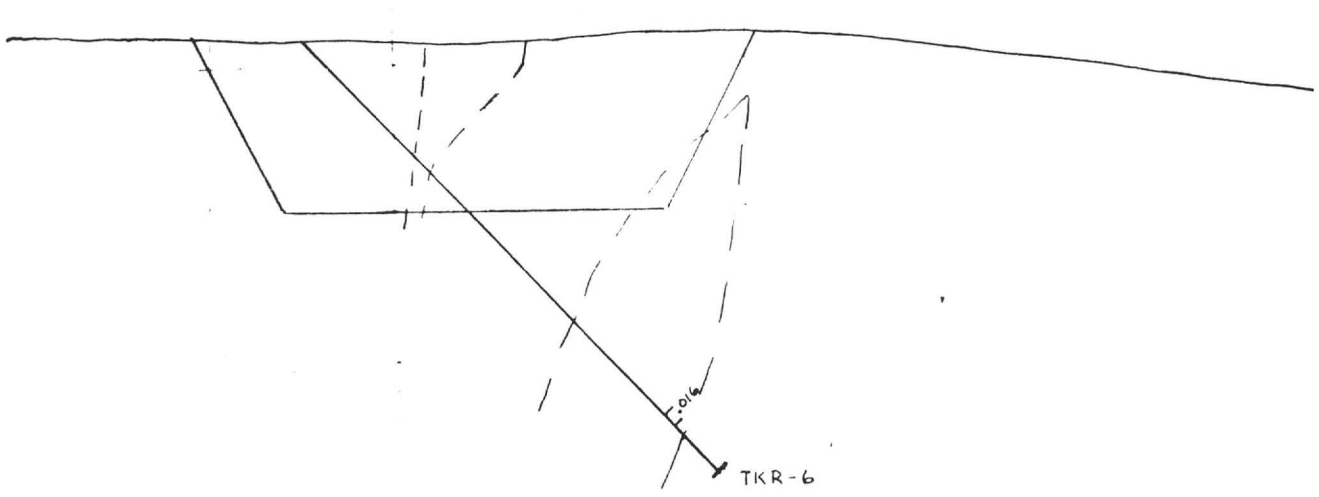

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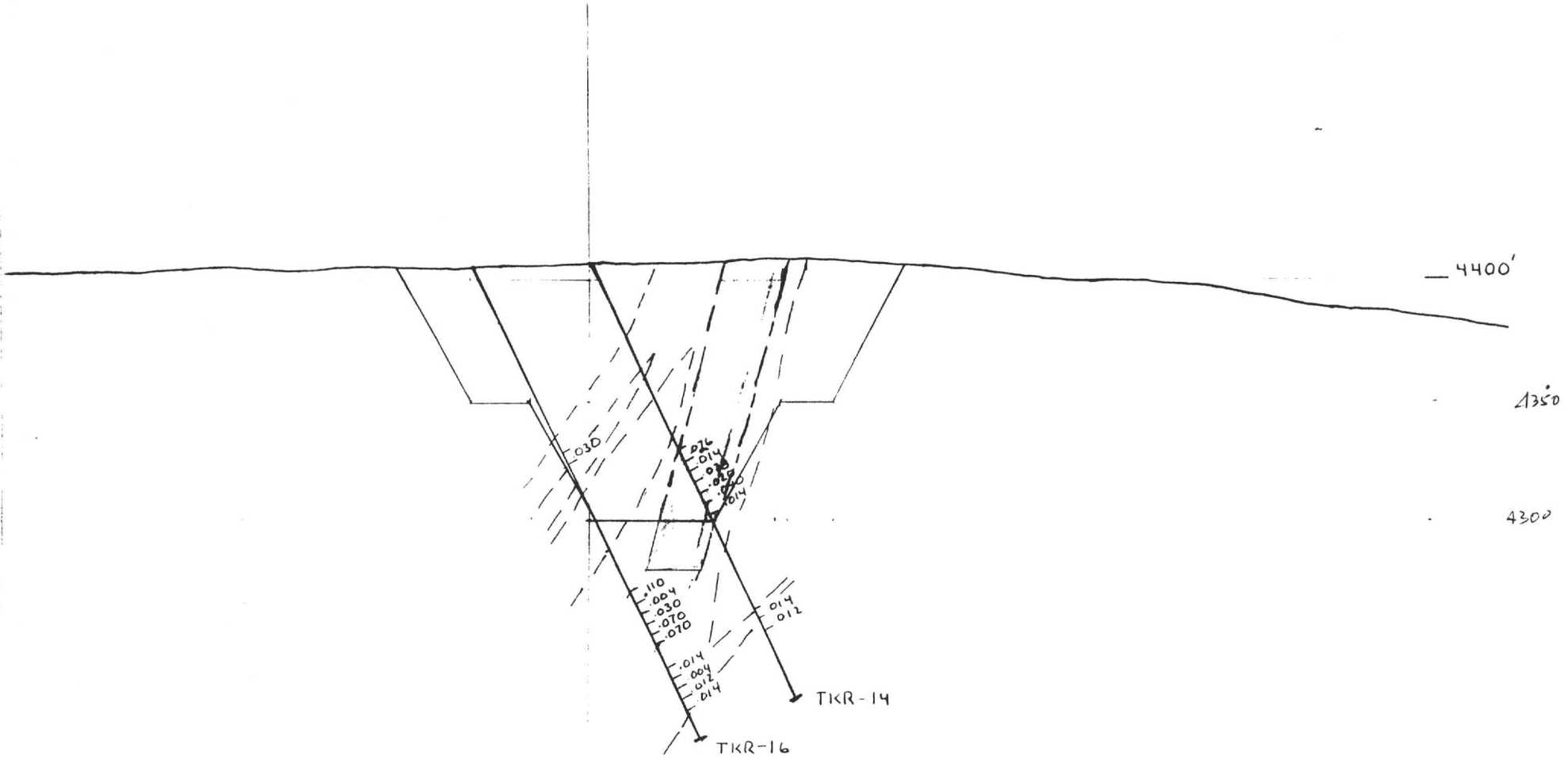

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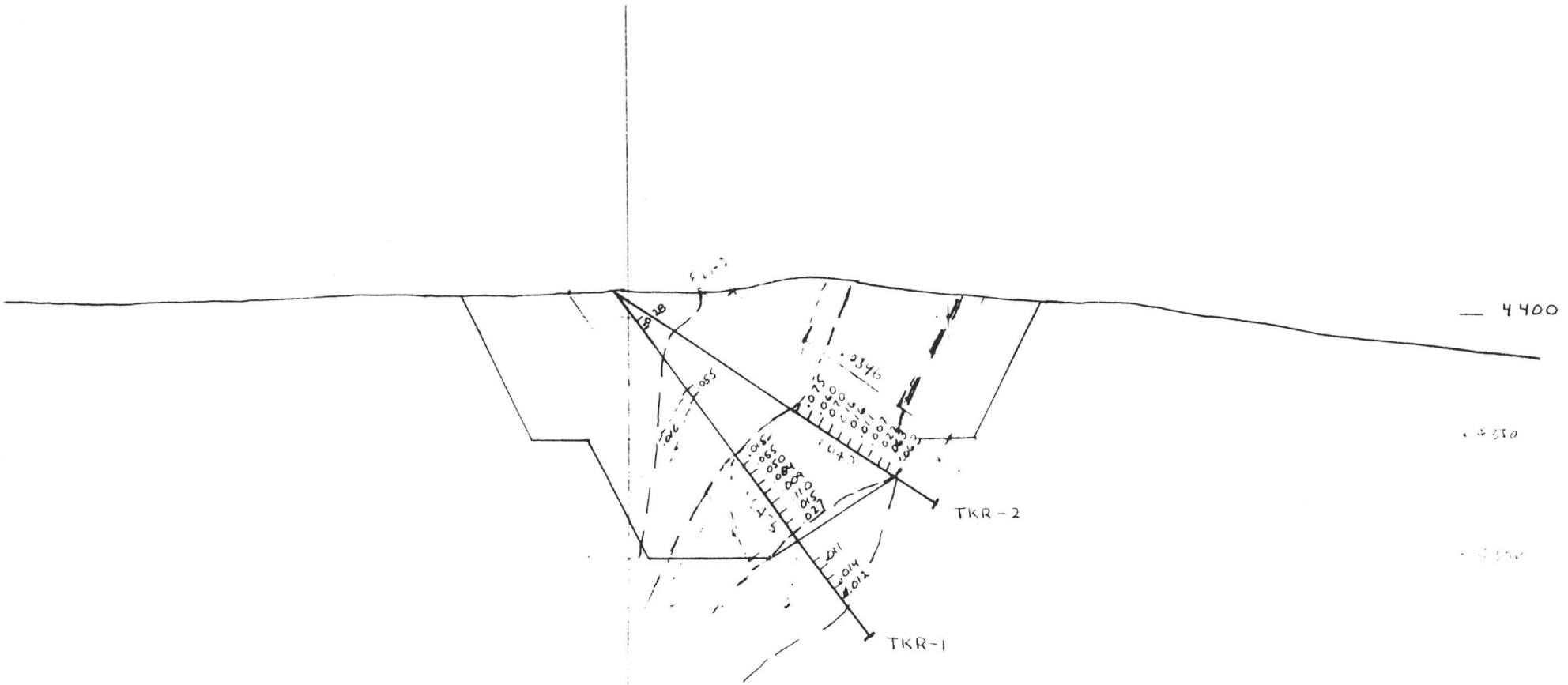

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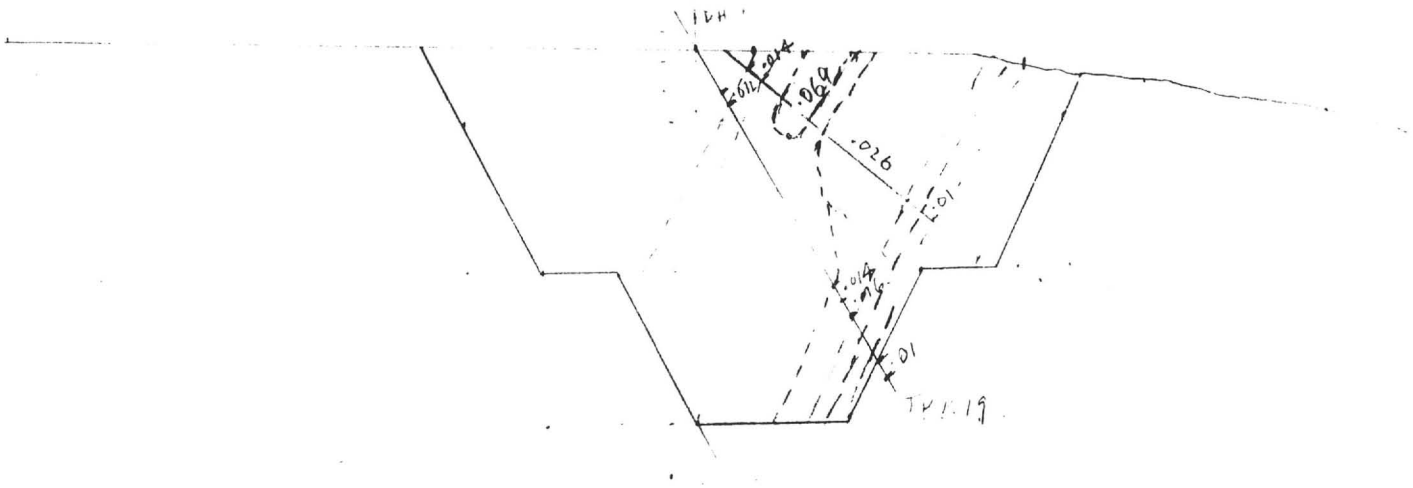

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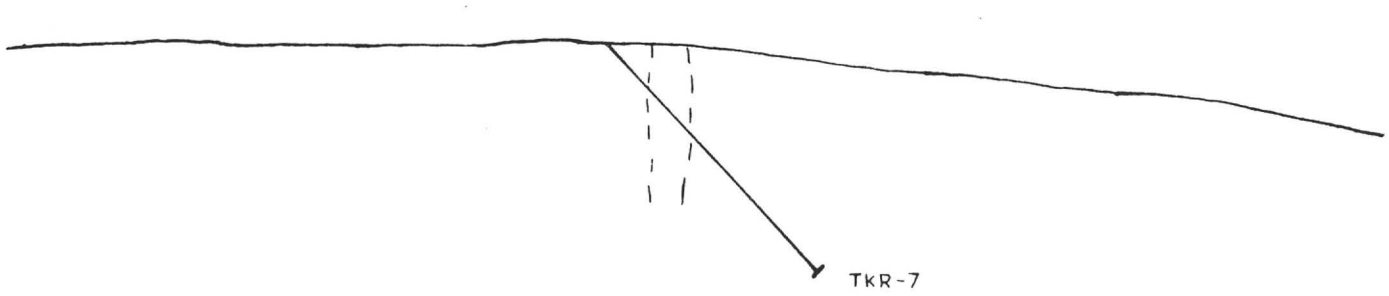

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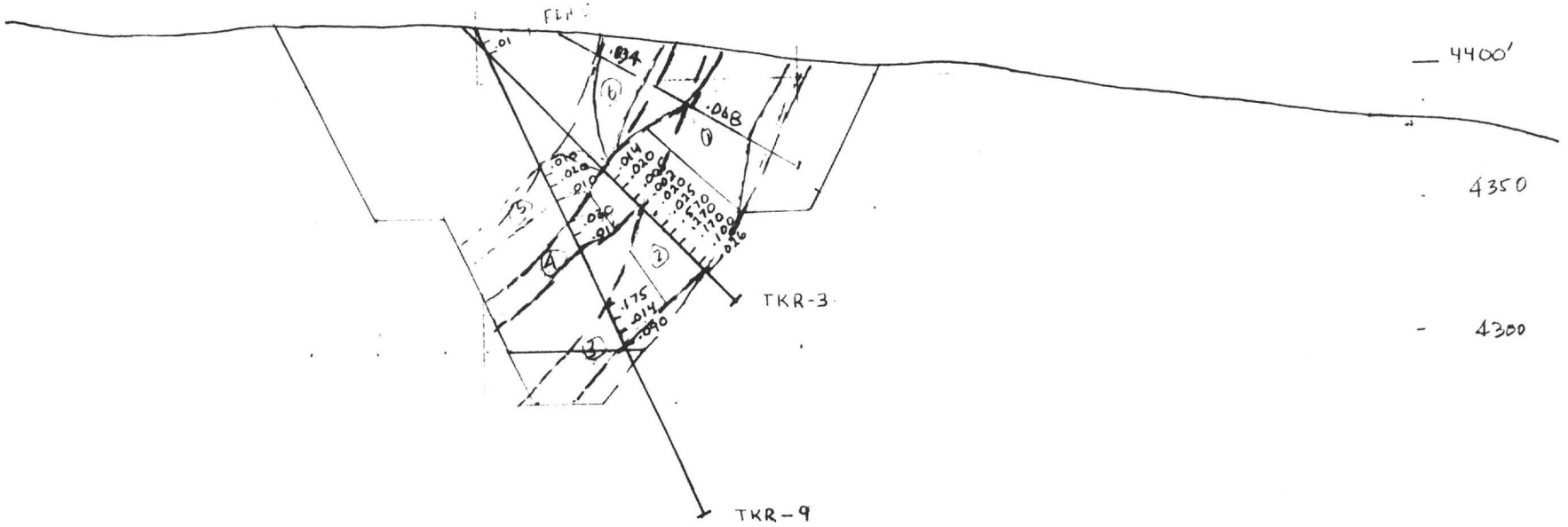

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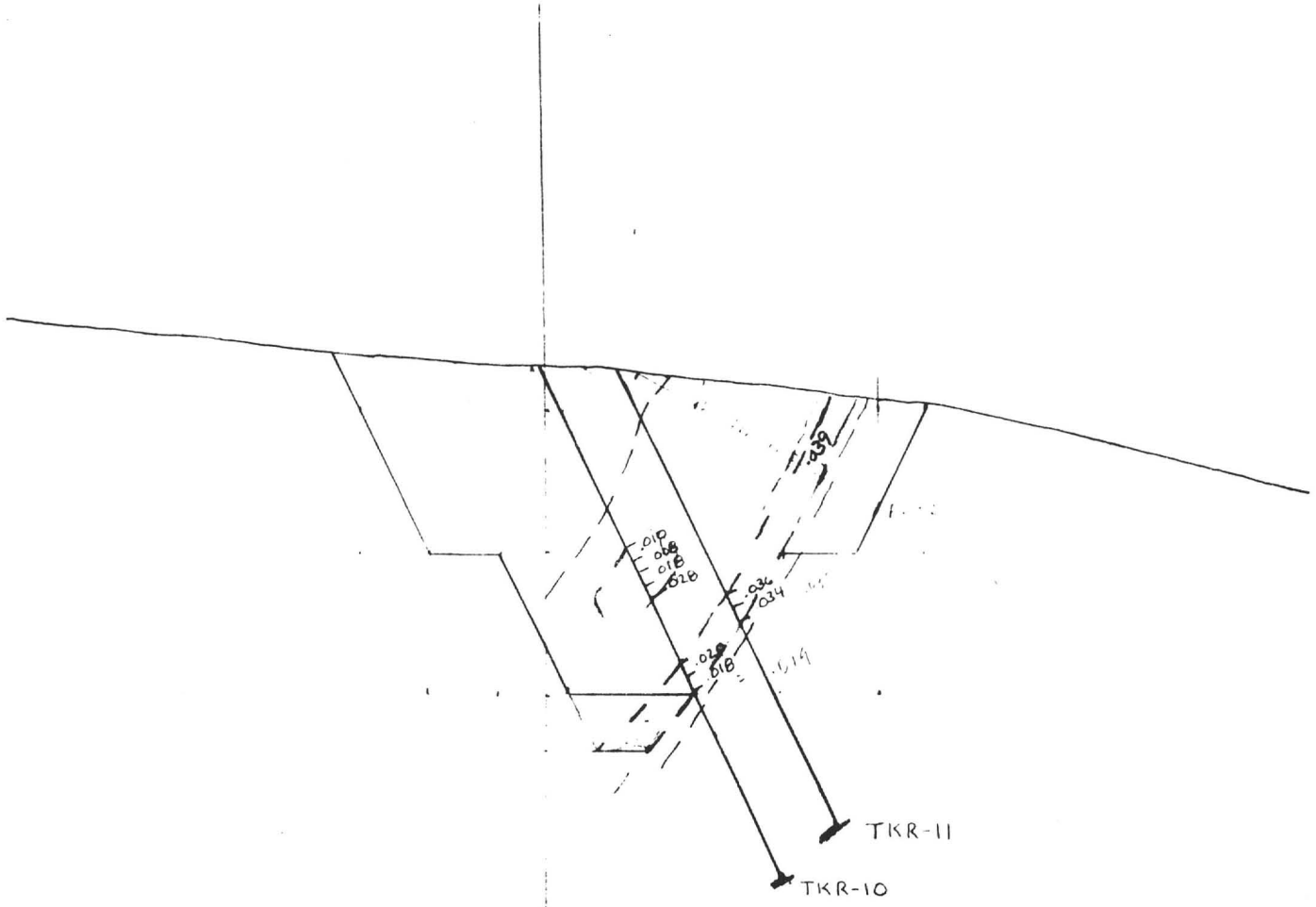

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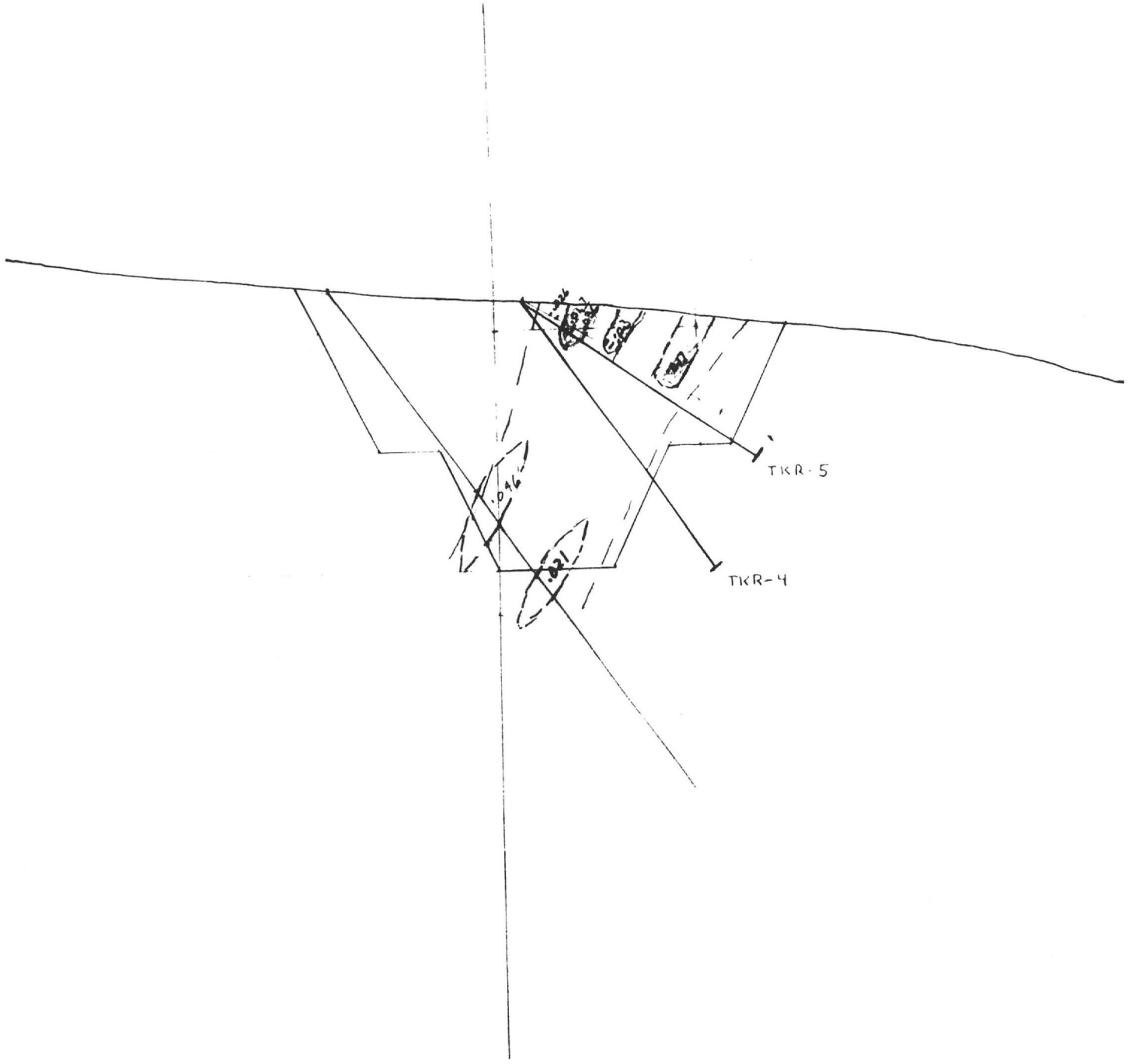

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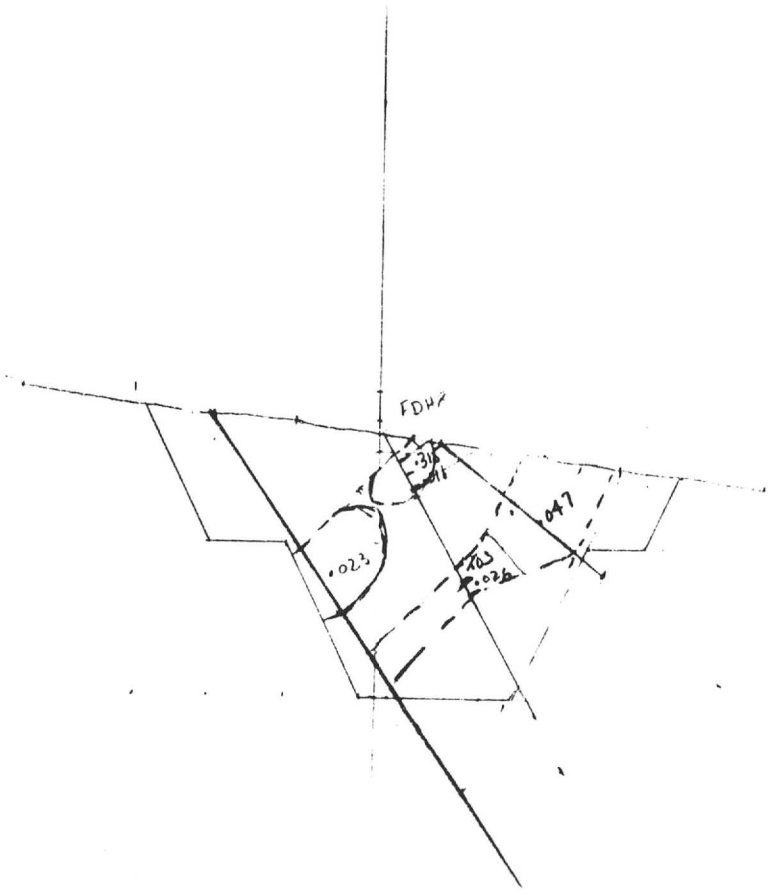

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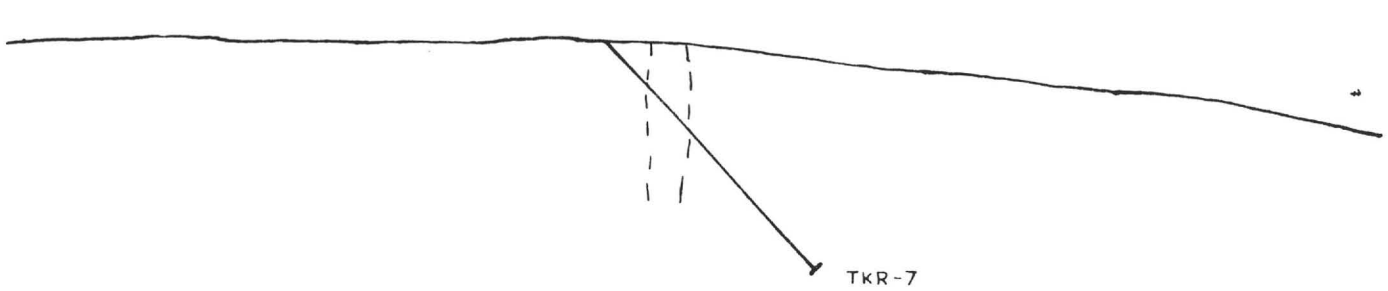

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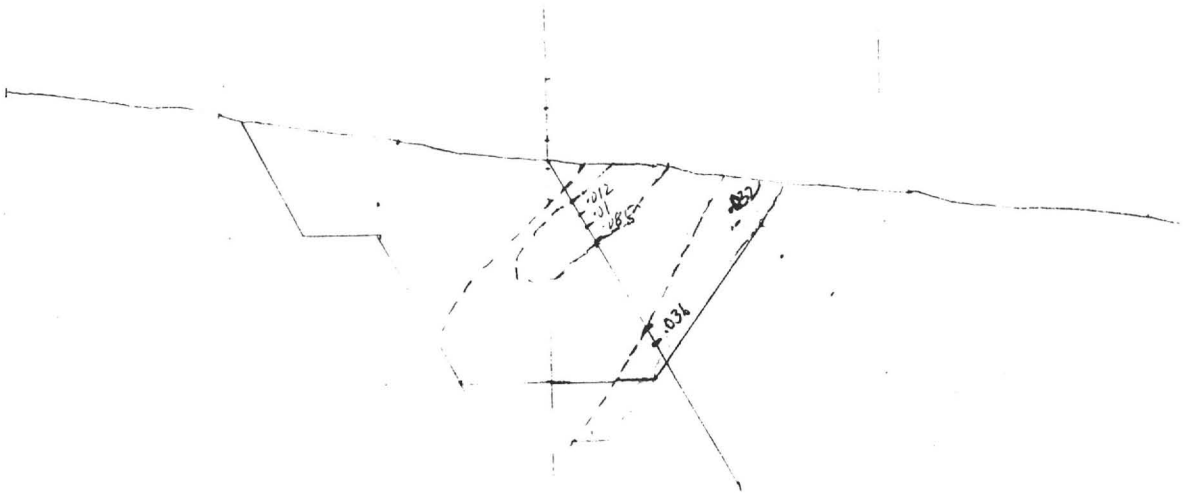

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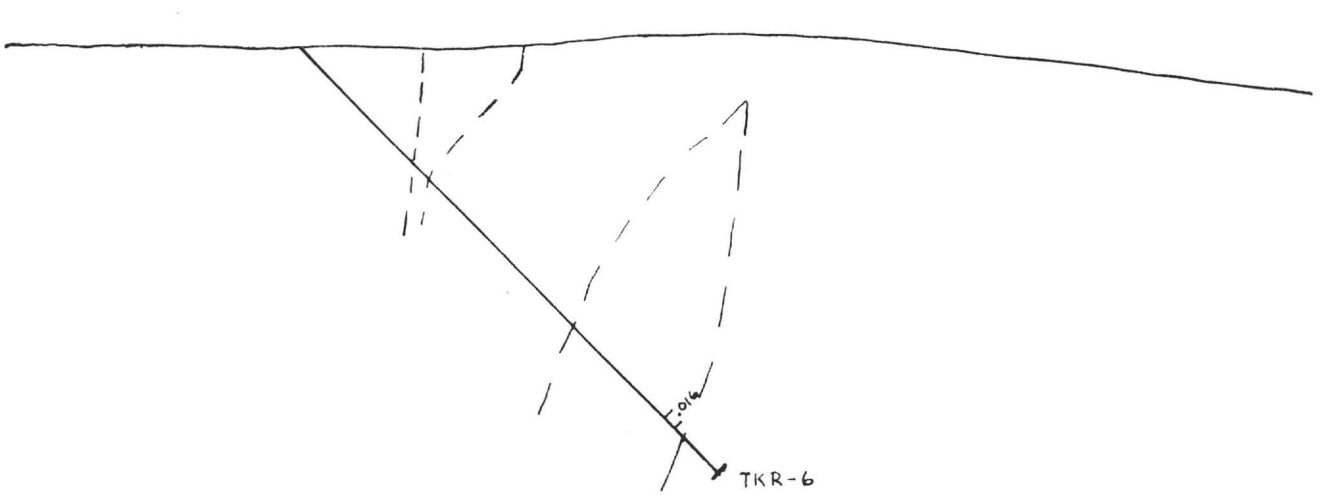

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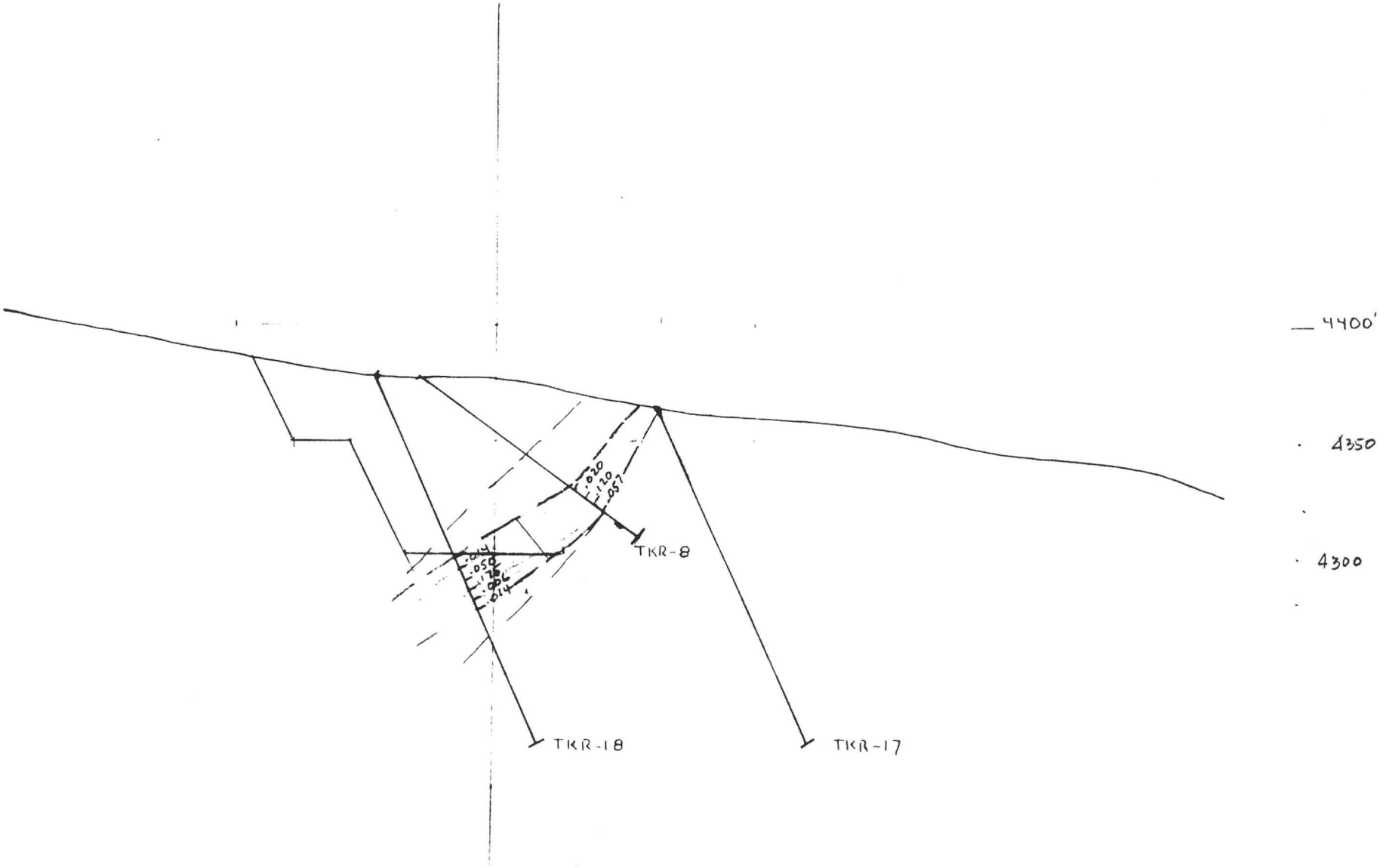

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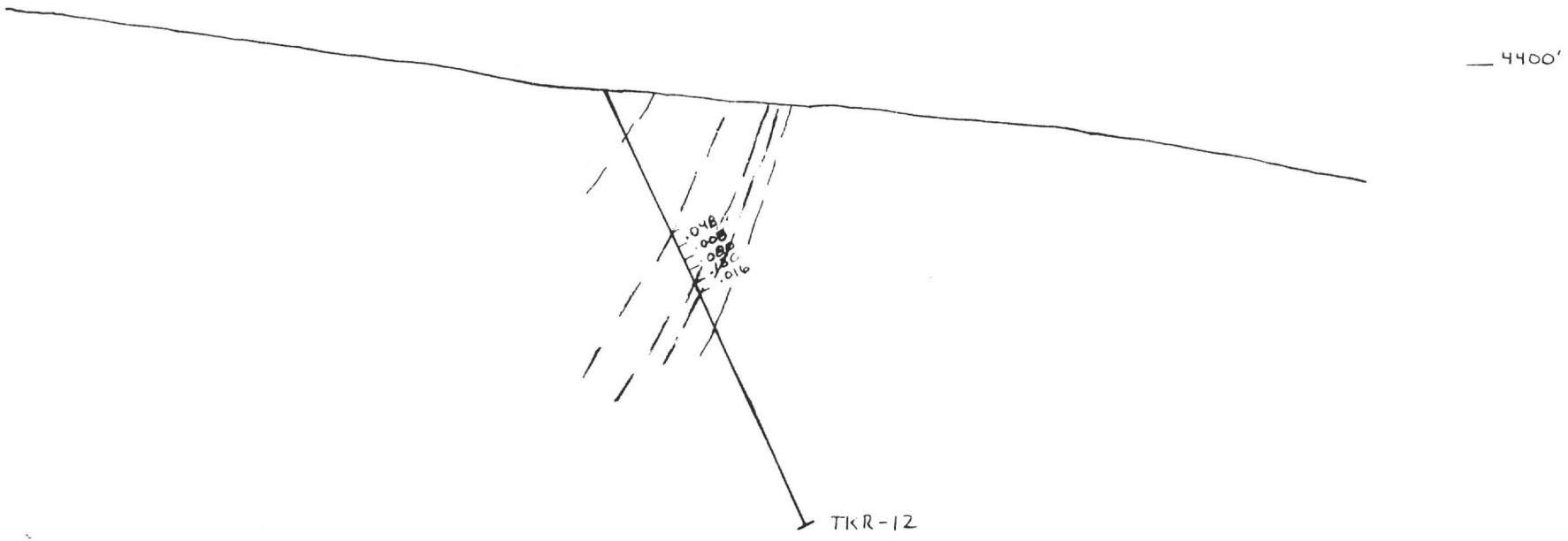

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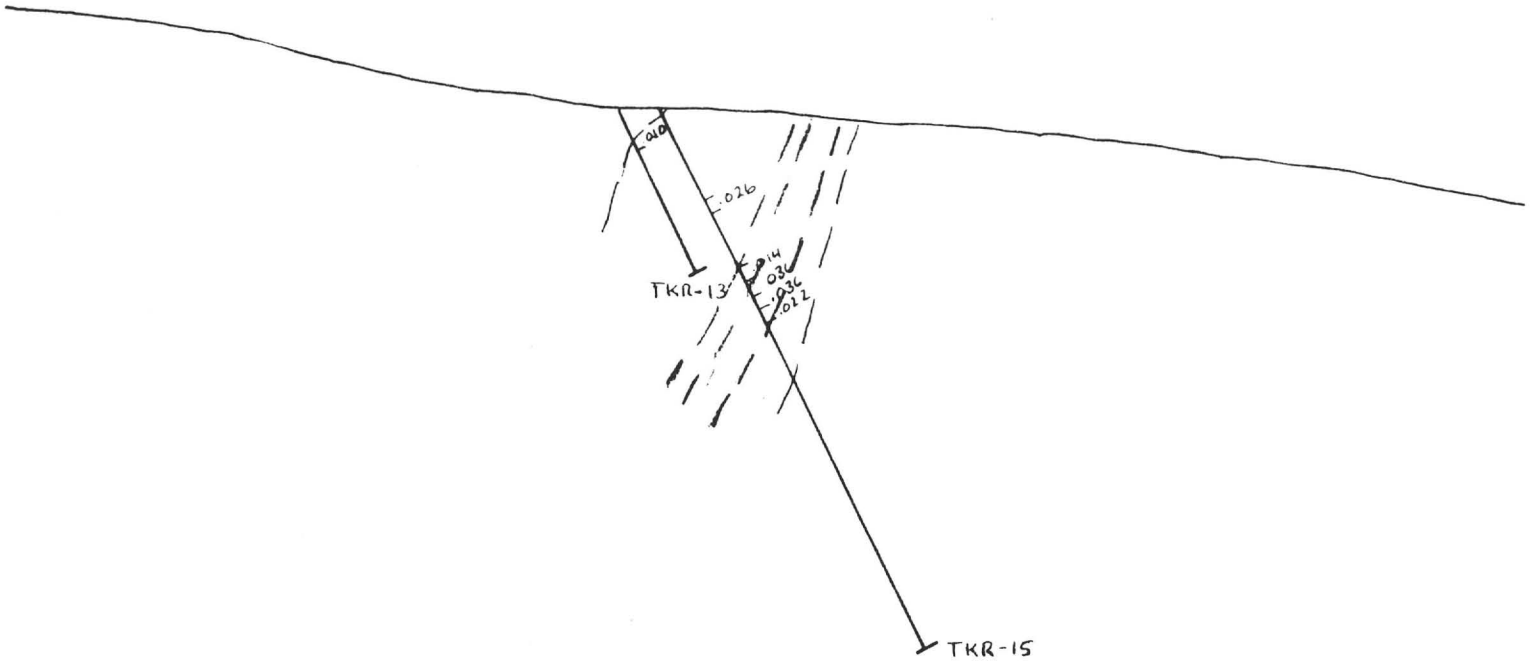

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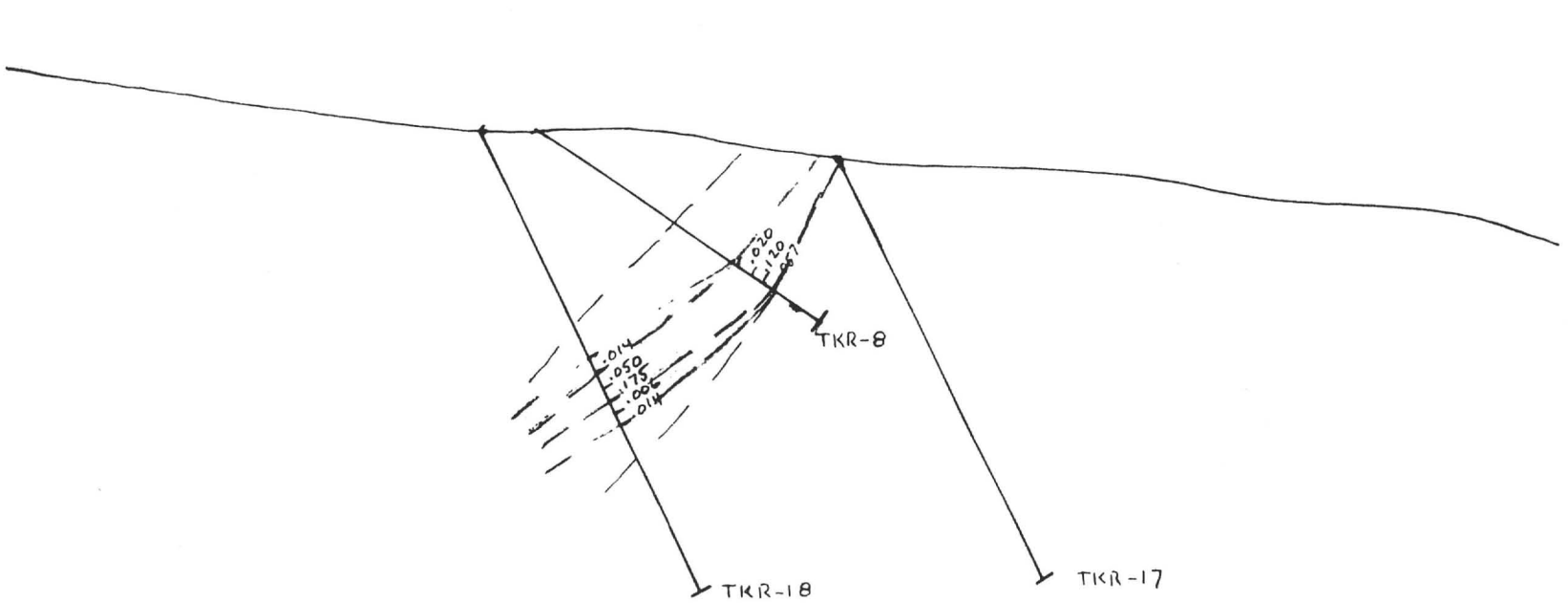

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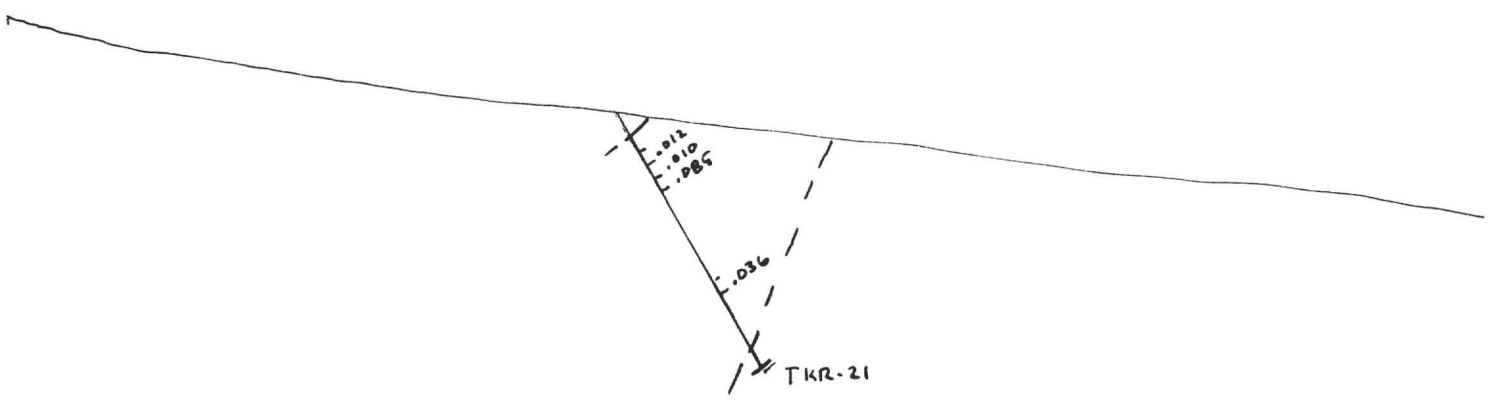

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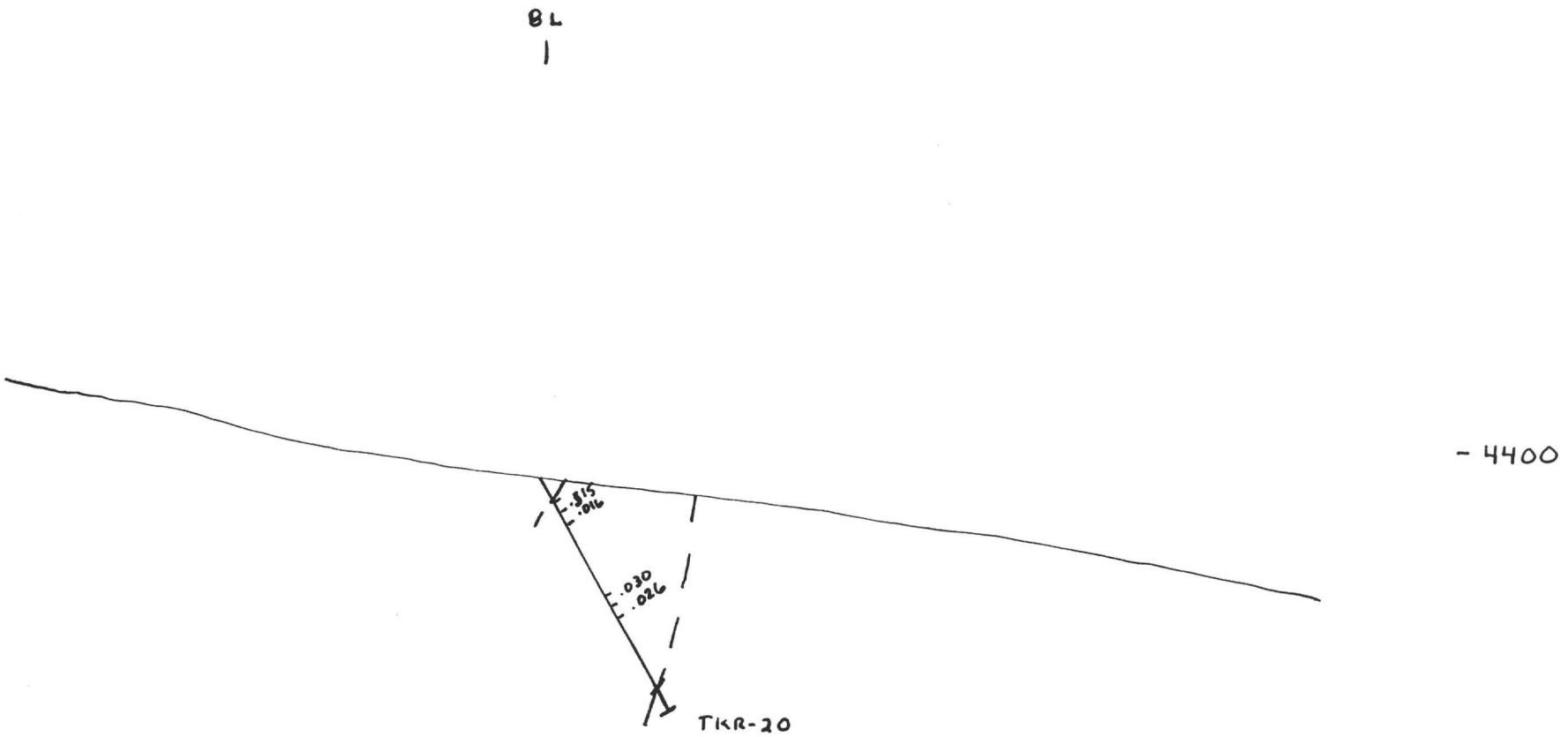

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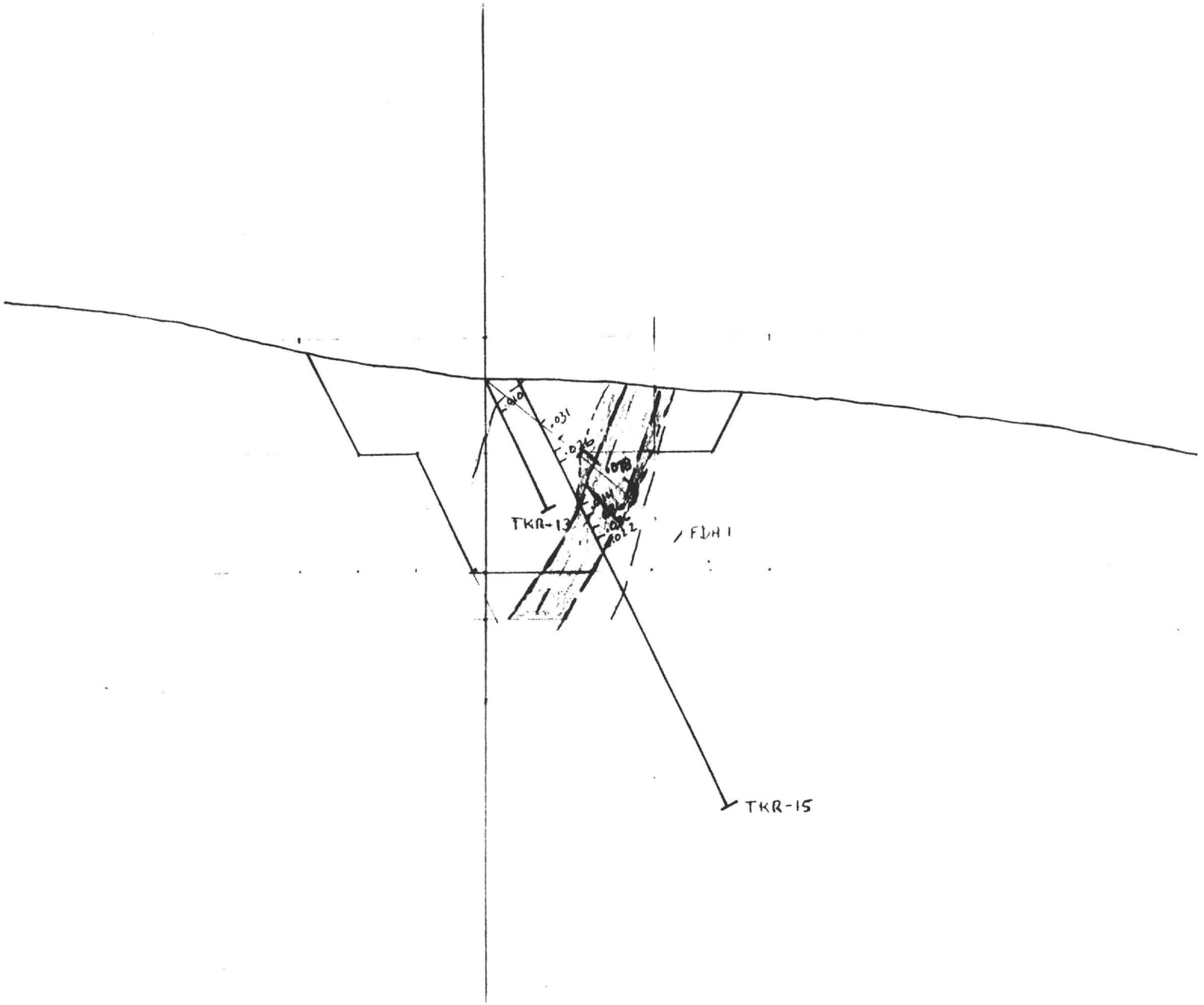

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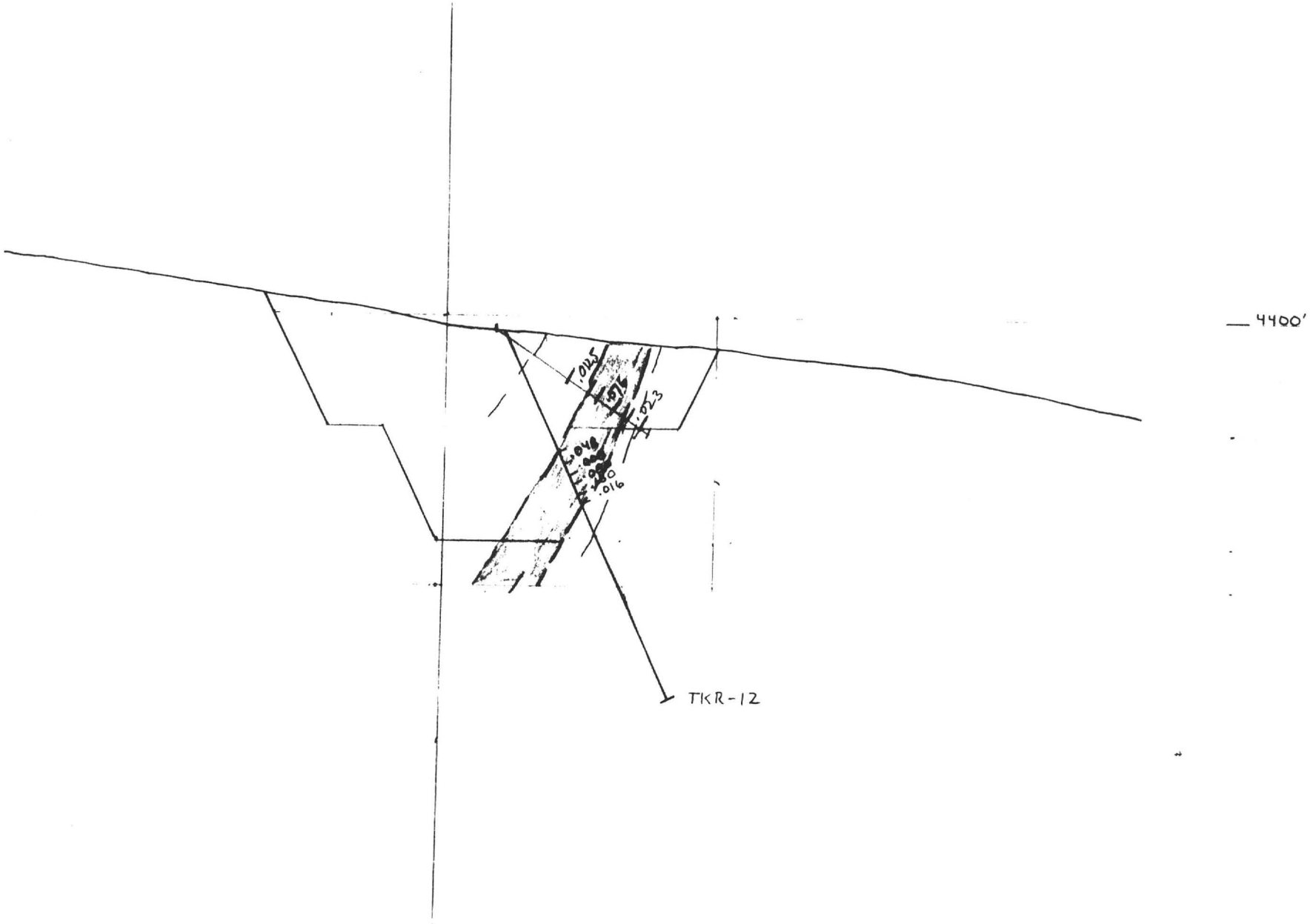

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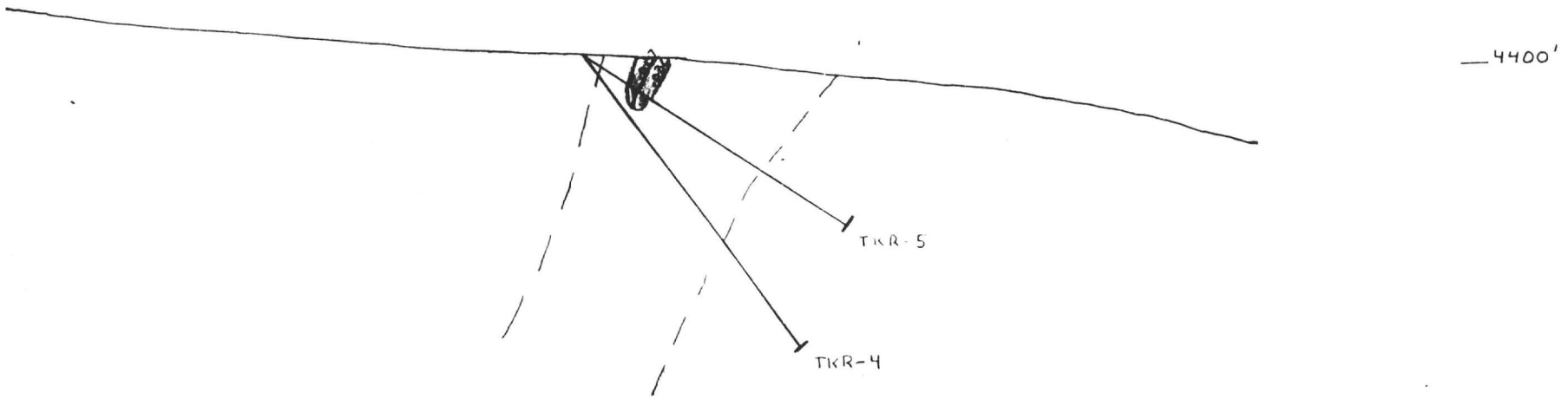

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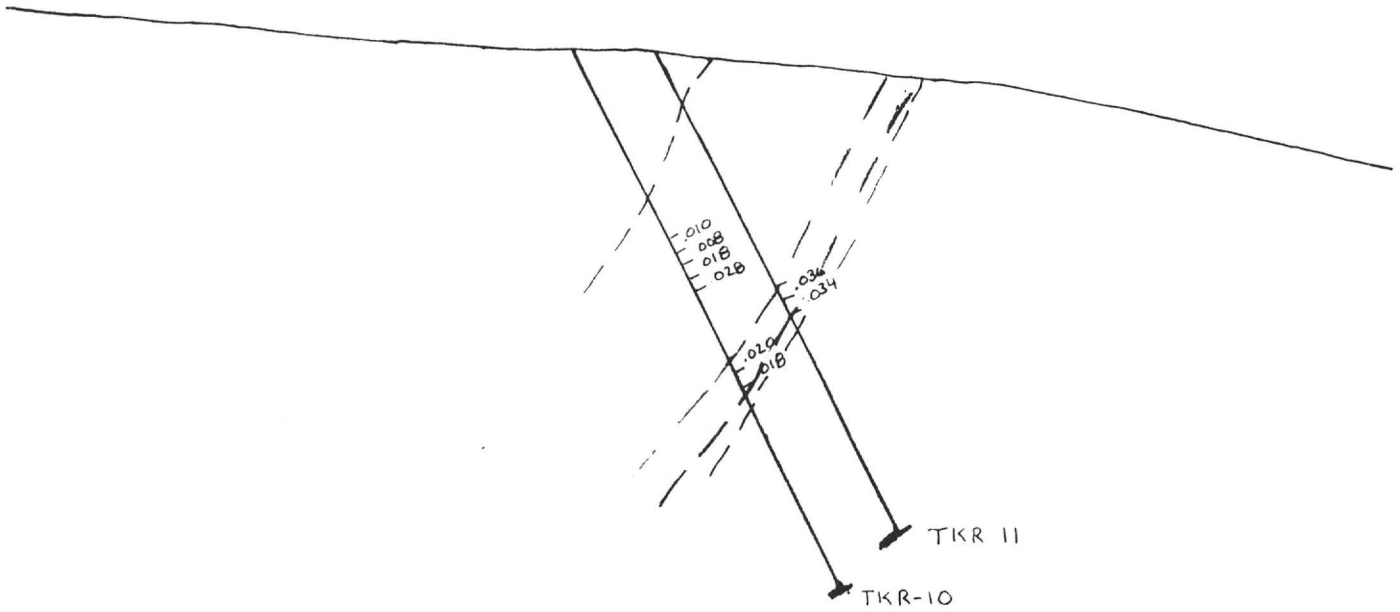

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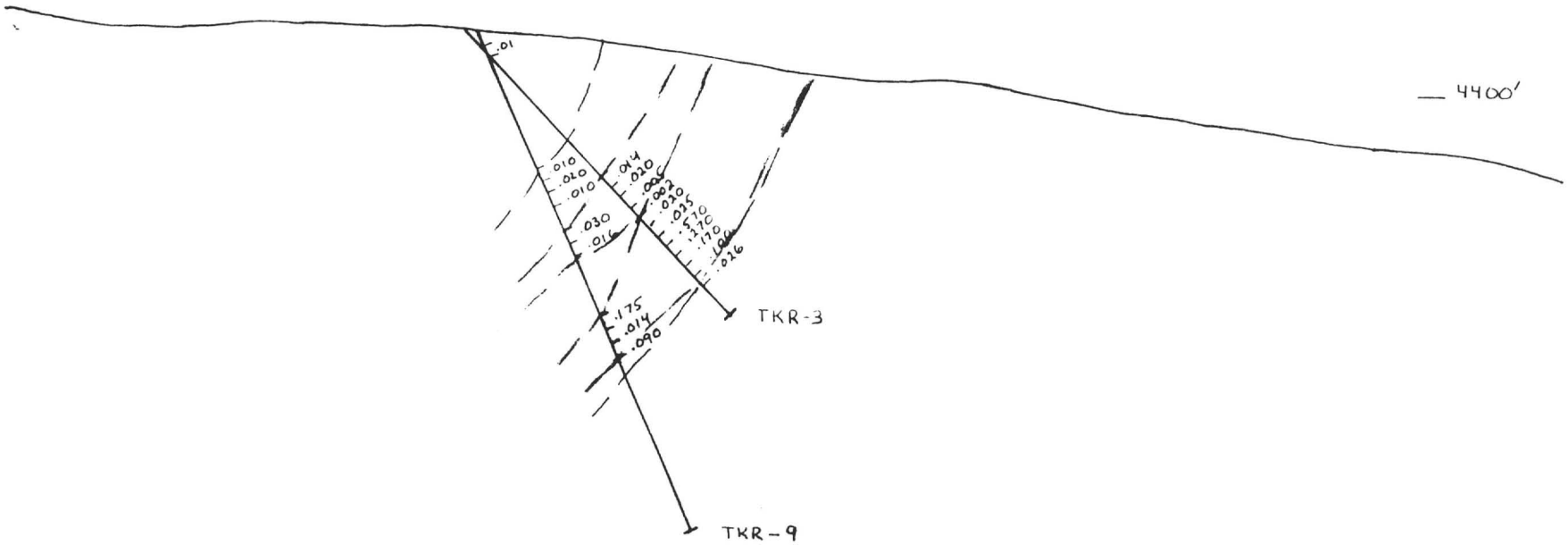

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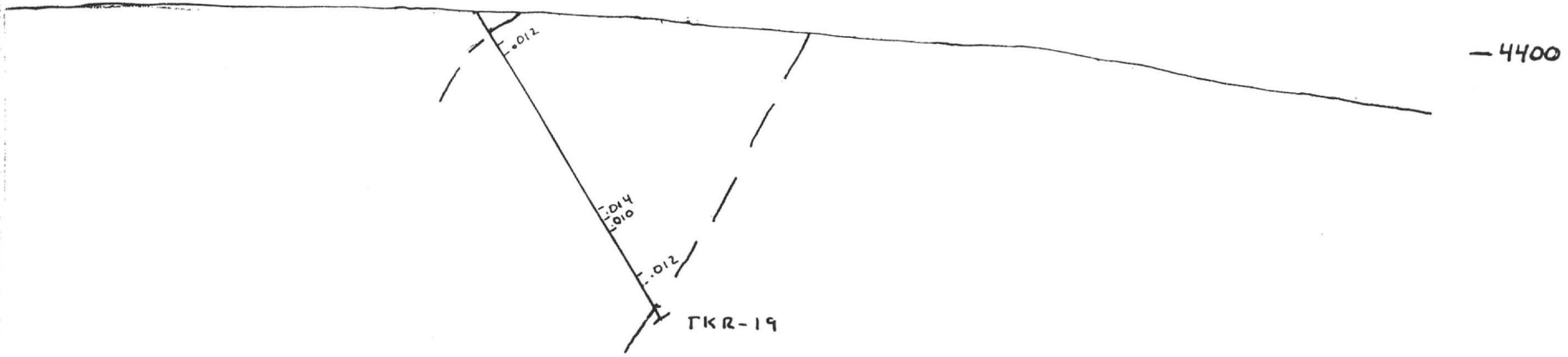

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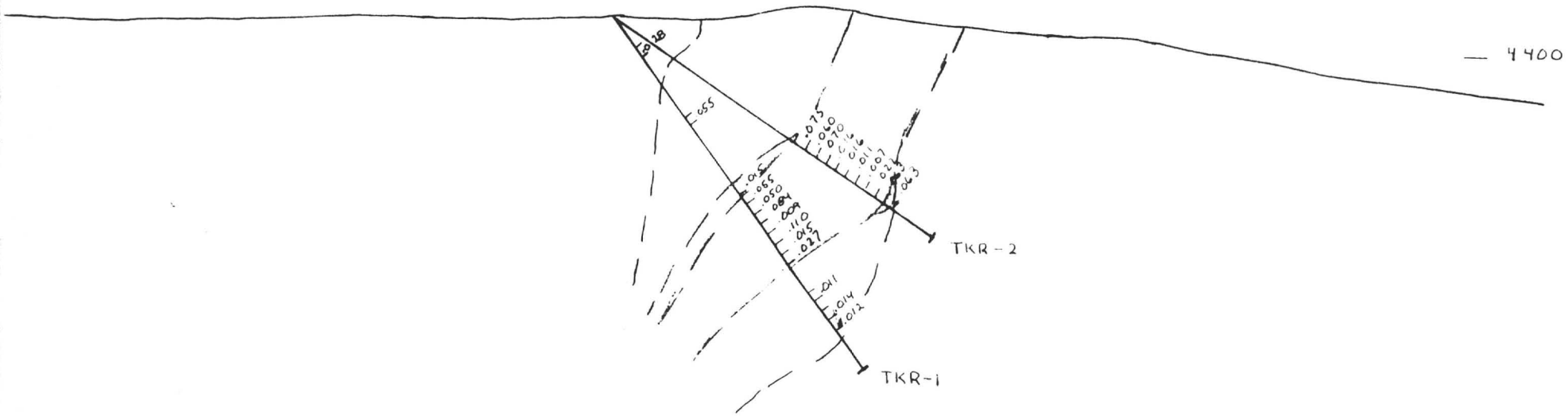

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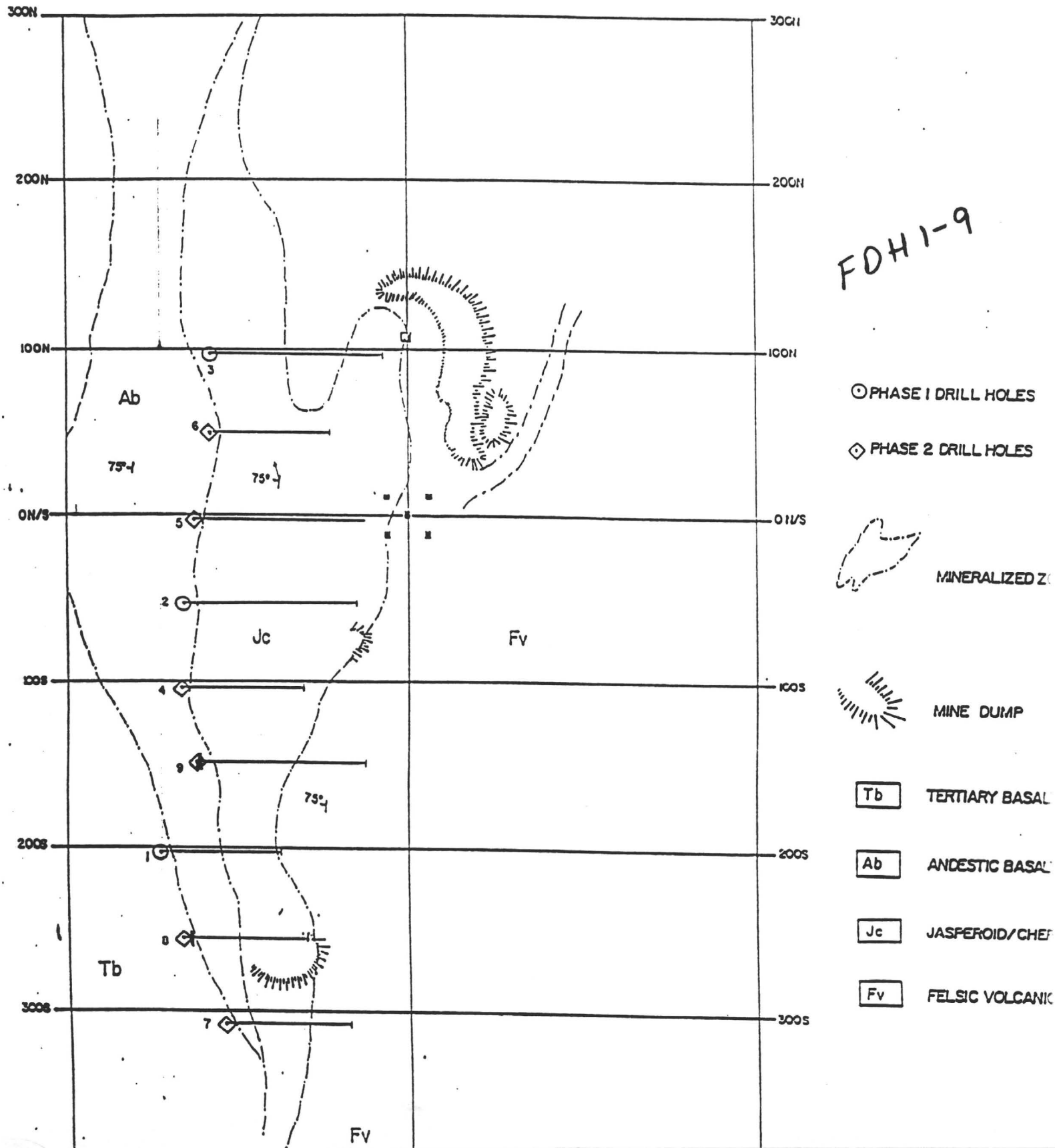
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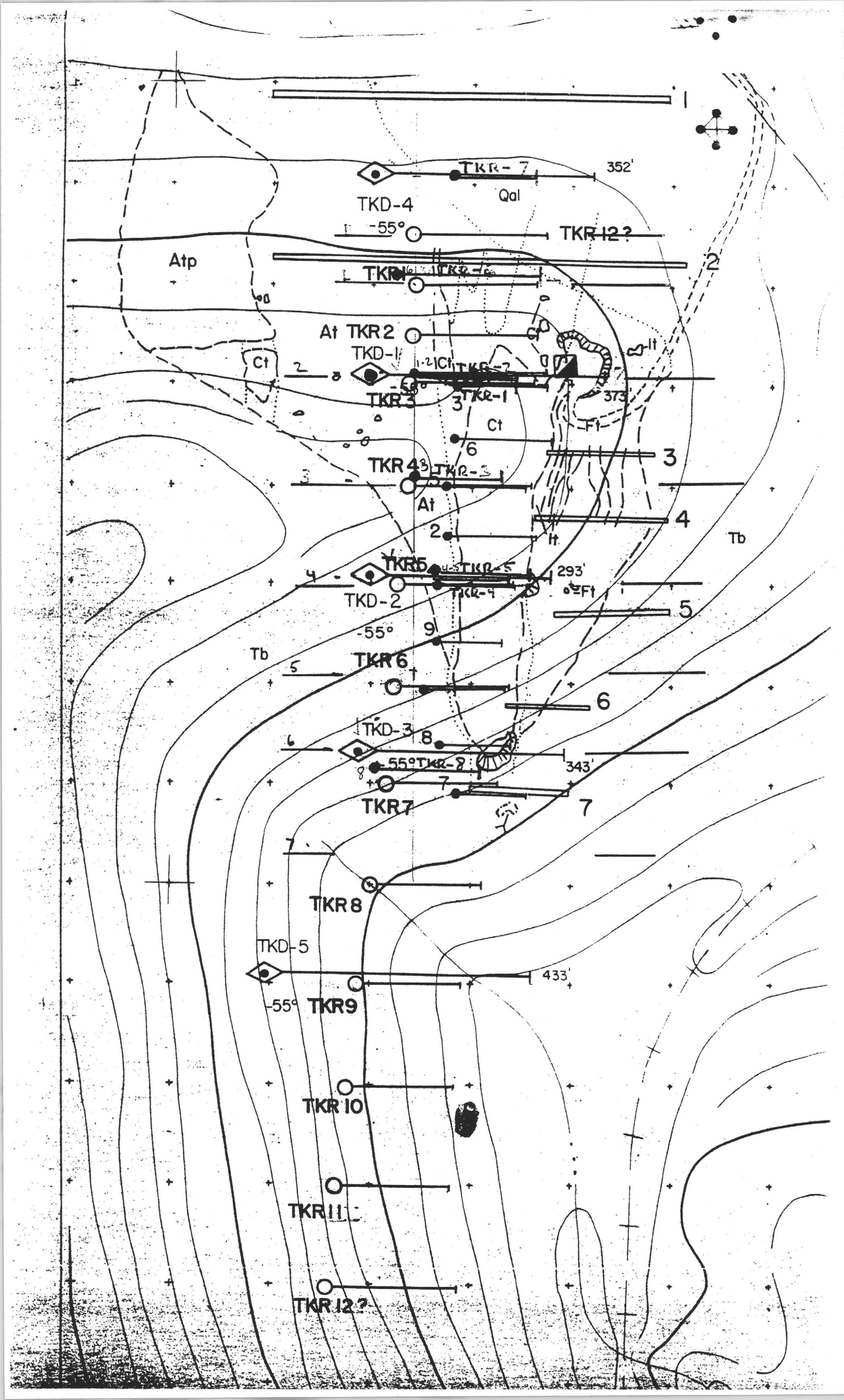
PHASE 1 DRILL HOLES
PHASE 2 DRILL HOLES
MINERALIZED Z
MINE DUMP
Tb TERTIARY BASAL
Ab ANDESTIC BASAL
Jc JASPEROID/CHEF
Fv FELSIC VOLCANIC

FDH1-9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