



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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February 9, 1993

Linus Keating
Kennebec Exploration
1515 Mineral Square
Salt Lake City, Utah 84112

ATTN: Joey Wilkins

ARIZONA STATE PARKS

800 W. WASHINGTON
SUITE 415
PHOENIX, ARIZONA 85007
TELEPHONE 602-542-4174

FIFE SYMINGTON
GOVERNOR

STATE PARKS
BOARD MEMBERS

BILLIE A. GENTRY
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SCOTTSDALE

J. RUKIN JELKS
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ELGIN

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TEMPE

DEAN M. FLAKE
SNOWFLAKE

M. JEAN HASSELL
STATE LAND COMMISSIONER

KENNETH E. TRAVOUS
EXECUTIVE DIRECTOR

COURTLAND NELSON
DEPUTY DIRECTOR

RE: Santa Rita Mountains Area; Proposed Elephant Head Access Roads and Drilling Sites; ASLD

Dear Mr. Keating:

Joey Wilkins of your staff FAXed us a copy of the cultural resources survey report by Desert Archaeology, Inc. for the above proposed project. I note that the project will occur on land owned by the Arizona State Land Department (ASLD); thus, I need to be consulted by Brian Kenny, Cultural Resources Manager for the ASLD, regarding archaeological site eligibility and project effect on significant cultural resources before I can comment on the report. By copy of this letter to Mr. Kenny, I am making him aware of my need for his consultation.

We appreciate your cooperation with this office in complying with the historic preservation requirements for state undertakings. If you have any questions or concerns, please feel free to contact me or James W. Garrison, State Historic Preservation Officer, at 542-4174 or 542-4009.

Sincerely,

Ann Valdo Howard
Archaeologist

cc: Brian Kenny, ASLD

ARIZONA DEPARTMENT OF WATER RESOURCES
OPERATIONS DIVISION
15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007

MAiled 1/5/93

CHANGE OF WELL INFORMATION

Well Registration No. 55- 537350-53 File No. D(20-13)1,2,11,12
(location)

I/We request the following well information be changed: change
drilling firm to: Drilling Services Company
12030 E. Riggs Rd.
Chandler, AZ 85249

DWR # 52

Date: 1/5/93 Signature of Current Well Owner Ken 2 Kty...
(DO NOT CUT THIS FORM IN HALF) (KENNECOTT EXPLORATION)

STATEMENT OF CHANGE OF WELL OWNERSHIP

I, _____, state that I am (no longer) the (new)
(please print)
owner of the well described below:

1/4 1/4 1/4: Section _____ Township _____ Range _____
10 acre 40 acre 160 acre

Well Registration No. 55- N/A File No. _____
(location)

PRINT Previous Owner's Name _____ PRINT New Owner's Name _____

Address _____ Address _____

City _____ State _____ Zip _____ City _____ State _____ Zip _____

Dated: _____ Signature of New Owner _____

NOTE: A.R.S. §45-593.C. requires that the Department be notified of change of well ownership and that the well owner is required to keep the Department's Well Registration records current and accurate. Well data and ownership changes must be submitted within thirty (30) days after changes take place.

RECEIVED

SAVE THIS FORM TO REPORT FUTURE CHANGES IN OWNERSHIP, CHANGES IN ADDRESS, OR CHANGE IN WELL DATA SUCH AS PUMP CAPACITY, CORRECTION OF LEGAL DESCRIPTION, CHANGE OF WELL DRILLER AND AMENDING INFORMATION PREVIOUSLY FILED.

KENNECOTT EXPLORATION
Salt Lake City, Utah

DWR-55-71-11/90

11/17/92

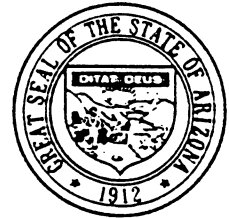
ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue, Phoenix, Arizona 85007

Telephone (602) 542-1553

Fax (602) 256-0506

*operations
542-1553
Ground Water*



FIFE SYMINGTON
Governor

ELIZABETH ANN RIEKE
Director

Re: Registration No. 55-537350 thru 55-537353

File No. VARIOUS

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill a well which was recently filed with this Department. This is returned to you as evidence of compliance with A.R.S. §45-596. Your designated driller has been mailed, separately, a Well Drilling Card which he is required to have in his possession before commencing to drill the well.



Since this well is being drilled as a monitor well, or for cathodic protection, grounding, geotechnical or piezometer purposes, our standard driller report form is also being furnished to the driller which he is required to complete and return to the Department within 30 days after the completion of drilling. A Completion Report form is being furnished for monitor wells where pump equipment is authorized to be installed as part of this packet so that you may submit the report within 30 days after the installation of the pumping equipment on a monitor well as required by A.R.S. §45-600.



This well is authorized to be drilled for mineral exploration purposes. Because of this, no pump equipment may be installed. A Project Completion Report is being furnished you for each hole to be drilled. You are required to submit this Project Completion Report within 30 days after completion of drilling. Frequently, exploration wells are abandoned shortly after drilling. Therefore, pursuant to R12-15-816.B, a Notice of Intent to Abandon a Well is being furnished.

The Department of Water Resources requires you to obtain written permission before proceeding with the drilling in the event that you determine it necessary to change the location of the proposed well. A properly signed amended Drilling Card must be in the possession of the driller before drilling commences at a different location than originally authorized.

If in the course of drilling a new well, it is determined that the well needs to be abandoned, then a Well Abandonment Completion Report must be submitted per R12-15-816.F.

ARIZONA DEPARTMENT OF WATER RESOURCES

EXPLORATION WELL(s)

15 South 15th Avenue

EXPLORATION WELL(s)

FILING FEE \$10.00

Phoenix, Arizona 85007

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL AND ABANDON EXPLORATION WELL(s)

Section §45-596, Arizona Revised Statutes, and Rule 12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 20 N Range 13 E Section 12
 In the case of a single well, list 10-acre subdivision.
1/4 X 1/4 1/4
 10 ACRE 40 ACRE 160 ACRE

2. County Santa Cruz

3. Kennecott Exploration
 Applicant Name

1515 MINERAL SQ
 Address

SALT LAKE, UT 84112
 City State Zip

4. Joey Wilkins
 Name of Contact Person

Phone 602-293-1012

5. Owner of Well:
Kennecott Exploration
 Name

1515 MINERAL SQ
 Address

SALT LAKE, UT 84112
 City State Zip

6. Purpose of well(s) drilled pursuant to this Notice:
 Mineral Exploration X
 Geotechnical _____
 Cathodic Protection _____
 Grounding _____

7. Number of wells 3
 (See Condition 4 on reverse side)

8. Owner of Land of wellsite:
State of Arizona
 Name

Address
 City State Zip

DO NOT WRITE IN THIS SPACE
 OFFICE RECORD
 File No. D(20-13)12
 Filed 11-16-92 By sk
 Input _____ By _____

DUPLICATE
 Mailed 11-17-92 By sk
 Registration 55- 537350
 AMA/INA Tucson
 W/S 09 S/B 16

9. DESCRIPTION OF THE WELL:
 Diameter 4 3/4 inches
 Depth 1000 feet
 Type of casing. If none, state:

- none anticipated.
If used: <10' of
Surface casing to be
removed at abandonment
 10. Construction will start

JAN. 20, 1993
 Month Day Year

11. Drilling Firm:
Dateline Drilling
 Name

HC 63, Box 5170
 Address

Dodson, MT 59524
 City State Zip

434
 DWR License Number

ROC License Category

12. Period well will remain in use:
0 months

13. Proposed method of abandonment of well(s) after project is completed: in accordance with
DWR Rule R-12-15-816.

14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials or a petroleum storage area and tanks? Yes _____ No X

GENERAL INSTRUCTIONS

- Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- For specific instructions, limitations and conditions, see the reverse side of this form.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

Date

11/13/92

Signature of Applicant/Owner

Joey Wilkins

NOV 16 1992

ARIZONA DEPARTMENT OF WATER RESOURCES

EXPLORATION WELL(s)

15 South 15th Avenue

EXPLORATION WELL(s)

FILING FEE \$10.00

Phoenix, Arizona 85007

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL AND ABANDON EXPLORATION WELL(s)

Section §45-596, Arizona Revised Statutes, and Rule 12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

20 N 13 E 2
1. Township | Range | Section
In the case of a single well, list
10-acre subdivision.
NE 1/4 SW 1/4 SE 1/4
10 ACRE 40 ACRE 160 ACRE

2. County SANTA CRUZ3. KENNECOTT EXPLORATION
Applicant Name1515 MINERAL SQ
AddressSALT LAKE, UT 84112
City State Zip4. Joey Wilkins
Name of Contact PersonPhone 602-293-10125. Owner of Well:
KENNECOTT EXPLORATION
Name1515 MINERAL SQ
AddressSALT LAKE, UT 84112
City State Zip6. Purpose of well(s) drilled
pursuant to this Notice:Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____7. Number of wells 1
(See Condition 4 on reverse side)

8. Owner of Land of wellsite:

State of Arizona
Name

Address

City State Zip

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

File No. D(20-1312) DCAFiled 11-16-92 By sk

Input _____ By _____

DUPLICATE

Mailed 11-17-92 By skRegistration 55-537351AMA/INA TucsonW/S 09 S/B 16

9. DESCRIPTION OF THE WELL:

Diameter 4 3/4 inchesDepth 1000 feet

Type of casing. If none, state:

- none anticipated.If used: <10' ofSurface casing to be removed at abandonment

10. Construction will start

JAN. 20, 1993
Month Day Year

11. Drilling Firm:

Dateline Drilling
NameHC 63 Box 5170
AddressDodson, MT 59524
City State Zip434
DWR License Number

ROC License Category

12. Period well will remain in use:

0 months13. Proposed method of abandonment of well(s) after project is completed: in accordance with
DWR Rule R-12-15-816.14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials or a petroleum storage area and tanks? Yes No X

GENERAL INSTRUCTIONS

- Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- For specific instructions, limitations and conditions, see the reverse side of this form.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

Date

11/13/92

Signature of Applicant/Owner

Joey Wilkins

NOV 16 1992

ARIZONA DEPARTMENT OF WATER RESOURCES

EXPLORATION WELL(s)

15 South 15th Avenue
Phoenix, Arizona 85007

EXPLORATION WELL(s)

FILING FEE \$10.00

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL AND ABANDON EXPLORATION WELL(s)

Section §45-596, Arizona Revised Statutes, and Rule 12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 20 N Range 13 E Section 1

In the case of a single well, list 10-acre subdivision.

1/4 X 1/4 1/4
10 ACRE 40 ACRE 160 ACRE

2. County Santa Cruz

3. Kennecott Exploration
Applicant Name

1515 MINERAL SQ
Address

SALT LAKE, UT 84112
City State Zip

4. Joey Wilkins
Name of Contact Person

Phone 602-293-1012

5. Owner of Well:
Kennecott Exploration
Name

1515 MINERAL SQ
Address

SALT LAKE, UT 84112
City State Zip

6. Purpose of well(s) drilled pursuant to this Notice:

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 2
(See Condition 4 on reverse side)

8. Owner of Land of wellsite:
State of Arizona
Name

Address
City State Zip

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D(20-13) 1
Filed 11-16-92 By ek
Input _____ By _____

DUPLICATE

Mailed 11-17-92 By ek
Registration 55- 537352
AMA/INA Tucson
W/S 09 S/B 16

9. DESCRIPTION OF THE WELL:

Diameter 4 3/4 inches
Depth 1000 feet
Type of casing. If none, state:

- none anticipated.
If used: <10' of

Surface casing to be removed at abandonment
10. Construction will start

JAN. 20, 1993
Month Day Year

11. Drilling Firm:

Dateline Drilling
Name

HC 63, Box 5170
Address

Dodson, MT 59524
City State Zip

434
DWR License Number

ROC License Category

12. Period well will remain in use:
0 months

13. Proposed method of abandonment of well(s) after project is completed: in accordance with
DWR Rule R-12-15-816.

14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials or a petroleum storage area and tanks? Yes _____ No X

GENERAL INSTRUCTIONS

- Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- For specific instructions, limitations and conditions, see the reverse side of this form.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

11/13/92
Date

[Signature]
Signature of Applicant/Owner

NOV 16 1992

ARIZONA DEPARTMENT OF WATER RESOURCES

EXPLORATION WELL(s)

15 South 15th Avenue
Phoenix, Arizona 85007

EXPLORATION WELL(s)

FILING FEE \$10.00

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL AND ABANDON EXPLORATION WELL(s)

Section §45-596, Arizona Revised Statutes, and Rule 12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

20 N 13 E 11
1. Township | Range | Section

In the case of a single well, list
10-acre subdivision.

1/4 X 1/4 1/4
10 ACRE 40 ACRE 160 ACRE

2. County Santa Cruz3. Kennecott Exploration
Applicant Name

1515 Mineral Sq
Address

SALT LAKE, UT 84112
City State Zip

4. Joey Wilkins
Name of Contact PersonPhone 602-293-10125. Owner of Well:
Kennecott Exploration
Name

1515 Mineral Sq
Address

SALT LAKE, UT 84112
City State Zip

6. Purpose of well(s) drilled
pursuant to this Notice:

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 2
(See Condition 4 on reverse side)8. Owner of Land of wellsite:
State of Arizona
Name

Address _____
City State Zip

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

File No. D(20-13)11Filed 11-16-92 By ad

Input _____ By _____

DUPLICATE

Mailed 11-17-92 By skRegistration 55- 537353AMA/INA TucsonW/S 09 SB 16

9. DESCRIPTION OF THE WELL:

Diameter 4 3/4 inchesDepth 1000 feet

Type of casing. If none, state:

- none anticipated.If used: <10' ofSurface casing to be- removed at abandonment10. Construction will start
JAN. 20, 1993
Month Day Year

11. Drilling Firm:

DateLine Drilling
Name

HC 63, Box 5170
Address

Dodson, MT 59524
City State Zip

434
DWR License Number

ROC License Category

12. Period well will remain in use:
0 months13. Proposed method of abandonment of well(s) after project is completed: in accordance with
DWR Rule R-12-15-816.14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials or a petroleum storage area and tanks? Yes _____ No X

GENERAL INSTRUCTIONS

- Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- For specific instructions, limitations and conditions, see the reverse side of this form.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

Date 11/13/92Signature of Applicant/Owner Jim Z. K...

NOV 16 1992

NOTICE OF INTENTION TO DRILL AND ABANDON EXPLORATION WELL(s)

Section §45-596, Arizona Revised Statutes, and Rule 12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 20 N Range 13 E Section 11

In the case of a single well, list 10-acre subdivision.

1/4 X 1/4 1/4
10 ACRE 40 ACRE 160 ACRE

2. County Santa Cruz

3. Kennecott Exploration
Applicant Name

1515 Mineral Sq
Address

SALT LAKE, UT 84112
City State Zip

4. Joey Wilkins
Name of Contact Person

Phone 602-293-1012

5. Owner of Well:
Kennecott Exploration
Name

1515 Mineral Sq
Address

SALT LAKE, UT 84112
City State Zip

6. Purpose of well(s) drilled pursuant to this Notice:

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 2
(See Condition 4 on reverse side)

8. Owner of Land of wellsite:

State of Arizona
Name

Address

City State Zip

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. _____
Filed _____ By _____
Input _____ By _____

DUPLICATE

Mailed _____ By _____
Registration 55- _____
AMA/INA _____
W/S _____ S/B _____

9. DESCRIPTION OF THE WELL:

Diameter 4 3/4 inches

Depth 1000 feet

Type of casing. If none, state:

- none anticipated.

If used: <10' of

Surface casing to be

10. Construction will start
- removed at abandonment

JAN. 20, 1993
Month Day Year

11. Drilling Firm:

Dateline Drilling
Name

HC 63 Box 5170
Address

Dodson, MT 59524
City State Zip

434
DWR License Number

ROC License Category

12. Period well will remain in use:

0 months

13. Proposed method of abandonment of well(s) after project is completed: in accordance with
DWR Rule R-12-15-816.

14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials or a petroleum storage area and tanks? Yes _____ No X

GENERAL INSTRUCTIONS

- Fill out this form in DUPLICATE and send WITH \$10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
- For specific instructions, limitations and conditions, see the reverse side of this form.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

Date 11/13/92

Sign 2 kth
Signature of Applicant/Owner

NOV 16 1992

08351

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
OPERATIONS DIVISION
15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007
(602) 542-1581

ENTRY CODE 55

FILE NO.	VARIOUS	THRU
537350		537350

ITEM DESCRIPTION	RATE	AMOUNT
FILING FEE FOR NOI TO DRILL WELLS	\$10.00	\$40.00
11/17/92/ek CK#295		\$40.00

CHECK NO. _____ FEE ACCOUNT NO. _____ TOTAL \$ _____

CHIT NO. _____ RECEIVED BY _____ DATE _____

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check boxes for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery (Extra charge)

<p>3. Article Addressed to:</p> <p>ARIZONA State Land Dept. 1616 W. Adams St. Phoenix, Arizona 85007</p> <p>Attn: Minerals Section</p>	<p>4. Article Number</p> <p>P 564 383 943</p>
<p>5. Signature — Addressee X</p> <p>6. Signature Agent X</p> <p>7. Date of Delivery NOV 27 1992</p>	<p>Type of Service:</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Insured</p> <p><input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD</p> <p><input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise</p> <p>Always obtain signature of addressee or agent and DATE DELIVERED.</p> <p>8. Addressee's Address (ONLY if requested and fee paid)</p>

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

EN-1
EA-3
NEW 50

WELL ABANDONMENT COMPLETION REPORT

A.R.S. 845-594; R12-15-816: Within 30 days after a well is abandoned, the well drilling contractor shall file a well Abandonment Completion Report on a form prescribed and furnished by the Director.

1. Well Registration No. 55- 537352
2. Well Location: 20S N/S 13E E/W 1 Section 10 1/4 Acre 40 1/4 Acre 160 1/4 Acre
Township Range
3. Owner of the Land:
Name: KENNEDY EXPLORATION
1515 MINERAL SQUARE SCC UT. 84112
Address City State Zip
4. Well Description: 400' Hole Depth 5 1/4" Diameter NONE Type of Casing
5. Reason for abandonment: EXPLORATION HOLE
6. Prior to abandonment, did the well have 20' of steel surface casing AND 20' of grout in the annular space surrounding the surface casing? Yes No X
7. If the answer to No. 6 is no, was the top 20' of casing removed prior to setting the cement plug? Yes No X
8. Identify the materials and methods used to abandon the well: ~~EXPLORATION~~ TYPE 2 CEMENT
~~975 GPM~~, with 20' Cement Plug
9. Is this Abandonment Completion Report filed in accordance with R12-15-816, F.?: Yes X No
10. How deep does the cement plug extend below land surface? Cemented to SURFACE
11. Was the well backfilled above the cement plug? Yes No X
12. Date abandonment completed: 2-4-93
13. Drilling firm:
Name: DRILLING SERVICES Co
12030 E. RIGGS RD. CHANDLER AZ 85249
Address City State Zip

DATE: 2-15-93

SIGNATURE OF WELL DRILLER James J. Campbell

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

E" EA-3 NE 1/4 SW

WELL ABANDONMENT COMPLETION REPORT

A.R.S. §45-594; R12-15-816: Within 30 days after a well is abandoned, the well drilling contractor shall file a well Abandonment Completion Report on a form prescribed and furnished by the Director.

1. Well Registration No. 55- 537352
2. Well Location: 20S N/S 13E E/W 1 1/4 1/4 1/4
Township Range Section 10 Acre 40 Acre 160 Acre
3. Owner of the Land: KENNICOTT EXPLORATION
Name: 1515 MINERAL SQUARE SLC UT. 84112
Address City State Zip
4. Well Description: 660' 5 1/4" N/A
Hole Depth Diameter Type of Casing
5. Reason for abandonment: EXPLORATION HOLE
6. Prior to abandonment, did the well have 20' of steel surface casing AND 20' of grout in the annular space surrounding the surface casing? Yes No X
7. If the answer to No. 6 is no, was the top 20' of casing removed prior to setting the cement plug? Yes No X
8. Identify the materials and methods used to abandon the well: TYPE 2 CEMENT
SET PLUG AT 20' Cemented to Surface
9. Is this Abandonment Completion Report filed in accordance with R12-15-816, F.?: Yes X No
10. How deep does the cement plug extend below land surface? Plugged to Surface
11. Was the well backfilled above the cement plug? Yes No X
12. Date abandonment completed: 1-30-93
13. Drilling firm: DRILLING SERVICES CO
Name: 12030 E. RIGGS RD CHANDLER AZ 85210
Address City State Zip

DATE: 2-15-93

SIGNATURE OF WELL DRILLER

James J. Campbell

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

124-2
N 61° 14' 36" E

WELL ABANDONMENT COMPLETION REPORT

A.R.S. §45-594; R12-15-816: Within 30 days after a well is abandoned, the well drilling contractor shall file a well Abandonment Completion Report on a form prescribed and furnished by the Director.

1. Well Registration No. 55- 537353
2. Well Location: 20S N/S 13E E/W 11 Section 10 1/4 Acre 40 1/4 Acre 160 1/4 Acre
Township Range
3. Owner of the Land:
Name: KENNECOTT EXPLORATION
1515 Mineral Square SLC UT. 84112
Address City State Zip
4. Well Description: 800' Hole Depth 5 1/4" Diameter NONE Type of Casing
5. Reason for abandonment: EXPLORATION HOLE
6. Prior to abandonment, did the well have 20' of steel surface casing AND 20' of grout in the annular space surrounding the surface casing? Yes No X
7. If the answer to No. 6 is no, was the top 20' of casing removed prior to setting the cement plug? Yes No X
8. Identify the materials and methods used to abandon the well: ENVIROPLUG, TYPE 2 Cement
975 GAC Gel, with 20' Cement Plug
9. Is this Abandonment Completion Report filed in accordance with R12-15-816, F.?: Yes X No
10. How deep does the cement plug extend below land surface? Cemented to Surface
11. Was the well backfilled above the cement plug? Yes No X
12. Date abandonment completed: 2-2-93
13. Drilling firm:
Name: DRILLING SERVICES Co
12030 E. RIGGS RD. CHANDLER AZ. 85249
Address City State Zip

DATE: 2-15-93

SIGNATURE OF WELL DRILLER

James J. Campbell

REISSUE - CHANGE OF DRILLER

MONITOR/PIEZOMETER WELL

MONITOR/PIEZOMETER WELL

DEPARTMENT OF WATER RESOURCES
15 SOUTH 15th AVENUE
PHOENIX, ARIZONA 85007

THIS DRILLING CARD SHALL BE IN THE POSSESSION OF THE DRILLER
BEFORE DRILLING OPERATIONS COMMENCE

AUTHORIZED DRILLER Drilling Services LICENSE NO. 52

Notice(s) of Intention to Drill/~~Drilling~~ Exploration Well(s) for Mineral Exploration
purposes has been filed with the Department by:

APPLICANT'S NAME Kennecott Exploration

Owner of Well Kennecott Exploration 1515 Mineral Square Salt Lake City UT 84112
Name Address City State Zip

Well(s) to be located in: 20S 13E 1
Township Range Section 4 4 4 537352

Number of Wells in Project: 2 Registration No. 55-

This authorization to drill/~~drill~~ the above well(s) expires at midnight on 11-16-93

PURSUANT TO ARS §45-600, R12-15-811.H.2, THE DRILLER SHALL FILE ON THE PRESCRIBED DEPARTMENT FORM,
A LOG OF THE WELL(S) WITHIN 30 DAYS OF COMPLETION OF DRILLING. A MONITOR WELL SHALL BE IDENTIFIED
AS SUCH, ON THE VAULT COVER OR AT THE TOP OF THE STEEL CASING. IDENTIFICATION INFORMATION WILL
INCLUDE WELL REGISTRATION NUMBER.

DWR-55-44B-9/90

[Signature]
603 DEPUTY DIRECTOR

REISSUE - CHANGE OF DRILLER

MONITOR/PIEZOMETER WELL

DEPARTMENT OF WATER RESOURCES

15 SOUTH 15th AVENUE

PHOENIX, ARIZONA 85007

THIS DRILLING CARD SHALL BE IN THE POSSESSION OF THE DRILLER
BEFORE DRILLING OPERATIONS COMMENCE

Drilling Services LICENSE NO. 52

Notice(s) of Intention to Drill/~~Deepen~~ Exploration Well(s) for Mineral Exploration
purposes has been filed with the Department by:

APPLICANT'S NAME Kennecott Exploration

Order of Well Kennecott Exploration 1515 Mineral Square Salt Lake City UT 84112
Name Address City State Zip

Well(s) to be located in: 20S 13E 11
Township Range Section 4 4 4

Number of Wells in Project: 2 Registration No. 55-537353

This authorization to drill/~~deepen~~ the above well(s) expires at midnight on 11-16-93

PURSUANT TO ARS §45-600, R12-15-811.H.2, THE DRILLER SHALL FILE ON THE PRESCRIBED DEPARTMENT FORM,
A LOG OF THE WELL(S) WITHIN 30 DAYS OF COMPLETION OF DRILLING. A MONITOR WELL SHALL BE IDENTIFIED
AS SUCH, ON THE VAULT COVER OR AT THE TOP OF THE STEEL CASING. IDENTIFICATION INFORMATION WILL
INCLUDE WELL REGISTRATION NUMBER.

DWR-55-44B-9/90

Deuce S. L.
60 DEPUTY DIRECTOR

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: Kennecott Exploration

Address: 1515 Mineral Square Salt Lake City UT 84112
Street City State Zip

2. Lessee or Operator Name: Kennecott Exploration

Address: 1515 Mineral Square Salt Lake City UT 84112
Street City State Zip

3. Driller Name: Drilling Services Company

Address: 12030 E. Riggs Rd. Chandler AZ 85249
Street City State Zip

4. Location: 20 13 11 NE 1/4 SE 1/4 NF 1/4
Township Range Section 10-Acre 40-Acre 160-Acre

WELL REGISTRATION NO. 55- 537353 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): None

6. Abandonment method and material used if abandoned: In accordance with DWR Rule R-12-15-816

Surface plug with cement to 20' depth. 20' to 800' (Total depth)
Hi-yield / Enviro-gel bentonite plugs

Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ☒ No ☐

7. Date of period drilled: From: 1-30-93 To: 2-2-93

LOG OF WELL



Unconsolidated Formation



Consolidated Formation

Depth to water in feet below land surface: 200'
(if encountered or detected)

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Jay Wilkins 2-15-93
Owner/Lessee's Signature, Date

**DO NOT WRITE IN THIS SPACE
OFFICE RECORD**

Registration No. 55-537353

Received _____ By _____

Entered _____ By _____

File No. D(20-13)11

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: Kennecott Exploration
Address: 1515 Mineral Square Salt Lake City UT 84112
Street City State Zip
2. Lessee or Operator Name: Kennecott Exploration
Address: 1515 Mineral Square Salt Lake City UT 84112
Street City State Zip
3. Driller Name: Drilling Services Company
Address: 12030 E. Riggs Rd. Chandler AZ 85249
Street City State Zip
4. Location: 20 13 1 SE SW SW
Township Range Section 10-Acre 40-Acre 160-Acre

WELL REGISTRATION NO. 55- 537352 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): NONE
6. Abandonment method and material used if abandoned: In accordance with DWR
Rule R-12-15-816, surface plug with cement to 20' depth.

Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ☒ No ☐

7. Date of period drilled: From: 2-3-93 To: 2-3-93

LOG OF WELL

☐

Unconsolidated Formation

☒

Consolidated Formation

Depth to water in feet below land surface:
(if encountered or detected)

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Jay Wilkin 2-15-93
Owner/Lessee's Signature Date

**DO NOT WRITE IN THIS SPACE
OFFICE RECORD**

Registration No. 55-537352

Received By

Entered By

File No. D(20-1311)

15 South 15th Avenue
Phoenix, Arizona 85007

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

- WELL REGISTRATION NO. 55- 537352 (REQUIRED)

5. Type of Casing (if installed): NONE

6. Abandonment method and material used if abandoned: In accordance with DWR Rule R-12-15-816. Surface plug with cement to 20' depth.

Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ☒ No ☐

7. Date of period drilled: From: 1-28-93 To: 1-30-93

☐ Unconsolidated Formation

☒ Consolidated Formation
Depth to water in feet below land surface:
(if encountered or detected)

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Owner/Lessee's Signature Jay Wilkins Date 2-15-93

Registration No. 55-537352

Received _____ By _____

Entered _____ By _____

File No. D(20-13)1



FIFE SYMINGTON
GOVERNOR

Arizona
State Land Department

1616 WEST ADAMS
PHOENIX, ARIZONA 85007



M.J. HASSELL
STATE LAND COMMISSIONER

March 2, 1993

Mr. Linus Keating
Kennecott Exploration Company
1515 Mineral Square
Salt Lake City, Utah 84112

Re: Plan of Operation
Permits 08-52235 through 08-52237 and
08-52375 through 08-52379

Dear Mr. Keating:

As noted in my letter dated December 23, 1992, the captioned proposal was approved contingent upon Kennecott receiving archaeological clearance for the contemplated work. Having received conditional clearance from the State Historic Preservation Office on February 16, 1993, our earlier approval is hereby confirmed.

Sincerely,

Michael Rice, Manager
Minerals Section
Natural Resources Division

MR:mlt

January 25, 1993

CULTURAL RESOURCE COMPLIANCE
ARIZONA STATE LAND DEPARTMENT
1616 WEST ADAMS
PHOENIX, ARIZONA 85007

JAN 28 1993

Lease Application No(s). 08-52235 thru 08-52237 / 08-52375 thru 08-52379Total Project Acreage Inspected 7.07 Acreage on State Trust Land 7.07CRM Report Title Desert Archaeology Letter Report 93-106 Archaeological Survey of
Elephant Head Drilling Sites and Access RoadsConsulting Archaeologist Desert Archaeology ASM Permit # Sponsor Kennecott ExplorationDate of Report 1/19/93 Methodology 100% pedestrian coverage; 15m transect intervalProject Location Elephant Head Santa Rita MtnsLegal Description Sec 1 - 2 and 11, T20S R13E G&SRB&MProject Description Survey of proposed mineral exploration drill sites and access roads.Number of Sites One (1) Number of Eligible Sites One (1) AZ EE:5:22(ASM)Isolated Artifact(s) Three (3) isolated occurrencesConsultant Recommendations Road will avoid site; clearance recommended; no clearance for
EH-5 and road in Section 14 - survey may need to be performed if this area will be used
in the future.Agency Comments AZ EE:5:22(ASM) is significant and eligible to National and State
Registers of Historic Places. Site must be avoided. No clearance granted for EH-5 and
road in Section 14. Otherwise, remaining project areas should be granted clearance.
Awaiting SHPO concurrence at this time.ASLD comments continued on reverse: Yes No XClearance granted when "CONCUR" appears
with SHPO signature.

Brian W. Kenny 1/26/93
Brian W. Kenny, Environmental & Cultural Resources Mgr.,
Environmental Division, (602) 542-2119 / FAX 542-2590

Distribution: SHPO X Consulting Archaeologist XProject Sponsor X File XSHPO Document Review Only
(Clearance not Granted) (Signature) (Date)SHPO Comments on Reverse: Yes No X

CONCUR

Jan 25 1993
ARIZONA STATE HISTORIC PRESERVATION OFFICER
ARIZONA STATE PARKS BOARD

F

GEOPHYSICAL REPORTS

* Elliot Geophysical to Keating



ELLIOT GEOPHYSICAL CO., INC.

3865 E. 34th STREET, SUITE 106

TUCSON, ARIZONA 85713

TEL. (602) 747-7448

23 September, 1992

REF. BE11P

Mr. Linus T. Keating
KENNECOTT EXPLORATION COMPANY
1515 East 100 South
P.O. Box 11248
Salt Lake City, UT 84147

EH

Dear Linus:

RE: Physical Property Laboratory Determinations

The 3 samples that were received on 9-16-92 have been run in the physical property laboratory of ELLIOT GEOPHYSICAL CO., INC. to determine the requested physical properties. The following physical property methods were run:

- Natural Remanent Magnetization
- Volume Magnetic Susceptibility
- Wet Bulk Density

The physical property procedures were performed following conventional techniques of laboratory analysis and are described in the attachments. The resulting data with the specific parameters and units employed are presented on the accompanying tables.

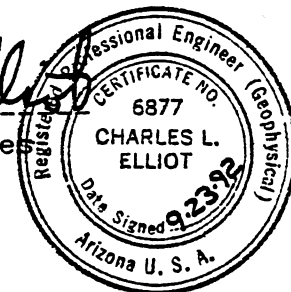
A one-inch diameter core was cut from each of the submitted samples in order to provide appropriate means for measurement of the requested physical properties.

The samples are being returned to you via United Parcel Service.

Sincerely yours,

ELLIOT GEOPHYSICAL CO., INC.

Charles L. Elliot
Charles L. Elliot, Pres



ATTACHMENTS: Tables
Physical Property Procedures

ENCL: Invoice

PROCEDURES FOR THE DETERMINATION OF VOLUME MAGNETIC SUSCEPTIBILITIES

The volume magnetic susceptibility measurements made in the physical property laboratory utilizes a magnetic susceptibility bridge type instrument operating at a frequency of 400 Hertz. The limits of detectability of the bridge are approximately 1.0 micro cgs units (1.26×10^{-5} SI units). Resulting data are presented in micro cgs units of volume magnetic susceptibility. The SI unit conversion is:

$$k_{SI} = (12.566)k_{cgs}$$

Magnetic susceptibility measurements are made on a 1.0 inch diameter bicylindrical core cut from each submitted sample to facilitate the determination. Sometimes surface samples may be broken to chip size which can be run with appropriate correction for the rock/void ratio of material. Also, sand, mud or chip samples can be utilized in the determination of volume magnetic susceptibility with appropriate corrections for porosity and/or voids.

PROCEDURES FOR THE DETERMINATION OF WET BULK DENSITIES

The density determinations made in the physical property laboratory are determined following conventional laboratory procedures for determining bulk rock densities utilizing the bouyancy method. The accuracy of the bouyancy technique of density measurement is better than 0.01 grams per cubic centimeter (10.0 SI units). The results of the laboratory density determinations are reported in grams per cubic centimeter. The SI units conversion is:

$$D_{kg/m^3} = (1000.0)D_{gms/cc}$$

Density measurements can be made on bicylindrical cores, grab samples, or drill cores. Cuttings or sand samples can be measured but with some loss in accuracy.

PROCEDURES FOR THE DETERMINATION OF NATURAL REMANENT MAGNETIZATION

Natural remanent magnetizations are determined utilizing a 0.5 Hz spinner magnetometer with fluxgate sensor. No AC demagnetization of the natural samples is employed. The samples are prepared by cross coring a length of 1.0 inch diameter core at a diameter of 1.0 inches, thus forming a bicylindrical specimen. On the attached tables the natural remanent magnetization magnitude is in gammas. The direction of the natural remanent magnetization vector is referenced by declination to north (usually magnetic) and by inclination to the horizontal. The inclination angles are positive below and negative above the horizontal. The direction of the total intensity of magnetization vector (I) is a vector summation of the natural remanent magnetization vector (J) and the inducing vector (kF) due to the normal earth's field at the sample site. The relationship is as follows:

$$\vec{I} = \vec{J} + k\vec{F}$$

I = The total intensity of magnetization

F = The normal field of the earth (Default = 50000 gammas)

Natural remanent magnetization in units of emu per cc (gauss) or SI units is given by:

$$\begin{array}{llll} J & = & (0.00001) J & \text{and} \\ \text{emu cc} & & \text{gamma} & \end{array} \qquad \begin{array}{llll} J & = & (0.1) J \\ & & \text{Tesla} & \text{gamma} \end{array}$$

The Koenigsberger ratio, the ratio of the natural remanent magnetization to the induced magnetization at the sample site, is given by:

$$Q = \frac{J}{kF} \quad (\text{dimensionless})$$

The Koenigsberger ratio (Q) is a direct measure of the ratio of remanent magnetization to induced magnetization. For ratios greater than 1.0 the remanent magnetization vector is the predominant contribution to the total intensity of magnetization.

The arrow on each double cored sample points down dip in the strike direction of the core as reported on the attached tables. The scribed line is on the top side of the core.

ROCK PHYSICAL PROPERTY LABORATORY DETERMINATIONS

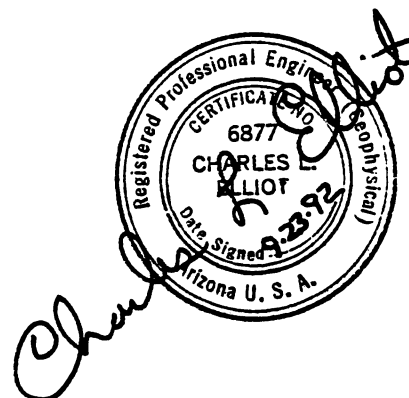
KENNECOTT EXPLORATION COMPANY

23 SEPTEMBER, 1992

REF. BE11P

REF. NO.	SAMPLE DESIGNATION	NATURAL REMANENT MAGNETIZATION MAGNITUDE (J) gammas	VOLUME MAGNETIC SUSCEPTIBILITY (K) micro cgs units	KOENIGSBERGER RATIO (Q) F = 50000 gamma
1	AC-1	4.2	1400.	.058
2	AC-2	87.	520.	3.3
3	E-1 <i>diomite</i>	3.5	340.	.21

REF. NO.	SAMPLE DESIGNATION	CORE ORIENTATION AZIMUTH INCLINATION degrees degrees	NATURAL REMANENT MAGNETIZATION DECLINATION INCLINATION degrees degrees
1	AC-1	181. 34.	20. 51.
2	AC-2	86. 12.	198. -71.
3	E-1	204. 35.	217. 31.



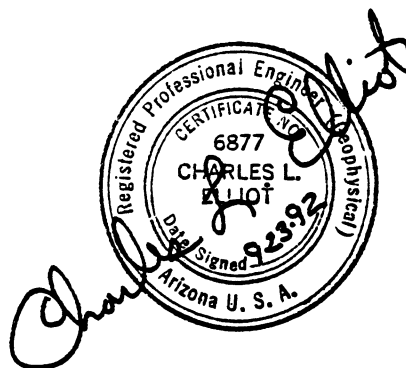
ROCK PHYSICAL PROPERTY LABORATORY DETERMINATIONS

KENNECOTT EXPLORATION COMPANY

23 SEPTEMBER, 1992

REF. BE11P

REF. NO. -----	SAMPLE DESIGNATION -----	WET BULK DENSITY grams/cc -----
1	AC-1	2.70
2	AC-2	2.69
3	E-1	2.81

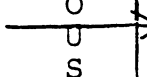


Geology Legend

EXPLANATION

T E R T I A R Y	Qal	Quaternary alluvium
	Tr	Rhyolite dikes
	Tl	Latite dikes
	Ta	Andesite dikes
	Lpqm	Laramide porphyritic quartz monzonite, coarse grained, quartz & feldspar phenocrysts
C R E T A C E O U S	Lqmp	Laramide quartz monzonite porphyry, quartz phenocrysts, fewer orthoclase phenocrysts
	Ldd	Laramide diorite dikes, fine grained
	Lqm	Laramide quartz monzonite, equigranular, fine grain, part of Elephant Head quartz monzonite
	Ljd	Laramide Josephine Canyon fine to coarse grain diorite and quartz diorite
	Lja	Laramide Josephine Canyon amphibolite bodies
P E R M I A N	Kba	Apache Canyon formation (Bisbee Group); red-brown siltstones, sandstones, minor conglomerate and limestone
	Prv	Rainvalley formation; limestone, dolomite, minor sandstone
	Pcn	Concha Limestone, thick bedded, cherty

Add



← Fort Crittenden Formation

Add

→ Triassic

← Mount Wrightson Formation middle member

Add



Quartz veins, veinlets; red = oxide copper, oxidized sulfides and/or sulfides; e = epidote; ek = epidote + K feldspar

Quartz vein zones, hematite, specularite, oxidized pyrite, sericite

Pervasive silicification

Fault, fractures; red = oxide copper

Thrust fault, sawteeth on upper plate

Linus:

9/17

I hurried with this map and haven't had much time to think all of the geology through.

There are a few questions yet.

Is it really Fort Crittenden or is it part of the Apache Canyon?

They are similar in some lithologies.

If it is Fort Crittenden on top of Pen and Pru, what happened to the Apache Canyon.

The multiple thrust faults seem to mesh well at this time.

Also I changed the outcrop of Lgmp to Kba. as in the petrographic report. and after looking at the rocks I guess that I agree that they are reds - but highly altered. much new qtz, etc.

Also on the ridge to the south. another slight change in contact - The contact between Kba and Lgm is mineralized - w/ much qtz, some sericite, calcite and fluorite.

Regards Jim

Fort Crittenden Formation

Kft Rhyolite tuff ~~at~~ in upper unit

Kfur upper red conglomerate; siltstone, volcanic conglomerate

Mount Wrightson Formation

Tillitic { Rwmr middle member; rhyolite flows, welded tuffs
Rwm1 middle member; latite flows, flow breccias.
S3 sandstone

X prospect pits

▣ shaft

40 Flow banding

Jim Walker
P. O. Box 50322
Tucson, AZ 85703

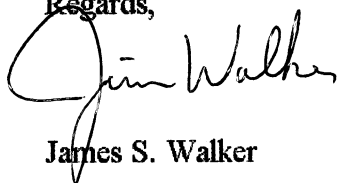
September 14, 1993

Mr. Rock Lefrancois
Cambior Exploration U.S.A., Inc.
230 South Rock Blvd., #23
Reno, NV 89502-2345

Dear Rock:

I would appreciate a notification of final decision on the Gold Coin and Elephanthead properties. I assume there is no further interest but would like to hear it from the horses mouth (or the horses wordprocessor). Thanks for the assay data from Gold Coin. Please send the sample descriptions also and any data you might have generated from Elephanthead. Thanks.

Regards,



James S. Walker

JAMES S. WALKER
Geologist

P.O. Box 50322
Tucson, AZ 85703
(602) 881-0547

1955 W. Grant
Suite 120
Tucson, Az
85745
(602) 882-5578 (office)

REC - CAMBIOR USA

SEP 20 1993

ELEPHANT HEAD PROJECT

**LAND STATUS
SURFACE SAMPLING
SURFACE COPPER OCCURRENCES
EPIDOTE ALTERATION**

James S. Walker

**Tucson, Arizona
May, 1993**

James S. Walker
P.O. Box 50322
Tucson, AZ 85703

5/9/93

Leo Smith
6985 North Oracle
Tucson, AZ 85704

Re: Big Haul Claims/Elephant Head Project

Dear Leo:

Bound here are clarifying illustrations with appendiced back-up data. It's a start at data reduction and interpretation. Sorry some of the data is repeat, but it keeps the package complete and tidy.

Figure 1. A simple location map, no explanation.

Figure 2. Land Status. Essentially taken from the Land and Mineral Titles Plat for Township 20 South, Range 13 East. Lacy (Appendices "A" and "B") notes conveyance of surface to private ownership and this is reflected in the figure. It is unclear what state minerals have been conveyed, if any.

Figure 3. Lode Claims. Superimposed on the private surface/federal minerals. Appendix "C" is the set of reduction copies of all Big Haul claim notices as placed in the DM's and filed with Santa Cruz County and the BLM.

Figure 4. Copper Geochemistry. Assay results from Kennecott, myself, and Lacy have been plotted and contoured. Rock chip from outcrop assays only; no stream sediment or soil samples were used. Clearly the challenged area to the north is highly anomalous. Little or no sampling has occurred in the area of claims Big Haul 14 through 17. Back-up: appendices "D," "E," "F" and Plates 1 and 2.

Figure 5. Cu Ox occurrences. corresponds to samples (appendices "D" and "E") and mapped alteration/mineralization (Wilkins, 92-93; Plate 3). Visible copper oxide over the area in question is extensive. Again, little or no work has been done in the area of claims Big Haul 14 through 17.

Figure 6. Epidote Alteration. Contouring is based on Wilkins work (Plate 3) and from sample descriptions. Note Lacy's mapping (Appendix "G"). This indicator mineral is pervasive and moderately abundant throughout the challenged areas.

Additional data reduction is in progress along with geology (Plan & Sections). I hope you find this illustrative set of practical use. I will be talking to you soon.

Patrick Gibbons
for
James J. Walker

PG/gpa

Enclosure

ELEPHANT HEAD PROJECT

LAND STATUS
SURFACE SAMPLING
SURFACE COPPER OCCURRENCES
EPIDOTE ALTERATION

James S. Walker

Tucson, Arizona
May, 1993

CONTENTS

ILLUSTRATIONS

Figure 1. Elephant Head Project: Location Map

Figure 2. Land Status

Figure 3. Lode Claims

Figure 4. Copper Geochemistry

Figure 5. CuOx Occurrences

Figure 6. Epidote Alteration

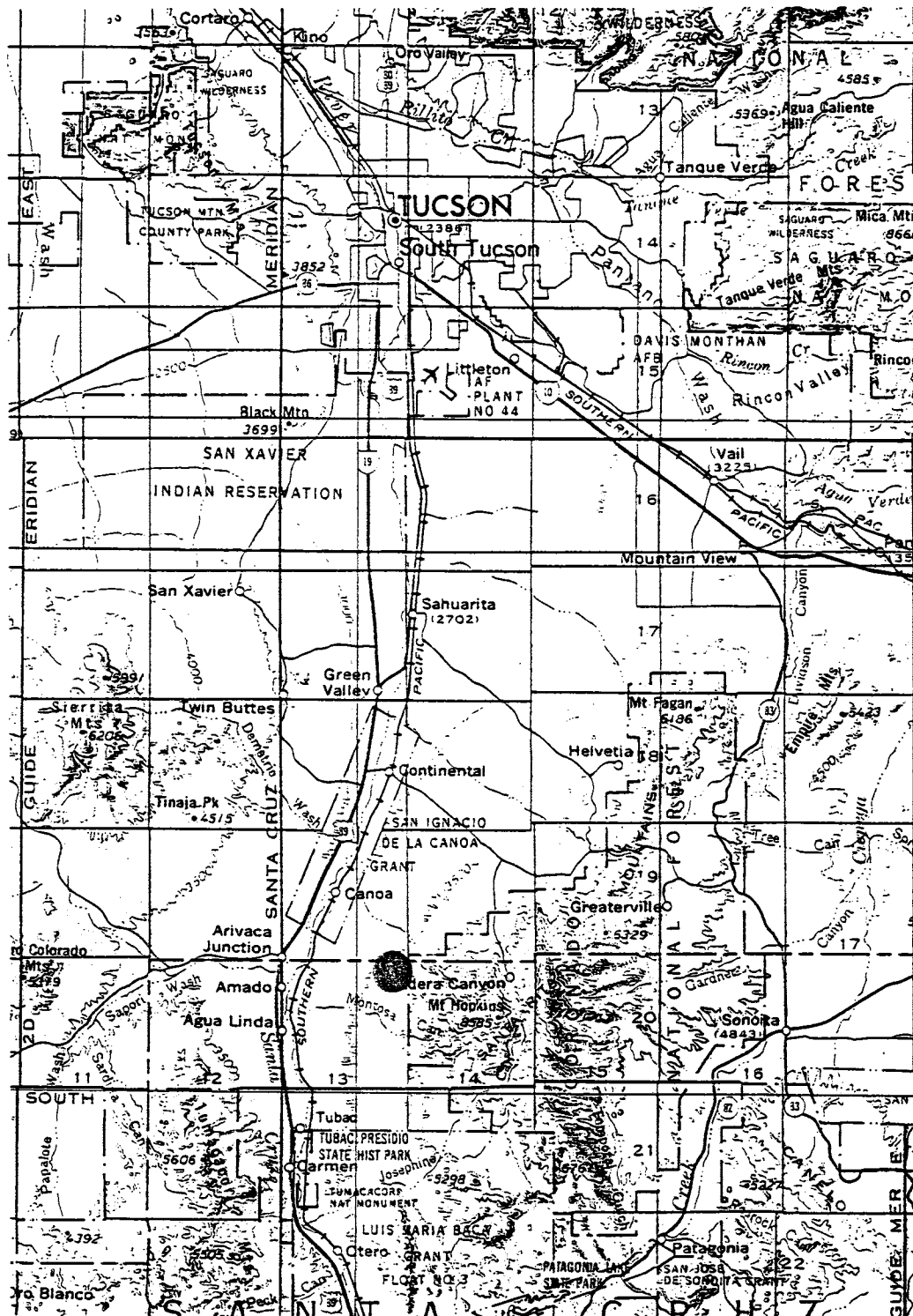
Plate 1. Sample Locations

Plate 2. Copper Geochemistry

Plate 3. Alteration And Fracture Density

APPENDIX

- A. Land Status in Agua Caliente Ranch Study (Lacy, 1993)
- B. 'D': Status Record Data (Lacy, 1993)
- C. Big Haul Claim Notices
- D. Sample Logs
- E. Assay Report (Lacy, 1992)
- F. Copper Geochemical Samples (Lacy, 1992)
- G. Areas of Wallrock Alteration (Lacy, 1993)



ELEPHANT HEAD PROJECT

LOCATION MAP

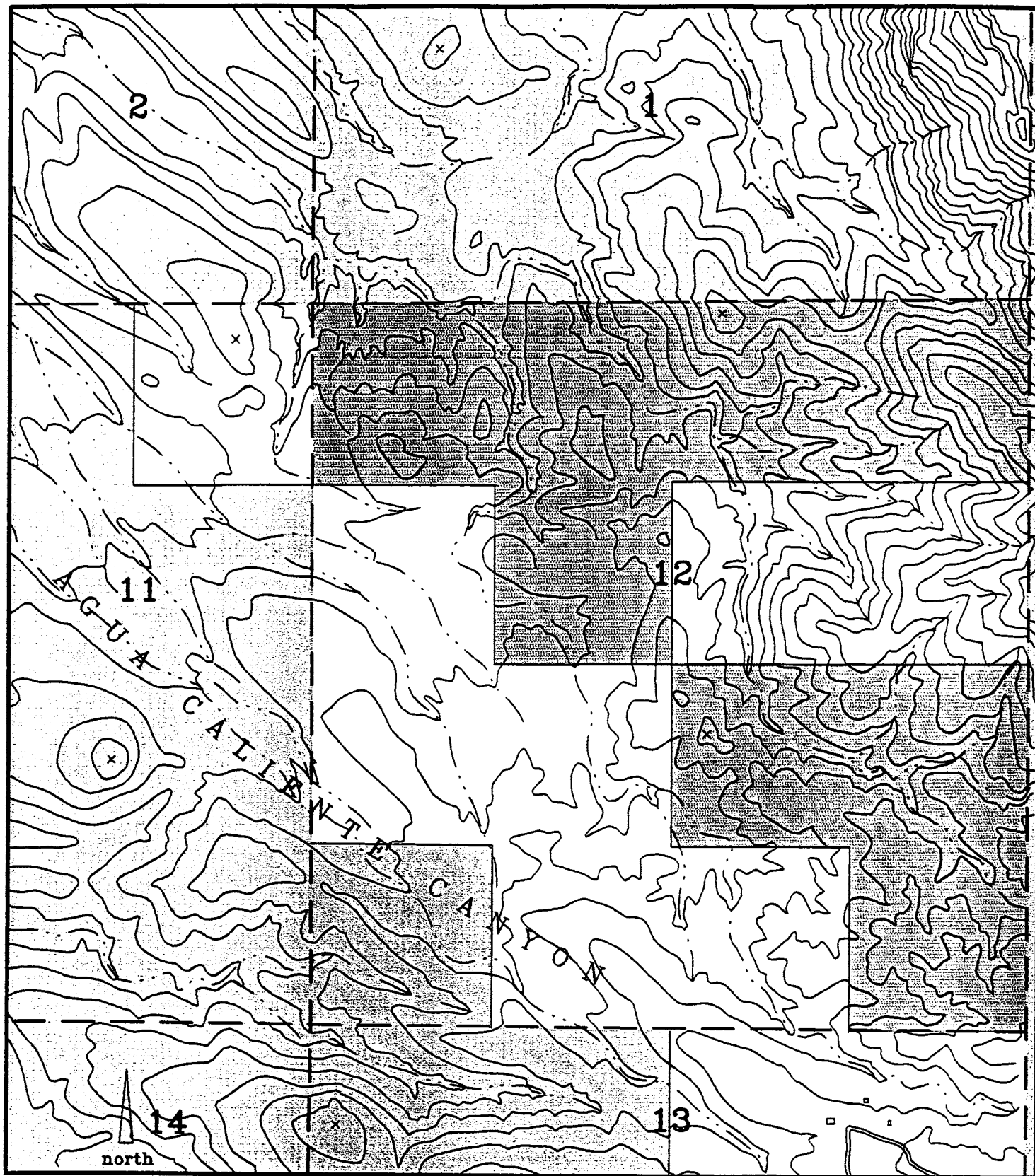
TOWNSHIP 20 SOUTH - RANGE 13 EAST
G & SRPM

James S. Walker

Tucson, Arizona






May, 1993

Figure 1



0 1000
F E E T

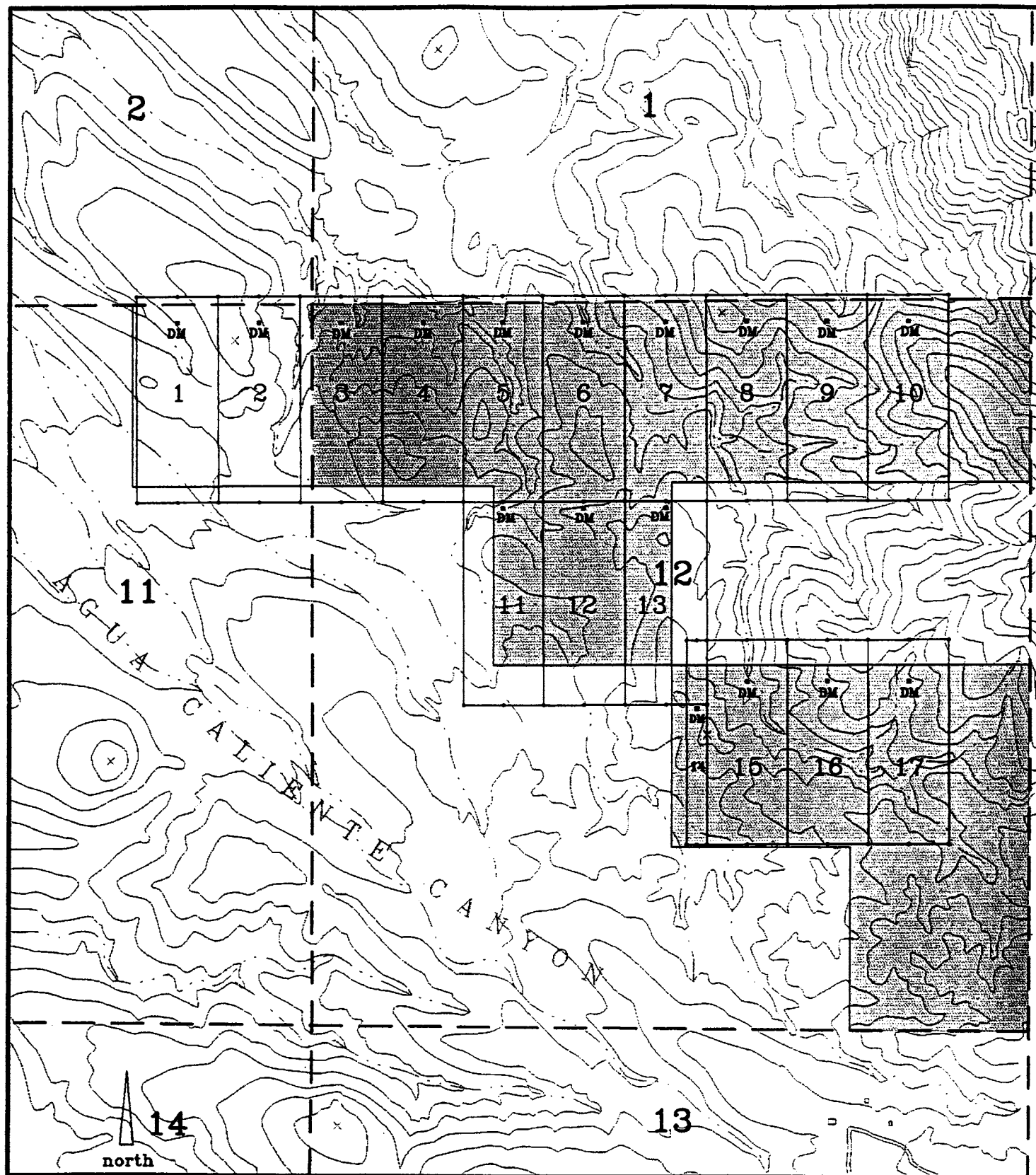
EXPLANATION

-  Private Surface/Federal Minerals
-  Private Surface/Private Minerals
or
Private Surface/State Minerals
-  State Surface/State Minerals
-  State Surface/Federal Minerals
-  Federal Surface/Federal Minerals

ELEPHANT HEAD PROJECT LAND STATUS

R. 13 E., T. 20 S.
Sec. 1, 2, 11, 12, 13, 14
SANTA CRUZ COUNTY, ARIZONA
J. S. Walker
MAY 1993

Figure 2



0 1000
F E E T

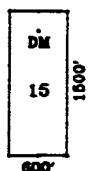
EXPLANATION



Private Surface/Federal Minerals



State Surface/Federal Minerals



Typical Big Haul Lode Claim

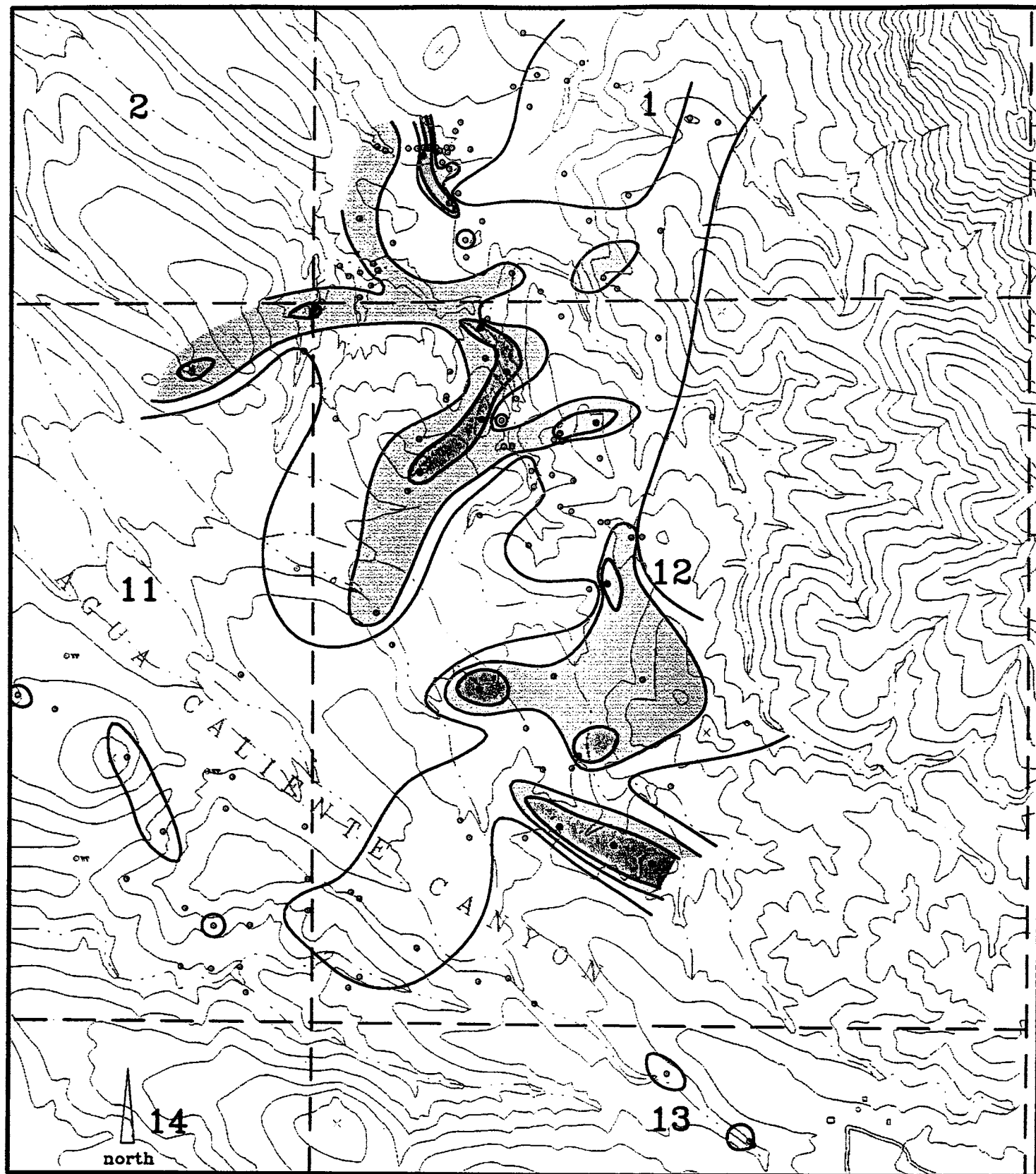
Map locates all located Big Haul
Lode Claims and includes
Big Haul 1 through 17.

ELEPHANT HEAD PROJECT LODE CLAIMS

R. 13 E., T. 20 S.
Sec. 1, 2, 11, 12, 13, 14
SANTA CRUZ COUNTY, ARIZONA

J. S. Walker
MAY 1993

Figure 3

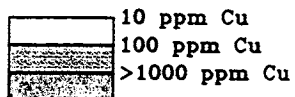


0 1000
F E E T

EXPLANATION

• Rock Chip Sample Location

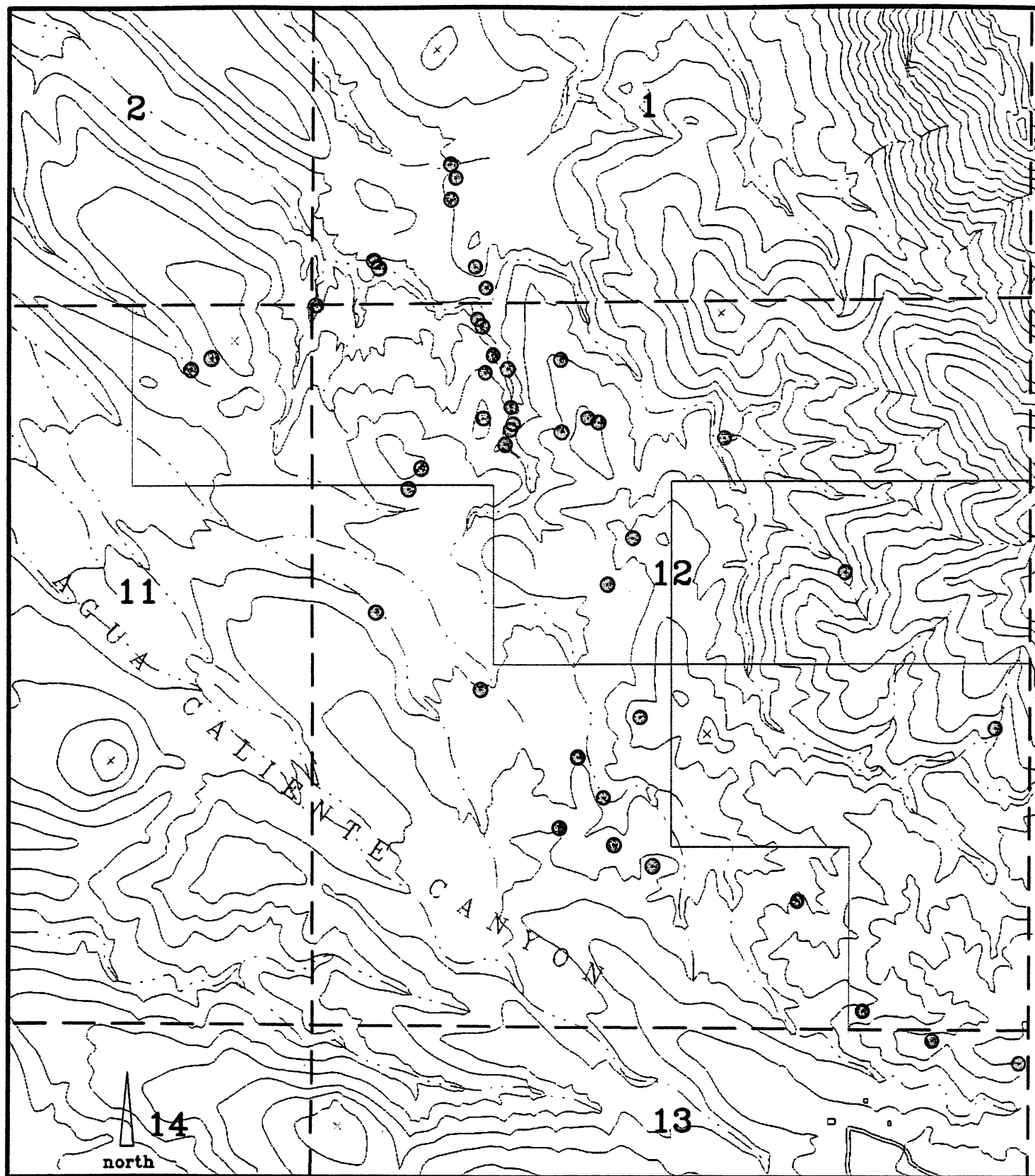
GEOCHEMISTRY



ELEPHANT HEAD PROJECT COPPER GEOCHEMISTRY

R. 13 E., T. 20 S.
Sec. 1, 2, 11, 12, 13, 14
SANTA CRUZ COUNTY, ARIZONA
J. S. Walker
MAY 1993

Figure 4



0 1000
F E E T

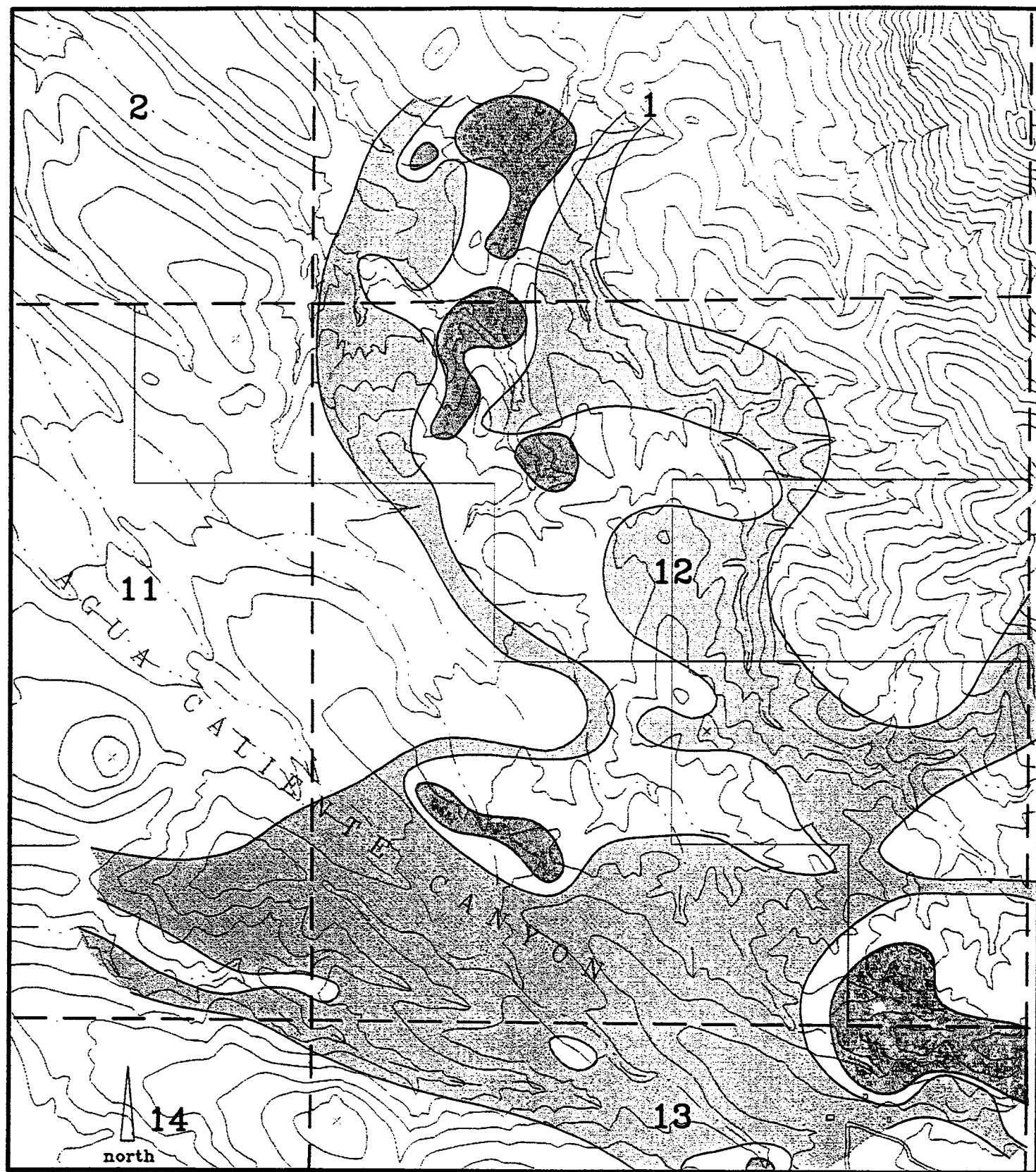
EXPLANATION

● Visible Copper Oxide in Outcrop

ELEPHANT HEAD PROJECT
CuOx OCCURRENCES

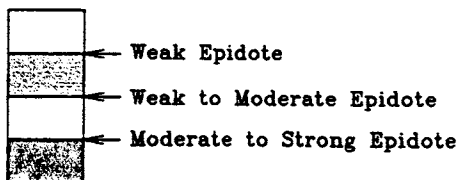
R. 13 E., T. 20 S.
Sec. 1, 2, 11, 12, 13, 14
SANTA CRUZ COUNTY, ARIZONA

J. S. Walker
MAY 1993



0 1000
F E E T

EXPLANATION



ELEPHANT HEAD PROJECT EPIDOTE ALTERATION

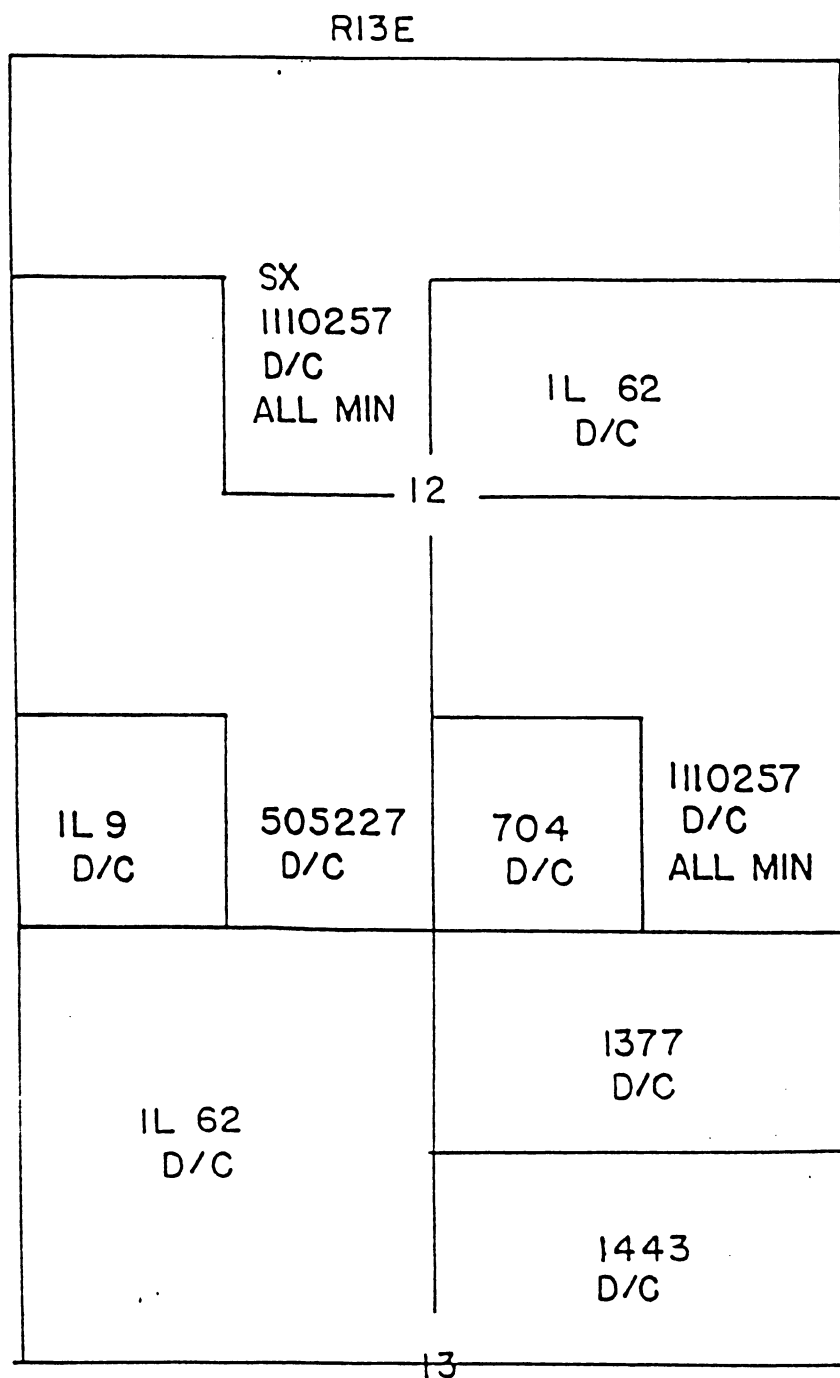
R. 13 E., T. 20 S.
Sec. 1, 2, 11, 12, 13, 14
SANTA CRUZ COUNTY, ARIZONA
J. S. Walker
MAY 1993

Figure 6

APPENDIX

A. Land Status in Agua Caliente Ranch
Study (Lacy, 1993)

Figure 2: Land Status in Agua Caliente Ranch Study Area.

MINERAL OWNERSHIP STATUS

- ☐ Conveyed to private ownership (Wingfield Cattle Co.) by Pat. No. 1110257; minerals reserved to the United States.
- ☐ State patent to Wingfield Cattle Company, "excluding minerals".
- ☐ Conveyed to private ownership (Wingfield Cattle Co.) by Pat. 505227, 704, 1377, & 1433 without mineral reservation.

B. 'D': Status Record Data (Lacy, 1993)

B. INTRODUCTION

At the request of Wingfield Cattle Company a geological examination was made of the Agua Caliente Ranch area to evaluate the mineral potential of lands in Section 12 and the North 1/2 of Section 13, Township 20 South, Range 13 East, G&SRM, Santa Cruz County, Arizona. A total of three days were spent in the field mapping geology and collecting stream alluvium and rock samples for geochemical analysis.

This study includes examination of not only lands for which the mineral rights are reserved by the United States government, but also adjacent lands for which mineral rights are reserved by the State of Arizona and those conveyed to Wingfield Cattle Company.

Conclusions presented within this report are based upon examination of surface geology, a review of available geological and geochemical data, and geochemical sampling of rock and soil. All work was done by Dr. W.C. Lacy (See Appendix B for qualifications).

C. LANDS INVOLVED

A request is submitted by Wingfield Cattle Company for purchase of mineral rights of approximately 320 acres reserved by the United States government in Section 12, Township 20 South, Range 13 East, G&SRM, Santa Cruz County, Arizona. The lands lie approximately 50 miles south of Tucson, Arizona, and 4 miles west of the Mount Hopkins Observatory. (See Figure 1)

D. STATUS RECORD DATA

Patented lands held by Wingfield Cattle Company with mineral rights reserved by the United States government include:

- The North 1/2, Northwest 1/4, Section 12;
- The Southeast 1/4, Northwest 1/4, Section 12;
- The North 1/2, Northeast 1/4, Section 12;
- The North 1/2, Southeast 1/4, Section 12;
- The Southeast 1/4, Southeast 1/4, Section 12, Township 20 South, Range 13 East, Gila and Salt River Meridian.

These lands were conveyed to Wingfield Cattle Company by Patent Number 1110257, with mineral rights reserved to the United States. (See Figure 2.)

Adjacent lands in Section 12 and 13 were granted by patent to Wingfield Cattle Company by the State of Arizona "excluding minerals", and by United States patent No. 505227, 704, 1377 and 1433 without mineral reservation. (See Figure 2.)

Examination of Land Status files of the Bureau of Land Management in Phoenix, Az. reveals no record of presently valid or abandoned mining claims within Sec. 12 and N1/2 Sec. 13, T20S, R13E. However, 5 claims (Santa Cruz 8, 14, 15, 20, 21) were located in the southeast quarter of Section 13 10/15/66 and were abandoned 1/2/85 (BLM File No. 80336).

C. **Big Haul Claim Notices**



INSTRUMENT # 926090
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :
WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 334 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INSTRUMENT # 926090

DOCK 590 PAGE 334

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 1 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 3rd day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the North end of the claim and the location monument
is in the NE 1/4 Section 11, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa Cruz
County, Arizona, and is located in NE 1/4 Sec 11

T20S, R13E, G&SRB&M.
The discovery monument is located approximately 5,400 feet South
and 6300 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

James S. Walker
Locator

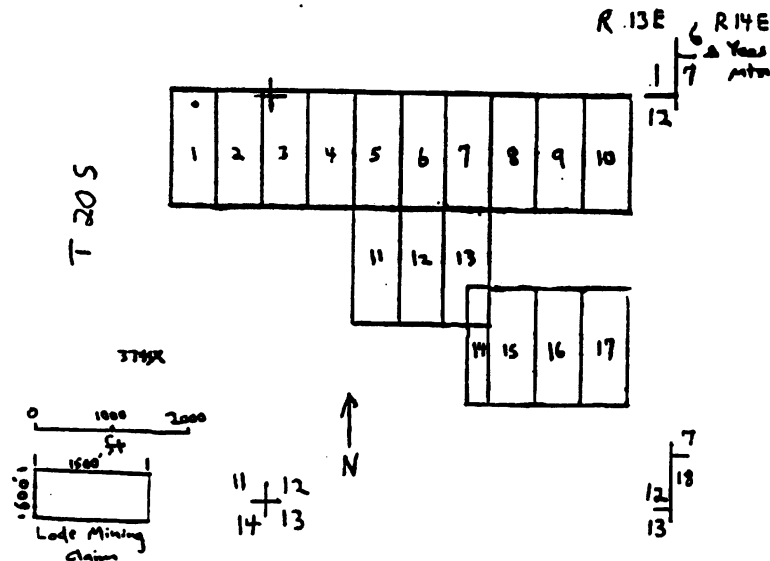
Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
1

LODE CLAIM



Location Date July 3, 1992

Lode Mining Claim

• Discovery Post

Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 6600 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

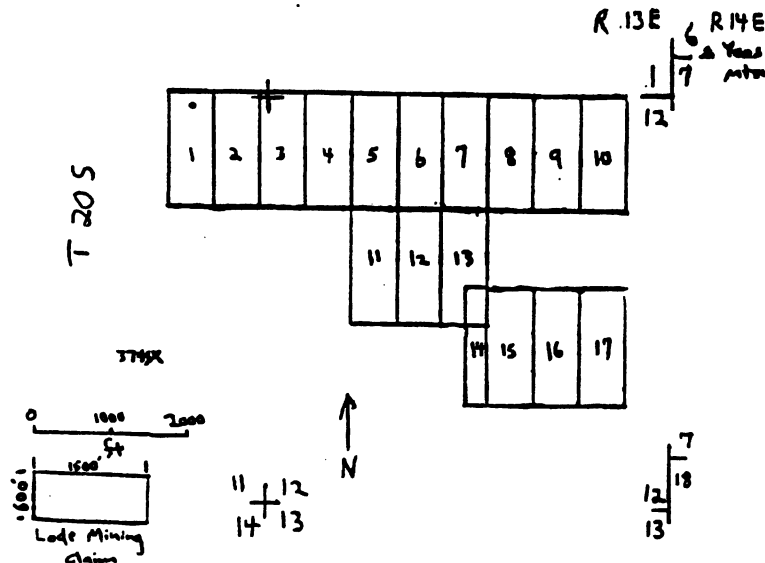
thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
1

LODE CLAIM



Location Date July 3, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 6600 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926091
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 336 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

~~MICROFILMED~~ INDEXED

DOCK 590 PAGE **336**

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 2 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 3rd day of July, 1992

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the North end of the claim and the location monument
is in the NE 1/4 Section 11, Township 20 S, Range 13 E
, G & SRB&M, and is 260 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa Cruz
County, Arizona, and is located in NE 1/4 Sec 11
T 20 S, R 13 E

The discovery monument is located approximately 5,400 feet South
and 5700 feet West of the monumented NE corner of
Section 1, Township 20 S, Range 13 E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

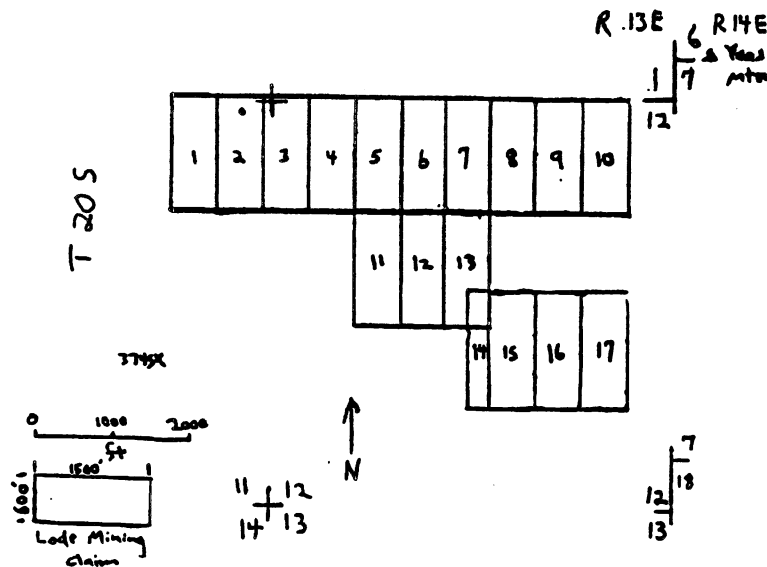
By

James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE *Big Haul*
 #2 LODE CLAIM



Location Date July 3, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

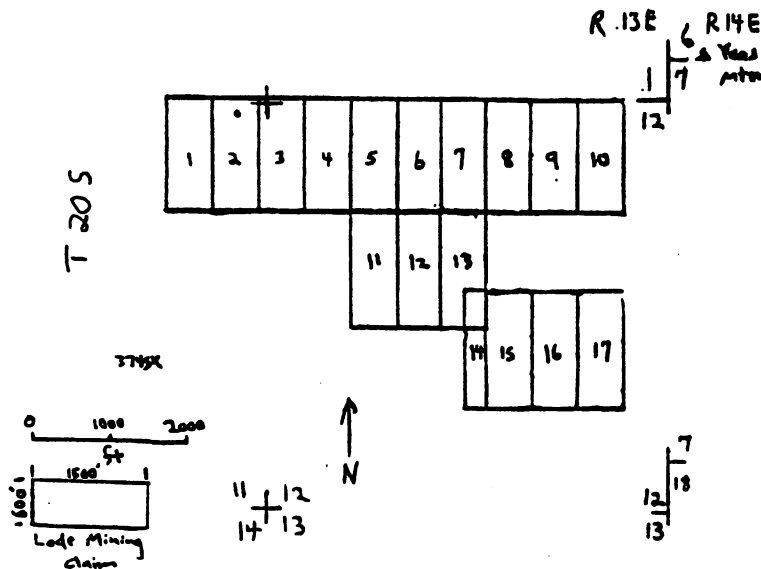
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 6000 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE *Big Haul* LODE CLAIM
 # 2



Location Date July 3, 1892 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 6000 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926092
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 6.00
DOCK 590 PAGE 338 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

INDEXED - RECORDED

DOCK 590 PAGE 338

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 3 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 3rd day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NE 1/4 Sec 11 and
NW 1/4 Sec 12
T 20S R 13E, G&SRB&M.

The discovery monument is located approximately 5,400 feet South
and 5100 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

James S. Walker
Locator

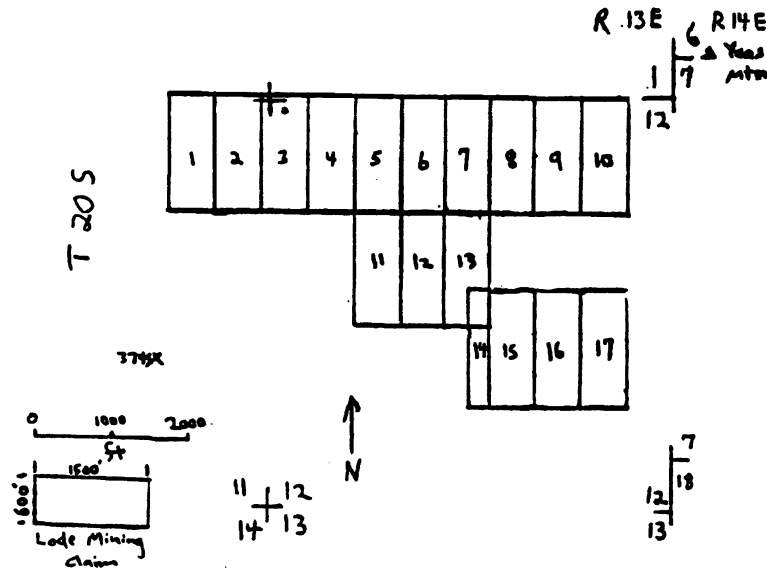
Witnesses:

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE

Big Haul
3

LODE CLAIM



Location Date July 3, 1992

Lode Mining Claim

• Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 5,200 feet South and 5,400 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

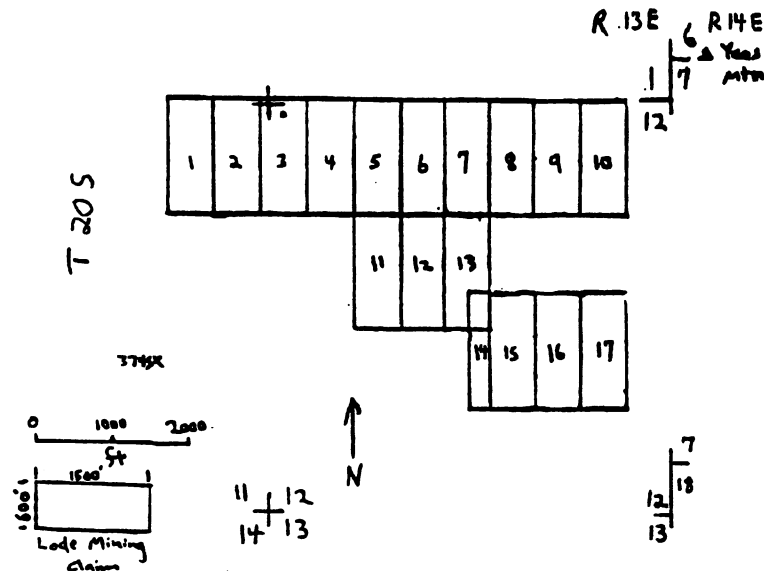
thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
3

LODE CLAIM



Location Date July 3, 1992 Lode Mining Claim • Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 5,400 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926093
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 340 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

THE OFFICIAL

DOCK 590 PAGE 340

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 4 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NW 1/4 Sec 12
T 20S, R 13E

The discovery monument is located approximately 5,400 South
and 4,500 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

James S. Walker
Locator

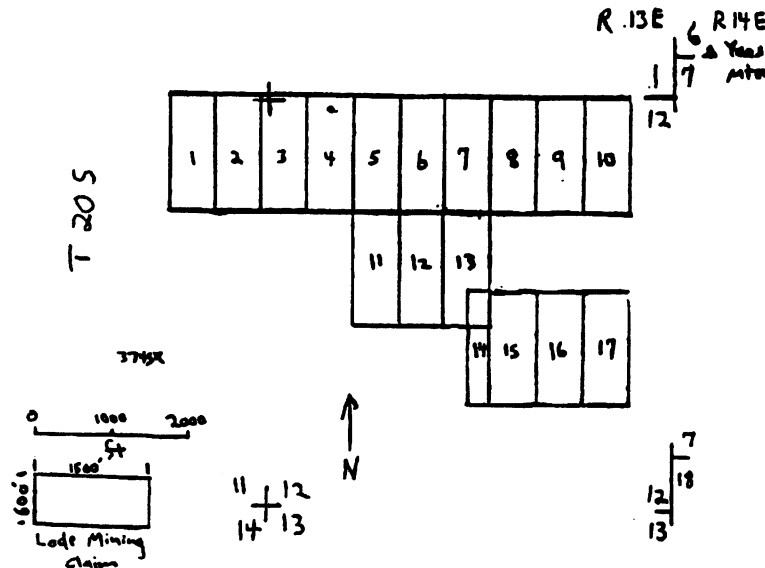
Witnesses:

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE

Big Haul
#4

LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

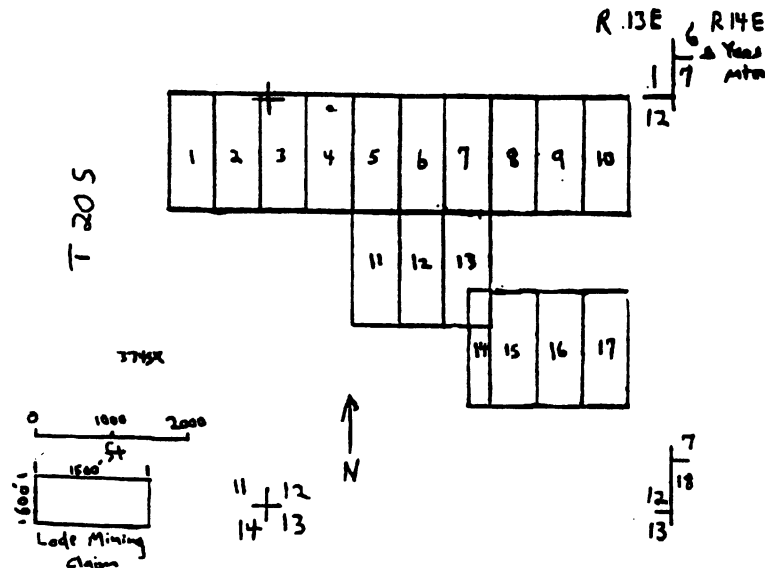
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 5,200 feet South and 4,800 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE *Big Haul*
#4 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 5,200 feet South and 4,800 feet West from the NE
corner of Section 1, Township 20 S, Range 13 E, G&SRB&M.
thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

INSTRUMENT # 926094
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :
WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 342 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

RECORDED
MICROFILMED
DOCK 590 PAGE 342

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 5 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in the NW 1/4 Sec 12
T 20S, R 13E, G&SRB&M.

The discovery monument is located approximately 5400 feet South
and 3,900 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By James S. Walker
Locator

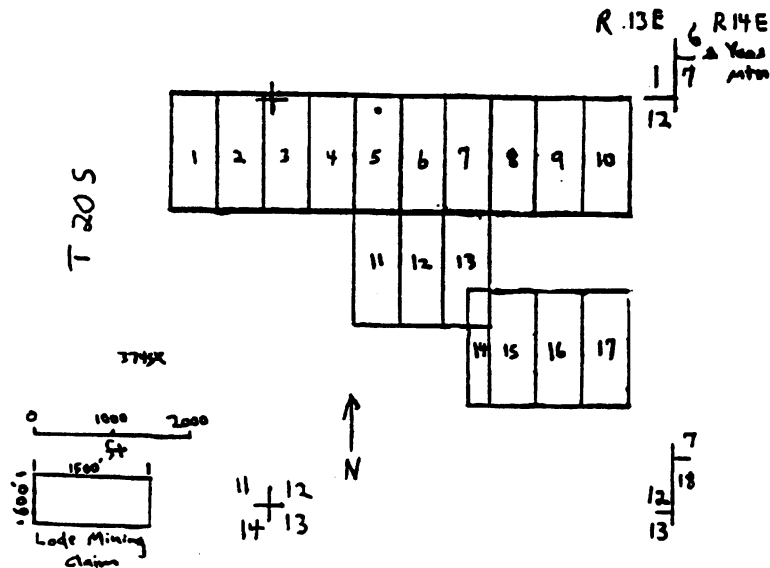
Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
#5

LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 4,200 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

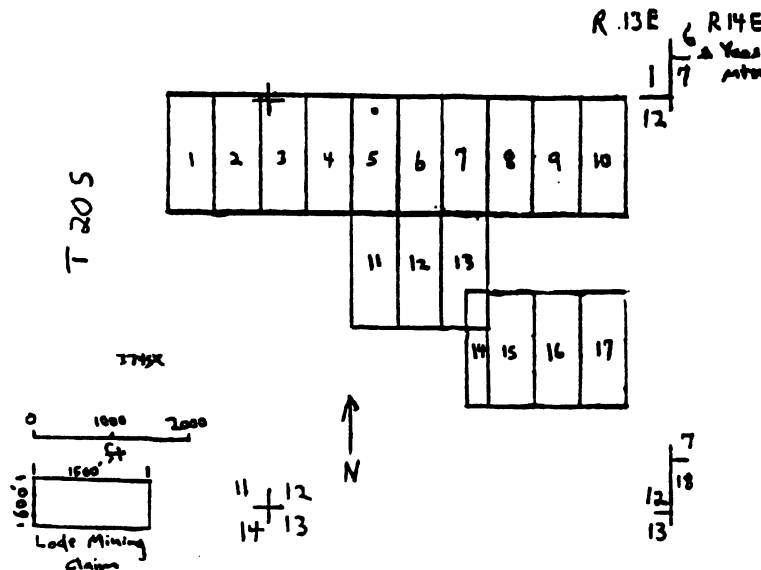
thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
#5

LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 4,200 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926095
 OFFICIAL RECORDS OF
 SANTA CRUZ COUNTY
 MARY LOU G. SAINZ
 COUNTY RECORDER
 REQUEST OF :
 WALKER, JAMES S.
 DATE: 07/30/92 TIME: 10.20
 FEE: 8.00
 DOCK 590 PAGE 344 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

RECORDED

DOCK 590 PAGE 344

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 6 lode
 mining claim has been located by James S. Walker
 whose address is P.O. Box 50322 Tucson, Arizona 85703, on
 the 26 day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
 claim and 600 feet wide. This notice is posted on the location
 monument at the N end of the claim and the location monument
 is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
 feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa Cruz
County, Arizona, and is located in the NW 1/4 Sec
12, T 20S, R 13E

The discovery monument is located approximately 500 feet South
 and 3,300 feet West of the monumented NE corner of
 Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
 the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
 177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

James S. Walker
 Locator

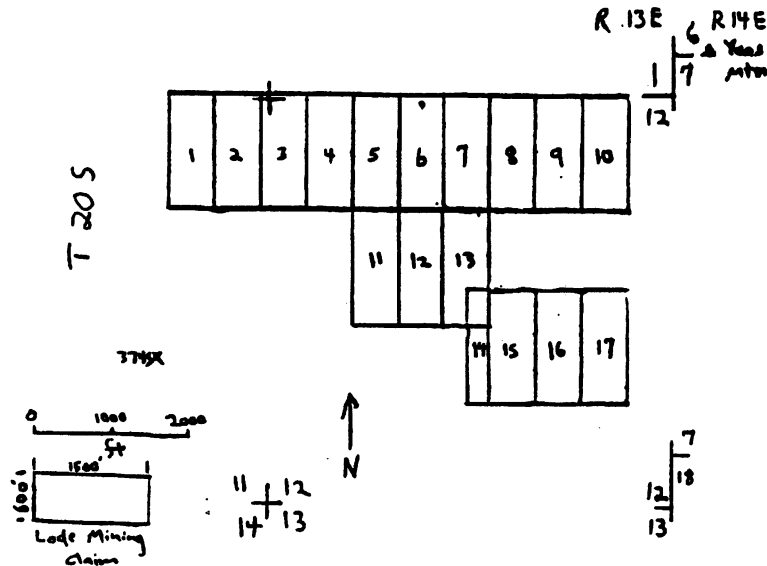
Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

Big Haul
#6

LODE CLAIM



Location Date July, 26 1992 Lode Mining Claim • Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

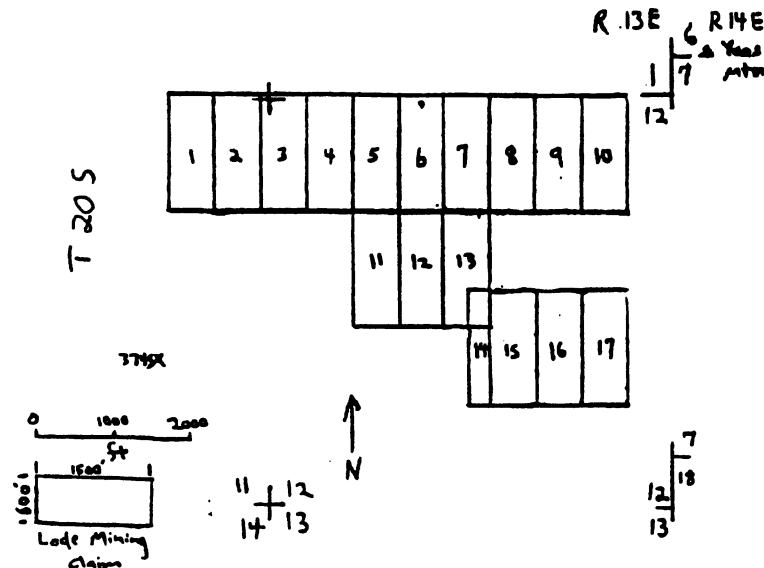
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 3,600 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE *Big Haul* LODE CLAIM
6



Location Date July, 26 1992 Lode Mining Claim • Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 5,200 feet South and 3,600 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.



INSTRUMENT # 926096
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 346 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

INDEXED
DOCK 590 PAGE 346

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 7 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50312 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S Range 13E
G & SRB&M, and is 200 feet from the North end and 1900 feet
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NW 1/4 sec 12,
NE 1/4 Sec 12, T 20S, R 13E

The discovery monument is located approximately 5,400 feet South
and 2,700 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

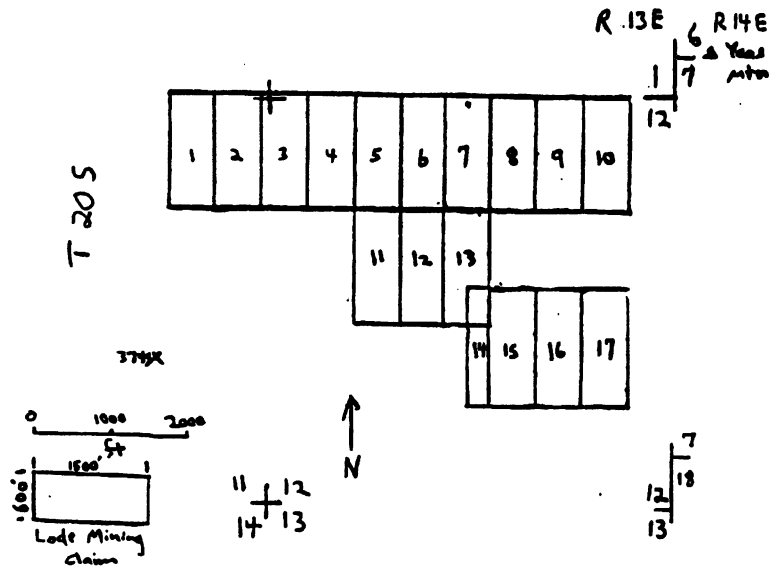
By

James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul #7 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

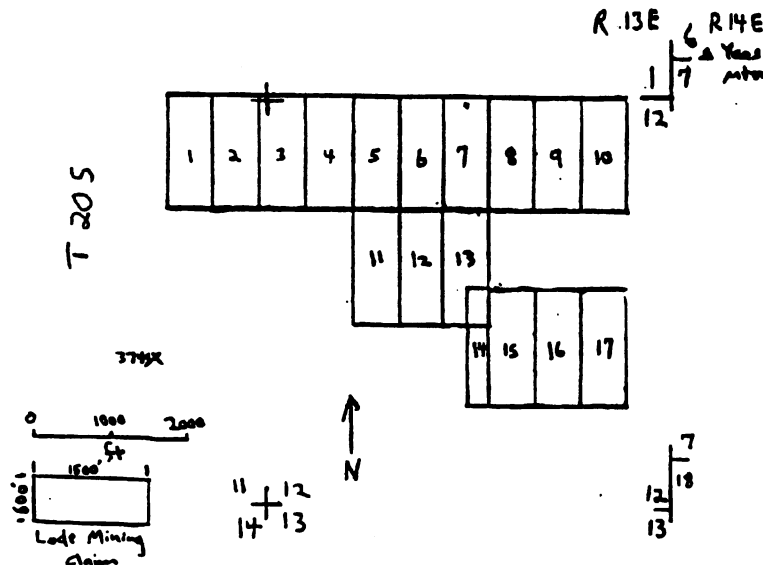
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner, which is located 5,200 feet South and 3,000 feet West from the NE corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul #7 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post

Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 3,000 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926097
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 348 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

INDEXED MICROFILMED

DOCK 590 PAGE 348

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 8 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NE 1/4 Section 12, Township 20 S, Range 13 E
G & SRB&M, and is 200 feet from the N end and 1900
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa Cruz
County, Arizona, and is located in NE 1/4 Sec 12

T 20 S, R 13 E, G & SRB&M.
The discovery monument is located approximately 5,800 feet South
and 2,100 feet West of the monumented NE corner of
Section 1, Township 20 S, Range 13 E, G & SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

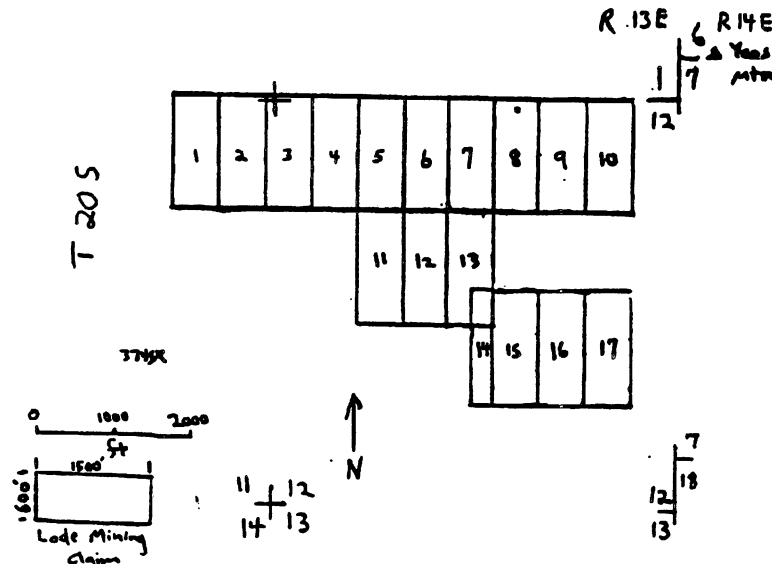
By

James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S / R 13E

PLAT OF THE Big Haul #8 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

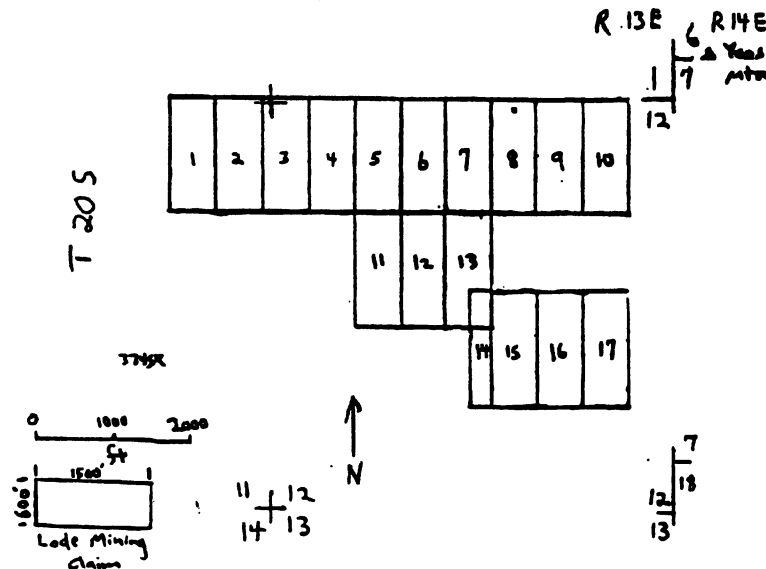
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 2,400 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S / R 13E

PLAT OF THE Big Haul #8 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5,200 feet South and 2,400 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the SE end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926098
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 350 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

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DOCK 590 PAGE 350

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 9 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NE 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 200 feet from the North end and 1300
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NE 1/4 Sec 12
T 20S, R 13E

The discovery monument is located approximately 500 feet South
and 1,500 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

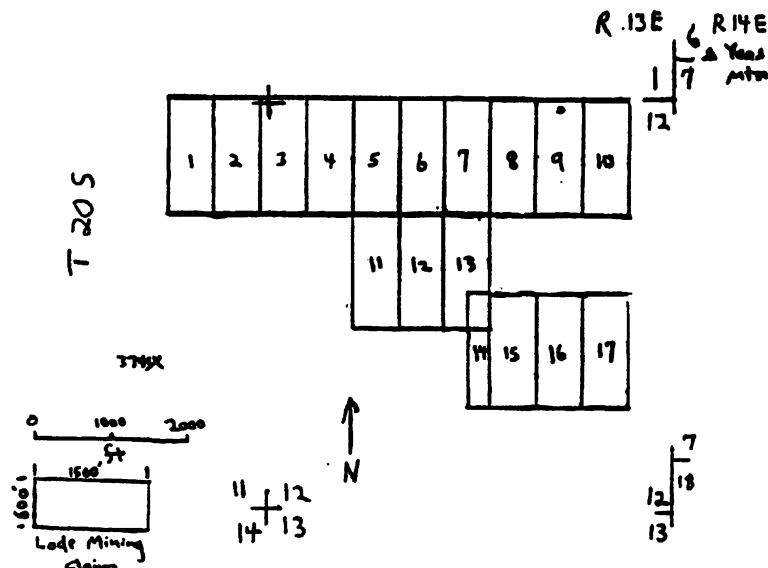
DATED AND POSTED on the ground the day and year written above.

By James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul #9 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim . Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

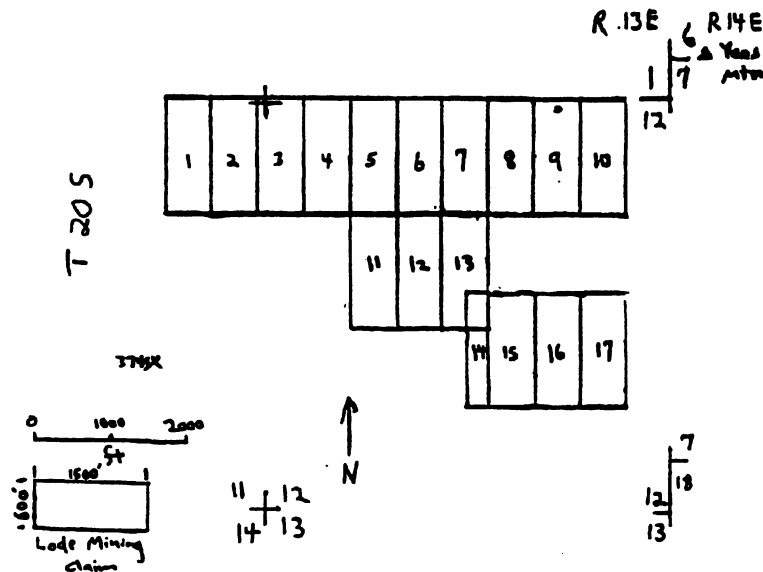
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5200 feet South and 1,800 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul #9 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim . Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 5200 feet South and 1800 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926099
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 352 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

DOCK 590 PAGE 352

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 10 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NE 1/4 Section 12, Township 20 S, Range 13 E,
G & SRB&M, and is 200 feet from the North end and 1900
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NE 1/4 Sec 12
20 S, R 13 E

The discovery monument is located approximately 5400 feet South
and 900 feet West of the monumented NE corner of
Section 1, Township 20 S, Range 13 E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

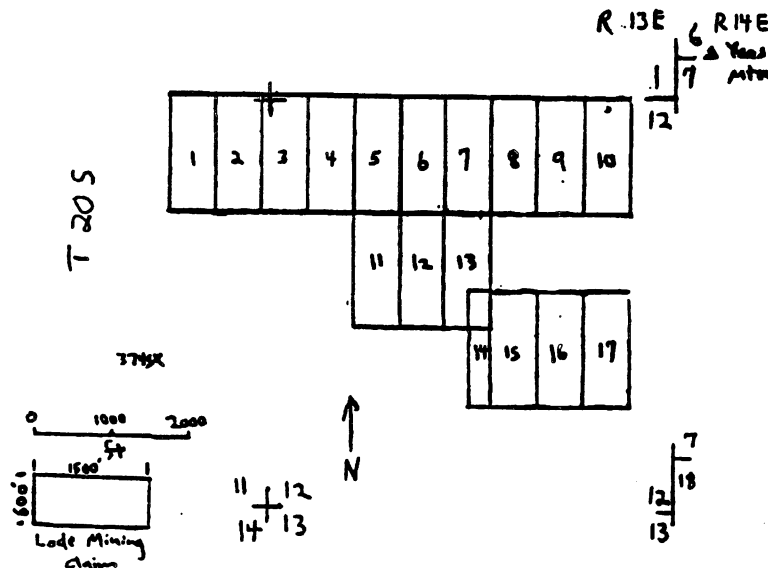
DATED AND POSTED on the ground the day and year written above.

By James S. Walker
Locator

Witnesses:

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE Big Haul # 10 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

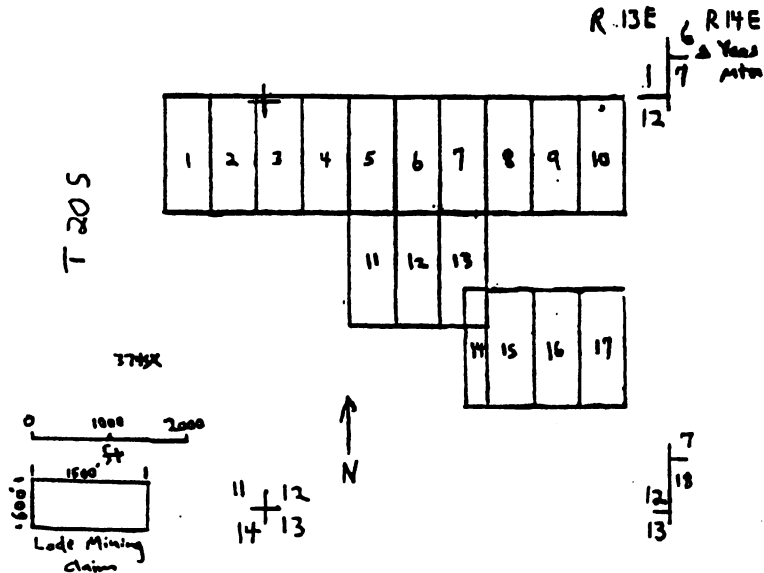
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 5,200 feet South and 1,200 feet West from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

Big Haul Claims
Santa Cruz Co., Arizona
T 205/R 13 E

PLAT OF THE Big Haul # 10 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner, which is located 5,200 feet South and 1,200 feet West from the NE corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the ^{SW} corner;
thence 300' East to a 2X2 post, the ^S end center;
thence 300' East to corner 3 a 2X2 post, the ^{SE} corner;
thence 1500' North to corner 4 a 2X2 post, the ^{NE} corner;
thence 300' West to a 2X2 post, the ^N end center;
thence 300' West to corner 1 a 2X2 post, the ^{NW} corner;
the point of beginning.



INSTRUMENT # 926100
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 354 PAGES: 2

NOTICE OF MINING LOCATION
LODE CLAIM

INDEXED 204071256

DOCK 590 PAGE 354

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Hawk No. 11 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the N end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 50 feet from the North end and 1450
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa Cruz
County, Arizona, and is located in NW 1/4 Sec 12
T 20S, R 13E

G&SRB&M.
The discovery monument is located approximately 6750 Feet South
and 3,900 feet West of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

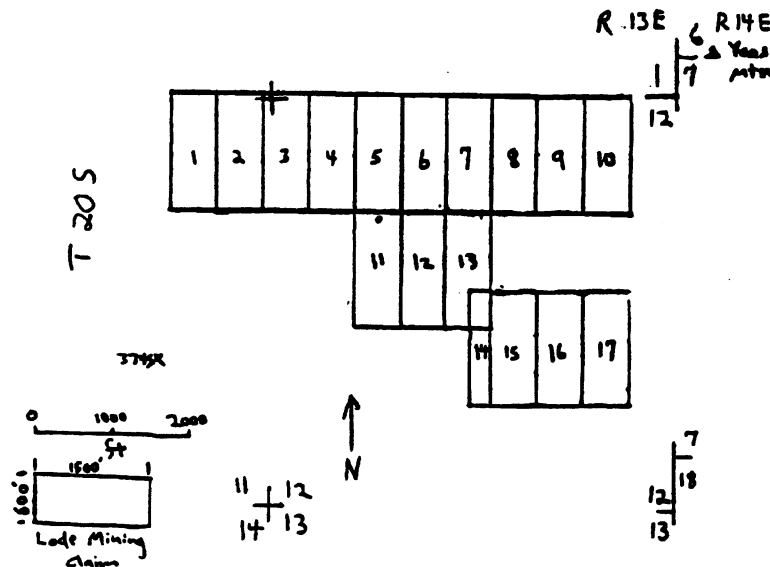
By

James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul # 11/LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

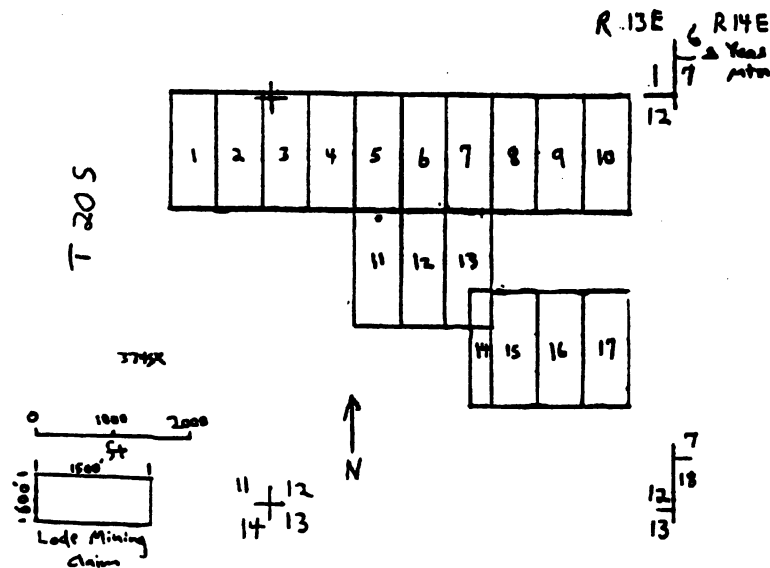
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 6700 feet South and 4,200 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul # 11 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim • Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 6700 feet South and 4,200 feet West from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.

INSTRUMENT # 926101
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :
WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 356 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED
DOCK 590 PAGE 356

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 12 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the North end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
, G & SRB&M, and is 50 feet from the North end and 1450
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NW 1/4, Sec 12
T 20S, R 13E

The discovery monument is located approximately 6,750 feet south
and 3,300 feet west of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

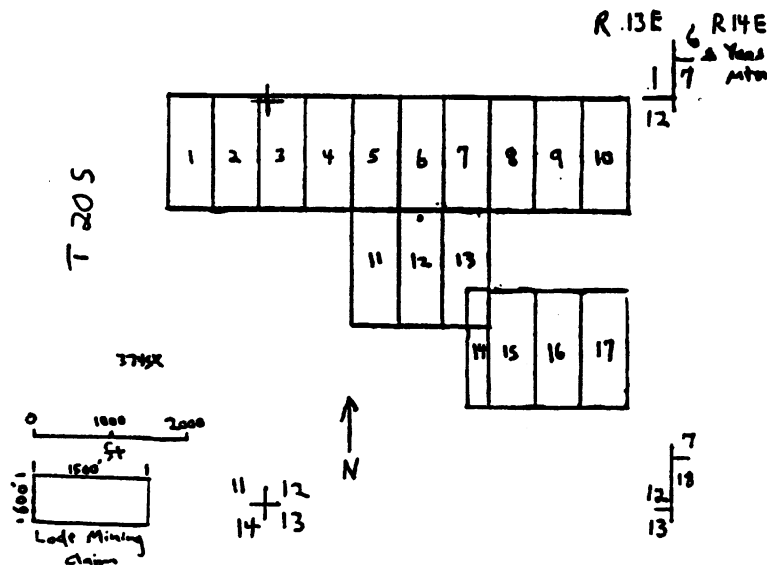
DATED AND POSTED on the ground the day and year written above.

By James S. Walker
Locator

Witnesses:

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE Big Haul #12 LODE CLAIM



Location Date July 26, 1992

Lode Mining Claim

•Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

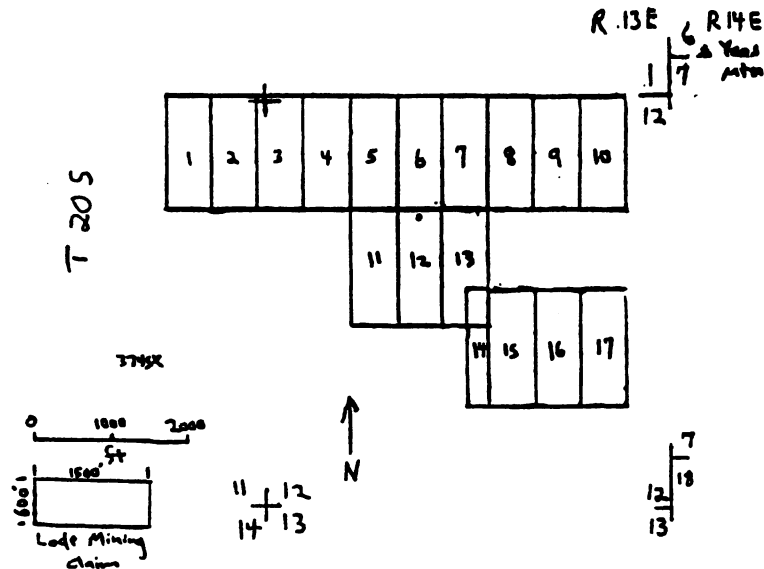
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 6,700 feet south and 3,600 feet west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE Big Haul #12 LODE CLAIM



Location Date July 26, 1992

Lode Mining Claim

•Discovery Post

Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 6,700 feet south and 3,600 feet west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926102
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.

DATE: 07/30/92 TIME: 10.20

FEE: 8.00

DOCK 590 PAGE 358 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

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DOCK 590 PAGE 358

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 13 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the North end of the claim and the location monument
is in the NW 1/4 Section 12, Township 20S, Range 13E
G & SRB&M, and is 50 feet from the North end and 1450
feet from the South end of this claim.

The general course of this claim is from N to S.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in NW 1/4, sec 12
T20S, R 13E

The discovery monument is located approximately 6,750 feet south
and 2,700 feet west of the monumented NE corner of
Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

James S. Walker
Locator

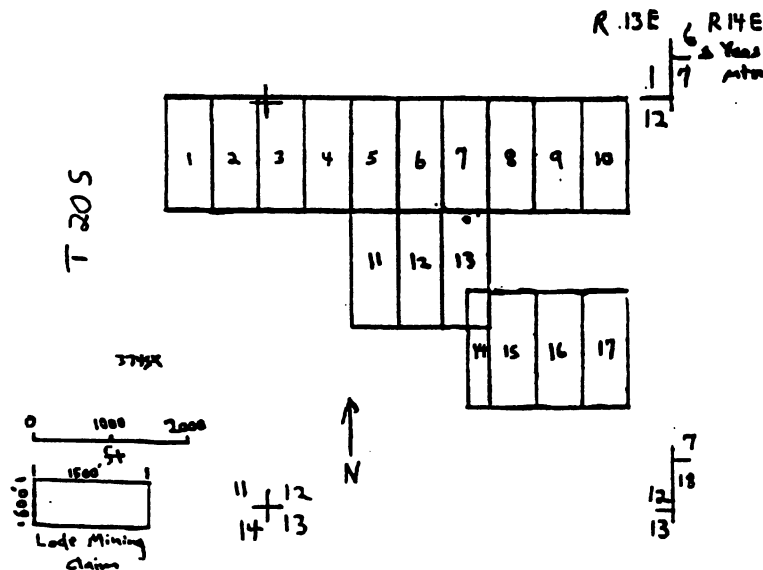
Witnesses:

[illegible]

thence 1500' South to corner 2 a 2X2 post, the SW corner;
thence 300' East to a 2X2 post, the S end center;
thence 300' East to corner 3 a 2X2 post, the SE corner;
thence 1500' North to corner 4 a 2X2 post, the NE corner;
thence 300' West to a 2X2 post, the N end center;
thence 300' West to corner 1 a 2X2 post, the NW corner;
the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S / R 13E

PLAT OF THE Big Haul # 13 LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim •Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 6,700 feet south and 3,000 feet west from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the SW corner;
 thence 300' East to a 2X2 post, the S end center;
 thence 300' East to corner 3 a 2X2 post, the SE corner;
 thence 1500' North to corner 4 a 2X2 post, the NE corner;
 thence 300' West to a 2X2 post, the N end center;
 thence 300' West to corner 1 a 2X2 post, the NW corner;
 the point of beginning.



INSTRUMENT # 926103
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 360 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

DOCK 590 PAGE 360

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 14 lode mining claim has been located by James S. Walker whose address is P.O. Box 50322 Tucson, Arizona 85703, on the 26th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the claim and 500 feet wide. This notice is posted on the location monument at the N end of the claim and the location monument is in the SE $\frac{1}{4}$ Section 12, Township 20S, Range 13E, G & SRB&M, and is 500 feet from the North end and 1000 feet from the South end of this claim.

The general course of this claim is from South to N.

This claim is located in the Unknown Mining District, Santa Cruz County, Arizona, and is located in the SE $\frac{1}{4}$ Sec 12, T 20 S, R 13 E.

The discovery monument is located approximately 8230 feet south and 2600 feet west of the monumented NE corner of Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter 177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

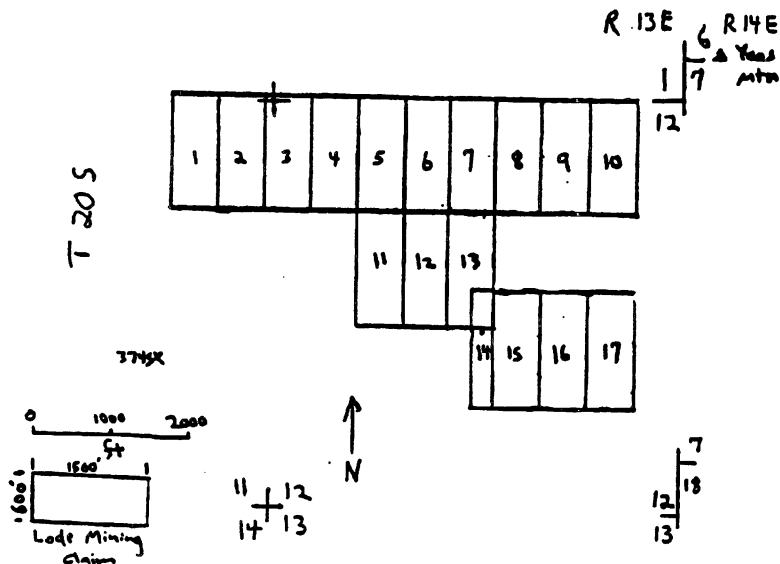
James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim •Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 2750' west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

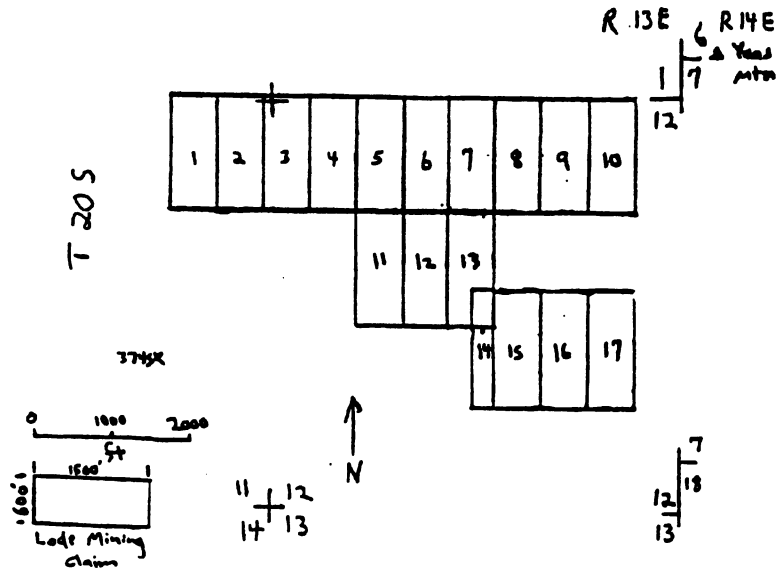
thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;

the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 26, 1992 Lode Mining Claim •Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 2750' west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;
 the point of beginning.

INSTRUMENT # 926104
 OFFICIAL RECORDS OF
 SANTA CRUZ COUNTY
 MARY LOU G. SAINZ
 COUNTY RECORDER
 REQUEST OF :
 WALKER, JAMES S.
 DATE: 07/30/92 TIME: 10.20
 FEE: \$ 8.00
 DOCK 590 PAGE 362 PAGES: 2

NOTICE OF MINING LOCATION
 LODE CLAIM

INDEXED
 DOCK 590 PAGE 362

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 15 lode
 mining claim has been located by James S. Walker
 whose address is P.O. Box 50322 Tucson, Arizona 85703, on
 the 25th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
 claim and 600 feet wide. This notice is posted on the location
 monument at the North end of the claim and the location monument
 is in the SE $\frac{1}{4}$ Section 12, Township 20S, Range 13E
G & SRB&M, and is 300 feet from the North end and 1,200
 feet from the South end of this claim.

The general course of this claim is from South to North.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in SE $\frac{1}{4}$, Section 12,
T 20S, R 13E

The discovery monument is located approximately 8030 feet south
 and 2150 feet west of the monumented NE corner of
 Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and
 the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
 177, Laws of 1978).

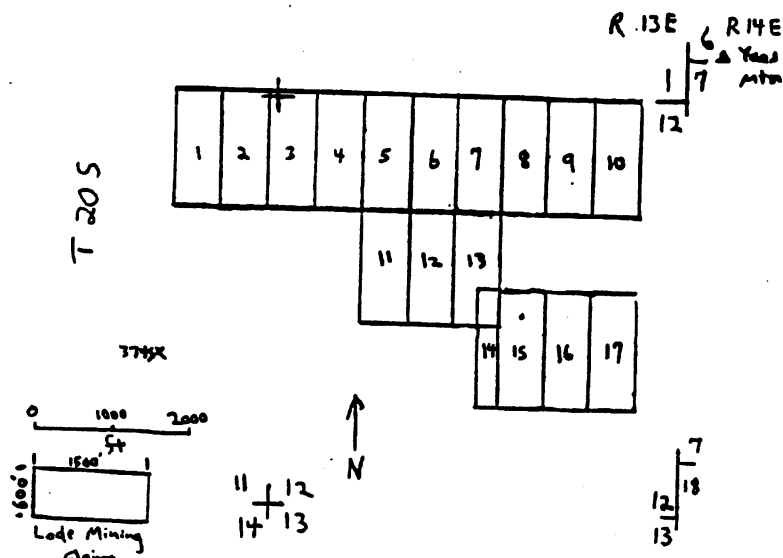
DATED AND POSTED on the ground the day and year written above.

By James S. Walker
 Locator

Witnesses:

Big Haul Claims
Santa Cruz Co., Arizona
T 205/R 13 E

LODE CLAIM



Location Date July 25, 1992

Lode Mining Claim

- **Discovery Post**

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ 85703

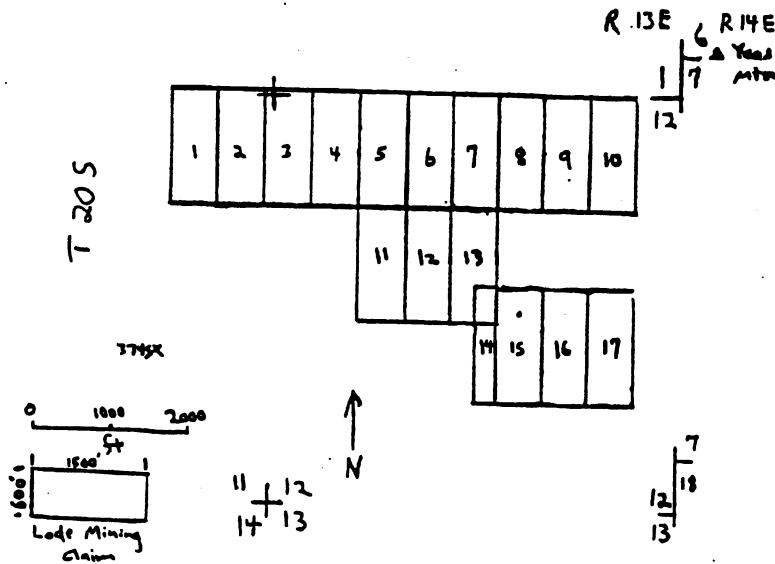
85703
The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
which is located 7730 feet south and 2450 feet west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
thence 300' East to a 2X2 post, the end center;
thence 300' East to corner 3 a 2X2 post, the corner;
thence 1500' North to corner 4 a 2X2 post, the corner;
thence 300' West to a 2X2 post, the end center;
thence 300' West to corner 1 a 2X2 post, the corner;
the point of beginning.

Big Haul Claims
Santa Cruz Co., Arizona
T 20S/R 13E

PLAT OF THE LODE CLAIM



Location Date July 25, 1992

Lode Mining Claim

Discovery Post

Locator: James S. Walker
P.O. Box 50322
Tucson, AZ
85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner, which is located 7730 feet south and 2450 feet west from the NE corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
thence 300' East to a 2X2 post, the end center;
thence 300' East to corner 3 a 2X2 post, the corner;
thence 1500' North to corner 4 a 2X2 post, the corner;
thence 300' West to a 2X2 post, the end center;
thence 300' West to corner 1 a 2X2 post, the corner;
the point of beginning.



INSTRUMENT # 926105
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 364 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED MICROFILMS

DOCK 590 PAGE 364

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 16 lode
mining claim has been located by James S. Walker
whose address is P.O. Box 50322 Tucson, Arizona 85703, on
the 25th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the
claim and 600 feet wide. This notice is posted on the location
monument at the North end of the claim and the location monument
is in the SE 1/4 Section 12, Township 20S, Range 13E
, G & SRB&M, and is 300 feet from the North end and 1200
feet from the South end of this claim.

The general course of this claim is from South to North.

This claim is located in the Unknown Mining District, Santa
Cruz County, Arizona, and is located in SE 1/4 section 12,
T 20S, R 13E

G & SRB&M.
The discovery monument is located approximately 9030 feet south
and 1,550 feet west of the monumented NE corner of
Section 1, Township 20S, Range 13E, G & SRB&M.

All done in accordance with the laws of the United States and
the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter
177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

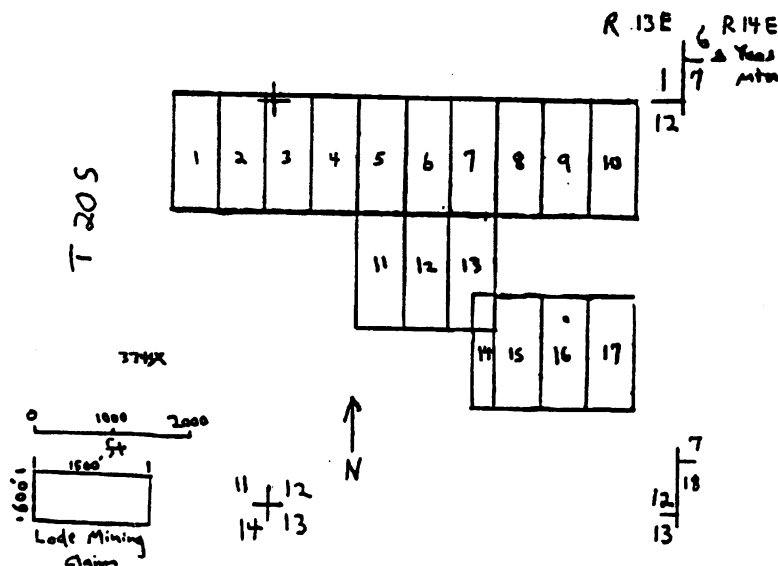
James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 25, 1992 Lode Mining Claim -Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

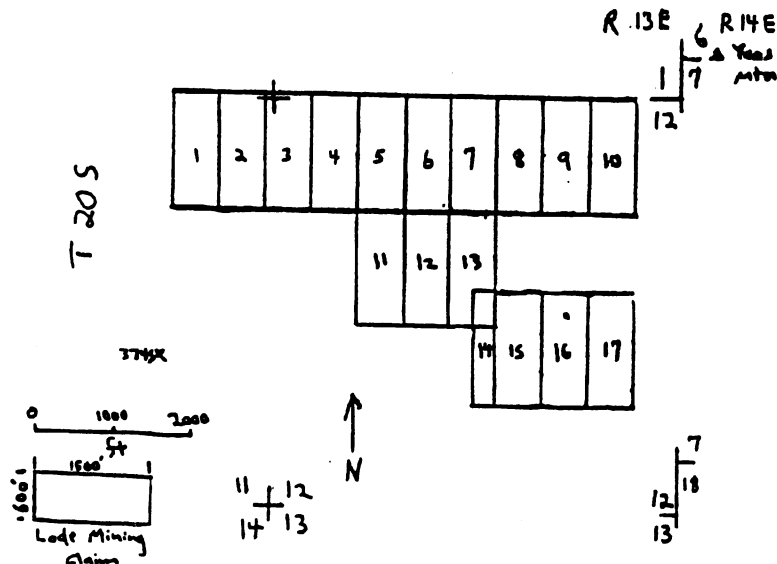
BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 1850 feet west from the NE
corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 25, 1992 Lode Mining Claim -Discovery Post
 Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 1850 feet west from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.
 thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;
 the point of beginning.



INSTRUMENT # 926106
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :

WALKER, JAMES S.
DATE: 07/30/92 TIME: 10.20
FEE: 8.00
DOCK 590 PAGE 366 PAGES: 2

NOTICE OF MINING LOCATION

LODE CLAIM

INDEXED

DOCK 590 PAGE 366

TO ALL WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Big Haul No. 17 lode mining claim has been located by James S. Walker whose address is P.O. Box 50322 Tucson, Arizona 85703, on the 25th day of July, 1992.

This claim is 1500 feet long measured along the centerline of the claim and 600 feet wide. This notice is posted on the location monument at the North end of the claim and the location monument is in the SE 1/4 Section 12, Township 20S, Range 13E, G & SRB&M, and is 300 feet from the North end and 1200 feet from the South end of this claim.

The general course of this claim is from South to North.

This claim is located in the Unknown Mining District, Santa Cruz County, Arizona, and is located in SE 1/4, Sec 12, T 20S, R 13E.

The discovery monument is located approximately 8030 feet south and 950 feet west of the monumented NE corner of Section 1, Township 20S, Range 13E, G&SRB&M.

All done in accordance with the laws of the United States and the laws of Arizona (Section 27-202, A.R.S., and amended by Chapter 177, Laws of 1978).

DATED AND POSTED on the ground the day and year written above.

By

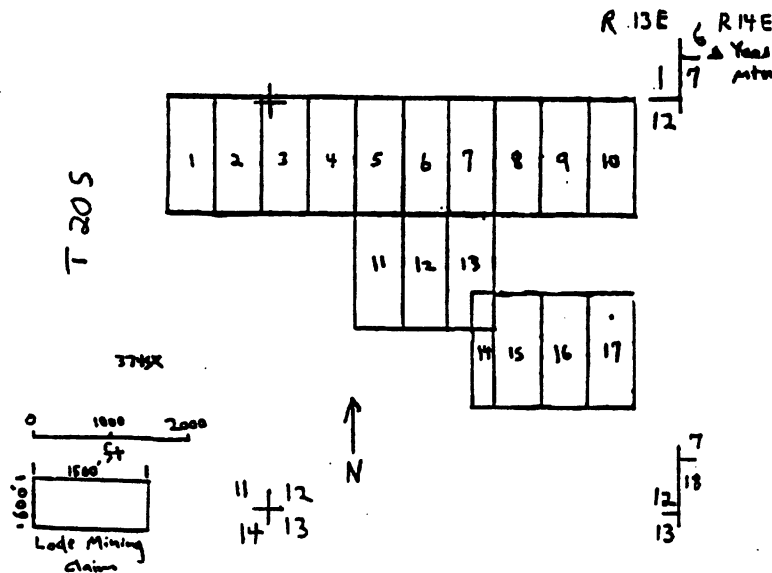
James S. Walker
Locator

Witnesses:

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 25, 1992 Lode Mining Claim . Discovery Post

Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

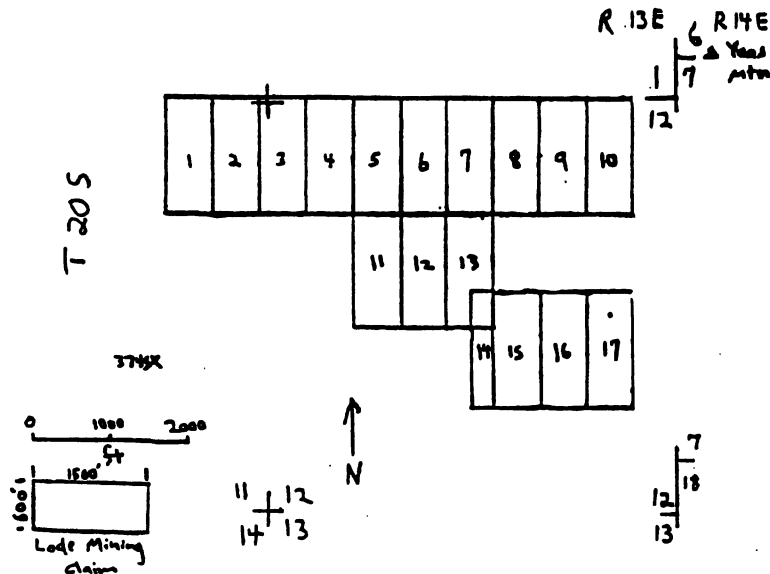
BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 1850 feet west from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;
 the point of beginning.

Big Haul Claims
 Santa Cruz Co., Arizona
 T 20S/R 13E

PLAT OF THE

LODE CLAIM



Location Date July 25, 1992

Lode Mining Claim

• Discovery Post

Locator: James S. Walker
 P.O. Box 50322
 Tucson, AZ
 85703

The surface boundaries of the claim are marked upon the ground as follows:

BEGINNING AT Corner 1 a 2X2 post, the NW corner,
 which is located 7730 feet south and 1850 feet west from the NE
 corner of Section 1, Township 20S, Range 13E, G&SRB&M.

thence 1500' South to corner 2 a 2X2 post, the corner;
 thence 300' East to a 2X2 post, the end center;
 thence 300' East to corner 3 a 2X2 post, the corner;
 thence 1500' North to corner 4 a 2X2 post, the corner;
 thence 300' West to a 2X2 post, the end center;
 thence 300' West to corner 1 a 2X2 post, the corner;
 the point of beginning.

D. Sample Logs

CH-channel
C-chip
A-rock
F-float
T-talus
D-dump
RC-rotary
HJ-high grade
S-soll
St-stream

Ar, Hg in ppb

COUNTY: Santa Cruz

PROJECT: Elephant Head

GEOLOGIST: Jerry Wilkins, Kai Anderson

DATE: September 92

Sample Number	Sec. T. R.	Location	Rock Description Comments	Au	Ag	As/Sb	Hg	Cu	Pb	Zn	Mo	Bi/Ba
44988c	SW 1/4 12, 20S, 13E	Small prospect in NW 1/4 sec at 40' shaft	Kba hornfelsed slt/lyns, Cg, heavy epidite	<5	0.2	4/6.4	20	120	9	45	<1	0.9
44989c	SE 1/4 1, 20S, 13E		Qte & Qte/sec slt Qte monz pupd hem box, UK san.	12/10	3.2	2/0.2	200	16	106	20	125	8.8
44990c	NE 1/4 12, 20S, 13E	In E-N wash E of main wash	Qte monz, occ. fruct. Cg, most expy	<5	1.6	2/2.2	20	4450	6	15	32	<1
44991c	NE 1/4 1, 20S, 13E	Small prospect	Qte/sec/ham v. N. stemmz pupd. tr. py	15	0.7	2/2.2	20	12	50	13	85	0.7
44992c	E cant 1, 20S, 13E	W. slope of N-S ridge	Fractured Qte monz pupd, MAg, ser, WE expy	<5	0.2	2/2.2	20	17	12	21	4	<1
44993c	NE 1/4 1, "	In gully, N-S ridge	Qte/sec/ham in gmp, speckle, expy.	50	0.4	4/0.2	50	44	760	162	7	0.8
44994c	Ant 1, "	N. end of N-S ridge	Mod/stl fruct. gmp, Qte stocks hem after sa	25	0.2	2/2.2	20	7	69	21	<1	0.6
44995c	NE 1/4 12, "	In large N-S wash E of hill	Plonite, fruct. Cg, speckle, ser, WE expy	30	16.4	2/2.2	30	710000	10	34	<1	8.5
44996c	" "	"	Diorite, mod. shaled, ser, chl, diry py - ex. v. h	10	0.8	2/2.2	10	62	27	88	<1	4.5
44997c	SE 1/4 12, "	Large N-S wash	Qte silicified chlorite, vuggy Qte, py - ex. v. h	<5	0.3	6/2.2	10	29	9	50	6	0.5
44998c	SE 1/4 12, 20S, 13E	Top of N-S ridge	Phylite chd, heavily Qte silicified, arg, tr ser	<5	0.2	2/2.2	10	8	3	8	<1	<1
44999c	" "	W. slope of hill	Kba ep/Mag-stang, some Qte silicified, expy	<5	0.2	2/1.0	10	69	10	32	<1	0.9
44000c	NW 1/4 13, 20S, 13E	Ag. Caliente	Mod-fractured Tr. v. h, expy, Qte silicified	<5	0.3	14/3.4	90	3	10	70	<1	<1
44657c	SE 1/4 12, "	Just W. of Fage	Kba hornfelsed slt/lyns, bx, Qte silicified, tr ser	<5	0.2	4/0.4	10	86	2	18	2	1.2
44652c	E cant 12, "	In gully, NW side	Diorite, minor Qte silicified/sec. biotite, chlorite	<5	0.3	2/2.2	10	184	4	80	7	<1
44653c	NE 1/4 12, "	Gully, btm	Stl fruct. diorite, pyrite, Qte v. h, expy, chl, py	<5	0.5	2/2.2	10	232	11	74	2	0.1
44654c	SE 1/4 12, "	Small prospect SE side of gully	Qte - spec - ser - calcite - chrysocolla var. pyrite	105	1.6	3/1.2	10	3950	64	26	103	48.0
44655c	SE 1/4 12, "	Small prospect	Kba epidite/lyns/spec/CuOx horizon, chl	280	11.6	10/6.8	30	710000	45	150	2	72.0
44656c	SW 1/4 1, "	W. side main wash, up slope	CuOx/spec/arg in Kba ss, Qte, ser, expy, exp	70	4.0	1/1.0	60	6400	6	26	119	34.0
44657c	NW 1/4 12, "	N. base of N-S E-W hill	Calcite var. cathy, Qte stock gmp, w. h. expy	10	<2	1/2.2	40	102	4	4	8	0.9
44677c	NE 1/4 13, "	Ag. Caliente wash, SE side	Stl fractured truffs, irhyolith, truffs, Diorite, ser, strom	<5	0.2	2/0.8	180	55	13	54	<1	0.5

KENNECOTT

GEOCHEMICAL SAMPLING

PROJECT: Arizona Recon Agua Caliente/ Elephant Head

GEOLOGIST: James D. Loghry

DATE: 5/19/92

QUAD: Mt. Hopkins 7.5'

COUNTY: Santa Cruz

STATE: AZ

Chemical analysis
A9215120
Au, Hg in PPL
others in PPM

Sample Number	Sec. T. R.	Location	Rock Description Comments	Ag	As	Hg	Sb	Cu	Mo	Pb	Zn
15251C	1, T20S, R13E	NE, SW	N67W dip 35°N - 10' quartz vein, veinlets, stockwork zone, minor specularite	<5	2.2	1	.6	27	11	15	1
45252C	1, T20S, R13E	EE, SW4	Pink fine-med-grained granite, no min	<5	<2	2	.2	19	<1	6	1
15253C	1, T20S, R13E	E, SW4	Crystalline quartzite	<5	<2	1	.2	5	<1	3	8
15254C	1, T20S, R13E	E, SW4	3' short siliceous specularite - chemically altered, dip 25°SW vein/fault zone shale	60	6.5	1	1.2	7400	23	31	6
45255C	1, T20S, R13E	SE, SW	Fine-grained symplectite, w/ pyrrhotite, all in sericitic	10	<2	2	.2	45	1	3	5
45256C	1, T20S, R13E	SW, SW	Crystalline sandstone/gray shale unit 50'	<5	.2	6	1.6	100	<1	11	9
45257C	1, T20S, R13E	SE, SW	Thick, siliceous propylitized, quartz breccia vein w/ gneiss, hematite, quartz breccia vein w/ gneiss, strike 10' wide	20	.7	48	1.2	110	32	24	1
45258C	1, T20S, R13E		Black amphibolite, plus inclusions brecciated granite, no min.	30	<2	1	.6	42	<1	<1	10

Chemical analysis
C-chip
R-rock
F-float
T-telus
D-dump
AG-refinery
HQ-high grade
S-sell
SI-stream

JAMES S WALKER

AZ, West Santa Rita Recon, Big Haul Prospect

No Sp1 36400

Mt. Hopkins 7 1/2' AZ

Sp1

PPM

				Cu	Mo	Pb	Zn	Ag	Hg
36399c	1	205/13E	20'x20' chip. Knob of fractured, silicified sandstone. Weakly spotty limonite.	16	2	10	32	0011	1
36401c	1	205/13E	25' chip across fault-zone in Bisbee ss. Abund. qtz-calc-epid - spec/earthy hem veins. Weak cov. Bleaching	890	2	26	60	002	7
36402c	"	"	40' chip Bisbee shales. wk to strong bleaching. Locally strong hem in epidotized + silicified shales. Near strike of N-S shear.	60	4	20	65	<002	3
36403c	"	contiguous w/ 36402	40' chip, contiguous w/ 36402. Sheared shales. wk to strong bleaching. Marked increase in silicification. qtz-epid	20	2	16	60	<	1
36404c	"	contiguous w/ 36403	35' chip. Sheared, strongly fractured shale. Strong decrease in silicification from 36403. qtz-epid - spec vms.	42	14	22	46	<	.2
36405c	"	contiguous w/ 36404	30' chip. Strongly sheared shales. Silicified. Spotty bleaching. Local zones of moderately strong cov in hr + fides.	60	2	20	75	<	.2
36406c	"	contiguous w/ 36405	45' chip. Sheared siltstn, ss + shale. Abundant qtz-epid vms. Spotty hem.	6100	4	26	140	2.5	5.8
36407c	"	contiguous w/ 36406	60' chip, interm. Hent 10/c. Sheared shale, ss. Moderately - abundant qtz-epid vms.	700	24	22	65	0014	1.2
36408c	"	contiguous w/ 36407	50' chip. Moderately - fractured, locally bleached shale. Moderately - abundant epid vms.	70	<2	12	70	<	.2
36409c	"	contiguous w/ 36408	50' chip. Shale. Weakly - to moderately - fractured. Moderate epid - calcite veining.	36	<2	18	75	<	.2
36410c	"	contiguous w/ 36409	4' chip. H+ grade of silicified, hem rich zones with 0.5 - 2.0% CuOe.	30000	14	145	160	.30	16
36411c	"	"	4' chip. B'd siltstn. Locally w/ silicified clasts. Sparse qtz veins.	500	2	60	306	.012	1.4
36412c	"	"	3' chip. Isolated knob in bottom of wash. Moderately - propylitized quartzite. qtz-spec - chl alt. Also diorite.	195	<2	42	350	.002	.3
36413c	"	"	10' chip. B'd Bisbee shale. Spotty, weak silicification. wk hem.	145	8	5250	4000	.028	.8
36414c	"	"	20'x20' chip. Weakly limonitic, epidotized Bisbee shale w/ dikelets of silicified calcite porphyry.	150	2	700	2050	<	.6
36415c	"	"	20'x5' chip. CG ss (Bisbee). Mod abund qtz-calc-epid veins. Sigmoidal vein structures indicate high-angle N20°W left lateral.	20	<2	30	65	<	1
36416c	"	"	35' chip. Silicified shale. Blocky frags w/ qtz-calc-epid wk lim.	18	<2	38	145	<	1
36417c	"	"	4' chip across shear in shale (N 28 E, 58° W). Mod abund CO3 lim veins.	12	<2	46	270	<	1
36418c	10	"	3' chip across sheared, bleached shale and altered felsic dike. Strong hem in frags.	730	44	38	170	.002	.2
36419c	"	"	10' chip across sheared ss. Abund calc-epid vms. Sparse chl-specularite vms. 1/2 - 2 inches thick. N 75 W, 80° S (shear).	95	6	30	330	<	.1
36420c	"	"	30' chip along wash bank. moderately Moderately - fractured shale, ss and ls. Cond. Spotty, moderate hem in ferric Abund. and illite.	12	<2	22	140	<	.1

AZ, West Santa Rita Recon, Big Haul Prospect

00121

Spl #	Sec	T/R
36421c	12	205 / 13E
36422c	12	205 / 13E
36423c	12	" "
36424c	12	" "
36425c	12	" "
36426c	1	" "
36427c	1	" "
36428c	1	" "
✓ 36429c	1	" "
36419 - Spec mns 2-8" wrk c N80W and N20W, w/ very minor epididym; Hem + epi, calcite & Nes-15E. wh. b ± = bedding 36418 - Fract. w/ hem. ± spec starts N50-talud - could be asphered Sels - same Feldspar visible, not definitely a felsic dkt look like a f.g. massive silicates.		

CII-channel
 C-chip
 R-rock
 F-diesel
 T-telus
 O-dump
 RC-refinery ch
 HQ-high grade
 S-soil
 ST-stream sed

KENNECOTT GEOCHEMICAL SAMPLING

PROJECT: Elephant Head
 GEOLOGIST: J.N. Finkbeiner
 DATE: 8-11-92

QUAD: Alt. Heptane
 COUNTY: Santa Cruz
 STATE: Arizona

Page 1 of 6

Sample Number	Sec. T. R.	Location	Rock Description Comments	AN	Au PPM	Ag PPM	As PPM	Bi PPM	Sb	Cu PPM	Mo PPM	Pb PPM	Zn PPM
46251-C	12 T. 20S. R. 13E		Siltstone, epidite, quartz, calcite	C	<5	0.3	4	10		111	6	17	72
46252-C	Same		Sandstone, gtz, vult, calcite, ex. py	C	<5	0.8	166	60		900	17	28	34
46253-C	Same		Sandstone, gtz, calcite, calcite, ex. py	C	20	5.6	2	12		4550	3	12	16
46254-C	Same		Fl. S.S.; brd, gtz, vult, Tr-M ex. py	C	<5	<0.2	2	12		191	3	12	16
46255-C	11 T. 20S. R. 13E		limstone; brd, calcite, chrysocolla, calcite	D	<5	21.0	750	<0.1		7000	10	125	110
46256-C	Same		Siltstone; brd, calcite, calcite	D	<5	0.2	2	0.2		21	2	7	7
46257-C	11 T. 20S. R. 13E		limstone, calcite - gtz, calcite - spec. hematite	C	<5	<0.2	1	0.2		189	7	103	30
46258-C	12 T. 20S. R. 13E		Siltstone, fac. fault, minor calcite, Tr	C	10	0.7	2	2.1		1200	<1	113	211
			chrysocolla; hematite, calcite										
46259-C	11 T. 20S. R. 13E		Siltstone; calcite, gtz, calcite on bedding plane	C	<5	<0.2	2	0.2		10	1	10	7
46260-C	12 T. 20S. R. 13E		Fl. S.S.; calcite, epidite, gtz, hematite	C	<5	<0.2	4	0.2		81	1	6	6
46261-C	11 T. 20S. R. 13E		Qtz mmz py; mod argillite, minor gtz, mlt, Tr ex. py	C	<5	<0.2	2	0.3		32	1	3	1
46262-C	12 T. 20S. R. 13E		Siltstone; vult, brd gtz, epidite, calcite	C	<5	<0.2	1	0.2		7	1	13	78
46263-C	12 T. 20S. R. 13E		Siltstone; much epidite	C	<5	<0.2	12	<0.1		12	1	6	69
46264-C	11 T. 20S. R. 13E		Siltstone; fac. br zone, much hematite, 2-3% ex. py, clay	C	35	0.4	166	26		255	215	114	215
46265-C	12 T. 20S. R. 13E		Qtz mmz py; gtz mlt, minor gtz, mlt	C	10	<0.2	4	3.9		94	3	12	19
			Tr-M ex. py, calcite, clay, and Kf(?)										
46266-C	Same		Cassian-Picher sed; hematite, py, 5-7% ex. py	C	<5	2.0	410	32		590	15	7	22
46267-C	Same		Fault contact gtz mmz - hematite; chrysocolla, hematite, gtz, clay	D	175	10.5	2	100		2000	68	155	160

CH-channel
 C-chip
 A-rock
 F-flint
 T-talus
 D-dump
 AC-refinery c
 HQ-high grad
 S-sell
 SI-stream s

KENNECOTT
 GEOCHEMICAL SAMPLING
 QUAD: Pt. Hopton
 COUNTY: Santa Cruz
 STATE: AZ

Page 2 of 6

PROJECT: Elephant Head
 GEOLOGIST: S.M. Lunsford
 DATE: 8-11-92

Sample Number	Sec. T. R.	Location	Rock Description Comments	Typ	Au gpb	Ag ppm	As ppm	Bi ppm	Sb	Cu ppm	Mn ppm	Pb ppm	Zn ppm
46268-C	12 T. 20S., R. 13E.		Qtz mnz; ex sol vult; ex calc. druse; sericite, CuOx	C	10	4.2	4	300		5300	43	147	5
46269-C	1 T. 20S., R. 13E		Qtz mnz, silicified, gtz mnz, sericite, Tr ex py, hematite	C	<5	0.2	2	2.6		129	33	2.2	6
46270-C	Same		Qtz mnz zone in gtz mnz; sericite, hem, Tr ex py	C	20	<0.2	2	5.2		28	85	19	5
46271-C	12 T. 20S., R. 13E		Silicified; hem-gtz vult; minor bx	C	<5	<0.2	2	0.5		10	1	9	18
46272-C	Same		Qtz mnz; gtz mnz; ex py, klap, hem, specular	F	90	4.3	10	36		67	74	43	8
46273-C	Same		Qtz mnz; mod sericite, gtz vult, Tr klap	C	<5	0.2	2	0.8		9	2	5	4
46274-C	Same		Qtz mnz ppy; gtz vult; chl, ser, ex py, Tr py, chrysocolla	C	<5	1.1	2	1.6		2400	14	4	2
46275-C	Same		Silicified; gtz vult; epidote, calcite	C	<5	<0.2	18	0.5		6	1	8	5
46276-C	Same		Silicified; silicified; epidote, ± calcite	C	<5	<0.2	8	1.2		P	<1	7	6
46277-C	Same		Silicified; epidote on base chlt	C	<5	<0.2	18	0.6		5	1	9	5
46278-C	Same		Silicified; few vuggy gtz vults; epidote, hem	C	<5	<0.2	2	24		201	2	4	3
46279-C	Same		Shear zone in gtz mnz; druse; gtz vult, ser, chl	C	<5	0.3	4	0.9		164	30	11	5
46280-C	Same		Qtz mnz; gtz vult; wh FeOx; sericite	C	<5	<0.2	2	0.4		33	2	5	18
46281-C	Same		Limonite; calcite vult w malachite; minor FeOx	C	<5	28.0	120	<0.1		2220	9	45	12
46282-C	Same		Malachite - Banded (C?); calcite	D	<5	0.2	6	0.1		51	2	19	9
46283-C	Same		Qtz-silicified ls, minor chrysocolla, ± calcite, FeOx	C	<5	15.5	70	<0.1		2640	5	58	25

**KENNECOTT
GEOCHEMICAL SAMPLING**

GEOCHEMICAL SAMPLING

PROJECT: Elephant Head
 GEOLOGIST: J. N. Lukarewicz
 DATE: 8-11-92

QVND: Mr. H. H. H.

COUNTRY: Serbia Croatia

STATE: FL

Page 3 of 4

CII-channel
C-chip
R-rock
F-float
T-talus
D-dump
RC-rotary chi
HQ-high grade
S-soll
St-stream sed

Sample Number	Sec. T. R.	Location	Rock Description Comments	SiO ₂	Au ppb	Ag ppm	As ppm	Bi ppm	Sb	Cu ppm	Mn ppm	Pb ppm	Zn ppm
-462874-C	12, T. 20 S., R. 13 E.		Siltstone, bleached, epidote-grtz vultx, Fe ox	C	<5	<0.2	1	0.2		6	<1	3	19
-462875-C	1 T. 20 S., R. 13 E		Siltstone; low angle fault calcite, chyt	C	<5	<0.2	2	0.3		45	1	11	89
-462876-C	Same		Siltstone; epidote; ± vultx & speck hem Tr chloracalla	C	<5	<0.2	1	0.6		251	1	11	92
-462877-C	Same		Qtz mnt & grtz mntz, Tr-1% ex py, ± speck hem, sericite, chyt, embedded grtz	C	160	0.3	1	2.7		11	40	19	10
-462878-C	Same		Qtz vn in grtz mntz; 2-3% calc, much spec hem, Tr-1% ex py, sericite	C	15	8.7	1	240		156	410	790	178
-462879-C	Same		Qtz mnt in grtz mntz; Tr ex py, embedded grtz, vultx, sericite	C	<5	<0.2	2	1.1		6	2.5	12	16
-462880-C	Same		Qtz mnt equigranular, minor chyt	C	<5	<0.2	1	0.8		75	2	11	11
-462891-C	Same		Qtz vn zone in grtz mntz; hem, 1-3% ex py rock → recrystallized	C	<5	0.6	4	1.5		4	42	33	12
-462892-C	Same		Qtz vn zone in grtz mntz; Tr ex py, ser.	C	<5	<0.2	2	0.8		1	23	14	8
-462893-C	Same		Qtz vn zone in grtz mntz; siliceous, white	C	<5	<0.2	2	0.3		2	<1	12	10
-462894-C	Same		Qtz vn zone in grtz mntz; ukhem, ser.	C	<5	<0.2	4	0.9		1	3.5	220	37
-462895-C	Same		Qtz mntz, grtz mnt. vultx, Tr ex py, ser.	C	<5	<0.2	2	0.6		2	2	68	22
-462896-C	Same		Qtz mntz; grtz vultx, Tr-1% ex py, sericite, minor calcification	C	<5	<0.2	1	0.2		12	1	4	5
-462897-C	Same		Qtz mnt ppy; Fe-grtz vultx, uk acphr	C	<5	<0.2	2	0.3		11	2	2	8
-462898-C	Same		Qtz mnt ppy; mod sericite, uk Fe ox	C	<5	<0.2	1	0.3		9	<1	1	6
-462899-C	Same		Qtz mnt ppy; 2; grtz-ser zone, Tr ex py	C	<5	3.2	1	3.1		28	30	32	12
-462900-C	Same		Qtz mnt; grtz vns, vultx, 1-2% ex py, sericitized	C	<5	0.3	2	1.1		15	2	26	51

CII-channel
 C-chip
 R-rock
 F-float
 T-talus
 D-dump
 RC-refinery
 HQ-high grade
 S-soil
 ST-stream or

KENNECOTT

GEOCHEMICAL SAMPLING

PROJECT: Elephant Head
 GEOLOGIST: J. N. Lukavski
 DATE: 9-18-92

QUAD: Mt. Hapkin
 COUNTY: Santa Cruz
 STATE: AZ

Page 4 of 6

Sample Number	Sec. T. R.	Location	Rock Description Comments	Typ	Au opt	Ag ppm	As	Bi ppm	Sb	Cu ppm	Mo ppm	Pb ppm	Zn ppm
46301-C	11. T. 20 S., R. 13 E.		Rhyolite; fault bx, few gtr vults; w/fex; NFOE.	C	<.001	0.8		0.1		62	<.1	900	95
46302-C	Same		Qtz m; in lathite banded; chalcidary, finely xylite gtr	C	<.001	<0.2		<0.1		11	<.1	10	65
46303-C	Same		Lathite; epidote on face; N2000w	C	<.001	<0.2		<0.1		6	<.1	14	95
46304-C	Same		Rhyolite; slicked, gtr vults + epidote; Sericite narrow enveloped	C	<.001	<0.2		<0.1		6	<.1	8	17
46305-C	Same		Lathite agglomerate; gtr-epidote vults; minor kspars	C	<.001	<0.2		<0.1		4	<.1	10	5
46306-C	Same		Qtz-epidote + kspars vults; some kspars; Plucking along line; L epidote	C	<.001	<0.2		<0.1		4	<.1	5	71
46307-C	Same		Lathite; epidote; gtr vults; kspars?	C	<.001	<0.2		<0.1		5	<.1	3	44
46308-C	Same		Lathite; epidote; gtr- kspars vults	C	<.001	<0.2		<0.1		3	<.1	7	17
46309-C	Same		Lathite; epidote; kspars + gtr vults; kspars	C	<.001	<0.2		<0.1		4	<.1	7	45
46310-C	Same		Lathite; kspars; few epidote + gtr + kspars vults; minor horn	C	<.001	<0.2		<0.1		5	<.1	6	98
46311-C	Same		Lathite; much epidote; narrow slicked; epidote - kspars vults.	C	<.001	<0.2		<0.1		4	<.1	6	87
46312-C	12. T. 20 S., R. 13 E.		Fault bx, rhyolite; calcite-epidote + gtr	C	<.001	<0.2		<0.1		15	2	9	37
46313-C	Same		Qtz s.s., siltstone, much epidote, thin gtr vults	C	<.001	<0.2		0.1		6	<.1	18	67
46314-C	Same		Limestone; bx'd, on thrust; calcite	C	<.001	<0.2		<0.1		6	3	15	5
46315-C	Same		Siltstone, siliceous, epidote	C	<.001	<0.2		0.1		36	<.1	265	17
46316-C	Same		Siltstone; slicked gtr m; horn, epidote in fault bx	C	<.001	<0.2		<0.1		25	<.1	68	15

CII-channel
 C-chip
 R-rock
 F-float
 T-talus
 D-dump
 RC-rotary c
 HQ-high gra
 S-soil
 SI-stream s

KENNECOTT GEOCHEMICAL SAMPLING

QUAD: MT. HORTON
 COUNTY: Santa Cruz
 STATE: AZ

PROJECT: Elephant Head
 GEOLOGIST: J.N. Lukens
 DATE: 9-18-98

Page 5 of 6

Sample Number	Sec. T. R.	Location	Rock Description Comments	As	Ag ppm	Bi ppm	Sb	Cu ppm	Mo ppm	Pb ppm	Zn ppm
46317-C	12, T. 20S, R. 13E		Latite; epidote-gtz vnlts	<	<.001 <.0.2	<.0.1		3	<.1	6	4
46318-C	12, T. 20S, R. 13E		Diabase; gtz vnlts ± calcite, much chert-epidote	C	<.001 <.0.2	<.0.1		4	<.1	4	8
46319-C	11, T. 20S, R. 13E		Latite; trace epidote-gtz in fracs	C	<.001 <.0.2	0.7		16	<.1	4	1
46320-C	Same		Latite; epidote on fracs	C	<.001 <.0.2	<.0.1		5	<.1	5	9
46321-C	Same		Latite; epidote on fracs, minor vnlts	C	<.001 <.0.2	<.0.1		3	<.1	8	8
46322-C	Same		Plagioclase; many fracs w/ epidote, quartz, chlorite, minor gtz vnlts	C	<.001 <.0.2	<.0.1		3	<.1	4	2
46323-C	Same		Latite; epidote on same fracs	C	<.001 <.0.2	<.0.1		4	=.1	2	3
46324-C	12, T. 20S, R. 13E		Latite; epidote same ± calcite	C	<.001 <.0.2	<.0.1		3	<.1	8	15
46325-C	Same		Sandstone; gtz ss; fracts, fracs	C	<.001 <.0.2	0.1		26	4	20	18
46326-C	13, T. 20S, R. 13E		Sandstone; fault zone, gtz vnlts, hem.	C	<.001 <.0.2	0.2		4	<.1	11	5
46327-C	13, T. 20S, R. 13E		Latite; fault, shear, gtz vnlts, ± calcite	C	<.001 <.0.2	0.2		7	<.1	14	1
46328-C	12, T. 20S, R. 13E		Latite; epidote-gtz vnlts	C	<.001 <.0.2	<.0.1		2	<.1	16	8
46329-C	12, T. 20S, R. 13E		Latite; much epidote in vnlts with argon, minor gtz, ± hem (Spec.)	C	<.001 <.0.2	0.1		3	<.1	6	1
46330-C	Same		Latite; epidote vnlts, minor argon, gtz, calcite, clay	C	<.001 <.0.2	0.1		24	<.1	7	4
46331-C	Same		Latite; epidote gtz vnlts, minor speckles, (Spec?)	C	<.001 <.0.2	0.1		13	<.1	7	1
46332-C	11, T. 20S, R. 13E		Sandstone-siltstone	C	<.001 <.0.2	0.1		13	<.1	9	8
46333-C	12, T. 20S, R. 13E		Siltstone; gtz-calcite vnlts, ± chert	C	<.001 <.0.2	0.2		12	<.1	16	5
46334-C	Same		Breccia; sand interbedded clasts, much epidote in matrix	C	<.001 <.0.2	<.0.1		14	<.1	24	9

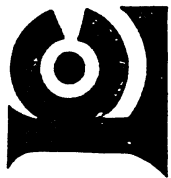
GEOCHEMICAL SAMPLING

QUAD: Mt. Hopkins
COUNTY: Santa Cruz
STATE: AZ

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Clt-channel
C-chip
A-rock
F-float
T-talus
D-dump
RC-rotery c
HQ-high gra
S-soll
St-stream a

[illegible]



Chemex Labs Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

A921512

Comments: ATTN: L. KEATING CC: J. D. LOGHRY

CERTIFICATE

A9215120

KENNECOTT EXPLORATION CO.

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-MAY-92.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	8	Geochem ring to approx 150 mesh
274	8	0-15 lb crush and split
238	8	Nitric-aqua-regia digestion
287	8	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	8	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
6	8	Ag ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	8	As ppm: HNO ₃ -aqua regia digest	AAS-HYDRIDE/EDL	1	10000
2	8	Cu ppm: HNO ₃ -aqua regia digest	AAS	1	10000
20	8	Hg ppb: HNO ₃ -HCl digestion	AAS-FLAMELESS	10	100000
4	8	Pb ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	1	10000
22	8	Sb ppm: HCl-KClO ₃ digest, extrac	AAS-BKGD CORR	0.2	1000
5	8	Zn ppm: HNO ₃ -aqua regia digest	AAS	1	10000
3	8	Mo ppm: HNO ₃ -aqua regia digest	AAS	1	1000



Chemex Labs Inc.
Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-6395

To: KENNECOTT EXPLORATION CO.
P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ATTN: L. KEATING CC: J. D. LOGHRY
Comments:

Page Number : 1
Total Pages : 1
Certificate Date : 27-MAY-92
Invoice No. : 19215120
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9215120

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Hg ppb	Pb ppm	Sb ppm	Zn ppm	Mo ppm	
45251 C	205 274	< 5	< 0.2	1	27	10	15	0.6	18	11	
45252 C	205 274	< 5	< 0.2	2	19	10	6	0.2	18	< 1	
45253 C	205 274	< 5	< 0.2	1	5	10	3	0.2	8	< 1	
45254 C	205 274	60	6.5	1	7400	150	31	1.2	65	23	
45255 C	205 274	10	< 0.2	2	45	30	3	0.2	52	1	
45256 C	205 274	< 5	0.2	6	100	20	11	1.6	94	< 1	
45257 C	205 274	20	0.7	48	110	20	24	1.8	18	32	
45258 C	205 274	30	< 0.2	1	42	10	< 1	0.6	100	< 1	

CERTIFICATION:

Heidi Buchler



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: J.N. LUKANUSKI

Page Number : 1
Total Pages : 1
Certificate Date : 28 SEP 92
Invoice No. : 19221598
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9221598

SAMPLE	PREP CODE	Au oz/T	Ag ppm Aqua R	Cu ppm	Mo ppm	Pb ppm	Bi ppm	Zn ppm		
46301C	208 226	< 0.001	0.8	62	< 1	900	0.1	93		
46302C	208 226	< 0.001	< 0.2	11	< 1	10	< 0.1	62		
46303C	208 226	< 0.001	< 0.2	6	< 1	14	< 0.1	92		
46304C	208 226	< 0.001	< 0.2	6	< 1	8	< 0.1	14		
46305C	208 226	< 0.001	< 0.2	4	< 1	10	< 0.1	56		
46306C	208 226	< 0.001	< 0.2	4	< 1	5	< 0.1	78		
46307C	208 226	< 0.001	< 0.2	5	< 1	3	< 0.1	44		
46308C	208 226	< 0.001	< 0.2	3	< 1	7	< 0.1	19		
46309C	208 226	< 0.001	< 0.2	4	< 1	7	< 0.1	43		
46310C	208 226	< 0.001	< 0.2	5	< 1	6	< 0.1	98		
46311C	208 226	< 0.001	< 0.2	4	< 1	6	< 0.1	80		
46312C	208 226	< 0.001	< 0.2	15	< 2	9	< 0.1	37		
46313C	208 226	< 0.001	< 0.2	6	< 1	18	< 0.1	69		
46314C	208 226	< 0.001	< 0.2	6	< 3	15	< 0.1	57		
46315C	208 226	< 0.001	< 0.2	36	< 1	265	< 0.1	172		
46316C	208 226	< 0.001	< 0.2	25	< 1	68	< 0.1	159		
46317C	208 226	< 0.001	< 0.2	3	< 1	6	< 0.1	49		
46318C	208 226	< 0.001	< 0.2	4	< 1	4	< 0.1	84		
46319C	208 226	< 0.001	< 0.2	16	< 1	4	< 0.7	19		
46320C	208 226	< 0.001	< 0.2	5	< 1	5	< 0.1	96		
46321C	208 226	< 0.001	< 0.2	3	< 1	8	< 0.1	81		
46322C	208 226	< 0.001	< 0.2	3	< 1	4	< 0.1	20		
46323C	208 226	< 0.001	< 0.2	4	< 1	2	< 0.1	32		
46324C	208 226	< 0.001	< 0.2	3	< 1	8	< 0.1	130		
46325C	208 226	< 0.001	< 0.2	26	< 4	20	< 0.1	187		
46326C	208 226	< 0.001	< 0.2	41	< 1	11	0.2	56		
46327C	208 226	< 0.001	< 0.2	7	< 1	14	0.2	13		
46328C	208 226	< 0.001	< 0.2	2	< 1	16	< 0.1	80		
46329C	208 226	< 0.001	< 0.2	3	< 1	6	< 0.1	17		
46330C	208 226	< 0.001	< 0.2	24	< 1	7	0.1	43		
46331C	208 226	< 0.001	< 0.2	13	< 1	7	0.1	15		
46332C	208 226	< 0.001	< 0.2	13	< 1	9	0.1	81		
46333C	208 226	< 0.001	< 0.2	12	< 1	16	0.2	54		
46334C	208 226	< 0.001	< 0.2	14	< 1	24	< 0.1	98		
46335C	208 226	< 0.001	< 0.2	24	< 2	5	1.1	14		
46336C	208 226	< 0.001	< 0.2	12	< 2	6	2.8	11		
46337C	208 226	< 0.001	< 0.2	5	< 1	22	3.1	16		
46338C	208 226	< 0.001	< 0.2	16	< 1	3	0.6	20		

Cap

CERTIFICATION:

Just Buchler



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Page Number : 1
Total Pages : 1
Certificate Date: 23-SEP-92
Invoice No. : 19221433
P.O. Number :
Account : GJV

Project : ELAPHANT HEAD
Comments: ATTN: LINUS KEATING CC: JOEY WILKINS

CERTIFICATE OF ANALYSIS A9221433

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Hg ppb	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Bi ppm
44651C	205 226	< 5	0.2		4	86	10	2	0.4	18	1.2
44652C	205 226	< 5	0.3		2	184	10	4	< 0.2	50	< 0.1
44653C	205 226	< 5	0.5		2	232	10	11	< 0.2	74	0.1
44654C	205 226	105	1.6		2	3950	10	64	1.2	26	48.0
44655C	205 226	280	11.6		10	>10000	30	45	6.8	150	72.0
44677C	205 226	< 5	0.2		2	55	180	13	0.8	54	0.5
44988C	205 226	< 5	0.2		4	120	20	9	0.4	45	0.9
44989C	205 226	1210	3.2		2	16	200	106	0.2	20	8.8
44990C	205 226	< 5	1.6		2	4450	20	6	< 0.2	15	< 0.1
44991C	205 226	15	0.7		2	12	20	50	< 0.2	13	0.7
44992C	205 226	< 5	0.2		2	17	20	12	< 0.2	21	< 0.1
44993C	205 226	50	0.4		4	44	50	760	0.2	162	0.8
44994C	205 226	25	0.2		2	7	20	69	< 0.2	21	0.6
44995C	205 226	30	16.4		2	>10000	30	10	< 0.2	34	8.5
44996C	205 226	10	0.8		2	62	10	27	< 0.2	88	4.5
44997C	205 226	< 5	0.3		6	29	10	9	< 0.2	50	0.5
44998C	205 226	< 5	0.2		2	8	10	3	< 0.2	8	< 0.1
44999C	205 226	< 5	0.2		2	69	10	10	1.0	32	0.9
45000C	205 226	< 5	0.3		14	3	90	10	3.4	70	< 0.1

CERTIFICATION

David B. Baker

Copy



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
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To: KENNECOTT EXPLORATION CO.

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84147

Page Number : 1
Total Pages : 1
Certificate Date : 28-SEP-92
Invoice No. : 19221747
P.O. Number :
Account : GJV

Project : ELEPHANT HEAD
Comments: ATTN:LINUS KEATING CC:JOEY WILKINS

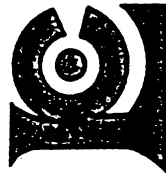
CERTIFICATE OF ANALYSIS A9221747

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Hg ppb	Pb ppm	Sb ppm	Zn ppm	Bi ppm
	205	226										
44656C	205	226	70	4.0	1	6400	6	60	76	1.0	119	34.0
44657C	205	226	10	< 0.2	1	102	4	40	4	< 0.2	8	0.9

46p

Jan H. Bickler

CERTIFICATION



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

A9218813

Comments: ATTN: LINUS KEATING CC: J. N. LUKANUSKI

CERTIFICATE

A9218813

KENNECOTT EXPLORATION CO.

Project: ELEPHANT HEAD
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 12-AUG-92.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	50	Geochem ring to approx 150 mesh
226	50	0-5 lb crush and split
238	50	Nitric-aqua-regia digestion
287	50	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	50	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
6	50	Ag ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	50	As ppm: HNO ₃ -aqua regia digest	AAS-HYDRIDE/EDL	1	10000
2	50	Cu ppm: HNO ₃ -aqua regia digest	AAS	1	10000
3	50	Mo ppm: HNO ₃ -aqua regia digest	AAS	1	1000
4	50	Pb ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	1	10000
23	50	Bi ppm: HCl-KClO ₃ digest, extrac	AAS-BKGD CORR	0.1	1000
5	50	Zn ppm: HNO ₃ -aqua regia digest	AAS	1	10000



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers
212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD

Comments: ATTN: LINUS KEATING CC: J. N. LUKANUSKI

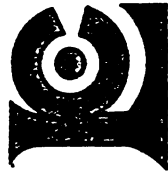
Page Number : 1
Total Pages : 2
Certificate Date: 12-AUG-92
Invoice No. : 19218813
P.O. Number : GJV
Account :

CERTIFICATE OF ANALYSIS A9218813

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Pb ppm	Bi ppm	Zn ppm		
46251C	205 226	< 5	0.3		111	6	17	10.0	72		
46252C	205 226	< 5	0.8	166	900	17	28	60.0	34		
46253C	205 226	20	5.6	2	4550	3	48	4.3	25		
46254C	205 226	< 5	< 0.2	2	191	3	12	12.0	10		
46255C	205 226	< 5	21.0	750	7000	10	125	< 0.1	1100		
46256C	205 226	< 5	0.2	2	21	2	7	0.2	71		
46257C	205 226	< 5	< 0.2	1	189	7	103	0.2	300		
46258C	205 226	10	0.7	2	1200	< 1	113	2.1	210		
46259C	205 226	< 5	< 0.2	2	10	1	10	0.1	72		
46260C	205 226	< 5	< 0.2	4	81	1	6	0.2	68		
46261C	205 226	< 5	< 0.2	2	32	1	3	0.3	14		
46262C	205 226	< 5	< 0.2	1	7	1	13	0.2	78		
46263C	205 226	< 5	< 0.2	12	12	1	6	< 0.1	69		
46264C	205 226	35	0.4	66	255	215	114	26.0	215		
46265C	205 226	10	< 0.2	4	94	3	12	3.9	19		
46266C	205 226	< 5	2.0	410	590	15	7	32.0	22		
46267C	205 226	175	10.3	2	>10000	68	155	100.0	169		
46268C	205 226	10	4.2	4	5300	43	147	300	52		
46269C	205 226	< 5	0.2	2	129	32	22	2.6	6		
46270C	205 226	20	< 0.2	2	28	85	19	5.2	5		
46271C	205 226	< 5	< 0.2	2	10	1	9	0.5	18		
46272C	205 226	90	4.3	10	67	74	43	36.0	8		
46273C	205 226	< 5	0.2	2	9	2	5	0.8	4		
46274C	205 226	< 5	1.1	2	2400	14	4	1.6	21		
46275C	205 226	< 5	< 0.2	18	6	1	8	0.5	52		
46276C	205 226	< 5	< 0.2	8	8	< 1	7	1.2	69		
46277C	205 226	< 5	< 0.2	18	5	1	9	0.6	59		
46278C	205 226	< 5	< 0.2	2	201	2	4	24.0	30		
46279C	205 226	< 5	0.3	4	164	30	11	0.9	57		
46280C	205 226	< 5	< 0.2	2	33	2	5	0.4	18		
46281C	205 226	< 5	28.0	120	2220	9	45	< 0.1	172		
46282C	205 226	< 5	0.2	6	51	2	19	0.1	94		
46283C	205 226	< 5	15.5	70	2640	5	58	< 0.1	251		
46284C	205 226	< 5	< 0.2	1	6	< 1	3	0.2	19		
46285C	205 226	< 5	< 0.2	2	45	1	11	0.3	89		
46286C	205 226	< 5	< 0.2	1	231	1	11	0.6	92		
46287C	205 226	160	0.3	1	11	40	19	2.7	10		
46288C	205 226	15	8.7	1	156	410	790	240	178		
46289C	205 226	< 5	< 0.2	2	6	25	12	1.1	10		
46290C	205 226	< 5	< 0.2	1	75	2	11	0.8	11		

CERTIFICATION:

Jan H. Buchler



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING GC: J. N. LUKANUSKI

Page Number :2
Total Pages :2
Certificate Date: 12-AUG-92
Invoice No. : 19218813
P.O. Number : GJV
Account :

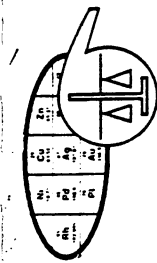
CERTIFICATE OF ANALYSIS

A9218813

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Pb ppm	Bi ppm	Zn ppm	
46291C	205 226	< 5	0.6	4	4	42	33	1.5	12	
46292C	205 226	< 5	< 0.2	2	1	23	14	0.8	8	
46293C	205 226	< 5	< 0.2	2	2	< 1	12	0.3	10	
46294C	205 226	< 5	< 0.2	4	1	35	220	0.9	37	
46295C	205 226	< 5	< 0.2	2	2	2	68	0.6	22	
46296C	205 226	< 5	< 0.2	1	12	1	4	0.2	5	
46297C	205 226	< 5	< 0.2	2	11	2	2	0.3	8	
46298C	205 226	< 5	< 0.2	1	9	< 1	1	0.3	6	
46299C	205 226	< 5	3.2	1	28	30	32	3.1	12	
46300C	205 226	< 5	0.3	2	15	2	26	1.1	31	

CERTIFICATION

Janet Buchanan



KENNECOTT LABORATORY, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703

JOB NUMBER VGN 238
June 9, 1992
36399C, 36401C-36429C
PAGE 1 OF 2 PAGES

KENNECOTT EXPLORATION

Attn: Mr. Linus Keating
1515 Minerals Square
Salt Lake City, UT 84112

REPORT OF ANALYSIS
Analysis of 30 Rock Chip Samples

FIRE ASSAY

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	Bi (ppm)
1	36399-C	.004	.1	2.6	.1	.10	16.	10.	32.	2.	.9
2	36401-C	.002	.7	6.0	1.5	.12	890.	26.	60.	2.	6.0
3	36402-C	< .002	.3	9.5	1.1	.16	60.	20.	65.	4.	9.0
4	36403-C	< .002	.1	4.6	.4	.17	20.	16.	60.	2.	1.5
5	36404-C	< .002	.2	4.2	.6	.18	42.	22.	46.	14.	.9
6	36405-C	< .002	.2	4.0	.6	.12	60.	20.	75.	2.	2.7
7	36406-C	2.500	5.8	6.5	1.5	.08	6100.	26.	140.	4.	14.0
8	36407-C	.014	1.2	16.0	2.2	.10	900.	22.	65.	24.	3.4
9	36408-C	< .002	.2	85.0	2.2	.11	70.	12.	70.	< 2.	.8
10	36409-C	< .002	.2	7.5	1.7	.12	36.	18.	75.	< 2.	1.8
11	36410-C	.300	16.0	7.5	1.6	.08	30000.	145.	160.	14.	175.0
12	36411-C	.012	1.4	6.5	2.7	.09	500.	60.	305.	2.	6.0
13	36412-C	.002	.3	8.5	1.0	.11	195.	42.	350.	< 2.	1.3
14	36413-C	.038	.8	16.0	4.5	.16	145.	5250.	4000.	8.	.7
15	36414-C	< .002	.6	34.0	1.3	.12	150.	700.	2050.	2.	7.5
16	36415-C	< .002	.1	6.0	.8	.09	20.	30.	65.	< 2.	.5
17	36416-C	< .002	.1	9.0	1.5	.07	18.	38.	145.	< 2.	1.0
18	36417-C	< .002	.1	3.2	1.4	.07	12.	46.	270.	< 2.	.7
19	36418-C	.002	.2	32.0	2.7	.11	730.	38.	170.	44.	14.0
20	36419-C	< .002	.1	12.0	1.0	.09	95.	30.	330.	6.	1.6
21	36420-C	< .002	.1	7.5	1.5	.08	12.	22.	140.	< 2.	.6
22	36421-C	< .002	.1	4.8	1.1	.10	10.	20.	30.	< 2.	.2
23	36422-C	< .002	.1	8.5	1.0	.07	6.	12.	36.	< 2.	.8
24	36423-C	.002	.8	13.0	.5	.07	280.	26.	48.	4.	80.0
25	36424-C	< .002	.3	1.4	.1	.05	75.	40.	36.	2.	6.5

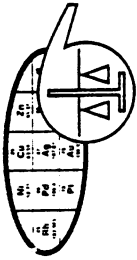
Charles E. Thompson

William L. Lehmbeck

James A. Martin

Cal

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703



JOB NUMBER VGN 238
June 9, 1992
36399C, 36401C-36429C
PAGE 2 OF 2 PAGES

KENNECOTT EXPLORATION

Attn: Mr. Linus Keating
1515 Minerals Square
Salt Lake City, UT 84112

REPORT OF ANALYSIS

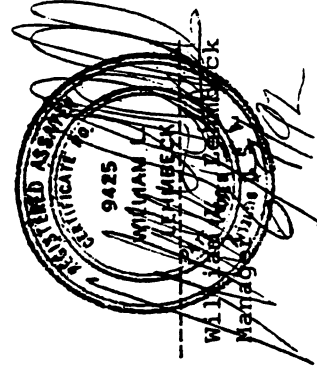
Analysis of 30 Rock Chip Samples

FIRE ASSAY

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	Bi (ppm)
26	36425-C	.012	1.1	2.6	.9	.07	1700.	115.	130.	< 2.	40.0
27	36426-C	< .002	.2	4.6	.7	.05	70.	160.	350.	< 2.	5.0
28	36427-C	< .002	.1	1.6	< .1	.06	30.	18.	28.	< 2.	1.1
29	36428-C	< .002	.2	13.0	1.3	.08	18.	16.	65.	< 2.	.6
30	36429-C	< .002	.2	4.2	1.1	.10	8.	12.	100.	< 2.	1.3

*NOTE: Method of analysis by combination
fire assay and atomic absorption.

cc: Mr. Jim Walker
P. O. Box 50322
Tucson, AZ 85703



Charles E. Thompson

William L. Lehmbeck

James A. Martin

E. Assay Report (Lacy, 1992)



Jacobs Assay Office
Registered Assayers, Estab. 1880

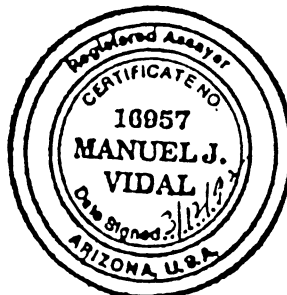
1435 S. 10th Ave. Tucson, Az 85713

3/12/92

DR. LACY

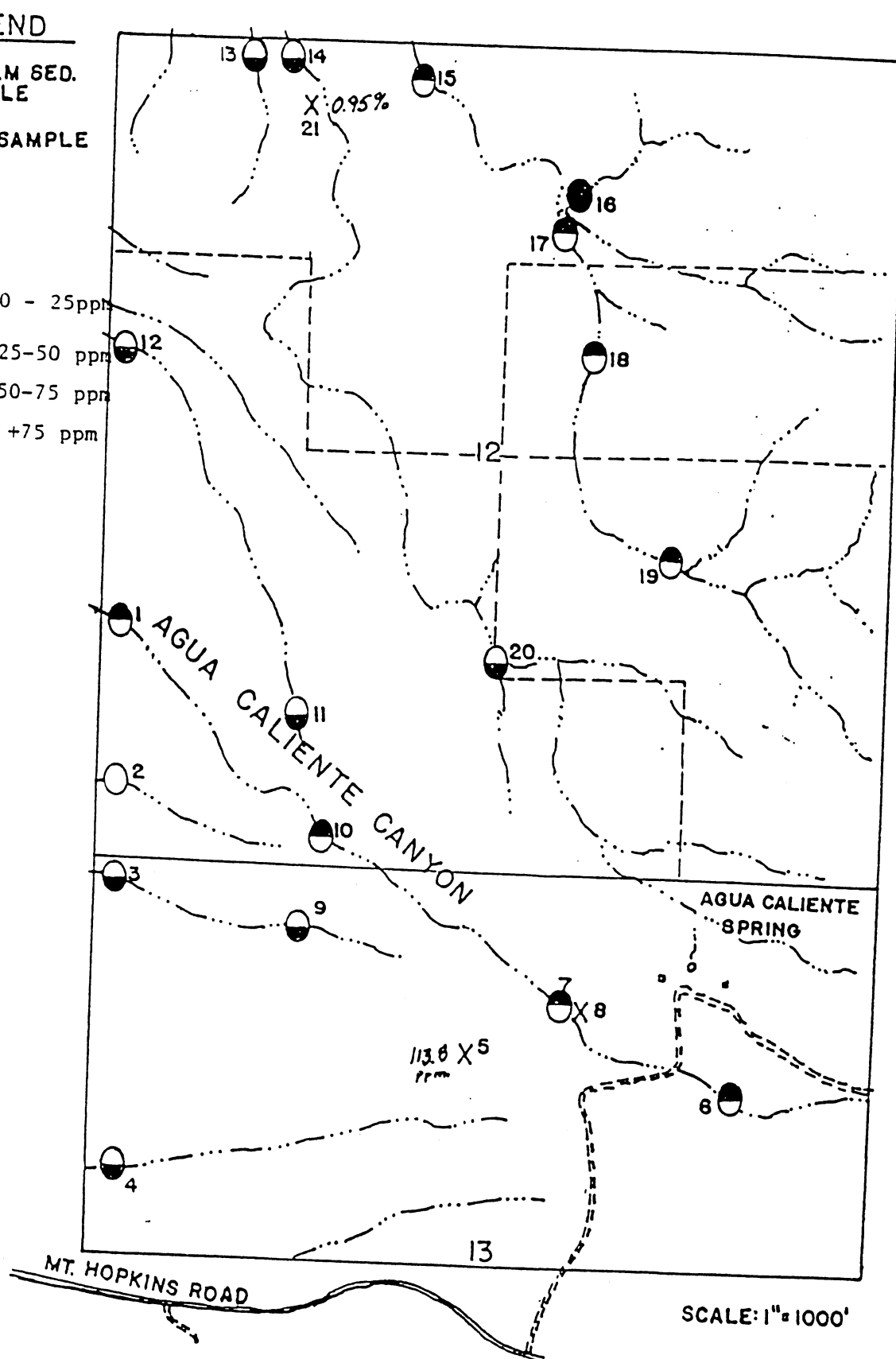
LACY02

SAMPLE # oz. per ton	Au	Cu ppm	Zn ppm	
AC-1	0.007	56.7	58.8	Stream alluvium
2	0.002	16.7	109.0	" "
3	0.002	26.7	150.0	" "
4	0.002	40.0	29.4	" "
5	0.001	113.8	550.8	Rock sample
6	0.002	56.7	51.5	Stream alluvium
7	0.004	56.7	79.1	" "
8	-----	-----	52.9	Rock sample
9	0.006	26.7	119.4	Stream alluvium
10	TRACE	56.7	63.2	" "
11	0.003	33.3	113.4	" "
12	0.002	43.3	67.6	" "
13	0.001	43.3	60.3	" "
14	TRACE	46.7	47.1	" "
15	TRACE	53.3	25.0	" "
16	TRACE	96.6	25.0	" "
17	TRACE	70.0	30.9	" "
18	0.001	66.7	27.9	" "
19	0.001	63.3	35.3	" "
20	0.003	46.7	47.1	" "
21	0.012	94736.8	33.8	Rock sample



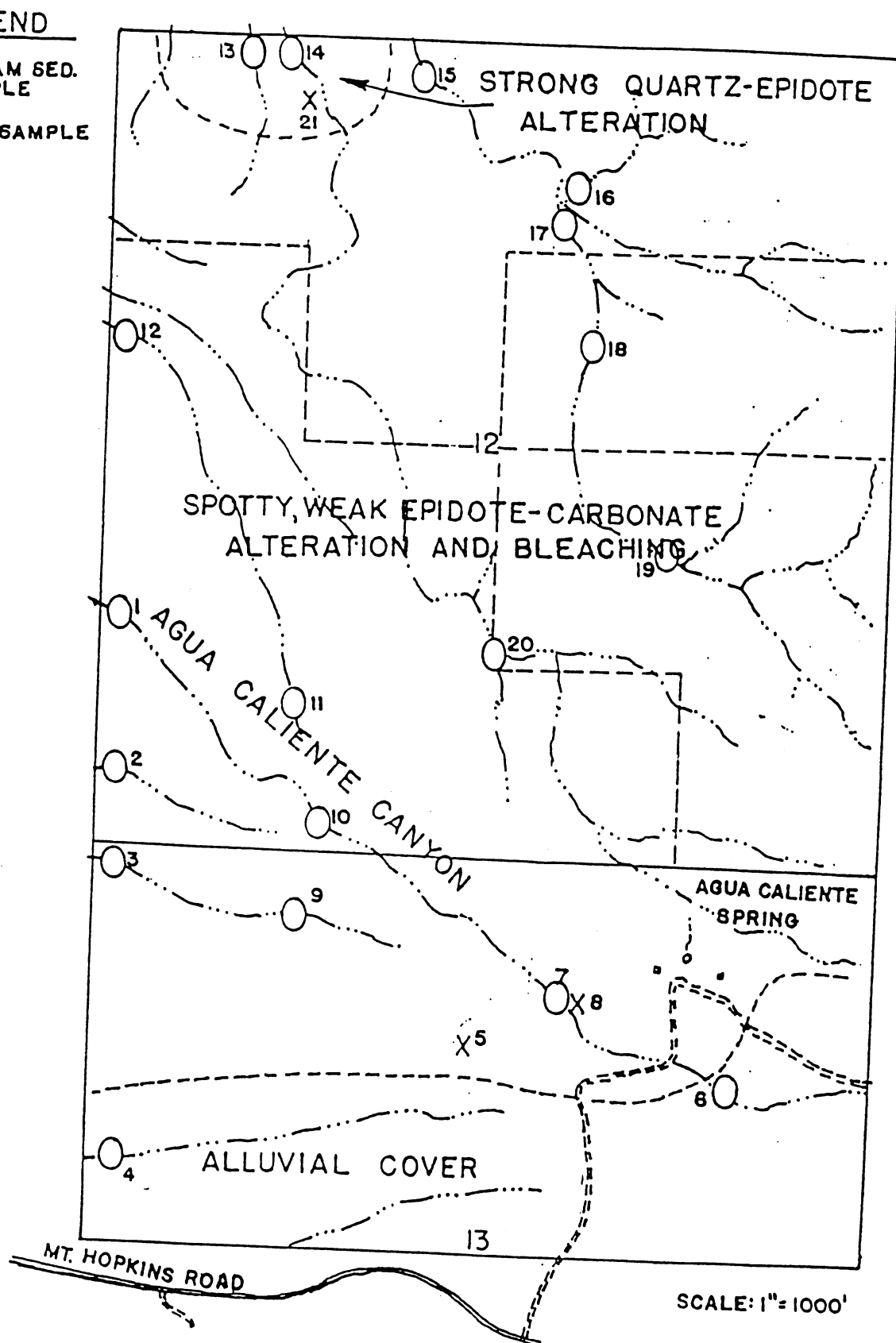
F. Copper Geochemical Samples (Lacy, 1992)

Figure 3: Copper geochemical samples.



G. Areas of Wallrock Alteration (Lacy, 1993)

Figure 3: Areas of wallrock alteration.



ELEPHANT HEAD PROJECT

Kennecott Exploration Co.

Data

1992-1993

**James S. Walker
Tucson, Arizona**

Kennecott Exploration Company
1515 East 100 South
P.O. Box 11248
Salt Lake City, Utah 84147
(801) 322-7000
FAX (801) 583-3129

Kennecott

April 13, 1993

Mr. James Walker
P.O. Box 50322
Tucson, Arizona 85703

Dear Jim:

Enclosed is most of the noninterpretive data to which you are entitled for the Elephant Head property. This data is delivered to you in accordance with Section F of the "Mineral Lease Agreement with Option to Purchase" dated August 1, 1992.

Certain portions of the data are awaiting drafting and will be delivered in a week or so. Delayed data are marked by an (*) on the accompanying table.

Please note that the geology is in some disarray. Parts "G", "K", and "L" are meant to go together. There may be some "border" effects when these are combined. In that case, Part "L" is senior to "G and K"; Part "K" is senior to Part "G".

We wish you best of luck with your property.

Sincerely,


Linus Keating

Elephant Head Property

Noninterpretive data delivered to James Walker

<u>PART</u>	<u>DELIVERY STATUS</u>	<u>TITLE</u>
A	1	Drill Logs and Drill Assays
B	1	Geochemical Assays
C	1	Petrographic Descriptions
D	1	Loghry Consulting Report
E	1	Permitting Data
F	1	Magnetic Susceptibility Test
G	*	Geology Map
H	*	Sample Location Map
I	1	Alteration Map
J	1	Drill Hole Location Map
K	1	Structural Interpretation Map
L	1	Southwest Area Geology w/ Legend

1 = delivered with this package

* = delivery scheduled for later package

A

DRILL LOGS & ASSAYS

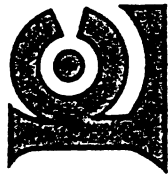
AZ93EH - 1

AZ93EH - 2

AZ93EH - 3

DRILL HOLE AZ93EH - 1

*DRILL LOGS
*ASSAYS



Chemex Labs Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: JOEY WILKINS

Page Number : 1
Total Pages : 1
Certificate Date: 19-FEB-93
Invoice No. : 19311099
P.O. Number : AZ93EH-1
Account : GJV

CERTIFICATE OF ANALYSIS A9311099

SAMPLE	PREP CODE	Au ppb FA+AA	Cu ppm	Zn ppm	Mo ppm	Pb ppm				
AZ93EH-1 020-025	205 226	---	6	---	---	---				
AZ93EH-1 040-045	205 226	---	7	---	---	---				
AZ93EH-1 065-070	205 226	---	41	---	---	---				
AZ93EH-1 090-095	205 226	---	7	---	---	---				
AZ93EH-1 105-110	205 226	---	13	---	---	---				
AZ93EH-1 135-140	205 226	---	10	---	---	---				
AZ93EH-1 170-175	205 226	---	6	---	---	---				
AZ93EH-1 190-195	205 226	---	9	---	---	---				
AZ93EH-1 215-220	205 226	---	5	63	< 1	---				
AZ93EH-1 230-300	205 226	---	38	58	< 1	---				
AZ93EH-1 255-260	205 226	< 5	7	63	< 1	4				
AZ92EH-1 265-270	205 226	< 5	102	60	< 1	4				
AZ93EH-1 285-290	205 226	< 5	13	43	< 1	2				
AZ93EH-1 315-320	205 226	---	5	---	---	---				
AZ93EH-1 335-340	205 226	30	4	48	< 1	15				
AZ93EH-1 355-360	205 226	---	66	---	---	---				
AZ93EH-1 375-380	205 226	---	25	---	---	---				
AZ93EH-1 405-410	205 226	---	6	---	---	---				
AZ93EH-1 430-435	205 226	---	2	---	---	---				
AZ93EH-1 450-455	205 226	---	3	39	1	< 1				
AZ93EH-1 475-480	205 226	---	3	---	---	---				
AZ93EH-1 500-505	205 226	---	4	---	---	---				
AZ93EH-1 525-530	205 226	---	6	---	---	---				
AZ93EH-1 555-565	205 226	---	29	25	1	2				
AZ93EH-1 580-585	205 226	---	62	---	---	---				
AZ93EH-1 620-625	205 226	---	26	---	---	---				
AZ93EH-1 630-635	205 226	< 5	47	26	2	2				
AZ93EH-1 655-660	205 226	---	71	---	---	---				

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CERTIFICATION:

KENNECOTT

1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE # EH-1

PROJECT Elephant Head

COMMENTS Santa Cruz Co. AZ

PAGE 1 OF 1

BEARING SIDE

DIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 660' BY Drilling service

START 1-28-93 COMPLETED 1-30-93

Logged by Joey Wilkins
SE COR, SW 1/4, SW 1/4 Section 1, T20S, R13E

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	Sericite	PYRITE	Copper 52/Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonites	Magnetite	Bleaching	Fracturing-Bx
		Beam drilled ~ 4500 ft 4.5' hole													
	0-5	Kb - Dispersed purple-brown sandstone - mudstone Calcareous sandstone													
	5-10	" "													
	10-15	minor lt gray siltstone													
	15-20	white sandstone in fractures epidote in fractures							1.5		1				
	20-25	1-29-92 7:35 am Dark gray siltstone - epidote sand in fractures - also - epidote - in here							Tr	Tr					
	25-30	lt gray ss - sand - negative of greenstone on fractures - to epidote - fr. chl. In matrix							Tr	Tr					
	30-35	" "							Tr	Tr					
	35-40	" " " " " " Dark here & spec - Tr							Tr	Tr					
	40-45	PK repl shale, inclusion of ss -> epidote and relict -> calcite. some with epidote and calcite - to here with white - & calcite							1.5	Tr	1	Tr			
	45-50	" " " " " " lt gray - repl - some - calcite - & calcite							Tr						
	50-55	" " " " " " darkish white - some in fractures							Tr	Tr					
	55-60	" " " " " " in matrix - calcite - repl							Tr	Tr					
	60-65	Repl shale - some - calcite - & calcite epidote - repl, chly, some white - calcite - & calcite							1.5	Tr	Tr		1.5		
	65-70	epidote repl calcite - L. pods Shaded zone - calcite - & calcite							2	Tr	Tr		2		
	70-75	lt gray - some - repl - some - calcite - & calcite some - repl - some - calcite - & calcite limy -> relict - to here - & calcite							1.5	1	Tr		1	1	
	75-80	" " " " " "							1.5	1	Tr		1		

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

PROJECT Elephant Herd

COMMENTS

PAGE 4 OF

BEARING SIDE DIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 660 BY DST

START 1-28-93 COMPLETED 1-30-93

[illegible]

KENNECOTT

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # EH-1

PROJECT Elephant Head

COMMENTS _____

PAGE 2 OF 1

BEARING S10E DIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 660 BY DSI

START 1-28-93 COMPLETED 1-30-93

O-5 scale (5 Max.)

SAMPLE NUMBER	FOOTAGE			SLUGIFICATION	Sericite	PYRITE	Copper S ² /Ox	K-Spar	Sec. Biotite*	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	FROM	TO														
			<u>Loss Silver Green</u>													
	<u>160-165</u>		<u>Light-brown ss - sandy shale, non-calc.</u> <u>Worked to the collar here</u>								Tr	Tr	Tr			
	<u>165-170</u>		" "								Tr	1	Tr			
	<u>170-175</u>		" "								1	1	Tr			
	<u>175-180</u>		" "								1	1	Tr			
	<u>180-185</u>		<u>Loss sandy, non calc</u> <u>chert layers</u>								1	1.5				1
	<u>185-190</u>		<u>" "</u> <u>chert, to hem, some sec. epidote</u>							Tr	1.5	Tr	Tr			100
	<u>190-195</u>		<u>Mixed, fine-grained ss - sandy shale</u> <u>bleached, fine-grained ss - shale, epidote</u> <u>laminated, minor chert & calc</u>							2	1	1		2	2	
	<u>195-200</u>		<u>Blackish shale w/ inclusions of epidote & calc</u> <u>limestone frags? Some bleaching, int</u> <u>clayey</u>							2	1			1	1	
	<u>200-205</u>		<u>" "</u> <u>incr. bleaching, post-epidote & calc in</u> <u>bleaching</u>					1		2	1			2	1	
	<u>205-210</u>		<u>Sandy shale</u> <u>" "</u>					Tr		2	1					
	<u>210-215</u>		<u>" "</u> <u>Rare calc. int - hematite</u>					Tr		2	Tr	Tr		2	1	
	<u>215-220</u>		<u>" "</u> <u>Minor bleaching, minor post-epidote</u> <u>minor calc. int - hematite</u>					Tr		2	1	1	Tr	2	2	
	<u>220-225</u>		<u>DR. brown shale, sec. sandy</u> <u>minor epidote, calcite, Tr. bleaching</u>							1.5	1	Tr		Tr		
	<u>225-230</u>		<u>" "</u> <u>bleaching, epidote primarily in sandy zones</u>							1.5	1	Tr		1.5	Tr	
	<u>230-235</u>		<u>incr. sandy zones, sl. more epidote, less calc</u>							2	1	Tr		1	Tr	
	<u>235-240</u>		<u>Mixed shale & ss, ss more epidote - calc</u> <u>Tr hematite/epidote</u> <u>minor calc. int - hematite</u>					1		2	1	Tr	1	1	1	

1100-1120-1140

KENNECOTT

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # 15H-1

PROJECT Elephant Head

COMMENTS _____

BEARING S10E

PAGE 4 OF 1

DIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 660' BY DSE

START 1-28-93 COMPLETED 1-30-93

0-5 scale (5 Max.)

SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	Sericite	Pyrite	D	Copper 52/0k	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonites	Magnetite	Bleaching	Fracturing-Bx
		Kba - 315m. Sand														
	240-245	bleached & silicified / gaspered Sand Shale? ss. + silicified / gaspered + bleaching 10-15 mm. bleached ss. - white	2					1.5		2	1.5	1		2	1	
	245-250	" " "	2					1.5		2	1.5			2	1	
	250-255	" " "	1					1		2	1.5	1		1.5	1	
	255-260	* chip w/ sphalerite? orber, xthin, soft - 3.5 ss. + silicified / gaspered	1					1		2	1.5	Tr		1.5	1	
	260-265	" " "	1					1		1.5	1.5	Tr		1	1	
	265-270	* chip w/ sph? cone, calcite nod, epidote nod	1.5					1		2	1.5	1	Tr	2	1.5	
	270-275	" " "	1.5					1		2.5	1.5	1	Tr	2	1.5	
	275-280	" " " occ. MnO ₂ Epidote ss. massive w/ bleached silicite	1.5					1		2.5	1	Tr	Tr	1.5	1	
	280-285	" " " 10-15 mm. and 10-20 mm. calcite 10-15 mm. calcite	2					1		3	2.5	1.5		2	2	
	285-290	* from pass rock, silicified, calcite nodules	2					1		3	2.5	1.5		2	2	
	290-295	" " "	1					1		2.5	2	1.5		1.5	1.5	
	295-300	white to pink mgy ss, calc, w/ ep.	1					Tr		2	2	1.5		1.5	1.5	
	300-305	@ 300 - SWITCH TO WATER, WET SPLITTER IN USE NEEDED TO REPAIR WET SPLITTER FIRST (145) WET SPLITTER NOT USED! Mostly ss, Purple-bn sandstone with siliceous calc								1.5	1	Tr				
	305-310	Purple-bn shale, w/ epidote in fractures, to calcite and silicite								1	1	Tr				
	310-315	" " " calcite & silicite - some chlorite nod								1.5	1.5	1.5			1	
	315-320	mixed ss & calcite								1	1	1.5				

12:00
1:15
→

KENNECOTT

1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE →

EH-1

PROJECT

Elephant Head

COMMENTS

PAGE 5 OF 1

BEARING 510 E

DIP 45°

LOCATION: N. E.

COLLAR ELEV.

TOTAL DEPTH 660' BY DSI

START 1-28-97 COMPLETED 1-30-93

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE			SILICIFICATION	Sericite	PYRITE	Copper 5/Ax	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	FROM	TO														
	320	325	Primarily purple-brown shale, sandy, argillaceous. Minor epidote, chlorite, and calcite veinlets. Tr bleaching.							1.0	1.0	1.0			Tr	1
	325	330	" " "							1.5	1.5	1.5				
	330	335	" " "							1.5	1.5	1.5				
	335	340	" " "							1.5	1.5	1.5				
	340	345	Strongly fractured/bx'd argillaceous shale ss. Epidote, calcite, hematite (pinkish white). Occ pyrite cts → hematite. Hem veinlets.					1.5		2.5	2	2	2		3	3.5
	345	350	Mostly fr. argill. ss. some shale. Mod. epidote veinlets, w/ chl, calc. & xing.							1.5	1	1	Tr		1	1
	350	355	" " "	1.5						2	Tr	2			2.0	1
	355	360	less silicified/bx'd. Tr pyrite cts → hematite.	Tr		Tr				1.5	1.0	1.5	1		1	1
	360	365	Mixed shale and ss. epidote abund, as is calcite, chlorite, hematite (some arg. py cts). SL fractured & bx'd. Abund. microm. calc. cts.			Tr				2.5	2	1.5	2		2	2.5
	365	370	" " "	Tr						2.5	2	1.5	2		2	2
	370	375	Minor speckled calcite veinlets. w/ epidote dev.							2.5	2	1.5	2		2	2
	375	380	" " "							2.5	2	1.5	1.5		1.5	1.5
	380	385	Mostly ss, some arg. p.s. Minor arg. veinlets? w/ chl, sericite, some epidote.	1						2	2.5	1	1		Tr	1
	385	390	" " "	Tr						1	2.0	1	1			1
	390	395	Primarily arg. ss.							1	1.5	1	1			1
	395	400	" " "							1.5	1.5	1	1			1
	400	405	Some w/ arg. dissem. speckled calcite.							1.5	1.5	1	1			1
	405	410	" " "							1.5	1.5	1	1			1
	410	415	Probly ss. locally.							1.5	1	1	Tr			Tr
	415	420	Fractured ss. Calcareous.							1.5	1	1	Tr			Tr

KENNECOTT

1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE # 217-1PROJECT Elephant Head

COMMENTS _____

PAGE 1 OF 1BEARING SIDEDIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 660 BY DSFSTART 1-25-93 COMPLETED 1-30-93

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE FROM TO		SLICIFICATION	Sericitic PYRITE	Copper S ² /Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
		Khan-Bi-Bi Group												
	400-405	Mg - Pervine is, pale green-gray to gray, calcitic matrix, w/ epidote, to calcite						Tr	1	Tr				
	405-410	" " " " " " " " " " " "						2.5		1.5				
	410-415	2. Pale gray - some purple - some sandy zone						2	1	1.0				
	415-420	" " " " " " " " " " " "						2	1	Tr				
	420-425	Red-gray S.S. some purple - some sandy zone						1	1	Tr	2			
	425-430	" " " " " " " " " " " "						1	1.5	Tr	1.5			
	430-435	Compacted, calcareous sandy, calcite w/ some epidote, ch. w/ spec. bad fractured						2.5		2	1.5			3
	435-440	" " " " " " " " " " " "						2		1.5	1.5			2.5
	440-445	" " " " " " " " " " " "						2.5		1.5	1.5			2
	445-450	" " " " " " " " " " " "						2.5		1.5	1.5			2
	450-455	T ₂ Andesite, dark green, epidotized, chloritic, specularite, calcite matrix, bad fractured (Possibly an olivine basalt?)						2.5		2.0	2.5			2
	455-460	" " " " " " " " " " " "						2.5		2	2.5			2
	460-465	" " " " " " " " " " " "						2		1	2.5			1
	465-470	" " " " " " " " " " " "						2		1	2.5			1
	470-475	" " " " " " " " " " " "						1		1	2.5			1
	475-480	" " " " " " " " " " " "						1		1	2.5			1

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # EH-1
PROJECT Elkhart Head
COMMENTS _____

PAGE 1 OF 1
BEARING S10°E DIP 45°
LOCATION: N. _____ E. _____
COLLAR ELEV. _____
TOTAL DEPTH 660' , BY DSF
START 1-25-93 COMPLETED 1-30-93

[illegible]

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE \rightarrow E H-1

PROJECT Elephant Head

COMMENTS santa Cruz Co AZ

PAGE 7 OF 1

BEARING S10E DIP 45°

LOCATION: N. _____ E. _____

COLLAR ELEV.

TOTAL DEPTH 64201 BY DSI

START 1-28-43 COMPLETED 1-30-43

Logged by Jerry Wilkins

[illegible]

DRILL HOLE AZ93EH - 2

- * DRILL LOGS
- * ASSAYS

AZ 93 EH-2

Kennett Expl. 2-9-93
Elephant Head Proj

	Au	Cu	Zn	Mo	Pb
0 - 60 Composite		✓	✓	✓	✓
60 - 125 "		✓	✓	✓	✓
125 - 155 "		✓	✓	✓	✓
155 - 170 "		✓	✓	✓	✓
170 - 210 "		✓	✓	✓	✓
210 - 260 "		✓	✓	✓	✓
260 - 295 "		✓	✓	✓	✓
295 - 360 "		✓	✓	✓	✓
360 - 390 "		✓	✓	✓	✓
390 - 415 "		✓	✓	✓	✓
415 - 455 "		✓	✓	✓	✓
455 - 485 "		✓	✓	✓	✓
(470-475)	✓	✓	✓	✓	✓
(475-485)	✓	✓	✓	✓	✓
490 - 505 Composite		✓	✓	✓	✓
505 - 545 "		✓	✓	✓	✓
545 - 605 "		✓	✓	✓	✓
605 - 650 "		✓	✓	✓	✓
650 - 675 "		✓	✓	✓	✓
675 - 700 "		✓	✓	✓	✓
700 - 735 "		✓	✓	✓	✓
735 - 755 755 "		✓	✓	✓	✓
755 - 780 "		✓	✓	✓	✓
780 - 790 "		✓	✓	✓	✓
790 - 800 "		✓	✓	✓	✓



Chemex Labs Inc.
Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: JOEY WILKINS

Page Number : 1
Total Pages : 1
Certificate Date: 19-FEB-93
Invoice No. : 19311100
P.O. Number : AZ93EH-2
Account : GJV

CERTIFICATE OF ANALYSIS **A9311100**

SAMPLE	PREP CODE	Au ppb FA+AA	Cu ppm	Zn ppm	Mo ppm	Pb ppm			
AZ93EH-2 000-060	205 274	---	14	73	1	10			
AZ93EH-2 060-125	205 274	---	21	93	1	12			
AZ93EH-2 125-155	205 274	---	14	73	1	14			
AZ93EH-2 155-170	205 274	---	12	73	1	12			
AZ93EH-2 170-210	205 274	---	6	97	1	11			
AZ93EH-2 210-260	205 274	---	10	66	1	9			
AZ93EH-2 260-295	205 274	---	18	84	1	7			
AZ93EH-2 295-360	205 274	---	43	82	1	8			
AZ93EH-2 360-390	205 274	---	66	102	1	2			
AZ93EH-2 390-415	205 274	---	39	92	1	14			
AZ93EH-2 415-455	205 274	---	28	90	1	13			
AZ93EH-2 455-485	205 274	---	860	107	2	23			
AZ93EH-2 470-475	205 274	10	2550	196	4	95			
AZ93EH-2 475-480	205 274	< 5	2280	135	3	15			
AZ93EH-2 485-505	205 274	---	54	86	1	9			
AZ93EH-2 505-545	205 274	---	28	90	2	8			
AZ93EH-2 545-605	205 274	---	12	75	< 1	8			
AZ93EH-2 605-650	205 274	---	20	82	<	7			
AZ93EH-2 650-675	205 274	---	9	120	2	4			
AZ93EH-2 675-700	205 274	---	6	92	2	4			
AZ93EH-2 700-730	205 274	---	10	89	2	7			
AZ93EH-2 730-755	205 274	---	39	71	3	5			
AZ93EH-2 755-780	205 274	---	7	57	2	4			
AZ93EH-2 780-790	205 274	---	4	59	1	5			
AZ93EH-2 790-800	205 274	---	3	45	1	5			

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CERTIFICATION:

KENNECOTT

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # 217-2

PROJECT Elephant Head

COMMENTS Santa Cruz Co. AZ

PAGE 1 OF 1

BEARING Vertical

DIP

LOCATION: N. E.

COLLAR ELEV.

TOTAL DEPTH 800' BY DSF

START 1-30-93 COMPLETED 2-2-93

Logged by Joey Wilkins and
SE 1/4 NE 1/4 Section 11, T20S, R13E Richard Ahern

Drilling Services ←

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE FROM TO	DESCRIPTION	SIGNIFICATION	Sericite	PYRITE	Copper S^{2+}/Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
		<u>Kbs Spinel Ground</u>													
	<u>0-5</u>	<u>Red-gray (purple-gray) sandstone, silty, calcareous, micaceous</u>													
	<u>5-10</u>	<u>" " "</u>													
	<u>10-15</u>	<u>" " "</u>													
	<u>15-20</u>	<u>Mixed ss and shale Shale w/ chlorite & calcite veinlets</u>								1.5	1.5				
	<u>20-25</u>	<u>" " "</u>													
	<u>25-30</u>	<u>Mostly silty ss, some calcite, calcareous, calcite and gtz micro veins</u>													
	<u>30-35</u>	<u>" " "</u>													
	<u>35-40</u>	<u>" " "</u>													
	<u>40-45</u>	<u>END DAY @ 5:00 PM 1-31-92 START @ 7:30 AM</u>													
	<u>45-50</u>	<u>" " "</u>													
	<u>50-55</u>	<u>" " "</u>													
	<u>55-60</u>	<u>" " "</u>													
	<u>60-65</u>	<u>Mixed ss and shale (red-brown) Round gtz-fragments, calcite-veinlet veinlets in both rock types</u>													
	<u>65-70</u>	<u>Red-brown shale, minor ss, some calcite, some gtz-fragments</u>													
	<u>70-75</u>	<u>" " "</u>													
	<u>75-80</u>	<u>" " "</u>													

Water in hole

4-14-92 10:00 AM

KENNECOTT

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # 12-11-2
PROJECT Elephant Head

COMMENTS _____

PAGE 1 OF 1
BEARING Vertical DIP _____
LOCATION: N. _____ E. _____
COLLAR ELEV. _____
TOTAL DEPTH 800' BY DSI
START 1-30-93 COMPLETED 2-2-93

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		0-5 scale (5 max)										
			SILIFICATION	Sericite	PYRITE	Copper S^{2+}/Cu	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonites	Magnetite
		<u>Kbb Broken Ground</u>											
	<u>80-85</u>	<u>Sandy, sh. calcareous</u> <u>minor calc units & calcite units w/te ar sch.</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1.5</u>		<u>1</u>
	<u>85-90</u>	<u>" " "</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1.5</u>		<u>1</u>
	<u>90-95</u>	<u>Mixed Shale & ss (fine-grained)</u> <u>gte & calcite units = calcite</u>		<u>Tr</u>						<u>Tr</u>	<u>1.5</u>		
	<u>95-100</u>	<u>mostly sand shale</u> <u>hard calcite units</u> <u>ss. gte</u>	<u>1</u>	<u>Tr</u>						<u>1</u>	<u>2</u>		<u>2</u>
	<u>100-105</u>	<u>Silty Sandstone</u> <u>minor calcite gte</u>	<u>1/4</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		<u>1</u>
	<u>105-110</u>	<u>" " "</u>	<u>1/4</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		<u>1</u>
	<u>110-115</u>	<u>Sandy Shale</u> <u>Tr gte & calcite</u> <u>highly calcareous</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		
	<u>115-120</u>	<u>Sandstone, sh. calc.</u> <u>" "</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		
	<u>120-125</u>	<u>Sandy Shale</u> <u>" "</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		
	<u>125-130</u>	<u>Silty Sandstone</u> <u>Tr calcite & gte</u> <u>calcareous</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		
	<u>130-135</u>	<u>" " "</u> <u>minor calcite units, Tr gte</u>	<u>Tr</u>	<u>Tr</u>						<u>Tr</u>	<u>1.5</u>		
	<u>135-140</u>	<u>" " "</u> <u>Wk sand w/ gte</u>	<u>1</u>	<u>1</u>						<u>Tr</u>	<u>1.5</u>		
	<u>140-145</u>	<u>ss is vfg, silty, calc.</u> <u>gradual</u> <u>calcareous</u> <u>" "</u>	<u>1</u>	<u>1</u>						<u>Tr</u>	<u>1</u>		
	<u>145-150</u>	<u>" " "</u>	<u>1</u>	<u>1</u>						<u>Tr</u>	<u>1</u>		
	<u>150-155</u>	<u>1/3 ss</u> <u>" " "</u>	<u>1</u>	<u>1</u>						<u>Tr</u>	<u>1</u>		
	<u>155-160</u>	<u>Cg ss, poorly sorted, sub-angular clasts</u> <u>gte - calcite units</u>	<u>1</u>	<u>Tr</u>						<u>Tr</u>	<u>1</u>		

Please refer to hole

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1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # E-H-1

PROJECT Elephant + Hand

COMMENTS _____

PAGE 1 OF
BEARING Vertical DIP
LOCATION: N. E.
COLLAR ELEV.
TOTAL DEPTH 800' BY DSI
START 1-30-93 COMPLETED 2-2-93

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE FROM TO		SLIIFICATION	Sericate PYRITE	Copper 5% K-spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
		Kaa Bisbee / Apache Group Formation											
	240-245	Red-brown sandy shale to silty vty ss minor gte & calcite units ± chl & sericate	1.5	Tr				Tr	1.0				1
	245-250	" "	1.5	Tr				Tr	1				1
	250-255	" "	1.5	Tr				Tr	1				1
	255-260	" "	1.5	Tr				Tr	1				1
	260-265	Tan to sandstone, indurated, calcareous minor calcite units, to gte	1.5	Tr				1					Tr
	265-270	Red-brown shale to sandstone weakly calcareous Minor gte & calcite units = Ser & chl	1.5	Tr				Tr	1.0				Tr
	270-275	" " "	1.5					1/2					
	275-280	" " "	1/2					1/2					
	280-285	Sandy shale w/ minor pale pink-gray vty sandstone	1.5	Tr				Tr	1				
	285-290	" " " w/ tan sandstone minor hematite & fractures	1	Tr				Tr	1				1
	290-295	" " "	1	Tr				Tr	1 1/2				1
	295-300	Dark red-brown sandy shale / silty vty ss	1/2	Tr				Tr	Tr	Tr			1
	300-305	Dark red-brown shale w/ calcite units						Tr	1/2				
	305-310	" " " Some pale pink-gray shale - bleached? Brecciated some w/ calcite - yellowish matrix	1.5	Tr				1.5	1.5				1
	310-315	Mixed shale and sandstone, quartz & chert frags, minor calcite fill bx A+ iron silicate? - chert?	1.5					1.5	1.5				2
	315-320	" " "	2	Tr				2	2				2

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1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE → EH-2PROJECT Elephant Head

COMMENTS _____

PAGE 2 OF 2BEARING Vertical

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 800' BY DSFSTART 1-30-93 COMPLETED 2-2-93

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE			SILIFICATION	Sericite	PYRITE	Copper $\frac{5}{10}$	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	FROM	TO														
			<u>Kbo Disbee Group</u>													
	<u>320-325</u>		<u>Mostly red-brn silty shale w/ gta-ser/chl veins, ± calcite</u>	<u>2</u>	<u>1</u>						<u>1</u>	<u>1/2</u>				<u>2</u>
	<u>325-330</u>		<u>" " "</u>	<u>2</u>	<u>1.5</u>						<u>1.5</u>	<u>2</u>				<u>2</u>
	<u>330-335</u>		<u>" " "</u>	<u>2.5</u>	<u>1.5</u>						<u>1.5</u>	<u>2</u>				
	<u>335-340</u>		<u>" " "</u>	<u>2</u>	<u>1.5</u>						<u>1</u>	<u>2</u>				<u>2</u>
	<u>340-345</u>		<u>" " "</u>	<u>2.5</u>	<u>1.5</u>						<u>1.5</u>	<u>2</u>				<u>2.5</u>
	<u>345-350</u>		<u>" " "</u>	<u>2.5</u>	<u>1.5</u>						<u>1.5</u>	<u>2</u>				<u>2.5</u>
	<u>350-355</u>		<u>" " "</u>	<u>2</u>	<u>1</u>						<u>1.5</u>	<u>2</u>				<u>2</u>
	<u>355-360</u>		<u>" " "</u>	<u>2</u>	<u>1.5</u>						<u>2</u>	<u>2.5</u>				<u>2.5</u>
	<u>360-365</u>		<u>Mostly olive siltstone, Tangiav freg, Calcite, Chlorite w/ red-brn silty shale</u>	<u>1.0</u>	<u>1.5</u>						<u>2</u>	<u>2</u>				<u>2</u>
	<u>365-370</u>		<u>Red-brn shale w/ calc-chl units some silty</u>	<u>1</u>	<u>1</u>						<u>2</u>	<u>2</u>				<u>2</u>
	<u>370-375</u>		<u>" " "</u> <u>Abund. calc-chl = gta-ser units</u>	<u>1.5</u>	<u>1.5</u>						<u>2.5</u>	<u>2.5</u>				<u>2</u>
	<u>375-380</u>		<u>" " "</u>	<u>1.5</u>	<u>1.5</u>						<u>2</u>	<u>2.5</u>				<u>2</u>
	<u>380-385</u>		<u>" " "</u>	<u>1.5</u>	<u>1.5</u>						<u>2.5</u>	<u>2.5</u>				<u>2.5</u>
	<u>385-390</u>		<u>Olive siltstone/shale w/ freg chlorite, calc-chl units</u>	<u>1</u>	<u>1</u>						<u>2</u>	<u>2</u>				<u>2</u>
	<u>390-395</u>		<u>Red-brn sandstone/silty vfg freg w/ minor calc-chl units, some silty</u>	<u>1</u>	<u>1</u>						<u>1.5</u>	<u>1.5</u>				<u>1</u>
	<u>395-400</u>		<u>" " "</u>	<u>1</u>	<u>1</u>						<u>1.5</u>	<u>1.5</u>				<u>1</u>

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1515 MINERAL SQUARE
P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE #

PROJECT Elephant HeadPAGE 1 OF 1BEARING Vertical DIP

LOCATION: N. E.

COLLAR ELEV.

TOTAL DEPTH 800' BY DSISTART 1/30/93 COMPLETED 2-2-93

COMMENTS

Logged by Joe Wilkins to 460'Logged by R. Aherm 460 to TD

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		SLICIFICATION	Sericite	PYRITE	Copper 5/Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	400	405								1.5	1.5				1
	405	410								1	1				1
	410	415								1/2	1/2				
	415	420								1/2	1/2				
	420	425								1.5	1.5				
	425	430								1.5	1.5				
	430	435								1	1				
	435	440								1/2	1/2				
	440	445								1/2	1/2				
	445	450								1/2	1/2				
	450	455								1/2	1/2				
	455	460								1/2	1/2				
	460	465								1/2	1/2				
	465	470								1/2	1/2				
	470	475								1/2	1/2				
	475	480								1/2	1/2				
	480	485								1/2	1/2				
	485	490								1/2	1/2				
	490	495								1/2	1/2				
	495	500								1/2	1/2				
	500	505								1/2	1/2				
	505	510								1/2	1/2				
	510	515								1/2	1/2				
	515	520								1/2	1/2				
	520	525								1/2	1/2				
	525	530								1/2	1/2				
	530	535								1/2	1/2				
	535	540								1/2	1/2				
	540	545								1/2	1/2				
	545	550								1/2	1/2				
	550	555								1/2	1/2				
	555	560								1/2	1/2				
	560	565								1/2	1/2				
	565	570								1/2	1/2				
	570	575								1/2	1/2				
	575	580								1/2	1/2				
	580	585								1/2	1/2				
	585	590								1/2	1/2				
	590	595								1/2	1/2				
	595	600								1/2	1/2				
	600	605								1/2	1/2				
	605	610								1/2	1/2				
	610	615								1/2	1/2				
	615	620								1/2	1/2				
	620	625								1/2	1/2				
	625	630								1/2	1/2				
	630	635								1/2	1/2				
	635	640								1/2	1/2				
	640	645								1/2	1/2				
	645	650								1/2	1/2				
	650	655								1/2	1/2				
	655	660								1/2	1/2				
	660	665								1/2	1/2				
	665	670								1/2	1/2				
	670	675								1/2	1/2				
	675	680								1/2	1/2				
	680	685								1/2	1/2				
	685	690								1/2	1/2				
	690	695								1/2	1/2				
	695	700								1/2	1/2				
	700	705								1/2	1/2				
	705	710								1/2	1/2				
	710	715								1/2	1/2				
	715	720								1/2	1/2				
	720	725								1/2	1/2				
	725	730								1/2	1/2				
	730	735								1/2	1/2				
	735	740								1/2	1/2				
	740	745								1/2	1/2				
	745	750								1/2	1/2				
	750	755								1/2	1/2				
	755	760								1/2	1/2				
	760	765								1/2	1/2				
	765	770								1/2	1/2				
	770	775								1/2	1/2				
	775	780								1/2	1/2				
	780	785								1/2	1/2				
	785	790								1/2	1/2				
	790	795								1/2	1/2				
	795	800								1/2	1/2				

Brick red shale, w/ calc.
minor cal-chl. units

" " "

" " "
mixed w/ gray ss - biotite rich" " "
pale olive shale w/ sandy calcareousRed-bn ss, w/ calc.
minor cal-chl. units

" " "

" " "

" " "

" " "

" " "

" " "

Pale green-brown sandstone calcareous
minor calcite unitsEND DAY 23:10 pm
2/11/93 START 7:50
Grn gray sandstone w/ hairline carbonate
units

" " "

" w QTZ vln > 1/4", CuOx blue

limonite "plates" > 1/2" from fractures

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1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # C 17 - 4PROJECT Elephant Head

COMMENTS _____

PAGE 1 OF 1BEARING Vertical DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 800' BY DSCSTART 1-20-93 COMPLETED 2-2-93

		0-5 scale (5 Max)											
SAMPLE NUMBER	FOOTAGE FROM TO		SLICIFICATION	Sericite PYRITE	Copper 570s	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching Fracturing-Bx
	<u>480-485</u>	Greengray Sandstone + siltstone w/ platelets of limonite/hematite fracture filling	<u>1/2</u>	<u>Tr</u>	<u>0</u>					<u>2</u>		<u>1/2</u>	
	<u>485-490</u>	Purple gray ss siltstone w/ Qtz vnlts	<u>1</u>	<u>Tr</u>						<u>Tr</u>			
	<u>490-495</u>	" "	<u>1</u>	<u>Tr</u>						<u>Tr</u>			
	<u>495-500</u>	" "	<u>1</u>	<u>Tr</u>						<u>Tr</u>			
	<u>500-505</u>	Gray siltstone sandstone, larger cuttings, occasional Qtz vnlts	<u>1</u>	<u>Tr</u>						<u>1/2</u>			
	<u>505-510</u>	Purple gray shaley siltstone, minor vnlts	<u>1/2</u>	<u>Tr</u>						<u>1/2</u>			
	<u>510-515</u>	" "	<u>1/2</u>	<u>Tr</u>						<u>1/2</u>			
	<u>515-520</u>	" "							<u>Tr</u>	<u>Tr</u>			
	<u>520-525</u>	Shale, No vnlts. Coarse shale partings evident in cuttings							<u>Tr</u>				
	<u>525-530</u>	" "							<u>Tr</u>				
	<u>530-535</u>	" "											
	<u>535-540</u>	" "											
	<u>540-545</u>	" "											
	<u>545-550</u>	Sandstone w/ rare chalcocite stringers filling fractures	<u>Tr</u>	<u>Tr</u>					<u>Tr</u>	<u>Tr</u>			<u>Tr</u>
	<u>550-555</u>	" "	<u>Tr</u>	<u>Tr</u>					<u>Tr</u>	<u>Tr</u>			<u>Tr</u>
	<u>555-560</u>	" "	<u>Tr</u>						<u>Tr</u>	<u>Tr</u>			<u>1/2</u>

12.1.3

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1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE # EH-2

PROJECT Elephant Head

COMMENTS _____

PAGE 6 OF

BEARING Vertical

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 800' BY DSC

START 1-30-93 COMPLETED 2-2-93

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	SERICITE	PYRITE	COPPER $5/10$	K-SPAR	SEC. BIOTITE	EPIDOTE	CHLORITE	CALCITE	LIMONITE	MAGNETITE	BLEACHING	FRACTURING-Ox
		gray													
	560-565	Green Sandstone, rare carbonate stringers									Tr			1/2	
	565-570	"									Tr			1/2	
	570-575	"									Tr			1/2	
	575-580	"									Tr			1/2	
	580-585	"									Tr			1/2	
	585-590	"									Tr			1/2	
	590-595	Sandstone w some green							Tr	Tr				1/2	
	595-600	Green Sandstone w occasional carbonate stringers 1:25	Tr	Tr					Tr	Tr	1/2			1/2	
	600-605	Green-brown Sandstone w clay? Fr, broken fault?	Tr	Tr							1/2			1/2	1
	605-610	Dark red Shale w/green-brown frags from above? or occasional local beds	Tr	Tr							Tr			Tr	1/2
	610-615	Purple-brown Shale w/occasional calcite stringers + rare FeOx stain on fractures									1/2			1/2	
	615-620	Shale												1/2	
	620-625	Shale w thin partings, Red Sandstone, + gray clay; occasional carbonate stringers									1/2			1	
	625-630	Shale. No Sandstone Calcite veinlets 2:38	Tr								1/2			1	
	630-635	" more numerous thin calcite veins	Tr								1			1.5	
	635-640	Shale cut by thin Qtz veins + calcite stringers 2:04	1/2								1/2			1.5	

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1515 MINERAL SQUARE

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SALT LAKE CITY, UTAH 84147

HOLE # EH-2PROJECT Elephant Head

COMMENTS _____

PAGE 1 OF 1BEARING Vertical

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 800' BY DSCSTART 1/30/93 COMPLETED 2-2-93

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		SLICIFICATION	Serite	PYRITE	Copper 52/Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	640-645	Shale w calcite along frags 1/4"-1/2" partings in shale 3:30								Tr					1
	645-650	Shale w carbonate on frags occasional epidote w calcite							1/2	Tr	1/2				1/2
	650-655	brn shale + light red sandstone, rare calcite units								Tr					1/2
	655-660	Sandstone and brn brn or maroon shale, rare 4:01 Calcite units								Tr					1/2
Change to Tricone bit Rod Count	660-665	Green brn Shale 1/2/93 w clay. Calcite on frags								1/2					1/2
Now on 5:20	665-670	" w 1/2" reddish orange								1/2					1/2
	670-675	Red brn siltstone occasional ss stringers along frags, clay, no ss								Tr					Tr
	675-680	Red brn siltstone, no shale partings occasional lt red ss chips, hole matrix abundant clay w/ 5 arm H ₂ O								Tr					Tr
	680-685	"								Tr					Tr
	685-690	"								Tr					Tr
	690-695	" 9:25								Tr					Tr
	695-700	" 9:37 lt Red-brn ss chips more abundant								Tr					Tr
	700-705	Grn brn siltstone + lt red brn ss w clay. Occasional calcite units 9:56 limonite fractures. Clay not significant								Tr					
	705-710	"								Tr					
	710-715	"								Tr					
	715-720	" DTR standard w 2-3 frags								Tr	Tr				

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1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # HH-2PROJECT Elephant Head

COMMENTS _____

PAGE 1 OF 1BEARING Vertical

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 800' BY DSCSTART 1/30/93 COMPLETED 2/2/93

		0-5 scale (5 Max)													
SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	Sericite	PYRITE	Copper 5% O ₂	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Ox
	710-725	WTR dbn Sandstone									Tr				
	725-730	Sandstone									Tr				
	730-735	Red shale 10:50									Tr				
	735-740	Shale + SS in silicious matrix Pale green brn	1	Tr							Tr	1/2		Tr	1/2
	740-745	Sandstone pale red w qtz Stringers, limonite stained	1	Tr							Tr	1/2		Tr	1/2
	745-750	Plnc bleaching or w/ rock	1	Tr							Tr	1/2		Tr	1/2
	750-755	Siltstone w minor qtz vn 1 to 10:25	1/2								1/2				1/2
	755-760	Siltstone w c/qtz vnts on frags Dark Purple	1/2								Tr				
	760-765	"	1/2								Tr				
	765-770	" less to nil carbonate, minor qtz	Tr								Tr				
	770-775	"	Tr								Tr				
	775-780	"	Tr								Tr				
	780-785	Sandstone Tan brownish yellow w silica filling fractures. No Sulfides or limonite after pu	1											Tr	1/2
	785-790	" (SANDSTONE)	1											Tr	1/2
	790-795	TKjd Josephine Canyon qtz Diorite w silica filling occasional frags. No Sulfides or limonite, Diorite	1	1						1				1/2	
	795-800	TKjd is finer grained than that encountered in #1 Gray w/ brownish gray	1	1						1				1	

DRILL HOLE AZ93EH - 3

- * DRILL LOGS
- * ASSAYS

AZ93 EH-3

Kennecott Exp!
Elephant Head Proj; 2-9-93

Interval	Au	Cu	Mo	Pb	Zn
0-15 comp.		✓	✓	✓	✓
15-60 comp.		✓	✓	✓	✓
60-100 comp.		✓	✓	✓	✓
100-150 comp		✓	✓	✓	✓
150-170 comp		✓	✓	✓	✓
170-200 comp		✓	✓	✓	✓
200-205		✓	✓	✓	✓
205-210		✓	✓	✓	✓
210-215	✓	✓	✓	✓	✓
215-220	✓	✓	✓	✓	✓
220-225		✓	✓	✓	✓
225-230		✓	✓	✓	✓
230-235	✓	✓	✓	✓	✓
235-240	✓	✓	✓	✓	✓
240-245		✓	✓	✓	✓
245-260 comp.		✓	✓	✓	✓
260-265	✓	✓	✓	✓	✓
265-280 comp.		✓	✓	✓	✓
280-285		✓	✓	✓	✓
285-290	✓	✓	✓	✓	✓
290-295	✓	✓	✓	✓	✓
295-300		✓	✓	✓	✓
300-305		✓	✓	✓	✓
305-310		✓	✓	✓	✓
310-315		✓	✓	✓	✓
315-345 comp		✓	✓	✓	✓
345-355 comp		✓	✓	✓	✓
355-370 comp		✓	✓	✓	✓
370-385 comp		✓	✓	✓	✓
385-400 comp		✓	✓	✓	✓
T.D.					
400'					

H



To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH-
84147

Project: **ELEPHANT HEAD**
Comments: **ATTN: LINUS KEA**

Comments: **ATTN: LINUS KEATING** **CC: JOEY WILKINS**

Page Number : 1
Total Pages : 1
Certificate Date: 19-FEB-93
Invoice No. : 19311123
P.O. Number : AZ93EH-3
Account : GJV

CERTIFICATE OF ANALYSIS

[illegible]

CERTIFICATION:

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # E H-3
PROJECT Elephant Head

COMMENTS Logged by R Alcorn
additional logging by Joey Wilkins

PAGE 1 OF 5
BEARING Vertical DIP _____
LOCATION: N 1170 N 660 E SW Cor
Sec 1, T20S, R13 E
COLLAR ELEV. _____
TOTAL DEPTH 400 BY DSI
START 2/3/93 COMPLETED 2/3/93

		0-5 scale (5 Max)													
SAMPLE NUMBER	FOOTAGE		SILICIFICATION	Sericite	PYRITE	Copper S ²⁺ /Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonites	Magnetite	Bleaching	Fracturing-Ox
	FROM TO														
	0-5	10/50 K Bisbee Group fg ss w calcite vnits, gray brown	Tr							i	1				
	5-10	chlorite on fractures mostly red-brown shale	Tr							i	1/2				
	10-25									i	Tr				
	15-20									i	Tr				
	20-25									i	Tr				
	25-30									i	Tr				
	30-35	Red Brn Siltstone + Sandstone	1/2							Tr	Tr				
	35-40	"								i	Tr				
	40-45	" w rare calcite vnits								i	1/2				
	45-50	"								i	Tr				
	50-55	"								i	Tr				
	55-60	"								i	Tr				
	60-65	11:35 " Calcite vnit. lighter color Able green-gray sandstone chlorite on fractures								1/2	1/2				
	65-70	Gray green siltstone w calcite vnits + chalcedony	1/2							1/2	1/2				
	70-75	" Red-brn fg ss, silty, weakly calc.	1/2							1/2	Tr				
	75-80	"	1/2							1/2	1/2				

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1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE #

EH-3

PROJECT

COMMENTS

BEARING

PAGE 2 OF 5

DIP

LOCATION: N.

E.

COLLAR ELEV.

TOTAL DEPTH

400

BY

DSI

START

2/3/93

COMPLETED

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE FROM TO		SIGNIFICATION	SERICITE	PYRITE	Copper 52 O $_2$	K-spar	Sec. Biotite	Epidote	Chlorite	Calcite	J-magnetite	Magnetite	Bleaching	Fracturing-Bx
		Red-brown sandstone, silty													
	80-85	Gray Green siltstone w/calcrete veins + chalcedony chlorite on fractures	$\frac{1}{2}$								$\frac{1}{2}$				
	85-90	" "	$\frac{1}{2}$								$\frac{1}{2}$				
	90-95	" "	$\frac{1}{2}$								$\frac{1}{2}$				
	95-100	" "	$\frac{1}{2}$								$\frac{1}{2}$				
	100-105	Red brown siltstone, only rare chalcedony or calcrete	$\frac{1}{2}$								$\frac{1}{2}$				
	105-110	silty sandstone	$\frac{1}{2}$								$\frac{1}{2}$				
	110-115	"	$\frac{1}{2}$								$\frac{1}{2}$				
	115-120	"	$\frac{1}{2}$								$\frac{1}{2}$				
	120-125	Brick red-brn shale. sandy.	$\frac{1}{2}$								$\frac{1}{2}$				
	125-130	Red-brn sandy shale / silty ss.	$\frac{1}{2}$								$\frac{1}{2}$				
	130-135		$\frac{1}{2}$								$\frac{1}{2}$				
	135-140		$\frac{1}{2}$								$\frac{1}{2}$				
	140-145		$\frac{1}{2}$								$\frac{1}{2}$				
	145-150	with calcite veins tr. gtz	$\frac{1}{2}$								$\frac{1}{2}$				
	150-155	tr. gtz	$\frac{1}{2}$								$\frac{1}{2}$				
	155-160	minor Hedenberg and epidote	$\frac{1}{2}$								$\frac{1}{2}$				

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1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE # EH-3PROJECT Elephant Head

COMMENTS _____

PAGE 3 OF 5BEARING Vertical

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 400' BY DSCSTART 2/3/93 COMPLETED 2-3-93

SAMPLE NUMBER	FOOTAGE FROM TO		0-5 scale (5 Max)										
			SILICIFICATION	Sericite	Pyrite	Copper %/Ox	K-Spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite
	160-165	Red-brown shale, some pale pink-yy silicified/bleached. epidote, w/ qtz and chlorite	1/2						1.5	1/2	1		1 1
	165-170	" "	1/2						1.5	1/2	1		1 1
	170-175	Pale green-gray ss Red brown sandstone w chlorite along close spaced hairline fracs, Qtz + rare calcite veinlets	1.5							2	1/2		2 2
	175-180	Some chloritic surfaces look like Slicks	1							1	1/2		1 1
	180-185	" " " " minor hematite on fractures	1							2	Tr	1	1 1
	185-190	" "	1							2	Tr	1	
	190-195	Chips exhibit layered or sheared character w/ minor chlorite varts, to hem. Pale gray to pale red-brown sandstone	1/2							2		Tr	
	195-200	mixed shale & ss, sheared, bleached shale, qtz veinlets, chlorite, hematitic	2							2	1/2	1/2	1 2
* @ 200' Sheet	200-205	TKgd Elephant Head granodiorite cut by thin chlorite and qtz	1							1			
	205-210	Chlorite stringers → still in sandstone / kba	1							2			
	210-225	ss + chrysocolla ✓	2							1/2			
	225-228	Bld - ss + chrysocolla	2							1/2			
	228-225		2							1/2			
	225-230		1							Tr			
	230-235	units rare	1	Tr						Tr	Tr		
	235-240	" w Qtz + Calcite units	1/2	1/2						Tr	1/2		

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

PROJECT

PAGE 3 OF 5

BEARING Vertical DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 400' BY DSC

START 2-3-93 COMPLETED 2-3-93

COMMENTS

COMMENTS
Re-logged 2-9-93

			0-5 scale (5 Max)												
SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	Sericite	PYRITE	Copper s^2/a	K-Spar	sec. Biotite	Epidote	Chlorite	Calcite	Limonites	Magnetite	Bleaching	Fracturing-Bx
		Kba													
		Kba													
	200-205	Epidotized-bluechal sandy ls-shale? pink K-spar Flooding?, silicification, chlorite & hem on fracturing Calcite vnts.	3			?	2	2.5	2	2	1.5		2	4	
	205-210	" Str. brecciation - Shearing " "	3			?	2	2.5	2	2	1.5		2	4	
	210-215	mg sandstone, arkosic, chloritic. Shaded w/ gtz & calcite vnts I chl, hem. Tr hem. after pyrite vnts w/ specularite or gtz. minor to Tr. Chrysocolla	1			Tr		1/2	2	1	1		-	3	
	215-220	mostly ss ^{w/} minor slt/shale-limy w/ opacitate, hematite (after pyrite), Chlorite. Calcite, tr gtz	1					1/2	2	1	1			2	
	220-225	mixed ss & slt/shale w/ epidote in shale - limy hematite after pyrite	1/2					2	2	1	1			2	
	225-230	Epidotized sandy limy shale /slt. bxl, Calcite flooded, hematitic (after pyrite)						3	2	2.5	1/2			4	
	230-235	Hematite Flooded sandy shale, hematite dissem and vnts after pyrite. clay altered, tr. chl.				3 OK		Tr	1/2		4			2 1/2	
	235-240	Rail-brn sandy shale, hematitic fractures, some after pyrite, Chloritic ss, some gtz	Tr			1				1	2			1	

SALT LAKE CITY, UTAH 84147

PROJECT Elephant Herd

COMMENTS: Re logged by Jerry Watkins
2-9-83

PAGE 1 OF 2

BEARING Vertical DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH 400' BY DSC

START 2-3-93 COMPLETED 2-2-93

[illegible]

KENNECOTT

1515 MINERAL SQUARE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

HOLE # _____

PROJECT _____

COMMENTS _____

PAGE 7 OF 2

BEARING _____

DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH _____, BY _____

START 2/3/93 COMPLETED _____

0-5 scale (5 Max)

SAMPLE NUMBER	FOOTAGE			SILICIFICATION	Sericite	PYRITE	Copper S ₂ O ₃	K-spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-Bx
	FROM	TO														
	240	245	Granodiorite Pink & rare Vnites	Tr							Tr			1		
	245	250	QTZ vein	L							Tr			1		
	250	255	"	1							Tr			1		
	255	260	Base of Surface Oxidation Granodiorite gray, occasional QTL, rare calcite Vnites	1							Tr			1		
	260	265	"	1/2							Tr			1		
	265	270	"	Tr							Tr			1		
	270	275	"	Tr							Tr			1		
	275	280	"	Tr							Tr			1		
	280	285	Granodiorite, green gray, bleaching suggested by low chrt. clay & kaolinite	Tr							1/2			1		
	285	290	" Brown & white massive clay											1	1/2	
	290	295	" Brown & white clay											1	1/2	
	295	300	" No clay											1		
	300	305	" Chalcodanous chips, QTL-clay Vnites	2	1									1	2	
	305	310	" Less chalcodanous, some barite line QTL Vnites w bleaching	1	1									1	1/2	
	310	315	"	1/2	1/2						1/2			1	Tr	
	315	320	"	1/2	1/2						1/2			1	Tr	

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1515 MINERAL SQUARE

P.O. BOX 11248

SALT LAKE CITY, UTAH 84147

HOLE # HZ93EH-3
PROJECT Elephant Head

COMMENTS _____

PAGE 2 OF 2BEARING Vertical DIP _____

LOCATION: N. _____ E. _____

COLLAR ELEV. _____

TOTAL DEPTH _____ BY 2-11-93START 2/3/93 COMPLETED 2-3-93Drilling dry w air

0-5 scale (5 max)

SAMPLE NUMBER	FOOTAGE FROM TO		SILICIFICATION	Sericite	PYRITE	Copper $\frac{5}{10}$	K-spar	Sec. Biotite	Epidote	Chlorite	Calcite	Limonite	Magnetite	Bleaching	Fracturing-BX
<u>320-325</u>		Fg granodiorite w chalcedony blebs cut by $\frac{1}{8}$ - $\frac{1}{4}$ " QTZ veins. No sulfides	$\frac{1}{2}$	$\frac{1}{2}$						$\frac{1}{2}$				$\frac{1}{2}$	
<u>325-330</u>		"	$\frac{1}{2}$	$\frac{1}{2}$						$\frac{1}{2}$				$\frac{1}{2}$	
<u>330-335</u>		Fg granodiorite, gray w coarse QTZ veins + hairline QTZ-chal veins	2	2						$\frac{1}{2}$				$\frac{1}{2}$	
<u>335-340</u>		w minor bleached envelopes	2	2						$\frac{1}{2}$				$\frac{1}{2}$	
<u>340-345</u>			2	2						$\frac{1}{2}$				$\frac{1}{2}$	
<u>345-350</u>			2	2						$\frac{1}{2}$				$\frac{1}{2}$	
<u>350-355</u>		$\frac{1}{4}$ " QTZ v	2	2						$\frac{1}{2}$				$\frac{1}{2}$	
<u>355-360</u>			2	1						$\frac{1}{2}$				$\frac{1}{2}$	
<u>360-365</u>		Vfg Granodiorite, pale greenish gray	2	1						1				$\frac{1}{2}$	
<u>365-370</u>		Vfg Granodiorite, pale greenish gray	2	1						1				$\frac{1}{2}$	
<u>370-375</u>		"	2	1						1				$\frac{1}{2}$	
<u>375-380</u>		Fg. Granodiorite, greenish gray	1	1	Tr					$\frac{1}{2}$				$\frac{1}{2}$	
<u>380-385</u>			1	1	Tr					$\frac{1}{2}$				$\frac{1}{2}$	
<u>385-390</u>			1	1	Tr					$\frac{1}{2}$				$\frac{1}{2}$	
<u>390-395</u>			1	1	Tr					$\frac{1}{2}$				$\frac{1}{2}$	
<u>395-400</u>			1	1	Tr					$\frac{1}{2}$				$\frac{1}{2}$	

SALT LAKE CITY, UTAH 84147

COMMENTS_____

START _____ COMPLETED _____

[illegible]

SURFACE GEOCHEMICAL
SAMPLING

- * Number
- * Location
- * Description
- * Type
- * Geochemistry
- * Lab Reports

$$\frac{8}{92}$$

JAMES S WALKER
Santa Rita Recon. w Glove/Montosa Canyon Areas 8/92

skyline Lab;

7½ Mt. Jopkins

A Z

			Skyline Labs	Hg	As	Sb	Cu	Pb	Zn
36430c	T20S/R13E, sec 13	5' chip Weak qtz stockwork	Silicified volcaniclastic, wk dissem, oxidized py	.01	34	.09	680	24	185
36431c	" " "	Craterous rhy ash-flow tuff, wk cl./seric alt moderately stockwork.	Moderately stockwork.	1	8.5	.6	115	40	38
36432c	" " "	10x10' chip locally alt'd rhy ash-flow tuff (K) - wk dissem, localized py wk qtz stockwork. wk-med lim	wk med lim	.002	16	.06	65	8	70
36433c	20S/14E	Ht.-Grade Dump spl. Shaft on E-W high & fault in Pz ls	Shaft on E-W high & fault in Pz ls	.07	1.9	.50	3100	5550	2000
36434c	" "	Stream gossun w/ spotty CuOe.	Stream gossun w/ spotty CuOe.	.002	2.1	3.6	42	28	130
36435c	20S/13E	8' chip Wk calcite & calciferous lim veining in bxd granitic porphyry. E-W shear zone.	Wk calcite & calciferous lim veining in bxd granitic porphyry. E-W shear zone.	.002	0.7	10	130	3600	470
36436c	20S/13E	3x3' chip. Locally sheared, locally silicified granitic porph	Locally sheared, locally silicified granitic porph	.002	0.2	2.2	42	16	48
36437c	" "	4' chip.	Limestone?	.002	20.1	12	16	12	115
36438c	" "	20' subco	ls	.002	0.2	16	16	16	40
36439c	20S/14E	Prospect and	Stishov. wk qtz	.002	20.1	4.6	12	12	100
36440c	20S/14E	6' chips	Bleaching In dir.	.002	0.4	3.6	18	5550	265
36441c	" "	15' ch		.002	20.1	3.2	10	8	60

2 copies
this section

MIT, Kings 1st

Skyline

Sp#	Locality	Sample #	Sample Description	Ag	Cu	Pb	Zn	Mn	Sb	Hg
36362C	SE slope 4158 Hill. 20S/14E sec 19		3' chip across fractured, fg ss. Sparse to moderately abundant qtz vns w/ weak limonite. Mod lim. in fracs.	.01	8.7	490	30	155	12	60
36363C	Same locality as 36362C		25' chip. Shale + stst. wk to moderate limonite in fracs.	<.002	0.4	65	2	135	4	10
36364C	" "	" "	H6 of dump at shaft, top of 4158 Hill, NE end. FG, epidotized ss. Spotty Feox and weak CuOx in fractures.	.006	1.3	1100	275	2450	6	10
36365C	W end of 4158 Hill, top.	" "	50'x50' chip. Dacite porphyry. Mod propylitic alt of ground mass (Hem-epid).	.07	0.2	30	18	240	2	4.1
36366C	" "	" "	75'x25' chip. Dacite porphyry. Mod to strong propylitic alt. sparse qtz-epid vns.	<.002	0.3	40	46	230	2	2.8
36367C	20S/13E sec 13		20'x10' chip. Rhyolite porphyry. Sericitic alteration. Weak, spotty qtz stockwork w/ limonite after sulfide.	.004	<0.1	18	12	60	<2	1.1
36368C	" "	" "	10' chip. Mixed clastic sediments. wk to moderate qtz veining. Local breccia w/ jasperoid matrix.	.004	<0.1	20	8	95	<2	1.3
36369C	" "	" "	15' chip. Weak seric alt overprinting prop alt in dacite. sparse qtz vns w/ lim after sulfide.	.004	<0.1	16	10	215	<2	1.0
36370C	" "	" "	30'x10' chip. Dacite. Moderate propylitic alt. Epid/gtz vns w/ moderate limonite.	<.002	<0.1	18	8	185	<2	1.2
36371C	" "	sec 24	3' chip. Hybrid sed/intrusive contact. Epid clots rimmed by pink qtz/calc.	.002	<0.1	32	8	145	<2	1.6
36372C	" "	" "	8' chip across subvertical shear zone in siltstone. Calcite/FeCO ₃ flooding. N 60° w strike.	.008	0.1	28	12	105	4	5.5
36373C	20S/14E 19		7' chip across silicified subvertical rhy dike. Aphanitic. Mod abundant cryptocrystalline qtz vns. N 200° w strike.	.002	<0.1	20	4	32	<2	0.9
36374C	" "	" "	15' chip across rhy porph dike. Prop alt. qtz stockwork.	<.002	<0.1	16	<2	38	<2	1.0
36375C	Adit, NE slope 4158 Hill.	" "	Chert conglomerate. Qtz-calcite intx w/ wk lim. Some epid. Minor drusy qtz in mtx.	.01	<0.1	16	12	55	<2	2
36376C	South Adit. Agua Caliente "cave"	20S/14E sec 18	Banded calcite, FeCO ₃ and limonite after sulfide? Some cherty limestone w/ wk lim. Pz limestone host	.004	0.1	18	78	345	2	0.9

KENNECOTT EXPLORATION Salt Lake City
GEOCHEMICAL SAMPLING

CH-channel
C-chip
R-rock
F-float
T-talus
D-dump
RC-rotary chlr
HQ-high grade
S-soil
St-stream sed

Chemex Labs

PROJECT: Elephant trail

GEOLOGIST: Jay Williams, Kai Anderson

DATE: September 92

QUAD: Mount Hopkins

COUNTY: Santa Cruz

STATE: Arizona

As, Hg in ppb

Others in ppm

Sample Number	Sec. T. R.	Location	Rock Description Comments	Au	Ag	As/Sb	Hg	Cu	Pb	Zn	Mo	Bi
44988c	Su14 12, 205, 13E	Small prospect in wash area at 40' shaft	Kba hornfelsed slt limy ss, ch, hyp, gndite	<5	0.2	4/6.4	20	120	9	45	<1	0.9
44989c	SE14 1, 205, 13E		Qte gte/sec silt gte monz porph hem box	1210	3.2	2/0.2	200	16	106	20	125	8.8
44990c	NE14 12, 205, 13E	In E-N wash E of main wash	Qte monz, occ. fresh of Cu ₂ S, magnet, expy	<5	1.6	2/2.2	20	4450	6	15	32	<1
44991c	NE14 1, 205, 13E	Small prospect	Qte/sec hem vln in gte monz porph to py	15	0.7	2/2.2	20	12	50	13	85	0.7
44992c	E cant 1, 205, 11E	N. slope of N-S ridge	Fractured gte monz porph, ch, hyp, gndite	<5	0.2	2/2.2	20	17	12	21	4	<1
44993c	NE14 1, " "	In gully, N-S ridge	Qte/sec/mnd in gmp, specularite, expy	50	0.4	4/0.2	50	44	760	162	7	0.8
44994c	Cent 1, " "	N. end of N-S ridge	Mud/slt fract. gmp, gte stochs hem after py	25	0.2	2/2.2	20	7	69	21	<1	0.6
44995c	NE14 12, " "	In large N-S wash E of wash	Diorite, fresh, Cu ₂ S, specularite, azurite, malachite	30	16.4	2/2.2	30	710000	10	34	<1	8.5
44996c	" " " "	" " " "	Diorite, mud, specularite, sec, ch, clin py - quartz	10	0.8	2/2.2	10	62	27	88	<1	4.5
44997c	SE14 12, " "	Large N-S wash	Qte silicified chlorite, maggy gte py - hematite	<5	0.3	6/2.2	10	29	9	50	6	0.5
44998c	SE14 12, 205, 13E	Top of N-S ridge	Phylolite dte, heavily gte silicified, arg, trer	<5	0.2	2/2.2	10	8	3	8	<1	<1
44999c	" " " "	W. slope of hill	Kba ep/mag, sharp, some site silicified, expy	<5	0.2	2/1.0	10	69	10	32	<1	0.9
44600c	NE14 13, 205, 13E	Agua Caliente Wash, S. side	Mud fractured Tr carbonate, exp, Exposed gte calcite	<5	0.3	14/3.4	90	3	10	70	<1	<1
44657c	SE14 12, " "	Just W. of Fence in gully, NW side	Kba hornfelsed slt/limy ss, by gte silicified, hyp	<5	0.2	4/0.4	10	86	2	18	2	1.2
44658c	E cant 12, " "	" " " "	Diorite, minor gte calcite/sec. biotite, chlorite, ad	<5	0.3	2/2.2	10	184	4	50	7	<1
44659c	NE14 12, " "	Gully, 67m	Slt fract. diorite protic, gte vlns exp ch sphere	<5	0.5	2/2.2	10	232	11	74	2	0.1
44654c	SE14 12, " "	Small prospect SE of wash	Qte-spec - ser-calcite - chlorite, exp, protic	105	1.6	2/1.2	10	3950	64	26	103	48.0
44655c	SE14 12, " "	Small prospect	Kba epidote/slp/spec Cu ₂ S horizon, ch	280	11.6	10/6.8	30	710000	45	150	2	72.0
44656c	Su14 1, " "	W. side main wash, up slope	Cu ₂ S/spec pass in Kba ss, gte, ser, pyrox, exp	70	4.0	1/1.0	60	6400	6	26	119	34.0
44657c	NE14 12, " "	N. slope of N-S hill	Calcite var cutting gte stoch gmp with ser	10	<2	1/2.2	40	102	4	4	8	0.9
44677c	NE14 13, " "	Agua Caliente Wash, S. side	Slt fractured tuffs, imp, lithic tuffs, Disproportionate	<5	0.2	2/0.8	180	55	13	54	<1	0.5

Arizona Recon

PROJECT: Agua Caliente/ Elephant Herd

GEOLOGIST: James D. Loughry

DATE: 5/19/92

GEOCHEMICAL SAMPLING

QUAD: Mt. Hopkins 7.5'

COUNTY: Santa Cruz

STATE: AZ

Chemex m-b
A9215120
Au. Hg in pfb
others in pfm

Chain-
C-chip
R-rock
F-float
T-talus
D-dump
AC-rofery
HQ-high gra
S-soil
SI-stream

[illegible]

JAMES S WALKER

AZ, West Santa Rita Recon, Big Haul Prospect

No Sp 36400

Sp 1

Mt. Hopkins T_{1/2} AZ

PPM

		Cu		Mo		Pb		Zn		Al ₂ O ₃	
36399c	1	205/13E	20'x20' chip. Knob of fractured, silicified sandstone. Weakly, spotty limonite.	16	2	10	32	001	1		
36401c	1	205/13E	25' chip across fault-zone in Bisbee ss. Abund. qtz-calc. epid - spec/earthy hem veins. Weak CuOx. Bleaching	290	2	26	60	002	7		
36402c	"	"	40' chip Bisbee shales. wk to strong bleaching. Locally strong hem in epidotized + silicified shales. Across strike of N-S shear.	60	4	20	65	<002	13		
36403c	"	"	40' chip, contiguous w/ 36402. Sheared shales. wk to strong bleaching. Marked increase in silicification. qtz-epid	20	2	16	60	<	1		
36404c	"	"	35' chip. Sheared, strongly fractured shale strong decrease in silicification from 36403. qtz-epid - spec vms.	42	14	22	46	<	12		
36405c	"	"	30' chip. Strongly sheared shales. Silicified. Spotty bleaching. Local zones of moderately strong CuOx in br + feds.	60	2	20	75	<	12		
36406c	"	"	45' chip. Sheared siltstn, ss + shale. Abundant qtz-epid vms; spotty hem.	6100	4	26	140	2.5	5.8		
36407c	"	"	60' chip, interm. bent 10'. Sheared shale, ss. Moderately - abund qtz-epid vms.	700	24	22	65	011	1.2		
36408c	"	"	50' chip. Moderately - fractured, locally bleached siltstn. Moderately - abundant epid vms.	70	<2	18	70	<	12		
36409c	"	"	50' chip. Shale, weakly - to moderately - fractured. Moderate epid - calcite veining.	36	<2	18	75	<	12		
36410c	"	"	4' chip. Hl - grade of silicified, hem rich zones with 0.5 - 2.0% CuOx.	30000	14	145	160	30	16		
36411c	"	"	4' chip. Bixid siltstn. Locally w/ silicified clasts. Sparse qtz veins.	500	2	60	306	012	1.1		
36412c	"	"	3' chip. Isolated Kuo in bottom of wash. Moderately - propylitized arg. sil. qtz-spec - chl alt. Also diorite -	195	<2	42	350	002	1.3		
36413c	"	"	10' chip. Bx'd Bisbee shale. Spotty, weak silicification. wk hem.	145	8	280	400	018	1.8		
36414c	"	"	20'x20' chip. Weakly limonitic, epidotized Bisbee shale w/ diorite of silicified felite porphyry.	150	2	70	205	<	10		
36415c	"	"	20'x5' chip. CG ss (Bisbee). Mod abund qtz-calc. epid vms. Sug. medial vein structures indicate high-angle N 20° w left lateral.	20	<2	30	65	<	1		
36416c	"	"	35' chip. Silicified shale. Blocky frags w/ qtz-calc. epid. wk lim.	18	<2	38	145	<	1		
36417c	"	"	4' chip across shear in shale (N 28 E, 88° w). Mod abund w/ lim veins.	12	<2	46	270	<	1		
36418c	"	"	3' chip across sheared, bleached shale and altered felite dike. Strong hem in frags.	730	44	38	175	002	1.2		
36419c	"	"	10' chip across sheared ss. Abund calc-epid vms. Sparse chl-specularite vms. 1.5 - 2 inches thick. N 75° w 80° s (shear)	95	6	30	330	<	1		
36420c	"	"	30' chip along wash bank. moderately Moderately - fractured shale, ss and ls congl. Spotty, moderate hem in frags. Abund epid. chl-calc vms	12	<2	22	140	<	1		

JAMES S WALKER

AZ, West Santa Rita Recon, Big Haul Prospect

Mt. Hopkins 7 1/2

PPM

Spl # Sec T/R

Cu Mo Pb Zn Au Ag

36421c	12	205/13E	Hi-grade of sparse qtz-calc-epid vns in shale peripheral to main zone of propylitic alt.	10	<2	20	30	<	.1
36422c	12	205/13E	Siltstn, spotty bleaching. Sparse qtz + qtz-epid - calcite veins. Wk lim in frags.	6	<2	12	36	<	.1
36423c	12	"	25' chip, across stail of qtz + qtz-coz-lim vns in Bisbee clastics. Trends N 80W, Subvert.	250	4	26	48	102	.1
36424c	12	"	20' chip; limonitic granite (qtz monz). Maties to chl. Sparse, drusy qtz vns.	75	2	46	36	<	.3
36425c	12	"	10' chip; w/ale qtz-calc-epid vein zone in bleached, silicified sandstones. Spotty COX. Local dissem epid.	1700	<2	115	130	0.12	1.1
36426c	1	"	25' chip. Silicified Bisbee shale, siltstn + ss. Wk to mod epid. Sparse to mod abund qtz + qtz epid vns. Abund Bx	70	<2	160	35	<	.2
36427c	1	"	30' chip. Qtz monz Bx (pipe?). Maties to chl. Mod silicif.	30	1	18	28	<	.1
36428c	1	"	20' chip, across bedding. Bisbee clastics bleached/silicified. Wk epid in frags w/ spotty wk specularite.	18	1	16	65	<	.2
36429c	1	"	20' x 10', subvnp grab. Silicified siltstn. Wk epid in frag. Wk to mod lim. Moderately abund qtz vns.	8	1	12	100	<	.2

36419- Spec ms 2-8" w/ale = N 80W and N 20W, w/

very minor epididol; Hem + ep; calcite & N 45-15 E.

wh. b ± = bedding

36418 - Fract. w/ hem. ± spec starker N 50-100W - could be asphered

Sels - some Feldspar visible; not definitely a fiber-like

look like e.g. massive calcite

CII-channel
 C-chip
 R-rock
 F-float
 T-talus
 D-dump
 RC- rotary ch
 HQ-high grade
 S-soil
 SI-stream sed

KENNECOTT GEOCHEMICAL SAMPLING

PROJECT: Elephant Head
 GEOLOGIST: CLN Lubenau
 DATE: 8-11-92

QUAD: MT. Hopkins
 COUNTY: Santa Cruz
 STATE: Arizona

Page 1 of 6

Sample Number	Sec. T. R.	Location	Rock Description Comments	TA	Au p.p.b	Ag p.p.m	As p.p.m	Bi p.p.m	Sb	Cu p.p.m	Mo p.p.m	Pb p.p.m	Zn p.p.m
412251-C	12. T. 20S, R. 13E		Siltstone, epidote, garnet, quartz, calcite	C	<5	0.3	4	10		111	6	17	72
412252-C	Same		Sandstone; gtz vult, ± clbs, ex py, Tr, py	C	<5	0.8	166	60		900	17	28	34
412253-C	Same		Sandstone; gtz, epidote, clbs, Tr, ex py, py	D	20	5.6	2	12		4550	3	12	16
412254-C	Same		Fl. S.S. bnd, gtz vult, Tr-14 ex py	C	<5	<0.2	2	12		191	3	12	10
412255-C	11. T. 20S, R. 13E		limstone, bnd, calcite, chrysocolla, clbs	D	<5	21.0	750	<0.1		7000	10	125	110
412256-C	Same		Siltstone; fcs, calcite, xenotime	D	<5	0.2	2	0.2		21	2	7	7
412257-C	1. T. 20S, R. 13E		Mudst; epidote - gtz ± calcite - spec horn vult	C	<5	<0.2	1	0.2		189	7	103	30
412258-C	12. T. 20S, R. 13E		Siltstone, fcs - fault, minor calcite, Tr	C	10	0.7	2	2.1		1200	<1	113	21
			Chrysocolla - hornblende, calcite										
412259-C	11. T. 20S, R. 13E		Siltstone; calcite, gtz, calcite on bedding planes	C	<5	<0.2	2	0.2		10	1	10	72
412260-C	12. T. 20S, R. 13E		Fl. S.S. calcite-epidote, ± gtz, horn	C	<5	<0.2	4	0.2		81	1	6	6
412261-C	1. T. 20S, R. 13E		Alumina py, mod argillite, minor gtz vult, Tr ex py	C	<5	<0.2	2	0.3		32	1	3	1
412262-C	12. T. 20S, R. 13E		Siltstone; vults bnd gtz-epidote-calcite	C	<5	<0.2	1	0.2		7	1	13	78
412263-C	12. T. 20S, R. 13E		Siltstone; much epidote	C	<5	<0.2	12	<0.1		12	1	6	69
412264-C	1. T. 20S, R. 13E		Siltstone; fcs, bx zone, much horn, 2-3% ex py, clay	C	35	0.4	166	26		255	215	114	215
412265-C	12. T. 20S, R. 13E		212 mmz py; gtz vult, minor gtz vults, Tr-14 ex py, sericite, clays, and kf(?)	C	10	<0.2	4	3.9		94	3	12	19
412266-C	Same		Crossed-fiber fcs; horn, epidote, Tr py, 5-7% ex py	C	<5	2.0	410	32		590	15	7	29
412267-C	Same		Fault contact gtz mmz - diorite; chrysocolla horn, gtz, clays	D	175	10.3	2	100		>10000	68	155	162

CII-channel
 C-chip
 A-rock
 F-float
 T-talus
 D-dump
 RC-rotery c
 HQ-high grad
 S-soil
 SI-stream or

KENNECOTT
 GEOCHEMICAL SAMPLING
 QUAD: Mt. Hopkins
 COUNTY: Santa Cruz
 STATE: AZ

Page 2 of 6

PROJECT: Elephant Head
 GEOLOGIST: S.M. Lukanowich
 DATE: 8-11-92

Sample Number	Sec. T. R.	Location	Rock Description Comments	Type	Au gph	Ag ppm	As ppm	Bi ppm	Sb	Cu gph	Mo ppm	Pb ppm	Zn gph
46268-C	12. T. 20S., R. 13E.		Qtz mnz; ox ssk vults, ex calc. chert, sericite, CuOx	C	10	4.2	4	300		5300	43	147	5300
46269-C	1 T. 20S., R. 13E		Qtz mnz, chlorid. ss, qtz mnz, sericite, Tr ox py, hematite	C	<5	0.2	2	2.6		129	32	22	6
46270-C	Same		Qtz mnz zone in qtz mnz; sericite, hem, Tr ox py	C	20	<0.2	2	5.2		28	85	19	5
46271-C	12. T. 20S., R. 13E		Silicified hem-grt vults, minor bs	C	<5	<0.2	2	0.5		10	1	9	18
46272-C	Same		Qtz mnz, qtz mnz; ox py, 1/2 py, hem, spec hem	F	90	4.3	10	36		67	74	43	8
46273-C	Same		Qtz mnz; mod sericite, glauvults, Tr-chert	C	<5	0.2	2	0.8		9	2	5	4
46274-C	Same		Qtz mnz ppy; qtz vults, chl, ser, ox py, Tr py, chlorocolla	C	<5	1.1	2	1.6		2400	14	4	2
46275-C	Same		Silicified qtz vults, epidote, calcite	C	<5	<0.2	18	0.5		6	1	8	5
46276-C	Same		Silicified; silicified, epidote, ± calcite	C	<5	<0.2	8	1.2		P	<1	7	6
46277-C	Same		Silicified; epidote on base, chert	C	<5	<0.2	18	0.6		5	1	9	54
46278-C	Same		Silicified; few vuggy glauvults, epidote, hem	C	<5	<0.2	2	24		201	2	4	30
46279-C	Same		Shear zone in qtz mnz; chert; qtz vults, ser, chl	C	<5	0.3	4	0.9		164	30	11	55
46280-C	Same		Qtz mnz; qtz vults; wh FeOx; sericite	C	<5	<0.2	2	0.4		33	2	5	18
46281-C	Same		Limestone; calcite vults w/ malachite, minor FeOx	C	<5	28.0	120	<0.1		2220	9	45	12
46282-C	Same		Mylonite - Banded FeOx (C?); calcite	D	<5	0.2	6	0.1		51	2	19	9
46283-C	Same		Qtz-chloridified ls; minor chrysocolite, calcite, FeOx	C	<5	15.5	70	<0.1		2640	5	58	25

CII-channel
 C-chip
 A-rock
 F-float
 T-talus
 D-dump
 RC- rotary c
 HQ-high gra
 S-soil
 SI-stream a

KENNECOTT

GEOCHEMICAL SAMPLING

QUAD: MT. Hesperia
 COUNTY: Santa Cruz
 STATE: AZ

Page 4 of 6

PROJECT: Elephant Head
 GEOLOGIST: J. N. Lukenski
 DATE: 9-18-92

Sample Number	Sec. T. R.	Location	Rock Description Comments	Typ	Au opt	Ag ppm	As	Bi ppm	Sb	Cu ppm	Mo ppm	Pb ppm	Zn ppm
46301-C	11 T. 20 S. R. 13 E		Rhyolite; fault bx, few qtz mlt, w/kaol; NFOE.	C	<.001	0.8		0.1		62	<1	900	95
46302-C	Same		Rtz m; in latite, banded	C	<.001	<0.2		<0.1		11	<1	10	65
46303-C	Same		Chalcedony, finely xylite qtz										
46304-C	Same		Latite; epidote on frac N20E SW	C	<.001	<0.2		<0.1		6	<1	14	95
			Rhyolite; silicified, qtz mlt + epidote	C	<.001	<0.2		<0.1		6	<1	8	19
			Sericite narrow enveloped										
46305-C	Same		Latite agglomerate qtz-epidote mlt, minor ksp	C	<.001	<0.2		<0.1		4	<1	10	51
46306-C	Same		Qtz-epidote + ksp mlt, same	C	<.001	<0.2		<0.1		4	<1	5	71
			Ksp. Plucking along line L. epidote										
46307-C	Same		Latite; epidote-gtz mlt; ksp?	C	<.001	<0.2		<0.1		5	<1	3	44
46308-C	Same		Latite; epidote-gtz. ksp mlt	C	<.001	<0.2		<0.1		3	<1	7	19
46309-C	Same		Latite; epidote - ksp + qtz mlt + ksp	C	<.001	<0.2		<0.1		4	<1	7	45
46310-C	Same		Latite Plumb; few epidote + qtz + ksp mlt; minor hem.	C	<.001	<0.2		<0.1		5	<1	6	98
46311-C	Same		Latite; much epidote, perovskite, silicified - ksp mlt.	C	<.001	<0.2		<0.1		4	<1	6	87
46312-C	12 T. 20 S. R. 13 E		Fault bx, thymolite; calcite-epidote + qtz	C	<.001	<0.2		<0.1		15	2	9	37
46313-C	Same		Rtz s.s. siltstone, much epidote, then qtz mlt	C	<.001	<0.2		0.1		6	<1	18	65
46314-C	Same		Limestone; bxd, on throat; calcite	C	<.001	<0.2		<0.1		6	3	15	5
46315-C	Same		Siltstone, siliceous, epidote	C	<.001	<0.2		0.1		36	<1	265	17
46316-C	Same		Siltstone; silicified, qtz m; hem. epidote in fault bx	C	<.001	<0.2		<0.1		25	<1	68	15

KENNECOTT

GEOCHEMICAL SAMPLING

PROJECT: Elephant Head
 GEOLOGIST: V. N. Lukatski
 DATE: 9-18-92

QUAD: Mt. Hopton
 COUNTY: Santa Cruz
 STATE: AZ

Page 5 of 6

CU-channel
 C-chip
 R-rock
 F-float
 T-talus
 D-dump
 AC-activity
 HQ-high grade
 S-soil
 St-stream s.

Sample Number	Sec. T. R.	Location	Rock Description Comments	As	Ag ppm	Bi ppm	Sb	Cu ppm	Mo ppm	Pb ppm	Zn ppm
46317-C	12, T. 20S, R. 13E		Latite; epidote-gtz vnlts	<	<.001 <.0.2	<.0.1		3	<.1	6	41
46318-C	12, T. 20S, R. 13E		Quartz; gtz vnlts ± calcite; much chb. epidote	C	<.001 <.0.2	<.0.1		4	<.1	4	84
46319-C	11, T. 20S, R. 13E		Latite; much epidote-gtz in fracs	C	<.001 <.0.2	0.7		16	<.1	4	11
46320-C	Same		Latite; epidote in fracs	C	<.001 <.0.2	<.0.1		5	<.1	5	91
46321-C	Same		Latite; epidote in fracs; minor vnlts	C	<.001 <.0.2	<.0.1		3	<.1	8	81
46322-C	Same		Rhyolite; many fracs of epidote, quartz, chlorite; minor gtz vnlts	C	<.001 <.0.2	<.0.1		3	<.1	4	21
46323-C	Same		Latite; epidote in some fracs	C	<.001 <.0.2	<.0.1		4	<.1	2	31
46324-C	12, T. 20S, R. 13E		Latite; epidote veins ± calcite	C	<.001 <.0.2	<.0.1		3	<.1	8	131
46325-C	Same		Sandstone; gtz s.s.; fault; fracs	C	<.001 <.0.2	0.1		26	4	20	18
46326-C	13, T. 20S, R. 13E		Sandstone; fault zone; gtz vnlts, hem.	C	<.001 <.0.2	0.2		41	<.1	11	51
46327-C	13, T. 20S, R. 13E		Latite; fault; shear; gtz vnlts, ± calc.	C	<.001 <.0.2	0.2		7	<.1	14	11
46328-C	12, T. 20S, R. 13E		Latite; epidote-gtz vnlts	C	<.001 <.0.2	<.0.1		2	<.1	16	81
46329-C	12, T. 20S, R. 13E		Latite; much epidote in vnlts with ksp. minor gtz, ± hem (Spec.)	C	<.001 <.0.2	0.1		3	<.1	6	11
46330-C	Same		Latite; epidote vnlts, minor ksp. gtz, calcite, clay	C	<.001 <.0.2	0.1		24	<.1	7	41
46331-C	Same		Latite; epidote gtz vnlts, minor speckled, ksp. (?)	C	<.001 <.0.2	0.1		13	<.1	7	11
46332-C	11, T. 20S, R. 13E		Sandstone; calcite	C	<.001 <.0.2	0.1		13	<.1	9	8
46333-C	12, T. 20S, R. 13E		Siltstone; gtz-calcite vnlts, ± chb.	C	<.001 <.0.2	0.2		12	<.1	16	51
46334-C	Same		Breccia; sand; calcified clasts; much epidote in matrix	C	<.001 <.0.2	<.0.1		14	<.1	24	98

CII-channel
C-chip
R-rock
F-float
T-talus
D-dump
RC-rotary c
HQ-High gra
S-soil
Sl-stream

GEOCHEMICAL SAMPLING

COUNTRY: Santa Cruz

STATE: AZ

Page 6 of 6

[illegible]



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

A921512

Comments: ATTN: L. KEATING CC: J. D. LOGHRY

CERTIFICATE

A9215120

KENNECOTT EXPLORATION CO.

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 27-MAY-92.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	8	Geochem ring to approx 150 mesh
274	8	0-15 lb crush and split
238	8	Nitric-aqua-regia digestion
287	8	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	8	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
6	8	Ag ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	8	As ppm: HNO ₃ -aqua regia digest	AAS-HYDRIDE/EDL	1	10000
2	8	Cu ppm: HNO ₃ -aqua regia digest	AAS	1	10000
20	8	Hg ppb: HNO ₃ -HCl digestion	AAS-FLAMELESS	10	100000
4	8	Pb ppm: HNO ₃ -aqua regia digest	AAS-BKGD CORR	1	10000
22	8	Sb ppm: HCl-KClO ₃ digest, extrac	AAS-BKGD CORR	0.2	1000
5	8	Zn ppm: HNO ₃ -aqua regia digest	AAS	1	10000
3	8	Mo ppm: HNO ₃ -aqua regia digest	AAS	1	1000



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project:

Comments: ATTN: L. KEATING CC: J. D. LOGHRY

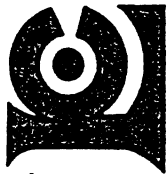
Page Number : 1
Total Pages : 1
Certificate Date: 27-MAY-91
Invoice No. : 19215120
P.O. Number : GJV
Account :

CERTIFICATE OF ANALYSIS A9215120

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Hg ppb	Pb ppm	Sb ppm	Zn ppm	Mo ppm	
45251 C	205 274	< 5	< 0.2	1	27	10	15	0.6	18	11	
45252 C	205 274	< 5	< 0.2	2	19	10	6	0.2	18	< 1	
45253 C	205 274	< 5	< 0.2	1	5	10	3	0.2	8	< 1	
45254 C	205 274	60	6.5	1	7400	150	31	1.2	65	23	
45255 C	205 274	10	< 0.2	2	45	30	3	0.2	52	1	
45256 C	205 274	< 5	0.2	6	100	20	11	1.6	94	< 1	
45257 C	205 274	20	0.7	48	110	20	24	1.8	18	32	
45258 C	205 274	30	< 0.2	1	42	10	< 1	0.6	100	< 1	

CERTIFICATION:

Jan H. Bickler



Chemex Labs Inc.

Analytical Chemists * Geochemists * Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
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PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: J.N. LUKANUSKI

Page Number : 1
Total Pages : 1
Certificate Date : 28-SEP-92
Invoice No. : 19221598
P.O. Number : GJV
Account :

CERTIFICATE OF ANALYSIS

A9221598

SAMPLE	PREP CODE	Au oz/T	Ag ppm Aqua R	Cu ppm	Mo ppm	Pb ppm	Bi ppm	Zn ppm		
46301C	208 226	< 0.001	0.8	62	< 1	900	0.1	93		
46302C	208 226	< 0.001	< 0.2	11	< 1	10	< 0.1	62		
46303C	208 226	< 0.001	< 0.2	6	< 1	14	< 0.1	92		
46304C	208 226	< 0.001	< 0.2	6	< 1	8	< 0.1	14		
46305C	208 226	< 0.001	< 0.2	4	< 1	10	< 0.1	56		
46306C	208 226	< 0.001	< 0.2	4	< 1	5	< 0.1	78		
46307C	208 226	< 0.001	< 0.2	5	< 1	3	< 0.1	44		
46308C	208 226	< 0.001	< 0.2	3	< 1	7	< 0.1	19		
46309C	208 226	< 0.001	< 0.2	4	< 1	7	< 0.1	43		
46310C	208 226	< 0.001	< 0.2	5	< 1	6	< 0.1	98		
46311C	208 226	< 0.001	< 0.2	4	< 1	6	< 0.1	80		
46312C	208 226	< 0.001	< 0.2	15	< 1	9	< 0.1	37		
46313C	208 226	< 0.001	< 0.2	6	< 1	18	< 0.1	69		
46314C	208 226	< 0.001	< 0.2	6	< 1	15	< 0.1	57		
46315C	208 226	< 0.001	< 0.2	36	< 1	265	< 0.1	172		
46316C	208 226	< 0.001	< 0.2	25	< 1	68	< 0.1	159		
46317C	208 226	< 0.001	< 0.2	3	< 1	6	< 0.1	49		
46318C	208 226	< 0.001	< 0.2	4	< 1	4	< 0.1	84		
46319C	208 226	< 0.001	< 0.2	16	< 1	4	< 0.7	19		
46320C	208 226	< 0.001	< 0.2	5	< 1	5	< 0.1	96		
46321C	208 226	< 0.001	< 0.2	3	< 1	8	< 0.1	81		
46322C	208 226	< 0.001	< 0.2	3	< 1	4	< 0.1	20		
46323C	208 226	< 0.001	< 0.2	4	< 1	2	< 0.1	32		
46324C	208 226	< 0.001	< 0.2	3	< 1	8	< 0.1	130		
46325C	208 226	< 0.001	< 0.2	26	< 1	20	< 0.1	187		
46326C	208 226	< 0.001	< 0.2	41	< 1	11	0.2	56		
46327C	208 226	< 0.001	< 0.2	7	< 1	14	0.2	13		
46328C	208 226	< 0.001	< 0.2	2	< 1	16	< 0.1	80		
46329C	208 226	< 0.001	< 0.2	3	< 1	6	< 0.1	17		
46330C	208 226	< 0.001	< 0.2	24	< 1	7	0.1	43		
46331C	208 226	< 0.001	< 0.2	13	< 1	7	0.1	15		
46332C	208 226	< 0.001	< 0.2	13	< 1	9	0.1	81		
46333C	208 226	< 0.001	< 0.2	12	< 1	16	0.2	54		
46334C	208 226	< 0.001	< 0.2	14	< 1	24	< 0.1	98		
46335C	208 226	< 0.001	< 0.2	24	< 1	25	< 0.1	14		
46336C	208 226	< 0.001	< 0.2	12	< 1	6	2.8	11		
46337C	208 226	< 0.001	< 0.2	15	< 1	22	3.1	16		
46338C	208 226	< 0.001	< 0.2	16	< 1	3	0.6	20		

Cap

CERTIFICATION:

Justin Buckler



Chemex Labs Inc.
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To: KENNECOTT EXPLORATION CO.

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84147

Project: ELAPHANT HEAD
Comments: ATTN: LINUS KEATING CC: JOEY WILKINS

Page Number : 1
Total Pages : 1
Certificate Date : 23-SEP-92
Invoice No. : 19221433
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9221433

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Hg ppb	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Bi ppm
44651C	205 226	< 5	0.2		86	10	2	2	0.4	18	1.2
44652C	205 226	< 5	0.3		184	10	7	4	< 0.2	50	< 0.1
44653C	205 226	< 5	0.5		232	10	2	11	< 0.2	74	0.1
44654C	205 226	105	1.6		3950	10	103	64	1.2	26	48.0
44655C	205 226	280	11.6		>10000	30	2	45	6.8	150	72.0
44677C	205 226	< 5	0.2		55	180	< 1	13	0.8	54	0.5
44988C	205 226	< 5	0.2		120	20	< 1	9	0.4	45	0.9
44989C	205 226	1210	3.2		16	200	125	106	0.2	20	8.8
44990C	205 226	< 5	1.6		4450	20	32	6	< 0.2	15	< 0.1
44991C	205 226	15	0.7		12	20	85	50	< 0.2	13	0.7
44992C	205 226	< 5	0.2		17	20	4	12	< 0.2	21	< 0.1
44993C	205 226	50	0.4		44	50	7	760	0.2	162	0.8
44994C	205 226	25	0.2		7	20	< 1	69	< 0.2	21	0.6
44995C	205 226	30	16.4		>10000	30	< 1	10	< 0.2	34	8.5
44996C	205 226	10	0.8		62	10	< 1	27	< 0.2	88	4.5
44997C	205 226	< 5	0.3		29	10	6	9	< 0.2	50	0.5
44998C	205 226	< 5	0.2		8	10	< 1	3	< 0.2	8	< 0.1
44999C	205 226	< 5	0.2		69	10	< 1	10	1.0	32	0.9
45000C	205 226	< 5	0.3		3	90	< 1	10	3.4	70	< 0.1

Copy

CERTIFICATION Stan H. Buehler



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Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: JOEY WILKINS

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Certificate Date: 28-SEP-92
Invoice No. : 19221747
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9221747

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Hg ppb	Pb ppm	Sb ppm	Zn ppm	Bi ppm
	205	226										
44656C	205	226	70	4.0	1	6400	6	60	76	1.0	119	34.0
44657C	205	226	10	< 0.2	1	102	4	40	4	< 0.2	8	0.9

CGP

CERTIFICATION
Jant Buehler



Chemex Labs Ltd.

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84147

A9218813

Comments: ATTN: LINUS KEATING CC: J. N. LUKANUSKI

CERTIFICATE

A9218813

KENNECOTT EXPLORATION CO.

Project: ELEPHANT HEAD

P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 12-AUG-92.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	50	Geochem ring to approx 150 mesh
226	50	0-5 lb crush and split
238	50	Nitric-aqua-regia digestion
287	50	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	50	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
6	50	Ag ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	50	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
2	50	Cu ppm: HNO3-aqua regia digest	AAS	1	10000
3	50	Mo ppm: HNO3-aqua regia digest	AAS	1	10000
4	50	Pb ppm: HNO3-aqua regia digest	AAS-BKGD CORR	1	10000
23	50	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	10000
5	50	Zn ppm: HNO3-aqua regia digest	AAS	1	10000



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Project: ELEPHANT HEAD
Comments: ATTN: LINUS KEATING CC: J. N. LUKANUSKI

Page Number : 1
Total Pages : 2
Certificate Date: 12-AUG-92
Invoice No. : 19218813
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9218813

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Pb ppm	Bi ppm	Zn ppm		
46251C	205 226	< 5	0.3	4	111	6	17	10.0	72		
46252C	205 226	< 5	0.8	166	900	17	28	60.0	34		
46253C	205 226	20	5.6	2	4550	3	48	4.3	25		
46254C	205 226	< 5	< 0.2	2	191	3	12	12.0	10		
46255C	205 226	< 5	21.0	750	7000	10	125	< 0.1	1100		
46256C	205 226	< 5	0.2	2	21	2	7	0.2	71		
46257C	205 226	< 5	< 0.2	1	189	7	103	0.2	300		
46258C	205 226	10	0.7	2	1200	< 1	113	2.1	210		
46259C	205 226	< 5	< 0.2	2	10	1	10	0.1	72		
46260C	205 226	< 5	< 0.2	4	81	1	6	0.2	68		
46261C	205 226	< 5	< 0.2	2	32	1	3	0.3	14		
46262C	205 226	< 5	< 0.2	1	7	1	13	0.2	78		
46263C	205 226	< 5	< 0.2	12	12	215	6	< 0.1	69		
46264C	205 226	35	0.4	66	255	2	114	26.0	215		
46265C	205 226	10	< 0.2	4	94	3	12	3.9	19		
46266C	205 226	< 5	2.0	410	590	15	7	32.0	22		
46267C	205 226	175	10.3	2	>10000	68	155	100.0	169		
46268C	205 226	10	4.2	4	5300	43	147	300	52		
46269C	205 226	< 5	0.2	2	129	32	22	2.6	6		
46270C	205 226	20	< 0.2	2	28	85	19	5.2	5		
46271C	205 226	< 5	< 0.2	2	10	1	9	0.5	18		
46272C	205 226	90	4.3	10	67	74	43	36.0	8		
46273C	205 226	< 5	0.2	2	9	2	5	0.8	4		
46274C	205 226	< 5	1.1	2	2400	14	4	1.6	21		
46275C	205 226	< 5	< 0.2	18	6	1	8	0.5	52		
46276C	205 226	< 5	< 0.2	8	8	< 1	7	1.2	69		
46277C	205 226	< 5	< 0.2	18	5	1	9	0.6	59		
46278C	205 226	< 5	< 0.2	2	201	2	4	24.0	30		
46279C	205 226	< 5	0.3	4	164	30	11	0.9	57		
46280C	205 226	< 5	< 0.2	2	33	2	5	0.4	18		
46281C	205 226	< 5	28.0	120	2220	9	45	< 0.1	172		
46282C	205 226	< 5	0.2	6	51	2	19	0.1	94		
46283C	205 226	< 5	15.5	70	2640	5	58	< 0.1	251		
46284C	205 226	< 5	< 0.2	1	6	< 1	3	0.2	19		
46285C	205 226	< 5	< 0.2	2	45	1	11	0.3	89		
46286C	205 226	< 5	< 0.2	1	231	1	11	0.6	92		
46287C	205 226	160	0.3	1	11	40	19	2.7	10		
46288C	205 226	15	8.7	1	156	410	790	240	178		
46289C	205 226	< 5	< 0.2	2	6	25	12	1.1	10		
46290C	205 226	< 5	< 0.2	1	75	2	11	0.8	11		

CERTIFICATION:

David B. Baker



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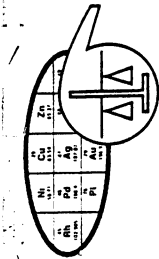
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CERTIFICATE OF ANALYSIS

CERTIFICATION



KYNARD & SONS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703

JOB NUMBER VGN 238
June 9, 1992
36399C, 36401C-36429C
PAGE 1 OF 2 PAGES

KENNECOTT EXPLORATION

Attn: Mr. Linus Keating
1515 Minerals Square
Salt Lake City, UT 84112

REPORT OF ANALYSIS

Analysis of 30 Rock Chip Samples

FIRE ASSAY

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	Bi (ppm)
1	36399-C	.004	.1	2.6	.1	.10	16.	10.	32.	2.	.9
2	36401-C	.002	.7	6.0	1.5	.12	890.	26.	60.	2.	6.0
3	36402-C	< .002	.3	9.5	1.1	.16	60.	20.	65.	4.	9.0
4	36403-C	< .002	.1	4.6	.4	.17	20.	16.	60.	2.	1.5
5	36404-C	< .002	.2	4.2	.6	.18	42.	22.	46.	14.	.9
6	36405-C	< .002	.2	4.0	.6	.12	60.	20.	75.	2.	2.7
7	36406-C	2.500	5.8	6.5	1.5	.08	6100.	26.	140.	4.	14.0
8	36407-C	.014	1.2	16.0	2.2	.10	900.	22.	65.	24.	3.4
9	36408-C	< .002	.2	85.0	2.2	.11	70.	12.	70.	< 2.	.8
10	36409-C	< .002	.2	7.5	1.7	.12	36.	18.	75.	< 2.	1.8
11	36410-C	.300	16.0	7.5	1.6	.08	30000.	145.	160.	14.	175.0
12	36411-C	.012	1.4	6.5	2.7	.09	500.	60.	305.	2.	6.0
13	36412-C	.002	.3	8.5	1.0	.11	195.	42.	350.	< 2.	1.3
14	36413-C	.038	.8	16.0	4.5	.16	145.	5250.	4000.	8.	.7
15	36414-C	< .002	.6	34.0	1.3	.12	150.	700.	2050.	2.	7.5
16	36415-C	< .002	.1	6.0	.8	.09	20.	30.	65.	< 2.	.5
17	36416-C	< .002	.1	9.0	1.5	.07	18.	38.	145.	< 2.	1.0
18	36417-C	< .002	.1	3.2	1.4	.07	12.	46.	270.	< 2.	.7
19	36418-C	.002	.2	32.0	2.7	.11	730.	38.	170.	44.	14.0
20	36419-C	< .002	.1	12.0	1.0	.09	95.	30.	330.	6.	1.6
21	36420-C	< .002	.1	7.5	1.5	.08	12.	22.	140.	< 2.	.6
22	36421-C	< .002	.1	4.8	1.1	.10	10.	20.	30.	< 2.	.2
23	36422-C	< .002	.1	8.5	1.0	.07	6.	12.	36.	< 2.	.8
24	36423-C	.002	.8	13.0	.5	.07	280.	26.	48.	4.	80.0
25	36424-C	< .002	.3	1.4	.1	.05	75.	40.	36.	2.	6.5

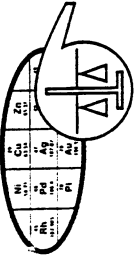
Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
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James A. Martin
Arizona Registered Assayer No. 11122

CS

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703



JOB NUMBER VGN 238
June 9, 1992
36399C, 36401C-36429C
PAGE 2 OF 2 PAGES

KENNECOTT EXPLORATION

Attn: Mr. Linus Keating
1515 Minerals Square
Salt Lake City, UT 84112

REPORT OF ANALYSIS

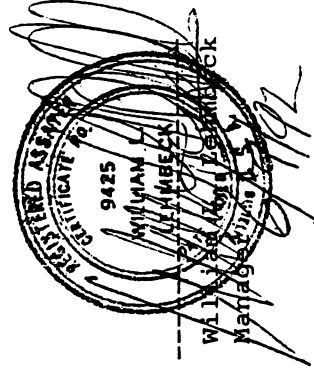
Analysis of 30 Rock Chip Samples

FIRE ASSAY

ITEM	SAMPLE NO.	Au* (ppm)	Ag (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	Bi (ppm)
26	36425-C	.012	1.1	2.6	.9	.07	1700.	115.	130.	< 2.	40.0
27	36426-C	< .002	.2	4.6	.7	.05	70.	160.	350.	< 2.	5.0
28	36427-C	< .002	.1	1.6	< .1	.06	30.	18.	28.	< 2.	1.1
29	36428-C	< .002	.2	13.0	1.3	.08	18.	16.	65.	< 2.	.6
30	36429-C	< .002	.2	4.2	1.1	.10	8.	12.	100.	< 2.	1.3

*NOTE: Method of analysis by combination
fire assay and atomic absorption.

cc: Mr. Jim Walker
P. O. Box 50322
Tucson, AZ 85703



Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbek
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

C

GEOLOGIC/PETROGRAPHIC REPORTS

BEANE TO KEATING

TO: Linus Keating
FROM: Richard Beane
RE: Elephant Head Project

DATE: Dec. 10, 1992

On November 23, I spent a day in the field with Joe Wilkins at Elephant Head. During that time we did a circular traverse in the northern half of the project area, beginning to the south in the Bisbee Group sediments and finishing by coming down the wash along the northern border in the granodiorite porphyry. We also spent a short time at the southern end looking at the strongly-epidotized Bisbee Group. I have combined the features I saw on that tour, the information I received from Joe, the results of the thin section petrographic analyses, and my knowledge of porphyry copper systems, to provide the following assessment of the Elephant Head project area.

Comments on available information

During my day in the field, I did not see any direct evidence of an exposed mineralizing pluton. Features of interest in the granodiorite porphyry include the altered and quartz-veined rocks on the dump on the north end of the area, the breccia pipe nearby, and the sets of orthogonal veins/veinlets in the wash along the northern border of the area. But I do not believe the granodiorite porphyry itself would be the mineralizing pluton.

reference to other Kenn property deleted

Restricted occurrences of orthogonal quartz \pm K-feldspar veins in the granodiorite probably represent locally higher amounts of exsolved water as that rock crystallized. Crenulated, discontinuous quartz veins in that rock support such an origin. I saw only scattered evidence of sulfides in this rock type, and nowhere did I see porphyry copper-type stockwork veining.

reference to other Kenn property deleted

→ Neither did I see any alteration in the granodiorite which would suggest a buried mineralizing pluton, such as exists at the Red Mountain porphyry copper deposit about 20 miles to the east. Such lithocap alteration in the granodiorite should contain minerals such as alunite, kaolinite, and pyrite.

The background epidote developed in the Bisbee group on the north end of the project area could represent propylitic alteration, but it is difficult to assess this without petrographic data as to the original and current mineralogies of the rocks containing epidote. As with the basalt/andesite sample (E-7), scattered epidote in the Bisbee group could simply reflect mild heating. The locally abundant epidote to the south may be an isochemical effect, but it could also indicate introduction of calcium mobilized from an underlying limestone. Again, petrographic analysis is required. The abundance of epidote seems to increase to the south which might suggest increasing proximity to an intrusion, but the overall width of rocks bearing epidote is far too wide to correspond to skarn. Also, in the clastic rocks I saw, I would expect to see some development of biotite if this is a porphyry copper system. And if rocks such as these were to overlie a mineralizing pluton, I would expect to see a calcic analogue to acid sulfate alteration, namely anhydrite, montmorillonite, kaolinite, pyrophyllite, and diaspore.

An exploration model

My recommendation regarding Elephant Head would be to investigate an exploration model based upon the Sierrita and Esperanza deposits across the valley. At that location, mineralization is centered upon a quartz monzonite porphyry stock intruded along the contact between the Ruby Star granodiorite to the north, and a Mesozoic,

rhyodacitic, volcanic complex to the south. The major orientation of mineralized fractures in the quartz monzonite porphyry at Sierrita is N60°E, and at Esperanza there is an additional accompanying fracture set oriented N50°W. Conjugate orthogonal fracture sets are present for both of these. This fracture direction persists in the granodiorite wall rock up to a distance of about 1½-2 kilometers north of the mineralization center. Three mineralogically and chronologically distinct sets of fractures are present in the granodiorite wall rocks. The earliest set contains quartz, K-feldspar, and magnetite. These are succeeded by quartz veinlets containing pyrite ± chalcopyrite, and the latest set comprising epidote ± K-feldspar.

Selectively pervasive biotitization of hornblende and recrystallization of biotite is present in large volumes of rock up to a distance of at least 3 kilometers north of the Sierrita and Esperanza pits. Likewise, the K-feldspar and sulfide veinlet sets extend to distances of about 3 kilometers beyond the deposits. Close to the pits, these veinlets have N60°E orientations similar to the quartz monzonite porphyry, but beyond distances of about 2 kilometers north of the deposits, both sets strike about N40°E. The late set of veinlets containing epidote is more restricted to the vicinity of the pits, and their orientation changes moving eastward from N80°E north of Sierrita to N40°E north of Esperanza. About 2½ kilometers northeast of Esperanza, epidote veinlets reappear and locally grade into patches of pervasive epidote+quartz alteration of granodiorite in an area of background propylitic alteration consisting of albite, epidote, and chlorite. This epidotization may be an endoskarn related to the original intrusion of the granodiorite into limestones lying further to the east. A set of quartz latite dikes trending N30-40°E cuts, and both pre-dates and post-dates, the propylitization and epidotization. The orientation of these dikes, as well as that of the different

DISSEMINATION OF THE RESULTS OF THE RESEARCH
Linus Keating
Elephant Head Project
Page 4

generations of filled fractures north of Esperanza, appears to follow a zone of structural weakness which passes through the Sierrita pit. But in the vicinity of the Sierrita pit, this structural fabric is subordinate to the strong N60°E fracturing related to the mineralizing pluton.

Portions deleted

SAMPLE # E-5
 SUBMITTED BY L. Keating
 PROJECT Elephant Head, AZ

DATE 11/09/92
 PETROGRAPHER P. Matter

ROCK NAME syenodiorite
 ALTERATION weak/moderate late-magmatic/deuteric

%	Mineral	
37	plagioclase	andesine - sub/euhedral - wk/mod sausseritized
24	chlorite	pennine - after hrnbd & biot - minor in plag
15	orthoclase	anhedral, interstit - often intergrown w/ qtz or plag
6	sericite	in altd plag w/ chlor, cal, epid
5	cal	after plag, hrnbd, sph
4	leucoxene	after mafites and sph xls
4	quartz	anhedral, interstit - often myrmekitic or micrographic
2	epidote	after plag, hrnbd
±	apatite	abund dissem euhedral slender prisms
tr	zircon	dissem small xls
2½	magnetite	dissem sub/euhed xls - weakly altd to hem
±	hematite	after mag, mafites, sph

COMMENTS This sample is a fine-grained, equigranular syenodiorite, with orthoclase constitution between 5 and 33 % of the total feldspar. The texture is subhedral granular. Plagioclase and former mafites (hornblende & biotite) are subhedral, while quartz & orthoclase are anhedral and interstitial. Plagioclase is weakly to moderately sausseritized to mixtures of sericite, chlorite, calcite, and epidote. Former hornblende and biotite are completely altered to chlorite ± calcite, epidote, leucoxene, and hematite. Former sphene crystals are converted to leucoxene ± calcite & hematite. Alteration is late-magmatic/deuteric only.

SAMPLE # E-7
SUBMITTED BY L. Keating
PROJECT Elephant Head, AZ

DATE 11/09/92
PETROGRAPHER P. Matter

ROCK NAME basalt
ALTERATION weak/moderate late-magmatic/deuteric (propylitic)

%	Mineral	
62	plagioclase	andesine/labradorite - subhedral phenocrysts & matrix laths - wk/mod saussuritiztn
23	chlorite	pennine - after oliv, px, glass - in late fractures ± alb, cal
7	epidote	subhedral in plag phenocrysts - granular after mafites - veinlets
1½	sphene	granular - finely dissem in matrix - after mafites, glass
1	antigorite	with chlor after px, olv
1	leucoxene	after mafites
1	sericite	in altered plag ± chlor, epid, cal
½	calcite	after plag & mafites
tr	apatite	dissem slender euhed prisms
2	hematite	specular - after dissem magn, mafites - in late fracs

COMMENTS Although much of the plagioclase appears to have been in the andesine range, I have classified this sample as a basalt rather than andesite based on the presence of former olivine and pyroxene, and the typical basalt texture. It is porphyritic, carrying about 15-20 % phenocrysts of primarily plagioclase with lesser amounts of former olivine, pyroxene, and rare hornblende. The hyalopilitic matrix is characterized by subhedral plagioclase laths with interstitial former pyroxene and glass. Olivine and pyroxene are completely altered to chlorite ± antigorite, epidote, calcite, leucoxene, and hematite. Glass is also completely altered to chlorite ± sphene. Plagioclase phenocrysts are weakly to moderately saussuritized. Disseminated magnetite has altered to hematite (Specular), which also occurs in late fractures with chlorite, sphene, calcite, leucoxene, and traces of malachite. No evidence of former sulfides was noted. Malachite occurs on joint surfaces in the hand specimen. Alteration is propylitic (late-magmatic/deuteric). Metallization (copper) may relate to a thick sequence of andesitic/basaltic rocks (?).

Petrographic Report #AMV

September 14, 1992

for

Mr. Linus T. Keating -- Geologist
Kennecott Corporation
P.O. Box 11248
Salt Lake City, UT 84147

by

Michael DePangher
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show 2nd order interference colors. "Sericite" used in this way could include a number of colorless phyllosilicates (muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc).

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

Particle size distributions are given as (A-B-C μ m), where A, B, and C are the smallest, median, and largest particle sizes, respectively, in microns. A question mark (?) in the position of A, B, or C indicates that the value of A, B, or C was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification, (2) film roll number, (3) frame number, (4) type of illumination, (5) field of view (FOV) or the magnification on the color print, which is given as the number of times actual size (ie., 32X), and (6) the job identification number. "PPL" indicates plane-polarized light; "XPL" indicates cross-polarized light. "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted to highlight features of extremely low birefringence. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. For normal photography of hand specimens, the focal length of the lens used is given rather than the magnification. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs can be located by overlaying the accompanying orthogonal plastic grid. A block of squares is marked by referencing the uppermost left and lowermost right corners of the block, ie. A6-E15. Linear features are marked by designating the extent of the feature from beginning to ending points, ie. B6 to L19.

SAMPLE # E-2 **Rock** September 14, 1992

ROCK NAME ALTERED CATACLASTIZED FINE QUARTZ DIORITE -- probably formed by penetrative cataclastic deformation and hydrothermal alteration (propylitic) of a fine grained quartz diorite intrusive.

MINERALS Epidote (56%) + plagioclase (20%) + quartz (10%) + calcite (5%) + K-feldspar (5%) + opaques (2%) + FEOH (2%). Section Preparation: 27 x 46 mm rectangular thin section + sodium cobaltinitrite stain + alizarin red S stain + potassium ferricyanide stain + Loctite + coverglass.

TEXTURES Phaneritic, holocrystalline, equigranular, hypidiomorphic, fine grained.

ALTERATION The following alteration features are present but of indeterminate relative ages: (1) veins of quartz + calcite; (2) plagioclase strongly altered to epidote; (3) opaques moderately altered to FEOH; and (4) penetrative cataclastic deformation.

PHOTOS E-2/92041/16/DAY/2.8X/AMV ALTERED CATACLASTIZED FINE QUARTZ DIORITE showing typical appearance of hand specimen.

E-2/92041/04/XPL/28X/AMV ALTERED CATACLASTIZED FINE QUARTZ DIORITE showing typical appearance of fine equigranular texture with abundant epidote (G19) and calcite (E23) (same view as 92041/05).

E-2/92041/05/PPL/28X/AMV ALTERED CATACLASTIZED FINE QUARTZ DIORITE showing typical appearance of fine equigranular texture with abundant epidote (G19) and calcite (stained red) (same view as 92041/04).

SAMPLE #

E-3

Rock

September 14, 1992

ROCK NAME

ALTERED ANDESITE PORPHYRY -- probably formed by moderate hydrothermal alteration of an andesite porphyry flow or shallow intrusive.

MINERALS

Plagioclase (42%) + quartz (15%) + epidote (12%) + K-feldspar (10%) + sericite (10%) + opaques (8%) + calcite (3%). All quartz, epidote, K-feldspar, sericite, and calcite are secondary. Section Preparation: 27 x 46 mm rectangular thin section + sodium cobaltinitrite stain + alizarin red S stain + potassium ferricyanide stain + Loctite + coverglass.

TEXTURES

Phaneritic, holocrystalline, porphyritic, fine grained.

Phenocrysts (25%)

Plagioclase (20%) -- subhedral to euhedral, whole, isolated to glomeroporphyritic, Albite-twinned, sometimes zoned, 120-320-1600 μ m, moderately altered to epidote.

Hornblende (5%) -- subhedral to euhedral, whole, isolated to glomeroporphyritic, 320-800-3400 μ m, completely altered to very fine grained opaques.

Groundmass (75%) is composed of [cryptocrystalline plagioclase moderately altered to sericite + K-feldspar] + opaques.

Vesicles (0%) were not observed.

ALTERATION

Alteration features in relative chronological order from oldest to youngest are: (1) veins of quartz + K-feldspar + calcite + epidote.

PHOTOS

E-3/92041/17/DAY/2.8X/AMV ALTERED ANDESITE PORPHYRY showing typical appearance of hand specimen with a thick veins of quartz (K13) + K-feldspar (J15) + calcite + epidote.

E-3/92041/06/XPL/28X/AMV ALTERED ANDESITE PORPHYRY showing typical appearance of phenocrysts of plagioclase moderately altered to epidote (S7, G19) and hornblende completely altered to very fine grained opaques (G5).

SAMPLE #

E-3

continued

Rock

September 14, 1992

PHOTOS

E-3/92041/07/XPL/114X/AMV ALTERED ANDESITE PORPHYRY showing closeup appearance of a vein of quartz + K-feldspar + calcite + epidote (same view as 92041/08).

E-3/92041/08/PPL/114X/AMV ALTERED ANDESITE PORPHYRY showing closeup appearance of a vein of quartz + K-feldspar (stained yellow at H12) + calcite (unstained at N22) + epidote (pleochroic yellow at N18) (same view as 92041/07).

SAMPLE #

E-4

Rock

September 14, 1992

ROCK NAME

ALTERED CATACLASTIZED ANDESITE PORPHYRY -- probably formed by cataclasis and strong hydrothermal alteration (propylitic) of an andesite porphyry shallow intrusive.

MINERALS

Plagioclase (45%) + chlorite (20%) + sericite (20%) + epidote (8%) + opaques (5%) + K-feldspar (2%). All chlorite, sericite, epidote, and K-feldspar are secondary. Section Preparation: 27 x 46 mm rectangular thin section + sodium cobaltinitrite stain + alizarin red S stain + potassium ferricyanide stain + Loctite + coverglass.

TEXTURES

Phaneritic, holocrystalline, porphyritic, fine grained.

Phenocrysts (30%)

Plagioclase (25%) -- subhedral to euhedral, whole to broken, isolated to glomeroporphyritic, Albite-twinned, unzoned, 320-720-2400 μ m, moderately altered to epidote + sericite + opaques \pm K-feldspar \pm chlorite.

Hornblende (?) (5%) -- subhedral to euhedral, whole, isolated to glomeroporphyritic, 400-560-1200 μ m, completely altered to chlorite + epidote.

Groundmass (70%) is composed of plagioclase + chlorite.

Vesicles (0%) were not observed.

ALTERATION

Sericite 1/8-3
Alteration features in relative chronological order from oldest to youngest are: (1) cataclasis; and (2) sparse veinlets of K-feldspar. The following alteration features are also present but of indeterminate relative ages: (1) sericite moderately altered to very poorly crystallized chlorite or secondary biotite (?). Overall these features suggest that strong propylitic and weak potassic alteration have been superimposed.

PHOTOS

E-4/92041/18/DAY/2.8X/AMV ALTERED CATACLASTIZED ANDESITE PORPHYRY showing typical appearance of hand specimen.

E-4/92041/09/XPL/28X/AMV ALTERED CATACLASTIZED ANDESITE PORPHYRY showing typical appearance of plagioclase phenocrysts in a groundmass of plagioclase + chlorite that is cut by cataclastic structures (T8 to A29) (same view as 92041/10).

E-4/92041/10/PPL/28X/AMV ALTERED CATACLASTIZED ANDESITE PORPHYRY showing typical appearance of plagioclase phenocrysts in a groundmass of plagioclase + chlorite that is cut by cataclastic structures (T8 to A29) (same view as 92041/09).

SAMPLE #

E-5

Rock

September 14, 1992

ROCK NAME

ALTERED GRANODIORITE -- probably formed by strong hydrothermal alteration (chloritization) of a fine grained granodiorite intrusive.

MINERALS

Plagioclase (25%) + sericite (20%) + penninite chlorite (20%) + quartz (12%) + K-feldspar (12%) + opaques (5%) + FEOH (3%) + rutile (2%) + apatite (1%) + zircon (<1%). Section Preparation: 27 x 46 mm rectangular thin section + sodium cobaltinitrite stain + alizarin red S stain + potassium ferricyanide stain + Loctite + coverglass.

TEXTURES

Phaneritic, holocrystalline, equigranular, hypidiomorphic, fine grained.

ALTERATION

The following alteration features are present but of indeterminate relative ages: (1) veins of calcite; (2) biotite completely altered to chlorite + rutile + opaques + FEOH; and (3) plagioclase strongly altered to sericite.

PHOTOS

E-5/92041/19/DAY/2.8X/AMV ALTERED GRANODIORITE showing typical appearance of hand specimen.

E-5/92041/11/XPL/28X/AMV ALTERED GRANODIORITE showing typical appearance of equigranular hypidiomorphic plagioclase (strongly altered to sericite; R15) + biotite (completely altered to chlorite + rutile + opaques + FEOH; D27) + quartz (E17) + K-feldspar (M17) (same view as 92041/12).

E-5/92041/12/PPL/28X/AMV ALTERED GRANODIORITE showing typical appearance of equigranular hypidiomorphic plagioclase (strongly altered to sericite; R15) + biotite (completely altered to chlorite + rutile + opaques + FEOH; D27) + quartz (E17) + K-feldspar (stained yellow; M17) (same view as 92041/11).

SAMPLE #

E-6

Rock

September 14, 1992

ROCK NAME

ALTERED QUARTZ MONZONITE -- probably formed by weak hydrothermal alteration (mostly sericite) of a fine to medium grained quartz monzonite intrusive.

MINERALS

Plagioclase (26%) + quartz (26%) + K-feldspar (26%) + sericite (10%) + penninite chlorite (5%) + epidote (3%) + opaques (2%) + apatite (1%) + sphene (1%). Section Preparation: 27 x 46 mm rectangular thin section + sodium cobaltinitrite stain + alizarin red S stain + potassium ferricyanide stain + Loctite + coverglass.

TEXTURES

Phaneritic, holocrystalline, equigranular, hypidiomorphic, fine to medium grained.

ALTERATION

The following alteration features are present but of indeterminate relative ages: (1) biotite completely altered to chlorite + epidote + sphene + opaques; (2) plagioclase moderately altered to sericite + epidote \pm K-feldspar; and (3) K-feldspar weakly altered to sericite.

PHOTOS

E-6/92041/20/DAY/2.8X/AMV ALTERED QUARTZ MONZONITE showing typical appearance of hand specimen.

E-6/92041/13/XPL/28X/AMV ALTERED QUARTZ MONZONITE showing typical appearance of equigranular hypidiomorphic plagioclase (G8) + chloritized biotite (O10) + quartz + K-feldspar (stained yellowish) (same view as 92041/14).

E-6/92041/14/PPL/28X/AMV ALTERED QUARTZ MONZONITE showing typical appearance of equigranular hypidiomorphic plagioclase (G8) + chloritized biotite (O10) + quartz + K-feldspar (stained yellowish) (same view as 92041/13).

Sphene
rich g^d
E.H

KENN09/92

44653c

This rock is a granodiorite, very close to diorite or tonalite in composition. The chief component is plagioclase which occurs as rectangular crystals in random orientation. Spaces interstitial to the plagioclase are occupied by quartz and orthoclase, sometimes in graphic intergrowth with each other and with plagioclase. Some of the orthoclase seems late magmatic in age for it corrodes and begins to replace the margins of plagioclase adjacent to it. Hornblende is by far the dominant mafite, occurring as stout prisms wedged between the plagioclase crystals. A few grains of pyroxene were also observed. The texture of the rock is very clear and it has experienced modest alteration which is considered of deuteric age.

Plagioclase is clouded with sericite and hosts almost earthy clinozoisite in the crystal cores. A little calcite is present as well and it also was found corroding orthoclase which otherwise remains quite fresh. Both hornblende and pyroxene are entirely altered, usually to pennine but sometimes an intermediate step is an oxidized hydrobiotite interlayered with calcite. Apatite is an accessory in this rock and was found in normal abundance as needle-like crystals embedded in the plagioclase, a habit which is typical for basic rocks. Sphene is also present as occasional crystals, sometimes large, but its net abundance is no more than 1%. Oxidized pyrite was observed, chiefly along poorly defined microcracks that wander along grain boundaries through the rock. It seems compatible with the deuteric alteration described above.

Sid Williams llc

Phil Matter description
per Dick Beane

The following Elephant Head samples were reviewed by P. Matter for comparison with S. Williams' former descriptions:

45257-c

A vitric tuff, probably of andesitic composition, with ill-defined bedding. The rock consists of formerly glassy porphyritic andesitic debris and lesser amounts of crystal debris (β -quartz, plagioclase, mafites) in a vitroclastic matrix of finer material. Plagioclase is virtually all replaced by sericite; and sericite-hydromica \pm clay replaces glass. Mafites have altered to chlorite, now oxidized. Quartz \pm hematite veins fill fractures, and are associated with minor disseminated pyrite. Alteration is strong epizonal sericitization.

46353-c

A brecciated volcaniclastic containing fine crystal debris (quartz and plagioclase) in a sericitized matrix. The rock probably represents a tuffaceous sandy siltstone. Quartz veining has formed subsequent to brecciation. Abundant former pyrite, now oxidized and leached, is disseminated throughout the rock. Strong epizonal alteration includes silicification and sericitization.

46265-c

A brecciated volcaniclastic, this rock contains abundant sandy crystal debris (β -quartz, plagioclase, K-spar, mafites) and also former glassy lithic debris (pumice, vitric tuff-vitrophyre) in a matrix of finer material. The breccia matrix consists of randomly oriented prismatic quartz and hydrobiotite (inter-layered biotite and chlorite). Quartz veins \pm K-spar also cut the sample. Pyrite euhedra completely altered to hematite are disseminated in the breccia matrix and in quartz veining. The volcaniclastic appears to represent a fairly coarse, poorly sorted tuffaceous sediment. Most of the glassy debris has altered to quartz \pm sericite. Very strong epi-/mesozonal alteration includes silicification, sericitization, and minor K-metasomatism.

46274-c

A brecciated, fine-grained fragmental rock that probably represents a vitric-crystal tuff. What appears to have been former glassy and feldspar debris (now silicified) is scattered in a fine-grained sericite matrix exhibiting ill-defined bedding. patchy microgranular quartz forms the breccia matrix. More coarsely crystalline subhedral quartz occurs as later veinlets carrying hematite \pm chrysocolla after chalcopryrite. Alteration is strong epizonal silicification and sericitization.

KENN07/92

GLOBO DE PLOMO ENTERPRISES



P.O. BOX 872
DOUGLAS, AZ 85607
USA

18 August 1992

James N. Lukanuski
Consulting Economic Geologist
8342 E. Appomattox
Tucson, AZ 85710

Dear Jim:

Enclosed are descriptions of the four samples you sent on August 7th. I am returning the rock remains and slides to Linus Keating together with a copy of this report.

All of these rocks seem to fit somewhere between vitric tuffs and reworked crystal tuffs - and sediments derived from them - but alteration has made identification shaky in most of the samples. The sulfides seem associated with brecciation that was followed by strong silicification and sericitization. I do not see porphyry copper characteristics in these four samples despite the presence of attractive alteration and the appearance of some copper. The thought crossed my mind during this study that this could represent a breccia pipe, and in porphyry copper camps I seldom or never see porphyry copper characteristics in such pipes which are usually post-mineral anyway. But the brecciation in these samples seems to be structural - related probably to some shearing. I would expect this to be some sort of linear feature although you did not describe the setting for these samples in your letter. If it is the case that is if this is a sheared structure, I do not know what the source of alteration and metals might be.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Sid Williams'.

Sidney A. Williams
SAW:bj

encls.

45257-C *leached gossan; Bisbee*

The original rock was a vitric crystal tuff somewhere in the compositional range dacite-andesite. Most of the material in it appears to represent porphyritic glassy andesites with squarish phenocrysts of plagioclase in a matrix that did not devitrify subsequent to deposition. Finer grained debris of more varied character comprises the matrix of the tuff and in addition to bits of andesitic glass and clasts of plagioclase in mafites there are occasional angular splinters of β quartz. The fabric of the unit is vaguely bedded but neither reworking nor welding has occurred. Epizonal alteration has been strong.

Plagioclase is replaced by an extremely fine grained paste of sericite, and still finer grained sericite sometimes joined by cryptocrystalline plagioclase replaces glass. Where this has happened dust-like Fe and Ti-oxides may color the replaced fragments or domains distinctively. β Quartz has been unchanged by alteration. The rock is cut by fracture zones which guide the development of veins of quartz which are accompanied by small plates of specular hematite. These veins appear to represent fractures that were later followed by weak shears and the shears are packed with a paste of kaolinite which crystallized after motion had ceased. Mafites and certain basic glass fragments in the rock are replaced by very fine grained delessite which is now oxidized and stained with yellowish hisingerite. Small cubes of pyrite were disseminated in the general vicinity of the veins described above. They have been oxidized and thoroughly leached.

46252-C

2nd gossan outcrop: Bisbee

The rock is a breccia in which all of the fragments represent the same rock type. Initially this unit is believed to have been a reworked crystal tuff for it is rich in clasts of plagioclase and quartz plus few of mafites and there are also occasional fragments of devitrified glass of andesite or dacite composition. Alteration has been severe in these fragments and yet they retain the sense of bedding within them and clasts axes and concentrations show alignment that represents the bedding.

Subsequent to brecciation quartz appears to have grown quite strongly in the matrix cementing the fragments but not penetrating and silicifying the margins of them to any significant extent. After silicification there was an episode of pervasive re-brecciation and the quartz that formed in the matrix is finely comminuted as angular splinters and isolated grains commingled with bits of altered tuff fragments. The fragments are sericitized just as are the larger pieces that represent fragments in the original breccia. In these a paste of sericite has replaced everything, joined by leucoxene dust and hematite in mafite sites and squeezed onto quartz grain boundaries in the matrix where quartz growth has been noticeable but slight. Subsequent to the second episode of brecciation the rock was cut by seams of comby quartz that pass

46252-C con't.

through fragments and matrix alike. Oxidized pyrite, now thoroughly leached, seems to have been guided by these features but it was also thickly disseminated throughout the matrix of the rock. It has been removed leaving shells of cubic outline lined by hematite.

46265-C Lgmp?

The rock is a breccia altered almost beyond recognition. The few fragments that still retain some textural information seem to be varied, for some of them are clearly devitrified dacite glasses but the majority appear to represent sediments indicating reworking of possible dacitic debris admixed with numerous quartz clasts and other materials. Some fragments within these clearly represent vitric tuffs for they show outlines of shards nicely. Alteration subsequent to brecciation of the rock has been intense.

The matrix of the rock is a jumble of coarse prisms of quartz with hydrobiotite caught up in the quartz as inclusions and also pushed into the interstices as scaly patches of disorganized crystallites. In addition to replacing the matrix, quartz of this character veins the fabric and sometimes cuts fragments and the veins carry crystals of cubic pyrite which are usually embedded in the quartz though they are now fully oxidized. Within the fragments dust-like sericite has replaced glasses and plagioclase and it is joined by delessite in replacing mafite fragments. Quartz has grown within the fragments as well but the degree of silicification seems to vary with the material being replaced and silicification is negligible where the rock fragments show distinct clastic fabric.

46274-C Lgmp?

The protolith here has been brecciated and silicified almost beyond recognition. It appears that it may have been a fine grained vitric volcanic based largely on comparison with samples described above in this suite, but textures here have been severely blurred.

The fragments are replaced by very fine grained sericite clouded with dust-like hematite and leucoxene. Sometimes the textures of these mixtures serve to define what appear to have been shards and glass fragments in a crudely bedded fabric. Quartz has grown as dense, cherty-textured material at some points in the matrix of the rock and its growth seems to increase both in abundance of silica and grain size as the fragment margins are approached. This quartz blends into the matrix which is a mosaic of ragged interlocking quartz grains with little dust-like sericite inherited as inclusions from the wallrock. Small amounts of penine were found, usually developed within the matrix quartz and not within the fragments and occasionally still fresh grains of sodic

46274-C con't.

plagioclase were observed as phenocrysts protected in the matrix quartz. Ultimately the matrix is gradational into a series of vein-forms that seem to represent a continuum of ages. The younger of these veins are occupied by jumbled quartz prisms with chalcopyrite in the interstitial spaces. The chalcopyrite is oxidized to hematite and some chrysocolla leaks out onto fracture surfaces of the sample.

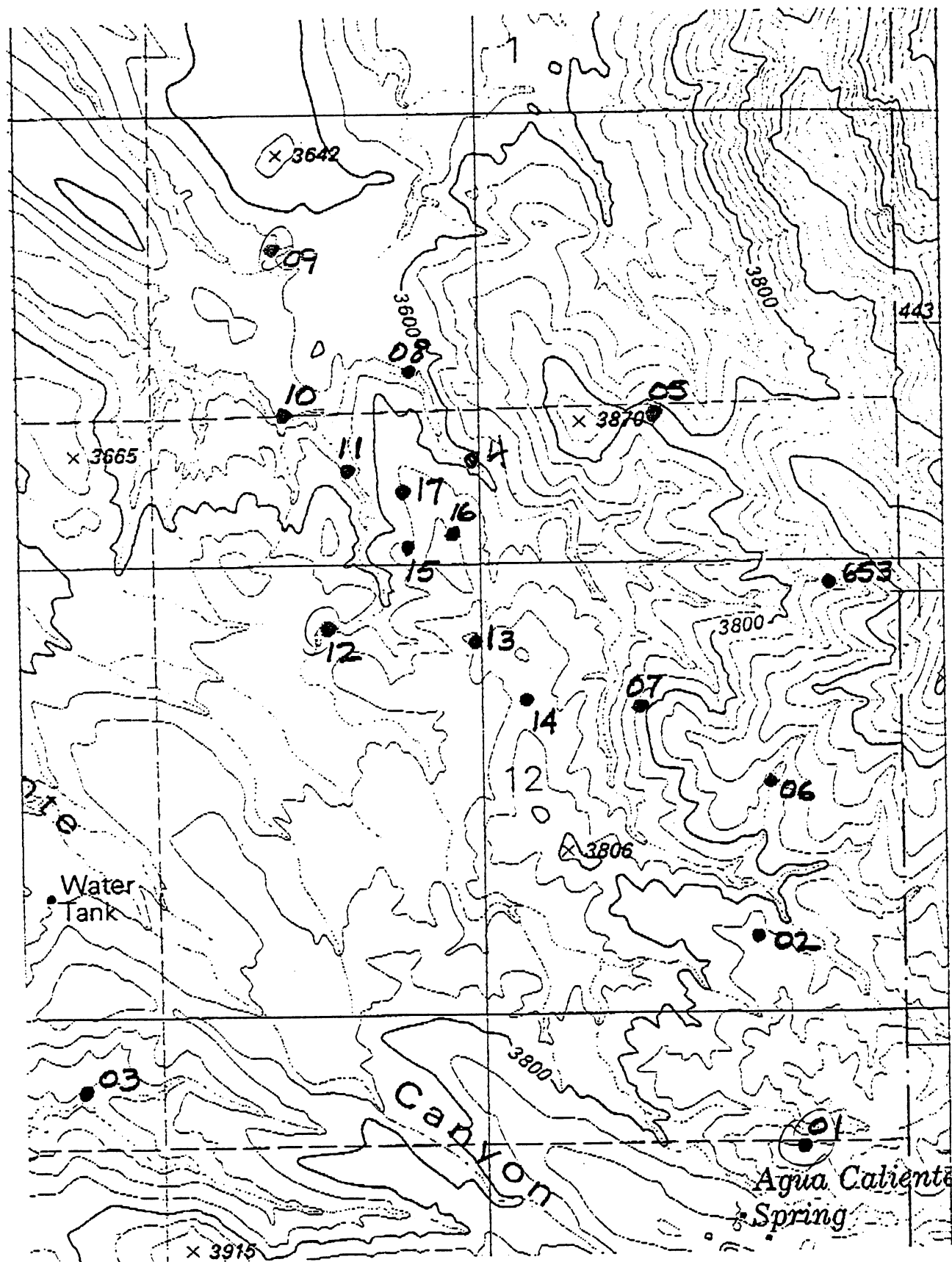
TO: Linus Keating, Kennecott Expl.

(801) 583-3129

From: Dick Beane

DATE: January 28, 1993

Here are petrographic and fluid inclusion descriptions of samples plus a map of sample locations. The only two samples which showed porphyry copper type effects are 46402c and 46406c, and these are weak. The most widespread alteration, including the post deformational stage from dump with copper staining by the shaft (46416C), is epizonal sericitization. The Bisbee group shows the effects of Ca and Mg addition, but much of the epidote and actinolite could be formed from components directly present in the ferruginous sediment. I will be at home tomorrow morning and will try to get in touch with you then.



1, 17, 9, all B&B
 addns of Ca, Mn (Clinochlore)
 over d above sediment mat'l.

tho it had
garnet

46401

A clastic rock with included volcanic (andesitic) and siltstone debris. The rock contains abundant granular epidote intergrown with chlorite (clinocllore), calcite, and quartz with included hematite after actinolite. Veins of calcite and of chlorite + anhedral quartz after actinolite are cut by later vuggy (?) epizonal hydrothermal veins of prismatic quartz with malachite and Fe-ox after chalcopyrite. Calcium necessary for the development of epidote, actinolite, and calcite may derive from deuteric alteration of associated andesitic rocks.

46402

med g. gmm. Temp 350 (Berne) *An40?*
A medium/coarse-grained quartz monzonite exhibiting late-magmatic/deuteric effects. ~~Orthoclase replaces plagioclase, which alters to epidote; hornblende is replaced by late magmatic~~

~~secondary biotite, altering to hydrobiotite and minor chlorite.~~
Medium to coarse-grained granular quartz forms discontinuous irregular areas intergrown with feldspar. Quartz veining was not apparent. The rock shows some cataclastic effects with the development of granulated zones and microfractures, often filled with combinations of epidote, hydrobiotite, quartz, and secondary magnetite. Goethite is present after trace disseminated pyrite.

alt of hydroth bt → chl.

46403

An andesite with seriate phenocrysts of plagioclase, former clinopyroxene, and minor hornblende. Coarse subhedral epidote replaces plagioclase phenocrysts, while pyroxene has altered to fine-grained granular epidote and hematite. Minor quartz (mostly secondary) and trace K-spar occur along with plagioclase in the matrix. Epidote also forms irregular veinlets ± quartz. A larger barren, coarse-grained, anhedral/subhedral quartz vein includes some hematite and albitic plagioclase (? after included wall rock) as well as minor K-spar. Alteration and veining appear to be late-magmatic/deuteric (propylitic).

46404

This sample is a fine-grained equigranular syenodiorite (equivalent to previously described sample E-5) composed of subhedral plagioclase, former hornblende and biotite, sphene, a little over 5 % interstitial K-spar, minor quartz, and several percent disseminated magnetite. Plagioclase is moderately sausseritized to sericite ± calcite and epidote; hornblende and biotite are completely altered to chlorite (pennine) and leucoxene ± calcite. Sphene has altered to leucoxene and calcite. Chlorite ± quartz, and calcite (often with chlorite selvages) form microveinlets. A larger, coarsely-crystalline quartz vein includes minor calcite and chlorite. Adjacent to this vein the rock is somewhat bleached and characterized by the absence of magnetite, and more calcite rather than sericite in altered plagioclase. Alteration and veining appear to be late-magmatic/deuteric.

*Ortho-type
fine*

46405

This sample is a fine-grained equigranular quartz monzonite. Major constituents are anhedral quartz and roughly equal amounts of subhedral plagioclase and anhedral orthoclase, usually intergrown with plagioclase. Plagioclase is completely altered to sericite, which also weakly replaces orthoclase. Former mafites, minor biotite and hornblende, are completely altered to sericite, leucoxene, and hematite. Hematite also forms pseudomorphs after trace disseminated euhedral pyrite. Several barren, somewhat irregular veinlets of anhedral to jumbled prismatic quartz traverse the section. Alteration is strong epizonal sericitization and quartz veining.

fine grained gm Temp? 350°? (Berne)

46406

The same rock as 46405 with the same texture and composition, but different alteration. This sample shows primarily late-magmatic/deuteric effects with orthoclase replacing plagioclase, and plagioclase weakly sericitized. ~~Biotite has altered to chlorite, while secondary late-magmatic biotite has replaced hornblende and in turn has altered to chlorite,~~ with some intermediate hydrobiotite still present. Fine-grained prismatic quartz in diverse orientations fills fractures in the wall rock, and within a larger vein of coarsely-crystalline anhedral/subhedral quartz. Disseminated magnetite occurs along with trace pyrite altered to hematite/goethite. Alteration includes late-magmatic/deuteric effects and (?) epizonal quartz veining.

There are two distinct stages of quartz and fluid inclusions in this sample. Early quartz has two-phase liquid-rich inclusions that are regularly shaped. These probably formed at temperatures $\geq 300^{\circ}\text{C}$. Late quartz has lots of large, irregularly-shaped inclusions that probably formed at $\leq 250^{\circ}\text{C}$. A few halite-bearing inclusions were seen in the early quartz. No vapor-rich inclusions were found with the halite-bearing inclusions, and no chalcopryrite daughter minerals were observed.

one type of gm

46407

A medium/coarse-grained quartz monzonite very similar to 46402 in texture and composition. Plagioclase is weakly to moderately sericitized, and biotite has completely altered to sericite. Small disseminated hornblende crystals are represented by leucoxene and hematite. Coarse- to medium-grained, anhedral to jumbled prismatic quartz fills a large fracture vein that includes angular wall rock debris, and quartz also forms microveinlets. Sericitization is pervasive, and sericite $\pm \text{FeOx}$ also fills numerous fine fractures. Alteration is weak epizonal sericitization and quartz veining.

Vein quartz is coarse-grained and low temperature, with classic growth zoning defined by large irregularly-shaped fluid inclusions. No halite-bearing or vapor-rich inclusions, and no chalcopryrite daughter minerals were seen.

*Microcline PE.
Orthoclase CHM*

46408

A fine-grained equigranular quartz monzonite like 46405 and 46406. Plagioclase is completely altered to sericite, which also weakly replaces orthoclase. Former mafites (hornblende and biotite) are altered to sericite and leucoxene. Sub-parallel barren veins and veinlets of fine to coarse, anhedral/subhedral, often comby quartz traverse the rock. Alteration is strong epizonal sericitization and quartz veining as in 46405.

Quartz in the vein shows a feathery texture characteristic of quartz in epithermal environments. Growth zones are outlined by lots of poorly-formed, irregularly-shaped two-phase fluid inclusions. This texture is characteristic of quartz that formed in open space at low temperatures ($\leq 250^{\circ}\text{C}$). No halite-bearing or vapor-rich inclusions were seen and no chalcopyrite daughter minerals were observed in the fluid inclusions. A few inclusions contained squarish to rectangular opaque daughter minerals which, based on shape, are not chalcopyrite.

46409

This sample appears to represent a tuffaceous siltstone. It consists of detrital silt-sized quartz and feldspar, along with (?) andesitic debris and minor (?) shaley fragments in a micro-crystalline siliceous matrix clouded by fine hematite. Granular epidote is disseminated throughout and also forms irregular epidote-rich areas along with minor chlorite and patchy calcite. Calcite also occurs as microveinlets. The presence of epidote again may relate to deuteric alteration of associated andesitic rocks.

46410

A sheared, medium-grained diorite similar in composition to 46404. This sample is more coarsely-crystalline, contains less K-spar, and includes clinopyroxene along with former hornblende. Alteration again appears to be late-magmatic/deuteric, and stronger in sheared areas of the thin section where some granulation has occurred. Plagioclase is moderately sausseritized to mixtures of sericite \pm epidote/clinozoisite and calcite, with stronger development of sericite in sheared zones. Relict clinopyroxene has been strongly converted to actinolitic hornblende (uralite) which in turn is altering to secondary biotite \pm epidote and later chlorite. What appears to have been primary hornblende is completely replaced by epidote, calcite, secondary magnetite \pm sericite in sheared areas. Calcite forms irregular microveinlets and sub-parallel stringers in sheared zones. Elongate lensoid structures in sheared zones consist, in one case, of secondary biotite, albite, and minor epidote; and in another of epidote and prehnite. Several percent magnetite occur as disseminated subhedral crystals.

46411

A medium/coarse-grained quartz monzonite similar in texture and composition to samples 46402 and 46407, but differing with respect to somewhat lower plagioclase content, and the kind of K-spar which in this sample is all microcline as opposed to orthoclase (? Precambrian basement). This rock has been fractured, often healed by quartz, and zones of crushing and granulation are also evident. Sericite fills some fractures and replaces adjacent plagioclase. Elsewhere, plagioclase is only very weakly sericitized. Disseminated biotite altering to hydrobiotite is generally completely converted to sericite. Minor hornblende ~~has~~ altered to leucoxene and FeOx. Goethite/hematite ~~forms~~ ^{has} pseudomorphs after euhedral pyrite which occurs in and adjacent to sericite fractures. Non-pervasive alteration is weak epizonal sericitization associated with late fracturing.

46412

A ferruginous siltstone, probably the same unit as 46409, consisting predominantly of silt-sized quartz detritus along with lesser amounts of detrital feldspar and some fine cherty quartz fragments. The matrix is clouded with abundant finely-divided hematite. The rock has been fractured and irregularly veined with granular epidote intergrown with former actinolite/tremolite which has altered to Mg-rich chlorite, calcite, and quartz. Calcite microveinlets cut earlier epidote-actinolite/tremolite veining. Veining may again result from deuteric alteration of associated andesitic rocks.

46413

A brecciated quartz monzonite, virtually identical in texture to sample 46416B. It differs somewhat compositionally in that, although altering to sericite \pm smectite clay, some plagioclase remains in this sample along with microcline. In addition, an ill-defined discontinuous band of disseminated coarse (1-1½ mm) patches of colorless fluorite occurs within the breccia matrix, which again consists of fine- to medium-grained, anhedral to jumbled prismatic quartz. Sub-parallel vuggy vein structures are filled with slightly coarser subhedral to prismatic barren quartz. Hematite forms pseudomorphs after trace amounts of euhedral pyrite disseminated in the breccia matrix, but chalcopryrite or former chalcopryrite (as seen in 46416B) was not observed. Epizonal alteration includes sericitization and strong silicification associated with brecciation.

46414

a fine-grained equigranular quartz monzonite equivalent in texture and composition to samples 46405, 46406, and 46408. Plagioclase in this sample is altering very weakly to sericite, while biotite is completely replaced by sericite. Several granulated zones give evidence of some cataclastic deformation. Sub-parallel veins of fine- to coarse-grained, subhedral to prismatic barren quartz traverse the rock, sometimes following or

cutting these granulated zones. Sericite fills microfractures \pm quartz. Trace disseminated pyrite has altered to hematite. Alteration is weak epizonal sericitization and quartz veining.

46415

A vitric crystal tuff of rhyolitic composition consisting of abundant β -quartz and sanidine crystal debris, along with some fragments of rhyolitic volcanics and silicified glass, in a vitroclastic matrix of microcrystalline quartz and K-spar. The sample has been brecciated and strongly silicified. Anhedral to prismatic quartz forms the breccia matrix and irregular veining. A larger barren comby quartz vein appears to be later and cuts the breccia matrix and fragments. Abundant former pyrite (now boxworks lined with FeOx and jarosite) occurs along earlier vein structures and also disseminated in the tuff. Alteration is strong epizonal silicification associated with brecciation.

Quartz in this sample is less deformed (metamorphosed) than quartz in the 46416 samples. The fluid inclusions are two-phase liquid-rich, and are regularly-shaped. A few halite-bearing inclusions occurred randomly throughout the sample. No vapor-rich inclusions or chalcopryrite-bearing inclusions were found.

46416A

A medium/coarse-grained quartz monzonite with microcline, the same rock as 46411 with the same texture and composition. Plagioclase and mafites (hornblende and biotite) are completely altered to sericite. A branching vein of medium- to coarse-grained, anhedral/subhedral quartz carrying trace former pyrite cuts the sample. Chlorite is present on both walls of the quartz vein. Subsequent deformation is evidenced by shears and fractures carrying fine-grained jumbled prismatic quartz, that cut both the rock and the earlier quartz veining. Alteration is moderate epizonal sericitization and quartz veining related to fracturing.

This sample is similar to 46416B in that much of the quartz has metamorphic textures, such as undulatory extinction and wispy fluid inclusions. The two-phase liquid-rich fluid inclusions are fairly regularly-shaped, suggesting a moderate temperature of formation (250-350°C). A few vapor-rich inclusions occur ~~along~~ fractures, but these may be leaked liquid-rich inclusions. ~~No~~ porphyry copper-type inclusions were seen.

46416B

This sample is brecciated quartz monzonite, apparently the same rock as 46416A, but strongly brecciated and shattered. Coarse to fine sub-angular fragments of quartz monzonite and its mineral constituents are veined by, and enclosed in, a matrix of fine-grained anhedral to jumbled prismatic quartz. Most lithic debris consists of quartz and K-spar (microcline). Sericite occurs after traces of biotite, but former plagioclase (presumably sericitized) apparently did not survive brecciation and silicification in this

sample. Traces of chalcopyrite are disseminated in the breccia matrix, altering to goethite and malachite, with trace chrysocolla in fractures. Epizonal alteration includes sericitization and strong silicification associated with brecciation.

This sample has two generations of quartz. The early quartz has metamorphic characteristics: undulatory extinction, and numerous trails of small fluid inclusions which cut across crystals. The trails more-or-less all have the same orientation which is characteristic of metamorphic rocks, and not the ~~random~~ trail orientation typical of porphyry copper samples. ~~Pyrite~~ pyrite was seen in the early quartz, but not with later ~~quartz~~ quartz. Late coarse quartz contains few inclusions and is not deformed.

46417

A breccia consisting of siltstone to sandy siltstone debris along with quartz monzonite debris (sometimes sheared) in a breccia matrix of anhedral to jumbled prismatic quartz, which also forms veining. The breccia matrix includes some sericite, which also replaces plagioclase feldspars and mafites in breccia fragments. Trace FeOx occurs after disseminated pyrite in the breccia matrix. Alteration is strong epizonal silicification and sericitization associated with brecciation.

44653

A medium-grained equigranular diorite very similar to 46410 in texture and composition, although this sample is not sheared. Plagioclase is moderately sausseritized to mixtures of sericite, calcite, and epidote/clinozoisite. Hornblende is converted to chlorite and leucoxene, while former pyroxene apparently altered first to uraltite, followed by chlorite and calcite \pm epidote. Calcite forms irregular microveinlets. Several percent magnetite is present as disseminated small crystals, and traces of pyrite altering to FeOx occurs along microfractures. Alteration is late-magmatic/deuteric.

EH-1

A shaley siltstone consisting of fine quartz, feldspar, and former mafite (altered to chlorite) detritus in a microcrystalline siliceous matrix with finely granular disseminated epidote. The rock is cut by a large vein of coarsely crystalline epidote intergrown with randomly oriented coarse fibrous actinolite and lesser amounts of coarsely anhedral to subhedral quartz. An adjacent smaller, parallel vein of similar composition is also present. Siltstone/shale between these two veins is, with the exception of detrital quartz grains, completely replaced by granular epidote. Finer-grained granular epidote also floods outward from vein boundaries into the siltstone, gradually becoming less abundant and more finely disseminated. As in other samples described, this veining may relate to deuteric alteration of associated andesitic rocks.

GxEx
1761 East Deer Hollow Loop
Oro Valley, AZ 85737
(602) 544-4487
February 9, 1993

Linus Keating
Kennebecott Corporation
P. O. Box 11248
Salt Lake City, UT 84147

Dear Linus,

Enclosed is a copy of my synopsis of the Elephant Head petrographic and fluid inclusion examinations. I think the limited data we have fits together reasonably well. The only question remaining is the source of the calcium for the calcite veining and epidote replacement in the Bisbee group. Sample EH-1 indicates that the calcium was introduced rather than derived from the rock itself. However we are not able to determine whether the calcium was derived from andesite (as Phil thinks) or limestone.

I'll get a second copy of the report to Joey.

Cheers,



Richard E. Beane
Consulting Geochemist

enc.

TO: Linus Keating
FROM: Dick Beane
RE: Elephant Head Synopsis

DATE: January 29, 1993

Several rock types have been identified petrographically in the area. The rocks, and samples corresponding to each type, are:

- 1) fine-grained quartz monzonite with orthoclase: (= Lqm); -405, -406, -408, -414
- 2) medium- to coarse-grained quartz monzonite with orthoclase: (= Lpqm); may be the same intrusion as the fine grained quartz monzonite; mineralogically the same but texturally different; -402, -407
- 3) medium- to coarse-grained quartz monzonite with microcline: (= Lqm); similar in texture and composition as -402 and -407, but different in terms of the type of K-feldspar; may represent Precambrian basement; -411, -413, -416
- 3) (syeno)diorite: (= Ljd); a range in compositions depending on the type of mafic (olivine, pyroxene) and relative amount of feldspars present; -404, -410, 44653, E-5
- 4) vitric crystal tuff: (= Kba); rhyolitic to andesitic; -415, -257
- 5) volcaniclastic/siltstone: tuffaceous siltstone containing debris of volcanic origin (= Kba); -401, -409, -412, -265, -274, -353
- 6) andesite: (= TRwml); intrusive (?); -403

The two medium- to coarse-grained quartz monzonites are differentiated in that all samples containing microcline are sheared. This may indicate directional dynamic metamorphism or thrusting. Based on the feldspar, the microcline-bearing group is possibly Precambrian in age. This includes -417 which is a breccia of quartz monzonite and siltstone. All microcline-bearing samples come from a block in the northwest quarter of Section 12 lying between two washes, and which also contains the dump with intense chrysocolla staining.

About one-half of the samples are granulated, fractured, and brecciated (402, and -410 through -417). These are essentially colinear with an approximately N40°W orientation, and may indicate a major structural zone. This trend is essentially parallel to the Santa Rita fault zone (Drewes, 1972) which lies several kilometers to the north. In addition, two samples (-416 and QM fragments in -417) show evidence of shearing which pre-dates brecciation.

TO: L. Keating
FROM: D. Beane
Elephant Head, p. 2

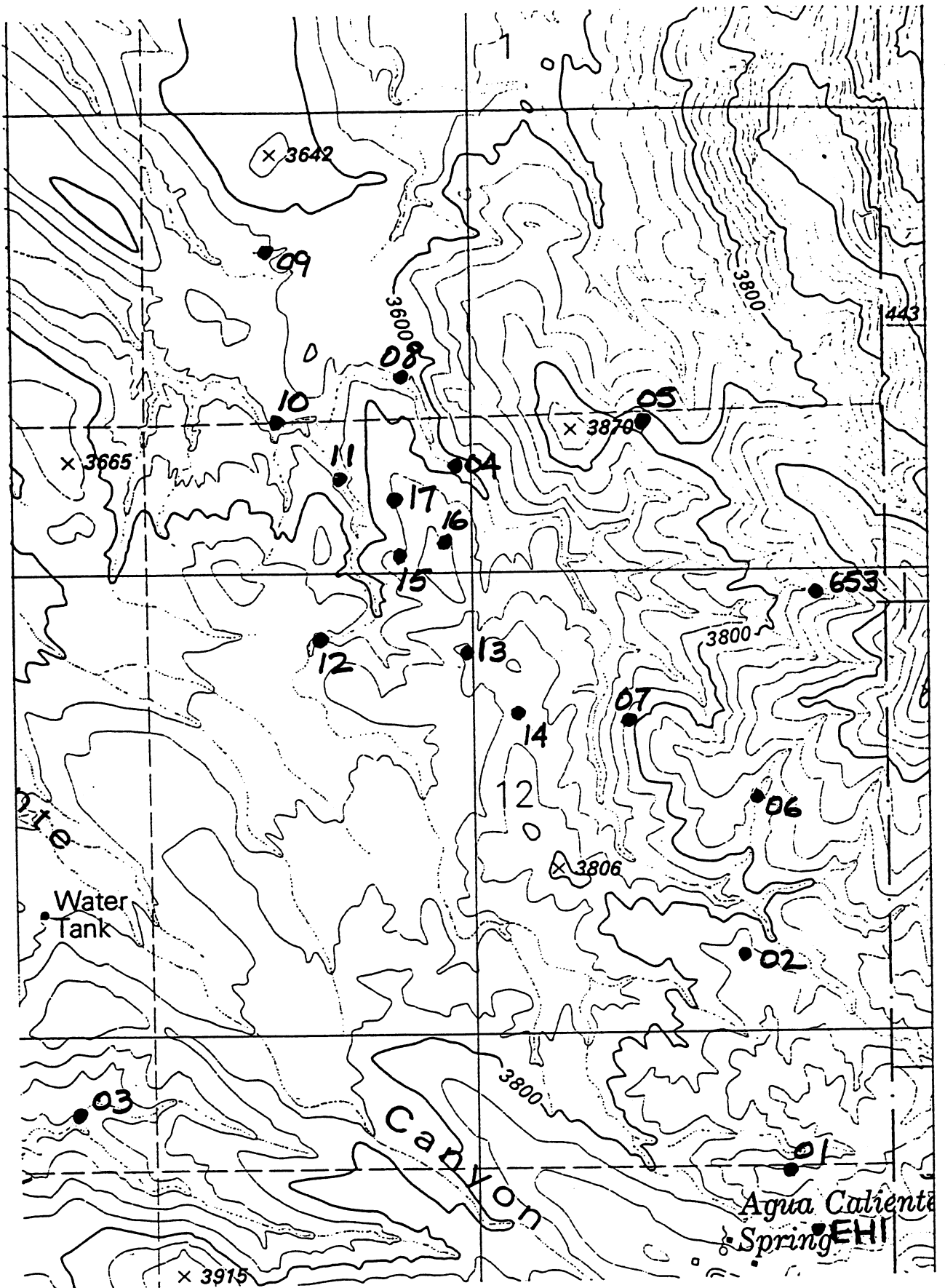
Several textural varieties of hydrothermal quartz can be assigned relative ages with respect to one another and to the structural deformation. From oldest to youngest, these include:

- 1) veins; medium- to coarse-grained, anhedral to subhedral
- 2) shearing
- 3) brecciation
- 4) veins and breccia-matrix; prismatic (sometimes jumbled) and fine-grained anhedral
- 5) veins; comby, coarse-crystalline

Distinctive types of hydrothermal alteration can be assigned to each of the types of quartz. The specific mineralogies may vary between different rock types, but they are grouped based on chemical similarities in the alteration and the type of quartz with which they are associated.

- 1) biotite + orthoclase in quartz monzonite (-402, -406), Fe-chlorite in mafic rocks (-404, E-5, E-7), epidote + actinolite + calcite in siltstones (-401, EH-1): this earliest stage of alteration is, in part, selectively-pervasive, and may represent distal porphyry copper alteration
- 2) Mg-chlorite + calcite + actinolite + magnetite + minor pyrite: coincident with the structural Stage 1 above
- 3) sericite + minor chlorite + hematite + pyrite + chalcopyrite + leucoxene + calcite + isolated fluorite (-413): related to matrix quartz in breccias of Stage 3 above (eg. -408, -413, -416)

Based on the rock- and fluid inclusion-petrography available, the majority of the hydrothermal alteration consists of sericite + pyrite \pm chalcopyrite and is epithermal in nature. I believe this might coincide with the poly-metallic veins and replacements found immediately to the south (eg. Glove Mine), although I have never looked at these rocks. The nature of the quartz is not porphyry-copper-type. Samples -402 and -406 show selectively-pervasive potassium addition seen distal to the central alteration in porphyry copper systems. It may occur at distances of a few kilometers away from the mineralized zone, and predates classic propylitic alteration. At Elephant Head the samples showing such lie in the southeast-central portion of Section 12.



D

GEOLOGIC REPORT
LOGHRY TO KEATING

James D. Loghry
Consulting Geologist
2121 East Monte Vista Drive
Tucson, Arizona 85719-2859
(602) 323-2945

May 30, 1992

To: Linus Keating
Kennecott Corporation
1515 Mineral Square
P.O. Box 11248
Salt Lake City, Utah 84147
(801) 322-8345

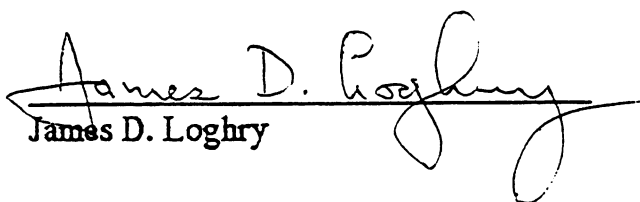
From: James D. Loghry

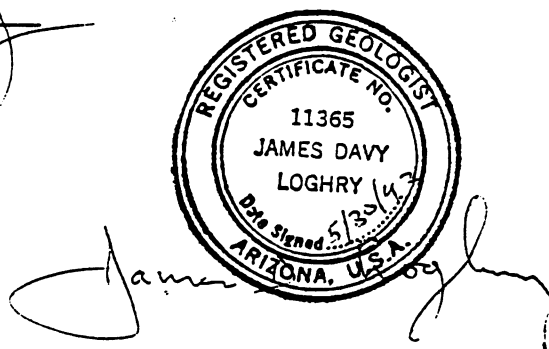
Re: Agua Caliente/Elephant Head Prospect, Jim Walker Submittal
Santa Cruz County, Arizona
Section 1, S2, T20S, R13E
Mt. Hopkins 7.5' Quadrangle
Samples 45251C - 45258C (Loghry)
West Santa Rita Mountains reconnaissance by J. Walker.

Geologist Jim Walker is accomplishing recon geologic mapping of the foothills of the Santa Rita Mountains between Elephant Head and Agua Caliente Canyon tracing range front faults and searching for mineralization and alteration that might be clues to concealed ore deposits. In Section 1, he has found several intrusions and Cretaceous shales where he finds that published maps show one granitic pluton. Coarse-, medium- and fine-grained granites (sample 45252C), which may be phases of the same pluton are cut by quartz veins up to 30 feet wide (sample 45251C, 11 ppm Mo) with minor earthy hematite and specular hematite mineralization. These veins are of no economic interest. Weakly altered monzonite porphyries intrude the granites. Irregular mafic granodiorite (45255C), diorite and amphibolite (sample 45258C, 100 ppm Zn), which could be related phases of a mafic intrusive complex also intrude the granites. A gray unmineralized rhyolite dike with rare small quartz eyes which also intrudes the granitic rocks was not sampled. Most of the Cretaceous rocks are maroon shales and lesser quartzites (sample 45253C) of the Bisbee Formation, equivalent to the Morita Formation at Bisbee. Silty, sandy beds within the shales are preferentially mineralized with silica, epidote, calcite and chlorite, sometimes specular hematite, goethite, black copper oxides and chrysocolla. One occurrence is a series of altered gray sandy beds in a horizon that is at least 50 feet wide (sample 45256C, 100 ppm Cu, 94 ppm Zn, 6 ppm As). The beds strike N30°W and dip 55° NW. Chrysocolla with goethite mineralization after chalcopryrite locally replace at least two beds with bands and blebs of chrysocolla-limonite scattered over as much as 3 inches of a bed. Specularite and

chrysocolla are present in other thin beds. The sample taken was low-graded, having no visible copper oxides. A N40°W dip 25°S vein with a silica-specularite-chrysocolla ore shoot of economic grade (Walker sample) is exposed in an old caved shaft, now a shallow pit. Sample 45254C was chipped across a 3 foot shoot of silica-specularite and chrysocolla in the northwest corner of the pit, assaying 60 ppb Au, 6.5 ppm Ag, 150 ppb Hg, 7400 ppm Cu, 23 ppm Mo. Other poorly exposed occurrences of specularite and chrysocolla were seen near by. Walker suspects that the mineralization is related to the diorite/granodiorite intrusion. Elsewhere, a north trending quartz-goethite-hematite breccia vein in Cretaceous shales was also sampled (45257C, 110 ppm Cu, 32 ppm Mo, 48 ppm As, 0.7 ppm Ag). Prior to oxidation, this vein contained strong pyrite and copper sulfides. There is no evidence that this vein was ever prospected.

The exploration concept proposed here is that since alteration and mineralization is present in the Bisbee Formation, a poor host which tends to mask ore deposits, favorable carbonate beds in the lower Bisbee and the Naco Group, even the lower Paleozoic, might contain ore deposits. Research of available geologic mapping in the area might give a clue to the proximity of favorable formations. State mineral rights are dominant in the area and it has seen little prospecting - very few pits, no evidence of I.P. surveys and no drill holes. I suggest that you encourage Walker to continue the effort. At this point in time, there is no definite target, but he may find one.


James D. Loghry



Arizona Reconn
PROJECT: Aquaculiente/ Elephant Head

QUAD: Mt. Hopkins 7.5'

!EOLOGIST: James D. Logberry

DATE: 5/19/92

COUNTY: Santa Cruz

STATE: AZ

As. Hg
others

Cli-channel
C-chip
R-rock
F-float
T-talus
D-dump
RC-rofery
HQ-high gra
S-goli
St-stream

Sample Number	Sec. T. R.	Location	Rock Description Comments	Ag	Au	Ag	As	Hg	Sb	Cu	Mo	Pb	Zn
15251C	1, T20S, R13E	NE, SW	N07W dip 35-40' - 10' quartz vein, veinlets, stockwork zone, minor specularite	10C	<5	<.2	1	10	.6	27	11	15	13
15252C	1, T20S, R13E	EE, SW4	Pink fine-med-grained granite, no min.	R	<5	<.2	2	10	.2	19	<1	5	1
15253C	1, T20S, R13E	E, SW4	Crystalline quartzite	R	<5	<.2	1	10	.2	5	<1	3	2
15254C	1, T20S, R13E	E, SW4	3' short silica-specularite-chrysocolla veinlet, dip 25-30S vein/fault in R shale	3C	60	6.5	1	150	1.2	7400	23	31	85
15255C	1, T20S, R13E	SE, SW	Fine-grained granodiorite, wk pyrrhotite, silicified, ser. cup.	R	10	<.2	2	30	.2	45	1	3	50
15256C	1, T20S, R13E	SW, SW	Crystalline sandstone/brecciated unit 50' thick, silicified, propylitized, cyclo. low graded	R	<5	.2	6	20	1.6	100	<1	11	40
15257C	1, T20S, R13E	SE, SW	Tr? goethite-hematite-quartz breccia vein 10' wide, strike-slip fault	C	20	.7	48	20	1.2	110	32	24	15
15258C	1, T20S, R13E		Black amphibolite plug, intrudes brecciated granite, no min.	R	30	<.2	1	10	.6	42	<1	<1	10



Chemex Labs Inc.

Analytical Chemists • Geochemists • Registered Assayers
994 West Glendale Ave., Suite 7, Sparks,
Nevada, U.S.A. 89431
PHONE: 702-356-5395

To: KENNECOTT EXPLORATION CO.

P.O. BOX 11248
SALT LAKE CITY, UTAH
84147

Project:
Comments: ATTN: L. KEATING CC: J. D. LOGHRY

Page Number : 1
Total Pages : 1
Certificate Date : 27 MAY-9
Invoice No. : 19215120
P.O. Number :
Account : GJV

CERTIFICATE OF ANALYSIS A9215120

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Cu ppm	Hg ppb	Pb ppm	Sb ppm	Zn ppm	Mo ppm	
45251 C	205 274	< 5	< 0.2	1	27	10	15	0.6	18	11	
45252 C	205 274	< 5	< 0.2	2	19	10	6	0.2	18	< 1	
45253 C	205 274	< 5	< 0.2	1	5	10	3	0.2	8	< 1	
45254 C	205 274	60	6.5	1	7400	150	31	1.2	65	23	
45255 C	205 274	10	< 0.2	2	45	30	3	0.2	52	1	
45256 C	205 274	< 5	0.2	6	100	20	11	1.6	94	< 1	
45257 C	205 274	20	0.7	48	110	20	24	1.8	18	32	
45258 C	205 274	30	< 0.2	1	42	10	< 1	0.6	100	< 1	

CERTIFICATION:

David Buchler

T19S

T20S

R13E

R14E

1

x 45251c TKgr
45258c TKgr
45254c TKgr
45253c TKgr
45256c KS
45257c 45258c
KS

Δ Yoas Mountain

- 42° 30'

N

Mt. Hopkins 7.5' quadrangle
Agua Caliente Canyon

2000 FEET

J.D. Loghry 6/5/92

E

STATE PERMITS

- * Plan of Operation - AZ State
Land Department
- * AZ State Parks to Wilkins
- * AZ Dept. of Water Resources -
Change of Well Information
- * AZ Dept. of Water Resources -
Well Abandonment Completion Report



FIFE SYMINGTON
GOVERNOR

Arizona
State Land Department

1616 WEST ADAMS
PHOENIX, ARIZONA 85007



M.J. HASSELL
STATE LAND COMMISSIONER

December 23, 1992

RECEIVED
JAN 04 1993
KENNECOTT EXPLORATION
STATE LAND COMMISSIONER

Mr. Linus Keating
Kennecott Exploration Company
1515 Mineral Square
Salt Lake City, Utah 84112

Re: Plan of Operation
Permits 08-52235 through 08-52237 and
08-52375 through 08-52379

Dear Mr. Keating:

The captioned exploration plan has been approved subject to the following conditions:

- That archaeological clearance be obtained from the Arizona State Museum. A copy of the proposal has been sent to the museum for their review.
- Upon there no longer being needed the designated survey lines, access routes, and drill pads, all disturbed areas are to be recontoured and appropriate erosion control measures taken. Seeding requirements, if any, will be separately made by Department range personnel.
- That Kennecott seek permission from the private surface owner for activities to be conducted on land covered by Permit 08-52379.

In closing, I would like to express my appreciation for the manner in which Kennecott has chosen to deal with private landowners. As a result of the cooperative manner and diligent efforts of the company and Mr. Robert Gilmore, I am hopeful that any concerns which may arise will be satisfactorily resolved.

Sincerely,

Michael Rice

Michael Rice, Manager
Minerals Section
Natural Resources Division

MR:mlt

602-

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

ARIZONA STATE LAND DEPARTMENT
Minerals SectionPlan of Operation

The following information must be submitted to Department prior to initiating exploration or State land. The plan is approved for a beginning on the date approved. Any change in operations must first be approved by the Department.

Plan evaluation and approval may require 30 days.

PROSPECTING PERMIT OR MINERAL LEASE NUMBER(S)

NAME IN WHICH ISSUED James S. Walker/Kennecott Exp

NAME OF OPERATOR Kennecott Exploration TELEPHONE 8

ADDRESS OF OPERATOR 1515 Mineral Square, SLC, Utah 84112

NAME OF FIELD REPRESENTATIVE Linus Keating; same as above

(If different than operator include address and telephone)

1) LAND DESCRIPTION AND MAP

Attach as Exhibit A to this Plan a topographic map of the referenced property.

County Santa Cruz Township 20S Range 13E Section(s) 1,2,11,12

2) PERIOD OF OPERATION

The operation is proposed to begin on 1/5/93 and end on 12/31/93. If operations are proposed to exceed one year, an addendum to this plan must be filed prior to the plan expiration date.

3) ACCESS

Show on Exhibit A existing and proposed routes. Describe in detail the extent of all improved or newly constructed access. Note any locked gates.

See topo sheet attached (Exhibit A). Where new roads cross fence lines, the fence will be cut and a good quality temporary barbed wire gate installed. At completion of activities all fences will be properly repaired.

4) VEHICLES AND EQUIPMENT

List by type and size all vehicles and equipment which will be used in connection with the operation. Include the capacity of concentrators for placer operations. (4) 4WD pickup trucks; (1) D-8 cat bulldozer; (1) DSI track mounted rotary drill rig; (1) all terrain support vehicle/water truck; (1) Honda ATV; (1) cat excavator (for reclamation use only).

5) SCOPE AND TYPE OF OPERATION

Describe the type and extent of the operation to be performed. Include the estimated area of disturbance and provide detailed information for any earth moving or site clearance operations. For placer type exploration include the amount of material to be processed from each test site, and the dimension of test sites.

Type of operation: Exploration.
Estimated area of disturbance: IP Geophysical Survey - (3) 14,000' IP lines. Road construction needed to reach transmitter site (A) for each line; Area of Disturbance: 11,600' of road construction 12' wide totalling 3.09 acres. (8) reverse circulation drill holes, 4 3/4" diameter; Area of disturbance: (8) drill sites 15' x 20' flat: 0.05 acres; Additional roads required to reach some drill sites: 10,500' x 12' wide = 2.8 acres.

Total Disturbance: -5.94- acres (approximately).

U.S.G.P.O. 1989-234-555 PS Form 3800, June 1985

Sent to <u>AZ State Land Dept.</u>	
<u>1616 W. Adams St.</u>	
<u>Phoenix, AZ 85007</u>	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	<u>11/24/92</u> <u>elephant Plan & Ops</u>

sent
11/24/92

Please do not place stamps or other markings on this form. If you need to place a stamp or other marking, please place it on the back of the form.

ARIZONA STATE LAND DEPARTMENT
Minerals Section

Plan of Operation

The following information must be submitted to, and approved by the Department prior to initiating exploration or mining activities on State land. The plan is approved for a period of one year beginning on the date approved. Any change in the below described operations must first be approved by the Department.

Plan evaluation and approval may require 30 days.

PROSPECTING PERMIT OR MINERAL LEASE NUMBER(S) 08-52235 through 37
08-52375 through 79

NAME IN WHICH ISSUED James S. Walker/Kennecott Exploration

NAME OF OPERATOR Kennecott Exploration TELEPHONE 801-322-8414

ADDRESS OF OPERATOR 1515 Mineral Square, SLC, Utah 84112

NAME OF FIELD REPRESENTATIVE Linus Keating; same as above
(If different than operator include address and telephone)

1) LAND DESCRIPTION AND MAP

Attach as Exhibit A to this Plan a topographic map of the referenced property.

County Santa Cruz Township 20S Range 13E Section(s) 1,2,11,12

2) PERIOD OF OPERATION

The operation is proposed to begin on 1/5/93 and end on 12/31/93. If operations are proposed to exceed one year, an addendum to this plan must be filed prior to the plan expiration date.

3) ACCESS

Show on Exhibit A existing and proposed routes. Describe in detail the extent of all improved or newly constructed access. Note any locked gates.

See topo sheet attached (Exhibit A). Where new roads cross fence lines, the fence will be cut and a good quality temporary barbed wire gate installed. At completion of activities all fences will be properly repaired.

4) VEHICLES AND EQUIPMENT

List by type and size all vehicles and equipment which will be used in connection with the operation. Include the capacity of concentrators for placer operations. (4) 4WD pickup trucks; (1) D-8 cat bulldozer; (1) DSI track mounted rotary drill rig; (1) all terrain support vehicle/water truck; (1) Honda ATV; (1) cat excavator (for reclamation use only).

5) SCOPE AND TYPE OF OPERATION

Describe the type and extent of the operation to be performed. Include the estimated area of disturbance and provide detailed information for any earth moving or site clearance operations. For placer type exploration include the amount of material to be processed from each test site, and the dimension of test sites.

Type of operation: Exploration.
Estimated area of disturbance: IP Geophysical Survey - (3) 14,000' IP lines. Road construction needed to reach transmitter site (A) for each line: Area of Disturbance: 11,600' of road construction 12' wide totalling 3.09 acres. (8) reverse circulation drill holes, 4 3/4" diameter; Area of disturbance: (8) drill sites 15' x 20' flat: 0.05 acres; Additional roads required to reach some drill sites: 10,500' x 12' wide = 2.8 acres.

Total Disturbance: -5.94- acres (approximately).

6) AFFECTED LAND

Indicate to the nearest 300 feet the location of all proposed prospecting sites (Exhibit A). If necessary complete Exhibit B or provide coordinate description (topographic grid or distance from section corner). For placer type exploration include the location of concentrators.

Coordinate description: Submit as an attachment.
See Exhibit "A"

7) DRILLING

For all drilling operations indicate the type of drilling operation, drilling medium (air, water e.g.) hole diameter, and proposed total depth.

Reverse circulation rotary from small DSI track mounted rig; medium: air; water used only in difficult situations; hole diameter 4 3/4"

*Hole I.D.	Total Depth	Hole I.D.	Total Depth	Hole I.D.	Total Depth
EH-1	1000'	EH-7	1000'		
EH-2	1000'	EH-8	1000'		
EH-3	1000'				
EH-4	1000'				
EH-5	1000'				
EH-6	1000'				

If drilling is anticipated indicate the method of plugging and abandonment. Indicate the marsh funnel viscosity if applicable. Drill holes shall be plugged with cement or bentonite as required by AAR&R Title 12, Chapter 15, Article 8 R12-15-817

8) WATER USE

If the use of water is required, describe the location and quantity to be used. No water use is anticipated. However, a worse case scenario might call for 10,000 gallons which would be acquired from a local landowner.

9) RECLAMATION

Describe actions taken to minimize environmental impacts and state plans for reclamation of disturbed areas. If applicable include measures for erosion control, recontouring, seed bed preparation, method of seeding, seed species, etc. Unless otherwise approved reclamation is to be completed within the approved plan period of one year.

- As this is an exploration project, No significant environmental impact is anticipated. 90 days following completion of the last drill hole, if abandonment is planned, all newly constructed roads will be closed, re-contoured as closely as possible to the original contours and seeded with a seed mixture recommended by U.S.F.S. administrator. If roads exceed 5% slope, roads will be waterbarred to prevent erosion per U.S.F.S. standards. Any fences cut will be repaired to their original condition. If abandonment is not planned, a second Plan of Operations will be filed.
- Any drill additives or fluids used will be non-toxic and polymer based.
- No saguaro or barrel cacti will be damaged.

10) ANTIQUITIES AND NATIVE PLANTS

If required, the applicant agrees to obtain archaeological clearance prior to the following surface disturbance:

- A. Prospecting Permit: All land surface affected by exploration activities including access roads.
- B. Mineral Lease: All acreage under application. The applicant will be directly contacted by the Arizona State Museum.

Archaeological clearance must be obtained through the Arizona State Museum.

If the destruction or removal of protected plants is necessary to enjoy the privileges of a permit or lease, the applicant agrees to obtain written permission from the Arizona

* Hole I.D. - Identification Number

Commission of Agriculture and Horticulture. The applicant also agrees to purchase said plants from the Arizona State Land Department. Native plants are as described under the Arizona Native Plant Law.

APPLICANT:

Signature and Date

Applicant must be the permit holder or duly authorized representative.

Following the Department's evaluation of this plan, two copies will be sent to the applicant noting any conditions which may be required by the Department. The applicant shall sign and return one copy which will attach to, and become a part of, the permit or lease.

CONDITIONS OF APPROVAL:

Applicant agrees to abide by the methods and extent of the operations described herein. Applicant also agrees to abide by the above listed CONDITIONS OF APPROVAL.

APPLICANT:

Signature and Date

FOR DEPARTMENT USE ONLY

PLAN NUMBER

BOND AMOUNT

APPROVED FOR THE PERIOD: BEGINNING EXPIRING

APPROVED BY:

REASONS FOR DENIAL:

DATE OF PERMIT OR LEASE ISSUE:

DATE LAST PLAN SUBMITTED: PLAN NUMBER

REMARKS:

35

36

PIMA CO

SANTA CRUZ CO

2

1

6

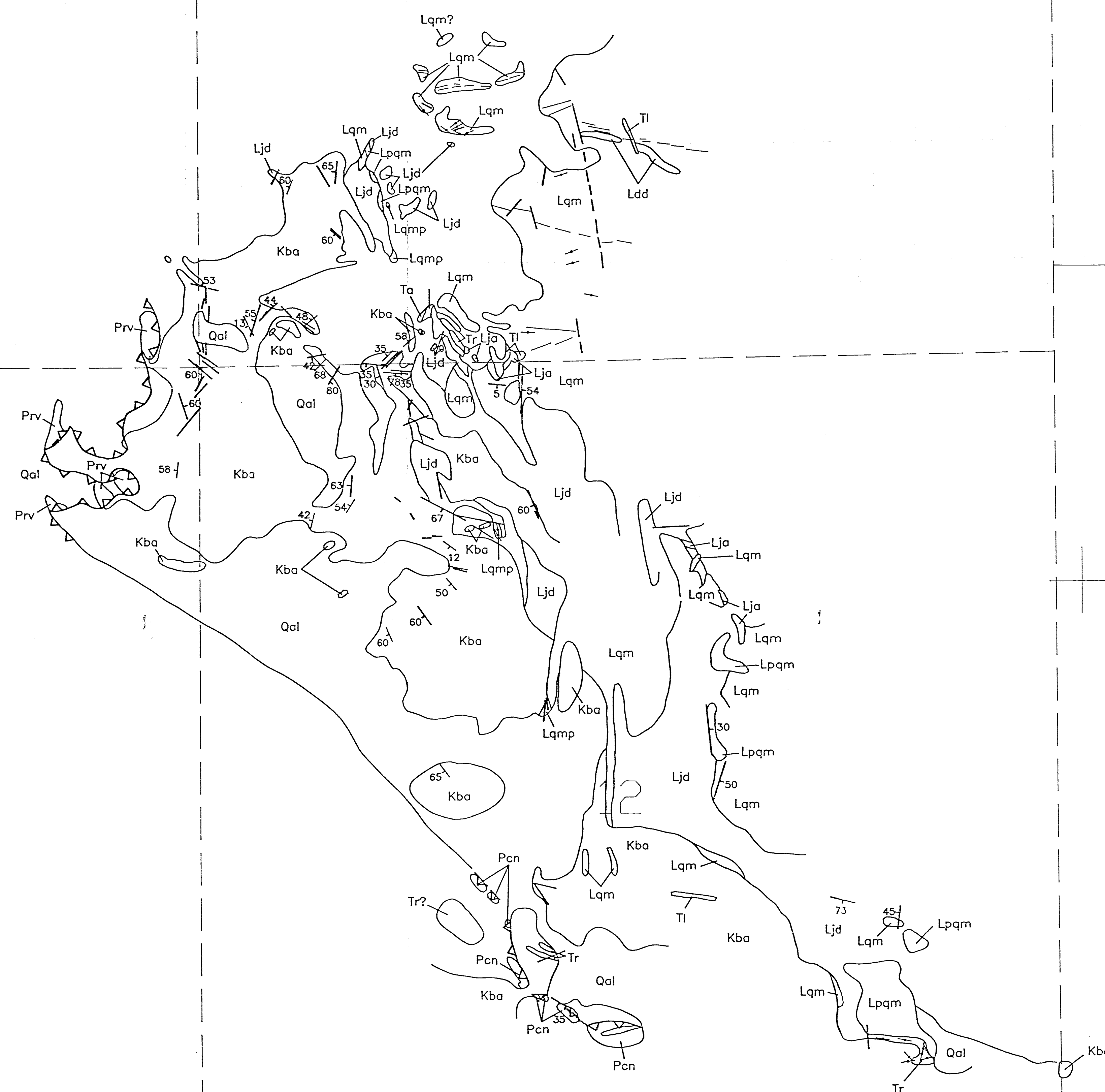
11

7

14

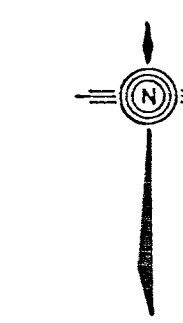
13

18



EXPLANATION

- Qal
Alluvium
- Tr
Rhyolite dikes
- TI
Latite dikes
- Ta
Andesite dikes
- Lpqm
Laramide porphyritic
quartz monzonite
- Ldd
Laramide diorite dikes
- Lqm
Laramide quartz monzonite
- Ljd
Laramide Josephine Canyon
diorite and quartz diorite
- Lqm
Laramide Josephine Canyon
amphibolite bodies
- Kba
Apache Canyon Fm.
(Bisbee Group)
- Prv
Rainvalley Fm.
- Pcn
Concha limestone
- Quartz vein zone
- Quartz veins, veinlets
- Fault, fractures with oxide copper



Scale: 1:48,000
0 1000
FEET

Kennecott Exploration
Salt Lake Office

Elephant Head Prospect
Geology
Santa Cruz County, Arizona

Ellipsoid: NA	Projection: NA	Grid/UTM Zone: NA
Date: 4/93	Author: NA	
File: ELEPH892	PS: 1= 400	Plate: 1



Y-17* ++Y-4
Y-18+
+Y-3
+Y-1
+Y-2
+Y-19
+Y-5*

Y-10+ +Y-7
+Y-9
+Y-8

Kennecott Exploration
Salt Lake Office

Elephant Head Prospect
Sample Location Map
Santa Cruz County, Arizona

Ellipsoid: NA	Projection: NA	Grid/UTM Zone: NA
Date: 4/93	Author: ABC	
File: SAMPLNO	PS: 1= 400	Plate: 1

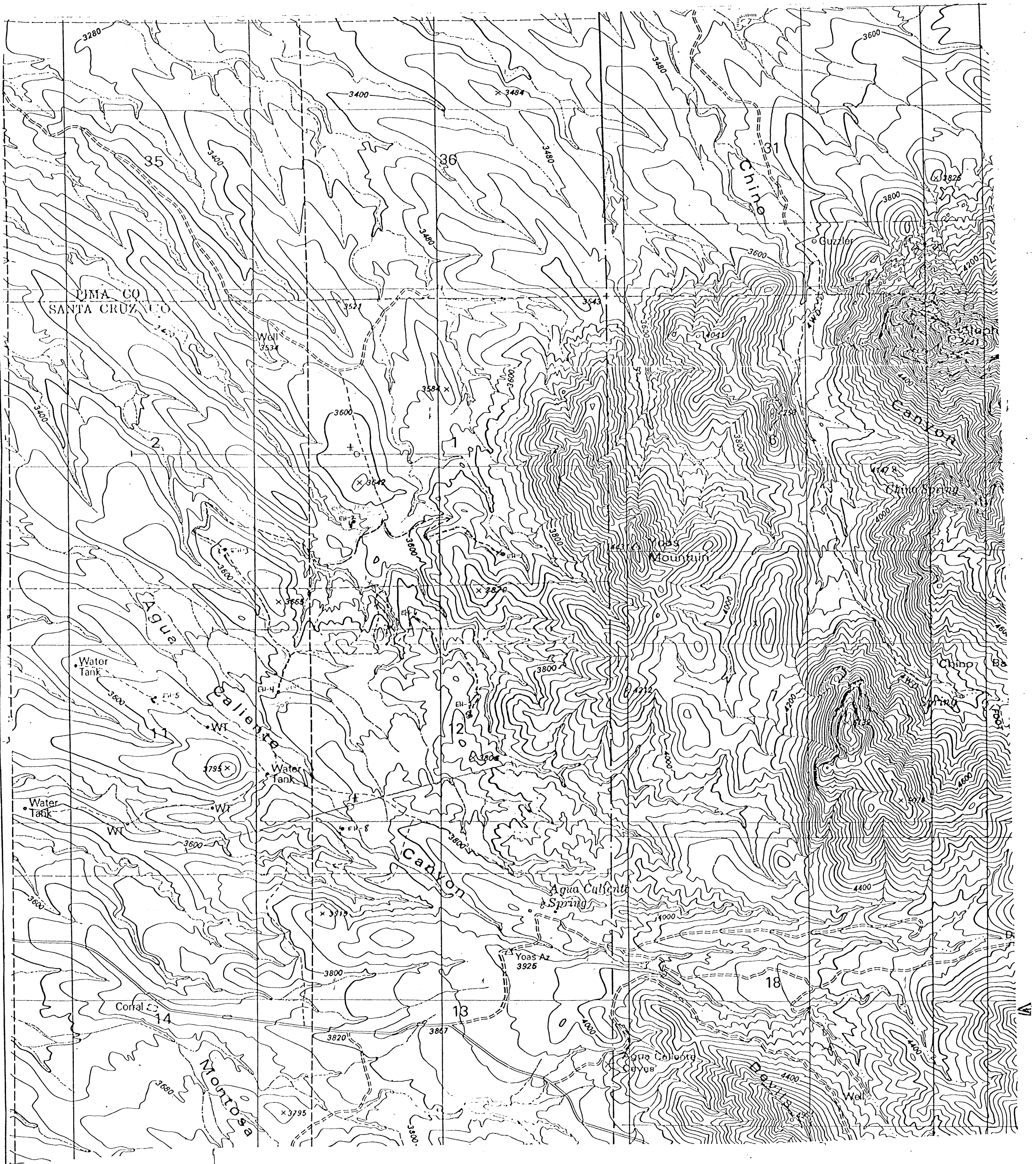


EXHIBIT "A"

KENNECOTT EXPLORATION COMPANY PLAN OF OPERATIONS

PROPOSED FOR ARIZONA STATE PROSPECTING
PERMITS #'S 08-52235 THROUGH 08-52237
& 08-52375 THROUGH 08-52379

LEGEND

SCALE: 1" = 1000'
NOVEMBER 24, 1992

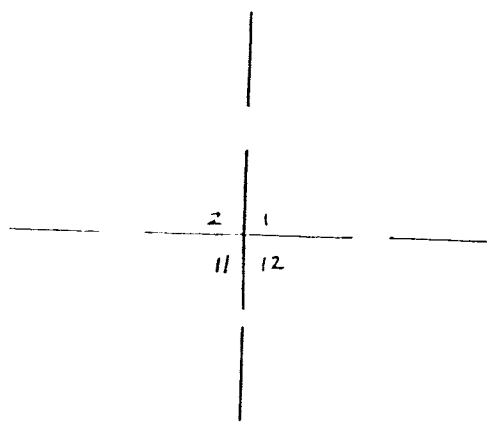
- EXISTING 4WD ROAD OR TRACK (SOME CAYWORK MAY BE REQUIRED).
- PROPOSED NEW ROAD
- EH-5 PROPOSED DRILL SITE
- PROPOSED IP LINE (NO DISTURBANCE REQUIRED)
- TO = TRANSMITTER SITE

NOTE: SECTION 12 IS ENTIRELY PRIVATE SURFACE (AGUA CALIENTE RANCH) WITH STATE, FEDERAL, & PRIVATE MINERALS. ACCESS ONTO PRIVATE MINERAL/PRIVATE SURFACE LANDS WILL BE OBTAINED BY KENNECOTT.

NE/NE OF SECTION 11 IS STATE SURFACE - FEDERAL MINERALS

EH-3

T.D. 460'



EH-1

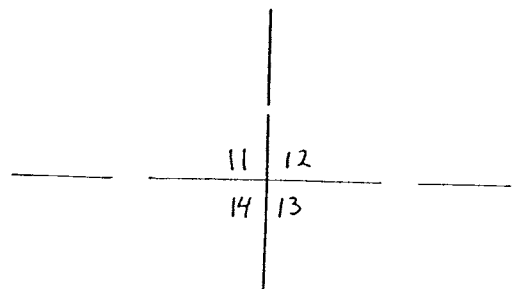


T.D. 660'

EH-2



T.D. 800'



Kennecott Exploration Co.
Elephant Head Drilling Project
Drill Hole Locations

Santa Cruz County, Arizona

2-11-93

By: Jerry Williams

1" = 400'

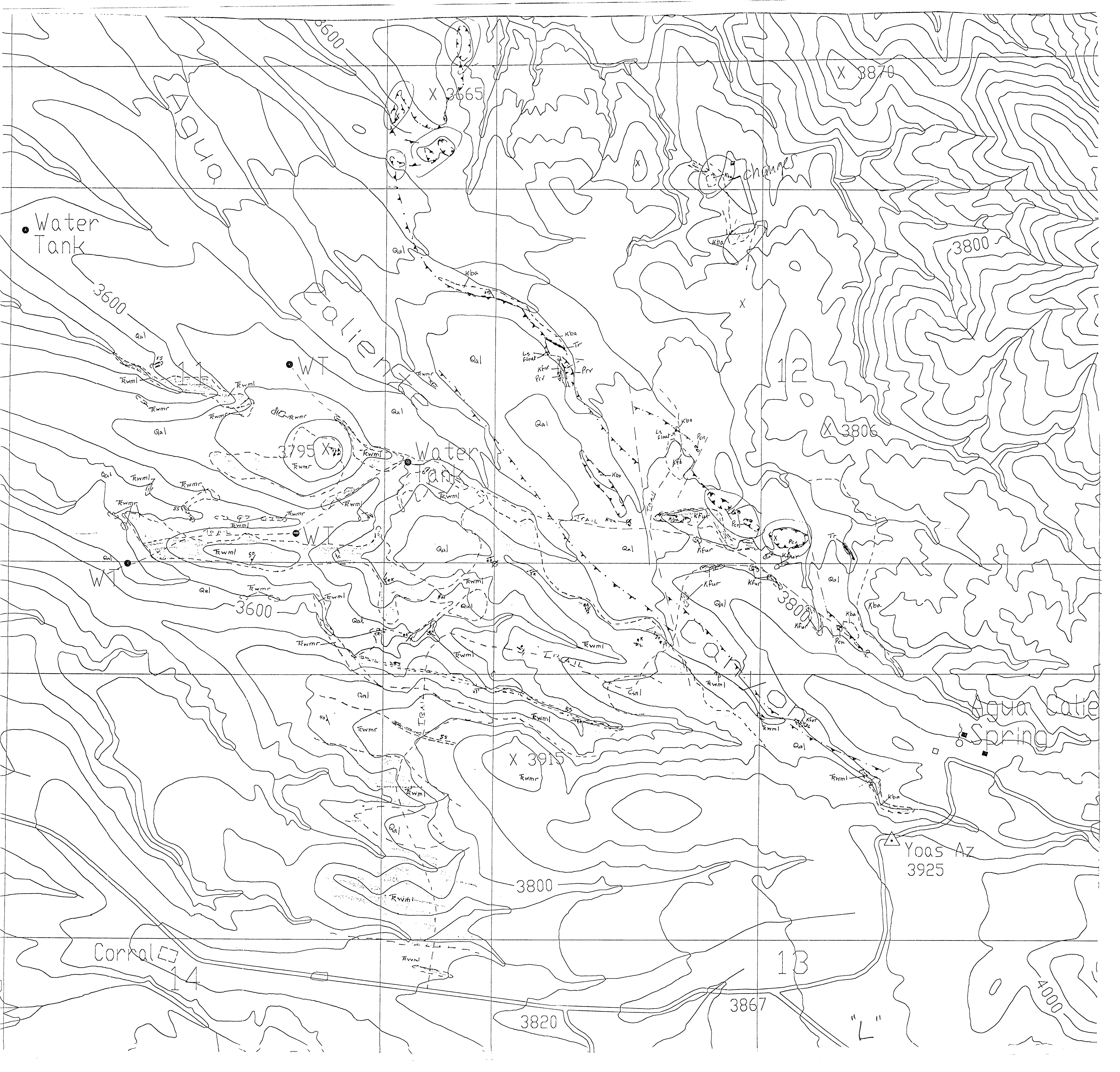
449986 sample Location

Tax (Rhodod. tree) Tax (oak tree)
 54

11	12
14	13

45000 ✓

✓ 44677c



Water Tank

WT

Water Tank

WT

WT

Corral

Agua Caliente Spring

Yogas Az 3925

13

3820

3867

4000

Alteration and Fracture Density Map

Elephant Head Project

Santa Cruz Co, AZ

September 1992, By Joey Wilkins & Kai Anderson

Sections 1,2,11,12,13 & 14, Township 20 South, Range 13 East.

1" = 400'

Scale in feet

Explanation

Mineral

Copper sulfide

Calcite

Chlorite

Epидote

Jasperoid

Potassium Feldspar

Magnetite

Manganese oxide

Quartz

Pyrite, including dr.

Specular Hematite

Sericite

Symbol

U

C

H

E

J

K

M

Mn

Q

P

Sp

S

Color

Blue

Yellow

Brown

Green

Red

Pink

Penic

Red

Orange

Orange

Purple

Number Code

a) First number, 1-10, represents extensiveness or degree of mineral occurrence.

b) Second number, 1-10, represents pervasiveness or distribution of mineral occurrence.

Example:

S-5-1

S = Sericite

5 = Moderate abundance or extent through area surveyed.

1 = Very weak savings

Structural Key

Strike and Dip of fracture or joint

Dip of mineral vein (Quartz in this case)

Location of Alteration survey

Strike and plunge of fault or bedding plane lineation with bold arrow indicating direction of motion.

Fracture Density Code: 0-5

A number assigned to an area, roughly 1 square foot, which has been visually surveyed for the amount of fractures within that space. A scale of 0 to 5 is applied to the location, 5 being maximum. Roughly ten fractures per square foot is thought to be a maximum type density. One to two fractures would only receive a 0 or 1 for low density.

X 3642

