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PRINTED: 09/04/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: THUNDERBIRD GROUP

ALTERNATE NAMES:
PINAL MAMMOTH GYPSUM
GARCIA GYPSUM

PINAL COUNTY MILS NUMBER: 524

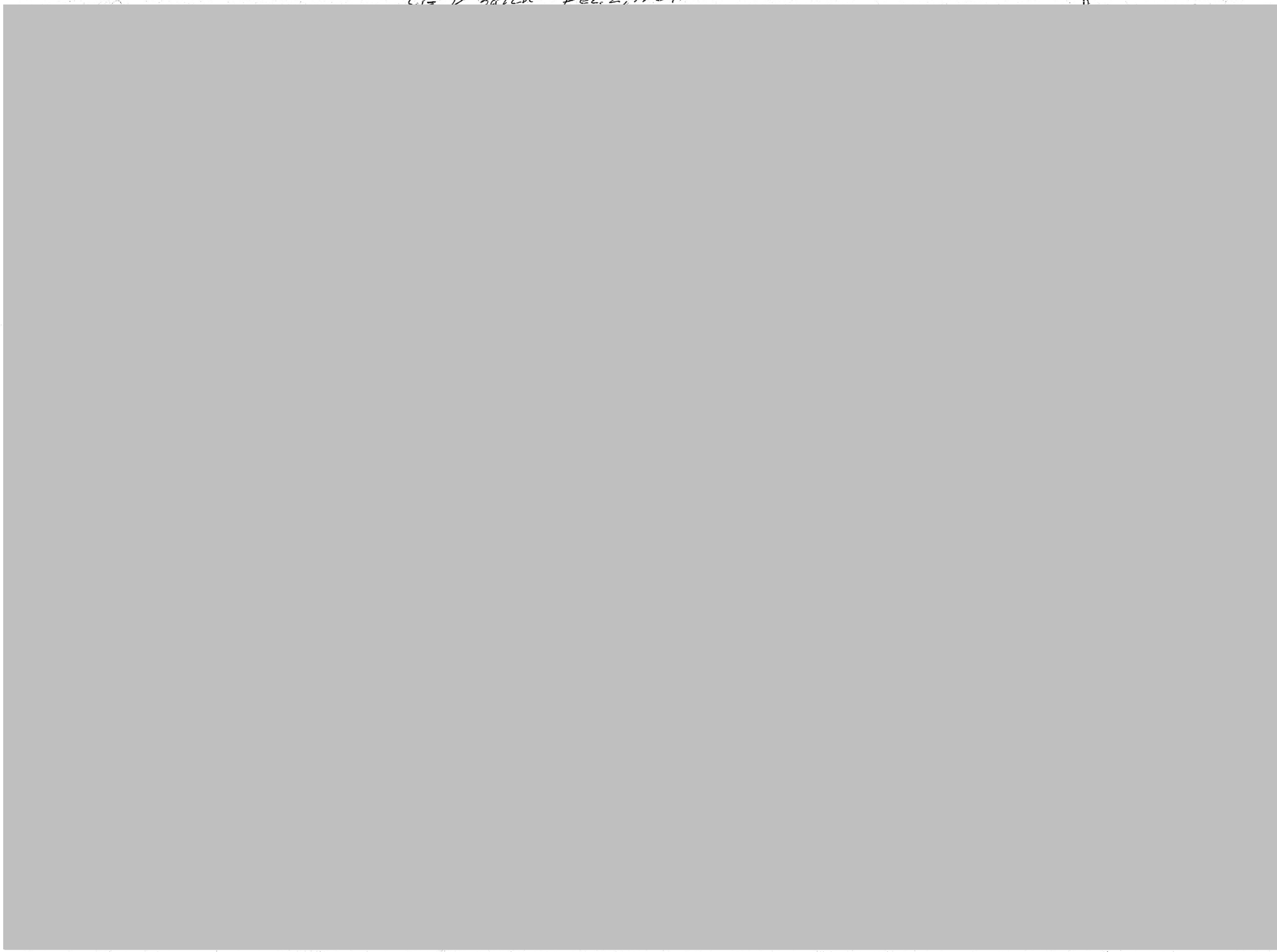
LOCATION: TOWNSHIP 7 S RANGE 16 E SECTION 14 QUARTER NE
LATITUDE: N 32DEG 49MIN 48SEC LONGITUDE: W 110DEG 40MIN 43SEC
TOPO MAP NAME: LOOKOUT MTN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GYPSUM

BIBLIOGRAPHY:
ADMMR THUNDERBIRD GROUP FILE
USBM PROD TABLE
ELEVATORSKI, E.A., AZ INDUSTIAL MINERALS 1980
AZBM BULL. 180, P. 375

CG Dispatch Dec. 2, 1981



CG Dispatch 10/7/86 THUNDERBIRD GRPSVR (P)

THUNDERBIRD GROUP PINAL COUNTY

NJN WR 12/29/87: J. E. Shearer gave a presentation at the SME annual meeting held in Phoenix January 24-26 entitled Gypsum Deposits of the San Pedro Valley, Arizona with Emphasis on the Thunderbird Gypsum Property (file) Pinal County. Mike Greeley will obtain a copy for the file.

GARCIA GYPSUM DEPOSIT PINAL COUNTY

Visited the Garcia Gypsum mine - no activity. EGW WR 4-2-64

Garcia Gypsum - Active - 2 men working. FTJ WR 10-1-65

Active Mine List Oct. 1966 - 2 men

USBM List 1966 - John W. Markham, Box 967, Clay - at Garcia Gypsum

Active Mine List April 1967 - 2 men
Active Mine List Oct. 1967 - 2 men
Active Mine List April 1968 - 2 men
Active Mine List Oct. 1968 - 2 men
Active Mine List April 1969 - 2 men - Alex Garcia, 526 N. Main, Coolidge

Visited Gypsum plants at Feldman - no change in rate of production or personnel. FTJ WR 9-26-69

Active Mine List Oct. 1969 - S27, 6S, 16E - Alex Garcia, 526 N. Main, Coolidge
Active Mine List May 1970 - 2 men - Alex Garcia
Active Mine List Oct. 1970 - 2 men - Alex Garcia

Went to Pinal-Mammoth gypsum operation . This is the old Garcia gypsum and is now owned by R.D. Bechtel, 2020 S. 8th Street, Coolidge (Martin Road - as listed in phone book). He is trucking about 1500 tons/month for agriculture use, mostly around Coolidge, Eloy and Casa Grande. This property is a few miles north of Mammoth. FTJ WR 6/14/73

Pinal-Mammoth Gypsum (Garcia Mine), operated by R.D. Bechtel, Coolidge, is trucking about 1500 tons/month for agricultural use. FTJ Annual Report 6/28/73

Visited Pinal-Mannoth (Garcia) Gypsum. They were not operating, but equipment on property. Indian service men were at the gate as a power line survey crew was expected. They said shut down was temporary, also operation is seasonal. FTJ WR 5-23-74

NJN WR 8/8/86: Reportedly where the gypsite has been stripped off the Thunderbird mine (Pinal Mammoth Gypsum active file) Pinal County, there is good clean gypsum suitable for making wallboard. It is rumored that an out of state corporation may soon mine the underlying gypsum to supply a new wallboard plant.

SOCIETY OF MINING ENGINEERS

P.O. BOX 625002, LITTLETON, COLORADO 80162-5002

PREPRINT NUMBER

88-59

GYPSUM DEPOSITS OF THE SAN PEDRO VALLEY, ARIZONA, WITH EMPHASIS ON THE THUNDERBIRD GYPSUM PROPERTY

J. E. Shearer

Tucson, Arizona

For presentation at the SME Annual Meeting
Phoenix, Arizona - January 25-28, 1988

ARIZONA DEPARTMENT OF MINES & RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: R.D. Bechtel
   Address: 2020 - S 9th St., Coolidge, Az Martin Rd.
2. Mine: Garcia Gypsum. Thunderbird Claims
3. No. of Claims - Patented
   Unpatented 6
4. Location:
5. Sec S½NW¼, NE¼ 14 Tp 7S Range 16E
6. Mining District San Pedro
7. Owner: R. D. Bechtel
8. Address: 2020 - S 9th St., Coolidge, Az Martin Rd.
9. Operating Co.: Pinal-Mammoth Gypsum Co.
10. Address: as above
11. President: R. D. Bechtel
12. Gen. Mgr.:
13. Principal Metals: Gypsum (agricultural) No. Employed: 3
15. Mill, Type & Capacity:
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☑ 1500 T/month (e) Rate _____ tpd.
17. New Work Planned:
18. Miscl. Notes:

Date: June 14 1973

T. T. Likins
(Signature) (Field Engineer)

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

3-7S-16E

Mine Garcia Gypsum Deposit Date Feb. 26, 1957

District San Pedro District ---- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report.
Examination made on the request of Franklin W. Wade, Box 265, Picacho, Ariz. (pros. purch.)

Location About 8 1/2 miles N. of Mammoth. Take Highway # 77 N. from Mammoth for 8 miles. Turn right (E) and drive 1/2 mile to the claims.

Number of claims 18 unpatented claims (about 360 acres)

Owner Alex Garcia, Coolidge, Ariz.

Operator Same as above.

Principal Minerals Gypsum rock.

Present Mine Activity Mining and selling gypsum for agricultural use.

Geology About 40 acres of gypsum rock has been exposed, with practically no overburden. The gypsum rock appears to be of fine quality. As it occurs in a large flat deposit, it is reasonable to assume that it was formed by evaporation of sea or saline waters, as from an old ocean bed, rather than from deposition by ground waters or from replacement of limestone. Consequently, it may have considerable depth, but the depth has, to my knowledge, not been determined.

Milling and Marketing Facilities None.

Past History and Production Mr. Garcia has been reported to have mined 3,000 tons of gypsum last year for agricultural use. His gross sales is reported to have been $ 27,000, which has reportedly netted him $ 8,000 for the years operation. As the Arizona Gypsum Corp. sells agricultural gypsum, labeled 90 % in and sacked in 100 # sacks at $ 7.50 per ton f. o. b. mine, this $ 27,000 gross for 3,000 tons must include delivery and application on the field. The gypsum was scraped up from the top of the deposit by means of bulldozer and scrapers with apparently a very low mining cost.

Old Mine Workings There are no mine workings of any kind on the property. All the gypsum produced thus far has been scraped up from the top of the deposit.

Present Mine Operations The gypsum from near the surface is, for the most part, loose and decomposed, and is scraped directly into a waiting ore truck, which then delivers it to the agricultural user. There is also a small crushing and grinding plant on the property, where the gypsum which contains some chunky material is processed. The material is dumped over a grizzly, with rails 1 1/2 to 2 inches apart, the undersize being delivered to the crusher, and the oversize stockpiled for future treatment. The crushed material is then loaded on trucks in bulk and sold for the agricultural market. This small crushing plant does not appear to have been used to any large extent. Operations have been conducted for only about 4 to 5 months of the year, when agricultural gypsum is in demand. 3 men are employed, working part time.

Proposed Plans Owner, Mr. Garcia, has been reported as willing to sell the property at $ 50,000, with a substantial down payment. He may, it has been reported, be willing to lease out the property at 30 cents per ton royalty, with a minimum royalty of from $ 6,000 to 10,000 per year.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT
P. 2.

Mine Garcia Gypsum Deposit. Date Feb. 26, 1957.

District San Pedro District ---- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report (con't)

Special Difficulties
(1) Lack of market for agricultural gypsum, except for 4 to 5 months during each year.
(2) Lack of mining machinery for drilling, blasting and mining the gypsum rock.
(3) Lack of an adequate crushing, grinding, screening and sacking plant to treat the product mined.

General Remarks This may prove to be a deposit of some merit that could be mined on a much larger scale of operation with the installation of modern mining machinery and a processing plant. However, the depth of the deposit is still unknown, and the tonnage of ore reserves should be first determined, as well as the average grade of the gypsum rock, before such a project is undertaken.

I would recommend putting down a few drill holes by means of a wagon drill, equipped with a dust collector, in order to find out the approximate depth of the deposit and the approximate grade of the gypsum. If this preliminary work appears to be favorable, then I would recommend to follow up the exploration work with diamond drilling, in order to have sufficient proof of the tonnage and quality of the gypsum. A trench across the deposit will also prove of value in determining the uniformity and the grade of the deposit.

GEOLOGICAL REPORT ON THE THUNDERBIRD CLAIM GROUP

for

BECHTEL GYPSUM COMPANY
2020 S. 9TH STREET
COOLIDGE, AZ. 85228

by

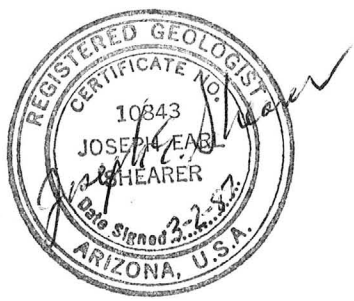
JOSEPH E. SHEARER
REGISTERED GEOLOGIST

MARCH 2, 1987
TUCSON, ARIZONA

GEOLOGICAL REPORT ON THE THUNDERBIRD CLAIM GROUP

for

BECHTEL GYPSUM COMPANY
2020 S. 9th Street
Coolidge, AZ 85228



by

JOSEPH E. SHEARER
Registered Geologist

March 2, 1987

Tucson, Arizona

TABLE OF CONTENTS

GEOLOGICAL REPORT ON THE THUNDERBIRD CLAIM GROUP

INTRODUCTION

The Thunderbird Claim Group is located approximately 6 miles north of Mammoth, Arizona in Pinal County. The claims lie east of the San Pedro River Valley and south of Aravaipa Creek which is a tributary of the San Pedro River. The claims cover portions of Sections 10 through 15 in Township 7 South, Range 16 East, Gila and Salt River Base and Meridian, Pinal, County, Arizona. Please refer to PLATE I in the Appendix for the precise coverage.

A core drilling project was initiated on the 22nd of December, 1986 and completed on the 24th of January, 1987. A total of 27 holes were drilled, logged and randomly sampled.

Previous Work

During the latter part of 1985, a rotary drilling project was completed with a total of 15 holes being drilled. These holes were drilled to depths of from 100 to 300 feet. The holes were logged from a stream of cuttings that was forced out of a one inch nipple by the air pressure used to drill the holes. Samples of the Gypsum bearing intervals were sampled and analyzed. A preliminary report was written based on the results.

During this time also, the claims and drill holes were surveyed by a mineral land surveyor. This was done with the intention of patenting the unpatented placer claims. This also gave me good control for geological purposes and provided a survey framework to tie the more recent work into.

The surface of the claim group has been mined for Gypsite, an impure earthy form of gypsum used for agricultural purposes. This material was dozed into piles, the piles were loaded onto trucks with a front-end loader, and the trucks delivered the material to a yard in Coolidge, Arizona. The material was sized and then sold to the farmers, golf courses and other consumers. Spreader trucks were available to deliver and spread the gypsite.

Geographic Setting

Mammoth, Arizona and the San Pedro Valley are located in Southeastern Arizona approximately 60 miles north northeast of Tucson along state highway 77. It is an area of low annual precipitation, high summer temperatures, and very mild winters. The property sits in a relatively flat evaporite basin above and adjacent to the San Pedro River Valley. A few drainages extend through the property from the south to the north emptying into Aravaipa creek. The property has been further leveled by the extensive dozing done during the mining of the Gypsite. The range in elevation is from 2300' at drill site #5 to 2391' at drill site #10.(see PLATE II, Drill Hole Location Map)

Access to and around the property is good. The road from state highway 77 to the property is part ofthe old highway for 3/4 of a mile, then good dirt road another 1/4 mile to the property gate. During the recent drilling program we were able to drill most any where we wanted with out preparing drilling sites. Since the property has been mined over the past 20 plus years very little vegetation exists on the property.

Acknowledgments

Many people and Companies have provided help and information during my work on the property, and during the preparation of reports.

Mr. Jim Bechtel, President of Bechtel Gypsum Company and an owner of the property, has been very cooperative and helpful. He has provided equipment, help and assistance throughout the work.

Mr. Abe Kalaf of Venture Drilling Company did the Rotary Drilling in 1985. He and his drillers were very conscientous and did a fast and efficient job.

Jan Wilt, Consultant, did the correlation of the gypsum beds from the rotary drilling, typed the earlier report on her computer and also helped copy and assemble the report.

Bill Marum surveyed the property, including the drill holes, and provided me with maps, hole elevations and coordinates.

Joy Manufacturing Co. drilled the core holes during December 1986 and January 1987. The core recovery was excellent due to the cooperation of Mr. Nino Trujillo, the manager, and his driller Mr. Kellerman. They made up a special starting barrel with an intertube to drill the gypsum at or near the surface.

Mr. Jim Bond, geologist, split out the random samples of core for assaying, and helped me survey the last few drill holes and the topography in and around the close spaced holes.

The Arizona Testing Laboratories in Phoenix did the laboratory tests on all of the samples for percent gypsum.

DRILLING AND SAMPLING PROCEDURES

A total of 15 rotary drill holes were drilled in 1985 and 27 diamond core holes were drilled within the past few months. Core holes were drilled on all but 2 of the rotary drill sites,in order to sample the near surface gypsum beds indicated by the rotary drilling. An additional 14 holes were drilled close spaced to check the continuity of the gypsum beds in that area.(see PLATE I, Drill Hole Location Map). The Rotary Drill Holes were designated PMG #1 through #15. The Diamond Drill Holes were designated DDH#1 through #9, and #11 through #14 to correspond with the rotary drill sites upon which they were drilled, and #16 through #29 for the close spaced holes drilled on new sites.

Rotary Drill Holes

The fifteen (15) rotary drill holes were drilled by the Venture Drilling Company of Tucson, Arizona. The holes were all air rotary drilled except the last 100 feet in Drill Hole #4, which encountered sufficient water to require completion by water rotary drilling. The shallowest holes were 100 feet in depth and the deepest hole was drilled 300 feet.

During the drilling of the holes, I was present to log the cuttings and select the intervals to be sampled. Each hole was started by spudding in an oversized hole (7 7/8 inches) to approximately eight (8) feet, to accommodate the casing with a packing seal and 90 degree pipe attached. A hose connected the pipe to the sampler, thus the cuttings were forced by air into the Dust Free Sampler. The Dust Free Sampler collects the entire sample from the 6 1/2 inch diameter hole. The sample is split by a splitter as the material is removed from the Dust Free Sampler. A small nipple, approximately 1/2 inch in diameter, was welded into the 90 degree pipe coming from the casing, in order to observe a stream of cuttings forced through the nipple as the hole was being drilled. The cuttings were constantly monitored and caught in a sieve and examined to determine when gypsum beds were being drilled. When gypsum cuttings were observed, the drillers were instructed to stop drilling, empty the sampler, and then proceed to drill until clay cuttings were observed, at which time they would be instructed to stop drilling and take a sample. This procedure allowed the samples to be diluted with clay in varying amounts, and lowered the percentage of gypsum in the samples. The highest calculated gypsum sample was 91%, which is lower than the grade required for use in wall board production. The cuttings indicated that a higher grade of gypsum was present in many samples, than what was indicated by the analysis.

It was suggested by Mr. James Bechtel that some of the surface or near surface beds at a few of the drill holes might be

ripped by the D-9 Caterpillar present on the property to expose the gypsum beds for sampling purposes. Three trenches were dug, using the ripper and dozer on the D-9 Caterpillar. The trenches were near Holes #1, #3, and #12. Channel samples were collected from gypsum beds at each site. The analysis of the samples were as follows:

Trench	Interval	% Gypsum
T1	3.Ø-4.6'	98
T3	3.8-4.8'	86
T12	Ø.5-1.4'	95
T12	2.8-3.4'	97
T12	4.2-5.5'	99

The gypsum bed in T3 contained clay intermixed with the gypsum. Overall, these analyses gave us confidence that a major portion of the gypsum beds contained high grade gypsum in excess of 9Ø%.

Diamond Drill Holes

Mr. Jim Bechtel contacted me on the morning of December 15th 1986, in regard to core drilling some of the existing drill sites and additional sites as determined feasible within the four (4) Thunderbird claims #1, #4, #7, and #8.

Within the next week, a drill contractor was selected, hole depths were determined from the previous drilling, and preparations were made to start drilling on the following Monday, December 22nd. The Joy Manufacturing Company was selected as the drill contractor, and I met the drillers in Mammoth that Monday morning to show them the property and to get the project started.

After the first two (2) days, it was not necessary for me to be at the drill site, since the drill holes were marked in the field and the driller was shown the drill sites, and a list of drill hole depths was provided to the driller. Therefore, about every three working days I went to the property and logged the core, in detail to Ø.1 foot, and surveyed in the drilled holes.

On Tuesday January 6th, 1987, I met Jim Bechtel at the property and we laid out the close spaced holes DDH#16 through #29, and that following Thursday, the drillers moved onto #16 and started drilling the following day. On Thursday, January 22nd, Jim Bond accompanied me to the property and split and bagged the random intervals that I marked in the core boxes. He also assisted me in surveying the hole sites and selected topography.

The drilling was finished the following day, and I went out to the property on Monday to log and sample the remaining core.

A total of 1009 feet were core drilled and 47 random samples were taken and sent for analysis. The core was picked up by Bechtel Gypsum Company and stored for future reference and sampling.

GEOLOGY

The geology of the Lookout Mountain Quadrangle, in which the property is located, was mapped by Medora H. Krieger in 1968, and published by the USGS as Map GQ-670. The interbedded gypsum and clay materials were mapped as the fine-grained facies of the Gila Conglomerate of late Tertiary age. Krieger further indicates that the Gila Conglomerate in the subject area is assigned to the Pliocene because of the presence of pre-Blancan vertebrate fossils in the presumably equivalent beds southeast of mammoth.

Approximately 550 stratigraphic feet of gypsum beds and clay materials were drilled during the drilling programs. This was estimated using the distance and apparent dip between drill holes PMG #4 and #10. Jan Wilt correlated and numbered the gypsum beds 1 through 40 in the previous report, and estimated that 595 stratigraphic feet of clays and gypsum were drilled. For purposes of this report the correlation of gypsum beds is shown on PLATES III & IV. These correlations were plotted using the hole coordinates and the collar elevations along with the strike and dip of the strata to calculate the apparent dip and the difference in depth of strata between each set of holes. The dip and strike of the strata were determined by doing the three point method on a light colored tuff layer logged in five of the rotary drill holes. The calculated strike and dip is N.31.5 degrees E. & 2 degrees to the Southeast.

The types of gypsum present are Gypsite, an impure earthy form, Rock Gypsum, Selenite plates, Satin Spar and Alabaster. The different types have been seen on the surface, but are not readily recognized in cuttings or the unsplit core. Therefore, no estimate of the amount of the different kinds has been made.

The clays range in color from cream to tan to brown, both light and dark, to green to gray to black, and are a mixture of colors in some cases. The lighter colors are near the surface and probably due to oxidation processes. The green clays and clays with a greenish cast are found within a gypsum horizon or bed. The green color is probably due to reduction processes caused by the high sulfur content. The grays, browns and black clays are thought to be from different source materials that were deposited in the evaporite basin. The black clays may have more organic material within them.

The detailed cross-sections in PLATES V, VI, VII & VIII show the relative position of the clays. A sample of the dark

brown clay with visible gypsum was taken to the Arizona Portland Cement Company Plant for analysis. They sent the sample to their Cal Mat Company in Colton, California. Their lab said that the clay is probably an illite, and was not acceptable for their use because the alkalies (Na2O & K2O) are too high. Also the SO3 content is high.

The tuff layer mentioned in connection with determining the dip and strike of the strata, outcrops in the western part of the property, just over the ridge from hole site #4. It appears to be a volcanic ash layer, ranging from a few inches to about one foot thick.

GYPSUM GRADES

As indicated under the section on Rotary Drill Holes in this report, the rotary drilling samples were less than representative of the gypsum sampled at the surface in the trenches. Therefore, the rotary sample analyses are omitted from this report.

The channel samples taken in 1985, and the random core samples are listed below by Hole No., Depth and Percent Gypsum:

HOLE NO.	DEPTH	%GYPSUM	HOLE NO.	DEPTH	%GYPSUM
T1	3	98	17	3	87
1	8	96	17	15	91
1	13	83	18	4	80
2	5	98	18	13	94
2	24	72	19	3	92
T3	3.8	86	19	12	86
3	4	95	20	4	83
4	6	90	20	14	93
5	9	89	21	2	96
6	2	88	21	19	89
6	23	97	22	6	80
7	3	95	22	14	96
7	12	90	23	3	84
8	6	85	23	15	94
9	17	78	24	4	93
11	12	90	24	9	92
T12	0.5	95	25	8	83
T12	2.8	97	25	14	88
T12	4.2	99	26	8	80
12	8	95	26	16	96
12	63	84	27	4	87
13	12	97	27	20	96
13	70	94	28	6	93
14	10	87	28	18	97
16	5	85	29	7	97
16	17	96	29	19	95

The drill hole analyses are indicated on the cross-sections (Plates III through VIII) by depth and % gypsum. The samples were taken randomly so as to represent the gypsum sections as a whole, if selected samples had been taken the analyses could have been higher. In most cases, the quality of the gypsum intervals can not be determined by visual inspection of the cores until they have been split. Except for hole number 1, only the selected sample interval was split.

TONNAGE ESTIMATES

In the previous report the polygonal method of equal distances around each drill hole was used for calculating the area, along with some alterations for areas where beds were eroded away or missing. Jan Wilt then put these figures into her calculations of bed thickness. Due to the contaminated analyses, the tonnages were reduce to represent 100% gypsum. As an example, if the interval logged was 3 feet thick and the percentage of gypsum was 75%, the thickness of gypsum used to determine tonnage would be (3 times .75) or 2.25 feet gypsum.

The total gypsum was calculated from all holes in the three depth ranges of 0-30 feet, 0-60 feet, 0-100 feet, and total all beds. This method seemed to be appropriate with the information and data that were available at the time.

With the data from the recent diamond core drilling program, a better understanding of the gypsum intervals, grades and distribution have been accomplished. More emphasis will be placed on the overburden, gypsum continuity and thickness. The main area that has potential, is in the area of the common section corner of Sections 11, 12, 13, & 14, and includes portions of the mining claims Thunderbird 1, 3 - 8, and Bechtel 1 & 2. The gypsum beds underlying this area is continuous, has had most of the overburden removed, and maintains a thickness in excess of ten feet. A Gypsum Delineation Map has been prepared for this area, see PLATE IX in the Appendix. Seventeen core holes were drilled in this area, and the detailed cross-sections A - A' through D - D' (PLATES V - VIII) were plotted through the area.

The Gypsum Delineation Map shows the location of the drill holes, and has text by each hole indicating the overburden /thickness of bed/ and the percent of gypsum in the bed. This percent is not the grade of the gypsum, but the estimated amount of gypsum from logging the drill hole. If the percent gypsum is multiplied times the thickness of the bed, this will give the estimated thickness of gypsum in the bed. A major portion of the overburden is gypsite and could be sold for agricultural uses. The solid red line on the map is the existing outcrop of gypsum bed. The dotted line is an arbitrary line drawn along the downdip

side of the denuded gypsum bed. The bed continues downdip but apparently thins considerably in holes 8 & 9, and the overburden thickens rapidly. According to my correlation cross-sections, the top of this bed is 45 feet below surface in hole 8, and 75 feet in hole 9. In the case of hole 9, not only is the bed dipping, but additional strata overlies the bed as indicated by the difference in elevation between hole 27 (2313.2') and hole 9 (2362.3). Along dip (S. 58.5 degrees E.), the beds drop 3.5 feet in elevation, for each 100 horizontal feet in the dip direction.

Using this arbitrary line along with the known outcrop boundaries, a tonnage figure has been calculated for the area. The average gypsum is 10.95 feet, rounded to 10 feet, the calculated square feet of area is 1,785,000. This equates to approximately 13 million short tons of gypsum material using a specific gravity of 2.32. An average grade is not projected for this tonnage. It is thought that some of the sub-grade material could be up-graded by coarse grinding and fine screening to remove clay particles.

There are other areas that have some potential production, but do not have the exposure or data to estimate tonnage. Holes 1 through 3 and 6 have high grade material near the surface. The thickness of these beds range from 1.2 to 8.8 feet gypsum, and samples range from 95 to 98 percent. Some of these beds were drilled in the holes to the south and east and in some cases become thicker. A case in point is the bed that outcrops at hole 1, and was core drilled in holes 12 and 13. The beds are lying 60 and 66.7 feet below the surface, are 8.8 and 12.8 feet thick, contain 75.5% and 85% gypsum, and the samples ran 84% and 94% gypsum. Holes 12 and 13 are situated on high ground capped by the surface gypsum bed. The surrounding area to the north and west is eroded away to near the underlying bed. The amount of overburden removal after mining the surface gypsum would be feasible in this area.

In summary, the core drilling program provided data that indicates thirteen million (13,000,000) tons of near surface gypsum material that assays from between 80% and 97% gypsum. Other beds indicate sufficient grade to be worth consideration, if the above tonnage were to be mined. Also, there are large quantities of gypsite remaining on the property. Gypsite is a renewable resource since the gypsum oxidizes and breaks down when exposed to the surface environment. Both the gypsum and gypsite are potential saleable products.

The drill cores are available for studying or assaying to interested parties.

APPENDIX

PLATE I,	Placer Claim Map
PLATE II,	Drill Hole Location Map
PLATE III,	Drill Hole Correlation Cross-section Northern Line
PLATE IV,	Drill Hole Correlation Cross-section Southern Line
PLATE V,	Cross-section A - A'
PLATE VI,	Cross-section B - B'
PLATE VII,	Cross-section C - C'
PLATE VIII,	Cross-section D - D'
PLATE IX,	Gypsum Delineation Map

PLOTTED by: JOSEPH E. SHEARER

SECTION LINES= _____

PROPERTY BOUNDRY= _____

INTERIOR CLAIM LINES _ _ _

SECTION OR 1/4 CORNER O

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH EARL
SHEARER
Date Signed 7-2-83
ARIZONA, U.S.A.

BECHTEL GYPSUM COMPANY
PLACER CLAIM MAP

T.7 S., R.16 E., G&SRB&M
PINAL COUNTY, ARIZONA

SCALE
800 FEET

N

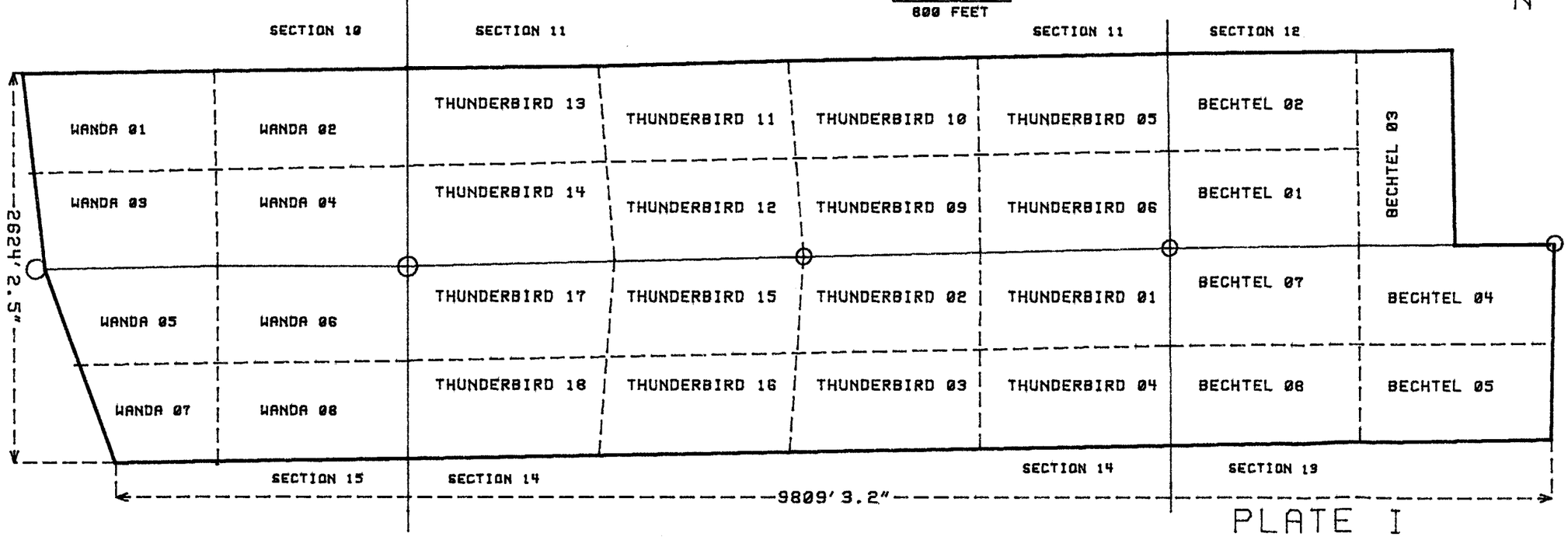


PLATE I

BECHTEL GYPSUM COMPANY
DRILL HOLE LOCATION MAP
PLOTTED by: JOSEPH E. SHEARER

T.7 S., R.16 E., G&SRB&M
PINAL COUNTY, ARIZONA

SECTION LINE= ——— 1/4 & SECTION COR.= ○

PROPERTY BOUNDRY= ———

INTERIOR CLAIM LINES= — — — — —

ROTARY DRILL HOLE = ▫ PMG HOLE NO./COLLAR ELEVATION

DIAMOND DRILL HOLE = ○ DDH HOLE NO./COLLAR ELEVATION

N

SCALE

600'

REGISTERED GEOLOGIST CERTIFICATE NO. 10843 JOSEPH EARL SHEARER Date Signed 3-2-83 ARIZONA, U.S.A.

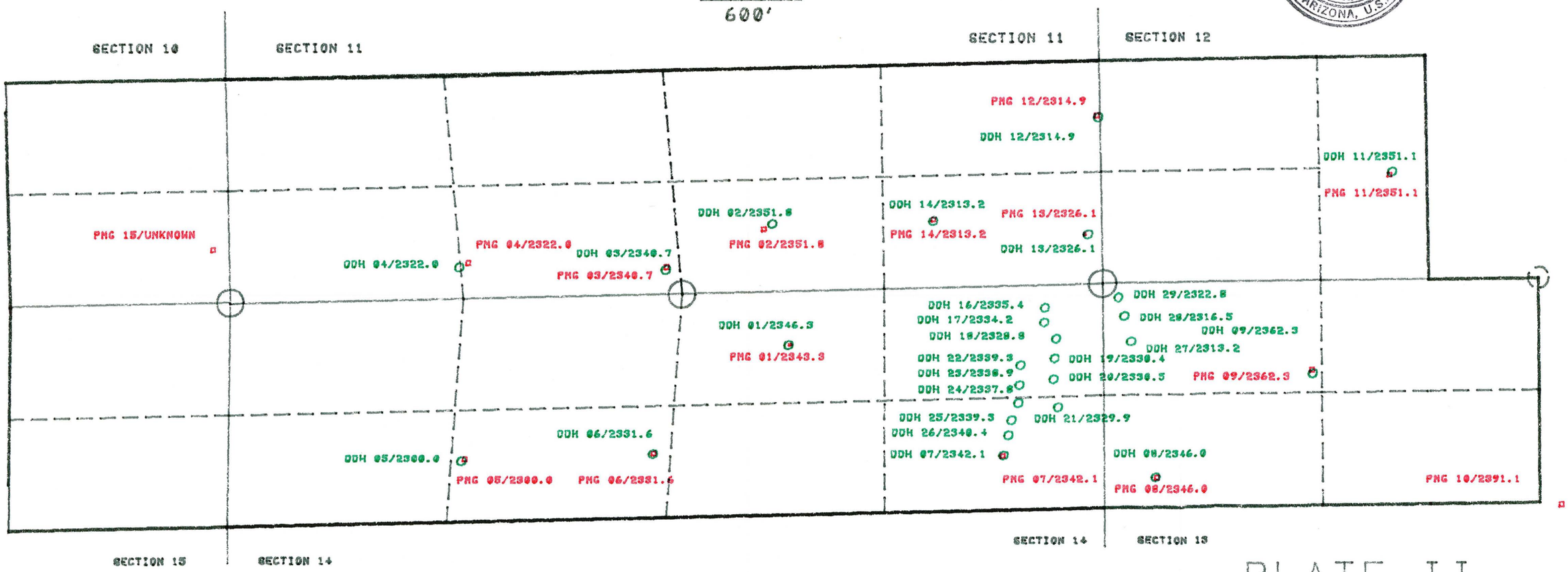


PLATE II

BECHTEL GYPSUM COMPANY

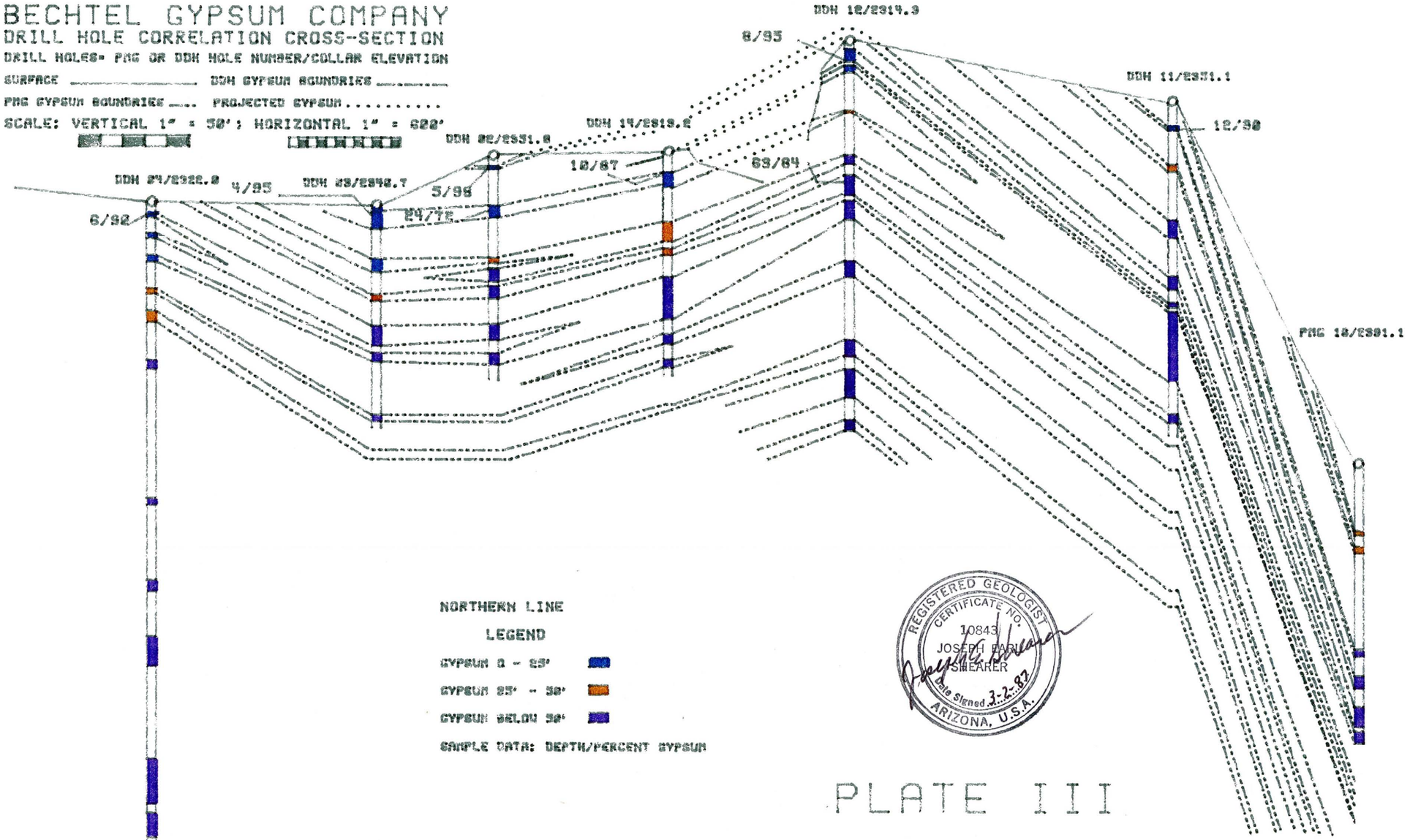
DRILL HOLE CORRELATION CROSS-SECTION

DRILL HOLES= PNG OR DDH HOLE NUMBER/COLLAR ELEVATION

SURFACE _____ DDH GYPSUM BOUNDRIES _ _ _ _ _

PNG GYPSUM BOUNDRIES _ _ _ PROJECTED GYPSUM . . . . . .

SCALE: VERTICAL 1" = 50'; HORIZONTAL 1" = 600'



NORTHERN LINE

LEGEND

GYPSUM 0 - 25' ■

GYPSUM 25' - 30' ■

GYPSUM BELOW 30' ■

SAMPLE DATA: DEPTH/PERCENT GYPSUM

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH FARL
SHEARER
Date Signed 3-2-87
ARIZONA, U.S.A.

PLATE III

BECHTEL GYPSUM COMPANY

DRILL HOLE CORRELATION CROSS-SECTION

DRILL HOLES= PNG OR DDH HOLE NUMBER/COLLAR ELEVATION

SURFACE ——————— DDH GYPSUM BOUNDRIES —.—.—

PNG GYPSUM BOUNDRIES —.— PROJECTED GYPSUM .....

SCALE: VERTICAL 1" = 50'; HORIZONTAL 1" = 600'

SOUTHERN LINE

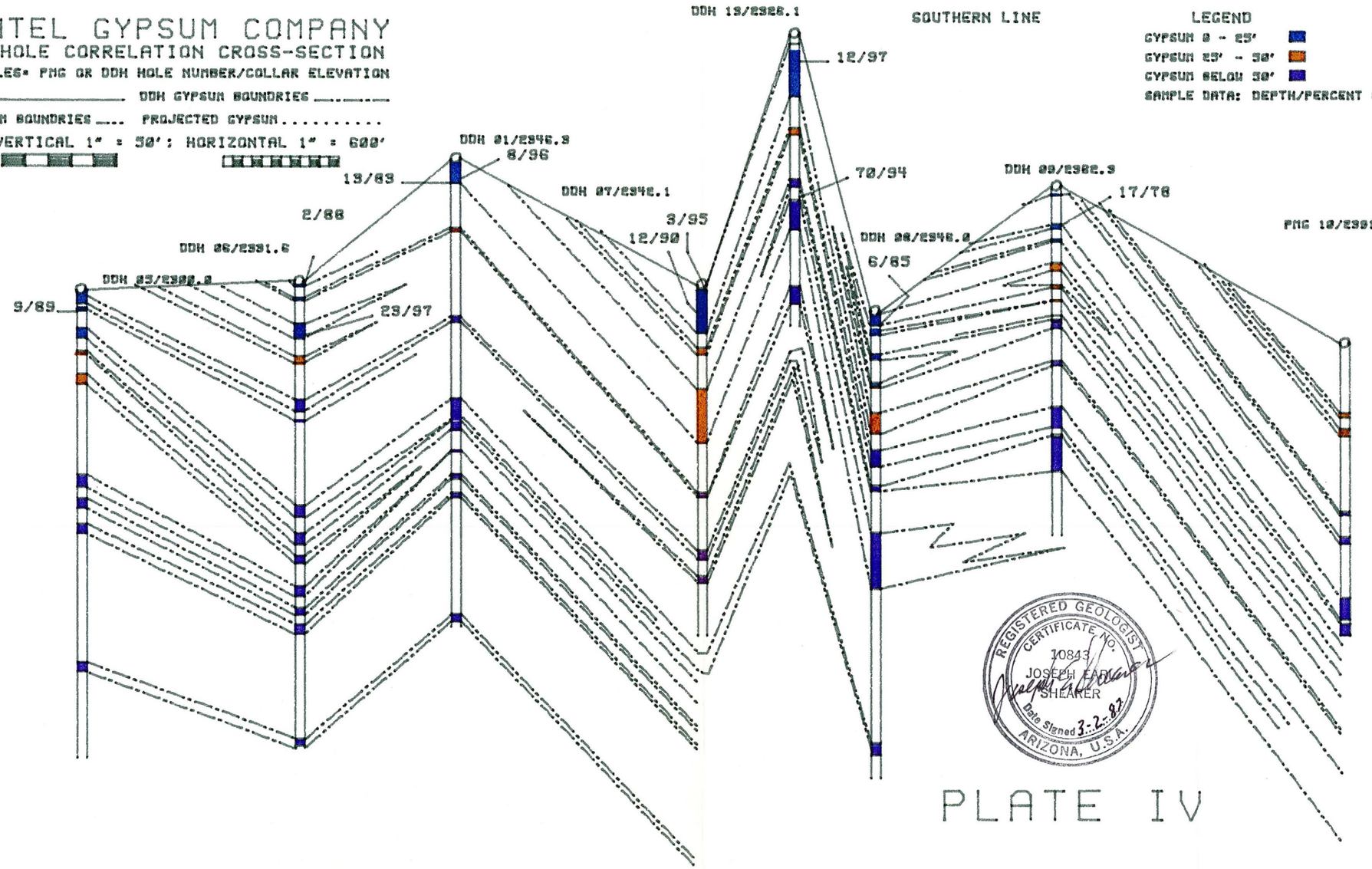
LEGEND

GYPSUM 0 - 25'

GYPSUM 25' - 30'

GYPSUM BELOW 30'

SAMPLE DATA: DEPTH/PERCENT GYPSUM



REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH EARL
SHEARER
Date Signed 3-2-83
ARIZONA, U.S.A.

PLATE IV

BECHTEL GYPSUM COMPANY

DDH CROSS-SECTION A - A' LOOKING EAST

DIAMOND DRILL HOLES- DDH HOLE NO./COLLAR ELEVATION

SURFACE ———— BASE OF GYPSITE - - - - - -

BOTTOM OF MINEABLE GYPSUM —.—.—.—.—.—

SCALE: VERTICAL 1" = 5'; HORIZONTAL 1" = 60'

SAMPLE DATA: DEPTH/PERCENT GYPSUM

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH EARL
SHEARER
Date Signed 3-2-87
ARIZONA, U.S.A.

GYPSUM
GYPSITE
GREEN CLAY
BROWN CLAY
BLACK & GRAY CLAY

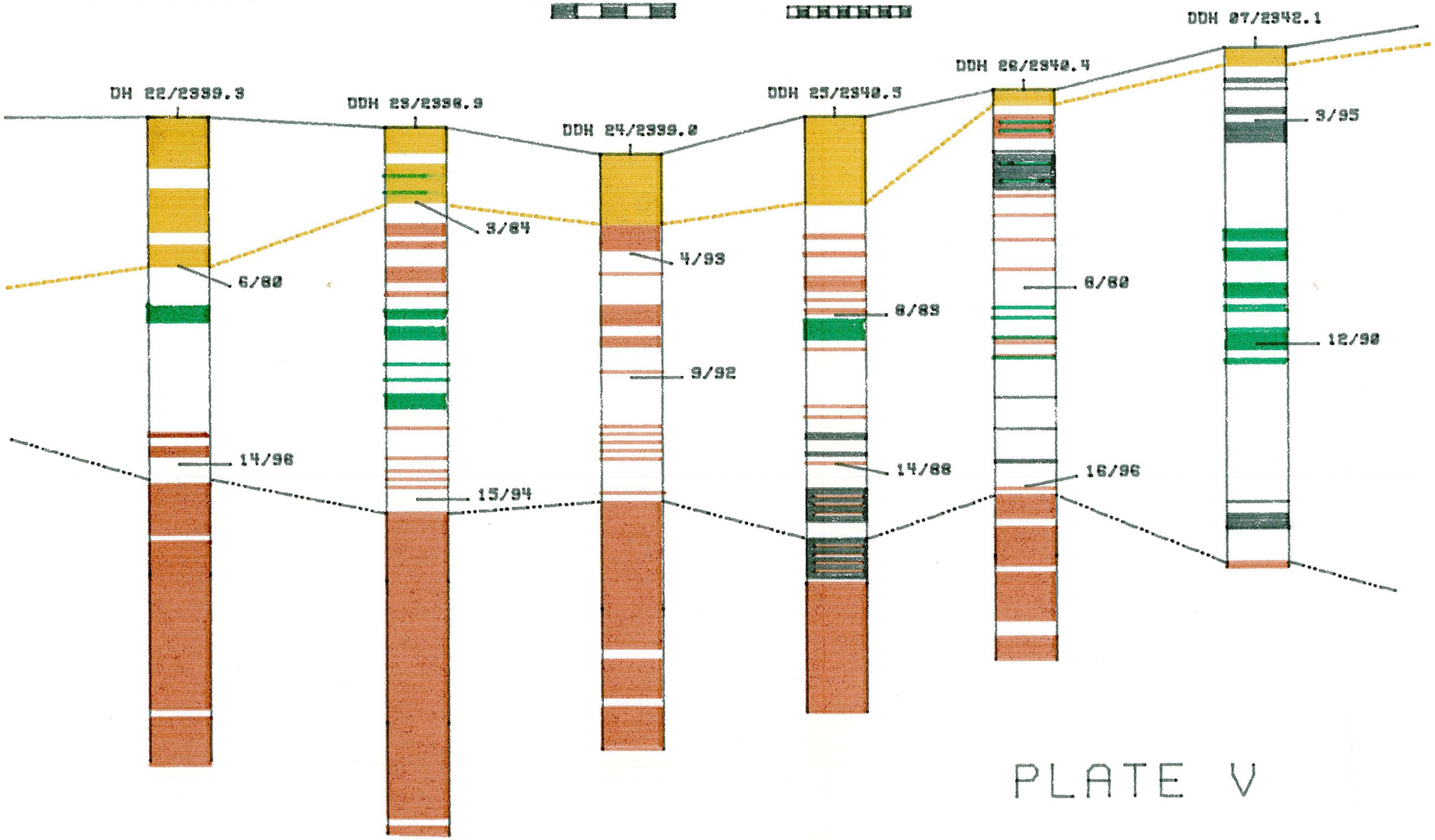


PLATE V

BECHTEL GYPSUM COMPANY

DDH CROSS-SECTION B - B' LOOKING EAST

DIAMOND DRILL HOLES- DDH HOLE NO./COLLAR ELEVATION

SURFACE ——— BASE OF GYPSITE - - - - -

BOTTOM OF MINEABLE GYPSUM —.—.—.—.—

SCALE: VERTICAL 1" = 5'; HORIZONTAL 1" = 60'

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH TEAL
SHEARER
Date Signed 3-2-87
ARIZONA, U.S.A.

GYPSUM
GYPSITE
GREEN CLAY
BROWN CLAY
BLACK & GRAY CLAY

SAMPLE DATA: DEPTH/PERCENT GYPSUM

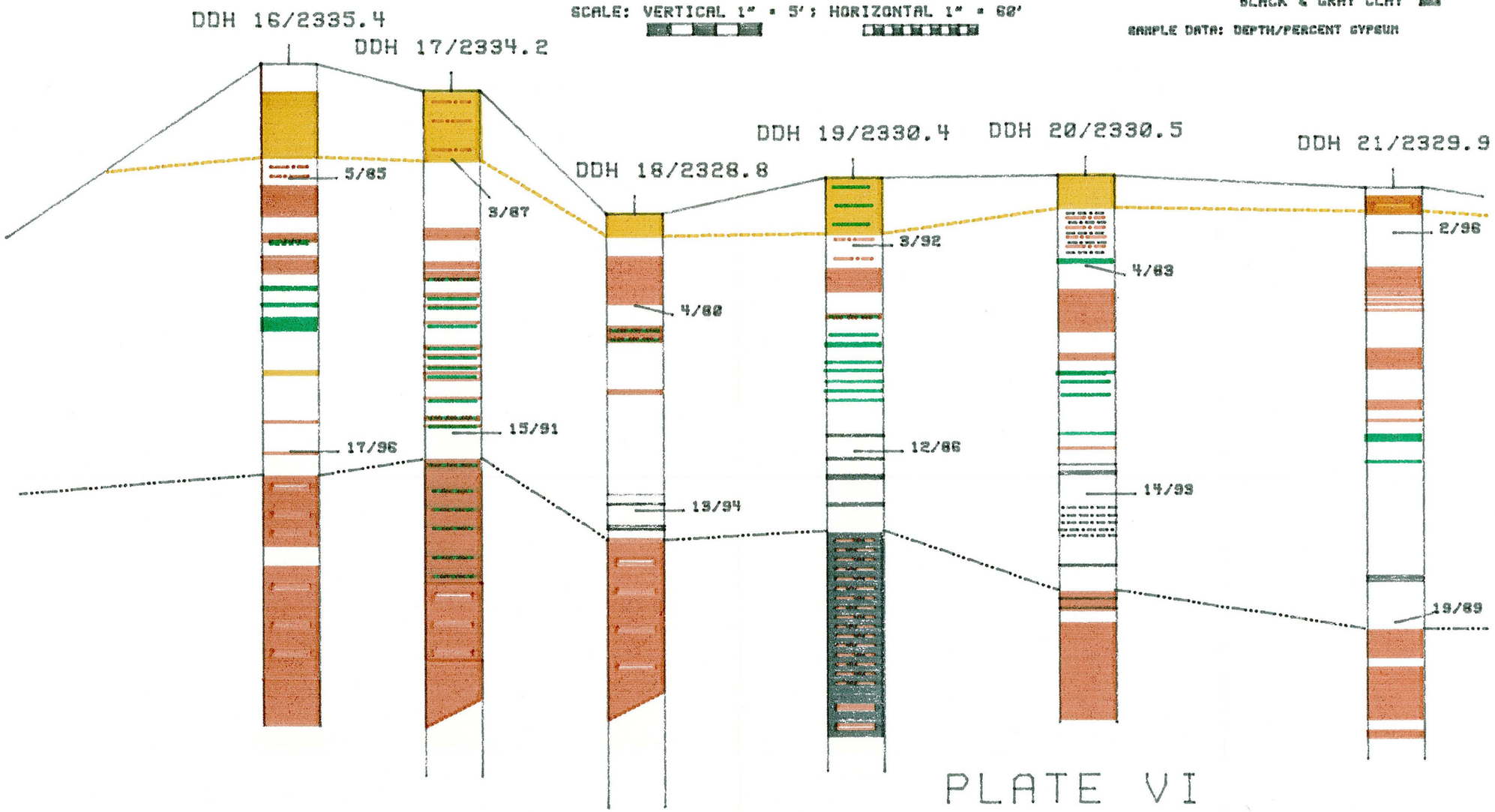


PLATE VI

BECHTEL GYPSUM COMPANY

DDH CROSS-SECTION C - C' LOOKING EAST

DIAMOND DRILL HOLES- DDH HOLE NO./COLLAR ELEVATION

SURFACE _____ BASE OF GYPSITE - - - - - -

BOTTOM OF MINEABLE GYPSUM -.-.-.-.-.-.-.-

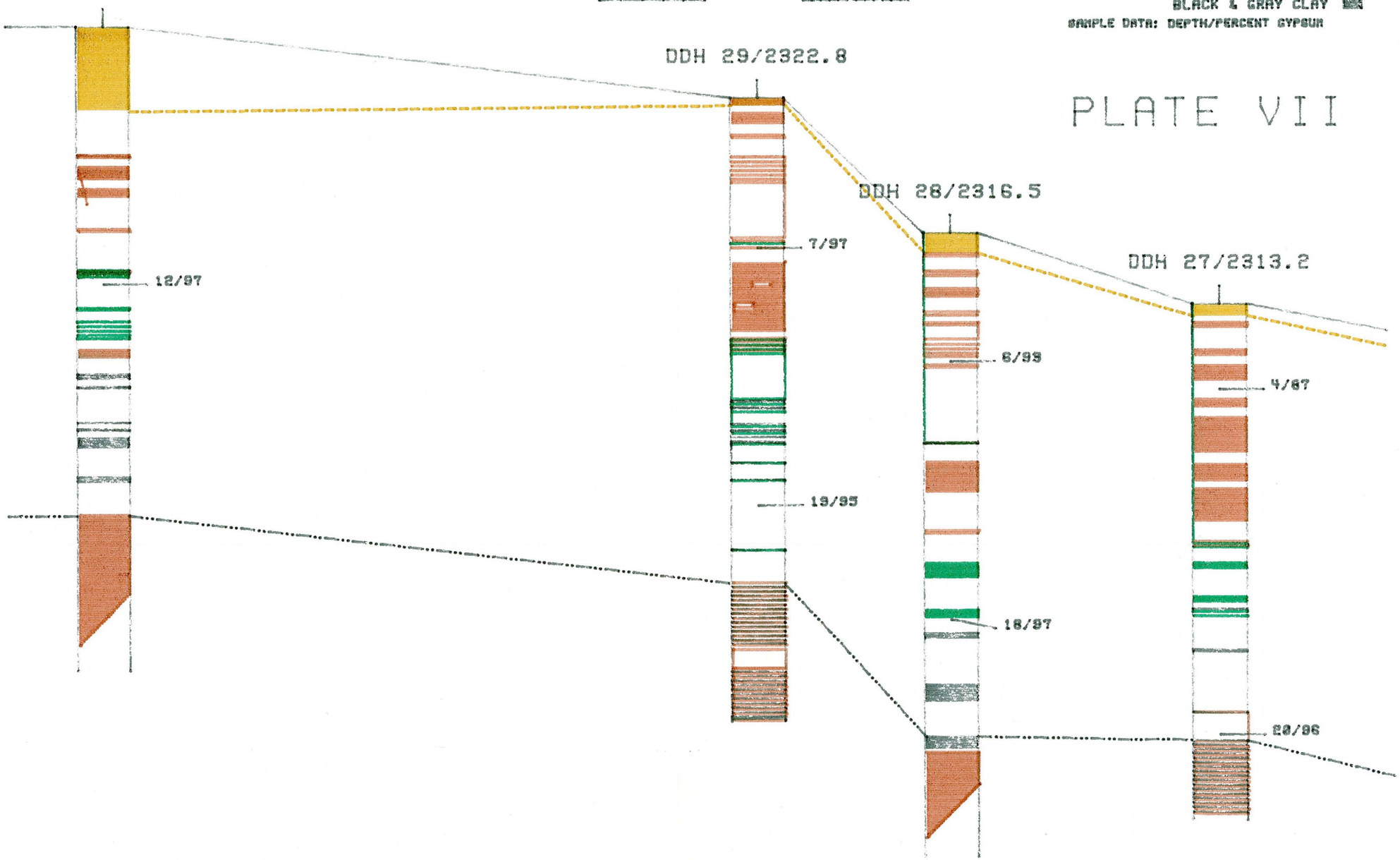
SCALE: VERTICAL 1" = 5'; HORIZONTAL 1" = 60'

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH LEAR SHARER
Date Signed 3-2-87
ARIZONA, U.S.A.

GYPSUM
GYPSITE
GREEN CLAY
BROWN CLAY
BLACK & GRAY CLAY

SAMPLE DATA: DEPTH/PERCENT GYPSUM

PLATE VII



REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH EARL SHEARER
Date Signed 3-2-87
ARIZONA, U.S.A.

BECHTEL GYPSUM COMPANY

DDH CROSS-SECTION D - D' LOOKING NORTH

DIAMOND DRILL HOLES- DDH HOLE NO./COLLAR ELEVATION

SURFACE _____ BASE OF GYPSITE _____

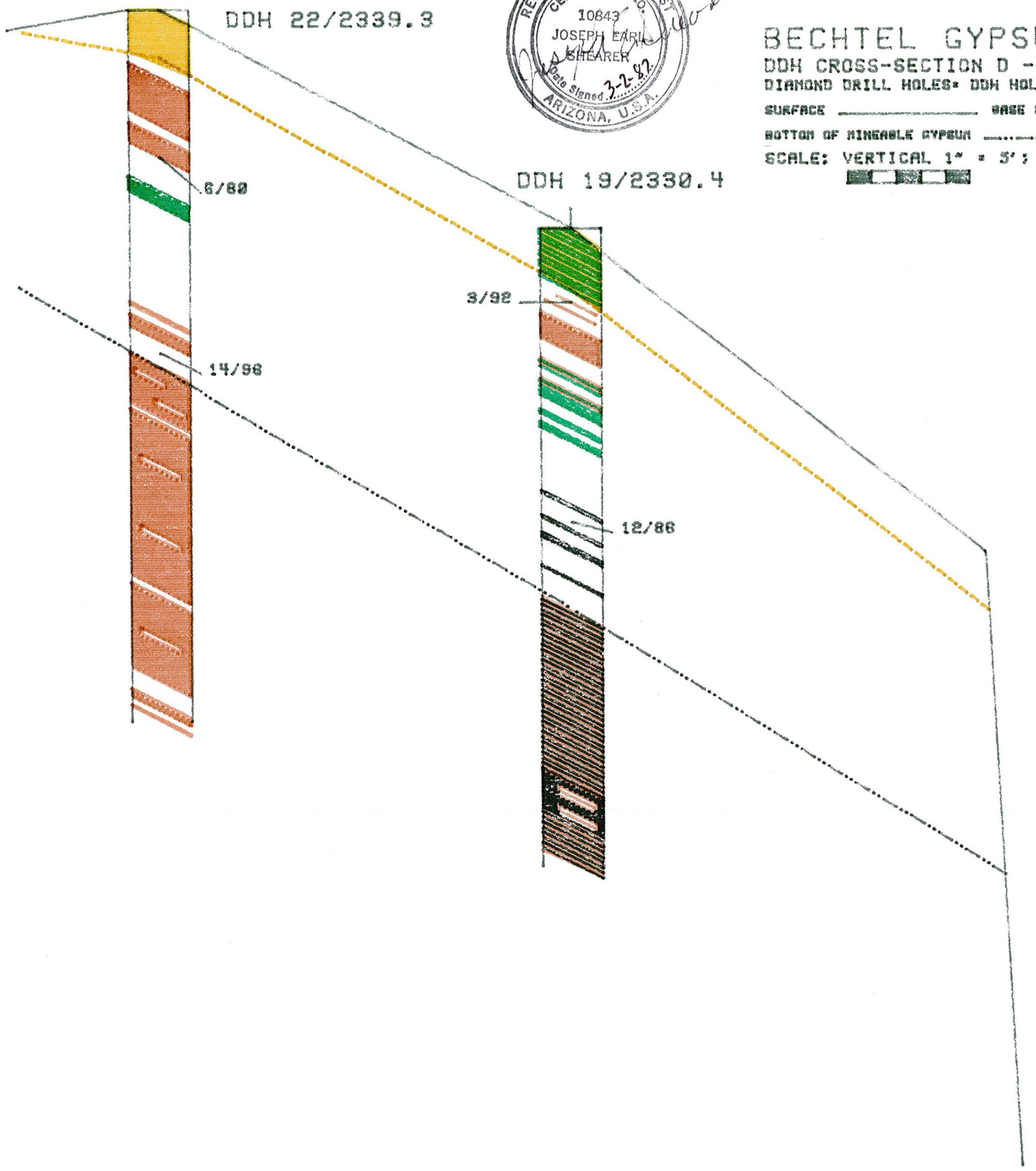
BOTTOM OF MINEABLE GYPSUM _____

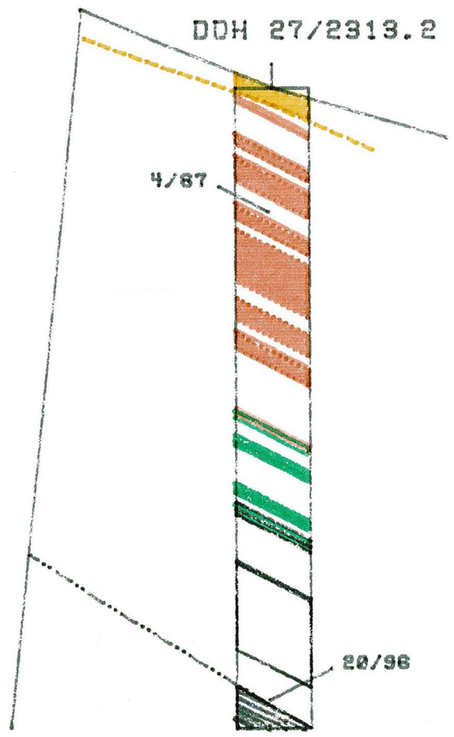
SCALE: VERTICAL 1" = 5'; HORIZONTAL 1" = 60'

GYPSUM
GYPSITE
GREEN CLAY
BROWN CLAY
BLACK & GRAY CLAY

SAMPLE DATA: DEPTH/PERCENTAGE GYPSUM

PLATE VIII





BECHTEL GYPSUM COMPANY
GYPSUM DELINEATION MAP

DIAMOND DRILL CORE HOLES = ●

OB/THICKNESS/%GYPSUM = 1'/20'/90%

SCALE : 1" = 300 FEET

GYPSUM BED OUTLINE =

REGISTERED GEOLOGIST
CERTIFICATE NO.
10843
JOSEPH EARL
USHEARER
Date Signed 3-7-91
ARIZONA, U.S.A.

BECHTEL 2

3.3'/10.3'/80%

THUNDERBIRD 5

THUNDERBIRD 9

4'/1.25'/95%

3'/7.4'/86.5%

THUNDERBIRD 6

4'/18.7'/66.8%

BECHTEL 1

THUNDERBIRD 1

0'/18'/58%

3'/13.7'/68.6%

1'/13.3'/73.6%

2.5'/13'/68.8%

2'/12.6'/68.2%

1'/14.4'/60%

4'/10'/78%

3.5'/13.5'/64.4%

0.6'/15.4'/72.7%

0'/20.8'/68.8%

0'/22.6'/67.7%

1'/23.2'/66.3%

0.6'/19.7'/56.8%

4'/14.2'/59.8%

0'/21'/67.1%

3'/10'/42%

THUNDERBIRD 2

THUNDERBIRD 3

2.2'/22.3'/39.5%

16.2'/2'/95%

THUNDERBIRD 7

THUNDERBIRD 8

5.9'/1.7'/90%

THUNDERBIRD 4

PLATE IX

AIME GYP PAPER 1-14-87

RESUME

JOSEPH E. SHEARER
6821 EAST BAKER ST.
TUCSON, ARIZONA 85710
(602) 296-8837

May 16, 1987

EDUCATION

University of Colorado - 1964 - B.A. in Geology
Ten semester hours of Graduate work in Geology - 1965

CERTIFICATIONS, REGISTRATIONS, and LICENSES

American Institute of Professional Geologists - Cert. #4159
State of Arizona Registered Geologist - Certificate #10843
State of California Registered Geologist - License #3823
State of Arizona Real Estate Brokers License - #200005044 00

PROFESSIONAL EXPERIENCE

July 1, 1977 - Present Consulting Geologist, most of work has been by contract in the Southwest U.S., and has consisted primarily of mine and prospect evaluation, exploration monitoring and supervision, land status and research, and mineral claim staking and maintenance. In 1985 a Compaq Deskpro computer was acquired, and during the past year, familiarity with word processing, drafting, and preparing spread sheets has been achieved. Presently, knowledge of data bases and geostatistics is being accomplished, all useful tools in geological exploration.

July 1976 - July 1977 Part-time consulting geologist.

November 1974 - July 1977 Mining Property Appraiser, Pima County Assessors Office, Tucson, Arizona, all of the major operating mines in Pima County were individually evaluated for comparison with the State evaluations. Other mining properties were evaluated as needed. The evaluation methods used were the Hoskold Formula, Net Present Value, and Replacement Cost.

February 1971 - Present Real Estate Salesman and Broker.

August 1968 - February 1971 Geological Engineer, Duval Corporation, Mine Evaluation Section, Mineral Exploration Department where the work consisted of project planning, budgeting and supervision, along with core drilling, sampling, logging, field mapping, geochemical sampling, land surveying, claim staking, and prospect examination and evaluation.

September 1967 - August 1968 Mill Engineer, New Jersey Zinc Company, Friedensville, Pennsylvania, supervising a twenty-five hundred ton per day Zinc concentrating mill.

September 1965 - September 1967 Exploration Geologist, New Jersey Zinc Company, Lake City, Florida (phosphates), managed the Lake City Office and Sample Laboratory during the latter year. A thorough understanding of phosphate exploration and mining was achieved, from drilling, sampling, calculations, and supervision.

August and part of September 1965 Consultant, worked on gold prospect in Honduras, S.A. for engineering firm.

February 1965 - August 1965 Exploration Geologist, Amax Exploration, Lake City, Florida (phosphates), work consisted of laying out drilling programs, drilling, logging and sampling of core or cuttings, and calculation of sample analysis.

Summer 1964 Geological Field Assistant, U.S.G.S., assisted Max Bergendahl in mapping part of the southern Gore Range in Summit County, Colorado.

MEMBERSHIPS

American Institute of Mining Engineers
ACOGS - Arizona Computer Oriented Geological Society
Arizona Geological Society
Mining Club of the Southwest