



CONTACT INFORMATION
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James Doyle Sell Mining Collection

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Thunder Mountain, Santa Cruz Co, AZ

Contents

1. Agreements.
2. Reports and Comments.
3. Claims & Salvage.
4. Whitt Hole Water
5. Location Notes

Assessment Work Filing

State Filing

Water Resources Filing

6. Fencing ^{Hydrology} Hazardous Workings

7. Storm Water Management

Agreements

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

PRELIMINARY COPY FOR REVIEW

Mr. Harold W. Holmberg
Director of Metal Exploration
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125

Thunder Mtn. Project
Patagonia Mountains
Santa Cruz County, AZ

Dear Mr. Holmberg:

A summary of the drilling results, and interpretation is submitted. The Thunder Mountain Project comprises part of the Patagonia Exploration program of Asarco. In addition to SWED claims, the Asarco Mining Department has claims in the district. Figure 1 locates the area in Santa Cruz County in southern Arizona.

Attachment A outlines the two major mineralization centers and the four target areas of past and present exploration interest. They are:

1. Sunnyside deep target lies plus 3800 feet below the surface and is part of the Thunder Mountain Project. The primary chalcopryite mineralization of the Sunnyside target has a sparse drill intercept geologic estimated resource of 650 million tons of 0.38% copper and 0.022% moly.

Attachment A outlines several shallow chalcocite zones which are upper-level expressions of the deep chalcopryite mineralization. The two explored targets are, A, the Sunnyside breccia and breccia pipe, and B, the Bucket Breccia chalcocite blanket.

- A. The Sunnyside breccia pipe was one of the earliest Asarco exploration drill targets in the Patagonia Mountains. The breccia pipe (Table 1-A) has a 5 hole drill indicated tonnage of 3 million tons of 0.48% copper surrounded by an envelope of lesser grade which is estimated at 35 million tons of 0.37% copper.
- B. The Bucket Breccia shallow chalcocite blanket has been the current drilling area and ten holes have cut the zone of mineralization. Mineralization essentially begins at the surface of the canyon bottom level and extends upward and under the adjacent hillsides. A potential

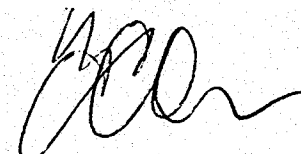
JDS JDS
COPY

New York, September 29, 1983

MEMORANDUM FOR: Mr. H. E. Kelshaw, Jr.

Thunder Mountain Property, Arizona
Manchester Property, New Jersey

Herewith for safekeeping are original executed copies of the two agreements approved by the Advisory Committee today, and described in the attached memorandum.


T. C. Osborne

Attachment

cc: RJKupsch
RLBrown
WLKurtz/JDSell

(each w/att.)

Orig. to MEK for Doc. Book

RECEIVED

OCT - 3 1983

S. W. U. S. EXPL. DIV.

New York, September 27, 1983

MEMORANDUM FOR: Advisory Committee

Agreements with Kerr-McGee Corp.
Thunder Mountain Property, Arizona
Manchester Property, New Jersey

Presented for approval are two agreements between Asarco and Kerr-McGee Corporation as follows:

1. Amendment to the Operating Agreement dated October 1, 1972 covering the Thunder Mountain property in Santa Cruz County, Arizona, wherein the end of the "Initial Exploration Period" during which Asarco has the option to become vested with 50% ownership of the property by spending a cumulative total of \$1.0 million is extended from October 1, 1984 to October 1, 1990. Applicable expenditures to date have been \$243,224.
2. Letter Agreement wherein Asarco agrees to allow Kerr-McGee 30 days to meet any bona fide offer for purchase or lease of the Manchester property, New Jersey, made by a third party who has the principal stated purpose of exploiting the mineral reserves. This right of first refusal does not apply to offers to purchase or lease by third parties who Asarco, in good faith, believes are not acquiring the property with the intention of exploiting the mineral resources.

Original Signed

T. C. Osborne

T. C. Osborne

ASARCO

RECEIVED

SEP 13 1983

T. C. OSBORNE

T. C. Osborne
Executive Vice President

August 5, 1983

Mr. T. S. Ary, President
Minerals Exploration Division
Kerr-McGee Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

Re: Thunder Mountain Property
Manchester Property

Dear Mr. Ary:

In accordance with our earlier discussion, enclosed please find one copy of a proposed Fifth Amendment to Operating Agreement dated October 1, 1972 covering certain mining claims in Santa Cruz County, Arizona known as the Thunder Mountain Project. This draft closely follows previous amendments which were drafted by your legal department and extends the time of the "Initial Exploration Period" to October 1, 1990. Under this amendment, Asarco is obligated to spend \$1,000,000.00 between December 1, 1977 and October 1, 1990.

Further, as we discussed, we are aware of your interest in our land holdings in Manchester, Ocean County, New Jersey, known as the Manchester Property. In consideration of your agreement to the above mentioned Fifth Amendment, Asarco agrees that should it receive, prior to June 30, 1985, a bona fide offer for the purchase or lease of all or a portion of the Manchester Property, from a third party who is purchasing or leasing the property for the principal stated purpose of exploiting the mineral reserves therein, Asarco shall promptly give written notice to Kerr-McGee setting forth the pertinent terms and conditions of the offer. Kerr-McGee shall have a prior and preferred right of option to purchase or lease Asarco's interest in the Manchester property at the price and according to the terms and conditions specified in such third party offer for a period of 30 days following the receipt of such notice. Thereafter, if Kerr-McGee does not exercise this right within 30 days from receipt of such notice, Asarco will be free to accept such offer in accordance with its terms.

It is further understood that this right of first refusal does not apply to offers to purchase or lease by third parties who Asarco, in good faith, believes are not acquiring the property with the intention of exploiting sub-surface mineral resources.

Mr. T. S. Ary, President
Page 2
August 5, 1983

I would appreciate your acknowledging the terms of this letter by signing below and returning a signed copy to me along with an executed copy of the Fifth Amendment described above.

Very truly yours,

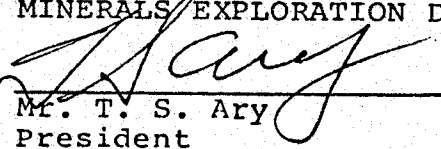

T. C. Osborne

TCO:pct

Enclosure

ACCEPTED:

KEER-McGEE CORPORATION
MINERALS EXPLORATION DIVISION


Mr. T. S. Ary
President

Approved as to form
LEGAL DEPARTMENT
By *[Signature]*

FIFTH AMENDMENT TO OPERATING AGREEMENT
DATED OCTOBER 1, 1972, BETWEEN
KERR-McGEE CORPORATION AND
AMERICAN SMELTING AND REFINING COMPANY

THIS AGREEMENT entered into as of July 1, 1983, between
KEER-McGEE CORPORATION (Kerr-McGee) and ASARCO INCORPORATED,
formerly American Smelting and Refining Company (ASARCO),

WITNESSETH:

WHEREAS the parties have heretofore entered into a
written Operating Agreement as of October 1, 1972 in regard to
mining claims on certain lands located in Santa Cruz County,
Arizona, being more particularly described in Exhibit A to said
operating agreement;

WHEREAS the parties have entered into four written
amendments to said Operating Agreement, said amendments having
become effective May 1, 1973 (First Amendment); December 4, 1974
(Second Amendment); December 1, 1977 (Third Amendment); September
23, 1981 (Fourth Amendment);

WHEREAS ASARCO had, as of December 1, 1977, expended
\$202,827.84 on Said Lands; and

WHEREAS ASARCO has, during the period December 1, 1977
to July 1, 1983, expended a further sum of \$225,838.16 on Said
Lands, including expenditure of not less than \$100,000 during the
period December 1, 1977 to October 1, 1980; and

WHEREAS it is the desire of the parties to further
amend said Operating Agreement in accordance with the following.

NOW, THEREFORE, in consideration of the mutual
covenants of the parties, it is hereby agreed:

1. Said Operating Agreement is amended as follows:

(a) The "Initial Exploration Period" is hereby modified to extend to but not beyond October 1, 1990.


(b) The minimum amount per fiscal year which must be expended by ASARCO in order to continue said Operating Agreement in effect shall be \$50,000.00 per year; provided, however, that at such time as \$1,000,000.00 has been expended by ASARCO from and after December 1, 1977 (being the effective date of the Third Amendment), no further minimum amounts will be required of ASARCO in order to continue said Operating Agreement in effect. If ASARCO has not expended \$1,000,000.00 or more between December 1, 1977 and October 1, 1990, then said Operating Agreement shall terminate on October 1, 1990 if it has not terminated before that date.


2. In the case of inconsistencies between the provisions of the Operating Agreement and the provisions of this amendment, this amendment shall govern.

3. Said Operating Agreement as previously amended and as herein amended shall continue in full force and effect.

IN WITNESS WHEREOF, this amendment has been executed to be effective July 1, 1983.

KERR-McGEE CORPORATION

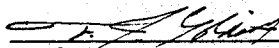
By 
Its Attorney-in-Fact


FORM
APPROVED
LAW DEPT.

ASARCO INCORPORATED

By 
Executive Vice President

ATTEST:


Assistant Secretary

ASARCO

Exploration Department
Southwestern United States Division

March 26, 1984

Mr. H. E. Kelshaw
ASARCO Incorporated
New York Office

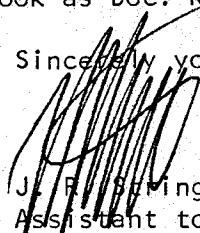
Thunder Mountain Project
Santa Cruz County, Arizona
Patagonia Document Book

Dear Mr. Kelshaw:

Enclosed is a copy of the fully executed Sixth Amendment to the Thunder Mountain Operating Agreement dated October 1, 1972 between Kerr-McGee and Asarco.

This will be entered in the Patagonia Document Book as Doc. No. 1-N.

Sincerely yours,


J. R. Birmingham
Assistant to the
Manager, SWED

JRS:mek
enc.

cc: J. D. Sell (w/enc.)
A. J. Robles (w/enc.)

SIXTH AMENDMENT TO OPERATING AGREEMENT DATED
OCTOBER 1, 1972 BETWEEN KERR-McGEE
CORPORATION AND ASARCO INCORPORATED

WHEREAS Kerr-McGee Corporation, herein referred to as "Kerr-McGee" and ASARCO Incorporated, herein referred to as "Asarco" did on October 1, 1972 enter into an Operating Agreement in regard to certain mining claims located in Santa Cruz County, Arizona, being more particularly described in Exhibit A to said Operating Agreement; and

WHEREAS Asarco has located a certain mining claim in the vicinity of the claims described in Exhibit A to said Operating Agreement, and Kerr-McGee and Asarco mutually agree that said mining claim, more particularly described in Exhibit I attached to this Amendment, shall be made a part of said lands as if said mining claim had been described originally in Exhibit A to the Operating Agreement, dated October 1, 1972.

NOW, THEREFORE, Kerr-McGee and Asarco do hereby agree that the mining claim described in Exhibit I is hereby added to Exhibit A of the Operating Agreement, dated October 1, 1972.

IN WITNESS WHEREOF, the parties hereto have duly executed this Sixth Amendment to Operating Agreement effective as of the 20th day of March, 1984.

KERR-McGEE CORPORATION

By [Signature]
Attorney-in-Fact

532
FORM
APPROVED
[Signature]
LAW DEPT.

ATTEST

[Signature]

ASARCO Incorporated

By R. L. Brown
R. L. Brown, Jr.
Vice President
Approved as to
Form: [Signature]

EXHIBIT I

TO

SIXTH AMENDMENT TO OPERATING AGREEMENT

Between Kerr-McGee and Asarco

Dated March 20, 1984

<u>Claim Name</u>	Santa Cruz County, AZ Recording Data <u>Docket</u>	<u>Page</u>	BLM Serial No. <u>A MC</u>
Orb #10	343	224-225	192268

April 17, 1986

RECEIVED

APR 21 1986

EXPLORATION DEPARTMENT

TO: R. L. Brown

Thunder Mtn. Project,
Arizona

Asarco is presently in default of the joint venture option agreement with Kerr-McGee due to failure to complete the minimum work requirement due October 1985. We have several possibilities to consider:

- 1) Drop out of Thunder Mtn.
- 2) Ask Kerr-McGee to forgive our error and reinstate us in the property, or
- 3) Unitize Kerr-McGee and certain adjacent Asarco claims in a fully-vested joint venture

W. L. Kurtz and I have reviewed this subject and recommend a unitized joint venture be established as follows:

- 1) A new project in which both Asarco and Kerr-McGee will be fully vested 50-50 partners, will be defined to include all mining claims in the Thunder Mtn., Mendoza (Humboldt), and Three R groups; Asarco will be manager,
- 2) All existing annual work and cumulative expenditure requirements in the existing Agreement will be eliminated,
- 3) Asarco will fund 100% of assessment work costs on the unitized block of 136 claims through September 1990, and
- 4) No programs in excess of Asarco-funded assessment work will be proposed until after September 1990, when all expenditures will be shared on a 50-50 basis.

RECEIVED

APR 21 1986

EXPLORATION DEPARTMENT

The advantage to Kerr-McGee is vesting in ground where they presently have no percentage interest. The advantage to Asarco is that a position in a high grade base-precious metal target is maintained and existing onerous annual and cumulative expenditure requirements are eliminated.

The proposal should be made to TS Ary, and although both Mr. Kurtz and I have met Mr. Ary, we believe the proposal will carry more weight if made by you or T. C. Osborne as executives of Asarco.

Flux and Ventura claim groups should be omitted from the proposed new claim block, but could be added as a bargaining chip, if required. The Trench patented group should not be included in the joint venture because of the potential value of fee land inside the National Forest if a mine were developed at Hardshell. Hardshell must also be excluded.

Kerr-McGee is aware of the deep porphyry copper system we found under the Sunnyside Mine along the Three R-Thunder Mtn. claim boundary. They have been mildly interested in this zone for several years, although it has no economic value. They are not, to my knowledge, aware of the high grade Cu-Pb-Zn-Ag replacement mineralization found under the Mendoza block.

All my previous contact with Kerr-McGee was through Jim Quinlan who was recently given early retirement. I do not know to what extent Ary is familiar with the area, and he may call Quinlan for details. If Ary is negative on the proposal, I suggest you mention the intersections in TCH-2 (map and assays attached for your information), which are under the Asarco-controlled Trench ground, as an inducement for him to cooperate. If he is still negative, we should consider including the 13 Flux claims and the 32 Ventura claims. Ventura contains 3.6 million tons of 0.402% MoS₂ and 0.26% Cu surrounded and underlain by an incompletely² drilled zone of 50 million tons of lower-grade material.

F. T. Graybeal
F. T. Graybeal

FTG:mr
Att.

cc: W. L. ~~X~~Kurtz/J. D. Sell (w/o att.) ✓

Exploration Department

June 24, 1986

R. L. Brown
Vice President

Mr. T. S. Ary
President
Minerals Exploration Division
Kerr-McGee Corporation
Kerr-McGee Center
P.O. Box 25861
Oklahoma City, Oklahoma 73125

ASARCO Incorporated

JUN 30 1986

SW Exploration

Thunder Mountain,
Arizona

Dear Tee:

During our recent conversations in Oklahoma City, we discussed various ways and means which would allow Asarco to stay in the Thunder Mountain Project and to keep the property together. I promised to summarize the terms of an amendment to our present Thunder Mountain joint operating agreement for your further consideration. As I understand it, you would be sympathetic to an agreement which would cover the following points:

- 1) The inadvertent failure of Asarco to meet its full expenditure commitment during 1985 would be excused.
- 2) The present requirement for an Asarco expenditure of \$1,000,000 prior to October 1, 1990 would be waived.
- 3) Asarco would agree to perform required assessment work for each assessment year, ending in September 1991; failure to perform to result in forfeiture of property.
- 4) In October 1991 and annually thereafter, Asarco would propose a budget and program (costing, say, \$100,000 annually) until Asarco has spent \$1,000,000. Kerr-McGee would have the option of contributing to the budget or of accepting pro-rata dilution. You will recall that the operating agreement provides that a party diluted

to 15% would revert to a 5% NSR royalty interest, but would have not a management function.

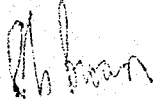
- 5) The remainder of the operating agreement would remain in force.

If you think that the above conveys the sense of our conversations in Oklahoma City, I will have a draft amending agreement to the operating agreement drawn up for your further consideration.

Perhaps I should mention that we have spent \$540,000 at Thunder Mountain to date.

It was good chatting with you last week, and I hope our paths cross soon.

Yours very truly,



R. L. Brown

RLB:mr

cc: W. L. Kurtz
J. D. Sell

JDS — / the

Exploration Department

December 8, 1987

R. L. Brown
Vice President

RECEIVED

DEC 14 1987

EXPLORATION DEPARTMENT

Mr. W. K. John
Manager, Mineral Lands
Kerr-McGee Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

Thunder Mountain
Arizona

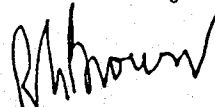
Dear Mr. John:

This will acknowledge your letter to me dated October 7, with the attached draft 8th amendment to the Thunder Mtn. Operating Agreement. We have discussed this matter on the phone. I am sorry that we have not been able to come to an agreement in this matter, and that there is still in fact disagreement between us even as to the meaning of Mr. Hill's letter to me of July 2, 1987.

Our problem with the draft amendment as it now stands is that most of the exploration interest we see in the joint venture area lies on or near the Humboldt ground, which we have offered to include in the area covered by the Joint Venture. It is unacceptable to us that expenditure incurred on those claims would not qualify as "joint venture earn in" expenditures. However, as a compromise, we would be willing to include only future expenditures on the Humboldt claims as "earn in" expenditures.

If Kerr-McGee sees merit in the above-described solution to our problem, please let me know.

Yours very truly,



R. L. Brown

RLB:mc

bcc: W. L. Kurtz/J. D. Sell

ASARCO

JDS

Exploration Department

R. L. Brown
Vice President

July 26, 1988

Mr. J. D. Sell
Tucson Office

Dear Mr. Sell:

I attach hereto the Eighth Amendment to the Thunder Mtn. Agreement which you should put in your document file, and include on your next contract reading report.

I also enclose a copy of the forwarding letter to us from Kerr-McGee in which they ask for copies of the original location notices, amended notices and recent affidavits of labor for the Humboldt claims. I think they would also appreciate a copy of a recent claim map showing the location of these claims and other title information.

I would appreciate your early attention to this matter. Please also note that we will be required to report much more fully to Kerr-McGee about our exploration work and activities than we were required to do under the previous agreements.

Yours very truly,



R. L. Brown

RLB:mc
Att.

ASARCO Incorporated
JUL 28 1988
SW Exploration



KERR-McGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

July 14, 1988

Mr. R. L. Brown, Vice President
Exploration Department
ASARCO INCORPORATED
180 Maiden Lane
New York, NY 10038

Re: AMENDMENT TO OPERATING AGREEMENT
Thunder Mountain Project (02-007-0000)
Santa Cruz County, Arizona

Dear Mr. Brown:

Confirming our recent telephone conversation, we enclose a fully executed and acknowledged duplicate original of the following:

EIGHTH AMENDMENT TO OPERATING AGREEMENT (Form 6131/88-0329)

In conformance with past practices involving our OPERATING AGREEMENT this amendment will be not be recorded in Santa Cruz County.

Would you please send to me copies of the original location notices, any amended notices and the 1986-87 and 1987-88 Affidavits of Labor involving the seven(7) unpatented lode mining claims comprising the Humboldt group together with a copy of a claim map and any pertinent title information involving same.

Your early consideration of this matter will certainly be appreciated. Thank you.

Yours very truly,

KERR-McGEE CORPORATION
Minerals Exploration Division

W.K. John
Manager-Mineral Land

WKJ:vk (3936M)

enclosure

EIGHTH AMENDMENT TO OPERATING
AGREEMENT

THIS AMENDMENT entered into effective the 1st day of January, 1988, by and between KERR-McGEE CORPORATION, a Delaware corporation, whose address is Kerr-McGee Center, P. O. Box 25861, Oklahoma City, Oklahoma 73125 ("Kerr-McGee") and ASARCO INCORPORATED, formerly American Smelting and Refining Company, a New Jersey-corporation, whose address is 180 Maiden Lane, New York, New York 10038 ("ASARCO").

WITNESSETH:

WHEREAS, Kerr-McGee and ASARCO did on October 1, 1972, enter into an Operating Agreement in regard to certain mining claims located in Santa Cruz County, Arizona, being more particularly described in Exhibit A to said Operating Agreement, as subsequently amended by the parties (the "Operating Agreement"); and

WHEREAS, the parties desire to further amend the Operating Agreement as herein provided.

NOW, THEREFORE, in consideration of the mutual covenants herein provided, it is agreed as follows:

1. ASARCO's failure to meet its minimum Exploration Expenditure Commitment for the year 1985 is excused, and it is agreed that the Operating Agreement has been continued beyond such date and is currently in force and effect.

2. The Operating Agreement is amended as follows:

(a) The definition of the "Initial Exploration Period" provided in said agreement to terminate on October 1, 1990 is hereby deleted and references in the

Operating Agreement to the "Initial Exploration Period" shall hereafter be interpreted to mean the period of time occurring from the date of the Operating Agreement until ASARCO earns a fifty percent (50%) interest in Said Lands as hereinafter provided.

(b) In order to earn a fifty percent (50%) interest in Said Lands, ASARCO shall be required to enter upon Said Lands and: (i) annually perform the minimum required assessment work for Said Lands for each assessment year through September 1, 1991, including the current year; and (ii) commencing October 1, 1991 and annually thereafter, budget and propose work programs requiring expenditures for exploration or development operations on Said Lands as it may determine in its sole judgment in the amount of One Hundred Thousand Dollars (\$100,000.00) or more per year, subject to the requirement that sufficient work be performed to satisfy the minimum annual assessment work for each assessment year ending after September 1, 1991, until ASARCO has spent the required earn-in amount of One Million Dollars (\$1,000,000.00).

(c) ASARCO may terminate the Operating Agreement at any time prior to earning its fifty percent (50%) interest in Said Lands, provided that if minimum work remains unperformed for the then current assessment work year, ASARCO shall notify Kerr-McGee of the termination at least ninety (90) days prior to the expiration of the then current assessment work year. After such termination, ASARCO shall not be obligated to make any further expenditures on Said Lands except as may be assumed by ASARCO pursuant to the agreement described in Paragraph 3 below.

(d) After ASARCO earns its fifty percent (50%) interest in Said Lands, as aforesaid, Kerr-McGee will have the option of contributing on a pro rata basis to the

annual work plans or accepting a pro rata dilution of its interest as provided in Section 11 of the Operating Agreement.

(e) The Said Lands described in Exhibit A to the Operating Agreement, as heretofore amended by the parties, are further amended to include the unpatented mining claims described in Schedule I attached hereto, known as the Humbolt Group, which lands and claims shall be made a part of Said Lands as if originally described in Exhibit A to the Operating Agreement, provided that costs and expenses incurred by ASARCO relative to the Humbolt Group, prior to January 1, 1988 shall not be included in the One Million Dollars (\$1,000,000.00) required to be expended by ASARCO to earn its fifty percent (50%) interest in Said Lands.

(f) ASARCO has heretofore submitted to Kerr-McGee a summary report of all exploration operations conducted on the Said Lands to October 1, 1987. As soon as is reasonably practicable following the execution of this Amendment and on or before February 1 of each year thereafter during the term of the Operating Agreement, ASARCO agrees to submit to Kerr-McGee a summary of all activities conducted on Said Lands during the prior calendar year.

3. If ASARCO terminates the Operating Agreement prior to earning said fifty percent (50%) interest in Said Lands but after making expenditures from January 1, 1988, toward meeting its minimum Exploration Expenditure Commitment:

(a) Within sixty (60) days following the date of such termination, ASARCO and Kerr-McGee will convey to each other by separate recordable instruments, in the form attached hereto as Schedule II and made a part of this Amendment, pro rata interests in the right, title and interest owned by each party in the Said Lands and the lands described in Schedule I prior to January 1, 1988.

(b) The pro rata interest each party will receive in the interest of the other party in the Said Lands and the Schedule I lands in the event of such termination will be calculated by dividing the amount of the expenditures made by ASARCO from January 1, 1988 toward meeting its minimum Exploration Expenditure Commitment under the Operating Agreement by twice the amount of the total expenditures which remained to meet the minimum Exploration Expenditure Commitment as of January 1, 1988. For purposes of clarification, if at the time of such termination ASARCO had expended Two Hundred Thousand Dollars (\$200,000) toward such exploration commitment, leaving Two Hundred Thousand Dollars (\$200,000) remaining to earn the said fifty percent (50%) interest, ASARCO would nevertheless be entitled to an assignment of twenty-five percent (25%) of Kerr-McGee's interest in the Said Lands as constituted immediately prior to January 1, 1988. Kerr-McGee, in turn, would be entitled to an assignment of twenty-five percent (25%) of ASARCO's interest in the lands described in Schedule I hereto.

(c) Notwithstanding the termination of the Operating Agreement, it is understood and agreed by the parties hereto that this Paragraph 3 shall not terminate with the termination of the Operating Agreement but shall continue as a covenant running with the Said Lands, including the lands described in Schedule I, and the terms of the Operating Agreement shall be reconstituted and apply to the operations thereafter conducted on the Said Lands and the lands described in Schedule I by the parties subject to the limitations provided in the assignments between the parties. The parties agree to execute such additional instruments and agreements as may be required to give effect to the intent of the parties herein expressed.

4. In the case of inconsistencies between the provisions of the Operating Agreement and the provisions of this Amendment, this Amendment shall govern.

5. The Operating Agreement as previously amended and as herein amended shall continue in full force and effect.

IN WITNESS WHEREOF, this instrument has been executed as of the day and year first above written.

KERR-McGEE CORPORATION

By Barry N. Hill
Barry N. Hill
Attorney-in-Fact

WTH
FORM
APPROVED
LAW DEPT.

ATTEST:

C. D. Gonzalez

ASARCO INCORPORATED

By R. L. Brown
Vice President

ACKNOWLEDGEMENTS

STATE OF OKLAHOMA)
) SS.
COUNTY OF OKLAHOMA)

The foregoing instrument was acknowledged before me this 12th day of July, 1988, by Barry N. Hill as Attorney-in-Fact of Kerr-McGee Corporation, a Delaware corporation, on behalf of the corporation.

Witness my hand and official seal.

Velisa Maple
Notary Public

My Commission Expires:

September 7, 1988

STATE OF NEW YORK)
) SS.
COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 8th day of July, 1988, by R. R. Brown as Vice President of ASARCO Incorporated, a New Jersey corporation, on behalf of the corporation.

Witness my hand and official seal.

Elizabeth J. Collow
Notary Public

My Commission Expires:

3-30-89

SCHEDULE I

LIST OF HUMBOLT GROUP
UNPATENTED LODGE MINING CLAIMS

	<u>NAME OF CLAIM(S)</u>	<u>RECORDING DATA</u>		<u>PAGE</u>	<u>BLM SERIAL NUMBER</u>
		<u>DOCKET OR BOOK</u>			
**	South Humbolt	ML	7	360	A MC 50226
	South Humbolt Amended		380	682 & 683	
* and **	Humbolt	ML	7	358	A MC 50227
	Humbolt Amended		380	684 & 685	
**	Silver Leaf	ML	7	364	A MC 50228
	Silver Leaf Amended		380	686 & 687	
* and **	Good Luck #2	ML	7	366	A MC 50229
	Good Luck #2 Amended		380	688 & 689	
**	Indian Chief	ML	7	368	A MC 50230
	Indian Chief Amended		380	690 & 691	
**	Monoca	ML	7	362	A MC 50231
	Monoca Amended		380	692 & 693	
**	Good Luck	ML	4	300	A MC 50232
	Good Luck Amended		382	575 & 576	

*Located in Section 32, T.22S., R.16E., G.&S.R.M., Santa Cruz County.

**Located in Section 5, T.23S., R.16E., G.&S.R.M., Santa Cruz County.

SCHEDULE II
TO EIGHTH AMENDMENT TO OPERATING AGREEMENT

DEED AND ASSIGNMENT

THIS DEED AND ASSIGNMENT is made and entered into this _____ day of _____, 19__, between _____ a _____ corporation ("Grantor"), with offices at _____, and _____, a _____ corporation ("Grantee"), with offices at _____.

RECITALS

A. Grantor owns certain interests in and to the mining claims situated in Santa Cruz County, Arizona, which are more particularly described on the attached Exhibit A, incorporated herein by this reference, together with any and all tenements, hereditaments, rights and appurtenances thereunto belonging, including without limitation because of enumeration, water rights, buildings, fixtures, shafts, tunnels and all mines and minerals and mineral bearing materials of whatever nature, their dips, spurs and extra-lateral rights (collectively the "Property").

B. Grantor and Grantee entered into that certain Operating Agreement dated October 1, 1972, as amended (the "Operating Agreement"), pursuant to which Grantee is entitled to a conveyance of an undivided _____ percent (___%) of Grantor's right, title and interest in and to the Property.

NOW, THEREFORE, in consideration of Ten Dollars (\$10) and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

WITNESSETH:

1. Grant. Grantor hereby grants, bargains and conveys to Grantee an undivided _____ percent (____%) of Grantor's right, title and interest in and to the Property.

2. Representations and Warranties. This Conveyance is made without warranty of title, express or implied, and subject to all outstanding burdens, covenants and obligations, including, - but not limited to, those described in the Operating Agreement.

3. Relationship to Other Agreements. Grantor and Grantee agree that the Property shall be subject to the Operating Agreement, as amended, provided said agreement shall apply independently to the Property and shall be modified to conform to the respective ownership interests of Grantor and Grantee in and to the Property giving effect to the grant herein made, and provided further, the provisions of the Operating Agreement giving ASARCO Incorporated, formerly American Smelting and Refining Company, the right to earn fifty percent (50%) of Kerr-McGee Corporation's right, title and interest in and to certain lands therein described by making a minimum Exploration Expenditure Commitment shall be terminated and will not be part of the Operating Agreement, except for the purpose of giving effect to expenditures determining the interest herein assigned.

IN WITNESS WHEREOF, this instrument is executed effective the day and year first above written.

GRANTOR:

ATTEST:

By _____

By _____

ACKNOWLEDGEMENTS

STATE OF _____)
COUNTY OF _____) SS.

The foregoing instrument was acknowledged before me this ____ day of _____, 1988, by _____ as _____ of _____, a _____ corporation, on behalf of the corporation.

Witness my hand and official seal.

Notary Public

My Commission Expires:

STATE OF _____)
COUNTY OF _____) SS.

The foregoing instrument was acknowledged before me this ____ day of _____, 1988, by _____ as _____ of _____, a _____ corporation, on behalf of the corporation.

Witness my hand and official seal.

Notary Public

My Commission Expires:

ASARCO

JDS
Southwestern Exploration Division

November 15, 1990

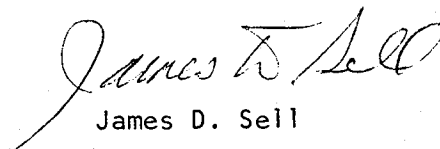
W.D. Gay

FS Superfund Studs
Patagonia Mtns., AZ

Call the Coronado National Forest headquarters (and any other agencies needed) and determine what the Superfund Study is all about, who is doing it, and the progress. Get your name on their updated mailing list. Coordinate with Mr. Maley.

Respond to me for passing on to others, and per F.T. Graybeal/J.L. Woods attached letters.

JDS:mek
Att.


James D. Sell

cc: W.L. Kurtz

F 168

ASARCO Inc.

NOV 13 1990

SW Exploration

November 6, 1990

To: J.L. Woods

Forest Service SuperFund Study
Patagonia Mountains,
Arizona

Regarding your undated memo with attachments on this subject which describe a USFS proposal to study the environmental impact of mine waste in the Harshaw Creek area in the Patagonia Mountains, Asarco has a number of unpatented mining claims in this area. These claims are part of two projects. One is the Thunder Mountain Project which is a 50-50 joint venture with Kerr McGee. The Thunder Mountain claims cover three separate partly-drilled zones of potential interest. The first is a deep sulfide zone containing roughly 150 million tons averaging 0.6% Cu as chalcopryite, 0.15 oz Ag, and 0.025% MoS₂ at a depth of roughly 4,000 ft. A second zone occurring virtually at the surface is presently being drilled but we estimate it contains about 40 million tons averaging 0.4% copper and 0.15 oz Ag. The copper mineralization in this shallow zone is a mixture of chalcocite and covellite. Both zones are close to the border of the study area but may be outside it. The study area limits are somewhat illogically drawn and I've known government agencies to change the outlines of areas like this in the past.

A third zone located several years ago at depths of 4,200 ft. has been insufficiently drilled to make any resource estimate. Intersections of 50-100 ft. of 15-20% combined base metals and 5-10 oz Ag have been made in carbonate rocks along with a number of 20-40 ft. intersections averaging 1.5-2.5% Cu. This zone and likely extensions of it are inside the study area. The Thunder Mountain Claim Group was reduced during the 1980's to its current size of 94 unpatented claims. We could probably drop a few more claims but substantial exploration potential remains on the ground even though the targets are very deep.

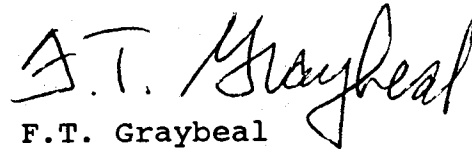
Hardshell is the second project which is located in the eastern portion of the USFS study area and administered by the Mining Dept. Hardshell has a reserve of 6.9 million tons averaging about 8.5 oz Ag with an envelope of 10-20 million tons containing 1-2 oz Ag. Some of this silver reserve may extend off the patented claims and onto the unpatented claims which would be subject to the USFS study.

You are aware that the vast majority of acid mine drainage and sulfide-bearing material contributed to Harshaw Creek comes from the Trench tailings which are on patented ground and therefore excluded from the USFS study. There is also some acid mine drainage from small mines farther south along Harshaw Creek on ground not owned by Asarco. Finally there is nearly constant drainage coming from one of the Trench mine shafts which drains into Alum Gulch but this shaft is also on patented ground owned by Asarco. Major contributors to what could be perceived as a problem are the Trench tailings and one of the Trench shafts.

You mentioned that "Humboldt Creek" had been identified as a serious problem by someone. There is no Humboldt Creek, but there is a Humboldt mine in Alum Gulch where a moderate-size dump exists with minor sulfides. Sulfides have also been exposed along Alum Gulch by the natural process of erosion. You asked whether we could drop the claim which covers the Humboldt mine even though this would be a small hole in a larger claim block and we could do this. However, the Humboldt mine is part of a rather centrally located group of 7 unpatented claims we have optioned from a local resident. Our agreement with him is silent regarding whether we could drop one claim without dropping all of this group. The Humboldt group covers the carbonate-hosted mineralization which has potential for 5-40 million tons of massive base-precious mineralization which, although deep, hot and difficult to explore from the surface may be a very large resource of metal.

My own view is that although the Humboldt mine contribution to Alum Gulch may be measurable (anything is measurable) it is negligible in comparison to the Trench mine drainage and tailings. I will forward your memo to Mr. Anzalone who can respond with regard to the Hardshell project (Mr. Maley has the description of the USFS study). By copy of this letter I am asking Mr. Sell to inquire at the Coronado National Forest headquarters regarding the progress of this study.

I do not know what deadlines I am working with as the USFS study you gave me has no time limits. I am not willing to simply drop the Humboldt group of 7 claims as I view the mine waste contributed to Alum Gulch from these claims as insignificant. Mr. Sell should determine what the time limits are for this study and he and Mr. Maley can monitor its progress. I will await comment from Messrs. Osborne, Brown, Sell, and Anzalone on this subject.


F.T. Graybeal

cc: T.C. Osborne
R.L. Brown
S.A. Anzalone (w/JLW memo)
J.D. Sell (w/JLW memo)

ASARCO

NEW YORK OFFICE
LEGAL DEPARTMENT

MEMORANDUM

F. T. G.

NOV 6 1990

F. T. G.

NOV 6 1990

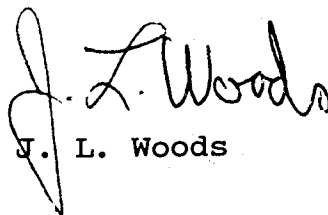
ASARCO LEGAL

NOV 13 1990

SW EXPEDITE

TO: R. L. Brown
FROM: J. L. Woods
RE: Attached Forest Service Study

Please review the attached to determine whether any Exploration Department claims exist within the area under study. If they do, a careful review of such claims should be made to determine whether their potential interest outweighs any risks we may be incurring because of potential Superfund Status. I will be available to discuss specific fact issues regarding any such claims as they relate to Superfund.


J. L. Woods

JLW/jon
Attachment

cc: T. C. Osborne

ASARCO

JDS
Southwestern Exploration Division

November 28, 1990

FILE MEMO

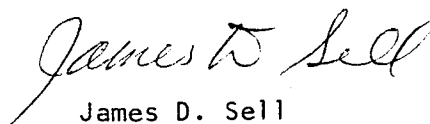
Patagonia Superfund
Santa Cruz County, AZ

Pat Maley came down (11/27/90) to tell me the same as written by W.D. Gay (attached).

Pat will keep SWED informed. Believes Asarco should keep a low profile in contacting the Forest Service as flags do not need to be raised and Stu Bengson may be on the FS list as an outside contractor and thus secure additional info. Otherwise, the FS has no mailing list at this time.

Pat will also get together with SWED and review the mine dumps and openings on SWED ground which may be contributing to the water quality problem.

JDS:mek
Att.


James D. Sell

cc: W.D. Gay
W.L. Kurtz
P.J. Maley

From: W. D. Gay

To: J.D. SELL

SUPERFUND

JIM:

In response to your
SuperFund Memo (11-15-90)

- 1) ASARCO (SWMD) found out
about a "maybe" study,
because Stu Bengson was
ask to bid on doing the
study (The FS thought he
was an independent operator.)
- 2) Pat Maley tells me there
is no mailing lists.
- 3) Pat also says the last
word ^{from Bengson} was the study is
now in doubt re. it

W.D. Gay

may not be done at all.
(No funding for study, yet.)

- 4) Pat may know more in
a week or so -- will
keep you informed.

I realize this is an
abbreviated note, but
will formalize a memo
when I have more
info.

Bill

ASARCO

returned!

Thunder Mtn

Exploration Department
Southwestern United States Division

James D. Sell
Manager

*Ch not cashed as of 4/92
ASARCO cancelled check (W.D.G.).*

June 17, 1991

Mr. Larry Cass
P.O. Box 1073
Patagonia, Arizona 85624

Re: Classic Unpatented Placer Mining Claim, AMC #313725

Dear Mr. Cass:

ASARCO Incorporated owns certain unpatented lode mining claims named the Boot, Orb, Roosevelt and Wellington claims which are described more fully in the enclosed Quit-Claim Deed and which are located in the northwest quarter of Section 5 and in the north half of Section 6, T23S, R16E, G&SRB&M, Santa Cruz County, Arizona. It is my understanding that you have entered in trespass upon those mining claims without Asarco's consent and you have located the Classic placer mining claim which is in conflict with Asarco's claims.

Because you have no right or interest in the land covered by the senior ASARCO mining claims, enclosed and hereby tendered to you pursuant to A.R.S. § 12-1103.b, are the sum of \$5.00 and a Quit-Claim Deed for the Classic mining claim and for the land and all rights thereto within the boundaries of the Asarco mining claims. We request that you consult with your attorney, execute the enclosed Quit-Claim Deed, and return the notarized Deed to this office. In the event you do not execute and return the Deed as requested, you may be liable for attorneys fees in any litigation regarding title to the property. You may also be subject to penalties described in A.R.S. § 33-420 if the deed is not executed and returned.

Sincerely,

James D. Sell
James D. Sell

JDS:mek
encs.

cc: W.L. Kurtz
W.D. Gay

STATE OF ARIZONA, } I hereby certify that the within instrument was filed and recorded
County of _____ } ss. _____, 19____, at _____ M.

Fee No.:

In Docket No. _____, Page _____, at the request of _____

Indexed:

When recorded mail to:

Witness my hand and official seal.

Compared:

Photostated:

County Recorder

Fee: \$ _____

By _____

Deputy Recorder

I.R.S.: \$ _____

Quit-Claim Deed

Five

For the consideration of ~~XXX~~ Dollars, and other valuable considerations, I or we, Larry Cass

hereby quit-claim to ASARCO Incorporated

all right, title, or interest in the following real property situated in Santa Cruz County, Arizona:

The ground within the boundaries of the following
unpatented mining claims situated in Sections 5
and 6, T23S, R16E, G&SRB&M:

Location Notice Recorded in
Official Records of Santa Cruz
County, Arizona and Filed with
The Bureau of Land Management,
Phoenix, Arizona

<u>Claim Name</u>	<u>Docket</u>	<u>Page</u>	<u>BLM Serial No.</u>
Roosevelt (Amended)	343	226 & 227	A MC 33776
Wellington (Amended)	380	672 & 673	A MC 33769
Orb 1	150	500	A MC 32501
Orb 2	150	501	A MC 32502
Boot 54	58	423	A MC 52017
Boot 55	58	424	A MC 52018
Boot 56	58	425	A MC 52019
Boot 57	58	426	A MC 52020
Boot 77	57	323	A MC 52032
Boot 79	57	325	A MC 52034
Boot 81	57	327	A MC 52036
Boot 82	57	328	A MC 52037
Boot 83	57	329	A MC 52038
Boot 84	57	330	A MC 52039
Boot 92	81	351	A MC 52046
Boot 94	81	353	A MC 52048
Boot 105	81	363	A MC 52058
Boot 106	81	364	A MC 52059

and the Classic Placer Mining Claim the location notice
of which is recorded In Docket 548, Pages 305, 306 and filed
in The Bureau of Land Management under BLM Serial Number
A MC 313725.

Dated this _____ day of _____, 19 91.

Larry Cass

STATE OF _____ }
County of _____ } ss.

This instrument was acknowledged before me this _____
day of _____, 19____, by Larry Cass

My commission will expire

Notary Public

STATE OF ARIZONA

County of } ss.

On this the day of, 19....., before me,

....., the undersigned Notary Public, personally appeared

....., known to me (or satisfactorily proven) to be the
person..... whose name..... subscribed to the within instrument and acknowledged that..... he.....
executed the same for the purposes therein contained.

In witness whereof I hereunto set my hand and official seal.

My commission expires..... Notary Public.

STATE OF ARIZONA

County of } ss.

On this the day of, 19....., before me,

....., the undersigned Notary Public, personally appeared

....., known to me (or satisfactorily proven) to be the
person..... whose name..... subscribed to the within instrument and acknowledged that..... he.....
executed the same for the purposes therein contained.

In witness whereof I hereunto set my hand and official seal.

My commission expires..... Notary Public.

No.....

Quit-Claim Deed
Short Form

FROM

TO

Dated....., 19.....

STATE OF ARIZONA

County of } ss.

I hereby certify that the within in-
strument was filed and recorded at
request of.....

Book.....

In Docket.....

on page.....

Witness my hand and official seal
the day and year aforesaid.

County Recorder.

By.....
Deputy Recorder.

ASARCO

returned!

Thunder Mtn

Exploration Department
Southwestern United States Division

James D. Sell
Manager

ck not cashed as of 4/92
ASARCO cancelled checks (JDS) June 17, 1991

Mr. David Briggie
P.O. Box 1073
Patagonia, Arizona 85624

Re: Classic Unpatented Placer Mining Claim, AMC #313725

Dear Mr. Briggie:

ASARCO Incorporated owns certain unpatented lode mining claims named the Boot, Orb, Roosevelt and Wellington claims which are described more fully in the enclosed Quit-Claim Deed and which are located in the northwest quarter of Section 5 and in the north half of Section 6, T23S, R16E, G&SRB&M, Santa Cruz County, Arizona. It is my understanding that you have entered in trespass upon those mining claims without Asarco's consent and you have located the Classic placer mining claim which is in conflict with Asarco's claims.

Because you have no right or interest in the land covered by the senior ASARCO mining claims, enclosed and hereby tendered to you pursuant to A.R.S. § 12-1103.b, are the sum of \$5.00 and a Quit-Claim Deed for the Classic mining claim and for the land and all rights thereto within the boundaries of the Asarco mining claims. We request that you consult with your attorney, execute the enclosed Quit-Claim Deed, and return the notarized Deed to this office. In the event you do not execute and return the Deed as requested, you may be liable for attorneys fees in any litigation regarding title to the property. You may also be subject to penalties described in A.R.S. § 33-420 if the deed is not executed and returned.

Sincerely,

James D. Sell
James D. Sell

JDS:mek
encs.

cc: W.L. Kurtz
W.D. Gay

STATE OF ARIZONA, } I hereby certify that the within instrument was filed and recorded
County of _____ } ss. _____, 19____, at _____ M.

In Docket No. _____, Page _____, at the request of _____

When recorded mail to:

Witness my hand and official seal.

County Recorder

By _____

Deputy Recorder

Fee No.:

Indexed:

Compared:

Photostated:

Fee: \$ _____

I.R.S.: \$ _____

Quit-Claim Deed

Five

For the consideration of ~~XXX~~ Dollars, and other valuable considerations, I or we, David Briggles

hereby quit-claim to ASARCO Incorporated

all right, title, or interest in the following real property situated in Santa Cruz County, Arizona:

The ground within the boundaries of the following
unpatented mining claims situated in Sections 5
and 6, T23S, R16E, G&SRB&M:

Location Notice Recorded in
Official Records of Santa Cruz
County, Arizona and Filed with
The Bureau of Land Management,
Phoenix, Arizona

<u>Claim Name</u>	<u>Docket</u>	<u>Page</u>	<u>BLM Serial No.</u>
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Boot 56	58	425	A MC 52019
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Boot 81	57	327	A MC 52036
Boot 82	57	328	A MC 52037
Boot 83	57	329	A MC 52038
Boot 84	57	330	A MC 52039
Boot 92	81	351	A MC 52046
Boot 94	81	353	A MC 52048
Boot 105	81	363	A MC 52058
Boot 106	81	364	A MC 52059

and the Classic Placer Mining Claim the location notice
of which is recorded In Docket 548, Pages 305, 306 and filed
in The Bureau of Land Management under BLM Serial Number
A MC 313725.

Dated this _____ day of _____, 19 91.

David Briggles

STATE OF _____ }
County of _____ } ss.

This instrument was acknowledged before me this _____
day of _____, 19____, by David
Briggles.

My commission will expire

Notary Public.

STATE OF ARIZONA }
County of } ss.

On this the day of, 19....., before me,
....., the undersigned Notary Public, personally appeared
....., known to me (or satisfactorily proven) to be the
person..... whose name..... subscribed to the within instrument and acknowledged that..... he.....
executed the same for the purposes therein contained.

In witness whereof I hereunto set my hand and official seal.

My commission expires..... Notary Public.

STATE OF ARIZONA }
County of } ss.

On this the day of, 19....., before me,
....., the undersigned Notary Public, personally appeared
....., known to me (or satisfactorily proven) to be the
person..... whose name..... subscribed to the within instrument and acknowledged that..... he.....
executed the same for the purposes therein contained.

In witness whereof I hereunto set my hand and official seal.

My commission expires..... Notary Public.

No.....

Quit-Claim Deed
Short Form

FROM

TO

Dated, 19.....

STATE OF ARIZONA

County of } ss.

I hereby certify that the within in-
strument was filed and recorded at
request of.....

Book.....

In Docket.....

on page.....

Witness my hand and official seal
the day and year aforesaid.

County Recorder.

By.....
Deputy Recorder.

September 5, 1991

R.L. Brown
New York

Kerr-McGee
Thunder Mountain
Arizona

The eighth amendment to Kerr-McGee - Asarco Operating Agreement required Asarco to budget and propose work of at least \$100,000 per year starting with the year October 1, 1991. Asarco still has approximately \$375,000 to spend to earn its interest in the property.

The amendment is somewhat ambiguous (except for assessment work) as to Asarco's expenditure obligations on termination, but I would say we become obligated on a pro rata basis starting 1 October 1991 (that is if you terminated on 1 January 92 you would be obligated to have spent 3/12 of the \$100,000), Amendment attached.

As you are well aware, I have been the lone voice to drop the property. You need to decide whether to hold or drop prior to 1 October 91, or to try for a ninth amendment. Please inform Mr. Sell of your decision.

WLK:mek
Att.


W. L. Kurtz

cc: J.D. Sell

VIA FAX

September 5, 1991

R.L. Brown
New York

Kerr-McGee
Thunder Mountain
Arizona

The eighth amendment to Kerr-McGee - Asarco Operating Agreement required Asarco to budget and propose work of at least \$100,000 per year starting with the year October 1, 1991. Asarco still has approximately \$375,000 to spend to earn its interest in the property.

The amendment is somewhat ambiguous (except for assessment work) as to Asarco's expenditure obligations on termination, but I would say we become obligated on a pro rata basis starting 1 October 1991 (that is if you terminated on 1 January 92 you would be obligated to have spent 3/12 of the \$100,000), Amendment attached.

As you are well aware, I have been the lone voice to drop the property. You need to decide whether to hold or drop prior to 1 October 91, or to try for a ninth amendment. Please inform Mr. Sell of your decision.

WLK:mek
Att.


W. L. Kurtz

cc: J.D. Sell

Operating Agreement to the "Initial Exploration Period" shall hereafter be interpreted to mean the period of time occurring from the date of the Operating Agreement until ASARCO earns a fifty percent (50%) interest in Said Lands as hereinafter provided.

n. 2 (b) In order to earn a fifty percent (50%) interest in Said Lands, ASARCO shall be required to enter upon Said Lands and: (i) annually perform the minimum required assessment work for Said Lands for each assessment year through September 1, 1991, including the current year; and (ii) commencing October 1, 1991 and annually thereafter, budget and propose work programs requiring expenditures for exploration or development operations on Said Lands as it may determine in its sole judgment in the amount of One Hundred Thousand Dollars (\$100,000.00) or more per year, subject to the requirement that sufficient work be performed to satisfy the minimum annual assessment work for each assessment year ending after September 1, 1991, until ASARCO has spent the required earn-in amount of One Million Dollars (\$1,000,000.00).

94.
Claims
+
7
101

49 TR
for assessment

(c) ASARCO may terminate the Operating Agreement at any time prior to earning its fifty percent (50%) interest in Said Lands, provided that if minimum work remains unperformed for the then current assessment work year, ASARCO shall notify Kerr-McGee of the termination at least ninety (90) days prior to the expiration of the then current assessment work year. After such termination, ASARCO shall not be obligated to make any further expenditures on Said Lands except as may be assumed by ASARCO pursuant to the agreement described in Paragraph 3 below.

(d) After ASARCO earns its fifty percent (50%) interest in Said Lands, as aforesaid, Kerr-McGee will have the option of contributing on a pro rata basis to the

JDS

ASARCO

Exploration Department

Frederick T. Graybeal
Chief Geologist

May 28, 1993

VIA FACSIMILE AND FEDERAL EXPRESS

Facsimile Number 405-270-3123

Mr. Harold Holmberg MT 2604
Kerr-McGee Corporation
Minerals Exploration Division
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

**Re: Operating Agreement dated October 1, 1972 (as
amended) Thunder Mountain Project Santa Cruz
County, Arizona (Your designation 02-007-0000)**

Gentlemen:

In accordance with the Operating Agreement dated October 1, 1972, as amended from time to time to and including the Eighth Amendment effective January 1, 1988, ASARCO Incorporated hereby gives notice of termination of the Operating Agreement as amended, in its entirety.

ASARCO Incorporated hereby notifies Kerr-McGee Corporation that ASARCO has not done annual assessment work for the assessment year commencing September 1, 1992; and has not made work program expenditures for exploration or development on the subject lands during the years commencing October 1, 1991 and October 1, 1992, and has not paid federal rentals on any of the Subject Land due August 31, 1993.

Within thirty days from date hereof, ASARCO will furnish to Kerr-McGee with a summary report of exploration operations, if any, conducted on the Subject Lands since the last annual report thereof.

- 2 -

ASARCO will upon request cooperate in executing additional documents, if reasonably necessary, to document the termination of the Operating Agreement as amended.

Sincerely,

F. T. Graybeal
F. T. Graybeal

FTG:dlc

cc: W. D. Gay - Tucson Office

cc: J.D. Sell (6/2/93)

ASARCO

Exploration Department

Frederick T. Graybeal
Chief Geologist

May 28, 1993

VIA FACSIMILE AND FEDERAL EXPRESS

Facsimile Number 405-270-3123

Mr. Harold Holmberg MT 2604
Kerr-McGee Corporation
Minerals Exploration Division
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Humbolt-Mendoza Claims
Thunder Mountain Project, Arizona

Dear Mr. Holmberg:

The Humbolt-Mendoza group of about 7 claims was held by Asarco for many years having been purchased from a local prospector named Joe Mendoza. These claims were made part of the project as part of the Eighth Amendment.

You should know that if you decide to retain these claims they carry a 2.5% NSR payable to Mr. Mendoza at production. Mr. William Gay in Asarco's Tucson Office can provide you with the details.

Very truly yours,

F. T. Graybeal
F. T. Graybeal

FTG:dlc

cc: W. D. Gay - Tucson Office

cc: J.D. Sell (6/2/93)

ASARCO

JDS
Southwestern Exploration Division

VIA FEDERAL EXPRESS

June 10, 1993

F.T. Graybeal
New York Office

Thunder Mtn. Claims

Enclosed are several copies of the claim map you requested.
If the map meets with your satisfaction you can forward a
copy to Mr. Holmberg of Kerr-McGee, or call me and I will
send him a copy.

WDG:mek
Enc. (4)

W. D. Gay
W. D. Gay

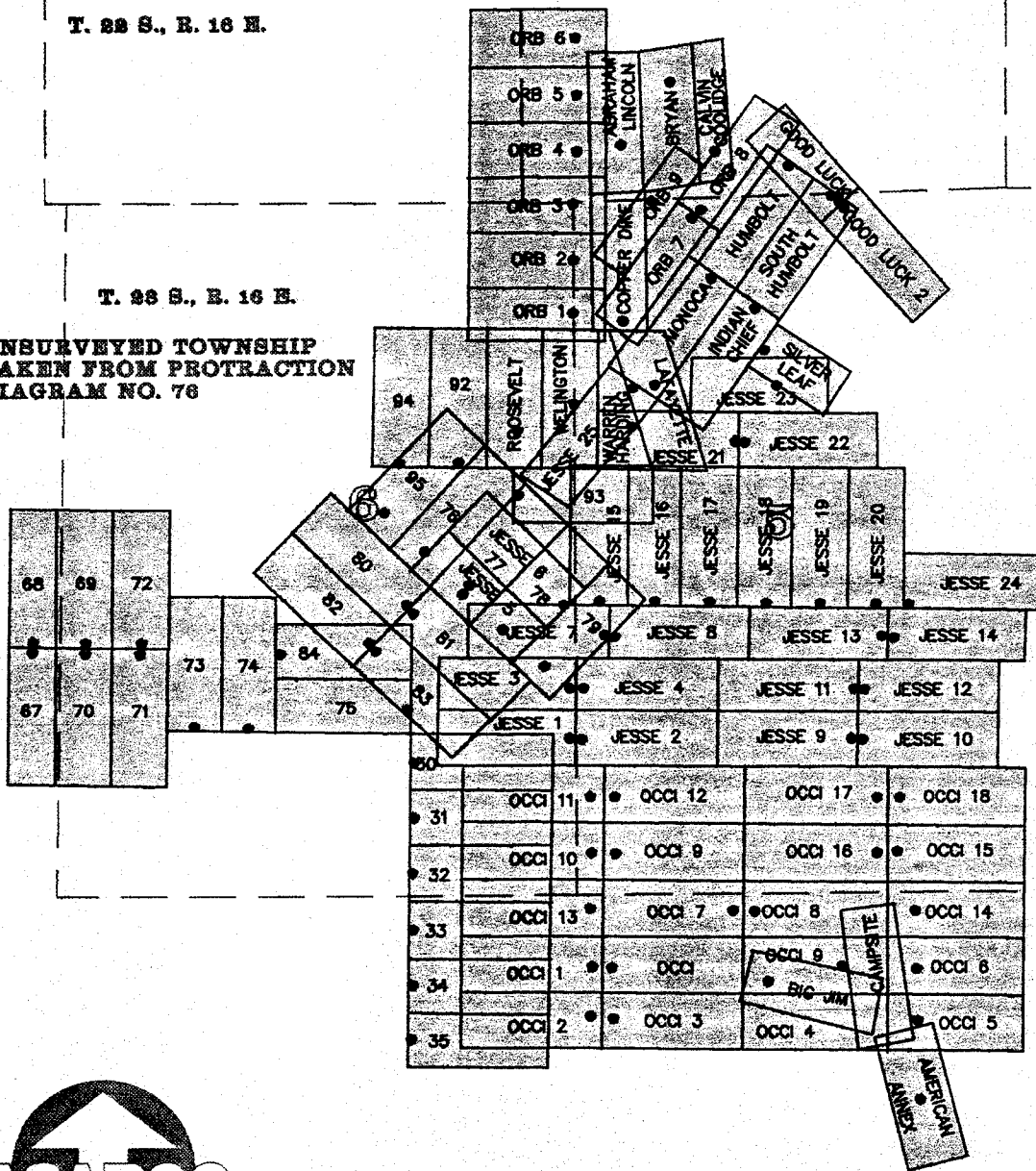
31

32

T. 22 S., R. 16 E.

T. 23 S., R. 16 E.

UNSURVEYED TOWNSHIP
TAKEN FROM PROTRACTION
DIAGRAM NO. 76



ASARCO EXPLORATION

THUNDER MOUNTAIN PROJECT CLAIM MAP

SANTA CRUZ COUNTY, ARIZONA

0 2000'

mn TM930601 TUC 06/04/93

Reports & Comments

ASARCO

FRK - Amy Lomant

SDS

Exploration Department

Frederick T. Graybeal
Chief Geologist

March 21, 1984

Mr. J. D. Sell, Manager
Southwestern Exploration Division
Tucson, Arizona

Sericite Alteration
Distribution of Hardshell Tuff
Thunder Mountain Project, Arizona

Dear Mr. Sell:

You may recall we discussed my 1972 mapping of the lapilli tuff in the diatreme when we were reviewing TM-14. I noted two aspects of the lapilli tuff of possible importance. The first was the distribution of sericite from outcrop and microscopic work which occurs throughout the lapilli tuff. This pattern distorts the geometry of the alteration zones by causing a substantial eastward bulge toward the Trench mine. Although the mica looks like sericite in thin section, it may be a poorly crystallized illitic clay-mica which formed by relatively cool groundwater alteration of glassy ash particles rather than as the silicate alteration component of the quartz-sericite-pyrite assemblage. In other words, the bulk of the sericite in the eastern part of the diatreme may not reflect pervasive hydrothermal alteration during a sulfide-mineralizing event. This conclusion receives some support by the instant cutoff of sericite (illite) at the diatreme - diabase contact just west of the Trench mine.

A second aspect of possible importance is an outcrop mapped as xenolithic quartz feldspar porphyry along the basal contact of the diatreme on the north side of the gully located 1000 ft. northwest of the Humboldt mine portal. I had a problem interpreting this outcrop and decided to lump it with part of the diatreme assemblage. Some of this uncertainty may be expressed on my field sheets and notes which you have. I did not cut any thin sections of this rock.

RECEIVED

MAR 27 1984

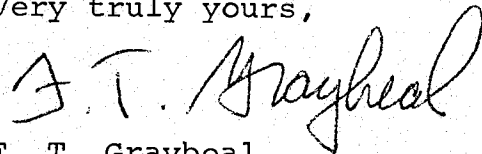
ASARCO Incorporated 120 Broadway New York, N.Y. 10271 (212) 669-1000
Telex: ITT 420585 RCA 232378 WUI 62522 Cables: MINEDEPART Telegrams: WU1-25991

S. W. U. S. EXPL. DIV.

The problem, as I recall, related to an apparent northeast-dipping foliation in the outcrop when viewed at 100-300 ft. distance which couldn't be documented at close range. I also recall the rock may have lacked xenocrysts, but probably discounted this due to variable mineralogy of the xenolithic quartz feldspar porphyry. The importance of this outcrop is that if it isn't part of the diatreme suite, it is likely part of the Hardshell volcanic suite which is otherwise terminated in outcrop southeast of the diatreme. An outcrop of Hardshell volcanics northwest of the Trench mine would mean the top of the underlying Paleozoic carbonate section could be as much as 4000 ft. nearer the surface than would be predicted from projection of dips in the Hardshell volcanics, or about 1000-1500 ft. deep.

The geometry of this speculation would be similar to that which must occur between the Hardshell silver deposit and TM-13. Based on dips in carbonate outcrops taken south of Hardshell the top of the Paleozoic section beneath the Trench mine should have been 8000-9000 ft. deep, but was in fact about 4000 ft. deep. The explanation for this is the presence of a concealed easterly-striking fault which brings the north side up. If the tuff outcrop northwest of the Humboldt mine is part of the Hardshell suite, there must be a second fault between TCH-2 and the tuff outcrop in question which again brings the north side up. Perhaps these upfaulted blocks were part of the caldera wall northwest of the moat that existed in the TM-13/TCH-2 area which now contains abundant flow-banded volcanic rocks below the Hardshell tuff.

Very truly yours,



F. T. Graybeal

cc: W. L. Kurtz

April 11, 1984

To: J. D. Sell

From: F. R. Koutz

Comments: Sericite Alteration -
Distribution of Hardshell Tuff
Thunder Mountain/Trench Projects
Santa Cruz County, AZ

I have read F. T. Graybeal's letter to you concerning the review of TM-14 core that you both did here in late February while I was field-tripping in the Mohave. I have a number of additional comments and questions concerning his ideas. I will also briefly mention my feelings on the volcanic stratigraphy in and north of the Chief Diatrema

Dr. Graybeal suggests that the distribution of sericite in the Trench-Mendoza-Thunder Mountain area is distorted to the east by the presence of the Chief Lapilli Tuff (see Map MVK 5332). I agree that it may be difficult if not impossible to distinguish between "deuteric" groundwater-volcanic-hot spring related illitic-clay/hydromica and sericite of the quartz-sericite-pyrite assemblage. X-ray diffraction work that I did in 1981 on TCH-2 showed both illite and sericite but also local montmorillonite-group clays in the lapilli tuff and underlying Hardshell Tuff Breccia. Sericite appeared to be the more common mineral in both rock types. Because of mixtures and overprinting of original lower-rank, illitic alteration by sericite in the later-stage phyllic-advanced argillic hydrothermal process the present amounts of these minerals do not give a good indication of all previous events. I believe that the major point that Dr. Graybeal was trying to make (at least in 1972) was the continuity of volcanism-intrusion with alteration-mineralization.

Probably as important as different times-alteration events on the present alteration assemblage are the differences in host rock composition and permeability. The lapilli tuff is much more permeable and therefore more totally reactive than the "diabase"--even though the diabase contains more mafic minerals. This is because alteration fluids in the diabase were largely constricted to fracture-fault-fissure zones including the amygdaloid top of the trachyandesite flows while fluids through the poorly consolidated, bedded Chief Lapilli Tuff soaked the lapilli.

I do not believe we are looking at a distortion of "apparent-sericitic" to the east in the diatrema as Dr. Graybeal suggested in his letter because the first 600' (400-1000' depth) of Hardshell Tuff Breccia in TCH-2

under the Chief Tuff is even more sericite > clay altered than the Chief (this could be due to more faulting in the Hardshell though)--see Fig. 3, TCH-2 report. The texture in the Hardshell here is often totally destroyed and the core is often plastic when wet! There are also considerable amounts of montmorillonite \geq sericite > kaolinite in the TCH-1 diabase but as Dr. Graybeal point out the diabase is less altered than the Chief Tuffs. Although there is undoubtedly some "mushrooming" of alteration within the Chief Diatreme I believe the surface alteration/mineralization and that in the upper portion of the holes are an excellent indication of what to expect at depth.

As to mystery outcrop 1000 ft. NW of the Humboldt Mine adit which could be part of the Hardshell Group, Dr. Graybeal has mentioned this to me several times before--first in Nov. 1980. I remember looking through his field sheets and notes when he sent them here in Aug. 1981 and I did not find a description of the type of outcrop he mentioned. I have last week read through his notes and maps carefully again and cannot find any specific mention of such an outcrop--although plenty of ruminating about the nature of the xenolithic quartz feldspar porphyry.

I have been on the north side of the diatreme several times south of World's Fair and even spent an hour last week looking around 1000' NW of the Humboldt adit without finding the specific outcrop. He could mean sample site 236 which he has marked as xeno QFP with penciled note: "better guess is qtz latite" (this 4000' NW of the Humboldt adit). This would only be a portion of the Cretaceous quartz latite porphyry which crops out 300' NW of No. 236. Perhaps a photograph is available or I could return the two field sheets which cover the area for an "x"-marks-the-spot?

Perhaps an even better idea is that the next time Dr. Graybeal comes to town we might have a mini-field symposium on the nature of the Chief Diatreme-tuff including looking at some core skeletons. Many of the units and boundaries of various mapping units appear to me (and others) to be obscure in the field. I have discussed xenolithic quartz feldspar problems a little in the Oct. 6, 1982 TM-14 report suggesting the term crystal lithic lapilli tuff for xenolithic QFP unless quartz feldspar porphyry intrusives have engulfed xenoliths of tuff or other rocks. Of course this grades into IBX-intrusive breccia or intrusion (wall rock) breccia of which both are present (at least in the holes I have logged).

In F. T. Graybeal's Aug. 24, 1973 report it is clear that he considers the XQFP the crystal-rich basal zone of one or more pyroclastic cycles, a phenomenon which has been well documented in many pyroclastic volcanic districts. I have not gone back and re-examined TR-10 but from F. T. G's drill log it is clear that the relationship of the XQFP being QFP with tuff xenoliths engulfed into it as he describes is the same as that encountered in TM-14 (555-650'). This XQFP phenomenon is entirely different than a basal crystal lithic lapilli tuff and XQFP should not be used for the latter as it only confuses the issue. Perhaps the confusing part in the field (especially trying to see through heavy alteration/surficial weathering) is that sometimes QFP probably intrudes basal crystal lithic

lapilli tuff units so that the appearance is one of complete gradation downward from extrusive tuff to intrusive porphyry. This phenomenon may also be confusing in core because of the limited lateral extent shown.

As to the outcrop in the field being Hardshell Group Volcanics this is totally possible although a megabreccia block might be more appropriate. I do not follow Dr. Graybeal's statement that "the Hardshell volcanic suite is terminated in outcrop NW of the Trench Mine." The complete (3700') Hardshell section including the Upper Breccia Units and Lower non-breccia (ash-flow tuff) units (type section: between the Hermosa Mine and Corral Canyon north of Mowry) was encountered in TCH-2 (as well as TCH-1 and TM-13). I also do not see how he brings the Paleozoic 4000 feet closer to the surface NW of the Trench Mine. It is fairly well known that the NW January-Norton-Hogan fault zone which extends from World's Fair to the Hardshell incline has a reverse component but there is no evidence of more than a few hundred feet maximum NE side up movement. I would not pay any attention to projecting dips on American Peak to the north because a large number of E-W and N-S faults bring the section both down and up to the north and have dropped it down to the east and west of the Hardshell Manto. This synvolcanic faulting also with some rotation was previous to the diabase and Chief tuff (which is why the lower Hardshell non-breccia units do not occur over the Paleozoic at the Hardshell Manto) and should have nothing to do with the diatrema area.

As I mentioned in my review of the World's Fair Mine (March 26) I believe that the flow-banded volcanics N and NW of World's Fair are part of the greater Hardshell Group. This would include the flow-banded Cretaceous quartz latite porphyry mapped by Graybeal (1973) north of the Chief Mine (see MVK 2626 and MVK 5332). This Kq1 unit of Graybeal's was previously mapped by Courtright (1951) as part of the Chief Conglomerate. This package of Cretaceous Volcanics (Kv of Simons, 1974 USGS Map I-762) includes tuffs, welded tuffs, volcanic conglomerates and breccia. North of World's Fair Mine these Cretaceous volcanics contain a fairly distinctive extrusive lava dome which extends northwest from north of the Trench Mine to north of the Flux Mine. The Cretaceous volcanic package underlies the basal trachyandesite of Meadow Valley ("diatrema") but is partially thrust over the diabase along the bottom of Alum Gulch and at the main haulage adit of the World's Fair Mine (see Simons).

Jim Quinlan has correlated Kerr-McGee's felsite-latite unit under the trachyandesite unit under Red Mountain (3000-5000' deep) with the Cretaceous volcanic package. He and I had agreed after examining the Red Mountain core, traversing Lower Alum Gulch to the Exposed Reef Mine during Red Mountain joint venture discussions in 1981 and visiting Hardshell-Hermosa during preparation for the 1981 AGS field trip to Red Mountain-Hardshell that the felsite-latite, Simon's Kv-la mapping units and the Hardshell breccia-ash flow tuff (including the latite porphyry sills or flows north of Hermosa) were part of the same volcanic sequence--essentially identical in style. Of course this leaves the problems with the Flux Conglomerates of Courtright (1951) which Simon's correlated with the upper Hardshell breccias (partially based on the presence of allochthonous limestone blocks

in the sequence at Flux and Hardshell) and with the Duquesne volcanics unresolved. However the Hardshell breccias, Simon's Cretaceous Kv-la units, and the felsite-latite of Kerr-McGee all dip NE at 20-50° while the Flux Conglomerates dip to the SW and according to Courtright are in angular unconformity below the Cretaceous latite porphyry-volcanics which we are now calling part of the Hardshell volcanic sequence.

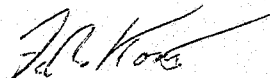
If you are completely confused by the above I suggest examining the various editions of mapping in the area. I believe it is worth 2 or 3 days of our time to examine a number of critical sections, outcrops and contacts in the field. There are a number of well-altered zones in and cutting across Alum Gulch between the Trench Mine and to NW of Flux which make a very interesting day's traverse. A profitable day could also be spent around the north rim of the diatreme from the Chief-World's Fair-Humboldt Mines and in Upper Alum Gulch. The area north and NW of Graybeal's mapping also deserves a complete district-scale recompilation and remapping extending onto Kerr-McGee's ground to the north.

The following maps have pertained to the Chief Diatreme area:

Courtright, J. H., 1951, Flux Geological Report (Map Tr-6-E100, 1"=500')

Graybeal, F. T., 1973, Sunnyside Area Report (Map MVK 2626 or MVK 5332 (FRK, 1982)-1"=1000')

Simons, F. S., 1974, Nogales and Lochiel Quads (USGS Map I-762, 1:48,000)


F. R. Koutz

FRK/cg

cc: WLKurtz

FTGraybeal

File Trench

~~File Thunder Mountain~~

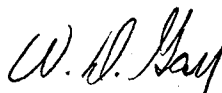
May 24, 1993

Mr. F. T. Graybeal
New York Office

Historic Asarco Mining
Activities
Thunder Mountain Project
Arizona

A review of the Tucson Office geologic files and the Trench files does not reveal any mining by Asarco other than the Trench and Flux areas which are presently under Asarco control (Patented & Unpatented Claims). Also, conversations with Mr. Norman Hale, Mr. Fran Kendall and Mr. Don Jamison indicate that Asarco did not mine any areas outside the Trench and Flux areas.

WDG:mek


W.D. Gay

cc: J.D. Sell

Claim Salvage.

February 7, 1985

TO: J. D. Sell

FROM: F. R. Koutz

Claim Salvage
Patagonia Mountains Projects
Santa Cruz Co., AZ

You have asked that I list the unpatented claims that should be saved from a general liquidation of our (+ JV) claim blocks in the Patagonia Mountains. I will not include any claims in the Hardshell Group as that property is now apparently the responsibility of the Mining Dept. Assessment work for some of the other Patagonia claims could be piggy-backed on Hardshell as was done, vice versa, in 1980-81 since all claims are contiguous.

The two main blocks of claims that should be preserved are the Humboldt-Mendoza Group (TCH-2 limestone replacement discovery) and surrounding 4 or 5 tiers of Thunder Mountain ("President" Group, Jesse and Orb) and east tiers of the 3-R Boot Group and those Ventura claims (W- series) over the breccia outcrop and downward projection (DDH V37-V38) to the west.

The Thunder Mountain Group of claims of the TM-Asarco Joint Venture in headwaters of Upper Alum Gulch including the Kerr-McGee DDH TM-1 - 7 area past the Thunder Mine and south, have no immediate mineral potential and could be dropped. I would hope that enough of the 3-R Boot Group could be preserved to protect the Sunnyside porphyry copper "discovery" (TR-10, 11, 14, 15) and keep up contiguity with the Flux Group which has potential for limestone replacement at depth beneath the volcanics. Those 3-R (Boot) claims north of the Ventura Group and Pierce option and southwest of Flux could probably be dropped.

In addition those Kerr-McGee Red Mountain claims northeast of the January-Norton-Trench group undoubtedly have limestone at 3000-4000 feet depth (maybe shallower if the January-Norton Shear zone has reverse movement and brings the Paleozoic up to the north) and might be considered for trades with Kerr-McGee. These Red Mountain claims and those in and north of Harshaw have Hardshell millsite potential also.

Please consult map mm 2617 dated June 73 (+ revisions) - Plate 12 1"=1000' "Claim map of the 3-R & Thunder Mtn Area" FTG-1973 Sunnyside report and Noranda Ventura claim map (5-1975) 1" = 400' No. 0820-B. The Argentor Claim Boundary Agreement (Asarco vs. World's Fair Syndicate) should also be consulted. The following claims cover or have a good chance of covering the Paleozoic and the Sunnyside Stock at depth.

SAVE:

Humboldt - Mendosa Group (7 claims): Good Luck, Good Luck 2, Humboldt, South Humbolt, Monica, Indian Chief, Silver Leaf.

President (8 claims): Abraham Lincoln, Bryan, Calvin Coolidge, Copper Dyke, Roosevelt, Wellington, Warren Harding, Lafayette.

Orb (10): Orb 1-10.

Jesse (24): Jesse 1-24 (those nearer Trench & Mendosa have priority)
(may be limestone under many of Jesse claims).

Thunder Mountain (16): TM 73-84, 92-95

OCCI Group (21): OCCI 1-18 + Big Jim, Campsite, American Annex
(possible limestone at depth).

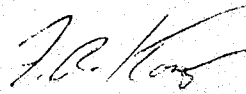
Boot (38): Boot 70-107 (priority several tiers next to Jesse & Orb).

Ventura (22): W139A-W142A, W131N-W138N, W143, W145N, W147, W164, W166, W168, W170, W172, W174, W176.

The above list ought to be checked by our property engineers for completeness. With the tangled groups and ownership of claims in the Mendosa area, I'm not sure the fractional claims could easily be restaked to larger sizes and fewer claims to cover the same ground.

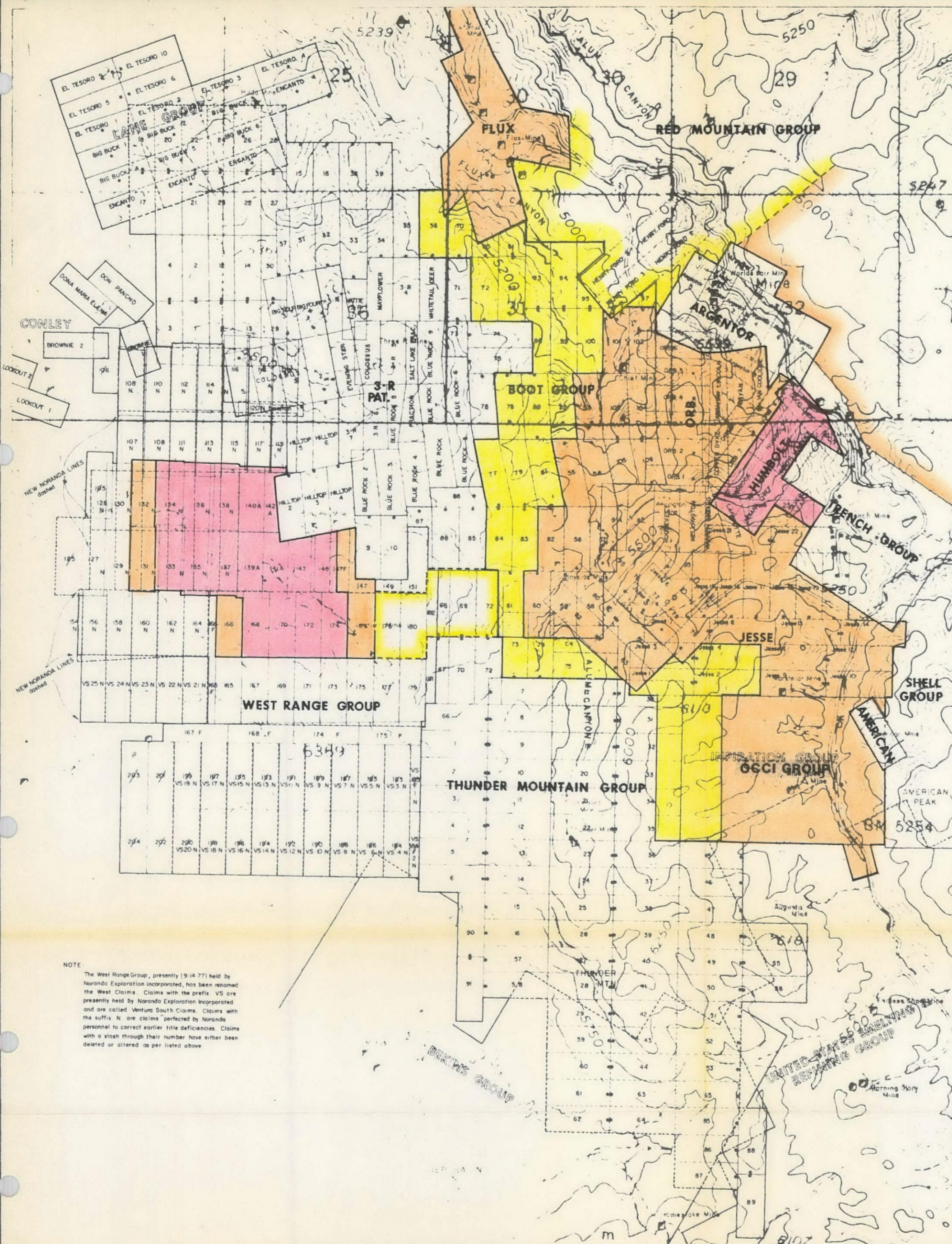
FRK:mek

Attachment: Reduced Map 2617



F. R. Koutz

cc: F. T. Graybeal, NYO
J. R. Stringham/W. D. Gay



EXPLANATION

- | | | |
|--|---|------------|
| | BEKINS GROUP | |
| | UNITED STATES SMELTING & REFINING GROUP | |
| | AMERICAN CLAIMS (B.W. HIGGINS) | |
| | OCCI GROUP | |
| | FLUX GROUP | |
| | SHELL GROUP | ASARCO |
| | TRENCH GROUP | |
| | THUNDER MOUNTAIN GROUP | KERR-MCGEE |
| | RED MOUNTAIN GROUP | |
| | 3-R & BOOT GROUPS | ANACONDA |
| | HUMBOLT GROUP | ASARCO |
| | ARGENTOR GROUP | LICHTY |
| | CONLEY CLAIMS | |
| | WEST RANGE GROUP | |
| | LANE GROUP | |
| | FIRST PRIORITY | |
| | SECOND PRIORITY | |
| | THIRD PRIORITY | |

CLAIM MAP OF THE 3-R & THUNDER MTN. AREA PATAGONIA DISTRICT SANTA CRUZ CO., ARIZONA

SCALE 1000'

COMPILED & DRAWN BY D.A.M.
REVISED BY F.R.K.

JUNE, 1973

JDS

FROM: J. D. SELL

5/14/85

TO: Fleet

While you are in town, you should:

1) Write up the Patagonia SEA for reentering TM-14 (3075'). (draft - I'll sign).

2) It appears that you will have 174 claims in the block.

3) With D Melhado, go down & check out road and find clues as to how DM can locate TM-14.



ASARCO

REGISTERED, RETURN
RECEIPT REQUESTED

Exploration Department

Frederick T. Graybeal
Chief Geologist

May 29, 1985

Mr. George Christiansen
Vice President, Exploration
Kerr-McGee Corporation
P. O. Box 25861
Oklahoma City, OK 73125

Thunder Mountain Project
Arizona

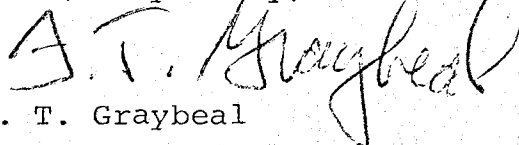
Dear Mr. Christiansen:

We believe that certain of the claims covered by the Agreement of October 1, 1972, between Kerr-McGee Corporation and ASARCO Incorporated, are not necessary for our needs. We, therefore, propose that 67 claims, as listed on Exhibit C, attached, be excluded from the agreement. Removing these claims would leave 93 claims as listed in Exhibit B, attached. A map showing all of the claims in the group with a yellow line around the ones we wish to keep is attached as well.

We don't propose any other changes to the agreement at this time. Except for assessment work, our work commitments for the next two years are covered by past expenditures.

If you agree to this arrangement, please have the attached amendment dated, executed and a copy returned to me.

Yours very truly,


F. T. Graybeal

bcc: J. D. Sell/J. R. Stringham

ASARCO Incorporated

JUN 3 1985

SW Exploration

SEVENTH AMENDMENT TO OPERATING AGREEMENT DATED
OCTOBER 1, 1972 BETWEEN KERR-McGEE
CORPORATION AND ASARCO INCORPORATED

WHEREAS Kerr-McGee Corporation, herein referred to as "Kerr-McGee" and ASARCO Incorporated, herein referred to as "Asarco" did on October 1, 1972 enter into an Operating Agreement in regard to certain mining claims located in Santa Cruz County, Arizona, being more particularly described in Exhibit A to said Operating Agreement; and

WHEREAS Asarco has determined that certain claims described in Exhibit A to said Operating Agreement are no longer necessary for Asarco's purposes, and Kerr-McGee and Asarco mutually agree that these claims, more particularly described in Exhibit C attached to this amendment, shall be excluded from said lands and those claims described in Exhibit B, attached, shall replace the claims described in Exhibit A, as if Exhibit B had been attached to the Operating Agreement dated October 1, 1972.

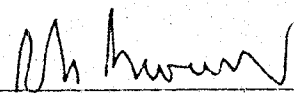
NOW, THEREFORE, Kerr-McGee and Asarco do hereby agree that the Operating Agreement, dated October 1, 1972, shall be amended by replacing the Exhibit A to that agreement with Exhibit B attached hereto.

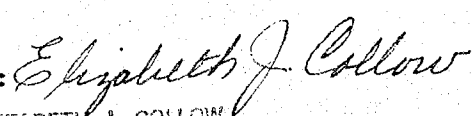
IN WITNESS WHEREOF, the parties hereto have duly executed this Seventh Amendment to Operating Agreement effective as of the _____ day of _____, 1985

KERR-McGEE CORPORATION

By: _____

ASARCO Incorporated

By: 
R. L. Brown, Jr., V.P.

ATTEST: 

ELIZABETH J. COLLOW

Notary Public, State of New York
No. 31-4297774

Qualified in New York County
Commission Expires March 30, 1987

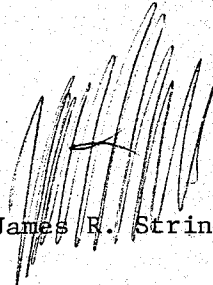
April 18, 1985

R. L. Brown
New York Office

Thunder Mountain Project

Attached are a letter to Kerr-McGee with lists of claims, a map and an amendment to the Operating Agreement. Would you please sign them if they are satisfactory and send them on to Mr. Christiansen? You might have Jim Woods check the legal language of the amendment, I paraphrased the language from former amendments.

Mr. Christiansen sounded favorable to the proposal over the telephone, but wanted to see the proposal first. It should be in his hands well before June 1.



James R. Stringham

JRS:mek
Att.

cc: J. D. Sell

ASARCO

Exploration Department
Southwestern United States Division

Mr. George Christiansen
Vice President, Exploration
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125

Thunder Mountain Project

Dear Mr. Christiansen:

We believe that certain of the claims covered by the Agreement of October 1, 1972, between Kerr-McGee Corporation and ASARCO Incorporated, are not necessary for our needs. We, therefore, propose that 67 claims, as listed on Exhibit C, attached, be excluded from the agreement. Removing these claims would leave 93 claims as listed in Exhibit B, attached. A map showing all of the claims in the group with a yellow line around the ones we wish to keep is attached as well.

We don't propose any other changes to the agreement at this time. Except for assessment work, our work commitments for the next two years are covered by past expenditures.

If you agree to this arrangement, please have the attached amendment signed, executed and a copy returned to me.

Sincerely yours,

R. L. Brown, Jr.
Vice President

cc: J. D. Sell

THUNDER MOUNTAIN PROJECT

Kerr-McGee Agreement

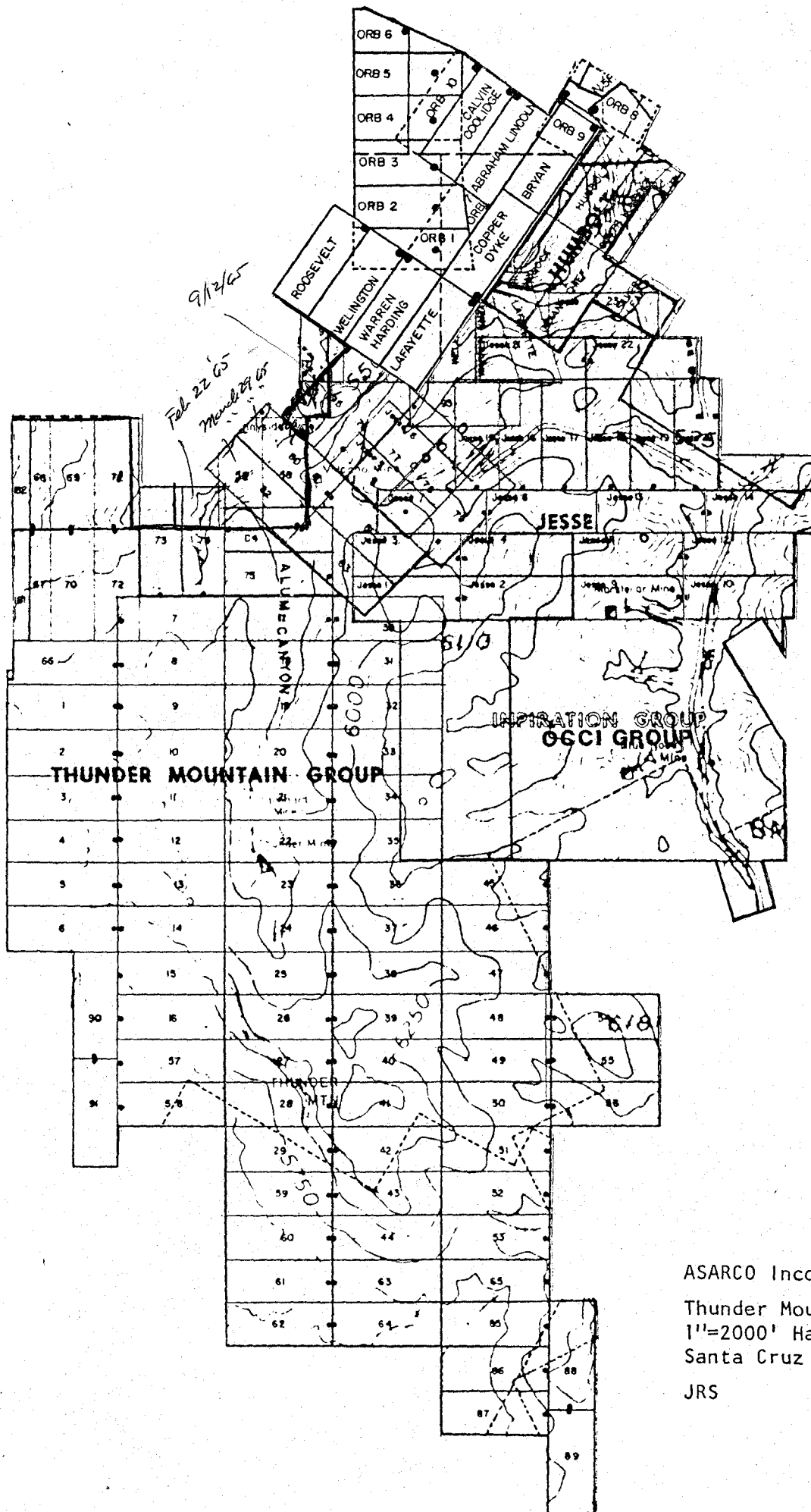
Claims to be relinquished - 67

Name of Claim

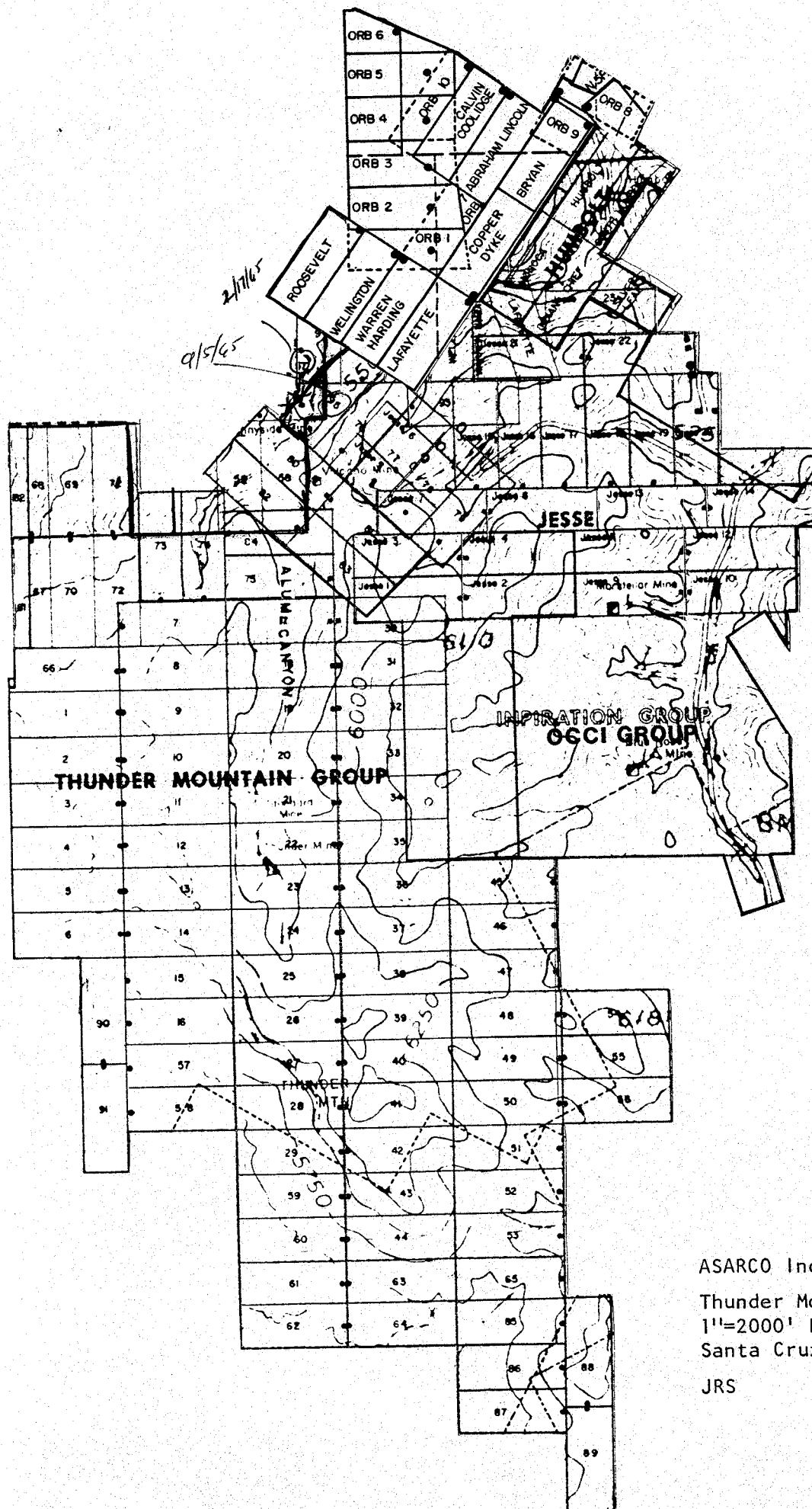
TM 1-29
TM 36-66
TM 85-91

AMC
BLM Serial No.

32905-32933
32940-32970
32989-32995



ASARCO Incorporated
 Thunder Mountain Group
 1"=2000' Harshaw Dist.
 Santa Cruz Co., Arizona
 JRS mn6156 4/85



ASARCO Incorporated
 Thunder Mountain Group
 1"=2000' Harshaw Dist.
 Santa Cruz Co., Arizona
 JRS mn6156 4/85

SEVENTH AMENDMENT TO OPERATING AGREEMENT DATED
OCTOBER 1, 1972 BETWEEN KERR-McGEE
CORPORATION AND ASARCO INCORPORATED

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WHEREAS Asarco has determined that certain claims described in Exhibit A to said Operating Agreement are no longer necessary for Asarco's purposes, and Kerr-McGee and Asarco mutually agree that these claims, more particularly described in Exhibit C attached to this amendment, shall be excluded from said lands and those claims described in Exhibit B, attached, shall replace the claims described in Exhibit A, as if Exhibit B had been attached to the Operating Agreement dated October 1, 1972.

NOW, THEREFORE, Kerr-McGee and Asarco do hereby agree that the mining claims described in Exhibit B hereby replaces those claims in Exhibit A of the Operating Agreement, dated October 1, 1972.

IN WITNESS WHEREOF, the parties hereto have duly executed this Seventh Amendment to Operating Agreement effective as of the _____ day of _____, 1985.

KERR-McGEE CORPORATION

By: _____

ASARCO Incorporated

By: _____
R. L. Brown, Jr., V.P.

ATTEST:

THUNDER MOUNTAIN PROJECT
Kerr-McGee Agreement

EXHIBIT B

Claims to be kept - 93

<u>Name of Claim</u>	<u>AMC BLM Serial No.</u>
TM 30-35	32934-32939
TM 67-84	32971-32988
TM 92-95	32996-32999
Wellington	33769
Lafayette	33770
Bryan	33771
Copper Dyke	33772
Warren Harding	33773
Abraham Lincoln	33774
Calvin Coolidge	33775
Roosevelt	33776
Jesse 1-23	32307-32329
Jesse 24	137599
Orb 1-6	32501-32506
Orb 7-10	192265-192268
OCCI	33746
OCCI 1-19	33747-33765
Big Jim	33768
Campsite	33767
American Annex	33766

July 85

Claims Retained : Patagonia Area

3R - 49

Treacher Mts - 93

Ventura - 32

174 claims contiguous ; \$17,400/year

+ 7 Treach (Mendocino) assessment

181

TM-14 @ 3075'

Drill Hole Data

ASARCO

Southwestern Exploration Division

JDS

July 26, 1985

To: F. R. Koutz

From: J. D. Sell

TR & TM Drill Holes

Prepare a map showing all TR and TM drill holes and a summary log of each drill hole. No assays on TR holes but give all assays on TM holes. This goes to Quinlan.

JDS:mek

J. D. Sell, mek
J. D. Sell

NO need to type

JD Sell

Thunder Mtn
Arizona

Mr. Graybeal called and requested

That Asaro send Jim Quilan & Ken McGee

① a location map showing only the TM holes
and the 4 deep 3R holes (the ones near TM-8)

② Assay data of TM holes

③ Summary log of TM holes (if we don't have them
have Koutz make a one page or less summary ^{for each hole})
something like - 0 - 1000 purphy; gtz-scarite - pyrite
1000 - 3500 purphy gtz-scarite w/ traces cpy
3500 - 5000 purphy cpy, py scarite, K spar
1

FRK
says
done!

May 15, 1989

FILE NOTE

Thunder Mountain Project
Santa Cruz County, AZ

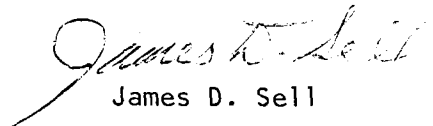
New addresses, telephone numbers for Kerr-McGee and report titles.

Mr. W.K. John is now:

Sr. Staff Landman
phone: 405/270-3326

Reports, etc. should now be sent with copy to
W.K. John, to:

Mr. L.A. Robbennott
Manager of Mineral Lands
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125
phone: 405/270-3975.


James D. Sell

JDS:mek

cc: W.L. Kurtz
W.D. Gay
M.E. Kavanagh

ch Amend & H-m to find out what
we need to do. only assessment work to do
1991 need to find out what has been spent since 1988
Write letter > see Amend & in line of quantity.
Assessment of 1989 (ending Sept 1) completed
for: 3R (ASACCO ^{only} owned).
Thunde Mts
Hamboldt et al. (w/ H-m)
Venturo (non-land).

TM-14 casing separation @
Shore off wedge @ 4021
hole problem ~~4586~~ 4587 T.D. (?) core band bit lost

Need band form to H-m?!

180,000

105 lin mil

244,000

BVO add 4000
 Yarnell Weave 41,000 total add 2 to Weave
 yellow jct add 8000
 Oche add 18,000
 Grafield add 8000
 Plomexes ~~4~~ add 21,000

July	Aug	Sept	Oct
trns < B 13 14 15 16	810 B 11 B12 1 16	1 10 2, 3, 4, 5, 6	7, 8 9
700	800	650	850
950	800	850	700
550	600	1400	800
550	500	700	2350
2200	3350	1250	
		4200	
\$71,500	109,000	139,500	70,500

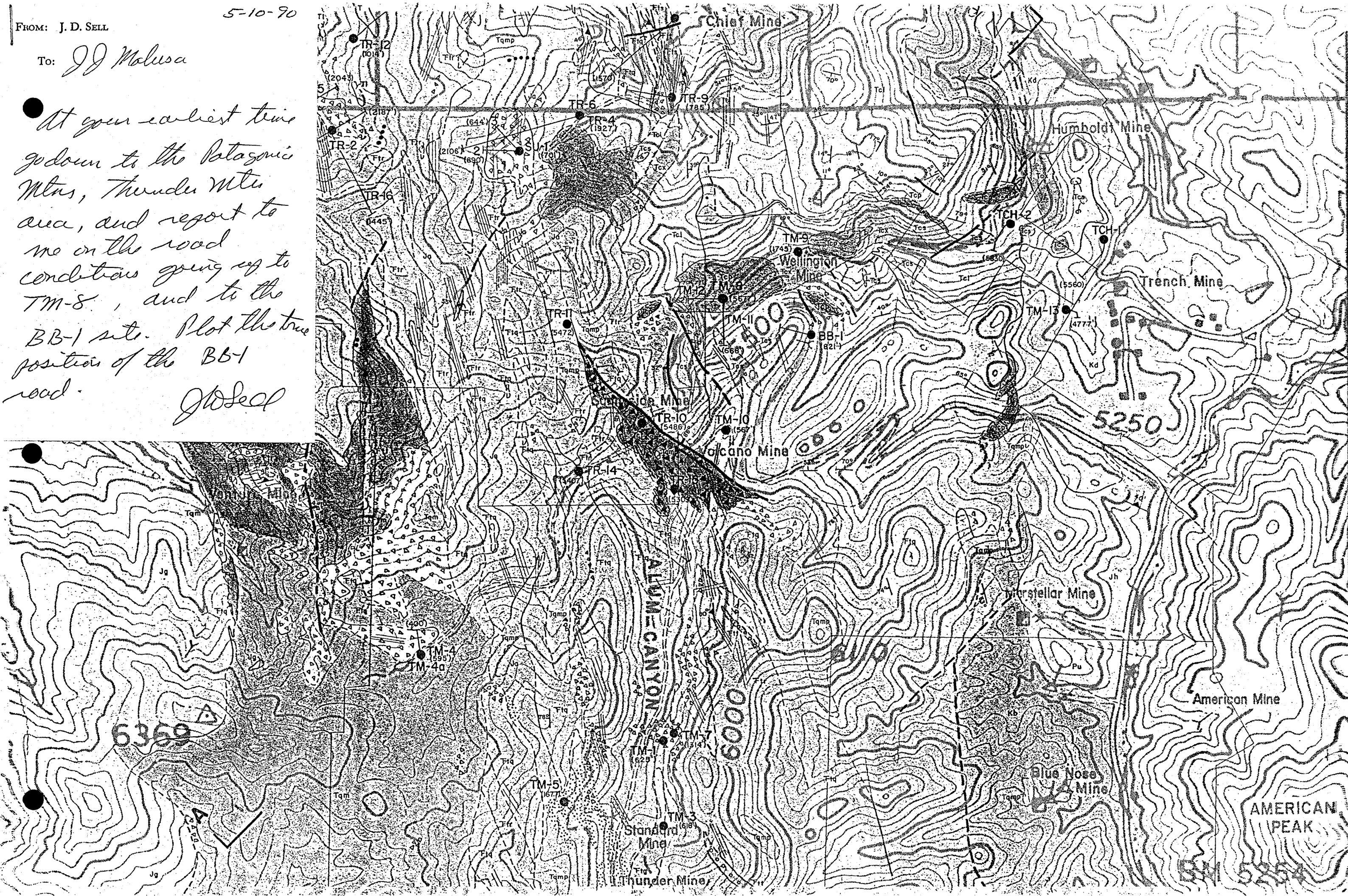
6x500x20

5-10-90

FROM: J. D. SELL

To: JJ Molusa

At your earliest time
go down to the Patagonia
Mtns, Thunder Mtn
area, and report to
me on the road
conditions going up to
TM-8, and to the
BB-1 site. Plot the true
position of the BB-1
road.
JDSell



May 14, 1990

J.D. Sell

Thunder Mountain
Patagonia Mtns.
Santa Cruz Co., AZ

Upon your request I went to the Patagonic Mountains, Thunder Mountain area, and checked out the locations and road conditions going to drill sites TM-8 and BB-1. Locations and road conditions are color coded on Attachment A.

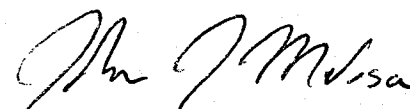
The road to TM-8 is passable with a drill rig its entire length, from the Flux Canyon Road intersection to the end of the road (1.1 miles).

JJM:mek

Attachments:

Road Log BB-1

Attachment A (map)



John J. Malusa

Thunder Mountain
Patagonia Mountains
Santa Cruz Co., AZ

Road Log BB-1

0.0 miles - Begin odometer at the intersection of the "Thunder Mtn. Road" and the Harshaw/Lochiel Road.

0.0 to 0.4 miles - Numerous gullies and boulders in the wash. Should be able to fix road with aid of bulldozer, otherwise impassable by drill rig.

.75 miles - Two piles of dirt washed down from upper embankment causing road to slant off side of hill. Needs bulldozer work, otherwise impassable by drill rig.

1.1 miles - Intersection of drill road BB-1 with main road. Starts at a saddle in the first main ridge crossed. Road to BB-1 mostly good enough for drill rig except for the very end where it gets too skinny and slants off the side of the mountain.

Both roads are overgrown with brushy material; however, it is light brush that can be driven through without the use of chain saws.


The road to BB-1 could be fixed with a day or less work with the use of a bulldozer.

3.3 MI. TO ARI


T. 22 S.

T. 23 S.


27'30"




roads not printed
on topo



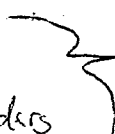
bad slant on road



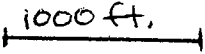
gullies and big boulders



Harshaw to Lochiel Road



needs
road work



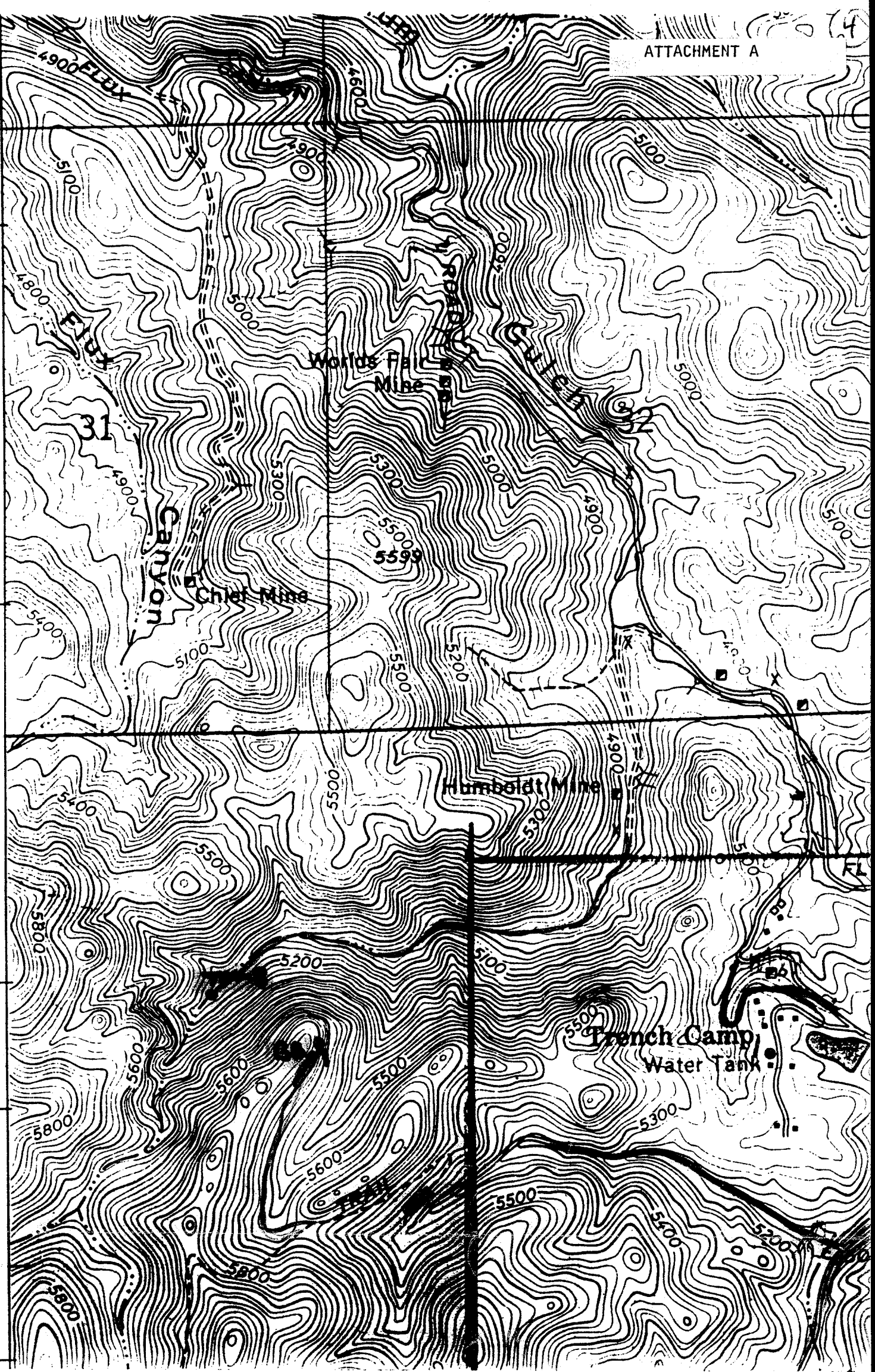
1000 ft.

HARSHAW, ARIZ.
NW/4 LOCHIEL 15' QUADRANGLE
N3122.5—W11037.5/7.5

1958

Flux Canyon Rd.

Attachment A





JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

May 24, 1990

James D. Sell
ASARCO, Inc.
P. O. Box 5747
Tucson, AZ, USA 85703

Dear Jim:

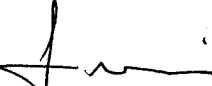
Do you have a project where immediate determination of the metal content of a rock face or sample is of importance? If you do, our service will be helpful to you. In January, JABA, Inc. became a representative for Scitec, who manufactures the MAP III Portable XRF Analyzer. This spring, we have started providing professional services using the MAP on a daily basis, for short term projects that do not justify purchase of the MAP unit.

As explained more fully in the enclosed news releases, the MAP can analyze for silver (down to about 1/4 oz.) and a variety of base metals, using either a down-the-hole probe, or the face scanner, useful in determining metal content in drill core, veins, mine faces, muck piles, metallurgical pulp streams, etc.

I think the MAP is a wonderful geologic tool because it can be used in a variety of ways. By holding the face scanner in one position, the MAP will analyze a small portion of rock about the size of a quarter to perhaps a silver dollar, giving the geologist the ability to tell what rock or vein type is actually carrying metal values. In the scanning mode, the face scanner can be moved over a rock face in order to get an average value for a large area. The MAP is also very rapid. Analyses take from between 15 seconds to 6 minutes, depending on the results desired by the geologist. For a drilling project, drill cuttings or core can be analyzed with the results available before the next interval is drilled. The MAP does not analyze for ore grade levels of gold yet, but I hope to be field testing a gold face scanner this summer that will.

Please review the enclosed releases, and if you have an application for the MAP, please give us a call. In addition to service work, we also sell and do the training for the MAP. If you have any questions, don't hesitate to call, toll free, at (800) 999-2348.

Very truly yours,


James A. Briscoe
JAB/mas

home office ph. 721-1375

6/6/90

Jim will send brochures
charges \$400/day + \$125/day interest
Perhaps can scan 1000-1500' / day
Thinking of using it on test-run
on TM-bucket breccia zone.



JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

NEWS RELEASE
(For Immediate Release)

ASARCO Inc.,

MAY 25 1990

SW Exploration

*For more information,
contact Jim Briscoe
at 1-800-999-2348*

**IN-SITU ANALYSES PERFORMED
With MAP III Portable XRF Analyzer**

March 29, 1990. JABA, Inc., a Tucson, Arizona based geologic consulting firm, headed by Jim Briscoe, a Registered Professional Geologist in Arizona and California, is now performing, on a daily, weekly, or monthly basis, in-situ analysis on exploration, drilling or mining sites. JABA, Inc. is using the Metal Analysis Probe III (MAP III) Portable X-ray Fluorescence (XRF) Analyzer (introduced last summer), a hand-held, multi-element probe, which performs quantitative analysis for silver and base metals and many trace elements, including those elements associated with gold. The in-situ analysis can also be performed in drill holes to 250 feet or greater. Combining the MAP analyses with Rockware's LOGGER, graphics drill hole log computer software, JABA, Inc. can provide an on-site graphic, geologic, alteration, mineralization and multi-element analysis log of the drill hole, within a few minutes of the last sample coming out of the bottom of the completed hole.

As previously released, "...the MAP III Analyzer is a exciting new decision tool in the field of quantitative analysis in all phases of the metals exploration, mining and extraction industries." The prospector-explorationist, can now have on-site, real-time analyses performed for their required assessment work, within the required expenditure amount, which ultimately will attain the long-term goals for mineral discovery and ore reserve generation. There is no sample preparation or special handling required, and each analysis takes an average of one minute.

For large company explorationists, with properties in the exploration/drilling phase, the MAP III saves substantial amounts of time, labor and money in the drilling program by real-time analysis during drilling and helping to define surface mineral zones quickly. For those in the mining phase, MAP III can help in ore control, i.e., identifying ore that is overlooked or missed and sent to waste, and amounts of waste mined and accidentally sent to the mill. For the metallurgist, MAP III can help in process control.

JABA, Inc. is providing these MAP III analytical services on a daily, weekly or monthly basis for those individuals or companies who don't wish to purchase the MAP III, but still would like to have the availability of its occasional use. JABA, Inc. was recently appointed by Scitec Corporation, of Kennewick, Washington as a U.S. Marketing Representative to sell the MAP III, and provide training and application consulting. Parties interested in more information regarding JABA, Inc.'s availability to perform in-situ analyses should contact Jim Briscoe at (800) 999-2348, or (602) 885-9141, FAX (602) 721-2768.

#

[illegible]

SUB TOTAL 2835⁰⁰

[illegible]

SUB TOTAL 2385⁰⁰

[illegible]

SUB TOTAL 2255⁰⁰

[illegible]

SUB TOTAL _____

[illegible]

SUB TOTAL 500.00

TOTAL 7975

August 2, 1990

J.D. Sell

J.J. Malusa
Monthly Report
July 1990*much better*Yarnell Project, Yavapai County, AZ - EA-0444

Completed reports pertaining to XRD work performed on green clay mineral and whole rock analysis of altered footwall granite. The green clay mineral was determined to be nontronite, an Fe rich montmorillonite. While the whole rock data suggests an introduction of potassium and a depletion in sodium in altered granite with respect to unaltered granite.

Thunder Mountain Project, Santa Cruz County, AZ - EA-0042

Arranged for road maintenance; excavation of mud pits and drilling supplies (i.e. wood blocks, marking pens, storage trailer and core boxes). Got drillers started on hole BB-2 which is located on the same drill site as TM-8. The hole is orientated S45°W34° and has been drilled to a depth of 446 feet as of July 31. So far the rock consists of a quartz feldspar porphyry that is highly sericitized with pyrite and chalcocite. Below 352 feet there is a different unit. This unit is a xenolithic quartz feldspar porphyry that contains less sericite and is more siliceous.

Ventura Project, Santa Cruz County, AZ - EA-0165

Same as Thunder Mountain project with the exception that drillers are working on hole V-39 which is located on the same drill site as V-1, 2, 3, & 4. The hole is vertical and has been drilled to a depth of 210' as of July 28th. So far rock encountered consist of a highly oxidized altered granodiorite down to 69 feet. From 69 to 81 feet there is an oxidized andesite dike which is underlain by a brecciated zone (81 to 82 feet). From 82 to 210 the rock is vuggy unoxidized and contains up to 10% pyrite.

Expenditures for both drill holes BB-2 and V-39, as of July 25, and their locations are shown on the attachments.

<u>Field Days</u>	<u>Office Days</u>	<u>Expense Account</u>	<u>Vehicle Expense</u>
July 12	8	\$274.27	\$700.00
YTD 60	80	\$3,175.17	\$2,413.00

JJM:mek


John J. Malusa

ET DRILLED
2-12 rotary
12-16Z

[illegible]

SUB TOTAL 2835⁰⁰

MENTING
CONDITIONING
SING
overburden drilling
road work

[illegible]

SUB TOTAL 2385⁰⁰

Hourly Work

[illegible]

SUB TOTAL 2255

TRUCK RENTAL
CLEANING
TENS OF THOUSANDS OF GALLONS OF WATER

[illegible]

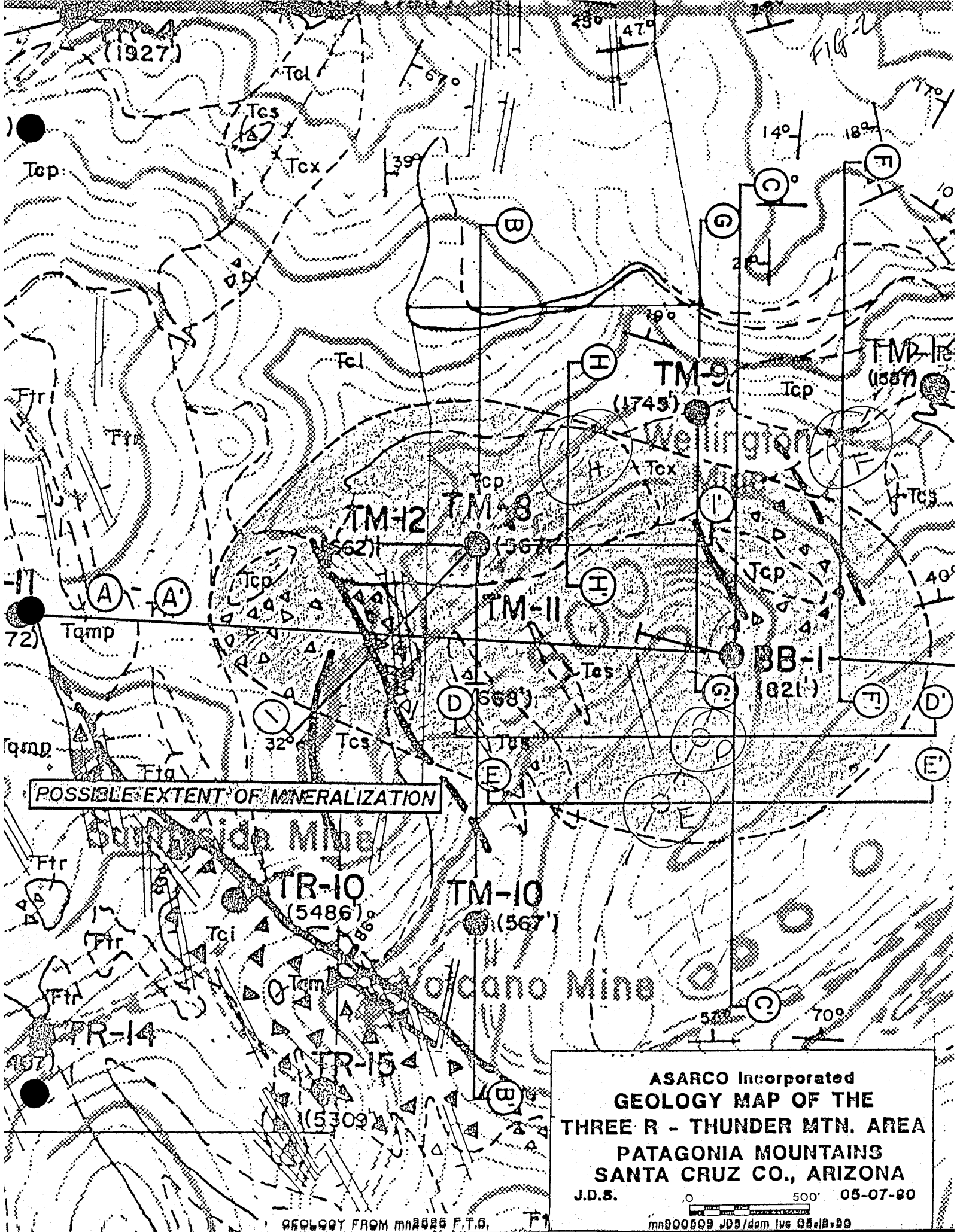
SUB TOTAL

ISC.
Mobilization

[illegible]

SUB TOTAL 500.

TOTAL 7975



ASARCO Incorporated
 GEOLOGY MAP OF THE
 THREE R - THUNDER MTN. AREA
 PATAGONIA MOUNTAINS
 SANTA CRUZ CO., ARIZONA

J.D.S. 0 500' 05-07-80

GEOLOGY FROM mn2029 F.T.G.

mn900599 JDS/dam lvs 05-12-80

ASARCO

JDS
Southwestern Exploration Division

June 26, 1991


Al Cooper
Mission Unit

TM-11 Drill Data
Patagonia Mountains
Santa Cruz County, AZ

I'm pleased to send you a copy of the geologic log and assays from the drill hole TM-11.

We drilled 4 new holes from that site this past year and sealed off the artesian water encountered, as well as cementing and capping the holes. The TM-11 was left with the water valve cap, so you may continue to sample it as needed.

JDS:mek
Att.


James D. Sell

cc: W.L. Kurtz (w/o att.)

July 15, 1992

Jim,

In early July we received approximately 100 boxes of Thunder Mountain core. These boxes include, TM-1, boxes 1-66 (12' thru 624.7'), TM-5, boxes 37-79 (1277' thru 1677') and skeletons of TM-6, TM-1, TM-5 and TM(log 9). All this core is presently being stored in container number 1, right hand bay 4 and 5.

Don

July 15, 1992

The following is a list of core presently being stored in the four containers at the Ventura warehouse.

CONTAINER 1:

LEFT BAY 1: BB-7, BB-6
LEFT BAY 2: BB-6, BB-5
LEFT BAY 3: BB-5, BB-4
LEFT BAY 4: BB-4, BB-3
LEFT BAY 5: BB-3, BB-2
LEFT BAY 6: BB-2

RIGHT BAY 1: EMPTY
RIGHT BAY 2: BB-7
RIGHT BAY 3: SKELETON HOLE 2 BOXES 2-7
RIGHT BAY 4: TM-5 SKELETON BOXES 1-2
TM-6 SKELETON BOXES 1-5
TM(LOG 9) SKELETON BOXES 1-3
TM-1 SKELETON BOXES 1-2
TM-5 1277'-1677'
RIGHT BAY 5: TM-5 CONT.
TM-1 12'-624
V-39
RIGHT BAY 6: V-39

CONTAINER 2:

LEFT BAY 1: RW-5 SKELETON BOXES 1-5 0-2502'
A-1 SKELETON BOXES 1-5 0-2127'
A-10 SKELETON BOXES 1-7 23'-2037'
QDC-5 SKELETON BOXES 1-6 0-4409'
LEFT BAY 2: AH-4 ROTARY BOXES 1-7 0-1966'
AH-4 SKELETON BOXES 1-2 1940'-2807'
M1A SKELETON 2916'-2926'
AH-5 SKELETON BOXES 1-2 0-894'
AH-2 ROTARY BOXES 1-2 0-1995'
AH-2 SKELETON BOXES 1-3 2019'-3781'
A-16 SKELETON BOXES 1-10 2454'-3808'
A-16 4127'-4177'
A-13 SKELETON 1
A-6 ROTARY BOXES 1-2 0-1655'
AH-1 ROTARY BOXES 1-2 0-1690'
AH-1 SKELETON BOXES 1-3 1710'-3863'
AI-1 ROTARY BOXES 1-3 0-2766'
AI-1 SKELETON BOXES 1-6 2800'-3967'
AI-2 SKELETON BOXES 1-5 0-2740'
M-1 SKELETON BOXES 2-8 0-2402'
LEFT BAY 3: A-2 4079'-4504'
A-2 SPOT CORE 2559'-4080'
A-2-W SKELETON BOXES 1-3 4230'-4940'
A-2-W 4230'-4940'

LEFT BAY 4: A-4 4989'-6287'
 LEFT BAY 5: A-4 3513'-4928'
 LEFT BAY 6: A-4 4938'-4989'
 AI-2 SKELETON 2842'-3612'
 A-15 SKELETON BOXES 1-17
 A-15 3608'-4159'
 RIGHT BAY 1: NC-EMPTYES
 RIGHT BAY 2: A-8 SKELETON BOXES 1-10 24'-2621'
 A-9 SKELETON BOXES 1-8 0-2186'
 A-3 SKELETON BOXES 1-10 0-6808'+TUFF
 A-10 2747'-2821'
 A-10 SKELETON 2822'-3339'
 RIGHT BAY 3: A-8 3225'-4907'
 A-10 2251'-3881'
 RIGHT BAY 4: A-10 3881'-4289'
 A-9 SKELETON BOXES 1-4
 2186'-2352', 3400'-3669'
 A-9 2878'-4903'
 RIGHT BAY 5: A-4 6287'-6664'
 A-4 SPOT CORES 2708'-10', 2716'-21',
 2734'-37'
 A-4 3602'-3641'
 A-4 ROTARY BOXES 1-5 0-3599'
 A-5 ROTARY BOXES 1-4 40'-3265'
 DCA-1A SKELETON BOXES 1-19 4002'-5813'
 RIGHT BAY 6: DCA-2 SKELETON 1352'-1901'
 DCA-2A SKELETON 1910'-2422'
 DCA-3 5144'-5154'
 DCA-3A SKELETON 2980'-4800'

CONTAINER 3:

LEFT BAY 1: A-13 1716'-2775'
 LEFT BAY 2: A-13 3530'-4656'
 LEFT BAY 3: A-13 3062'-3530'
 A-15 SKELETON 0-590'
 A-15 4186'-4699'
 LEFT BAY 4: A-14 SKELETON BOXES 1-6 1534'-3978'
 A-14 2232'-2897'
 LEFT BAY 5: A-14 ROTARY BOXES 1-3 0-1535'
 A-14 2956'-3724', 5231'-5738'
 LEFT BAY 6: A-14 3978'-5231'
 RIGHT BAY 1: A-13 2775'-3062'
 A-13 SKELETON BOXES 1-5 0-3062'
 A-16 SKELETON BOXES 4-7 1028'-2231'
 A-12 5452'-5724'
 RIGHT BAY 2: A-12 4217'-5452'
 A-12 SKELETON BOXES 1-5 2754'-4217'
 RIGHT BAY 3: A-11 SKELETON BOXES 1-12 12'-3479'
 A-11 3479'-5167'
 RIGHT BAY 4: A-7 SKELETON BOXES 1-8 3157'-4679'
 A-7 4679'-6042'
 A-12-A 4093'-4240'

RIGHT BAY 5: M-1A SKELETON BOXES 1-5 2400'-3340'
M-1A 3340'-5322'
RIGHT BAY 6: EMPTY

CONTAINER 4:

LEFT BAY 1: EMPTY
LEFT BAY 2:
LEFT BAY 3:
LEFT BAY 4:
LEFT BAY 5:
LEFT BAY 6:

RIGHT BAY 1: EMPTY
RIGHT BAY 2: NCP-1 766'-1553'
RIGHT BAY 3: NCP-1 0-766'
RIGHT BAY 4: EMPTY
RIGHT BAY 5: A-16 4250'-5212'
RIGHT BAY 6: A-16 3118'-4250'

GEOLOGIC LOG

PROJECT THUNDER MOUNTAIN

PROJECT THUNDER MOUNTAIN

HOLE NO. 13B-8

Collar elev. _____

Final depth 600'

Coord N. 1710, 100

Coord E. 865, 485

Inclination 5, 140

Page 1 of 2

Logged by H. J. Downey

Date start _____

Date finish _____

NOTE:

% RQD = % Pieces > 4" LONG IN 10' RUN

DEPTH			% CORE RECOV.	ASSAY					ORE					GANGUE & ALTERATION MINERALS					STRUCTURE			ROCK TYPE AND REMARKS											
from	to	interval		Cu	Ag	Ag	Al	Ag	CHALCOPRITE	COVELLITE	CHALCOPRITE	SPHALERITE	ENARGITE						FAULTS	FRACS. PER FT	% RQD												
0	8		NO CORE	—	—	—																											
8	10		95	.07	.04	3.8			Tr	Tr	0.1		0.1?											5	30	5	10			3	50	8 - QUARTZ FELDSPAR PORPHYRY - light gray, intensely	
10	20		98	.14	.03	1.1			Tr	Tr	0.1													5	30	5	10			2	85	altered giving rock a tuffaceous appearance - could	
20	30		100	.06	.03	.9			Tr	Tr	0.1													5	30	5	10			2	90	be called a quartz eye tuff - pyroclastic and	
30	40			.07	.02	1.0			Tr	Tr	0.1													5	30	5	20			2	85	has been predominant. Nil quartz veining. Disseminated	
40	50			.14	.02	1.0			Tr	0.1	0.1													5	30	5	20			1	85	pyrite blebs to 3 mm dia with minor associated	
50	60			.07	.03	2.8			Tr	0.1	0.1													5	30	5	20			1	95	chalcocite. Trace bornite and some pyrite grains	
60	70			—	—	—			0.1	0.1	0.1	0.1												5	30	5	20			1	90	are coated blue/black (covellite/chalcocite?). Fine	
70	80			.05	.02	1.6			0.1		0.1													3	30	5	20			1	95	grained black disseminated mineral may be enargite	
80	90			.12	.02	4.1			0.1		0.1													3	30	5	20			2	90	(Rosa Corn communication)	
90	100			.11	<.02	4.8			0.1	0.2	0.1													3	30	5	20			1	90	Chalcocite increases below 180. Strong	
100	110			.20	<.02	8.4			0.1	0.2	0.2													3	40	5	20			3	70	cpy 200-210	
110	120			.13	.02	8.9			0.1	0.2	0.2													3	40	5	20			2	70		
120	130			.07	.04	4.1			0.1	0.2	0.2													3	40	5	20			1	95		
130	140			.13	.03	7.5			0.1	0.1	0.1													Tr	3	40	5	20			1	90	
140	150			.17	.02	5.3			0.1	0.1	0.1													Tr	3	40	5	20	3		1	95	
150	160			.38	.02	6.4			0.1	0.1	0.2													Tr	5	40	5	20	3		1	90	
160	170			.27	<.02	10.0			0.1	0.1	0.2													Tr	5	40	5	20	1		1	95	
170	180			.51	.02	16.0			0.1	0.1	0.2													Tr	5	40	5	20	1		1	95	
180	190			.56	<.02	7.6			0.2	0.1	0.3													3	60	10	20	1		2	75		
190	200			.27	<.02	5.8			0.2	0.1	0.4													3	50	10	20	1		1	90		
200	210			1.35	.03	18.0			0.2	0.1	0.5													Tr	3	50	10	20	1		1	90	
210	220			.09	<.02	8.3			0.2	0.1	0.4													Tr	3	50	10	20	1		1	90	
220	230			.11	<.02	7.6			0.2	0.1	0.3													3	40	10	20	Tr		1	95		
230	240			.12	<.02	5.3			0.2	0.1	0.3													3	50	10	20	Tr		<1	95		
240	250			.10	<.02	8.9			0.2	0.1	0.3													3	50	10	20	Tr		<1	95		
250	260			.25	<.02	5.7			0.2	0.1	0.3													3	50	10	20	Tr		1	90		
260	270			.26	<.02	6.2			0.3	0.1	0.3													3	50	10	20	Tr		1	90		
270	280			.53	<.02	4.7			0.3	0.1	0.3													5	3	50	10	30	Tr		1	90	
280	290			1.22	<.02	12.0			0.3	0.1	0.3													5	3	50	10	30	Tr		<1	95	
290	300			.20	<.02	3.4			0.1	0.1	0.1													3	40	10	20	1		?	1	90	gouge 300-301 May be small fault
300	310			.11	.04	4.2			0.1	0.1	0.1													3	40	10	20	1		1	90		
310	320			.21	<.02	3.8			0.1	0.05	0.1													3	30	10	20			1	85	Rock is less altered and mineralized below 310	
320	330								0.1	0.05	0.1														3	30	10	20			<1	95	
330	340								0.1	0.05	0.1													5	3	30	10	20			1	80	Angular altered feldspars up to 5 mm dia 340-347
340	350								0.1	0.05	0.1													5	3	30	10	20			1	90	
350	360								0.1	0.05	0.1													3	30	10	20			2	80		
360	370								0.1	0.05	0.1													3	30	10	20			1	85		
370	380								0.1	0.05	0.1													5	3	30	10	10			1	95	6" Lapilli Tuff 372.5 - 373
380	390								0.05	Tr	0.1													2	3	20	10	10			1	95	(Tuffaceous Lapilli Agglomerate)
390	400								0.05	Tr	0.1													2	3	20	10	10			1	90	also at 382'-383'
400	410								0.05	Tr	0.1													2	3	20	10	10			1	95	
410	420								0.05	Tr	0.1													2	3	20	10	10			1	90	

GEOLOGIC LOG THUNDER MOUNTAIN

PROJECT THUNDER MTN. HOLE NO. 13B-8
 Drill elev. _____ Final depth 600'
 Core elev. _____ Core E. _____
 Inclination _____ Page 2 of 2
 Logged by H.J. DOWNEY
 Date start _____ Date finish _____

DEPTH			% LOSS	PPM			CHALCOC	COVELL	CHALCOP	SPHALER	ENARG	ALTERATION						STRUCTURE		ROCK TYPE and REMARKS
from	to			Cu	Ag	As						PYRITE-V	PYRITE-D	QUARTZ-V	QUARTZ-D	PIRROPHIL	SERIC	ARGILL	ALUN	
420	430	99-100	.02	<.02	3.8		0.05	Tr	0.1						320	10	1	95	QUARTZ FELDSPAR PORPHYRY Tuffaceous Lapilli Agglomerate 442-444	
430	440		.09	<.02	2.5		0.05	Tr	0.1						320	10,10	1	90		
440	450		.09	<.02	4.3		0.05	Tr	0.1						320	10,10	1	95	Alteration appears more argillie 450-600	
450	460		.21	<.02	4.2		0.05		0.05						320	20	1	95		
460	470		.13	<.02	1.6		0.05		0.05						320	20	1	95	Pyrite dominant to 600'	
470	480		.17	.04	3.8		0.05		0.05						320	20	2	90		
480	490		.04	<.02	0.9		0.05		0.05						320	20	1	90		
490	500		.15	<.02	5.4		0.05		0.05						320	20	1	90		
500	510		.03	<.02	1.9		0.05		0.05						320	30	1	95		
510	520		.06	<.02	4.4		0.05		0.05						320	30	1	90		
520	530		.08	<.02	2.9		0.05		0.05						320	30	1	90		
530	540		.05	<.02	3.7		0.05		Tr						320	30	1	90		
540	550		.03	<.02	1.3		0.05		Tr						320	30	2	85		
550	560		.08	<.02	1.4		0.05		Tr						320	30	1	90		
560	570		.06	<.02	0.9		0.05		Tr						320	30	2	85		
570	580		.07	<.02	1.4		0.05		Tr						320	30	1	90		
580	590		.07	<.02	0.8		0.05		Tr						320	30	2	80		
590	600		.05	<.02	1.0		0.05		Tr						320	30	1	90		
BOH - 600'																			BOH	

GEOLOGIC LOG

PROJECT THUNDER MOUNTAIN

PROJECT THUNDER MTN HOLE NO BB-9
Collar elev. 5,125' Final depth 600'
Coord N. 1710,170 Coord E. 865,555
Inclination 5,130 Page 1 of 2
Logged by H.J. DOWNEY
Date start 8/23/92 Date finish 8/29/92

DEPTH			% CORE RECOVERED	ASSAY			MINERALS					GANGUE & ALTERATION MINERALS					% RQD = % PIECES > 4" LONG IN 10' RUN			STRUCTURE		ROCK TYPE and REMARKS				
from	to	int'l		Cu	Au	Ag	CHALCOCITE	COVELLITE	CHALCOPYRITE	SPHALERITE	ENARGITE	Pyrite-Vein	Pyrite-Diss.	Goethite	Limonite	Hematite	Quartz-Vein	Quartz-Diss.	Pyrophyllite	Sericite	Argillite		Alunite	FAULTS	FRACS PER FT.	% RQD
0	13																									OVERBURDEN - NO CORE
13	20		95	.16	.02	1.6	Tr					3					3	30	10	20			2	60	13-20 QUARTZ FELDSPAR PORPHYRY - Soft white to light gray -	
20	30		95	.04	.02	1.9	Tr					3					3	30	10	20			1	80		
30	40		99-100	.11	.02	3.2	Tr					3					3	30	10	20			1	90	ruggy / porous to 85' - Extremely altered to pyrophyllite	
40	50			.17	.02	1.9	Tr	Tr	0.05			5					3	30	10	20	3		2	85		
50	60			.07	.04	1.8	.05	Tr	0.05			5					3	40	10	20	3		1	90	Compacted gray volcanic mud 66-67.5 (Alunite rich?)	
60	70			.07	.02	2.5	.05	Tr	0.05			5					3	40	10	20	10		1	90		
70	80			.01	.02	.4	0.1	Tr	0.05			5					3	40	10	20	3		2	80	sericite, kaolin with some alunite? layering, limonite	
80	90			.04	.02	3.9	0.1	0.1	0.1			5					3	40	20	10	2	72-82	1	90	-82	
90	100			.31	.02	5.5	0.1	0.2	0.1			5					5	30	20	10			1	95	after pyrite to 30'. Pyrite 3% to 5% in clumps &	
100	110			.02	.02	1.5	0.2	0.2	0.1			5					10	30	20	10			1	95		
110	120			.04	<.02	1.7	0.2	0.2	0.1			5					10	30	20	10			1	95	fine grained disseminated. Traces of chalcopyrite	
120	130			.01	<.02	1.4	0.2	0.1	0.1			5					10	30	20	10			1	95		
130	140			.08	.02	1.8	0.2	0.1	0.1			5					10	30	20	10			1	90	and fine grained black spines (chalcocite?) sparsely	
140	150			.04	<.02	1.8	0.2	0.1	0.1			5					10	30	20	10			1	90	disseminated throughout. Very little covellite compared	
150	160			.08	.02	2.1	0.2	0.1	0.05			5	7				10	30	20	10			1	95		
160	170			.10	.08	2.2	0.3	0.1	0.05			5	7				10	30	20	10			1	95		
170	180			.29	.02	2.7	0.3	0.05	0.05			5	7				10	30	20	10			1	95	to other holes in area (to 82' where covellite coats	
180	190			.16	<.02	<.1	0.2	0.05	0.05			7					5	30	20	10			1	95	pyrite). Probable fault from 72'-82' Below 82'	
190	200			.09	<.02	4.5	0.2	0.05	0.05			7					5	30	20	10			1	95		
200	210			.19	<.02	3.6	0.3	0.1	0.05			7					5	30	20	10			1	90		
210	220			.07	<.02	3.5	0.3	0.1	0.05			7					5	30	20	10			1	95	feldspar phenocrysts to 5 mm dia are more	
220	230			.08	<.02	5.2	0.3	0.1	0.05			7					5	30	20	10			1	95		
230	240			.08	<.02	7.0	0.3	0.05	0.05			5	7				5	30	20	10			1	90	prominent. Sooty chalcocite in fractures 165'-180'	
240	250			.50	.03	5.7	0.4	0.05	0.05			5	7				5	30	20	10	3		1	90	Pyrite blebs are larger 203'-240	
250	260			.08	<.02	1.4	0.2	Tr	Tr			5	5				5	30	20	10	3		1	95		
260	270			.08	<.02	1.1	0.2	0.05	0.05			5	5				5	30	20	10	3		1	95		
270	280			.08	<.02	1.4	0.3	0.05	0.05			5	5				5	40	20	10			1	95		
280	290			.26	.05	1.6	0.2	0.05	0.05			5	5				5	40	20	10			1	95		
290	300			.07	<.02	1.4	0.2	0.05	0.05			5	7				5	40	20	10			1	95	Chalcocite improves below 325. Fine grained	
300	310			.05	<.02	1.8	0.2	0.05	0.05			5	7				5	40	20	10			1	95	disseminated and sooty fracture coatings and	
310	320			.17	.03	2.0	0.3	0.05	0.05			5	7				5	40	20	10			1	90	seams. (325-460)	
320	330			.24	<.02	2.8	0.4	0.05	0.05			5	7				5	40	20	10			1	90		
330	340			.25	<.02	3.0	0.4	0.1	0.05			5	10				5	40	20	10			1	90		
340	350			.16	.03	2.5	0.4	0.1	0.05			5	10				5	40	20	10			1	90		
350	360			.33	<.02	3.7	0.4	0.1	0.05			5	10				5	40	20	10			1	90		
360	370			.22	<.02	3.6	0.3	0.1	0.05			5	7				5	40	20	10			1	95		
370	380			.09	<.02	1.9	0.3	0.1	0.05			5	7				5	40	20	10			1	95		
380	390			.17	<.02	3.5	0.3	0.1	0.05			7					5	40	20	10			1	90		
390	400			.20	<.02	2.5	0.3	0.1	0.05			7					5	40	20	10			1	90		
400	410			.22	<.02	3.1	0.3	0.1	0.05			7					5	20	10	10			1	90		
410	420			.04	.03	2.2	0.3	0.1	0.05			7					5	20	10	10			1	95		
420	430			.07	<.02	2.4	0.3	0.1	0.05			7					5	20	10	10			1	90		

Rock is less altered 410-460

Vuggy section 330-360

GEOLOGIC LOG

PROJECT THUNDER MOUNTAIN

PROJECT THUNDER MTN.

HOLE NO. BB-9

Collar elev. _____

Final depth _____

Coord N. _____

Coord E. _____

Inclination _____

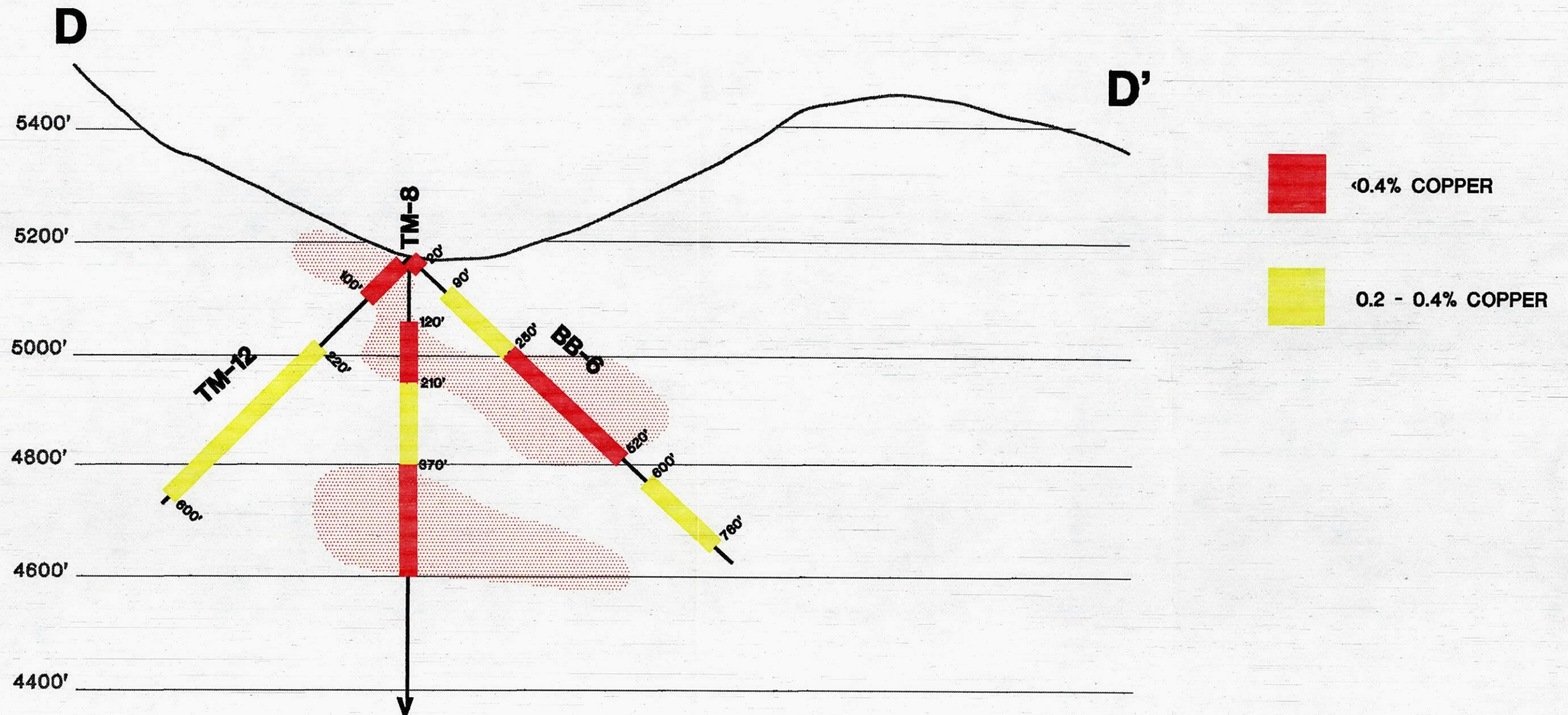
Page 2 of 2

Logged by HJD

Date start _____

Date finish _____

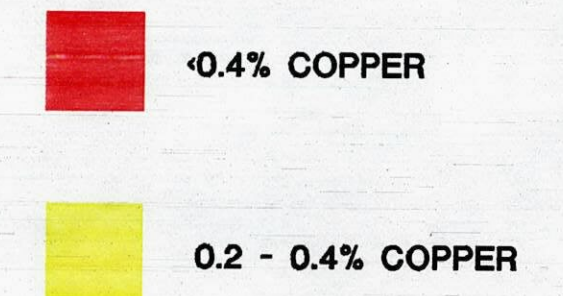
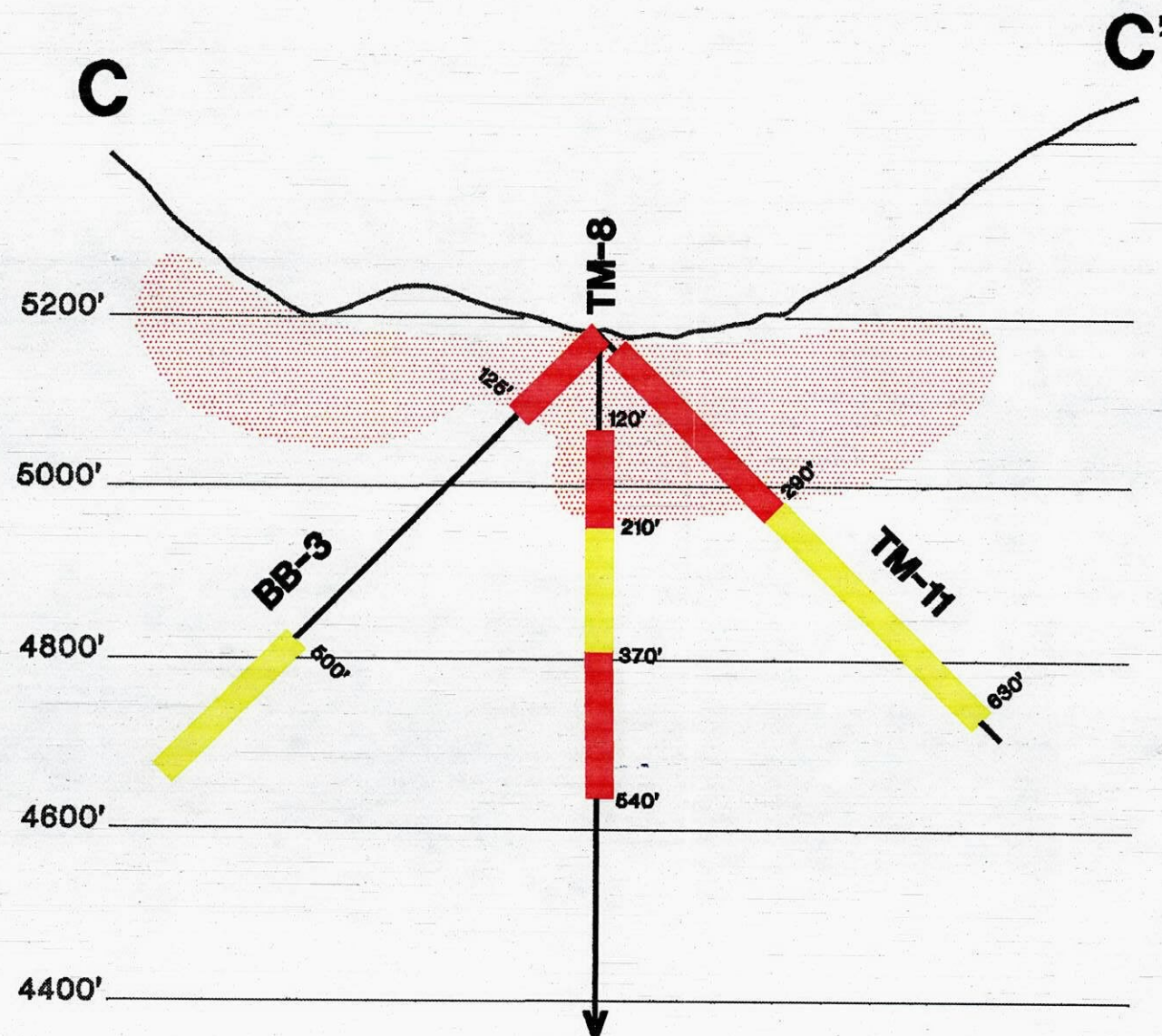
DEPTH			DIP	ANALYSIS			MINERALS					ALTERATION MINERALS					STRUCTURE			ROCK TYPE and REMARKS						
from	to	int.		o/o Cu	o/o Au	o/o Ag	CHALCOCITE	COVELLITE	CHALCOPYRITE	SPHALERITE	ENARGITE	PYRITE-VEIN	PYRITE-DISS	GOETHITE	LIMONITE	HEMATITE	QUARTZ-VEIN	QUARTZ-DISS	PYROPHILLITE		SERICITE	ARILLITE	ALUNITE	FAULTS	FRACS PER FT.	o/o RQD
430	440	100		.09	.02	3.5	0.3	0.1	0.05			7	7				5	20	10	10			1	95		- QUARTZ FELDSPAR PORPHYRY (continues to BOH)
440	450			.43	.02	4.9	0.3	0.1	0.05			7	7				5	20	10	10			1	90		
450	460			.06	.02	4.1	0.3	0.1	0.05			7	7				5	20	10	10			1	95		
460	470			.08	.02	4.9	0.2	0.1	0.05			7	7				5	30	20	10			1	95		
470	480			.13	.02	2.1	0.2	0.1	0.05			10					5	30	20	10			1	90		
480	490			.14	.02	1.5	0.2	0.1	0.05			7	7				5	30	20	10			1	90		
490	500			.08	.02	5.3	0.2	0.1	0.1			7	7				5	30	20	10			1	90		
500	510			.40	.02	4.4	0.4	0.1	0.1			10					5	40	20	10			2	85		Small fault? (gouge w/chalcosite) 504-504.5
510	520						0.2	0.1	0.1			7	7				5	30	20	10			1	95		Chalcosite decreases - chalcocite increases slightly
520	530						0.2	Tr	0.1			7	7				5	20	10	10			1	95		below 510 (510-600)
530	540						0.1	Tr	0.1			7	7				5	20	10	10			1	95		
540	550						0.1		0.1			5	5				5	30	20	10			1	95		
550	560						0.1		0.1			5	5				5	30	20	10			1	95		
560	570						0.1		0.1			5	5				5	30	20	10			1	95		
570	580						0.1		0.1			5	5				5	30	20	10			1	95		
580	590						0.1		0.1			5	5				5	30	20	10			1	95		
590	600						0.1		0.1			5	5				5	30	20	10			1	95		
BOH 600'																										BOH



ASARCO WESTERN USA
EXPLORATION

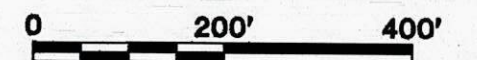
THUNDER MOUNTAIN PROJECT
SECTION D-D'
SANTA CRUZ CO., ARIZONA

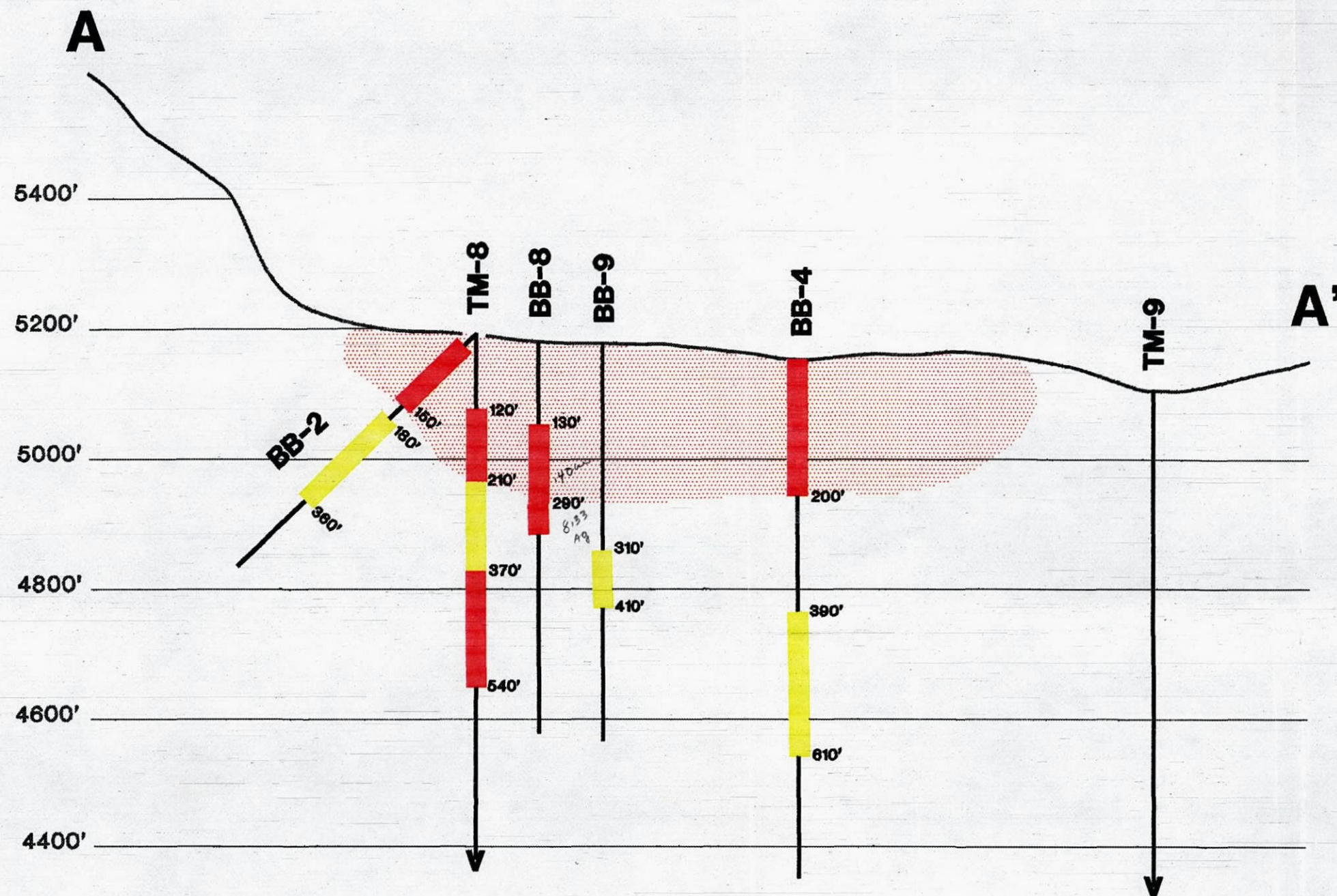
0 200' 400'



ASARCO WESTERN USA
EXPLORATION

THUNDER MOUNTAIN PROJECT
SECTION C-C'
SANTA CRUZ CO., ARIZONA





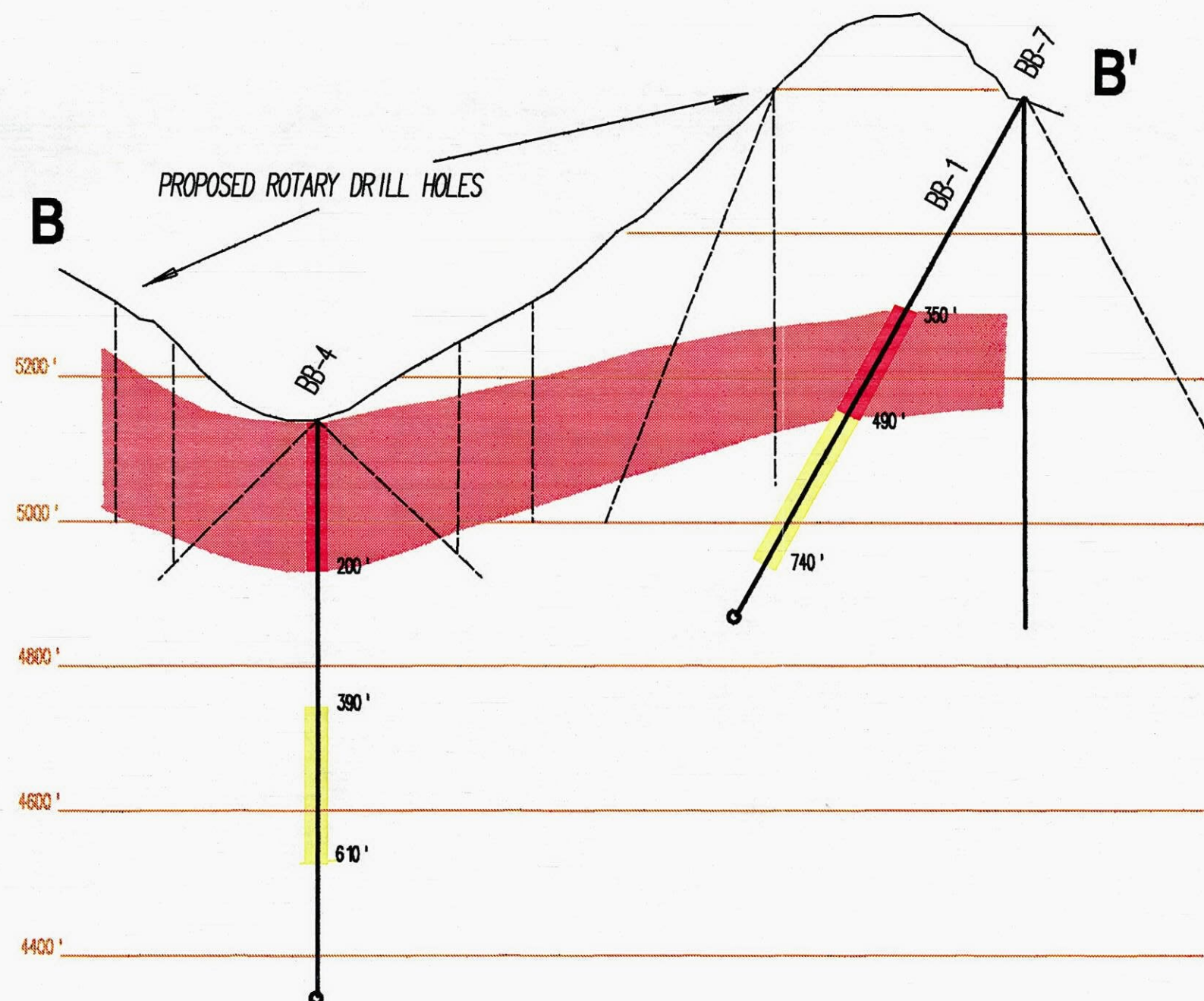
>0.4% COPPER

0.2 - 0.4% COPPER

ASARCO WESTERN USA
EXPLORATION

THUNDER MOUNTAIN PROJECT
SECTION A-A'
SANTA CRUZ CO., ARIZONA

0 200' 400'



EXPLANATION

- <0.4% COPPER
- 0.2-0.4% COPPER

ASARCO SOUTHWESTERN
EXPLORATION
THUNDER MOUNTAIN PROJECT
SECTION B-B'
PATAGONIA MOUNTAINS, ARIZONA
H.J.D. 0 100' 200' 01-91

January 7, 1992

F.T. Graybeal
New York Office

Greater Patagonia Exploration
Patagonia Mountains
Santa Cruz County, Arizona

Mr. R.L. Brown requested an update of the past drilling activities, discoveries, and the exploration potential of the land held under exploration agreements with Noranda and Kerr-McGee.

No drilling to date has outlined an area of sufficient grade and open-pit availability to propose a rapid expenditure of funds to confirm the grade and tonnage available. Present leach tests on the high-level chalcocite in the Bucket Breccia blanket indicate moderate recoveries of values for heap leach or in situ methods of recovery of the copper values.

The Asarco agreement with Noranda (Venture Project) calls for \$40,000 per year work commitment and approximately \$200,000 remains to be spent for a 51% vested ownership.

Each year between 1986 and 1991 I have been able to secure a waiver of work requirement, year by year. Noranda is presently considering my proposal to amend the agreement to eliminate the \$40,000/year work commitment or to a buy out of their interest. I should have a response during the first quarter of 1992.

The Asarco agreement with Kerr-McGee (Thunder Mountain Project) calls for \$100,000 per year work commitment, with approximately \$375,000 yet to be expended by Asarco for a 50% vested ownership. Mr. Brown negotiated the last amendment to the Kerr-McGee Thunder Mountain agreement which calls for \$100,000 to be spent in 1992. I have no idea if Kerr-McGee might be receptive to a reduced work commitment or to a totally new operating agreement.

In excess of fifty holes have been drilled in the area shown in Attachment A. Four major mineralized centers have been outlined with seven targets identified ranging from near vertical breccia pipe mineralization, to high-level primary chalcocite blankets, to extensive deep primary chalcopryite mineralization, to deep carbonate-hosted skarn mineralization of massive pyrite-lead-zinc-silver values in pods, lenses and variable massive beds.

Discussion of the four major mineralization zones and the seven target areas is detailed in the attached Addendum - Greater Patagonia Exploration, as is the recommended work for 1992.

The present claim block boundaries (Attachment A) show that the Three R shallow chalcocite zone (TR CC shallow) is no longer within the Asarco land or any of the agreement lands.

OVER

Table 1 lists the target zones of mineralization and a common theme is the relative low-grade ($\pm 0.40\%$ copper or less) in both the high-level chalcocite blankets, and the deeper primary chalcopyrite mineralization. Moderate to large tonnage of mineralization is available from these mineral centers. The carbonate-hosted massive sulfide deposits have excellent Pb-Zn-Ag values. The target is deep and the values variable and in scattered intercepts.

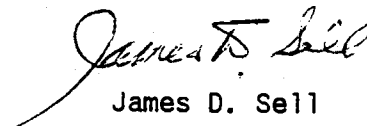
Table 1 outlines the mineral resource of the Attachment A portion of the Patagonia Mountains. The large tonnage indicated is an asset to Asarco as a mineral producer, although to date the targets are insufficiently drilled out and present parameters indicate low economics. The agreements property position is adjacent to the Asarco Mining Department holdings at the Flux, Trench, and Hardshell mineral resource areas.

I recommend further exploration to fulfill the annual work commitments on the agreement lands and to continue to outline the mineral base.

As you are aware, Mr. Kurtz has long advocated, both verbally and in writing, that both joint venture projects in the Patagonia Mountains should be terminated. He believes the low grade and attendant poor metallurgy of the near surface copper mineralization renders the indicated deposits as uneconomic for the foreseeable future. He believes the Ventura moly-copper pipe is too small to be of interest and the deeper disseminated chalcopyrite mineralization too low grade to be economic. He expresses the same reservation on the deep base metal-silver skarn mineralization, in that drilling has indicated erratic grades and a structurally complex setting for mining considerations.

Asarco in the past has maintained a longer view on mineral assets. The expenditures needed for Asarco to be vested at 50% in the two project lands will not fully test any of the present targets, but at the time of vesting will provide outside funding contributions for further evaluation.

JDS:mek
Atts.


James D. Sell

cc: W.L. Kurtz

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

February 5, 1992

Mr. Harold W. Holmberg
Director of Metal Exploration
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125

Report on Activities - 1991
Thunder Mountain Project
Santa Cruz County, Arizona

Dear Mr. Holmberg:

The annual summary of activities for the year 1991 on the Thunder Mountain Project, Santa Cruz County, Arizona, is hereby submitted.

In the fourth quarter of 1990, six shallow holes were drilled in the chalcocite mineralization between holes TM-8 and BB-1. The zone penetrated averages 576 feet thick with an average grade of 0.28% copper. The low copper grade lead to a ferric-acid leach, bottle roll test to determine readily soluble copper value.

Final results were reported in early 1991 and of the four samples submitted, the head grade ranged from 0.25% copper to 0.37% copper, and averaged 0.34% copper. The percent copper extracted ranged from a low of 18% to a high of 42%, with an average of 27% recovered. These low values do not suggest that leaching might be a viable method for extracting copper from the zone.

A composite sample of the three holes, with an average grade of 0.33% copper, was selected to be used in an extended leach time (6 days) with an elevated ferric iron concentration. The result from this test indicated a 29% copper recovery -- still far below that which is believed to be of interest.

No further work was done in the project area for the remainder of 1991.

Preliminary thoughts have been generated for the 1992 year, but no plan has been formalized.

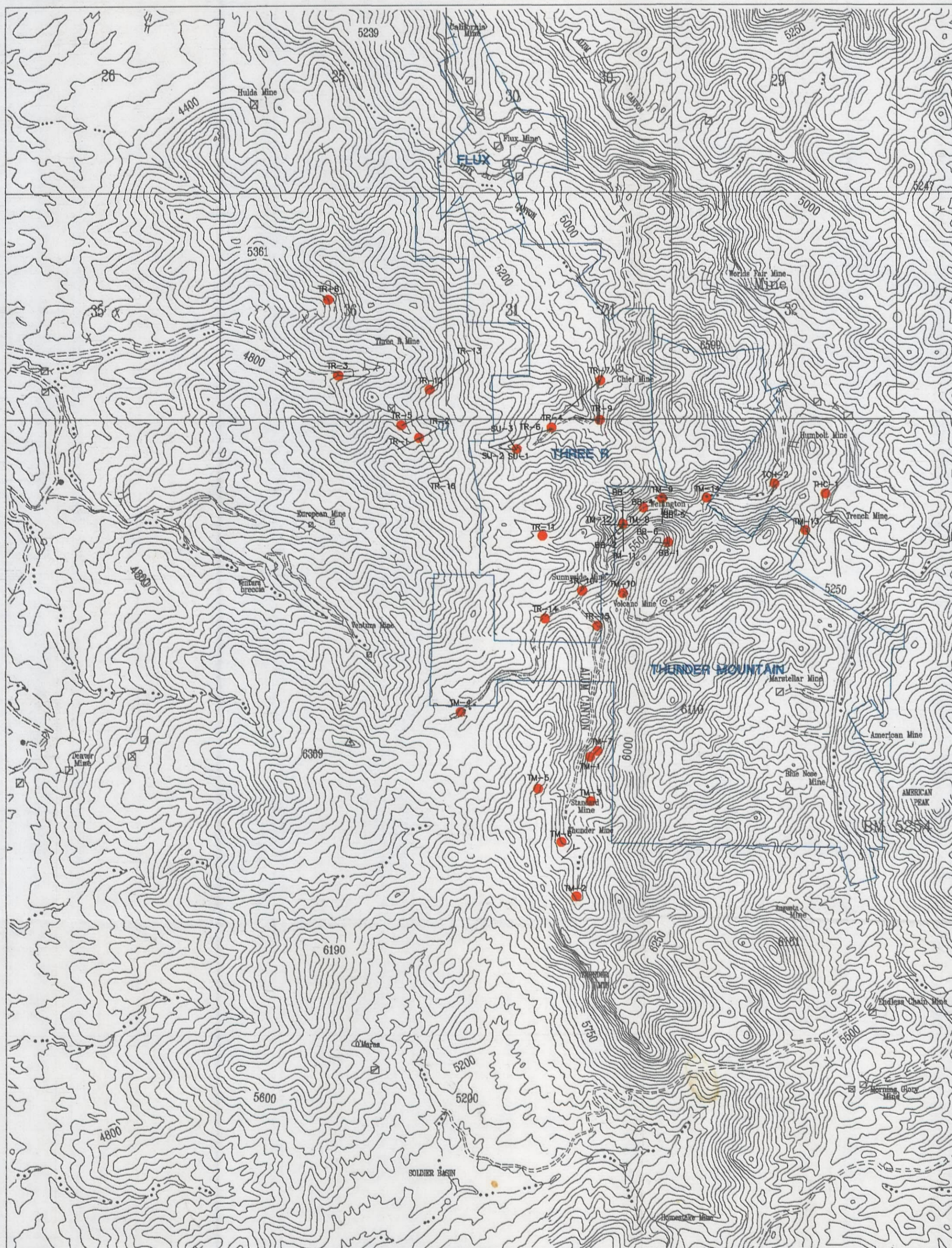
Sincerely,

James D. Sell
James D. Sell */mek*

JDS:mek

cc: G.D. Van Voorhis
F.T. Graybeal
W.L. Kurtz
W.D. Gay

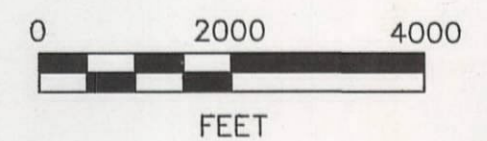
ASARCO Incorporated P.O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue FAX (602) 792-3934 Phone (602) 792-3010

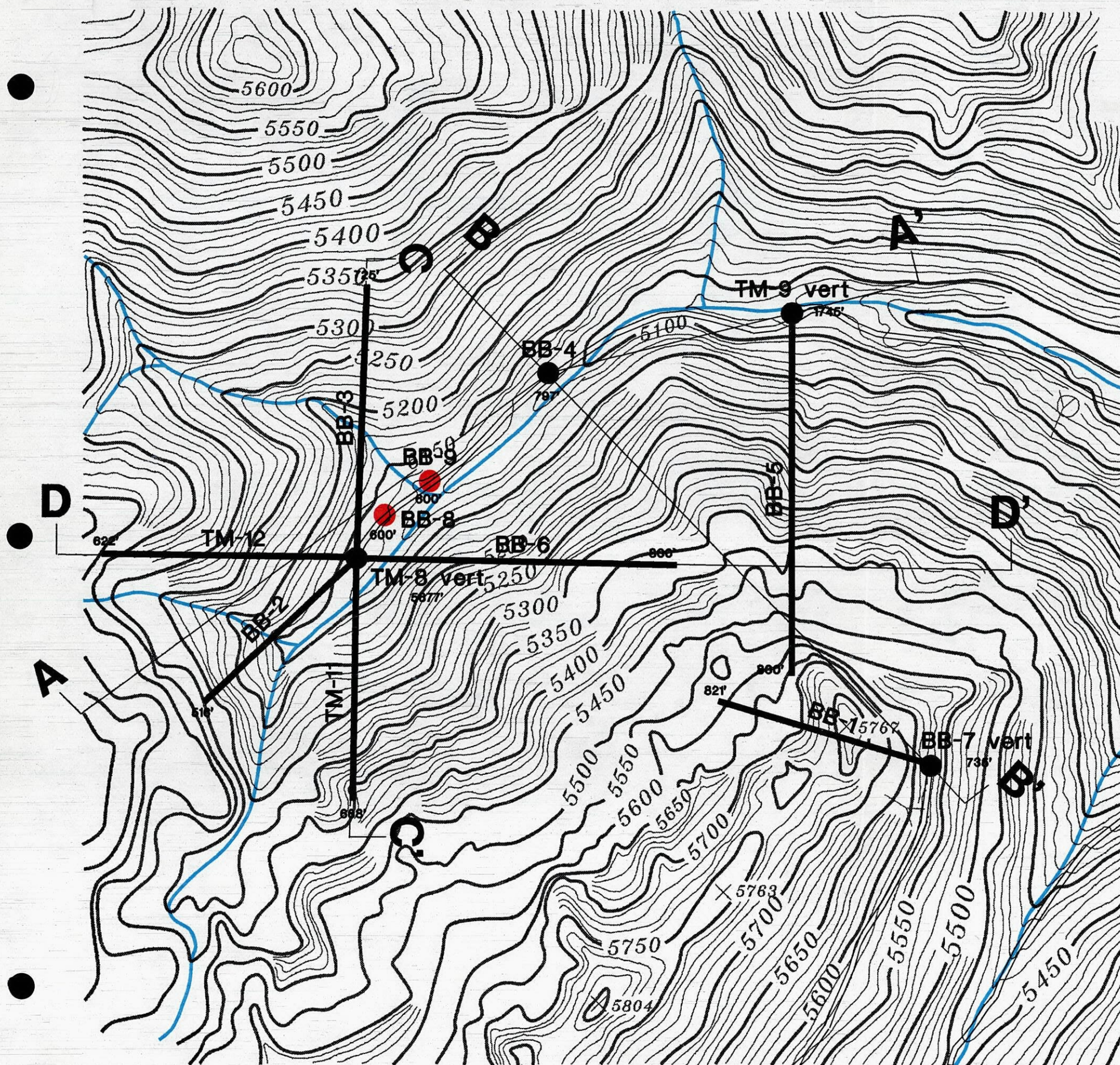


ASARCO SOUTHWESTERN
EXPLORATION

PATAGONIA MOUNTAINS CLAIM BLOCKS & DRILL HOLES

SANTA CRUZ COUNTY, ARIZONA
SCALE 1"=2000'

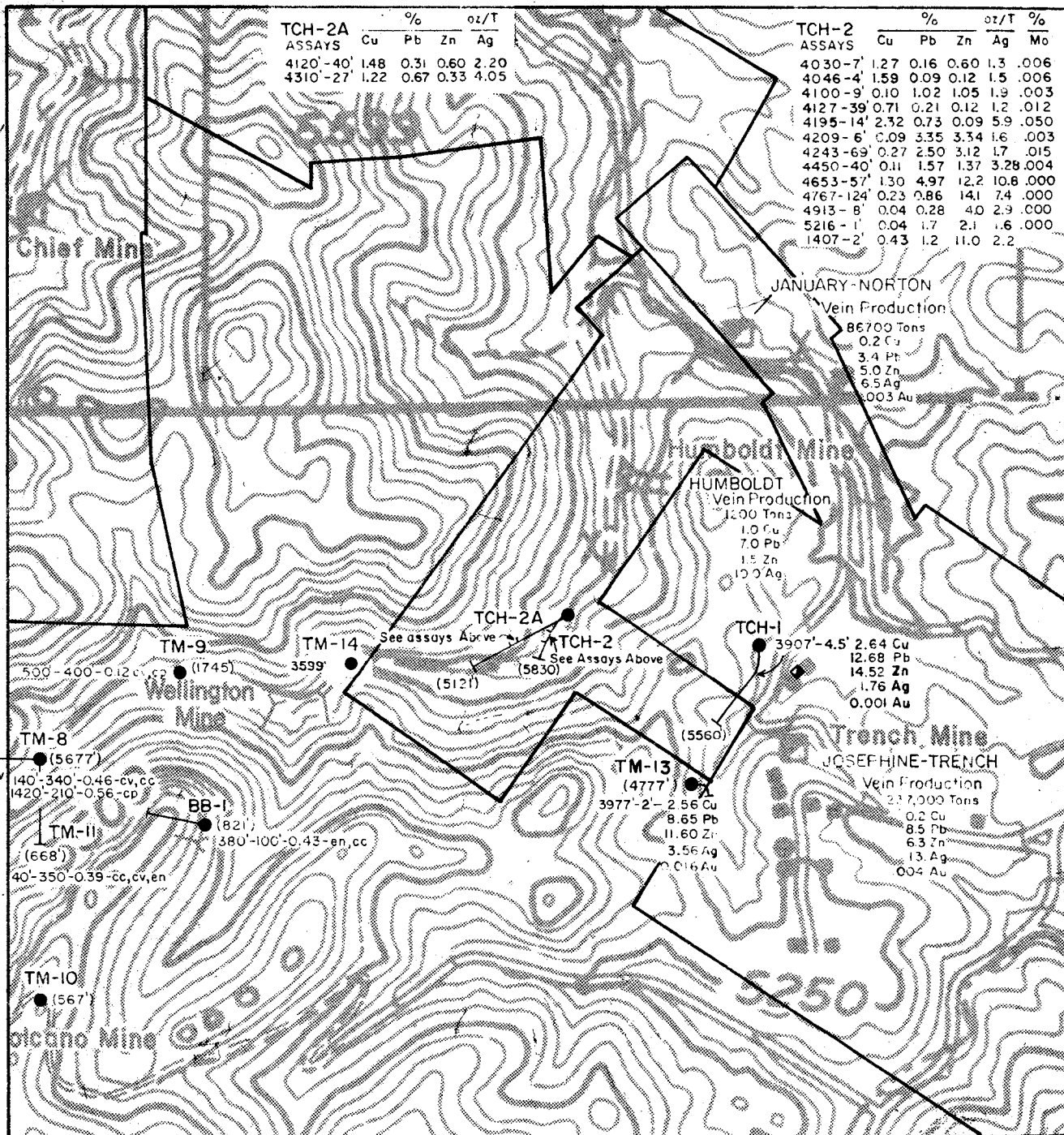




ASARCO WESTERN USA
EXPLORATION
THUNDER MOUNTAIN PROJECT
1992 BB-DRILLING
SANTA CRUZ CO., ARIZONA



Map number TM921202 TUC 12/11/92



EXPLANATION

- ASARCO INC. Trench Group
- ASARCO-Kerr McGee Thunder Mtn. Joint Venture
- ASARCO-Anoconda 3R Joint Venture
- Mendoza-Humboldt Group (ASARCO INC.)
- Kerr-McGee-Red Mtn.
- Lichty-Argentor
- (821') BB-1 Drill hole showing depth
- Proposed drill hole, deepen

ASSAY DATA KEY

depth-length-%Cu-mineral
3860'-350'-0.59-cp

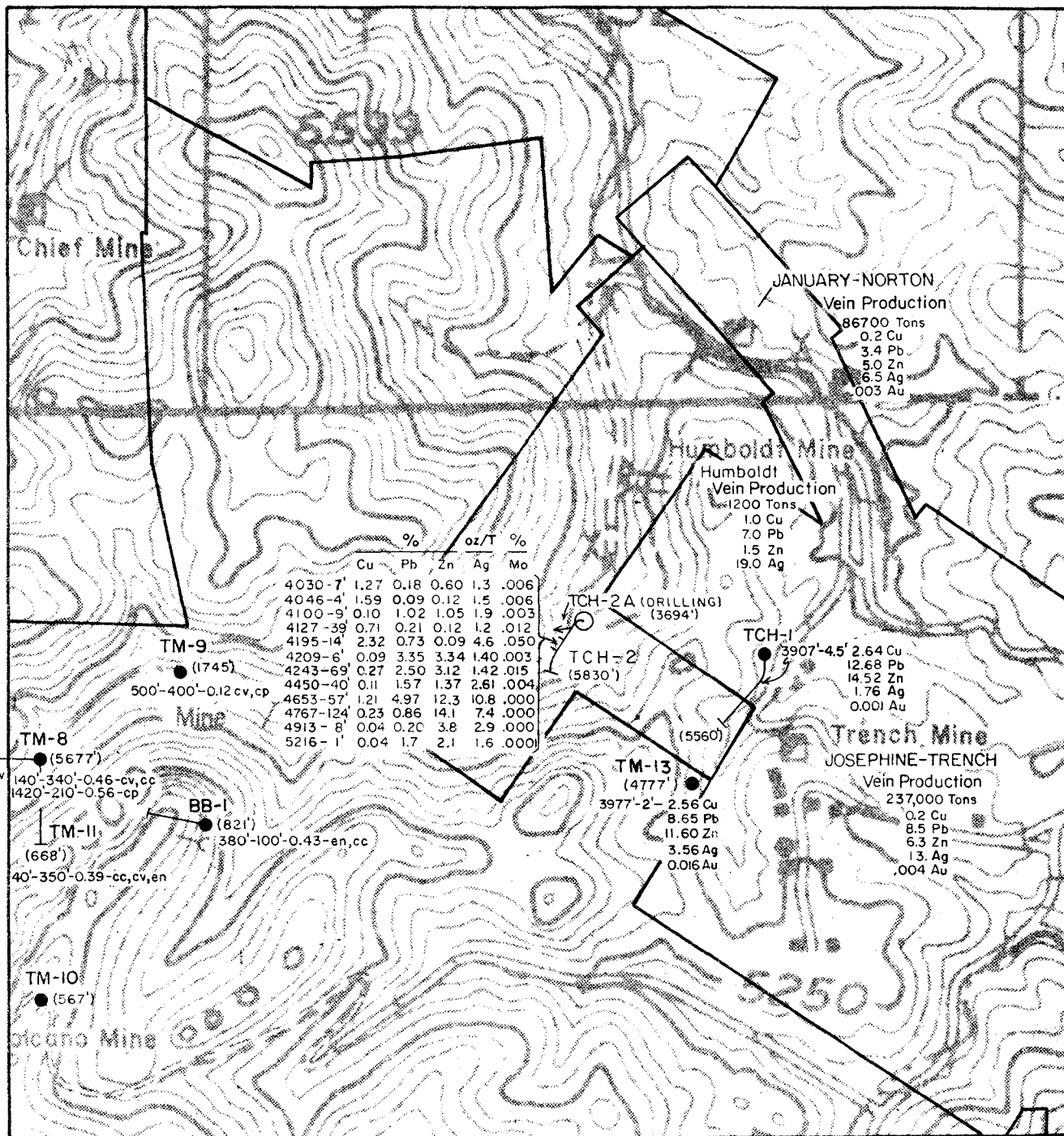
GEOLOGIC LEGEND

cp-chalcopryrite
cv-covellite
cc-chalcocite
en-enargite

DRILL MAP TRENCH PROJECT

THUNDER MTN. PROJECT
PATAGONIA MTNS.
Santa Cruz County, Arizona
SCALE: 1"= 1000'

F.R.K



EXPLANATION

- ASARCO INC. - Trench Group
- ASARCO-KerrMcGee Thunder Mtn. Joint Venture
- ASARCO-Anaconda 3R Joint Venture
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- (821') BB-1 Drill hole showing depth
- Proposed drill hole

ASSAY DATA KEY

depth-length - %Cu-mineral
3860'-350'-0.59-cp

GEOLOGIC LEGEND

cp - chalcopryite
cv - covellite
cc - chalcocite
en - enargite

DRILL MAP TRENCH PROJECT PATAGONIA MTNS.

Santa Cruz County, Arizona

SCALE: 1" = 1000'

F.R.Koutz

Feb. 1981

Location Notices
Assessment Work Filing
State Filing
Water Resource Filing
Stormwater Management

Table 1. Mineral Resource of Thunder Mountain - Trench Areas, Patagonia Mountains.

A. Shallow Upper Zones of hi-level chalcocite

<u>Zone</u>	<u>Depth to Top, ft.</u>	<u>Average Thickness, ft.</u>	<u>Avg. Grade % Copper</u>	<u>Estimated Tonnage</u>
Sunnyside Bx*	361	170	0.37	34,600,000
Bucket Bx	150	576	0.28	32,300,000
Average/Total	256	373	0.30	66,900,000

*Includes Sunnyside breccia pipe, 4 hole area, of 3 million tons at average grade of 0.48% Cu, thickness of 240 feet.

B. Deep Zone of primary chalcopyrite

<u>Zone</u>	<u>Depth Top, ft.</u>	<u>Average Thickness, ft.</u>	<u>Avg. Grade % Copper</u>	<u>Estimated Tonnage *</u>
Sunnyside	3860	388	0.38	650,000,000

*Note: Drilling insufficient to outline total resource. Open beyond drilling used for this tabulation.

C. Deep Trench carbonate-hosted Pb-Zn-Ag

Insufficient drilling to outline any resource. Presently, 4 drill holes, with numerous intercepts ranging from 2' to 43' thick at depth from 3900' to 5000'.

Best Single Interval

<u>Hole</u>	<u>Thickness</u>	<u>% Cu</u>	<u>% Pb</u>	<u>% Zn</u>	<u>oz. Ag</u>
TM-13	2'	2.56	8.65	11.60	3.56
TCH-1	4.5'	2.64	12.70	14.50	1.80
TCH-2*	26'	1.83	6.29	15.06	14.93
TCH-2A	6'	0.69	1.65	0.24	9.04

*The best total hole is TCH-2; 15 intervals, totalling 349', between 4030' and 4920' range between 4' and 43' thick, averaging 23' thick, 0.58% Cu, 1.95% Pb, 7.25% Zn, and 5.53 oz. Ag composited through the 349' of mineral. Trace of mineral is found throughout the remaining intervals of altered limestone (skarn).

ASARCO

Exploration Department
Southwestern United States Division
R. B. Crist
Property Manager

March 2, 1983

Ms. Mary Lou Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, AZ 85621

Mining Claim
Location Notices

Dear Ms. Sainz:

Enclosed please find a check in the amount of \$95.00 as the recording fee for the following 19 Location Notices with maps:

Amended Notice of Location - Asarco

South Humbolt, Humbolt, Silver Leaf, Good Luck #2, Indian Chief, Monoca and Good Luck. (7 claims)

Amended Notice of Location - Asarco-Kerr-McGee

Wellington, Lafayette, Bryan, Copper Dyke, Warren Harding, Abraham Lincoln, Calvin Coolidge and Roosevelt. (8 claims)

Notice of Relocation - Asarco-Kerr-McGee

Orb #7, #8 and #9

Notice of Location - Asarco-Kerr-McGee

Orb #10

Also enclosed is a self-addressed, stamped envelope for the return of the Recorded Notices to the sender.

Sincerely yours,


R. B. Crist

RBC:mek
encs.

cc: J.D.Sell, A.J.Robles, J.A.Yanez

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

File Thunders into

FEE NO. _____

STATE OF ARIZONA, County of Santa Cruz — SS.

I do hereby certify that the within instrument was filed and recorded at the request of _____

on _____ A. D., 198 _____ at _____ o'clock _____ M. Docket No. _____ Page _____

ords of Santa Cruz County, Arizona.

WITNESS my hand and official seal the day and year first above written.

When recorded mail to:

MARY LOU G. SAINZ, COUNTY RECORDER

"Claims"

P.O. Box 26525, Tucson

85726

By _____ Deputy

By _____ Deputy Recorder

NOTICE OF MINING CLAIM LOCATION ^{AND} ~~MAP~~ ^{MAP}.

1. ☒ Location ☐ Amendment ☒ Relocation ☐
2. ☐ Associate ☒ Placer ☒ Lode ☐ Millsite ☐ Tunnelsite

3. The name and address of the Locator is
IMPOSSIBLE DREAM LTD

Name
P.O. Box 26525 Tucson
Address
TUCSON ARIZ 85726
City State Zip

4. The name of the claim is 10 #

5. The date of the location is _____

6. The claim is 1500 feet long and 600 feet wide. The distance from the Location monument to each end of the claim is 1500 feet in a North direction and 600 feet in a _____ direction.

7. The general course of the claim is from the North to the South

8. The location of the claim is in Section _____, Township 23 South, Range 16 East
G&SRB&M, Harshel Mining District, Santa Cruz County, Arizona.

9. If amending or relocating, the previous claim name was _____

_____ recorded in Docket _____, Book _____
_____ Mining District, _____ County, Arizona.

10. The location of the claim with reference to a natural object or permanent monument is approximately

^{SOME}
10A These locations and maps cover portions of claims formerly known as Morning-Glow Mine - August Mine - Blue Nose Big Jim & United States Smelting & Refining Group

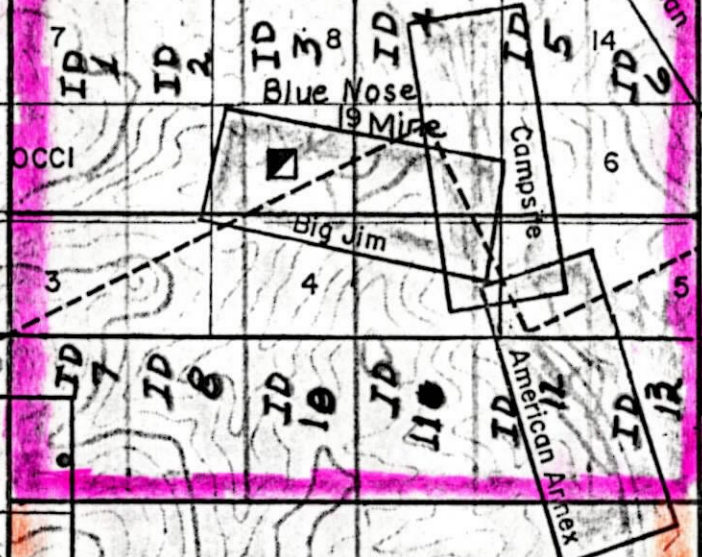
11. Any portions of privately owned minerals or, at this time, legal existing claims of this type are not intended to be included under this instrument. (we are not claim jumpers)

Date _____

IMPOSSIBLE DREAM LTD
Agent
Signature

INSPIRATION GROUP

ID LTD
Claims covering
ASARCO'S ground.



IMPOSSIBLE DREAM CLAIMS
(ID) TOTAL 53 IN UNSURVEYED
SECTIONS 8, 17, & 16 T. 23 S.
R. 16 E IN THE HARSHAW MINING
DISTRICT SANTA CRUZ COUNTY, ARIZ

UNITED STATES SMELTING
&
REFINING GROUP

Home Lake Mine

Thunder Mtn
89

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J. R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location as set forth in Exhibit A.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1983 and May 31, 1984, in excess of \$20,000 worth of work and improvements were done and performed for the benefit of each of the described claims. Work and improvements consisted of drilling with diamond drill rig performed by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (160), comprising said contiguous groups as part of a general plan of exploration, improvements and development and they tend to explore, improve and develop each and all of said mining claims. The amount expended for the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1984.

ASARCO Incorporated

By

Agent

STATE OF ARIZONA)
) ss
County of Pima)

27th The foregoing instrument was acknowledged before me this day of June, 1984, by J. R. Stringham.

My Commission Expires:

My Commission Expires March 4, 1985

Paul M. Casey
Notary Public

EXHIBIT A
TO AFFIDAVIT OF PERFORMANCE
OF LABOR FOR YEAR
ENDING SEPTEMBER 1, 1984

The following contiguous group of unpatented lode mining claims are situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names of which and the book and pages of recording of the Location Notices of which, are in the office of the Recorder of Santa Cruz County, and the Bureau of Land Management serial numbers of which are filed in Phoenix, Arizona.

<u>Name of Claim</u>	<u>Recording Data</u>		<u>BLM Serial Number</u>
	<u>Book</u>	<u>Page</u>	
TM #1 thru TM #49	042	120 thru 168	A MC 32905 thru 32953
TM #50	042	169	32954
TM #50 Amended	046	26	"
TM #51	042	170	32955
TM #51 Amended	175	05	"
TM #52 thru TM #55	042	171 thru 174	32956 thru 32959
TM #56	042	175	32960
TM #56 Amended	046	27	"
TM #57	042	176	32961
TM #58	042	177	32962
TM #58 Amended	046	28	"
TM #59 thru TM #65	042	178 thru 184	32963 thru 32969
TM #66 thru TM #91	060	89 thru 114	32970 thru 32995
TM #92 thru TM #94	061	57 thru 59	32996 thru 32998
TM #95	066	457	32999
Wellington	9	591	33769
" Amended	343	234 and 235	"
Lafayette	8	368	33770
" Amended	343	214 and 215	"
Bryan	11	79 and 80	33771
" Amended	343	200 and 201	"
Copper Dyke	18	155	33772
" "	343	204 and 205	"
Warren Harding	18	339	33773
" " Amended	343	232 and 233	"
Abraham Lincoln	27	260	33774
" " Amended	343	198 and 199	"
Calvin Coolidge	22	275	33775
" " Amended	343	202 and 203	"
Roosevelt	17	488	33776
" Amended	343	226 and 227	"
Jessee No. 1 thru Jesse No. 23	119	70 thru 92	32307 thru 32329
Jesse No. 24	308	139	137599
ORB #1 thru ORB #6	150	500 thru 505	32501 thru 32506
ORB #7	150	506	32507
Orb #7 Amended	343	218 and 219	192265
ORB #8	150	507	32508
Orb #8 Amended	343	220 and 221	192266
ORB #9	150	508	32509
Orb #9 Amended	343	222 and 223	192267
Orb #10	343	224	192268

<u>Name of Claim</u>	<u>Recording Data</u>		<u>BLM Serial Number</u>
	<u>Book</u>	<u>Page</u>	
OCCI	033	372	A MC 33746
OCCI #1 thru OCCI #18	033	373 thru 390	33747 thru 33764
OCCI #19	035	116	33765
Big Jim	025	335	33768
Campsite	083	222	33767
American Annex	083	221	33766

All of said claims being situated in Sections 31 and 32, Township 22 South, Range 16 East; Sections 5, 6, 7, 8, 17, and 18, Township 23 South, Range 16 East; Sections 1 and 12, Township 23 South, Range 15 East, G&SRB&M.

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

July 12, 1984

Mr. Dean Bibles
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group
Santa Cruz County, AZ
A MC Serial Numbers
32307 thru 32329
32501 " 32506
32905 " 32999
33746 " 33776
137599
192265 thru 192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's office in Docket 379, Pages 89 thru 91, for the assessment year ending September 1, 1984.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

J. R. Stringham/mek

J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek
encs.

cc: H.E. Kelshaw (w/encs.)
A.J. Robles (w/encs.)
J.D. Sell (w/encs.)

Kerr-McGee Corp.
Att: Mr. E. E. Jones
P.O. Box 25861
Oklahoma City, Oklahoma 73125

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J. R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location as set forth in Exhibit A.

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Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (160), comprising said contiguous groups as part of a general plan of exploration, improvements and development and they tend to explore, improve and develop each and all of said mining claims. The amount expended for the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1984.

ASARCO Incorporated

By [Signature]
Agent

STATE OF ARIZONA)
) ss
County of Pima)

27th The foregoing instrument was acknowledged before me this day of June, 1984, by J. R. Stringham.

My Commission Expires:
My Commission Expires March 4, 1985

[Signature]
Notary Public

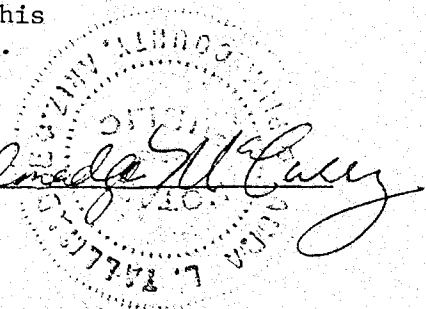


EXHIBIT A
TO AFFIDAVIT OF PERFORMANCE
OF LABOR FOR YEAR
ENDING SEPTEMBER 1, 1984

DOCK 379 PAGE 90

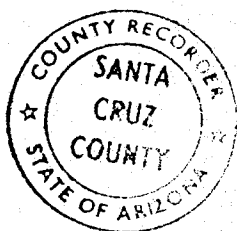
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DOCK 379 PAGE 91

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All of said claims being situated in Sections 31 and 32, Township 22 South, Range 16 East; Sections 5, 6, 7, 8, 17, and 18, Township 23 South, Range 16 East; Sections 1 and 12, Township 23 South, Range 15 East, G&SRB&M.



STATE OF ARIZONA } ss
County of Santa Cruz

12712

I hereby certify that the within instrument was filed for record at the request of ALACO

Date JUL 2 '84 - 10:00 AM at _____

Docket No. 379 Page 89-91

Witness my hand and Official Seal day and year above written

MARY LOU G. SAINZ County Recorder

By Barbara J. Lato
Deputy

ASARCO

JDS

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

November 13, 1984

Bureau of Land Management
Arizona State Office
Mining Claims Section
P.O. Box 16563
Phoenix, AZ 85011

Thunder Mountain Project
Santa Cruz County, Arizona

In checking our records on the Thunder Mountain Project claims owned by Kerr-McGee and Asarco against the BLM Geographic and Claimant Indexes, we have noted discrepancies in locations (SUBDV) on the microfiche. These are listed below. Please refer to Amended Notices with Maps, Document 288, Pages 555 thru 557.

<u>Name of Claim</u>	<u>BLM Serial No.</u>	<u>Location as shown on Amended Notices & Map</u>	<u>Location as shown on BLM Microfiche</u>
		<u>T23S, R16E</u>	
Jessie No. 1	AMC 32307	SW Sec. 5 & SE Sec. 6	No SUBDV shown, Sec. 5
" " 2	" 32308	SW Sec. 5	" " " " "
" " 3	" 32309	SW Sec. 5 & SE Sec. 6	" " " " "
" " 4	" 32310	SW Sec. 5	" " " " "
" " 5	" 32311	NE Sec. 6	" " " " "
" " 6	" 32312	NE Sec. 6 & NW Sec. 5	" " " " "
" " 7	" 32313	NW Sec. 5 & NE Sec. 6	" " " " "
" " 8	" 32314	NW Sec. 5	" " " " "
" " 9	" 32315	S2 Sec. 5	" " " " "
" " 10	" 32316	SE Sec. 5	" " " " "
" " 11	" 32317	S2 Sec. 5	" " " " "
" " 12	" 32318	SE Sec. 5	" " " " "
" " 13	" 32319	N2 Sec. 5	" " " " "
" " 14	" 32320	NE Sec. 5	" " " " "
" " 15	" 32321	NW Sec. 5	" " " " "
" " 16	" 32322	NW Sec. 5	" " " " "
" " 17	" 32323	NW Sec. 5	" " " " "
" " 18	" 32324	NW Sec. 5	" " " " "
" " 19	" 32325	N2 Sec. 5	" " " " "
" " 20	" 32326	NE Sec. 5	" " " " "
" " 21	" 32327	NW Sec. 5	" " " " "
" " 22	" 32328	N2 Sec. 5	" " " " "
" " 23	" 32329	N2 Sec. 5	" " " " "

Name of Claim	BLM Serial No.	Location as shown on Amended Notices & Map	Location as shown on BLM Microfiche
		<u>T23S,R16E</u>	
OCCI	AMC 33746	NW Sec. 8	SW Sec. 8
OCCI #1	" 33747	NE Sec. 7 & NW Sec. 8	SE Sec. 7 & SW Sec. 8
" #2	" 33748	NE Sec. 7 & NW Sec. 8	SE Sec. 7 & SW Sec. 8
" #3	" 33749	NW Sec. 8	SW Sec. 8
" #4	" 33750	N2 Sec. 8	S2 Sec. 8
" #5	" 33751	NE Sec. 8	SE Sec. 8
" #6	" 33752	NE Sec. 8	SE Sec. 8
" #7	" 33753	SW Sec. 5 & NW Sec. 8	NW Sec. 5 & W2 Sec. 8
" #8	" 33754	S2 Sec. 5 & N2 Sec. 8	NW Sec. 5 & All Sec. 8
" #9	" 33755	SW Sec. 5	NW Sec. 8
" #10	" 33756	SW Sec. 5 & SE Sec. 6	NE Sec. 7 & NW Sec. 8
" #11	" 33757	SW Sec. 5 & SE Sec. 6	NE Sec. 7 & NW Sec. 8
" #12	" 33758	SW Sec. 5	NW Sec. 8
" #13	" 33759	SW Sec. 5, SE Sec. 6, NE Sec. 7 & NW Sec. 8	E2 Sec. 7 & W2 Sec. 8
" #14	" 33760	SE Sec. 5 & NE Sec. 8	E2 Sec. 8
" #15	" 33761	SE Sec. 5	NE Sec. 8
" #16	" 33762	S2 Sec. 5	N2 Sec. 8
" #17	" 33763	S2 Sec. 5	N2 Sec. 8
" #18	" 33764	SE Sec. 5	NE Sec. 8
" #19	" 33765	N2 Sec. 8	S2 Sec. 8
American Annex	" 33766	E2 Sec. 8	SE Sec. 8
Campsite	" 33767	NE Sec. 8	E2 Sec. 8
Big Jim	" 33768	N2 Sec. 8	S2 Sec. 8
TM #1	AMC 32905	SW Sec. 6, T23S,R16E & SE Sec. 1, T23S,R15E	NW Sec. 7, T22S,R16E
TM #2	" 32906	NW Sec. 7, T23S,R16E & NE Sec. 12, T23S,R15E	W2 Sec. 7 & E2 Sec. 12, T22S,R16E
TM #3	" 32907	NW Sec. 7, T23S,R16E & NE Sec. 12, T23S,R15E	SE Sec. 12, T22S,R15E & SW Sec. 7, T22S,R16E
TM #4	" 32908	NW Sec. 7, T23S,R16E & NE Sec. 12, T23S,R15E	SW Sec. 7, & SE Sec. 12, T22S,R16E
TM #5	" 32909	W2 Sec. 7, T23S,R16E & E2 Sec. 12, T23S,R15E	SW Sec. 7 & SE Sec. 12, T22S,R16E
TM #6	" 32910	SW Sec. 7, T23S,R16E & SE Sec. 12, T23S,R15E	SW Sec. 7 & SE Sec. 12, T22S,R16E
TM #7	" 32911	SW Sec. 6, T23S,R16E	NW Sec. 7, T22S,R16E
TM #8	" 32912	SW Sec. 6, T23S,R16E	NW Sec. 7, T22S,R16E
TM #9	" 32913	SW Sec. 6 & NW Sec. 7, T23S,R16E	NW Sec. 7, T22S,R16E
TM #10	" 32914	NW Sec. 7, T23S,R16E	W2 Sec. 7, T22S,R16E
TM #11	" 32915	NW Sec. 7, T23S,R16E	SW Sec. 7, T22S,R16E
TM #12	" 32916	NW Sec. 7, T23S,R16E	SW Sec. 7, T22S,R16E
TM #13	" 32917	W2 Sec. 7, T23S,R16E	SW Sec. 7, T22S,R16E
TM #14	" 32918	SW Sec. 7, T23S,R16E	SW Sec. 7, T22S,R16E
TM #15	" 32919	SW Sec. 7, T23S,R16E	SW Sec. 7 & NW Sec. 18, T22S,R16E
TM #16	" 32920	SW Sec. 7, T23S,R16E	NW Sec. 18, T22S,R16E
TM #17	" 32921	S2 Sec. 6, T23S,R16E	N2 Sec. 7, T22S,R16E

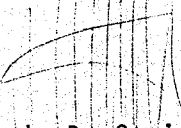
<u>Name of Claim</u>	<u>BLM Serial No.</u>	<u>Location as shown on Amended Notices & Map</u>	<u>Location as shown on BLM Microfiche</u>
TM #18	AMC 32922	S2 Sec. 6, T23S,R16E	N2 Sec. 7, T22S,R16E
TM #19	" 32923	S2 Sec. 6 & N2 Sec. 7, T23S,R16E	N2 Sec. 7, T22S,R16E
TM #20	" 32924	N2 Sec. 7, T23S,R16E	All Sec. 7, T22S,R16E
TM #21	" 32925	N2 Sec. 7, T23S,R16E	S2 Sec. 7, T22S,R16E
TM #22	" 32926	N2 Sec. 7, T23S,R16E	S2 Sec. 7, T22S,R16E
TM #23	" 32927	All Sec. 7, T23S,R16E	S2 Sec. 7, T22S,R16E
TM #24	" 32928	S2 Sec. 7, T23S,R16E	S2 Sec. 7, T22S,R16E
TM #25	" 32929	S2 Sec. 7, T23S,R16E	S2 Sec. 7 & N2 Sec. 18, T22S,R16E
TM #26	" 32930	S2 Sec. 7, T23S,R16E	N2 Sec. 18, T23S,R16E
TM #27	" 32931	S2 Sec. 7 & N2 Sec. 18, T23S,R16E	N2 Sec. 18, T23S,R16E
TM #29	" 32933	N2 Sec. 18, T23S,R16E	All Sec. 18, T23S,R16E
TM #30	" 32934	SE Sec. 6, T23S,R16E	NE Sec. 7 & NW Sec. 8, T23S,R16E
TM #31	" 32935	SE Sec. 6, T23S,R16E	NE Sec. 7 & NW Sec. 8, T23S,R16E
TM #32	" 32936	SE Sec. 6 & NE Sec. 7, T23S,R16E	NE Sec. 7 & NW Sec. 8, T23S,R16E
TM #33	" 32937	NE Sec. 7, T23S,R16E	E2 Sec. 7 & W2 Sec. 8, T23S,R16E
TM #34	" 32938	NE Sec. 7, T23S,R16E	SE Sec. 7 & SW Sec. 8, T23S,R16E
TM #35	" 32939	NE Sec. 7, T23S,R16E	SE Sec. 7 & SW Sec. 8, T23S,R16E
TM #36	" 32940	E2 Sec. 7, T23S,R16E	SE Sec. 7 & SW Sec. 8, T23S,R16E
TM #37	" 32941	SE Sec. 7, T23S,R16E	SE Sec. 7 & SW Sec. 8, T23S,R16E
TM #38	" 32942	SE Sec. 7, T23S,R16E	NW Sec. 17, NE Sec. 18, SE Sec. 7 & SW Sec. 8, T23S,R16E
TM #39	" 32943	SE Sec. 7, T23S,R16E	NW Sec. 17 & NE Sec. 18, T23S,R16E
TM #40	" 32944	SE Sec. 7 & NE Sec. 18, T23S,R16E	NW Sec. 17 & NE Sec. 18, T23S,R16E
TM #41	" 32945	NE Sec. 18, T23S,R16E	NW Sec. 17 & NE Sec. 18, T23S,R16E
TM #42	" 32946	NE Sec. 18, T23S,R16E	W2 Sec. 17 & E2 Sec. 18, T23S,R16E
TM #43	" 32947	NE Sec. 18, T23S,R16E	SW Sec. 17 & SE Sec. 18, T23S,R16E
TM #44	" 32948	NE Sec. 18, T23S,R16E	SW Sec. 17 & SE Sec. 18, T23S,R16E
TM #45	" 32949	E2 Sec. 7 & W2 Sec. 8, T23S,R16E	SW Sec. 8, T23S,R16E
TM #46	" 32950	SW Sec. 8 & SE Sec. 7, T23S,R16E	SW Sec. 8, T23S,R16E
TM #47	" 32951	SW Sec. 8 & SE Sec. 7, T23S,R16E	NW Sec. 17, T23S,R16E & SW Sec. 8, T22S,R16E

<u>Name of Claim</u>	<u>BLM Serial No.</u>	<u>Location as shown on Amended Notices & Map</u>	<u>Location as shown on BLM Microfiche</u>
TM #48	AMC 32952	SW Sec. 8 & SE Sec. 7 T23S,R16E	NW Sec. 17, T23S,R16E
TM #49	" 32953	SW Sec. 8, SE Sec. 7, NW Sec. 17 & NE Sec. 18 T23S,R16E	NW Sec. 17, T23S,R16E
TM #50	" 32954	NW Sec. 17 & NE Sec. 18, T23S,R16E	NW Sec. 17, T23S,R16E
TM #51	" 32955	NW Sec. 17 & NE Sec. 18, T23S,R16E	W2 Sec. 17, T23S,R16E
TM #52	" 32956	NW Sec. 17 & NE Sec. 18, T23S,R16E	W2 Sec. 17, T23S,R16E
TM #53	" 32957	NW Sec. 17 & NE Sec. 18, T23S,R16E	SW Sec. 17, T23S,R16E
TM #54	" 32958	S2 Sec. 8, T23S,R16E	N2 Sec. 17, T23S,R16E
TM #55	" 32959	S2 Sec. 8 & N2 Sec. 17, T23S,R16E	N2 Sec. 17, T23S,R16E
TM #57	" 32961	SW Sec. 7 & NW Sec. 18, T23S,R16E	NW Sec. 18, T23S,R16E
TM #59	" 32963	N2 Sec. 18, T23S,R16E	S2 Sec. 18, T23S,R16E
TM #60	" 32964	N2 Sec. 18, T23S,R16E	S2 Sec. 18, T23S,R16E
TM #61	" 32965	A11 Sec. 18, T23S,R16E	S2 Sec. 18, T23S,R16E
TM #62	" 32966	S2 Sec. 18, T23S,R16E	S2 Sec. 18, T22S,R16E & N2 Sec. 19, T23S,R16E
TM #63	" 32967	E2 Sec. 18, T23S,R16E	SW Sec. 17 & SE Sec. 18, T23S,R16E
TM #64	" 32968	SE Sec. 18, T23S,R16E	SW Sec. 17, SE Sec. 18, NE Sec. 19, & NW Sec. 20, T23S,R16E
TM #65	" 32969	W2 Sec. 17 & E2 Sec. 18, T23S,R16E	SW Sec. 17, T23S,R16E
TM #66	" 32970	SW Sec. 6, T23S,R16E & SE Sec. 1, T23S,R15E	NW Sec. 7, T22S,R16E & NE Sec. 12, T23S,R15E
TM #67	" 32971	NE Sec. 1, T23S,R15E	SW Sec. 6, NW Sec. 7, SE Sec. 1 & NE Sec. 12, T23S,R16E
TM #68	" 32972	E2 Sec. 1, T23S,R15E	SE Sec. 1 & SW Sec. 6, T23S,R16E
TM #69	" 32973	NW Sec. 6, T23S,R16E	SW Sec. 6, T23S,R16E
TM #70	" 32974	W2 Sec. 6, T23S,R16E	SW Sec. 6 & NW Sec. 7, T23S,R16E
TM #71	" 32975	NW Sec. 6, T23S,R16E	SW Sec. 6 & NW Sec. 7, T23S,R16E
TM #72	" 32976	W2 Sec. 6, T23S,R16E	SW Sec. 6, T23S,R16E
TM #73	" 32977	W2 Sec. 6, T23S,R16E	SW Sec. 6 & NW Sec. 7, T23S,R16E
TM #74	" 32978	W2 Sec. 6, T23S,R16E	SW Sec. 6 & NW Sec. 7, T23S,R16E
TM #75	" 32979	S2 Sec. 6, T23S,R16E	S2 Sec. 6 & N2 Sec. 7, T23S,R16E
TM #76	" 32980	NE Sec. 6, T23S,R16E	SE Sec. 6, T23S,R16E

<u>Name of Claim</u>	<u>BLM Serial No.</u>	<u>Location as shown on Amended Notices & Map</u>	<u>Location as shown on BLM Microfiche</u>
TM #77	AMC 32981	NE Sec. 6, T23S,R16E	SW Sec. 5 & SE Sec. 6, T23S,R16E
TM #78	" 32982	NW Sec. 5 & NE Sec. 6 T23S,R16E	SW Sec. 5 & SE Sec. 6, T23S,R16E
TM #79	" 32983	W2 Sec. 5 & E2 Sec. 6 T23S,R16E	SW Sec. 5, T23S,R16E
TM #80	" 32984	N2 Sec. 6, T23S,R16E	S2 Sec. 6, T23S,R16E
TM #81	" 32985	E2 Sec. 6, T23S,R16E	S2 Sec. 6, T23S,R16E
TM #82	" 32986	E2 & N2 Sec. 6, T23S,R16E	S2 Sec. 6, T23S,R16E
TM #83	" 32987	E2 Sec. 6, T23S,R16E	NE Sec. 7, T23S,R16E
TM #84	" 32988	All Sec. 6, T23S,R16E	S2 Sec. 6, T23S,R16E
TM #85	" 32989	SW Sec. 17 & SE Sec. 18, T23S,R16E	SW Sec. 17 & NW Sec. 20, T23S,R16E
TM #86	" 32990	SW Sec. 17 & SE Sec. 18, T23S,R16E	NW Sec. 20, T23S,R16E
TM #87	" 32991	SW Sec. 17 & SE Sec. 18, T23S,R16E	NW Sec. 20, T23S,R16E
TM #88	" 32992	SW Sec. 17, T23S,R16E	SW Sec. 17 & NW Sec. 20, T23S,R16E
TM #89	" 32993	SW Sec. 17 & NW Sec. 20, T23S,R16E	NW Sec. 20, T23S,R16E
TM #90	" 32994	SW Sec. 7, T23S,R16E	SW Sec. 7 & NW Sec. 18, T23S,R16E
TM #91	" 32995	SW Sec. 7 & NW Sec. 18, T23S,R16E	W2 Sec. 18, T23S,R16E
TM #92	" 32996	NE Sec. 6, T23S,R16E	E2 Sec. 6, T23S,R16E
TM #93	" 32997	NW Sec. 5 & NE Sec. 6 T23S,R16E	SW Sec. 5 & SE Sec. 6 T23S,R16E
TM #94	" 32998	NE Sec. 6, T23S,R16E	E2 Sec. 6, T23S,R16E
TM #95	" 32999	NE Sec. 6, T23S,R16E	E2 Sec. 6, T23S,R16E

Please correct your records to conform with the Amended Notices and Maps as submitted and recorded. If you have any questions, please don't hesitate to call.

Very truly yours,


J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek

cc: J. D. Sell

ASARCO

Southwestern Exploration Division

JDS

July 19, 1985

To: D. A. Melhado

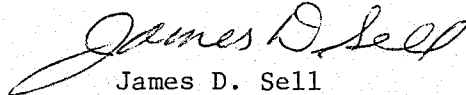
From: J. D. Sell

Thunder Mountain
Assessment Drilling
Patagonia Mountains
Santa Cruz County, AZ

As discussed, you will be in basic charge of the Joy drilling in TM-14, in collecting the core, keeping the drillers happy and honest, and expenditures. A copy of the drilling contract is attached.

You have \$18,100 to spend. Expenditures to be included are your time, but not the vehicle which should be "General Exp.," the road contractor, and the Joy charges.

F. R. Koutz will help when needed.



James D. Sell

JDS:mek
Att.

cc: W. L. Kurtz

EXPLORATION WELL(S)

DEPARTMENT OF WATER RESOURCES (DWR)

EXPLORATION WELL(S)

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL

Re-entry (see letters 5/29/84
8/10/83) to deepen 500-800'
additional.

EXPLORATION WELL(S)

Previous letter permit from J.S. Davis expired Aug. 10, 1984.

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION (protracted)

1. Township 23 N/S
Range 16 E/W
Section 5 (irregular)

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

SW 1/4, NW 1/4, NE 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated

Name SW Exploration Div.

P.O. Box 5747

Address

Tucson, AZ 85703

City State Zip

4. F.R.Koutz/W.D. Gay

NAME OF CONTACT PERSON

Phone 602-792-3010

5. Applicant is well:

Owner: X

Lessee: _____

Other: _____

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

Mineral Exploration X

Geotechnical _____

Cathodic Protection _____

Grounding _____

Monitor _____

Piezometer _____

Diamond Drill Hole

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land: Unpatented mining
claim "Warren Harding"

Asarco/Kerr-McGee

Name

P.O. Box 5747

Address

Tucson, AZ 85703

City State Zip

9. DESCRIPTION OF WELL:

3.685' to 2613' depth
Diameter 3.005' to 3075' depth

Depth 3075 feet

21' of 4"

Type of Casing 2613' NX

(If none, so state)

10. Construction will start:

August (early) 1985

Month Day Year

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

FILE NO. _____

FILED _____ BY _____

INPUT _____ BY _____

DUPLICATE _____

MAILED _____ BY _____

REGISTRATION NO. _____

AMA/INA _____

W/S _____ S/B _____

GENERAL INSTRUCTIONS

- Fill out this form in duplicate and mail to Department of Water Resources, Suite 100, 99 East Virginia, Phoenix, Arizona 85004. Filing fee must accompany Notice.
- Item 15 must be completed on the reverse side of this form for monitor wells.

I state that this Notice is filed in compliance with Rule R12-15-809 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 July 22, 1985

DWR-55-40-8/84

Signature of Applicant

Fleetwood R. Koutz, Geologist

11. For monitoring wells,
is pump equipment to
be installed? No

(a) If so, what will be
the design pump capacity?

N.A. gallons per minute.

(b) What use will be made
of the water? N.A.

12. Drilling firm:

Joy Mfg. Co.

Name

750 E. Evans Blvd.

Address

Tucson, AZ 85713

City State Zip

T-75

DWR License Number

13. Period well will remain
in use indefinite months.
deepening 1 month.

14. Proposed method of abandon-
ment of well(s) after
project is completed:

Hole filled with heavy

bentonite mud--casing

capped for re-entry.

CONDITIONS

1. Construction and abandonment standards for all wells shall be in accordance with DWR Rules R12-15-811 and R12-15-816.
2. Drilling of the well(s) shall be completed within one (1) year after the date of Notice.
3. Mineral exploration, geotechnical, cathodic protection or grounding holes of 100 feet of depth or less do not apply to these provisions and do not require filing. More than one well may be drilled under a single notice for mineral exploration, geotechnical, cathodic protection and piezometer purposes, so long as they are located within a single section.
4. A Project Completion Report, DWR-55-42-10/83, for each hole is required within 30 days of completion of the drilling project for mineral exploration wells. A Well Driller Report, DWR-55-6-5/83, for each hole is required within 30 days of completion of drilling for geotechnical, cathodic protection, grounding, monitor and piezometer wells. A Completion Report, DWR-55-7-3/83, is required to be filed with the Department within 10 days after installation of pump equipment for monitor wells.
5. Pump equipment may not be installed on wells drilled for mineral exploration, geotechnical, cathodic protection, grounding or piezometer purposes. If a monitor well is pumped, pumping is limited to the minimum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual amount of 10 acre feet total.
6. Special construction standards required pursuant to R12-15-821: _____

15. Indicate anticipated construction details for monitoring wells. N.A.

- (a) Drilling method _____
(Rotary, cable tool, auger, other (specify))
- (b) Casing diameter _____ inches from _____ to _____;
_____ inches from _____ to _____;
_____ inches from _____ to _____;
- (c) Method of sealing at reductions _____
- (d) Length of surface seal _____ (feet).
- (e) Anticipated perforation interval: from _____ to _____;
from _____ to _____;
- (f) Type of perforation _____
(Screen, machined slot, other (specify))
- (g) Type of pump _____
(Submersible, turbine, other (specify))

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 5, 1985

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85621

Affidavits of Labor
Santa Cruz County

Dear Ms. Sainz:

Enclosed is Asarco's check of \$15.00 as the recording fee for the following Affidavits of Labor which are attached:

<u>Claims</u>	<u>Owner</u>	<u>Project</u>
TM, Wellington, Jessie, ORB, OCCl, et al (93)	Asarco/Kerr-McGee	Thunder Mountain
Boot-Flux (49)	Asarco/Anaconda	3-R
Humbolt (7)	Asarco	Trench

Please return in the enclosed stamped envelope.

Very truly yours,

Original Signed By
L. R. STRINGHAM

J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek
encs.

cc: J.D. Sell
A.J. Robles

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J.R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location as set forth in Exhibit A.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1984 and August 28, 1985, in excess of \$9,500 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93), comprising said contiguous groups as part of a general plan of exploration, improvements and development and they tend to explore, improve and develop each and all of said mining claims. The amount expended for the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1985.

ASARCO Incorporated

By [Signature]
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day
of September, 1985, by J. R. Stringham.

My Commission Expires:
My Commission Expires Nov. 28, 1988

Mildred Koepfer
Notary Public

EXHIBIT A
TO AFFIDAVIT OF PERFORMANCE
OF LABOR FOR YEAR
ENDING SEPTEMBER 1, 1985

The following contiguous group of unpatented lode mining claims are situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names of which and the book and pages of recording of the Location Notices of which, are in the office of the Recorder of Santa Cruz County, and the Bureau of Land Management serial numbers of which are filed in Phoenix, Arizona.

Name of Claim	Recording Data		BLM Serial Number
	Book	Page	
TM #30 thru TM #35	042	149 thru 154	A MC 32934 thru 32939
TM #67 " TM #84	060	90 " 107	32971 " 32988
TM #92 " TM #94	061	57 " 59	32996 " 32998
TM #95	066	457	32999
Wellington	9	591	33769
" Amended	380	672 and 673	"
Lafayette	8	368	33770
" Amended	380	674 and 675	"
Bryan	11	79 and 80	33771
" Amended	380	676 and 677	"
Copper Dyke	18	155	33772
" " Amended	343	204 and 205	"
Warren Harding	18	339	33773
" " Amended	380	678 and 679	"
Abraham Lincoln	27	260	33774
" " Amended	343	198 and 199	"
Calvin Coolidge	22	275	33775
" " Amended	382	573 and 574	"
Roosevelt	17	488	33776
" Amended	380	680 and 681	"
Jesse No. 1 thru Jesse No. 23	119	70 thru 92	32307 thru 32329
Jesse No. 24	308	139 and 140	137599
ORB #1 thru ORB #6	150	500 thru 505	32501 thru 32506
ORB #7	343	218 and 219	192265
ORB #7 Amended	382	577 and 578	"
ORB #8	343	220 and 221	192266
ORB #8 Amended	382	579 and 580	"
ORB #9	343	222 and 223	192267
ORB #9 Amended	382	581 and 582	"
ORB #10	343	224	192268
ORB #10 Amended	382	583 and 584	"
OCCI	033	372	33746
OCCI #1 thru OCCI #18	033	373 thru 390	33747 thru 33764
OCCI #19	035	116	33765
American Annex	083	221	33766
Campsite	083	222	33767
Big Jim	025	335	33768

All of said claims being situated in Sections 5, 6, 7, 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J.R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are set forth as follows on Exhibit A.

That all of said mining claims are owned by ASARCO Incorporated and Anaconda Minerals Company, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1984 and August 28, 1985, in excess of \$5,000 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling by Joy Manufacturing Co., 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (49), comprising said contiguous groups as part of the general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the described unpatented lode mining claims for the assessment year ending 12:00 o'clock Meridian, September 1, 1985.

ASARCO Incorporated

By

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day of September, 1985, by J.R. Stringham.

My Commission Expires:
My Commission Expires Nov. 23, 1988

Mildred C. Koepfen
Notary Public

EXHIBIT A
TO AFFIDAVIT OF PERFORMANCE
OF LABOR FOR YEAR
ENDING SEPTEMBER 1, 1985

The following contiguous group of unpatented mining claims are situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona. The Location Notices of which are of record in the office of the Santa Cruz Recorder, and are as follows:

<u>Name of Claim</u>	<u>Recording Data</u>		<u>BLM Serial Number</u>
	<u>Book</u>	<u>Page</u>	
Boot No. 36	41	139	A MC 52011
Boot 52 thru 61	58	421 thru 430	52015 thru 52024
Boot 70	57	316	52025
Boot 72	57	318	52027
Boot 77	57	323	52032
Boot 78	57	324	52033
Boot 78 Amended	58	431	"
Boot 79	57	325	52034
Boot 80	57	326	52035
Boot 80 Amended	58	432	"
Boot 81 thru 84	57	327 thru 330	52036 thru 52039
Boot 90 thru 95	81	349 " 354	52044 " 52049
Boot 97 thru 106	81	355 " 364	52050 " 52059
Flux No. 1 (Flux Mine)	3	312 and 313	52060
Flux No. 2	1	258 thru 260	52061
Flux No. 2 Amended	3	314 and 315	"
Flux No. 3	2	14 and 15	52062
Flux No. 3 Amended	3	315 thru 317	"
Flux No. 4	3	318 and 319	52063
Flux No. 5 (Mexicano)	2	15	52064
Flux No. 5 Amended	3	319 thru 321	"
Flux No. 11	16	284 and 285	52065
Flux No. 11 Amended	16	314	"
Flux No. 15	16	285 and 286	52066
Flux No. 16	16	280 and 281	52067
Flux No. 18	16	282 and 283	52068
Flux No. 23	26	330	52069
Flux No. 25	26	375	52070
Rockney	24	100	52071

All of said claims are located in Sections 24, 25, and 36, T22S, R15E; Sections 30 and 31, T22S, R16E; and Section 6, T23S, R16E, G&SRB&M.

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J. R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of Claim</u>	<u>Book</u>	<u>Page</u>	<u>BLM Serial Number</u>
South Humbolt	007	360	A MC 50226
" " Amended	380	682 and 683	"
Humbolt	007	358	50227
" Amended	380	684 and 685	"
Silver Leaf	007	364	50228
" " Amended	380	686 and 687	"
Good Luck #2	007	366	50229
" " " Amended	380	688 and 689	"
Indian Chief	007	368	50230
" " Amended	380	690 and 691	"
Monoca	007	362	50231
" Amended	380	692 and 693	"
Good Luck	4	300	50232
" " Amended	382	575 and 576	"

The above described unpatented lode mining claims are located in Section 32 of Township 22 South, Range 16 East, and Section 5 of Township 23 South, Range 16 East, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1984 and August 28, 1985, in excess of \$800 worth of work and improvements were done and performed for the benefit of the aforementioned claims. Work and improvements consisted of drilling by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements

and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1985.

ASARCO Incorporated

By 

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day
of September, 1985, by J. R. Stringham.



Mildred C Koeppe
Notary Public

ASARCO

Exploration Department
Southwestern United States Division

Certified Mail
Return Receipt

September 11, 1985

Mr. Dean Bibles
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, AZ
A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599

192265 thru 192268

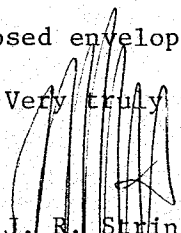
Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 406, Pages 476 and 477, for the assessment year ending September 1, 1985.

Please return acknowledgement receipt in the enclosed envelope.

JRS:mek
enc.

Very truly yours,


J. R. Stringham
Assistant to the
Manager, SWED

cc: R. L. Brown
H. E. Kelshaw (w/enc.)
J. D. Sell (w/enc.)
A. J. Robles (w/enc.)
Kerr-McGee Corporation
Att: G.D. Christiansen, V.P.

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

J.R. Stringham, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location as set forth in Exhibit A.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1984 and August 28, 1985, in excess of \$9,500 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93), comprising said contiguous groups as part of a general plan of exploration, improvements and development and they tend to explore, improve and develop each and all of said mining claims. The amount expended for the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1985.

ASARCO Incorporated

By [Signature]
Agent

STATE OF ARIZONA)
) ss
County of Pima)
Notary Public
MILBURN G. KOEPPEN
1985

The foregoing instrument was acknowledged before me this 4th day of September, 1985, by J. R. Stringham.

My Commission Expires:
My Commission Expires Nov. 28, 1988

Mildred C Koeppe
Notary Public

EXHIBIT A
TO AFFIDAVIT OF PERFORMANCE
OF LABOR FOR YEAR
ENDING SEPTEMBER 1, 1985

DOCK 406 PAGE 477

The following contiguous group of unpatented lode mining claims are situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names of which and the book and pages of recording of the Location Notices of which, are in the office of the Recorder of Santa Cruz County, and the Bureau of Land Management serial numbers of which are filed in Phoenix, Arizona.

Name of Claim	Book	Page	BLM Serial Number
TM #30 thru TM #35	042	149 thru 154	A MC 32934 thru 32939
TM #67 " TM #84	060	90 " 107	32971 " 32988
TM #92 " TM #94	061	57 " 59	32996 " 32998
TM #95	066	457	32999
Wellington	9	591	33769
" Amended	380	672 and 673	"
Lafayette	8	368	33770
" Amended	380	674 and 675	"
Bryan	11	79 and 80	33771
" Amended	380	676 and 677	"
Copper Dyke	18	155	33772
" " Amended	343	204 and 205	"
Warren Harding	18	339	33773
" " Amended	380	678 and 679	"
Abraham Lincoln	27	260	33774
" " Amended	343	198 and 199	"
Calvin Coolidge	22	275	33775
" " Amended	382	573 and 574	"
Roosevelt	17	488	33776
" Amended	380	680 and 681	"
Jesse No. 1 thru Jesse No. 23	119	70 thru 92	32307 thru 32329
Jesse No. 24	308	139 and 140	137599
ORB #1 thru ORB #6	150	500 thru 505	32501 thru 32506
ORB #7	343	218 and 219	192265
ORB #7 Amended	382	577 and 578	"
ORB #8	343	220 and 221	192266
ORB #8 Amended	382	579 and 580	"
ORB #9	343	222 and 223	192267
ORB #9 Amended	382	581 and 582	"
ORB #10	343	224	192268
ORB #10 Amended	382	583 and 584	"
OCCI	033	372	33746
OCCI #1 thru OCCI #18	033	373 thru 390	33747 thru 33764
OCCI #19	035	116	33765
American Annex	083	221	33766
Campsite	083	222	33767
Big Jim	025	335	33768

All of said claims being situated in Sections 5, 6, 7, 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

FEE NO. 05553

STATE OF ARIZONA, County of Santa Cruz — SS.

I do hereby certify that the within instrument was filed and recorded at the request of

ASARCO Incorporated

on SEP 6 '85 - 10 00 AM

Docket No. 406 Page 476-477

Records of Santa Cruz County, Arizona.

Witness my hand and official seal the day and year first above written.

MARY LOU G. SAINZ, COUNTY RECORDER

By Margarita Vergara
Deputy

ASARCO

Exploration Department
Southwestern United States Division

September 30, 1985

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125


Attention: G. D. Christiansen, V.P., Exploration

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment

Gentlemen:

Enclosed for your records is a copy of the 1985 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and acknowledged as received by the Bureau of Land Management, Arizona State Office, Phoenix, AZ on September 12, 1985.

Very truly yours,

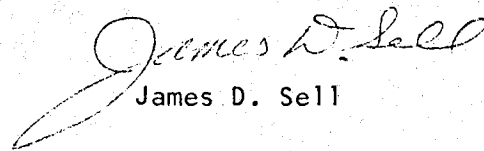

J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek
enc.

cc: J. D. Sell

3. Thunder Mtn Project (K-M portion), Santa Cruz Co., AZ
August 1, 1986
\$9,300
F.R. Koutz, T. Dalla Vista, and J.D. Sell.

JDS:mek


James D. Sell

cc: W. L. Kurtz

July 21, 1986

To: W. D. Gay

From: J. D. Sell

File Assessment Work
Year Ending Sept. 1, 1986

The following SWED projects have had the necessary funds expended in geologic studies and evaluation. Please file the assessment work records to the proper authorities. The blanks in the following paragraph are given below for the projects:

...; That between September 1, 1985, and _____, 1986, in excess of \$ _____ worth of geologic studies, evaluation, and improvements were done and performed for the benefit of the described claims. The studies, evaluation, and improvements were performed by _____, ASARCO Incorporated, Tucson, Arizona. ...

- 1.A. Superior East; Margaret Group, Pinal Co., AZ
July 31, 1986
\$12,300
J.D. Sell and H.G. Kreis

(NOTE: This can not be sent out until September.)

- 1.B. Superior East; Dacite, Kay, and LD Claims, Pinal Co., AZ
June 15, 1986
\$2,000
J.D. Sell and H.G. Kreis

NOTE: Last year Mr. Stringham filed on 9 Dacite claims, but we should have retained only Dacite #1 thru Dacite #6 according to our reduction plan.

Thus: 6 Dacites
5 Kays
9 LDs
20 Claims Total

2. Ventura Project, Santa Cruz Co., AZ
August 1, 1986
\$3,200
F.R. Koutz, T. Dalla Vista, and J.D. Sell

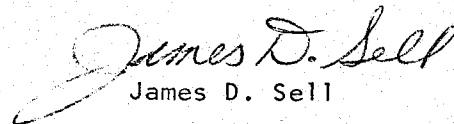
July 29, 1986

FILE NOTE

1985-1986 Assessment Year
Thunder Mountain Project
Santa Cruz County, AZ

For the record, between December 1985, and August 1, 1986, Messrs. F.R. Koutz, T. Dalla Vista, and J.D. Sell did spend time on the property and for the benefit of the property by geologic studies, evaluation, and improvements, for the assessment work on 93 claims of the block for the year September 1, 1985 through August 31, 1986.

JDS:mek


James D. Sell

cc: W. D. Gay

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

August 4, 1986

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, AZ 85628

Affidavit of Labor
Thunder Mt. Project
Santa Cruz Co., AZ

Dear Ms. Sainz:

Enclosed is Asarco's check of \$12.00 as the recording fee for the attached Affidavit of Labor for TM, Wellington, Jessie, ORB, OCCI, et al claims (93).

Please return in the enclosed stamped envelope.

Very truly yours,

/s/

William D. Gay
Land Engineer

WDG:mek
encs.

cc: J. D. Sell
A. J. Robles

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1985 and August 1, 1986, in excess of \$9,300 worth of geologic studies, evaluation, and improvements were done and performed for the benefit of the described claims. The studies, evaluation, and improvements were performed by F.R. Koutz, T. Dalla Vista, and J.D. Sell, ASARCO Incorporated, Tucson, Arizona.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of

said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1986.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day of August, 1986, by William D. Gay.

Kathleen Spreng
Notary Public

My Commission Expires:

My Commission Expires July 7, 1988

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

August 11, 1986

Mr. Dean Bibbes
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, AZ
A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining Claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 428, Pages 509 thru 511, for the assessment year ending September 1, 1986.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

W. D. Gay
W. D. Gay
Land Engineer

WDG:mek
encs.

cc: R.L. Brown
W.A. Bennis (w/enc.)
J.D. Sell (w/enc.)
A.J. Robles (w/enc.)
Kerr-McGee Corporation
Att: G.D. Christiansen, V.P.

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

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TM #92 thru	061	57 thru	A MC 32996 thru
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TM #95	066	457	A MC 32999
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Copper Dyke	18	155	A MC 33772
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" " Amended	382	577 & 578	"
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ORB #9	343	222 & 223	A MC 192267
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ORB #10	343	224	A MC 192268
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OCCI #1 thru	033	373 thru	A MC 33747 thru
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Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of

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ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day of August, 1986, by William D. Gay.

Kathleen L. Ferguson
Notary Public

My Commission Expires:

My Commission Expires July 7, 1988

03962

FEE NO. _____

STATE OF ARIZONA, County of Santa Cruz — SS.

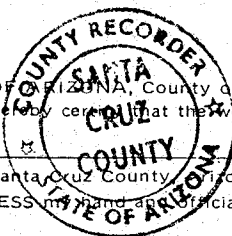
I do hereby certify that the within instrument was filed and recorded at the request of ASARCO Incorporated

Records of Santa Cruz County, Arizona.

WITNESS my hand and official seal the day and year first above written.

MARY LOU G. SAINZ, COUNTY RECORDER

By Margaret Vergara
Deputy



AUG 05 '86 - 10:00 AM

Docket No. 428 Page 509-511

ASARCO

Exploration Department
Southwestern United States Division

August 19, 1986

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Attention: Mr. G.D. Christiansen
V.P., Exploration

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment

Gentlemen:

Enclosed for your records is a copy of the 1986 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and acknowledged as received by the Bureau of Land Management, Arizona State Office, Phoenix, Arizona on August 12, 1986.

Sincerely yours,

W. D. Gay
W. D. Gay
Land Engineer

WDG:mek
encs.

cc: J. D. Sell

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

August 11, 1986

Mr. Dean Bibbes
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

RECEIVED
B.L.M. STATE OFFICE

AUG 12 1986

PHOENIX, ARIZONA

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, AZ
A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining Claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 428, Pages 509 thru 511, for the assessment year ending September 1, 1986.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

W. D. Gay
W. D. Gay
Land Engineer

WDG:mek
encs.

cc: R.L. Brown
W.A. Bennis (w/enc.)
J.D. Sell (w/enc.)
A.J. Robles (w/enc.)
Kerr-McGee Corporation
Att: G.D. Christiansen, V.P.

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

DOCK 428 PAGE 509

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

RECEIVED

AUG 12 1986

PHOENIX, ARIZONA

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

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Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1985 and August 1, 1986, in excess of \$9,300 worth of geologic studies, evaluation, and improvements were done and performed for the benefit of the described claims. The studies, evaluation, and improvements were performed by F.R. Koutz, T. Dalla Vista, and J.D. Sell, ASARCO Incorporated, Tucson, Arizona.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of

RECEIVED
B.I.M. AT
AUG 12 1986
PHOENIX, ARIZONA

said labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1986.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 4th day of August, 1986, by William D. Gay.

Kathleen Sprenger
Notary Public
RECEIVED
AUG 12 1986
7:40 P.M.
PHOENIX, ARIZONA

My Commission Expires:

My Commission Expires July 7, 1988

03962

FEE NO.

STATE OF ARIZONA, County of Santa Cruz — SS.

I do hereby certify that the within instrument was filed and recorded at the request of

ASARCO Incorporated

Records of Santa Cruz County, Arizona.

on

AUG 05 '86-10:00 AM

Docket No.

428

Page

509-511

WITNESS my hand and official seal the day and year first above written.

MARY LOU G. SAINZ, COUNTY RECORDER

By Margaret Vergara
Deputy

ASARCO

Exploration Department
Southwestern United States Division

September 15, 1986

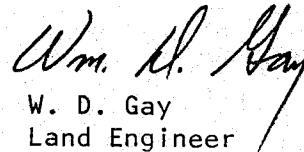
Mr. J.P. McNeely
Mineral Lease Records
KERR-McGEE Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

Thunder Mountain Project
Santa Cruz County, AZ

Dear Mr. McNeely:

As requested in your letter of September 9, 1986, enclosed are copies of amended claims ORB #7, #8, #9, and #10. Also enclosed is a copy of a letter of September 11, 1984 to Mr. E.E. Jones of Kerr-McGee whereby copies of these amended notices of location were sent to Kerr-McGee for record purposes.

Sincerely yours,


W. D. Gay
Land Engineer

WDG:mek
encs.

cc: J. D. Sell



KERR-MCGEE CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

September 9, 1986

ASARCO Incorporated
P.O. Box 5747
1150 North 7th Avenue
Tucson, AZ 85703-0747

Attn: Mr. W. D. Gay
Land Engineer

Re: Thunder Mountain Arizona Project
(02-007-0005)

Gentlemen:

In reviewing the Affidavit of Assessment Work transmitted by your letter of August 19, 1986, we find that we do not have copies of the following documents:

<u>CLAIM</u>	<u>RECORDED</u>	
	<u>BOOK</u>	<u>PAGES</u>
ORB #7 AMENDED	382	577 & 578
ORB #8 AMENDED	382	579 & 580
ORB #9 AMENDED	382	581 & 582
ORB #10 AMENDED	382	583 & 584

We would appreciate receiving copies of the above Amended Location Notices at your earliest convenience.

Yours truly,

J. P. McNeely
Mineral Lease Records

JPM:rg

enc1

ASARCO Incorporated

SEP 11 1986

SW Exploration

ASARCO

Exploration Department
Southwestern United States Division

September 11, 1984

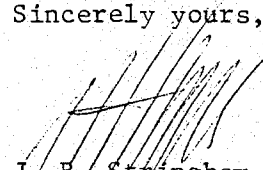
Mr. E. E. Jones
Kerr-McGee Corporation
Minerals Exploration Division
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Amended Notices of Location
Harshaw Mining District
Santa Cruz County, Arizona

Dear Mr. Jones:

Enclosed for your records are copies of amended notices of location for claims in the Harshaw Mining District, Santa Cruz County, Arizona which were quit claimed to Kerr-McGee. These amended notices have been recorded in the official records of Santa Cruz County and filed with the BLM which has acknowledged receiving them.

Sincerely yours,


J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek
encs.

cc: J. D. Sell

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 4, 1984

Bureau of Land Management
Mining Claims Section
P.O. Box 16563
Phoenix, AZ 85011

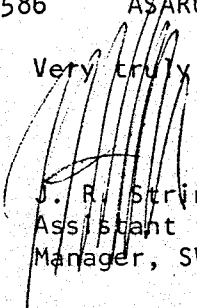
Amended Notices of Location
Harshaw Mining District
Santa Cruz County, AZ

Gentlemen:

In accordance with Section 314 of the Federal Land Policy and Management Act of 1976 (43 U.S.C., Sec. 1744) and the regulations thereto, there is enclosed for filing in your office a copy of the official record of the Amended Notices of Location with maps for the following 7 mining claims in the Harshaw Mining District, Santa Cruz County, Arizona.

<u>Name of Claim</u>	<u>Date of Amend. Notice</u>	<u>Recorded Book</u>	<u>Page</u>	<u>Owner</u>	<u>BLM Serial No.</u>
Calvin Coolidge	8/14/84	382	573 & 574	Kerr-McGee	AMC 33775
Good Luck	8/3/84	"	575 & 576	ASARCO Inc.	50232
Orb #7	8/20/84	"	577 & 578	Kerr-McGee	192265
Orb #8	8/1/84	"	579 & 580	Kerr-McGee	192266
Orb #9	8/1/84	"	581 & 582	Kerr-McGee	192267
Orb #10	8/16/84	"	583 & 584	Kerr-McGee	192268
Boot 107	8/2/84	"	585 & 586	ASARCO Inc.	194596

Very truly yours,


J. R. Stringham
Assistant to the
Manager, SWED

JRS:mek
encs.

cc: J. D. Sell
A. J. Robles

RECEIVED
B.L.M. AZ STATE OFFICE

SEP 5 1984

07.45 A.M.
PHOENIX, ARIZONA

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

March 30, 1987

To: H. G. Kreis

From: J. D. Sell

Assessment Work
Patagonia Mountains
Santa Cruz Co., AZ

At present we have a total of 181 claims in the Patagonia Mountains under the following projects:

Trench (Humboldt)	7 Claims
Ventura	32
3R	49
Thunder Mountain	<u>93</u>
	<u>181 Claims</u>

We may pare the size to 150 claims before the next quarter is completed.

\$30,000 will be requested to complete back-to-back assessment work covering the year ending August 31, 1987 and August 31, 1988.

We will do the work for the benefit of all claims by reentering and deepening TM-14, shown on the attached map. TM-14 presently has NX casing to 2613' and open NX hole to 3500 feet.

The Nogales Forest Service needs to be notified and I assume Joy should be asked to submit their bid on the deepening of the hole. Joy has drilled all the previous footage.

Supplemental Exploration Appropriation Request notification needs to be sent in. See me for any questions.

JDS:mek
att. map

James D. Sell
James D. Sell

cc: W.L. Kurtz

ASARCO

Exploration Department
Southwestern United States Division

June 18, 1987

Depart. of Water Resources
State of Arizona
99 E. Virginia, Suite 100
Phoenix, Arizona 85004

Thunder Mountain Project
Santa Cruz County, AZ

Gentlemen:

In compliance with drill hole regulations ASARCO Incorporated requests a drilling permit to deepen the drill hole described in the attached "Notice of Intention to Drill" form. When the permit is obtained and the hole deepened, our contractor, Joy Manufacturing, will complete and file the "Project Completion Report for Exploration Drilling." A check for the \$10 filing fee is enclosed. For your convenience, I have attached a previously approved copy of Asarco's July 22, 1985 "Notice of Intention to Drill" form for the same hole and the same drilling procedure.

If you have any questions, call or write me or J.D. Sell, Manager SWED.

Very truly yours,

William D. Gay
William D. Gay
Land Engineer

WDG:mek
Atts.

cc: W.L. Kurtz
J.D. Sell
H.G. Kreis
J.H. Koontz, Joy Mfg. Co.

FILING FEE \$10.00

DEPARTMENT OF WATER RESOURCES (DWR)

EXPLORATION WELL(S)

NOTICE OF INTENTION TO DRILL

Re-entry (see letters 6/12/87, 5/29/84, 8/10/83) to deepen 500' additional.

EXPLORATION WELL(S)

Previous Notice of Intention to Drill filed 7-24-85.

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 23 N/S
Range 16 E/W
Section 5 (irregular)

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

SW 1/4, NW 1/4, NW 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated
Name
SW Exploration Div.

Address P.O. Box 5747
Tucson, AZ 85703
City State Zip

4. H.G.Kreis/W.D.Gay/J.D.Sell
NAME OF CONTACT PERSON
Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson, AZ 85703
City State Zip

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

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land: Unpatented mining Joy Mfg. Co.
Claim "Warren Harding"

Asarco/Kerr-McGee
Name

P.O. Box 5747

Address

Tucson AZ 85703
City State Zip

9. DESCRIPTION OF WELL:

Diameter 3.685" to 2613' depth
3.005" to 3500' depth

Depth 3500 feet
21' of 4"

Type of casing 2613' NX
(If none, so state)

10. Construction will start:

June or July 1987
Month Day Year

11. Drilling firm:

Name

750 E. Evans Blvd.

Address

Tucson, AZ 85713

City State Zip

T-75

DWR License Number

Period well will remain
in use indef. months.

13. Proposed method of
abandonment of well(s)
after project is
completed:

Hole filled with heavy
bentonite mud--casing
capped for re-entry.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. _____

Filed _____ By _____

Input _____ By _____

Duplicate _____

Mailed _____ By _____

Registration _____

AMA/INA _____

W/S _____ S/B _____

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? Yes ___ No X

If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, Suite 100, 99 East Virginia, Phoenix, Arizona 85004.
2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 June 17, 1987

DWR 55-40-8/86 (Revised)

William D. Gay
Signature of Applicant
William D. Gay, Land Engineer

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL
EXPLORATION WELL(S)

Re-entry (see letters 5/29/84
8/10/83) to deepen 500-800'
additional.

Previous letter permit from J.S. Davis expired Aug. 10, 1984.

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION (protracted)

1. Township 23 N/S
Range 16 E/W
Section 5 (irregular)

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

SW 1/4, NW 1/4, NE 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated

Same SW Exploration Div.

P.O. Box 5747

Address

Tucson, AZ 85703

City State Zip

4. F.R.Koutz/W.D. Gay

NAME OF CONTACT PERSON

Phone 602-792-3010

5. Applicant is well:

Owner: X

Lessee:

Other:

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

Mineral Exploration X

Geotechnical

Cathodic Protection

Grounding

Monitor

Piezometer

Diamond Drill Hole

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land: Unpatented claim Warren Harding

Asarco/Kerr-McGee

Name

P.O. Box 5747

Address

Tucson, AZ

City State Zip

9. DESCRIPTION OF WELL:
3.685' to 2613' depth
Diameter 3.005' to 3075' depth

Depth 3075 feet

21' of 4"

Type of Casing 2613' NX
(If none, so state)

10. Construction will start:
August (early) 1985
Month Day Year

11. For monitoring wells,
is pump equipment to
be installed? No

If so, what will be
the design pump capacity
N.A. gallons per minute.

What use will be made
of the water? N.A.

12. Drilling firm:

Joy Mfg. Co.

Name

750 E. Evans Blvd.

Address

Tucson, AZ 85713

City State Zip

T-75 ✓

DWR License Number

13. Period well will remain
in use indefinite months.
deepening 1 month.

14. Proposed method of abandon-
ment of well(s) after
project is completed:

Hole filled with heavy

benonite mud-casting

capped for entry

HYDROLOGY

APPROVED

CYC

Surf. 100'

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

FILE NO. D(23-16)5

FILED 7-24-85 BY sk

INPUT BY

DUPLICATE
MAILED 7-26-85 BY sk

REGISTRATION NO. 65-511897 ✓

AMA/INA

W/S 09 S/B

GENERAL INSTRUCTIONS.

1. Fill out this form in duplicate and mail to Department of Water Resources, East Virginia, Phoenix, Arizona 85004. Filing fee must accompany Notice.
2. Item 15 must be completed on the reverse side of this form for monitor wells.

I state that this Notice is filed in compliance with Rule R12-15-809 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 July 22, 1985

DWR-55-40-8/84

Signature of Applicant

Fleetwood R. Koutz, Geologist

ASARCO

JDS/w/K

For Theodore M. Gay

Exploration Department
Southwestern United States Division

July 27, 1987

CERTIFIED MAIL
RETURN RECEIPT

Ms. Mary Lou Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, AZ 85621

QUIT CLAIM DEED
Harshaw Mining District

Dear Ms. Sainz:

Enclosed is Asarco's check for \$8.00 as the recording fee for the attached Quit Claim Deed to Kerr-McGee Corporation on unpatented mining claim in the Harshaw Mining District, Santa Cruz County, AZ.

Also enclosed is a self-addressed, stamped envelope for the return of the deed to the sender.

Very truly yours,

/s/

W. D. Gay
Land Engineer, SWED

WDG:mek
enc.

cc: J.D. Sell/W.L. Kurtz
A.J. Robles

QUIT CLAIM DEED

For the consideration of Ten Dollars, and other valuable considerations, ASARCO Incorporated, P.O. Box 5747, Tucson, Arizona 85703, does hereby quit-claim to Kerr-McGee Corporation, all right, title, or interest in the unpatented mining claim situated in the Harshaw Mining District, Santa Cruz County, Arizona, described in Exhibit A, attached hereto and made a part hereof.

Date: July 24, 1987

ASARCO Incorporated

By: W. D. Gay
W. D. Gay, Land Engineer, SWED

State of Arizona)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
24th day of July, 1987, by W.D. Gay, Land Engineer, SWED,
ASARCO Incorporated.

Mildred C. Koepfen
Notary Public

My commission expires:

My Commission Expires Nov. 28, 1988

EXHIBIT A

The following unpatented lode mining claim is situated in the Harshaw Mining District, Santa Cruz County, Arizona, the name of which and the book and pages of recording of the Location Notice of which, is in the office of the Recorder of Santa Cruz County, and the Bureau of Land Management serial number of which is filed in Phoenix, Arizona.

<u>Name of Claim</u>	<u>Recording Data</u>		<u>Serial Number</u>
	<u>Book</u>	<u>Page</u>	<u>A MC</u>
JESSE No. 24	308	139 & 140	A MC 137599

Said claim is situated in Section 5, Township 23S, Range 16E, GSRB&M.

ASARCO

Exploration Department
Southwestern United States Division

August 5, 1987

Kerr-McGee Corporation
Kerr-McGee Center
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Attention: Mr. John

Quit Claim Deed
Harshaw Mining District
Santa Cruz County, AZ

Gentlemen:

Enclosed is the original Quit Claim Deed for the unpatented lode claim, JESSE No. 24, which is located in the Harshaw Mining District, Santa Cruz County, Arizona. This was recorded in Santa Cruz County on July 28, 1987, Docket No. 453, Pages 269 and 270.

Sincerely yours,



W.D. Gay
Land Engineer, SWED

WDG:mek
enc.

cc: W.L. Kurtz
J.D. Sell
C.L. Snow

MICROFILMED

INDEXED

DOCK 453 PAGE 269

QUIT CLAIM DEED

For the consideration of Ten Dollars, and other valuable considerations, ASARCO Incorporated, P.O. Box 5747, Tucson, Arizona 85703, does hereby quit-claim to Kerr-McGee Corporation, all right, title, or interest in the unpatented mining claim situated in the Harshaw Mining District, Santa Cruz County, Arizona, described in Exhibit A, attached hereto and made a part hereof.

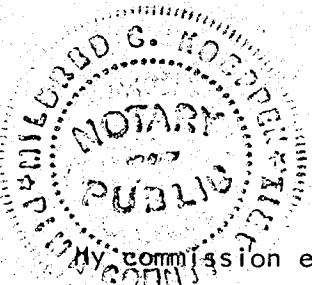
Date: July 24, 1987

ASARCO Incorporated

By: W. D. Gay
W. D. Gay, Land Engineer, SWED

State of Arizona)
County of Pima) ss

The foregoing instrument was acknowledged before me this
24th day of July, 1987, by W.D. Gay, Land Engineer, SWED,
ASARCO Incorporated.



Mildred C Koeppe
Notary Public

The following unpatented lode mining claim is situated in the Harshaw Mining District, Santa Cruz County, Arizona, the name of which and the book and pages of recording of the Location Notice of which, is in the office of the Recorder of Santa Cruz County, and the Bureau of Land Management serial number of which is filed in Phoenix, Arizona.

<u>Name of Claim</u>	<u>Recording Data</u>		<u>Serial Number</u>
	<u>Book</u>	<u>Page</u>	
JESSE No. 24	308	139 & 140	A MC 137599

Said claim is situated in Section 5, Township 23S, Range 16E, GSRB&M.



STATE OF ARIZONA
County of Santa Cruz

} ss 874538

I hereby certify that the within instrument was filed for record at the request of ASARCO, INC.

Date JUL 28 '87-10 10 at _____
Docket No. 453 Page 269-270

Witness my hand and Official Seal day and year above written

MARY LOU G. SAINZ County Recorder

By Juan L. Pacheco
CHIEF Deputy

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

August 21, 1987

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

Dear Ms. Sainz:

Enclosed is Asarco's check of \$39.00 as the recording fee for the attached three Affidavits of Labor for the following unpatented claims:

<u>Claim Names</u>	<u>No. Pages</u>	<u>Fee</u>
TM, Welington, etc.	3	\$13.00
Boot, Flux, Rockney	3	\$13.00
South Humbolt, Humbolt, etc.	2	<u>\$13.00</u>
		<u>\$39.00</u>

Also enclosed is a return, stamped envelope.

Very truly yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell
C.L. Snow

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u> <u>Serial No.</u>
	<u>Book</u>	<u>Page</u>	
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
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ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
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OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1986 and July 29, 1987, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1987.

ASARCO Incorporated

By W. D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 18th day of August, 1987, by William D. Gay.

Kathleen L. Preigan
Notary Public

My Commission Expires:

My Commission Expires July 7, 1988

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING</u>		<u>BLM</u>
	<u>BOOK</u>	<u>PAGE</u>	<u>SERIAL NO.</u>
Boot No. 36	41	139	A MC 52011
Boot 52 thru 61	58	421 thru 430	52015 thru 52024
Boot 70	57	316	52025
Boot 72	57	318	52027
Boot 77	57	323	52032
Boot 78	57	324	52033
Boot 78 Amended	58	431	"
Boot 79	57	325	52034
Boot 80	57	326	52035
Boot 80 Amended	69	432	"
Boot 81 thru 84	57	327 thru 330	52036 thru 52039
Boot 90 thru 95	81	349 thru 354	52044 thru 52049
Boot 97 thru 106	81	355 thru 364	52050 thru 52059

Flux No. 1 (Flux Mine)	3	312 and 313	52060
Flux No. 2	1	258 thru 260	52061
Flux No. 2 Amended	3	314 and 315	"
Flux No. 3	2	14 and 15	A MC 52062
Flux No. 3 Amended	3	315 thru 317	"
Flux No. 4	3	318 and 319	52063
Flux No. 5 (Mexicano)	2	15	52064
Flux No. 5 Amended	3	319 thru 321	"
Flux No. 11	16	284 and 285	52065
Flux No. 11 Amended	16	314	"
Flux No. 15	16	285 and 286	52066
Flux No. 16	16	280 and 281	52067
Flux No. 18	16	282 and 283	52068
Flux No. 23	26	330	52069
Flux No. 25	26	375	52070
Rockney	24	100	52071

All of said claims are located in Sections 24, 25, and 36, T22S, R15E; Sections 30 and 31, T22S, R16E; and Section 6, T23S, R16E, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated and Anaconda Minerals Company, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1986 and July 29, 1987, in excess of \$4,900 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the

above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1987.

ASARCO Incorporated

By W. D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 18th day of August, 1987, by William D. Gay.

Kathleen Herreger
Notary Public

My Commission Expires:

My Commission Expires July 7, 1988

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING DATA</u>		<u>BLM SERIAL NO.</u>
	<u>BOOK</u>	<u>PAGE</u>	
South Humbolt	007	360	A MC 50226
" " Amended	380	682 and 683	"
Humbolt	007	358	A MC 50227
" Amended	380	684 and 685	"
Silver Leaf	007	364	A MC 50228
" " Amended	380	686 and 687	"
Good Luck #2	007	366	A MC 50229
" " " Amended	380	688 and 689	"
Indian Chief	007	368	A MC 50230
" " Amended	380	690 and 691	"
Monoca	007	362	A MC 50231
" Amended	380	692 and 693	"
Good Luck	4	300	A MC 50232
" " Amended	382	575 and 576	"

The above described unpatented lode mining claims are located in Section 32 of Township 22 South, Range 16 East, and Section 5 of Township 23 South, Range 16 East, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1986 and July 29, 1987, in excess of \$700.00 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1987.

ASARCO Incorporated

By W. D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
18th day of August, 1987, by William D. Gay.

William D. Gay
Notary Public

My Commission Expires:
My Commission Expires July 7, 1988

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 4, 1987

Mr. Dean Bibbles
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, AZ
BLM Serial Numbers:

A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 455, Pages 101 thru 103, for the assessment year ending September 1, 1987.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown
W.A. Bennis (w/enc.)
J.D. Sell (w/enc.)
C.L. Snow (w/enc.)

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1986 and July 29, 1987, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1987.

ASARCO Incorporated

By W. D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

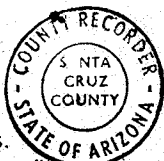
The foregoing instrument was acknowledged before me this 18th day of August, 1987, by William D. Gay.

Kathleen L. Higgins
Notary Public

My Commission Expires:

My Commission Expires July 7, 1988

3



FEE NO.

875078

STATE OF ARIZONA, County of Santa Cruz — SS.

I do hereby certify that the within instrument was filed and recorded at the request of

ASARCO Incorporated

on

AUG 24 '87-10 05

Docket No.

455

Page

101-123

Records of Santa Cruz County, Arizona.

WITNESS my hand and official seal the day and year first above written.

MARY LOU G. SAINZ, COUNTY RECORDER

By

Sofia Reynolds
Deputy

ASARCO

Exploration Department
Southwestern United States Division

September 10, 1987

Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Attention: Mr. G.D. Christiansen
V.P., Exploration

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment

Gentlemen:

Enclosed for your records is a copy of the 1987 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and acknowledged as received by the Bureau of Land Management, Arizona State Office, Phoenix, Arizona on September 8, 1987.

Sincerely yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
enc.

cc: J.D. Sell

*****ATTENTION*****

RETAIN THE ATTACHED PHOTOCOPY AS IT IS YOUR OFFICIAL ACKNOWLEDGEMENT OF RECEIPT

In an effort to expedite the acknowledgement procedure, we have time-stamped and photocopied what was submitted to this office. This DOES NOT mean it has been reviewed or processed, only that it was received.

As a reminder, if you have elected to file a notice of intention to hold, do not forget to record such notices of intention to hold for lode and placer claims (not mill or tunnel sites) and all affidavits of labor, amendments and transfers of ownership with the proper county recorder.

In the future, always include the A MC serial numbers assigned to each of your claims when filing affidavits and other documents. For large groups of mining claims, it would help us a great deal to process them into the computer terminal if you would list them in serial number order consecutively. Also, please keep us advised as to your current mailing address.

Bureau of Land Management
Arizona State Office
Mining Claims Section
Siete Square
3707 North 7th St.
Phoenix, Arizona 85014
Phone: (602) 241-5550

Mailing Address:
Mining Claims Section
P.O. Box 16563
Phoenix, Arizona 85011

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 4, 1987

Mr. Dean Bibbles
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, AZ
BLM Serial Numbers:

A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 455, Pages 101 thru 103, for the assessment year ending September 1, 1987.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

RECEIVED
B.L.M. AZ STATE OFFICE

SEP 08 1987

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown
W.A. Bennis (w/enc.)
J.D. Sell (w/enc.)
C.L. Snow (w/enc.)

7:45 A.M.
PHOENIX, ARIZONA

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

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	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
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TM #94		59	32998
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" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
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" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
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Abraham Lincoln	27	260	A MC 33774
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SEP 08 1987

7:45 A.M.
PHOENIX, ARIZONA

Calvin Coolidge	22	275	A MC 33775
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" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
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Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1986 and July 29, 1987, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by Joy Manufacturing Company, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

SEP 08 1987

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ASARCO Incorporated

By W. D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 18th day of August, 1987, by William D. Gay.

Kathleen Herzig
Notary Public

My Commission Expires:

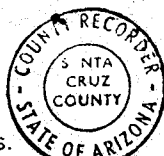
My Commission Expires July 7, 1988

RECEIVED
B.E.M. AZ STATE OFFICE

SEP 08 1987

7:45 A.M.
PHOENIX, ARIZONA

3



FEE NO. 875078

STATE OF ARIZONA, County of Santa Cruz — SS.

I do hereby certify that the within instrument was filed and recorded at the request of

ASARCO Incorporated

on

AUG 24 '87-10 05

Docket No.

455

Page

101-123

Records of Santa Cruz County, Arizona.

WITNESS my hand and official seal the day and year first above written.

MARY LOU G. SAINZ, COUNTY RECORDER

By

Maria Ramos
Deputy

Thunderbolt Aug 31, 1988

ATTENTION

RETAIN THE ATTACHED PHOTOCOPY AS IT IS YOUR OFFICIAL ACKNOWLEDGEMENT OF RECEIPT

In an effort to expedite the acknowledgement procedure, we have time-stamped and photocopied what was submitted to this office. This DOES NOT mean it has been reviewed or processed, only that it was received.

As a reminder, if you have elected to file a notice of intention to hold, do not forget to record such notices of intention to hold for lode and placer claims (not mill or tunnel sites) and all affidavits of labor, amendments and transfers of ownership with the proper county recorder.

Always include the A MC serial numbers assigned to each of your claims when filing affidavits and other documents. For large groups of mining claims, it would help us a great deal to process them if you would list them in serial number order consecutively. Also, please keep us advised as to your current mailing address.

Bureau of Land Management
Arizona State Office
Mining Claims Section
3707 North 7th Street
Phoenix, Arizona 85014
Phone: (602) 241-5550

Mailing Address:
Bureau of Land Management
Arizona State Office
Mining Claims Section
P. O. Box 16563
Phoenix, Arizona 85011

SARCO Incorporated

NOV 2 1988

SW Exploration

ASARCO

RECEIVED
B.L.M. AZ STATE OFFICE

OCT 27 1988

7:45 A.M.
PHOENIX, ARIZONA

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

October 25, 1988

Mr. Dean Bibles
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93)
Santa Cruz County, Arizona
BLM Serial Numbers:

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	32971	"	32988
	32996	"	32999
	33746	"	33768
	33769	"	33776
	137599		
	192265	thru	192268

Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 483, Pages 657 thru 659, for the assessment year ending September 1, 1988.

Please return acknowledgement receipt in the enclosed envelope.

Very truly yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown (w/enc.)
W.A. Bennis "
J.D. Sell "
Kerr-McGee Corporation (w/enc.)

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

INDEXED

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DOCK 483 PAGE 657

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

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" "	343	198 & 199	"

RECEIVED

B.L.M. AZ STATE OFFICE

1

OCT 27 1988

7:45 A.M.

PHOENIX, ARIZONA

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Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1987 and September 1, 1988, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by JOY-CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

RECEIVED

B.I.M. AZ STATE OFFICE

2

OCT 27 1988

7:45 A.M.

PHOENIX, ARIZONA

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1988.

ASARCO Incorporated

By William D. Gay
Agent

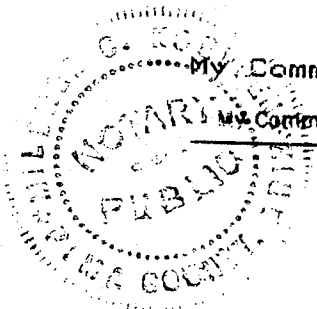
STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 14th day of October, 1988, by William D. Gay.

Walden C. Keppen
Notary Public

My Commission Expires:

My Commission Expires Nov. 23, 1986



RECEIVED
B.L.M. AZ STATE OFFICE

OCT 27 1988

7:45 A.M.
PHOENIX, ARIZONA

3

	INSTRUMENT # 886870	
	OFFICIAL RECORDS OF	
	SANTA CRUZ COUNTY	
	MARY LOU G. SAINZ	
REQUEST OF :		
ASARCO, INC.		
DATE: 10/19/88	TIME: 10.15	
FEE: 13.00		
BOOK 483	PAGE 657	PAGES: 3

ASARCO

Thunder Mtn

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

October 17, 1988

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

Dear Ms. Sainz:

Enclosed is Asarco's check of \$52.00 as the recording fee for the attached four Affidavits of Labor for the following unpatented lode claims:

<u>Claim Names</u>	<u>No. Pages</u>	<u>Fee</u>
TM, Welington, etc.	3	\$13.00
Boot, Flux, Rockney	3	\$13.00
South Humbolt, Humbolt, etc.	2	\$13.00
West	3	\$13.00
<u>Total</u>		<u>\$52.00</u>

Also enclosed is a return, stamped envelope.

Very truly yours,

William D. Gay

William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell
C.N. Snow

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
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TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
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Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" " "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
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ORB #10	343	224	A MC 192268
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OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1987 and September 1, 1988, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by JOY-CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1988.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 14th day of October, 1988, by William D. Gay.

Mildred C. Keppen
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1988

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING DATA</u>		<u>BLM SERIAL NO.</u>
	<u>BOOK</u>	<u>PAGE</u>	
South Humbolt	007	360	A MC 50226
" " Amended	380	682 and 683	"
Humbolt	007	358	A MC 50227
" Amended	380	684 and 685	"
Silver Leaf	007	364	A MC 50228
" " Amended	380	686 and 687	"
Good Luck #2	007	366	A MC 50229
" " " Amended	380	688 and 689	"
Indian Chief	007	368	A MC 50230
" " Amended	380	690 and 691	"
Monoca	007	362	A MC 50231
" Amended	380	692 and 693	"
Good Luck	4	300	A MC 50232
" " Amended	382	575 and 576	"

The above described unpatented lode mining claims are located in Section 32 of Township 22 South, Range 16 East, and Section 5 of Township 23 South, Range 16 East, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1987 and September 1, 1988, in excess of \$700.00 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by JOY-CBC DRILLING, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1988.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
14th day of October, 1988, by William D. Gay.

Mildred C. Koepper
Notary Public

My Commission Expires:
My Commission Expires Nov. 28, 1988

ASARCO

Exploration Department
Southwestern United States Division

November 10, 1988

Mr. W. K. John
Manager - Mineral Land
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment

Dear Mr. John:

Enclosed for your records is a copy of the 1988 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and acknowledged as received by the Bureau of Land Management, Arizona State Office, Phoenix, Arizona on October 27, 1988.

Sincerely yours,

William D. Gay /mek

WDG:mek
enc.

William D. Gay
Land Engineer, SWED

cc: J.D. Sell

January 5, 1989

File Note

1988-1989 Assessment Year
Thunder Mountain Project
Ventura Project
3-R Project
Trench Project
Santa Cruz County, Arizona

For the record, between September 1, 1988 and October 22, 1988, the following work and improvements were done and performed as follows:

1. Drilling

Joy-CBC Drilling	
707 Boyd Blvd.	
La Porte, Indiana 46350	\$26,641.32

2. Supervision*

Don Melhado (4 trips to site)	400.00
Bill Gay (1 trip to site)	<u>100.00</u>

<u>Total</u>	<u>\$27,141.32</u>
--------------	--------------------

Total contiguous claims are:

Ventura	32
Thunder Mountain	93
3-R	49
Trench	<u>7</u>
	<u>181</u>

* \$100.00 per trip to site.

WDG:mek

William D. Gay
William D. Gay

cc: J.D. Sell

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

January 6, 1989

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

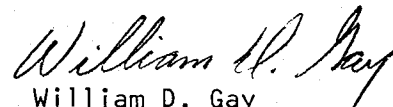
Dear Ms. Sainz:

Enclosed is Asarco's check of \$52.00 as the recording fee for the attached four Affidavits of Labor for the following unpatented lode claims:

<u>Claim Names</u>	<u>No. Pages</u>	<u>Fee</u>
TM, Welington, etc.	3	\$13.00
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South Humbolt, Humbolt, etc.	2	\$13.00
West	3	\$13.00
<u>Total</u>		<u>\$52.00</u>

Also enclosed is a return, stamped envelope.

Very truly yours,


William D. Gay
Land Engineer, SWED

WDG:mek
enc.

cc: J.D. Sell
C.N. Snow

Thunderbolt
1989 Assessment

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

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	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
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TM #94		59	32998
TM #95	066	457	A MC 32999
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OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
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Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1988 and October 22, 1988, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by JOY-CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1989.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 5th day of January, 1989, by William D. Gay.

Kathleen L. Ferguson
Notary Public

My Commission Expires:

My Commission Expires July 5, 1992

ASARCO

Exploration Department
Southwestern United States Division

February 17, 1989

Mr. W.K. John
Manager - Mineral Land
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment
Year ending Sept. 1, 1989

Dear Mr. John:

Enclosed for your records is a copy of the 1989 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County. Also enclosed is a copy of the Bureau of Land Management's Receipt and Accounting Advice, dated January 19, 1989, for this affidavit.

Sincerely yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIPT AND ACCOUNTING ADVICE

NO. 1544135

02

Subject:

AFFIDAVITS (93)

MG/AZ JAN 19 89 0 12 12

44500

Applicant:

ASARCO INC
BOX 5747
TUCSON AZ 85703-0747

Remitter:

SAME

Assignor:

SERIAL NO.

ANNEXES AND 32307 ET AL

REFER TO THE ABOVE CASE SERIAL NUMBER IN ALL CORRESPONDENCE. PLEASE INFORM THIS OFFICE OF ANY CHANGE IN ADDRESS.

NOTE: This notice is a receipt for monies paid the United States. If these monies are for required fees in connection with your application to lease, purchase, enter, or otherwise acquire an interest in public lands or resources, this receipt is not an authorization to utilize the land applied for and it does not convey any right, title, or interest in the land for which application is made.

cc: R.L. Brown
W.A. Bennis
J.D. Sell
Kerr-McGee Corp

B.W. MINING DEPT.
JAN 23 1989
TUCSON

T.E.S.
JAN 23

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

January 18, 1989

Mr. Dean Bibbes
State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (93 claims)
Santa Cruz County, Arizona
BLM Serial Numbers:

A MC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268

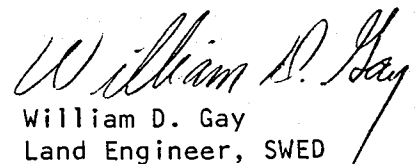
Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 491, Pages 364 thru 366, for the assessment year ending September 1, 1989.

Also enclosed is Asarco's check for \$465 in payment of service charge of \$5 for each claim (93 claims).

Please return acknowledgment in the enclosed, stamped envelope.

Very truly yours,


William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown (w/encs.)
W.A. Bennis (w/encs.)
J.D. Sell (w/encs.)
C.L. Snow ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

cc: Kerr-McGee Corp. (w/enc.)

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

INDEXED
DOCK 491 PAGE 364
MICROFILMED

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

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ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 5th day of January, 1989, by William D. Gay.

Kathleen Herrigan
Notary Public

My Commission Expires:

My Commission Expires July 6, 1992



INSTRUMENT # 890188
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
REQUEST OF :

ASARCO, INC.

DATE: 01/09/89 TIME: 10.45

FEE: 13.00

BOOK 491 PAGE 364 PAGES: 3

ASARCO

Exploration Department
Southwestern United States Division

March 6, 1989

Mr. W.K. John
Manager - Mineral Land
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

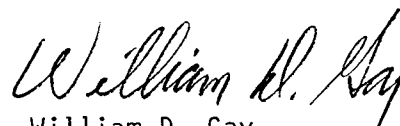
Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment
Year ending Sept. 1, 1989

Dear Mr. John:

Enclosed for your records is a copy of the 1989 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and officially acknowledged and stamped "Received" by the B.L.M. Arizona State Office on January 19, 1989.

We previously sent you, on February 17, 1989, a copy of the recorded Affidavit with a copy of the Bureau of Land Management's Receipt and Accounting Advice.

Sincerely yours,


William D. Gay
Land Engineer, SWED

WDG:mek
enc.

cc: J.D. Sell

cc: R.L. Brown
W.A. Bennis
J.D. Sell
Kerr-McGee Corp.
(3/6/89)

ATTENTION

RETAIN THE ATTACHED PHOTOCOPY AS IT IS YOUR OFFICIAL ACKNOWLEDGEMENT OF RECEIPT

In an effort to expedite the acknowledgement procedure, we have time-stamped and photocopied what was submitted to this office. This DOES NOT mean it has been reviewed or processed, only that it was received.

As a reminder, if you have elected to file a notice of intention to hold, do not forget to record such notices of intention to hold for lode and placer claims (not mill or tunnel sites) and all affidavits of labor, amendments and transfers of ownership with the proper county recorder.

Always include the A MC serial numbers assigned to each of your claims when filing affidavits and other documents. For large groups of mining claims, it would help us a great deal to process them if you would list them in serial number order consecutively. Also, please keep us advised as to your current mailing address.

Bureau of Land Management
Arizona State Office
Mining Claims Section
3707 North 7th Street
Phoenix, Arizona 85014
Phone: (602) 241-5550

Mailing Address:
Bureau of Land Management
Arizona State Office
Mining Claims Section
P. O. Box 16563
Phoenix, Arizona 85011

ASARCO Incorporated

MAR 1 1989

SW Exploration

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

INDEXED
DOCK 491 PAGE 364
ENCLOSURE

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

RECEIVED
B.L.M. AZ STATE OFFICE

JAN 19 1989
7:45 A.M.
PHOENIX, ARIZONA

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E, Section 1 of T23S, R15E, and Sections 31 and 32 of T22S, R16E, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1988 and October 22, 1988, in excess of \$9,300 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by JOY-CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (93) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

RECEIVED
B.I.M. AZ STATE OFFICE

2

JAN 19 1989

7:45 A.M.
PHOENIX, ARIZONA

labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1989.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 5th day of January, 1989, by William D. Gay.

Kathleen L. Ferguson
Notary Public

My Commission Expires:


My Commission Expires July 6, 1992

RECEIVED
B.L.M. AZ STATE OFFICE

JAN 19 1989

7:45 A.M.
PHOENIX, ARIZONA

3

	INSTRUMENT # 890188	
	OFFICIAL RECORDS OF	
	SANTA CRUZ COUNTY	
	MARY LOU G. SAINZ	
REQUEST OF :		
ASARCO, INC.		
DATE: 01/09/89 TIME: 10.45		
FEE: 13.00		
BOOK 491 PAGE 364 PAGES: 3		

ASARCO

Exploration Department
Southwestern United States Division

March 7, 1989

Mr. Steve Rossi
Arizona Dept. of Water Resources
310 S. Meyer Ave.
Tucson, AZ 85701

Exploration Drill Hole
DWR No. 55-518288

Dear Mr. Rossi:

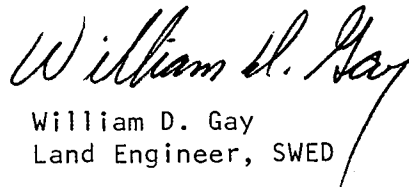
This letter is to follow up on our telephone conversation yesterday concerning the deepening of exploration drill hole (DWR No. 55-518288 and Asarco's No. TM-14).

There was a misunderstanding on my part during our telephone conversation on May 20, 1988, about the need for a Notice of Intention to Deepen this hole. I thought a letter to your Phoenix Office when the hole was abandoned was the only requirement.

In order to rectify this, enclosed is the original request for deepening the hole and the driller's completion report.

I appreciate your help in clearing up this matter.

Very truly yours,


William D. Gay
Land Engineer, SWED

WDG:mek

cc: J.D. Sell

WDC

ARIZONA DEPARTMENT OF WATER RESOURCES

99 E. Virginia Avenue, Phoenix, Arizona 85004



ASARCO Inc.
P.O. Box 5747
Tucson AZ. 85703

Registration No. 55-518288
File No. D (23-16) 5 BBC

Evan Mecham, Governor
Alan P. Kleinman, Director

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill an exploration 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 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 your designated driller for each hole to be drilled. Your driller is required to submit this Project Completion Report within 30 days after completion of drilling. You should insist that this is done.

For monitor, geotechnical, cathodic protection, grounding and piezometer wells, you should obtain the written permission of the Department of Water Resources 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.

For your future use, a Change of Well Information form is enclosed should it become needed. Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, including abandonment, in order to keep the well registration file current and accurate.

Sincerely,

R. A. Gessner
R. A. Gessner
Chief, Operations Division

RAG:
Enclosures
DWR-55-8-8/84

ASARCO Incorporated

JUN 29 1987

SW Exploration

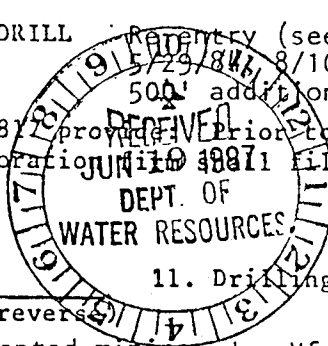
FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL
EXPLORATION WELL(S)

Re-entry (see letters 6/12/87,
5/29/84, 8/10/83) to deepen
500' additional.

Previous Notice of Intention to Drill filed 7-24-85.

Section 45-596, Arizona Revised Statutes and Rule R12-15-801 provide that prior to drilling one or more exploration wells, the well owner, lessee or exploration operator must file a Notice of Intention to Drill on a form provided by the Department.



WELL/LAND LOCATION

1. Township 23 N/S
Range 16 E/W
Section 5 (irregular)

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

SW 1/4, NW 1/4, NW 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated

Name

SW Exploration Div.

Address P.O. Box 5747

Tucson, AZ 85703

City State Zip

4. H.G.Kreis/W.D.Gay/J.D.Sell

NAME OF CONTACT PERSON

Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated

Name

P.O. Box 5747

Address

Tucson, AZ 85703

City State Zip

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

Mineral Exploration X

Geotechnical

Cathodic Protection

Grounding

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land: Unpatented mining Claim "Warren Harding"

Asarco/Kerr-McGee

Name

P.O. Box 5747

Address

Tucson AZ 85703

City State Zip

9. DESCRIPTION OF WELL:

3.685' to 2613' depth

Diameter 3.005' to 3500' depth

Depth 3500 feet

21' of 4"

Type of casing 2613' NX

(If none, so state)

10. Construction will start:

June or July 1987

Month Day Year

11. Drilling firm:

Joy Mfg. Co.

Name

750 E. Evans Blvd.

Address

Tucson, AZ 85713

City State Zip

T-75

DWR License Number

Period well will remain
in use indef. months.

13. Proposed method of

abandonment of well(s)

after project is

completed:

Hole filled with heavy

bentonite mud--casing

capped for re-entry.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D (23-16) 5 RBC

Filed 6-19-87 By md

Input By

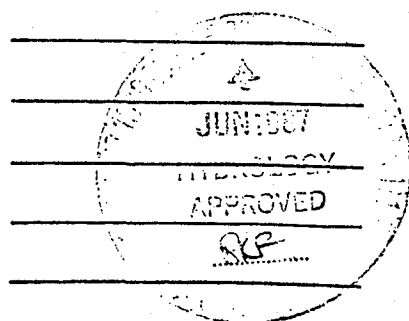
Duplicate

Mailed 6-25-87 By md

Registration 55-518288

AMA/INA Tucson

W/S 09 S/B 16



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? Yes No X

If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, Suite 100, 99 East Virginia, Phoenix, Arizona 85004.

2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 June 17, 1987

DWR 55-40-8/86 (Revised)

William D. Gay
Signature of Applicant
William D. Gay, Land Engineer

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

August 18, 1989

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Thunder Mountain Project
Harshaw Mining District
Santa Cruz County, AZ
Location Notice
Lode Claim Jesse 25

Dear Ms. Sainz:

Enclosed is Asarco's check of \$8.00 as the recording fee for the enclosed Notice of Location for Lode Claim Jesse 25 which is located in Harshaw Mining District, Santa Cruz County, Arizona.

Please return to my attention at the address below.

Sincerely yours,

William D. Gay
William D. Gay
Land Engineer

WDG:mek
Enc.

cc: J.D. Sell
C.L. Snow
D.A. Melhado

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 1, 1989

Bureau of Land Management
Arizona State Office
P.O. Box 16563
Phoenix, AZ 85011

Filing of Mining Claim
Notice of Location
Harshaw Mining District
Santa Cruz County, AZ

Gentlemen:

In accordance with Section 314 of the Federal Land Policy and Management Act of 1976 (43 U.S.C., Sec. 1744), and the regulations thereto, enclosed for filing in your office is a copy of the official record of the Notice of Location with map for the following lode claim in the Harshaw Mining District, Santa Cruz County, Arizona:

<u>Name of Claim</u>	<u>Date of Location</u>	<u>Recorded in the Official Records of Santa Cruz Co.</u>
Jesse 25	August 11, 1989	Book 507, Page 448 Instrument # 895905

A check for \$10.00 is enclosed as your filing fee. Please send receipt and accounting advise in the enclosed envelope.

Very truly yours,

WDG:mek
enc.

William D. Gay
Land Engineer, SWED

cc: J.D. Sell
C.L. Snow

6/5/90

JDS

ASARCO, INC.
P O BOX 5747
TUCSON AZ 85703



*Bucket Breccia Zone
Thunder Mtn Proj.*

JUN 6 1990

Peterson ARIZONA DEPARTMENT OF WATER RESOURCES *Mt. Santa Cruz Co., AZ*

SW Exploration

Rose Mofford, Governor
N. W. Plummer
Director

RE: Registration No. 55-528389 528390

File No. D(23-16)6 D(23-16)5bbc

Dear Well Owner:

15 South 15th Avenue
Phoenix, Arizona 85007

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.

For monitor, geotechnical, cathodic protection, grounding and piezometer wells, you should obtain the written permission of the Department of Water Resources 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.

For your future use, a Change of Well Information form is enclosed should it become needed. Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, including abandonment, in order to keep the well registration file current and accurate.

Sincerely,

R. A. Gessner
Chief, Operations Division

RAG:ba
Enclosures
DWR-55-50-3/90

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

NOTICE OF ABANDONMENT

A.R.S. §45-594; R12-15-816(E): The owner or operator of the well shall notify the Department, in writing, no later than thirty days after the abandonment has been completed.

1. Well location:

Township _____

Range _____

Section _____

_____ $\frac{1}{4}$ _____ $\frac{1}{4}$ _____ $\frac{1}{4}$
(10 acre subdivision)

County _____

2. Owner of the well:

Name

Address

City State Zip

3. Owner of the land:

Name

Address

City State Zip

4. Well Description:

Depth of hole _____

Diameter of hole _____

Type of Casing _____

5.

Well Registration Number

File Number

6. Prior to abandonment, did the well penetrate any waterbearing layers?

Yes _____ No _____

7. 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 _____

8. If the answer to No. 7 is no, was the top 20' of casing removed prior to setting the cement plug?

Yes _____ No _____

9. Was the well filled with cuttings or other non-toxic material prior to setting the cement plug?

Yes _____ No _____

10. If the answer to No. 9 is yes, what material was used to fill the well?

11. How deep does the cement plug extend below land surface?

12. Was the well backfilled above the cement plug?

Yes _____ No _____

13.

Date Abandonment Complete

I state that this Notice is filed in compliance with A.R.S. §45-594; R12-15-816(E), and is complete and correct to the best of my knowledge and belief.

DATE

SIGNATURE

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

CHANGE OF WELL INFORMATION

Well Registration No. 55-_____ File No. _____
(location)

I/We request the following well information be changed: _____

Date: _____ Signature of Current Well Owner _____

(DO NOT CUT THIS FORM IN HALF)

STATEMENT OF CHANGE OF WELL OWNERSHIP

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

Township _____ Range _____ Section _____; _____ $\frac{1}{4}$ _____ $\frac{1}{4}$ _____ $\frac{1}{4}$

Well Registration No. 55-_____ 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.

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.

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 23 N/S
Range 16 E/W
Section 6 (irregular)

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

1/4, 1/4, 1/4

2. County Santa Cruz

3. Applicant:
ASARCO Incorporated

Name SW Exploration Div.
P.O. Box 5747

Address
Tucson AZ 85703
City State Zip

4. J.J.Malusa/J.D.Sell
NAME OF CONTACT PERSON
Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

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

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 14
(See Condition 3 on reverse)

8. Owner of land:

ASARCO Inc./Kerr-McGee
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

9. DESCRIPTION OF WELL:

Diameter 3.8 inches

Depth 600 to 1400 feet

Type of casing surface
(If none, so state)

10. Construction will start:

June 1990
Month Day Year

11. Drilling firm:

CBC Drilling
Name
750 E. Evans Blvd.
Address
Tucson AZ 85713
City State Zip

75
DWR License Number

12. Period well will remain
in use <1 months.

13. Proposed method of
abandonment of well(s)
after project is
completed:

5 foot cement plug.

20 foot
per R12-15-816

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D(23-16)6
Filed 5-20-90 By sk
Input _____ By _____
Duplicate
Mailed 6-5-90 By sk
Registration 55-528389
AMA/INA _____
W/S 09 S/B _____

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? Yes _____ No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, 15 South 15th Ave. Phoenix, Arizona 85007
2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 5/25/90

OPERATIONS DIV.

DWR 55-40-10/88 (Revised)

Signature of Applicant

CONDITIONS

1. Construction and abandonment standards for all wells shall be in accordance with DWR Rules R12-15-811 and R12-15-816.
2. Drilling of the well(s) shall be completed within one (1) year after the date of Notice.
3. Mineral exploration, geotechnical cathodic protection or grounding holes of 100 feet of depth or less do not apply to these provisions and do not require filing. However, if water is encountered during the drilling of these wells, then the well(s) must be properly abandoned in accordance with Condition 1 above.
4. More than one well may be drilled under a single notice for mineral exploration, geotechnical, cathodic protection and grounding purposes, so long as they are located within a single section.
5. A Project Completion Report (DWR-55-42-10/83) must be filed for each hole, within 30 days of completion of drilling. A Well Driller Report (DWR-55-6-Rev.) for each hole drilled, must be filed by the well driller within 30 days of completion of drilling for geotechnical, cathodic protection, and grounding wells.
6. Pump equipment may not be installed on wells drilled for mineral exploration, geotechnical, cathodic protection or grounding purposes.
7. Special construction standards required pursuant to R12-15-821: _____

NOTICE OF INTENTION TO DRILL
EXPLORATION WELL(S)

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 23 N/S
Range 16 E/W
Section 5 (irregular)

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

SW 1/4, NW 1/4, NW 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated
Name Southwest Expl. Div.
P.O. Box 5747
Address

Tucson AZ 85703
City State Zip

4. J.J. Malusa/J.D. Sell
NAME OF CONTACT PERSON
Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

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

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

9. DESCRIPTION OF WELL:

Diameter 3.8 inches

Depth 800 feet

Type of casing surface
(If none, so state)

10. Construction will start:

June 1990
Month Day Year

11. Drilling firm:

CBC Drilling
Name
750 E. Evans Blvd.
Address
Tucson, AZ 85713
City State Zip

75
DWR License Number

12. Period well will remain
in use <1 months.

13. Proposed method of
abandonment of well(s)
after project is
completed:

5 foot cement plug.

20 feet
per R12-15-814

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D123-16) 5 abc

Filed 5-30-90 By sk

Input _____ By _____

Duplicate _____

Mailed 6-5-90 By sk

Registration 55-528390

AMA/INA _____

W/S 09 S/B _____

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? Yes No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, 15 South 15th Ave. Phoenix, Arizona 85007.
2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 5/25/90

DWR 55-40-10/88 (Revised)

OPERATIONS DIV.

Signature of Applicant

CONDITIONS

1. Construction and abandonment standards for all wells shall be in accordance with DWR Rules R12-15-811 and R12-15-816.
2. Drilling of the well(s) shall be completed within one (1) year after the date of Notice.
3. Mineral exploration, geotechnical cathodic protection or grounding holes of 100 feet of depth or less do not apply to these provisions and do not require filing. However, if water is encountered during the drilling of these wells, then the well(s) must be properly abandoned in accordance with Condition 1 above.
4. More than one well may be drilled under a single notice for mineral exploration, geotechnical, cathodic protection and grounding purposes, so long as they are located within a single section.
5. A Project Completion Report (DWR-55-42-10/83) must be filed for each hole, within 30 days of completion of drilling. A Well Driller Report (DWR-55-6-Rev.) for each hole drilled, must be filed by the well driller within 30 days of completion of drilling for geotechnical, cathodic protection, and grounding wells.
6. Pump equipment may not be installed on wells drilled for mineral exploration, geotechnical, cathodic protection or grounding purposes.
7. Special construction standards required pursuant to R12-15-821: _____

31020

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

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

1. Owner: _____
Name
Address: _____
Street City State Zip

2. Lessee or Operator: _____
Name
Address: _____
Street City State Zip

3. Driller: _____
Name
Address: _____
Street City State Zip

4. Location: _____
Township Range Section $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ WELL REGISTRATION NO. 55-
(A REQUIREMENT)

DESCRIPTION OF WELL

5. Type of Casing (if installed): _____

6. Abandonment method and material used if abandoned: _____

7. Construction details if completed for monitoring purposes, re-entry or conversion to water wells: _____

8. Date or period drilled: _____

LOG OF WELL

☐ Unconsolidated Formation

☐ Consolidated Formation

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

DO NOT WRITE IN THIS SPACE	
OFFICE RECORD	
Registration No. 55-528390	
Received _____	By _____
Entered _____	By _____
File No. D(23-16)5bbc	

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's Signature _____ Date _____

ASARCO
P.O. BOX 5747
TULSON AZ 85703

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
OPERATIONS DIVISION
15 S. 15TH AVENUE
PHOENIX, ARIZONA 85007

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	528389
	THRU
55	528390

ACCOUNT NO.				INT.	ITEM DESCRIPTION	RATE	\$ AMOUNT
FUND SOURCE	AGENCY	CHAPTER	DIV.	ACCT.			
					FILING FEE FOR NOI TO DRILL WELLS		20.00
					REGISTRATION#55-528389-528390		
					FILE#D(23-16)6 D(23-16)5bbe		

6/5/90/ek
000033849

ASARCO Inc.

JUN 6 1990

SW EXPANDED

TOTAL \$ 20.00

ASARCO

*Thunder Mtn
Bucket Breccia*

Exploration Department
Southwestern United States Division

May 24, 1990

Department of Water Resources
State of Arizona
15 South 15th Avenue
Phoenix, AZ 85007

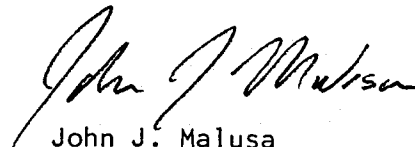
Gentlemen:

In compliance with drill hole regulations, ASARCO Incorporated requests a drilling permit for 15 holes which are described in the attached "Notice of Intention to Drill" forms. A check for \$20 is enclosed for the filing fee.

If you have any questions, call or write me or J.D. Sell, Manager, SWED, at the address below.

Sincerely yours,

JJM:mek
Atts.


John J. Malusa
Geologist

cc: J.D. Sell
W.D. Gay

NOTICE OF INTENTION TO DRILL
EXPLORATION WELL(S)

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 23 N/S
Range 16 E/W
Section 6 (irregular)

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

1/4, 1/4, 1/4

2. County Santa Cruz

3. Applicant:

ASARCO Incorporated

Name SW Exploration Div.

P.O. Box 5747

Address

Tucson AZ 85703

City State Zip

4. J.J. Malusa/J.D. Sell

NAME OF CONTACT PERSON

Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated

Name

P.O. Box 5747

Address

Tucson AZ 85703

City State Zip

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

Mineral Exploration X

Geotechnical

Cathodic Protection

Grounding

7. Number of wells 14
(See Condition 3 on reverse)

8. Owner of land:

ASARCO Inc./Kerr-McGee

Name

P.O. Box 5747

Address

Tucson AZ 85703

City State Zip

9. DESCRIPTION OF WELL:

Diameter 3.8 inches

Depth 600 to 1400 feet

Type of casing surface

(If none, so state)

10. Construction will start:

June 1990

Month Day Year

11. Drilling firm:

CBC Drilling

Name

750 E. Evans Blvd.

Address

Tucson AZ 85713

City State Zip

75

DWR License Number

12. Period well will remain
in use <1 months.

13. Proposed method of
abandonment of well(s)
after project is
completed:

5 foot cement plug.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No.

Filed By

Input By

Duplicate

Mailed By

Registration

AMA/INA

W/S S/B

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? Yes No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, 15 South 15th Ave. Phoenix, Arizona 85007
2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 5/25/90

DWR 55-40-10/88 (Revised)

Signature of Applicant

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling one or more exploration wells, the well owner, lessee or exploration firm shall file a Notice of Intention to Drill on a form provided by the Department.

WELL/LAND LOCATION

1. Township 23 W/S
Range 16 E/W
Section 5 (irregular)

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

SW $\frac{1}{4}$, NW $\frac{1}{4}$, NW $\frac{1}{4}$

2. County Santa Cruz

3. Applicant:
ASARCO Incorporated
Name Southwest Expl. Div.
P.O. Box 5747
Address

Tucson AZ 85703
City State Zip

4. J.J. Malusa/J.D. Sell
NAME OF CONTACT PERSON
Phone 602-792-3010

5. Owner of well:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

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

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 1
(See Condition 3 on reverse)

8. Owner of land:

ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

9. DESCRIPTION OF WELL:

Diameter 3.8 inches

Depth 800 feet

Type of casing surface
(If none, so state)

10. Construction will start:

June 1990
Month Day Year

11. Drilling firm:

CBC Drilling
Name
750 E. Evans Blvd.
Address
Tucson, AZ 85713
City State Zip

75
DWR License Number

12. Period well will remain in use <1 months.

13. Proposed method of abandonment of well(s) after project is completed:

5 foot cement plug.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. _____
Filed _____ By _____
Input _____ By _____
Duplicate _____
Mailed _____ By _____
Registration _____
AMA/INA _____
W/S _____ S/B _____

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? Yes No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

GENERAL INSTRUCTIONS

1. Fill out this form in duplicate and mail to Department of Water Resources, 15 South 15th Ave. Phoenix, Arizona 85007
2. Proper filing fee of \$10.00 must accompany Notice.

I state that this Notice is filed in compliance with Rule R12-15-809 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 5/25/90
DWR 55-40-10/88 (Revised)

John J. Malusa
Signature of Applicant

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

JDS

BB-2

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

1. Owner: ASARCO
Address: 1150 N 7th Av. Tucson AZ 85713
Street City State Zip
2. Lessee or Operator: _____
Name
Address: _____
Street City State Zip
3. Driller: CBC
Address: 750 E. Evans Blvd. Tucson AZ 85713
Street City State Zip
4. Location: 23 S 16 E 6 1 1 1 WELL REGISTRATION NO. 55-528389
Township Range Section (A REQUIREMENT)

DESCRIPTION OF WELL

1. Type of Casing (if installed): Surface
2. Abandonment method and material used if abandoned: 40 ft. cement plug

3. Construction details if completed for monitoring purposes, re-entry or conversion to water wells: _____

4. Date or period drilled: 7/12/90 → 8/15/90

LOG OF WELL

☐ Unconsolidated Formation
☒ Consolidated Formation
Depth to water in feet below land surface: 250'
(if encountered or detected)

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-528389
Received _____ By _____
Entered _____ By _____
File No. D(23-16)5bbc

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's Signature

Date

9/10/90

VR-55-57-12/89

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

JDS

BB-3

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

Owner: ASARCO

Address: 1150 N 7th Tucson AZ 85713
Street City State Zip

Lessee or Operator: _____
Name

Address: _____
Street City State Zip

Driller: CBC

Address: 750 E Evans Blvd. Tucson AZ 85713
Street City State Zip

Location: 23 S 16 E 6 1 1 1 WELL REGISTRATION NO. 55-528389
Township Range Section (A REQUIREMENT)

DESCRIPTION OF WELL

Type of Casing (if installed): ~~Surface~~ None

Abandonment method and material used if abandoned: 40 ft. cement plug

Construction details if completed for monitoring purposes, re-entry or conversion to water wells: _____

Date or period drilled: 8/16/90 → 9/1/90

LOG OF WELL

- ☐ Unconsolidated Formation
- ☒ Consolidated Formation
- Depth to water in feet below land surface: 250'
(if encountered or detected)

I state that this report is filed in compliance with A.R.S. 5-600 and is complete and correct to the best of my knowledge and belief.

[Signature] 9/10/90
Owner's Signature Date

55-57-12/89

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-528389
Received _____ By _____
Entered _____ By _____
File No. D(23-16)5bbc

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

Hole BB-4

JDS

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

1. Owner: ASARCO
Address: 7710 N. 7th Av | Tucson | AZ | 85703
Street City State Zip
2. Lessee or Operator: _____
Address: E | _____ | _____ | _____
Street City State Zip
3. Driller: CBC Drilling
Address: 705 E. Evans Blvd. | Tucson | AZ | 85713
Street City State Zip
4. Location: 23 S | 16 E | 6 | _____ | _____ | _____ | _____
Township Range Section 1/4 1/4 1/4 WELL REGISTRATION NO. 55-528389
(A REQUIREMENT)

DESCRIPTION OF WELL

5. Type of Casing (if installed): 4 inch casing set 12 feet into ground from surface
6. Abandonment method and material used if abandoned: surface casing left in place, - 20 foot cement plug and casing capped -
7. Construction details if completed for monitoring purposes, re-entry or conversion to water wells: casing left in place and capped for possible reentry
8. Date or period drilled: 9/5/90 → 9/30/90

LOG OF WELL

☐ Unconsolidated Formation

☒ Consolidated Formation

Depth to water in feet below land surface: 600'
(if encountered or detected)

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's Signature

Date

10/12/90

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-528389

Received _____ By _____

Entered _____ By _____

File No. D(23-16)5bbc

WR-55-57-12/89

September 19, 1990

FILE NOTE

1989-1990 Assessment Year
Ventura Project
Thunder Mountain Project
3-R Project
Trench Project
Santa Cruz County, Arizona

Attached is a list of expenditures on the Ventura, Thunder Mountain and 3-R Project submitted by Mr. John J. Malusa.

Total expenditures are \$66,960.24 which is far in excess of the \$18,200 needed for assessment work.

Total contiguous claims are:

Ventura	32
Thunder Mountain	94
3-R	49
Trench	<u>7</u>
<u>Total</u>	<u>182</u>

WDG:mek
Att

W.D. Gay
W.D. Gay

cc: J.D. Sell

ASARCO

TM

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 25, 1990

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

Dear Ms. Sainz:

Enclosed is Asarco's check of \$52.00 as the recording fee for the attached four Affidavits of Labor for the following unpatented Lode claims:

<u>Claim Names</u>	<u>No. of Pages</u>	<u>Fee</u>
TM, Wellington, etc.	3	\$13.00
Boot, Flux, Rockney	3	\$13.00
South Humbolt, Humbolt, etc.	2	\$13.00
West	3	\$13.00
<u>Total</u>		<u>\$52.00</u>

Also enclosed is a return envelope.

Very truly yours,

WDG:mek
enc.

William D. Gay
William D. Gay
Land Engineer, SWED

cc: J.D. Sell
C.N. Snow

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u> <u>Serial No.</u>
	<u>Book</u>	<u>Page</u>	
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" "	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
Jesse 25	507	448	A MC 298686
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1989 and August 31, 1990, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1990.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 21st day of September, 1990, by William D. Gay.

Kathleen Harrigan
Notary Public

My Commission Expires:

My Commission Expires July 6, 1992

ASARCO

Exploration Department
Southwestern United States Division

October 31, 1990

Mr. W.K. John
Manager - Mineral Land
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment
Year ending Sept. 1, 1990

Dear Mr. John:

Enclosed for your records is a copy of the 1990 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and officially acknowledged and stamped "Received" by the B.L.M. Arizona State Office on October 9, 1990. Also enclosed is a copy of the Bureau of Land Management's Receipt and Accounting Advice dated October 10, 1990 on this Affidavit.

Sincerely yours,



William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Thunder Mtn

RECEIPT AND ACCOUNTING ADVICE

NO. 1642192 04

94 Claims

BF/AZ

10/10/90

Subject:

AFFIDAVIT OF LABOR (94)

2 18 12

470.00

Applicant:

ASARCO INC.
P.O. BOX 5747
TUCSON, AZ 85703

Remitter: SAME - CK #03930
602/792-3010

ASARCO Incorporated

OCT 15 1990

Assignor:

SW Exploration

SERIAL NO.

AMC 32307 ET AL

REFER TO THE ABOVE CASE SERIAL NUMBER IN ALL CORRESPONDENCE. PLEASE INFORM THIS OFFICE OF ANY CHANGE IN ADDRESS.

NOTE: This notice is a receipt for monies paid the United States. If these monies are for required fees in connection with your application to lease, purchase, enter, or otherwise acquire an interest in public lands or resources, this receipt is not an authorization to utilize the land applied for and it does not convey any right, title, or interest in the land for which application is made.

cc: R.L. Brown
P. Donato, Contract Files NYO
J.D. Sell
C.L. Snow
Kerr-McGee Corp.
W.D. Gay

ack

Buf

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

October 5, 1990

Mr. Dean Bibbes
State Director
Bureau of Land Management
U.S. Dept. of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Group (94 clms)
BLM Serial Numbers:

AMC 32307 thru 32329
32501 " 32506
32934 " 32939
32971 " 32988
32996 " 32999
33746 " 33768
33769 " 33776
137599
192265 thru 192268
298686

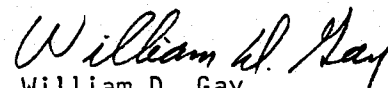
Dear Sir:

In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claim serial numbers, as recorded in the Santa Cruz County Recorder's Office in Docket 537, Pages 748 thru 750, for the assessment year ending September 1, 1990.

Also enclosed is Asarco's check for \$470 in payment of service charge of \$5 for each claim (94 claims).

Please return acknowledgment in the enclosed, stamped envelope.

Very truly yours,


William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown (w/encs.)
P. Donato, Contract File NYO (w/encs.)
J.D. Sell (w/encs.)
C.L. Snow
Kerr-McGee Corp. (w/encs.)

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

ATTENTION

PLEASE RETAIN, THIS IS YOUR OFFICIAL ACKNOWLEDGEMENT OF RECEIPT FROM BLM

In an effort to expedite the acknowledgement procedure, we have time-stamped and photocopied what was submitted to this office. This DOES NOT mean it has been reviewed or processed, only that it was received.

As a reminder, if you have elected to file a notice of intention to hold, do not forget to record such notices of intention to hold for lode and placer claims (not mill or tunnel site) and all affidavits of labor, amendments and transfers of ownership with the proper county recorder.

Always include the A MC serial numbers assigned to each of your claims when filing affidavits and other documents. For large groups of mining claims, it would help us a great deal to process them if you would list them in serial number order consecutively. Also, please keep us advised as to your current mailing address.

Bureau of Land Management
Arizona State Office
Branch of Mining
Law Administration
3707 North 7th Street
Phoenix, Arizona 85014
Phone: (602) 241-5550

Mailing Address:
Bureau of Land Management
Arizona State Office
Branch of Mining
Law Administration
P.O. Box 16563
Phoenix, Arizona 85011

RECORDED
8/17/90



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

ASARCO, INC.
DATE: 09/27/90 TIME: 11.25
FEE: 13.00
BOOK 537 PAGE 748 PAGES: 3

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

MICROFILMED INDEXED

BOOK 537 PAGE 748

STATE OF ARIZONA)
) ss
County of Pima)

OCT 15 1990

SW Exploration

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

Name of claim	Recording Data		BLM Serial No.
	Book	Page	
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
"	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
Jesse 25	507	448	A MC 298686
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1989 and August 31, 1990, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1990.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 21st day of September, 1990, by William D. Gay.

Kathleen L. Horgan
Notary Public

My Commission Expires:

My Commission Expires July 6, 1992

RECORDED
B.L.M. AZ 01-17-91

OCT 3 1990

7:45 A.M.
PHOENIX, ARIZONA

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

Hole BB-5

JDS

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

1. Owner: ASARCO
Address: 7710 N. 7th Av. Tucson AZ 85703
Street City State Zip
2. Lessee or Operator: _____
Address: _____
Street City State Zip
3. Driller: CBC Drilling
Address: 705 E. Evans Blvd. Tucson AZ 85713
Street City State Zip
4. Location: 23 S 16 E 6 1/4 1/4 1/4 WELL REGISTRATION NO. 55-528389
Township Range Section (A REQUIREMENT)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Surface casing
6. Abandonment method and material used if abandoned:
Surface casing left in place --- 20 foot cement plug and casing capped
7. Construction details if completed for monitoring purposes, re-entry or conversion to water wells: casing left in place and capped
8. Date or period drilled: Sept. 28 → Oct. 27, 1990

LOG OF WELL

☐ Unconsolidated Formation

☒ Consolidated Formation

Depth to water in feet below land surface: 168
(if encountered or detected)

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-528389
Received _____ By _____
Entered _____ By _____
File No. D(23-16)5bbc

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.

John J. Nelson 11/9/90
Owner's Signature Date

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

1513-6

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

1. Owner: ASARCO
Address: 7710 N. 7th Av. Tucson AZ 85705
Street City State Zip
2. Lessee or Operator: _____
Address: _____
Street City State Zip
3. Driller: CBC Drilling
Address: 705 E. Evans Blvd. Tucson AZ 85713
Street City State Zip
4. Location: 25S | 6E | 6 | | | | |
Township Range Section 1/4 1/4 1/4 WELL REGISTRATION NO. 55- 528389
(A REQUIREMENT)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Surface casing
6. Abandonment method and material used if abandoned: Surface casing left in place --- 20 foot cement plug and casing capped
7. Construction details if completed for monitoring purposes, re-entry or conversion to water wells: NA
8. Date or period drilled: 10/31/90 → 11/21

LOG OF WELL

☐ Unconsolidated Formation

☒ Consolidated Formation

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

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-528389

Received _____ By _____

Entered _____ By _____

File No. D(23-16)5bbc

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.

[Signature] 11/30/90
Owner's Signature Date

DWR-55-57-12/89

cc: W.D. Gay
J.D. Sell

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

JDS
BB-7

PROJECT COMPLETION REPORT FOR EXPLORATION DRILLING

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

Owner: ASARCO
Address: 1150 N 7th Av. Tucson AZ 85713
Street City State Zip
Lessee or Operator: _____
Name
Address: _____
Street City State Zip
Driller: CBC
Name
Address: 750 E Evans Tucson AZ 85713
Street City State Zip
Location: 23 S 16 E 16 (irrigated) 1 1 1 WELL REGISTRATION NO. 55-528389
Township Range Section (A REQUIREMENT)

DESCRIPTION OF WELL

Type of Casing (if installed): None
Abandonment method and material used if abandoned: 20 foot cement plug

Construction details if completed for monitoring purposes, re-entry or conversion to water wells: _____

Date or period drilled: Dec. 1 1990 to Dec. 29 1990

LOG OF WELL

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

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-528389
Received _____ By _____
Entered _____ By _____
File No. D(23-16)5bbc

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's Signature [Signature]

Date 1/14/91

WR-55-57-12/89

FROM: J. D. SELL

To: JJ Malusa

1/9/91

Have you completed the
State H2O Resource
Completion Report
for BB-7 ?

I think you have
incorrectly stated under
part 8

☒ Consolidated Sonar

Depth to water xxx
on previous reports ??

JDS

ASARCO

Thunder water

Exploration Department
Southwestern United States Division

January 28, 1991

Ms. Rosemary Hester
Dept. of Water Resources
15 South 15th Ave.
Phoenix, AZ 85007

Dear Rosemary:

This letter is to inform you that Asarco is not going to drill on Township 23S, Range 16E, Section 5. Therefore, you will not receive a Notice of Completion form for permit registration #55-528390. Also, under permit registration #55-528389, we only drilled 6 holes, but had asked to drill 14 holes. These 6 holes have had completion notices sent to your department. The remaining holes will not be drilled.

Sincerely yours,

JJM:mek

*John, you should
have stated that
"will be drilled
at a later time."*

John J. Malusa
John J. Malusa
Geologist

cc: J.D. Sell
W.D. Gay

*Now we'll have to refile when we go back
in, perhaps later this year. Please include
clear wording w/ WDG or myself. J.D. Sell*

May 22, 1991

FILE NOTE

1990-1991 Assessment Year
Ventura Project
Thunder Mountain Project
3-R Project
Trench Project
Santa Cruz County, Arizona

Attached is a list of expenditures on the Ventura and Thunder Mountain Projects submitted by Mr. John J. Malusa.

Total expenditures are \$135,223, which is in excess of the \$18,200 needed for assessment work.

Total contiguous claims are:

	Ventura	32
	Thunder Mountain	94
TM	3-R	49
	Trench	<u>7</u>
	<u>Total</u>	<u>182</u>

WDG:mek
Atts

William D. Gay

William D. Gay

cc: J.D. Sell

April 9, 1991

W.D. Gay

Assessment Expenditures
Thunder Mountain Project
Patagonia Mountains
Santa Cruz County, Arizona

The following is a list of Thunder Mountain Project expenditures from September 1, 1990 through April 9, 1991. Total expenditures are adequate to satisfy the assessment work requirements for the Assessment Year ending September 1, 1991.

1. Drilling

CBC Drilling Company
707 Boyd Blvd.
La Porte, Indiana 46350

\$76,360

2. Surveying Device Rental

Boyle Bros. Drilling Company
1707 South 4490 West
P.O. Box 25068
Salt Lake City, Utah 84125

3,811

3. Supervision

J.J. Malusa

5,125

4. Core Logging

H.J. Downey, Inc.
1803 E. 10th St.
Tucson, AZ 85719

3,907

5. Road Work

Dave Martin Excavating
P.O. Box 451
Patagonia, AZ 85624

1,993

6. Miscellaneous Expense

Vehicular Operation (4984 miles x .25/mile)

1,246TOTAL\$92,442

JJM:mek

cc: J.D. Sell


John J. Malusa

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

May 29, 1991

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

Dear Ms. Sainz:

Enclosed is Asarco's check of \$52.00 as the recording fee for the attached four Affidavits of Labor for the following unpatented Lode claims:

	<u>Claim Names</u>	<u>No. of Pages</u>	<u>Fee</u>
TM	TM, Wellington, etc.	3	\$13.00
	Boot, Flux, Rockney	3	\$13.00
	South Humbolt, Humbolt, etc.	2	\$13.00
Ventura	West	3	\$13.00
	<u>Total</u>		<u>\$52.00</u>

Also enclosed is a return, stamped envelope.

Very truly yours,

WDG:mek
enc.

cc: J.D. Sell
C.L. Snow

William D. Gay
William D. Gay
Land Engineer, SWED

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
"	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
Jesse 25	507	448	A MC 298686
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1990 and April 9, 1991, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

labor and improvements is more that One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1991.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 22nd day of May, 1991, by William D. Gay.

Kathleen L. Lueger
Notary Public

My Commission Expires:
My Commission Expires July 9, 1992

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>		<u>RECORDING</u>		<u>BLM</u>
		<u>BOOK</u>	<u>PAGE</u>	<u>SERIAL NO.</u>
1	Boot No. 36	41	139	A MC 52011
10	Boot 52 thru 61	58	421 thru 430	52015 thru 52024
1	Boot 70	57	316	52025
1	Boot 72	57	318	52027
1	Boot 77	57	323	52032
1	Boot 78	57	324	52033
	Boot 78 Amended	58	431	"
1	Boot 79	57	325	52034
1	Boot 80	57	326	52035
	Boot 80 Amended	69	432	"
4	Boot 81 thru 84	57	327 thru 330	52036 thru 52039
6	Boot 90 thru 95	81	349 thru 354	52044 thru 52049
10	Boot 97 thru 106	81	355 thru 364	52050 thru 52059

Flux No. 1 (Flux Mine)	3	312 and 313	52060
Flux No. 2	1	258 thru 260	52061
Flux No. 2 Amended	3	314 and 315	"
Flux No. 3	2	14 and 15	A MC 52062
Flux No. 3 Amended	3	315 thru 317	"
Flux No. 4	3	318 and 319	52063
Flux No. 5 (Mexicano)	2	15	52064
Flux No. 5 Amended	3	319 thru 321	"
Flux No. 11	16	284 and 285	52065
Flux No. 11 Amended	16	314	"
Flux No. 15	16	285 and 286	52066
Flux No. 16	16	280 and 281	52067
Flux No. 18	16	282 and 283	52068
Flux No. 23	26	330	52069
Flux No. 25	26	375	52070
Rockney	24	100	52071

All of said claims are located in Sections 24, 25, and 36, T22S, R15E; Sections 30 and 31, T22S, R16E; and Section 6, T23S, R16E, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1990 and April 9, 1991, in excess of \$4,900 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the

above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1991.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 21st day of May, 1991, by William D. Gay.

Kathleen Herizon
Notary Public

My Commission Expires:

My Commission Expires July 6, 1992

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING DATA</u>		<u>BLM SERIAL NO.</u>
	<u>BOOK</u>	<u>PAGE</u>	
South Humbolt	007	360	A MC 50226
" " Amended	380	682 and 683	"
Humbolt	007	358	A MC 50227
" Amended	380	684 and 685	"
Silver Leaf	007	364	A MC 50228
" " Amended	380	686 and 687	"
Good Luck #2	007	366	A MC 50229
" " " Amended	380	688 and 689	"
Indian Chief	007	368	A MC 50230
" " Amended	380	690 and 691	"
Monoca	007	362	A MC 50231
" Amended	380	692 and 693	"
Good Luck	4	300	A MC 50232
" " Amended	382	575 and 576	"

The above described unpatented lode mining claims are located in Section 32 of Township 22 South, Range 16 East, and Section 5 of Township 23 South, Range 16 East, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1990 and April 9, 1991, in excess of \$700.00 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., La Porte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1991.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
22nd day of May, 1991, by William D. Gay.

Kathleen L. Ferguson
Notary Public

My Commission Expires:

My Commission Expires July 6, 1992

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

June 6, 1991

State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Project
Santa Cruz County, AZ
TM, Wellington, etc. Claims (94)
BLM Serial Numbers:
AMC 32307-32329, 32501-32506,
32934-32939, 32971-32988,
32996-32999, 33746-33768,
33769-33776, 137599,
192265-192268, 298686

Dear Sir:


In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claims serial numbers, as recorded in the Santa Cruz County Recorder's office in Book 557, Pages 660 thru 662, for the assessment year ending September 1, 1991.

Also enclosed is Asarco's check for \$470 in payment of service charge of \$5 for each claim (94 claims).

Please return acknowledgment in the enclosed, stamped envelope.

Very truly yours,

WDG:mek
encs.


William D. Gay
Land Engineer, SWED

cc: R.L. Brown (w/enc.)
P. Donato, Contract File NYO (w/encs.)
J.D. Sell (w/enc.)
C.L. Snow (w/o enc.)
Kerr-McGee Corp. (w/encs.)



INSTRUMENT # 717000
 OFFICIAL RECORDS OF
 SANTA CRUZ COUNTY
 MARY LOU G. SAINZ
 COUNTY RECORDER
 REQUEST OF :

ASARCO INCORPORATED
 DATE: 05/30/91 TIME: 12.00
 FEE: 13.00
 DOCK 557 PAGE 660 PAGES: 3

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

INDEXED MICROFILMED

DOCK 557 PAGE 660

STATE OF ARIZONA)
) ss
 County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

Name of claim	Recording Data		BLM
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TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
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Bryant	11	79 & 80	A MC 33771
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Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
"	343	198 & 199	"

RECEIVED
 BLM-AZ STATE OFFICE

JUN 7 '91

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
Jesse 25	507	448	A MC 298686
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
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" " Amended	382	583 & 584	"
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OCCI #19	035	116	A MC 33765
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Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between September 1, 1990 and April 9, 1991, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 707 Boyd Blvd., LaPorte, Indiana 46350.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said

JUN 7 '91

labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1991.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
County of Pima) ss

The foregoing instrument was acknowledged before me this 22nd day of May, 1991, by William D. Gay.

Kathleen L. Hengen
Notary Public

My Commission Expires:
My Commission Expires July 6, 1992

RECEIVED
B.L.M. AZ STATE OFFICE

JUN 7 '91

9:00 AM
PHOENIX, ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Thunder Mt

RECEIPT AND ACCOUNTING ADVICE

NO. 1665985

24

LH/AZ

06/10/91

Subject: AFFIDAVITS OF ASSESSMENT WORK (94)

2 6 12

470.00

Applicant:

ASARCO, INC.
P.O. BOX 5747
TUCSON, AZ. 85703

SAME-CK#05851

Remitter:

Assignor:

SERIAL NO.

AMC32501, ET AL

REFER TO THE ABOVE CASE SERIAL NUMBER IN ALL CORRESPONDENCE. PLEASE INFORM THIS OFFICE OF ANY CHANGE IN ADDRESS.

NOTE: This notice is a receipt for monies paid the United States. If these monies are for required fees in connection with your application to lease, purchase, enter, or otherwise acquire an interest in public lands or resources, this receipt is not an authorization to utilize the land applied for and it does not convey any right, title, or interest in the land for which application is made.

cc: R.L. Brown
P. Donato, Contract File NY0
J.D. Sell
C.L. Snow
Kerr-McGee Corp.
W.D. Gay

ASARCO Inc.

JUN 12 1991

SW Exploration

ASARCO

Exploration Department
Southwestern United States Division

June 12, 1991

Mr. Harold W. Holmberg
Director of Metal Exploration
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125

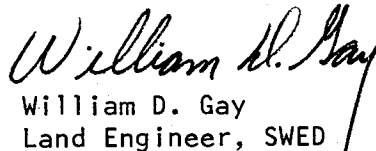
Thunder Mountain Project
Santa Cruz County, AZ
Affidavit of Assessment
Year ending Sept. 1, 1991

Dear Mr. Holmberg:

Enclosed for your records is a copy of the 1991 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and officially acknowledged and stamped "Received" by the B.L.M. Arizona State Office on June 7, 1991. Also enclosed is a copy of the Bureau of Land Management's Receipt and Accounting Advice dated June 10, 1991 on this Affidavit.

Sincerely yours,

WDG:mek
encs.


William D. Gay
Land Engineer, SWED

cc: J.D. Sell

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

June 3, 1992

Department of Water Resources
State of Arizona
15 South 15th Avenue
Phoenix, AZ 85007

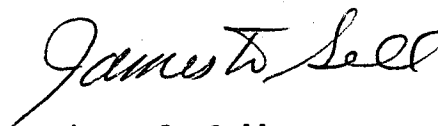
Notice of Intention to
Drill Exploration Wells
Thunder Mountain Project
Santa Cruz County, AZ

Dear Sir:

In compliance with drill hole reporting requirements, ASARCO Incorporated requests a drilling permit for five (5) holes which are described in the attached form DWR 55-43-7/90, in a single section.

A check for the \$10.00 filing fee is enclosed.

Sincerely,



James D. Sell

JDS:mek
Att.

cc: W.L. Kurtz
W.D. Gay
C.L. Snow

EXPLORATION WELL(s)

FILING FEE \$10.00

ARIZONA DEPARTMENT OF WATER RESOURCES

15 SOUTH 15TH AVENUE

PHOENIX, ARIZONA 85007

NOTICE OF INTENTION TO DRILL EXPLORATION WELL(s)

EXPLORATION WELL(s)

FILING FEE \$10.00

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. 23 N/S | 16 E/W | 6 (irregular)
Township | Range | Section

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

1 10 ACRE | 1 40 ACRE | 1 160 ACRE

2. County Santa Cruz

3. Applicant Name ASARCO Incorporated
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

4. W.D. Gay/J.D. Sell
Name of Contact Person
Phone 602-792-3010

5. Owner of Well
ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

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

Mineral Exploration X
Geotechnical
Cathodic Protection
Grounding

7. Number of wells 5
(See Condition 4 on reverse side)

8. Owner of Land:
ASARCO Incorporated
Name
P.O. Box 5747
Address
Tucson AZ 85703
City State Zip

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

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

DUPLICATE
Mailed _____ By _____
Registration 55- _____
AWA/INA _____
W/S _____ S/B _____

9. DESCRIPTION OF THE WELL
Diameter 3.8 inches
Depth 75 feet
Type of casing. If none,
state: Surface

10. Construction will start
June 1992
Month Day Year

11. Drilling Firm:
CBC Drilling
Name
750 E. Evans Blvd.
Address
Tucson AZ 85713
City State Zip
75
DWR License Number
A-4
ROC License Category

12. Period well will remain in use: <5 months

13. Proposed method of abandonment of well(s) after project is completed: 20 foot cement plug,
per R12-15-816

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 Notice is filed in compliance with Rule R12-15-809 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.

6-3-92

Date

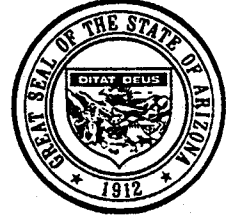
DWR 55-43-7/90 (Rev.)

James D. Sell
Signature of Applicant/Owner

6/10/92.

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue, Phoenix, Arizona 85007
Telephone (602) 542-1553
Fax (602) 256-0506



FIFE SYMINGTON
Governor

ELIZABETH ANN RIEKE
Director

Re: Registration No. 55-535682

File No. D(23-16)6

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.

ASARCO Inc.,

JUN 12 1992

SW Exploration

For your future use, a Change of Well Information form is enclosed for your convenience. Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, in order to keep the well registration file current and accurate.

Sincerely,



Dennis Kimberlin
Chief, Operations Division

DK:dl

Enclosures

DWR-55-50-9/90(Revised)

EXPLORATION WELL(s)

ARIZONA DEPARTMENT OF WATER RESOURCES

EXPLORATION WELL(s)

FILING FEE \$10.00

15 SOUTH 15TH AVENUE

PHOENIX, ARIZONA 85007

FILING FEE \$10.00

NOTICE OF INTENTION TO DRILL 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 23 N/S | Range 16 E/W | Section 16 (irregular)

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

1 10 ACRE 1 40 ACRE 1 160 ACRE

2. County Santa Cruz

3. Applicant Name ASARCO Incorporated
P.O. Box 5747
Address Tucson AZ 85703
City Tucson State AZ Zip 85703

4. W.D. Gay/J.D. Sell
Name of Contact Person
Phone 602-792-3010

5. Owner of Well ASARCO Incorporated
Name ASARCO Incorporated
P.O. Box 5747
Address Tucson AZ 85703
City Tucson State AZ Zip 85703

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

Mineral Exploration X
Geotechnical _____
Cathodic Protection _____
Grounding _____

7. Number of wells 5
(See Condition 4 on reverse side)

8. Owner of Land: ASARCO Incorporated
Name ASARCO Incorporated
P.O. Box 5747
Address Tucson AZ 85703
City Tucson State AZ Zip 85703

DO NOT WRITE IN THIS SPACE	
OFFICE RECORD	
File No. <u>1123-1616</u>	
Filed <u>6-5-92</u> By <u>ad</u>	
Input _____ By _____	
DUPLICATE	
Mailed <u>6-10-92</u> By <u>ad</u>	
Registration <u>55-335682</u>	
AMA/INA _____	
W/S <u>09</u> S/B _____	

9. DESCRIPTION OF THE WELL
Diameter 3.8 inches
Depth 75 feet
Type of casing.. If none,
state: Surface

10. Construction will start
June 1992
Month Day Year

11. Drilling Firm: CBC Drilling
Name CBC Drilling

750 E. Evans Blvd.
Address Tucson AZ 85713
City Tucson State AZ Zip 85713
75
DWR License Number A-4
ROC License Category _____

12. Period well will remain in use: <5 months

13. Proposed method of abandonment of well(s) after project is completed: 20 foot cement plug,
per R12-15-816

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 Notice is filed in compliance with Rule R12-15-809 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.

6-3-92
Date
DWR 55-43-7/90 (Rev.)

ASARCO Incorporated

Signature of Applicant/Owner

JUN 12 1992

SW EXPLORATION

JUN 5 1992

CONDITIONS

1. Construction and abandonment standards for all wells shall be in accordance with A.A.C. Rules R12-15-811 and R12-15-816.
 2. Drilling of the well(s) shall be completed within one (1) year after the date of Notice.
 3. Mineral exploration, geotechnical, cathodic protection or grounding holes of 100 feet of depth or less do not apply to these provisions and do not require filing. However, if water is encountered during the drilling of these well(s), then the well(s) must be properly abandoned in accordance with Condition 1 above.
 4. More than one well may be drilled under a single notice for mineral exploration, geotechnical, cathodic protection and grounding purposes, so long as they are located within a single section.
 5. A Project Completion Report must be filed for each mineral exploration hole within thirty (30) days of completion of drilling. A Well Driller Report for each hole drilled, must be filed by the well driller within thirty (30) days of completion of drilling for geotechnical, cathodic protection and grounding wells.
 6. Pump equipment may not be installed on wells drilled for mineral exploration, geotechnical, cathodic protection or grounding purposes.
 7. Special construction standards required pursuant to R12-15-821: _____
-
-

RECEIPT

N^o 1454

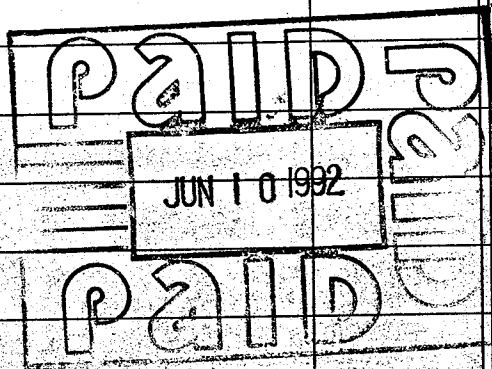
ASARCO, INC.
P O BOX 5747
TUCSON AZ 85703

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

ENTRY CODE 55

FILE NO. D(23-16)6 535682 THRU

ITEM DESCRIPTION	RATE	AMOUNT
FILING FEE FOR NOI TO DRILL WELL		\$10.00
6/10/92/ek CK#08407		\$10.00



CHECK NO. _____ FEE ACCOUNT NO. _____ TOTAL \$ _____
CHIT NO. _____ RECEIVED BY _____ DATE _____
IPS 1821 - Rev. 4/91

ASARCO Incorporated

JUN 12 1992

SW Exploration

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

CHANGE OF WELL INFORMATION

Well Registration No. 55-_____ File No. _____
(location)

I/We request the following well information be changed: _____

Date: _____ Signature of Current Well Owner _____

(DO NOT CUT THIS FORM IN HALF)

STATEMENT OF CHANGE OF WELL OWNERSHIP

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

$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$; Section _____ Township _____ Range _____
10 acre 40 acre 160 acre

Well Registration No. 55-_____ 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.

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.

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: _____

Address: _____
Street City State Zip

2. Lessee or Operator Name: _____

Address: _____
Street City State Zip

3. Driller Name: _____

Address: _____
Street City State Zip

4. Location: _____ N/A _____ E/W _____ 1/4 _____ 1/4 _____ 1/4
Township Range Section 10-Acre 40-Acre 160-Acre

WELL REGISTRATION NO. 55-_____ (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): _____

6. Abandonment method and material used if abandoned: _____

Was well abandoned pursuant to R12-15-816, F.? Yes _____ No _____

7. Date of period drilled: From: _____ To: _____

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.

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

Registration No. 55-535682

Received _____ By _____

Entered _____ By _____

File No. D(23-16)6

Owner/Lessee's Signature _____ Date _____

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 18, 1992

Ms. Mary Lou G. Sainz
Santa Cruz County Recorder
P.O. Box 1150
Nogales, Arizona 85628

Affidavits of Labor
Palmetto & Harshaw
Mining Districts
Santa Cruz Co., AZ

Dear Ms. Sainz:

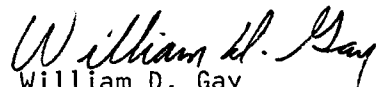
Enclosed is Asarco's check of \$52.00 as the recording fee for the attached four Affidavits of Labor for the following unpatented Lode claims:

<u>Claim Names</u>	<u>No. Of Pages</u>	<u>Fee</u>
TM, Wellington, etc.	3	\$13.00
Boot, Flux, Rockney	3	13.00
South Humbolt, Humbolt, etc.	2	13.00
West	3	<u>13.00</u>
<u>Total</u>		<u>\$52.00</u>

Also enclosed is a return, stamped envelope.

Very truly yours,

WDG:mek
encs


William D. Gay
Land Engineer, SWED

cc: J.D. Sell
C.L. Snow

ASARCO Incorporated P.O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" " Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" " Amd.	343	198 & 199	"

Calvin Coolidge	22	275	A MC 33775
" " Amd.	382	573 & 574	"
Roosevelt	17	488	A MC 33776
" Amended	380	680 & 681	"
Jesse No. 1 thru	119	70 thru	A MC 32307 thru
Jesse No. 23		92	32329
Jesse No. 24	308	139 & 140	A MC 137599
Jesse 25	507	448	A MC 298686
ORB #1 thru	150	500 thru	A MC 32501 thru
ORB #6		505	32506
ORB #7	343	218 & 219	A MC 192265
" " Amended	382	577 & 578	"
ORB #8	343	220 & 221	A MC 192266
" " Amended	382	579 & 580	"
ORB #9	343	222 & 223	A MC 192267
" " Amended	382	581 & 582	"
ORB #10	343	224	A MC 192268
" " Amended	382	583 & 584	"
OCCI	033	372	A MC 33746
OCCI #1 thru	033	373 thru	A MC 33747 thru
OCCI #18		390	33764
OCCI #19	035	116	A MC 33765
American Annex	083	221	A MC 33766
Campsite	083	222	A MC 33767
Big Jim	025	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between August 3, 1992 and August 29, 1992, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 750 East Evans Blvd., Tucson, AZ 85713 and road work by Dave Martin Excavating, P.O. Box 451, Patagonia, AZ 85624.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring,

improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1992.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 17th day
of September, 1992, by William D. Gay.



Mildred C. Koepfen
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1992

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>BOOK</u>	<u>PAGE</u>	<u>BLM</u> <u>SERIAL NO.</u>
Boot No. 36	41	139	A MC 52011
Boot 52 thru 61	58	421 thru 430	52015 thru 52024
Boot 70	57	316	52025
Boot 72	57	318	52027
Boot 77	57	323	52032
Boot 78	57	324	52033
Boot 78 Amended	58	431	"
Boot 79	57	325	52034
Boot 80	57	326	52035
Boot 80 Amended	69	432	"
Boot 81 thru 84	57	327 thru 330	52036 thru 52039
Boot 90 thru 95	81	349 thru 354	52044 thru 52049
Boot 97 thru 106	81	355 thru 364	52050 thru 52059

Flux No. 1 (Flux Mine)	3	312 and 313	52060
Flux No. 2	1	258 thru 260	52061
Flux No. 2 Amended	3	314 and 315	"
Flux No. 3	2	14 and 15	A MC 52062
Flux No. 3 Amended	3	315 thru 317	"
Flux No. 4	3	318 and 319	52063
Flux No. 5 (Mexicano)	2	15	52064
Flux No. 5 Amended	3	319 thru 321	"
Flux No. 11	16	284 and 285	52065
Flux No. 11 Amended	16	314	"
Flux No. 15	16	285 and 286	52066
Flux No. 16	16	280 and 281	52067
Flux No. 18	16	282 and 283	52068
Flux No. 23	26	330	52069
Flux No. 25	26	375	52070
Rockney	24	100	52071

All of said claims are located in Sections 24, 25, and 36, T22S, R15E; Sections 30 and 31, T22S, R16E; and Section 6, T23S, R16E, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between August 3, 1992 and August 29, 1992, in excess of \$4,900 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 750 East Evans Blvd., Tucson, AZ 85713, and road work by Dave Martin Excavating, P.O. Box 451, Patagonia, AZ 85624.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and

improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1992.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this 17th day
of September, 1992, by William D. Gay.



Mildred C. Koeppe
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1992

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING DATA</u>		<u>BLM</u>
	<u>BOOK</u>	<u>PAGE</u>	<u>SERIAL NO.</u>
South Humbolt	007	360	A MC 50226
" " Amended	380	682 and 683	"
Humbolt	007	358	A MC 50227
" Amended	380	684 and 685	"
Silver Leaf	007	364	A MC 50228
" " Amended	380	686 and 687	"
Good Luck #2	007	366	A MC 50229
" " " Amended	380	688 and 689	"
Indian Chief	007	368	A MC 50230
" " Amended	380	690 and 691	"
Monoca	007	362	A MC 50231
" Amended	380	692 and 693	"
Good Luck	4	300	A MC 50232
" " Amended	382	575 and 576	"

The above described unpatented lode mining claims are located in Section 32 of Township 22 South, Range 16 East, and Section 5 of Township 23 South, Range 16 East, G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between August 3, 1992 and August 29, 1992 in excess of \$700.00 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 750 East Evans Blvd., Tucson, AZ 85713 and road work by Dave Martin Excavating, P.O. Box 451, Patagonia, AZ 85624.

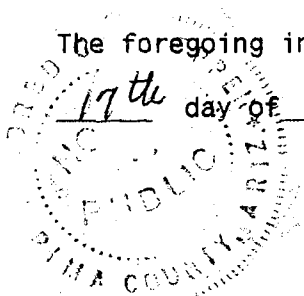
Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1992.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
17th day of September, 1992, by William D. Gay.



Mildred C. Koeppe
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1992

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss
County of Pima)

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Palmetto Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>Serial No.</u>
	<u>Book</u>	<u>Page</u>	
West 131N	174	52	AMC 17328
West 132N	174	53	AMC 17329
West 133N	174	54	AMC 17330
West 134N	174	55	AMC 17331
West 135N	174	56	AMC 17332
West 136N	174	57	AMC 17333
West 137N	174	58	AMC 17334
West 138N	174	59	AMC 17335
West 139A	60	251	AMC 17306
West 140A	60	252	AMC 17307
West 141A	60	253	AMC 17308
West 142A	60	254	AMC 17309
West 143	57	572	AMC 17283
West 145N	187	494	AMC 17336
West 147	56	162	AMC 17284
West 147F	57	574	AMC 17310
West 149	56	163	AMC 17285
West 151	56	164	AMC 17286
West 160N	185	346	AMC 17340
West 162N	185	347	AMC 17341

West 164N	185	348	AMC 17342
West 166	56	166	AMC 17289
West 166F	56	515	AMC 17344
West 168	56	168	AMC 17291
West 170	56	170	AMC 17293
West 172	56	172	AMC 17295
West 174	56	174	AMC 17297
West 176	56	176	AMC 17299
West 178	56	178	AMC 17301
West 180	56	180	AMC 17303
West 181	56	181	AMC 17304
West 182	55	182	AMC 17305

The above described unpatented mining claims are located in Sections 25 and 36, T22S, R15E, and Sections 1, 2, 11, and 12, T23S, R15E, G&SRM.

That between August 3, 1992 and August 29, 1992, in excess of \$3,200 worth of work and improvements were done and performed for the benefit of the aforementioned claims. Work and improvements consisted of drilling performed by CBC DRILLING, 750 East Evans Blvd., Tucson, AZ 85713, and road work by Dave Martin Excavating, P.O. Box 451, Patagonia, AZ 85624.

That all of the above-described work and improvements were performed by or at the expense of ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703, on behalf of Noranda Exploration, Inc., the owner of said claims, for the purpose of complying with the laws of the United States pertaining to assessment or annual work.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring, improving and developing said contiguous groups of mining claims, and was intended as annual labor and

improvements for each and all of the above-described unpatented lode (placer) mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1992.

ASARCO Incorporated

By William D. Gay
Agent

STATE OF ARIZONA)
) ss
County of Pima)

The foregoing instrument was acknowledged before me this
17th day of September, 1992, by William D. Gay.



Mildred C. Koeppen
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1992

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

October 6, 1992

State Director
Bureau of Land Management
U.S. Department of the Interior
P.O. Box 16563
Phoenix, AZ 85011

Mining Claim Annual Recordation
Thunder Mountain Project
Santa Cruz County, AZ
TM, Wellington, etc. Claims (94)
BLM Serial Numbers:

AMC 32307-32329, 32501-32506,
32934-32939, 32971-32988,
32996-32999, 33746-33768,
33769-33776, 137599,
192265-192268, 298686

Dear Sir:


In accordance with the Federal Land Policy and Management Act (43 CFR, Part 3833.2), enclosed is an exact reproduction of the affidavit of assessment work, with mining claims serial numbers, as recorded in the Santa Cruz County Recorder's office in Book 594, Pages 123 thru 125, for the assessment year ending September 1, 1992.

Also enclosed is Asarco's check for \$470 in payment of service charge of \$5 for each claim (94 claims).

Please return acknowledgment in the enclosed, stamped envelope.

Very truly yours,

WDG:mek
encs.


William D. Gay
Land Engineer, SWED

cc: G.D. Van Voorhis (w/enc.)
P. Donato, Contract File NYO (w/encs.)
J.D. Sell (w/enc.)
C.L. Snow (w/o enc.)
Kerr-McGee Corp. (w/encs.)

*****ATTENTION*****

PLEASE RETAIN, THIS IS YOUR OFFICIAL ACKNOWLEDGEMENT OF RECEIPT FROM BLM

In an effort to expedite the acknowledgement procedure, we have time-stamped and photocopied what was submitted to this office. This **DOES NOT** mean it has been reviewed or processed, only that it was received.

As a reminder, if you have elected to file a notice of intention to hold, do not forget to record such notices of intention to hold for lode and placer claims (not mill or tunnel site) and all affidavits of labor, amendments and transfers of ownership with the proper county recorder.

Always include the A MC serial numbers assigned to each of your claims when filing affidavits and other documents. For large groups of mining claims, it would help us a great deal to process them if you would list them in serial number order consecutively. Also, please keep us advised as to your current mailing address.

Bureau of Land Management
Arizona State Office
Branch of Mining
Law Administration
3707 North 7th Street
Phoenix, Arizona 85014
Phone: (602) 640-5550

Mailing Address:
Bureau of Land Management
Arizona State Office
Branch of Mining
Law Administration
P.O. Box 16563
Phoenix, Arizona 85011

~~9:00 AM.~~
~~PHOENIX, ARIZONA~~

RECEIVED
B.L.M. AZ STATE OFFICE

OCT 7 '92

9:00 A.M.
PHOENIX, ARIZONA



**INSTRUMENT # 927616
OFFICIAL RECORDS OF
SANTA CRUZ COUNTY
MARY LOU G. SAINZ
COUNTY RECORDER
REQUEST OF :**

ASARCO INCORPORATED
DATE: 09/21/92 TIME: 11.30
FEE: 13.00
DOCK 594 PAGE 123 PAGES: 3

AFFIDAVIT OF LABOR PERFORMED
AND IMPROVEMENTS MADE

INDEXED MICROFILMED

DOCK 594 PAGE 123

[illegible]

William D. Gay, being first duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one (21) years of age, and resides in Tucson, County of Pima, State of Arizona, and is personally acquainted with the mining claims situated in the Harshaw Mining District, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>Name of claim</u>	<u>Recording Data</u>		<u>BLM</u>
	<u>Book</u>	<u>Page</u>	<u>Serial No.</u>
TM #30 thru	042	149 thru	A MC 32934 thru
TM #35		154	32939
TM #67 thru	060	90 thru	A MC 32971 thru
TM #84		107	32988
TM #92 thru	061	57 thru	A MC 32996 thru
TM #94		59	32998
TM #95	066	457	A MC 32999
Wellington	9	591	A MC 33769
" Amended	380	672 & 673	"
Lafayette	8	368	A MC 33770
" Amended	380	674 & 675	"
Bryan	11	79 & 80	A MC 33771
" Amended	380	676 & 677	"
Copper Dyke	18	155	A MC 33772
" Amended	343	204 & 205	"
Warren Harding	18	339	A MC 33773
" " Amd.	380	678 & 679	"
Abraham Lincoln	27	260	A MC 33774
" " Amd.	343	198 & 199	"

RECEIVED B.L.M. AZ STATE OFFICE
 RECEIVED B.L.M. AZ STATE OFFICE

DOCK 594 PAGE 124

OCT 7 '92

OCT 8 '92

Calvin Copridge	9:00 A.M.	22	275	A MC 33775
PHOENIX, ARIZONA	9:00 A.M.	22	573 & 574	"
Roosevelt	17	488	488	A MC 33776
" Amended	380	680 & 681	680 & 681	"
Jesse No. 1 thru	119	70 thru	70 thru	A MC 32307 thru
Jesse No. 23		92	92	32329
Jesse No. 24	308	139 & 140	139 & 140	A MC 137599
Jesse 25	507	448	448	A MC 298686
ORB #1 thru	150	500 thru	500 thru	A MC 32501 thru
ORB #6		505	505	32506
ORB #7	343	218 & 219	218 & 219	A MC 192265
" " Amended	382	577 & 578	577 & 578	"
ORB #8	343	220 & 221	220 & 221	A MC 192266
" " Amended	382	579 & 580	579 & 580	"
ORB #9	343	222 & 223	222 & 223	A MC 192267
" " Amended	382	581 & 582	581 & 582	"
ORB #10	343	224	224	A MC 192268
" " Amended	382	583 & 584	583 & 584	"
OCCI	033	372	372	A MC 33746
OCCI #1 thru	033	373 thru	373 thru	A MC 33747 thru
OCCI #18		390	390	33764
OCCI #19	035	116	116	A MC 33765
American Annex	083	221	221	A MC 33766
Campsite	083	222	222	A MC 33767
Big Jim	025	335	335	A MC 33768

All of said claims being situated in Sections 5, 6, 7, and 8 of T23S, R16E; Section 1 of T23S, R15E; Sections 31 and 32 of T22S, R16E; and Section 5, T23S, R17E; G&SRB&M.

That all of said mining claims are owned by Kerr-McGee Corporation and ASARCO Incorporated, the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703; that between August 3, 1992 and August 29, 1992, in excess of \$9,400 worth of work and improvements were done and performed for the benefit of the described claims. Work and improvements consisted of drilling performed by CBC DRILLING, 750 East Evans Blvd., Tucson, AZ 85713 and road work by Dave Martin Excavating, P.O. Box 451, Patagonia, AZ 85624.

Said labor was performed and improvements made at the expense of ASARCO Incorporated for the benefit of each and all of said mining claims (94) comprising said contiguous groups as part of a general plan of exploration, improvements and development, and they tend to explore, improve and develop each and all of said mining claims. The amount expended for and the value of said labor and improvements is more than One Hundred Dollars (\$100.00) for each of the mining claims and at least said amount was allocated to each of the mining claims. Said expenditure was made in good faith for the purpose of exploring,

RECEIVED
B.L.M. AZ STATE OFFICE

OCT 7 '92

9:00 A.M.
PHOENIX, ARIZONA

RECEIVED
BLM AZ STATE OFFICE

~~Oct 6 '92~~

9:00 A.M.
PHOENIX, ARIZONA

DOCK 594 PAGE 125

improving and developing said contiguous groups of mining claims, and was intended as annual labor and improvements for each and all of the above-described unpatented lode mining claims for the assessment year ending at 12:00 o'clock Meridian, September 1, 1992.

ASARCO Incorporated

By

Agent

[illegible]

The foregoing instrument was acknowledged before me this 17th day of September, 1992, by William D. Gay.

Mildred C. Koeppe
Notary Public

My Commission Expires:

My Commission Expires Nov. 28, 1992

ASARCO

Exploration Department
Southwestern United States Division

October 9, 1992

Mr. Harold W. Holmberg
Director of Metal Exploration
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73125

Thunder Mountain Project
Santa Cruz County, Arizona
Affidavit of Assessment
Year ending Sept. 1, 1992

Dear Mr. Holmberg:

Enclosed for your records is a copy of the 1992 Affidavit of Labor for the Thunder Mountain group of claims which has been recorded in Santa Cruz County and officially acknowledged and stamped "Received" by the BLM Arizona State Office on October 7, 1992. Also enclosed is a copy of the Bureau of Land Management's Receipt and Accounting Advice dated October 7, 1992, on this Affidavit.

Sincerely yours,



William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell

ASARCO Incorporated
Copper Operations
Tucson, Arizona
TELEFAX COVER SHEET

TO: F. T. Graybeal

COMPANY/DEPARTMENT:

Chief Geologist
ASARCO Incorporated

DESTINATION FAX NUMBER:

212-510-1978

NUMBER OF PAGES TO FOLLOW:

5

FROM:

J. D. Sell 602/798-

EXT. NO. 7714

REFERENCE:

Boot claims - Patagonia Project

DATE:

8/30/93

MESSAGE:

Fred, here is the fax received from
Phil Jones of K-M, plus a copy of the
ASARCO claim block filing notice.

As stated, ASARCO Copper Operation will
pays on the 14 Boot claims, and upon
completion of paper-work, K-M will reimburse
the costs for the 14 Boot claims when ASARCO
gives them a quit-claim deed.

James D. Sell

If you do not receive all pages, please contact Barbara Watts (Ext. 7762).

TELEPHONE: (602) 798-7500

TELEFAX: (602) 798-7783

Original will/will not follow by mail

KERR-MCGEE CORPORATION
Kerr-McGee Center, Oklahoma City, Oklahoma 73125

Exploration and Production Division

TELECOPIER COVER LETTER

ASARCO Incorporated

AUG 30 1993

SW Exploration

FAX NO.: 602/624-3369 and 602/798-7782

DATE: August 27, 1993

TO: P.J. MALEY AND J.D. SELL/ASARCO

FROM: PHIL JONES

NUMBER OF PAGES, INCLUDING COVER LETTER: 3

IF TRANSMISSION IS IMPAIRED, PLEASE CONTACT BARBARA AT 405/270-2492.

THANK YOU.

8/27/93

Bill Leedy - Geologist
Kerr McGee

Ph. 405-270-3367

Fax 270-3316

Km Landman is
Phil Jones

TIME FAX SENT: _____



KERR-MCGEE CORPORATION

KERR-MCGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

August 27, 1993

EXPLORATION AND PRODUCTION DIVISION

Writer's Telephone #405/270-3878

FAX (602) 624-3369

FAX (602) 798-7782

Mr. P. J. Maley and
Mr. J. D. Sell
ASARCO Incorporated
P. O. Box 5747
Tucson, Arizona 85703

Re: Thunder Mountain Project
Project No. 02-007-0000
Santa Cruz County, Arizona

Gentlemen:

The purpose of this letter is to advise you of Kerr-McGee's desire to receive an assignment of certain ASARCO claims and as the time to pay rentals due on these claims is rapidly approaching, to have ASARCO pay rentals due on or before August 31, 1993. Your assistance in expediting payment of the rentals on behalf of Kerr-McGee is very much appreciated. We will, of course, reimburse you for the rentals and any expenses you will incur on our behalf. The claims that Kerr-McGee desires to retain are as follows:

Boot Group 52 ✓	Boot Group 78 ✓
53 ✓	79 ✓
54 ✓	80 ✓
55 ✓	81 ✓
56 ✓	103 ✓
57 ✓	105 ✓
77 ✓	106 ✓

A plat showing the location of these claims is also attached to help you in identifying the specific claims we desire to retain in the event the claim names as we know them are not correct.

In addition, please provide me with a written statement regarding the completeness of all reclamation on the Subject Lands. I am anticipating receiving something indicating that the U.S. Forest Service has inspected the premises and determined that your performance bond can be released. Any other assurance that all reclamation which might be required has been completed will be appreciated.

Mr. P.J. Maley
Mr. J.D. Sell
ASARCO Incorporated
August 27, 1993
Page 2

Please also provide me with copies of the eight Notices of Termination (NOT's) which ASARCO may have filed with the E.P.A. Have NOT's been filed on all the facilities on the captioned project on which a NOI were filed? Kerr-McGee trusts that it is ASARCO's intention to pursue with diligence the securing of the NOT's. Your assistance in these matters is much appreciated.

Yours very truly,

KERR-McGEE CORPORATION



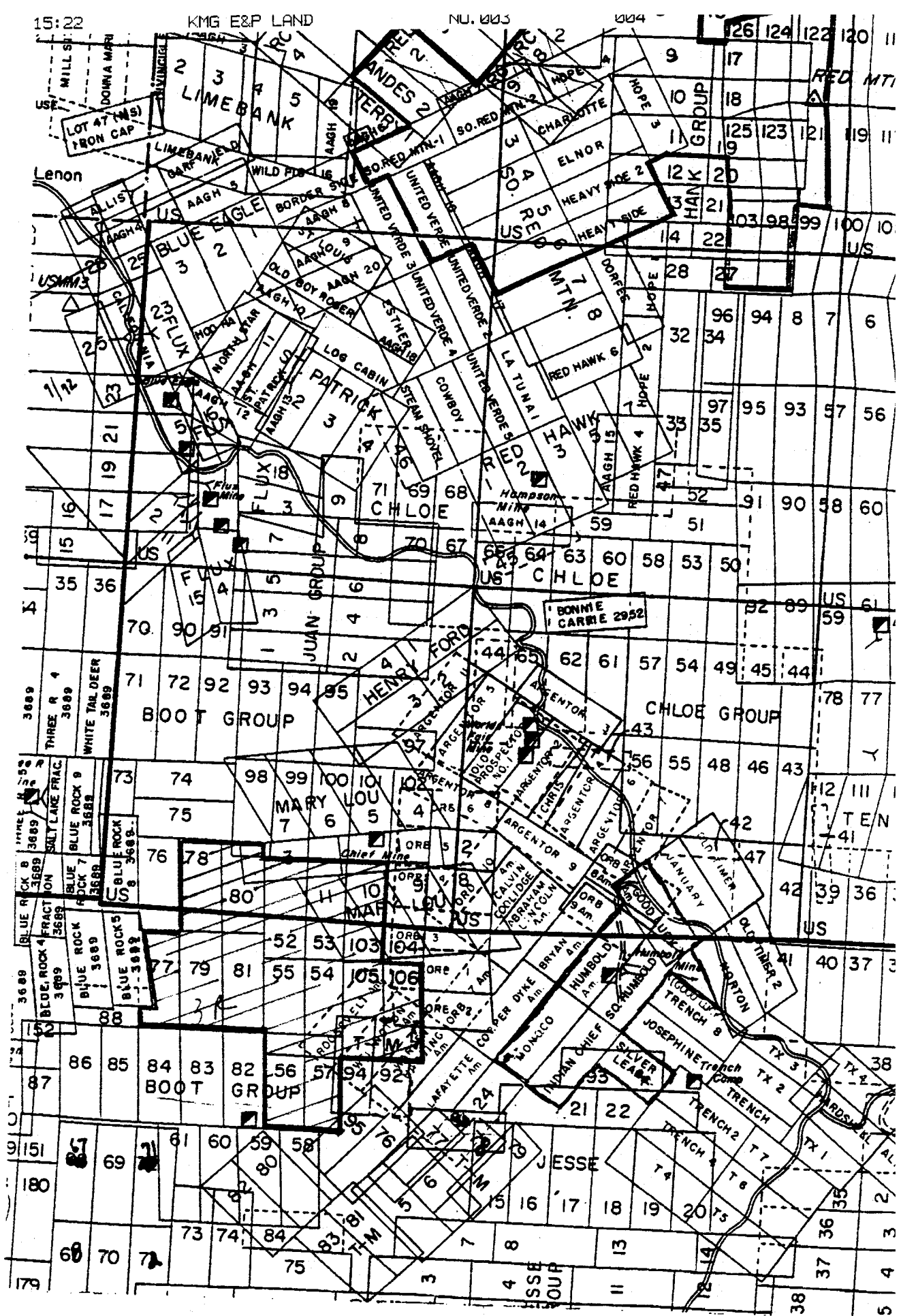
J. Phil Jones
District Landman

JPJ/bg

Attachment

xc: F. T. Graybeal
ASARCO Incorporated
180 Maiden Lane
New York, NY 10038

Harold Holmberg
Julian McNeely



ASARCO

Copper Operations
Tucson Office

August 30, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

BUREAU OF LAND MANAGEMENT
Arizona State Office
Attn: Mining Claims Unit
P O Box 16563
Phoenix, AZ 85011

Dear Sir:
Thunder Mountain Project
Evidence of Payment
Annual Rental Fee Fiscal years 1993 and 1994

This will serve as notice that the owner of the claims/sites intends to continue to hold them as listed and described in Exhibit A.

The annual rental fee of \$100.00 for each mining claim and mill site located on or before October 5, 1992, as required under Public Law 102-381 of October 5, 1992, 106 stat. 1374, 1378-79 for fiscal year 1993 and 1994, was mailed to the State Office of the BLM in the form of a check in the amount of \$2,800.00 for the claims/sites listed in Exhibit A.

Owner: ASARCO Incorporated
P O Box 5747
Tucson, AZ 85703

Please return the proof of payment receipt to the owner Attn:
D. F. Skidmore.



D. F. Skidmore

DFS/kh

Encls.

cc: JDSell

***** LF-250 ***** -JOURNAL- ***** DATE AUG-30-1993 ***** TIME 09:00 *****

NO.	COM	DOC	DURATION	X/R	IDENTIFICATION	DATE	TIME	DIAGNOSTIC
31	OK	06	00:03'35	MT	/ MINING-NY	AUG-30	08:57	840450AC7820

-ASARCO MINING-MBD

***** PANASONIC *****

802 792 3868- *****

EXHIBIT A

FISCAL YEARS 1993 - 1994

the mining claims situated in the Palmetto and Harshaw Mining Districts, Santa Cruz County, Arizona, the names and books and pages of record in the office of the County Recorder of Santa Cruz County, Arizona, and the Bureau of Land Management serial number of the Notices of Location whereof are as follows:

<u>NAME OF CLAIM</u>	<u>RECORDING</u>		<u>BLM</u>
	<u>BOOK</u>	<u>PAGE</u>	<u>SERIAL NO.</u>
Boot 52 thru 57	58	421 thru 426	A MC 52015 thru 52020
Boot 77	57	323	52032
Boot 78	57	324	52033
Boot 78 Amended	58	431	"
Boot 79	57	325	52034
Boot 80	57	326	52035
Boot 80 Amended	69	432	"
Boot 81	57	327	52036
Boot 103, 105, 106	81	360, 363, 364	52055, 52058, 52059

All of said claims are located in Sections 36, T22S, R15E; Sections 31, T22S, R16E; and Section 6, T23S, R16E, G&SRB&M.

That all of said mining claims are owned by ASARCO Incorporated the mailing address for which is P.O. Box 5747, Tucson, Arizona 85703

PAYMENT

$$14 \text{ Mining Claims} \times \$200^{00} = \underline{\underline{\$2800^{00}}}$$

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Thunder Mountain
EA 0042

04

RECEIPT AND ACCOUNTING ADVICE

CP/AZ NO. 1925803
10/07/92

Subject: AFFIDAVITS OF ASSESSMENT WORK (94)

2 8 12

470.00

Applicant:

ASARCO INC., ET AL
BOX 5747
TUCSON, AZ 85703

SAME - CK #01537

Remitter:

Assignor:

SERIAL NO.

AMC 32934, ET AL

REFER TO THE ABOVE CASE SERIAL NUMBER IN ALL CORRESPONDENCE. PLEASE INFORM THIS OFFICE OF ANY CHANGE IN ADDRESS.

NOTE: This notice is a receipt for monies paid the United States. If these monies are for required fees in connection with your application to lease, purchase, enter, or otherwise acquire an interest in public lands or resources, this receipt is not an authorization to utilize the land applied for and it does not convey any right, title, or interest in the land for which application is made.

OCT 9 - 1992

SW Exploration

CC: G.D. Van Voorhis
P. Donato - Contract File NYO
J.D. Sell
W.D. Gay
Kerr-McGee Corp.

ACK-CP

January 12, 1993

W.D. Gay
M.E. Kavanagh
J.D. Sell

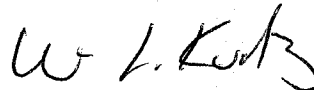
Exploration Department
Arizona "Patagonia" Project

In discussion with Mr. Van Voorhis it was decided to keep the Thunder Mountain (including Trench, Mendoza, and 3-R), and Ventura project files and document books in Tucson. Mr. Sell, Kreis, or Gay will be available to obtain any necessary file/map information.

Bill Gay/Mary Kavanagh should send Vikre a copy of the latest assessment work filings and up-to-date property maps.

Mr. Graybeal is continuing to negotiate with Kerr-McGee (Thunder Mtn.) and Noranda (Ventura) to obtain more favorable JV terms (i.e. elimination of annual work commitments).

WLK:mek



W. L. Kurtz

cc: G.D. Van Voorhis
P.G. Vikre

ASARCO

Southwestern Exploration Division

January 21, 1993

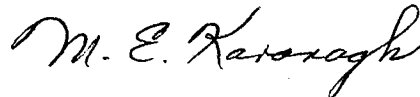
P.G. Vikre
Reno Office

Exploration Department
Arizona "Patagonia" Project

Regarding Mr. Kurtz's letter of January 12, 1993, attached are the latest assessment work filings for Thunder Mountain, Trench, Ventura and 3-R Projects.

Bill Gay/Don Melhado will be handling the up-to-date property maps.

mek
atts.



M. E. Kavanagh

cc: W.L. Kurtz
J.D. Sell
G.D. Van Voorhis
W.D. Gay
D.A. Melhado

ASARCO

Copper Operations
Tucson Office

ASARCO Incorporated

JUN 14 1993

SW Exploration

June 14, 1993

Mr. Hebert Holmberg
Kerr McGee
Kerr McGee Center
123 Robert S. Kerr Center
Oklahoma City, OK 73102

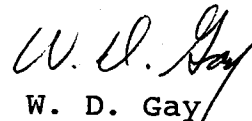
THUNDER MOUNTAIN PROJECT

Dear Mr. Holmberg:

Enclosed are copies of a map showing the unpatented claims in the Thunder Mountain Project.

Please call me if you have any questions concerning the project.

Very truly yours,


W. D. Gay

WDG/kh

Encls.

cc: FT Graybeal - w/o encl.
JDSell - w/ encl.

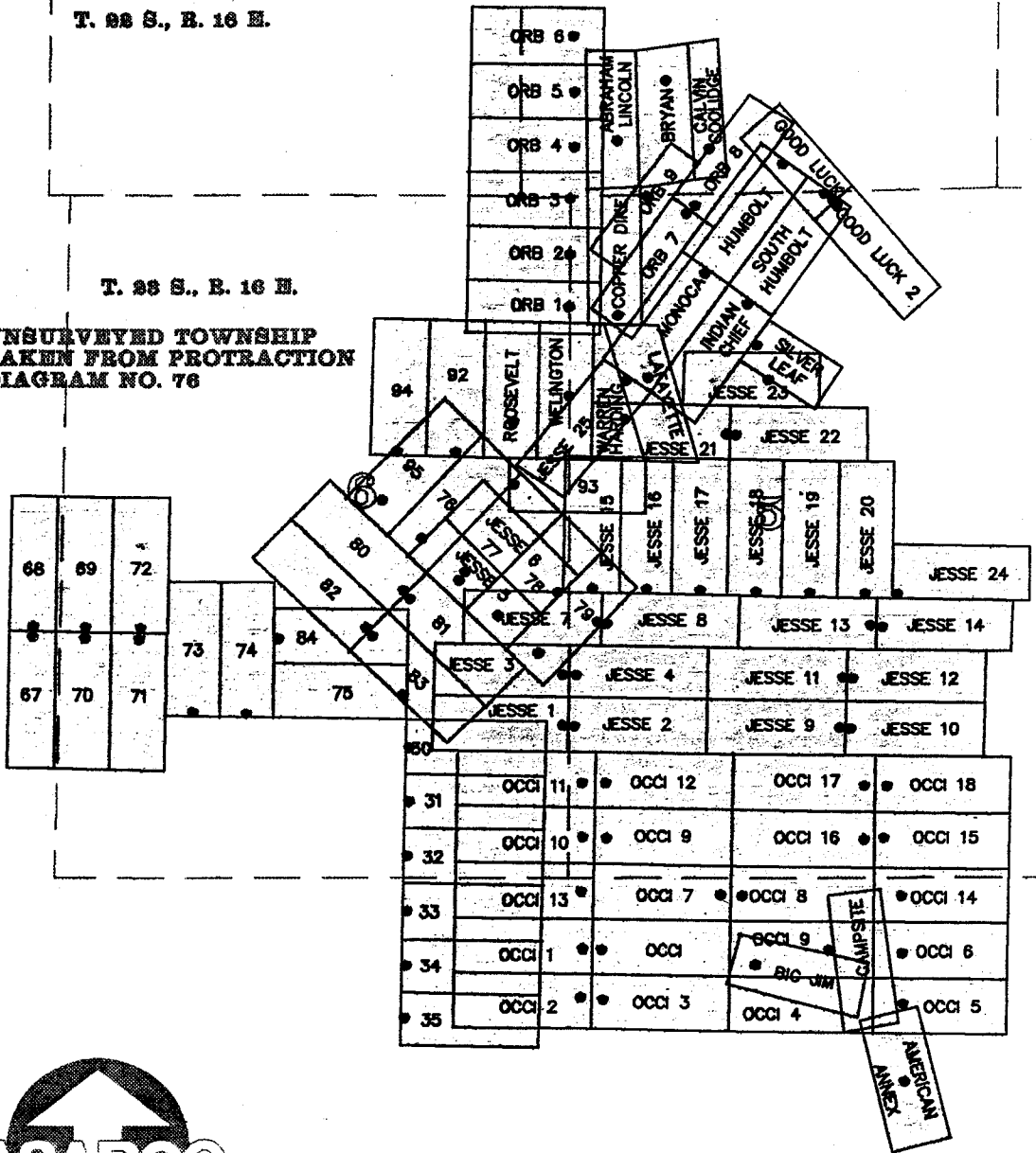
31

32

T. 28 S., R. 16 E.

T. 28 S., R. 16 E.

UNSURVEYED TOWNSHIP
TAKEN FROM PROTRACTION
DIAGRAM NO. 76



ASARCO EXPLORATION

THUNDER MOUNTAIN PROJECT CLAIM MAP

SANTA CRUZ COUNTY, ARIZONA



ASARCO

MISSION UNIT

January 30, 1991

Memo To: Mr. John Malusa
Geologist
Tucson Office

Please find the attached sample analyses of the water from drill hole TM-11. The laboratory analysis is for the most current sample taken from the hole. I have also included a historical tabulation of the groundwater quality from this hole from 1977 through 1988. Please contact me if I can be of further assistance.

Al
Al Cooper
Mine Engineer

AC/lb

Attachments

cc: J.D. Sell

ASARCO

A. T. (AL) COOPER
Mine Engineer
Mission Unit

ASARCO

JAN 31 1991

S.W. EXHIBITION

AGRICULTURE

CHEMICAL ANALYSIS

PETROLEUM

BC

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Water Development Corporation
3938 East Santa Barbara Avenue
Tucson, AZ 85711
Attn: Phillip C. Halpenny

Date Reported: January 17, 1989
Date Received: December 5, 1988
Laboratory No.: 9007-15

WATER ANALYSIS

Sample Description: D(23-16) 5bcc 12/1/88 @ 2:40 p.m.
Sampled By: ATC

Constituents, mg/liter

Acidity as Hydrogen	1.4
Calcium	4.6
Magnesium	2.6
Sodium	4
Potassium	2.2
Carbonate	0
Bicarbonate	0
Chloride	3.2
Sulfate	91
Nitrate	0.9
Fluoride	0.20
Iron	0.11
Manganese	0.25
Arsenic	(-) 0.01
Copper	0.42
Zinc	0.34
Total Dissolved Solids @ 180 F	175
Total Chromium	(-) 0.01
Lead	(-) 0.01
Electrical Conductivity, micromhos/cm @ 25 C	300
pH	3.5

(-) refers to "less than"

B C LABORATORIES, INC.

BY

J. J. Eglin
J. J. Eglin

(D-23-16) 5 bcc

[illegible]

January 30, 1991

J.D. Sell

Hydrologic Summary
Thunder Mountain Project
Santa Cruz County, AZ

The following is a compilation of data and inferences regarding the hydrologic environment at the Thunder Mountain Project. Depths to water encountered on angle holes were projected vertically to the land surface from the point where water was encountered (Figure 1).

BB-2

Artesian water flowing at a rate of 10 gals./minute was encountered 491 ft. down the hole, 430 feet below land surface.

BB-3

Artesian water flowing at a rate of 2 gals./minute was encountered 485 ft. down the hole, 430 feet below land surface.

BB-4

The water table was inferred to be encountered at approximately 600 feet due to the driller's account of excess water filling the drill hole overnight. However, when observing the drill hole after drilling was completed, the water level had risen to within 20 feet of the collar.

BB-5

The water table was encountered 335 feet down the hole, 225 feet below land surface.

BB-6

No mention of water by drillers; however, it was likely that water was encountered within 20 feet of the land surface due to the drill holes close proximity to the stream.

BB-7

No water encountered, probably due to location of the drill holes high on Canyon ridge.

Hydrologic Summary

Page 2

Other Notes

Artesian water flow is likely a result of the highly silicified breccia exposed in the cliffs upstream from drill hole BB-2, -3 and -6 forming an impermeable barrier to subsurface water. This subsequently results in a perched water table up the canyon. Therefore, when the impermeable confining formation is penetrated with a drill hole, it results in artesian water flow.

Surface water flow has persisted for approximately 80% of the time I have spent there (approximately 8 months). Furthermore, occasional "gully washers" resulting from summer down-pours have been serious enough to wash out the drill road and should be considered as a problem if this were to develop into an open pit mine. Another problem is that this creek/wash eventually drains into the Sonoita Creek Nature Conservancy Property.

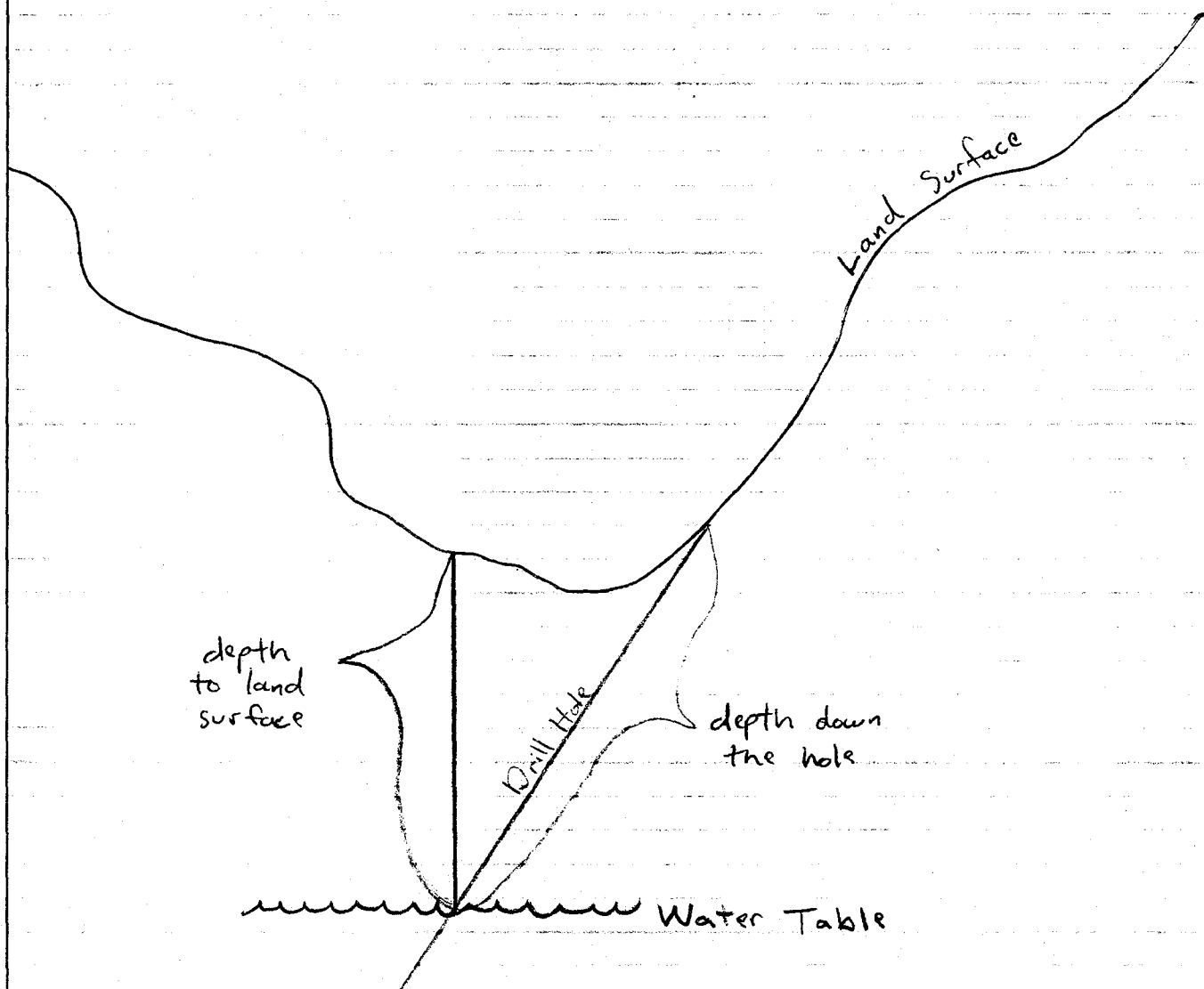
JJM:mek


J.J. Malusa

cc: W.L. Kurtz

Figure 1

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



Hazardous Wastewaters
Fencing
Hydrology

April 15, 1990

J.D. Sell

Dangerous Conditions
Patagonia Area
Santa Cruz County, AZ

On April 11 and 12, 1990 at your request, John Malusa and I checked the area covered by SWED unpatented claims for mine workings considered dangerous. The following is our observations:

Ventura Area

Ventura adit open (water coming out of portal - should be analyzed) and an open adit found approximately N44°E, 2000 feet from the Venture adit.

Flux Area (SWMD responsibility)

This area contains a glory hole, several shafts, some of which were filled, but have opened up again; also, several adits and a severe subsidence area close to the public road through the claims. This area was one that was identified in a letter from the Arizona State Mine Inspector and I would concur it is the most hazardous area we checked. In fact, vandals had blasted a road block into the old workings and access is not a problem to those who want to trespass.

Thunder Mountain Group

Found a shaft about 2000 feet SW of Trench Mine which is filled with water within 15 feet of the collar (severe hazard). Three adits were noted, but the most obvious hazard was the open workings alongside the access road about 1½ miles in from the main road to Lochiel.

Three other places were noted as shown on the attached map. The first area was west of main road about 1500 feet and a timbered shaft 15-20 feet deep was found as well as a partially caved adit. The second area was west of the main road about 1000 feet and two (2) open adits were seen. The third and final area was the Blue Nose Mine area. Here a fenced shaft was found that had water in it. The fence is very close to the collar, so the fence should be moved back. Three (3) adits were found that should be secured.

Humbolt Area

Mining Dept. had been thru this area and put up signs on all the shafts and adits.

Chief Mine Area

Two (2) adits were found open.

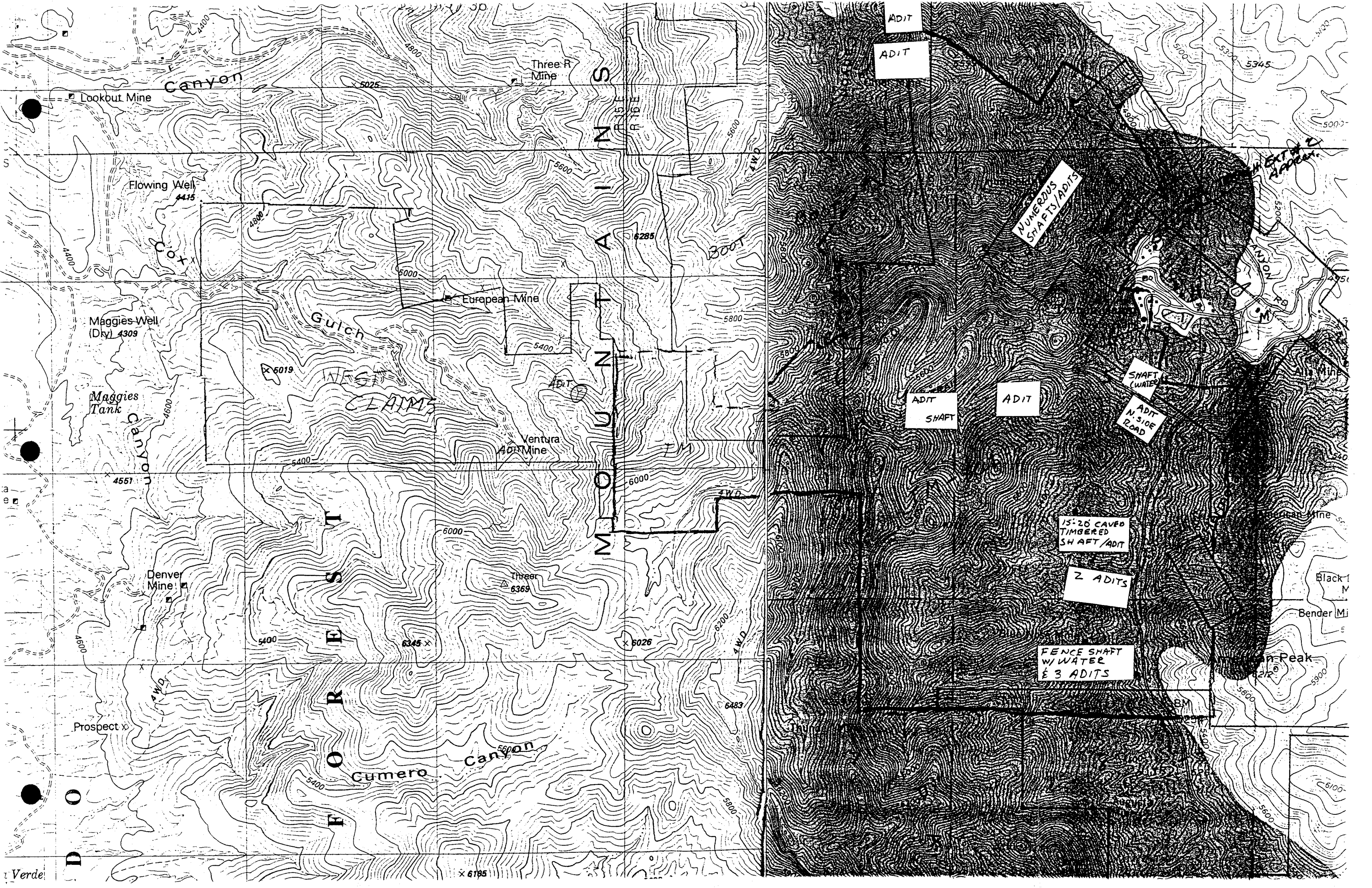
SUMMARY

Although a careful inspection of all areas was made, the topography and vegetation probably hid some hazardous workings. A continued search for these could be made when the found hazards are being secured.

WDG:mek
Att.

William D. Gay
William D. Gay

cc: W.L. Kurtz



Lookout Mine

Flowing Well
4415

Maggies Well
(Dry) 4309

Maggies
Tank

Denver
Mine

Prospect x

Three R
Mine

European Mine

Ventura
Mine

Three
6369

Black M

Bender M

Peak

ADIT

ADIT

NUMEROUS
SHAFTS/ADITS

ADIT
SHAFT

ADIT

SHAFT
(WATER)

ADIT
N. SIDE
ROAD

15-20 CAVED
TIMBERED
SHAFT/ADIT

2 ADITS

FENCE SHAFT
W/ WATER
& 3 ADITS

S
I
N
T
A
N
T
M
I
O
U
N
T
A
I
N

Canyon

Gulch

WEST
CLAIMS

T
E
S
T
F
O
R
E
C
U
M
E
R
O

Cumero

Canyon

Verde

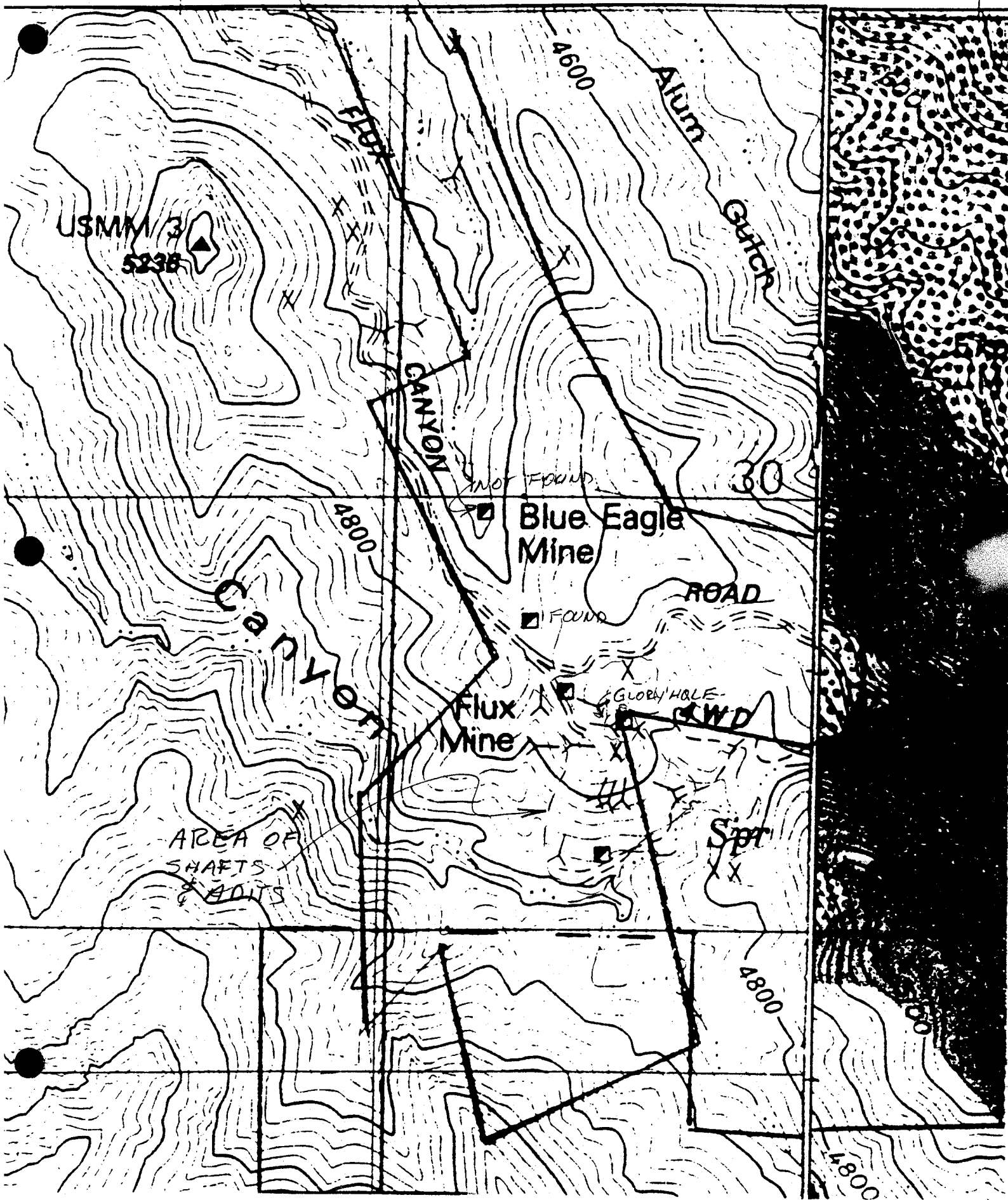
000 FEET

R 15 E

R 16 E

110° 45'

5'



ASARCO

JDS
Southwestern Exploration Division

March 20, 1990

W.D. Gay

Dangerous Condition
Patagonia Area
Santa Cruz County, AZ

Thanks for the claim map showing the Thunder Mountain, Three R, and Ventura Claim group and the major mines on this SWED ground.

Pull the Topo maps and mark all the adits, shafts, pits shown (such as the adit in Boot 102), then take J.J. Malusa along, after he returns from the Reno meeting and inventory the status of the openings and remark on how best to secure these openings on the SWED ground. See attached letter to Mr. Low to guide you, as the Exploration Department will probably be getting a letter such as this in the near future and we'll want to respond.

JDS:mek
Att.


James D. Sell

cc: W.L. Kurtz
J.J. Malusa



Office of
Arizona State Mine Inspector

1616 West Adams, Suite 411
Phoenix, Arizona 85007-2627
(602) 542-5971

cc: ESCartaccini - 3/13/90 ASARCO

S.W. MINING DEPT.
MAR 14 1990
TUCSON

T.E.S.
MAR 13 1990
MISSION UNIT

March 12, 1990

Mr. J. Low, Manager
Asarco, Inc.
P.O. Box 111

Dear Mr. Low:

The Arizona State Mine Inspector has examined your mines located in Sections 30, 31; T22S-R16E, Santa Cruz County, Arizona and has determined a dangerous situation exists.

The Arizona Revised Statute §27-318 states:

"Abandoned and inactive mines to be secured; inspector authority; violation; classification

A. Every mine operator or former mine operator or claimant who owns a mine or mining claim under lease, contract, permit or otherwise, who knowingly permits the existence on the premises of an abandoned or inactive mining shaft, portal, pit or other excavation which is dangerous to persons legally on the premises, who fails to cover, fence, fill or otherwise secure it and post warning signs, within sixty days of notification by the inspector and who fails to keep it so protected is guilty of a class 2 misdemeanor. If it is impossible or impracticable to comply with this subsection within the required sixty days, the operator may submit a written plan of action to the inspector which specifically outlines the measures that will be taken and the number of additional days necessary to comply with this section. In no case may the time extension granted by the inspector exceed an additional one hundred eighty days.

D. A person who knowingly and without authority removes, destroys or tampers with any warning sign, covering, fencing or other protection placed on, around or over any shaft, portal, or other excavation is guilty of a class 6 felony."

Please remedy the hazard within 60 days from the date of this letter and inform this office, in writing, what materials and methods were used to eliminate this hazard.

Thank you for your cooperation.

Sincerely,

William C. Vanderwall
Assistant State Mine Inspector

WCV:krb

May 17, 1990

J.D. Sell

Securing Hazardous Workings
Patagonia Area
Santa Cruz County, Arizona

Mr. Scartaccini said the crew that is fencing the SWMD workings do not have a 4-WD vehicle. This means we would (SWED) have to furnish the crew with one when they do SWED fencing.

Probably will have to lease or rent a 4-WD for them. I am sure you do not want to let them have the spare compound pick-up.

WDG:mek

W. D. Gay
W. D. Gay

cc: W.L. Kurtz

Correct,
[Signature]



Arizona State Mine Inspector

DOUGLAS K. MARTIN
1616 West Adams, Suite 411
Phoenix, Arizona 85007-2627
(602) 542-5971

T.E.S.

JUN 8 1990

S.W. MINING DEPT.
JUN 8 1990
TUCSON

June 4, 1990

ASARCO Southwestern Mining Department
T.E. Scartaccini General Manager
Post Office Box 5747
Tucson Arizona 85703-0747

Dear Mr. Scartaccini:

We have received your request for an extension of time to secure the hazards on your property located in Sections 30 & 31 of 22S, 16E, Santa Cruz County. Due to the location being remote and the terrain rugged, I am hereby granting you a sixty day extension to July 31, 1990. *Flux area, also chip mine*

We also granted an extension to May 31, 1990 on your property located in Sections 4 & 5; Township 23S; Range 16E; Santa Cruz County. Would you please update us on your progress with securing the hazards on this property. *Humboldt-Trench Mine Area*

Please be aware by granting an extension of time to secure the hazards from trespass, you are not relieved of any liability should some one be injured on your property. *Wellington Mine, Volcano Mine, San Jacinto Mine*

Please refer to File #137 on all future correspondence.

Sincerely,

DOUGLAS K. MARTIN
Arizona State Mine Inspector

RECEIVED

JUN 8 1990

EXPLORATION DEPARTMENT

DKM:krb

June 20, 1990

ASARCO Incorporated

TO: T. E. Scartaccini

JUN 21 1990

FROM: Tony Dalla Vista

SW Exploration

RE: Fence Old Workings/SWED Claims Group
Santa Cruz County, Arizona

Fencing of the Old Mine Workings comprised in Sections 8 & 31, T22S, R16E, and Sections 5 & 6, T23S, R16E, was completed on June 15, 1990. The Ventura Mine Section 1, T23S, R15E, (2 Adits) remains to be fenced. *now done, 6-21-90*

A list of the completed areas is shown below:

<u>AREA</u>	<u>LOCATION</u>	<u>TYPE OF WORKINGS</u>
<u>Chief Mine</u>	Sec. 31, T22S R16E	3 shafts 2 adits
<u>Humbolt Mines</u> (Incl. one shaft on Humbolt/Trench Boundary)	Sec. 32, T22S R16E Sec. 5, T23S R16E	3 shafts 10 adits 1 Decl.
<u>Upper Humbolt</u> (Volcano, Wellington Sunnyside Mines)	Sec. 5 & 6, T23S, R16E	1 open stope 1 shaft 4 adits
<u>South of Trench Camp</u> (Access Road to Upper Humbolt)	Sec. 5, T23S R16E	3 adits 1 shaft
<u>Blue Nose Mine</u> (Little Jim)	Sec. 8 T23S R16E	1 shaft 1 decl. 1 adit/stope 4 adits
<u>Marstellar Mine</u>	Sec. 8, T23S R16E	2 caved shafts 1 decl/stope
<u>Derek Mine</u>	Sec. 8, T23S, R16E	1 adit

TOTAL FOOTAGE - 4 STRANDS BARBED WIRE 2894'

COSTS:

Labor/Contract 2894' @ .85 \$2,459.90

Hourly Labor 7 man-hours @ \$6/hour 42.00

TOTAL LABOR \$2,501.90

MATERIALS:

Posts, wire, clips, staple, stays, etc. \$1,496.93

Rental 4x4 for 1½ week (Lee Kuhy's)
include gas,ruined tire 350.00

TOTAL COST \$4,347.93



Tony Dalla Vista

TDV/mck
encls. - Map & Invoice

cc: JSell - w/encls.
PJMaley - w/o encls.

cc: J.D. Sell
W.D. Gay

ASARCO INC.
SW Exploration Dept.

SKK

6/18/90

CONTRACT WORK FENCING THE BELOW
LISTED MINE WORKINGS. WORK PERFORMED
FROM JUNE 5 THRU JUNE 15, 1990
AT A PREVIOUSLY AGREED RATE OF
\$.85 / FOOT FOR 4-STRAND BARBED WIRE
Fence.

Humbolt canyon (C30)

3 SHAFTS, 10 ADITS, 1 DECL. TOTAL 1140'

Upper Humbolt

1 open STOPE, 1 SHAFT

3 ADITS

EAST OF Humbolt (Access Rd) 401'

4 ADITS

Blue Nose mine (Little Jim) 478'

1 SHAFT, 1 DECL., 1 STOPE,

4 ADITS

MARSTELLOR mine } 343'

1 SHAFT / 1 DECL. / STOPE

Derek mine

1 ADIT

CHIEF mine

3 SHAFTS, 2 ADITS 532'

TOTAL 2894' @ .85/FT 2459.90

Hourly Labor 17 man-hours @ 6/hr 42.00

TOTAL \$ 2,501.90



AMERICAN FENCE COMPANY, INC.

SW EXPORT

SOLD TO **ASARCO INC. (792-3010)**

ADDRESS **P.O. Box 5747 TSN, AZ. 85703**

DATE 05-31-90	CUST. OR. NO. T-650	SOLD BY RICHARD	CASH	CHECK	CHARGE <input checked="" type="checkbox"/>	<input type="checkbox"/> MASTERCARD NO.	<input type="checkbox"/> VISA CARD NO.
-------------------------	-------------------------------	---------------------------	------	-------	---	---	--

QTY	DESCRIPTION	PRICE	AMOUNT	QTY	DESCRIPTION	PRICE	AMOUNT
	11-2 FABRIC				TOP RAIL TIES		
	11-2 FABRIC				TENSION WIRE		
	FABRIC				GATES X 1 3/8" FRAME		
	FEET O.D. TOP RAIL				GATES X 1 3/8" FRAME		
	1 5/8" O.D. POSTS X FENCE				GATES X D.D. 1 3/8"		
	1 5/8" O.D. POSTS X FENCE				GATES X D.D. 1 3/8"		
	2" O.D. X FENCE-DRILL				GATES X FRAME		
	2" O.D. X FENCE-DRILL				O.D. TOP RAIL SLEEVES		
	2 1/2" O.D. X FENCE-DRILL				HOG RINGS		
	2 1/2" O.D. X FENCE-DRILL				BARBED WIRE		
	O.D. X FENCE-DRILL				FORK LATCHES		
	O.D. X FENCE-DRILL				WING LATCHES		
	O.D. X FENCE-DRILL				L BOLTS		
	TENSION BARS				INDUSTRIAL HINGES		
	TENSION BARS				GATE HINGES		
	O.D. RAIL ENDS				POST HINGES		
	END BANDS			100 6' 133	DOM T-POST	235	235 00
	END BANDS			400 133	T-POST CLIPS	INCLUDED	
	TENSION BANDS			6	2-PT IMP. BARB WIRE	290	174 00
	TENSION BANDS			200 42"	FENCE STAYS	33	66 00
	X EYE TOPS						
	X EYE TOPS						
	O.D. BALL CAPS						
	O.D. BALL CAPS						

PLEASE READ THE TERMS ON THE REVERSE SIDE WHICH ARE A PART OF THIS CONTRACT.

LOADED BY *[Signature]*

[Signature]

MERCHANDISE REC'D BY *[Signature]*

SUB TOTAL	475 00
SALES TAX	33 25
DELIVERY CHARGE	
TOTAL	508 25
DEPOSIT	
AMOUNT DUE	

77066

ALL CLAIMS AND RETURNED GOODS MUST BE ACCOMPANIED BY THIS BILL.

CUSTOMER COPY



AMERICAN FENCE COMPANY, INC.

 SOLD TO ASARCO INC. (792-3010)

 ADDRESS P.O. Box 5747 TSN, AZ. 85703

DATE <u>06-07-90</u>	CUST. OR. NO. <u>T-650</u>	SOLD BY <u>RICHARD</u>	CASH <input type="checkbox"/>	CHECK <input type="checkbox"/>	CHARGE <input checked="" type="checkbox"/>	<input type="checkbox"/> MASTERCARD NO.	<input type="checkbox"/> VISA CARD NO.
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QTY	DESCRIPTION	PRICE	AMOUNT	QTY	DESCRIPTION	PRICE	AMOUNT
	11-2 FABRIC				TOP RAIL TIES		
	11-2 FABRIC				TENSION WIRE		
	FABRIC				GATES <u>X</u> 1 3/8" FRAME		
	FEET O.D. TOP RAIL				GATES <u>X</u> 1 3/8" FRAME		
	1 5/8" O.D. POSTS <u>X</u> FENCE				GATES <u>X</u> D.D. 1 3/8"		
	1 5/8" O.D. POSTS <u>X</u> FENCE				GATES <u>X</u> D.D. 1 3/8"		
	2" O.D. <u>X</u> FENCE-DRILL				GATES <u>X</u> FRAME		
	2" O.D. <u>X</u> FENCE-DRILL				O.D. TOP RAIL SLEEVES		
	2-1/2" O.D. <u>X</u> FENCE-DRILL				HOG RINGS		
	2 1/2" O.D. <u>X</u> FENCE-DRILL				BARBED WIRE		
	O.D. <u>X</u> FENCE-DRILL				FORK LATCHES		
	O.D. <u>X</u> FENCE-DRILL				WING LATCHES		
	O.D. <u>X</u> FENCE-DRILL				L BOLTS		
	TENSION BARS				INDUSTRIAL HINGES		
	TENSION BARS				GATE HINGES		
	O.D. RAIL ENDS				POST HINGES		
	END BANDS			100	6' 1 3/8" DOM T-POST	235	235.00
	END BANDS			5	2-PT DRAP BARB WIRE	29.00	145.00
	TENSION BANDS			300	48" FENCE STAYS	34	102.00
	TENSION BANDS			400	1 3/8" T-POST CLIPS		INCLUDED
	<u>X</u> EYE TOPS						
	<u>X</u> EYE TOPS						
	O.D. BALL CAPS						
	O.D. BALL CAPS						

PLEASE READ THE TERMS ON THE REVERSE SIDE WHICH ARE A PART OF THIS CONTRACT.

LOADED BY _____

TERMS AND CONDITIONS

 MERCHANDISE
REC'D BY

SUB TOTAL	482.00
SALES TAX	33.74
DELIVERY CHARGE	
TOTAL	515.74
DEPOSIT	
AMOUNT DUE	

77183

ALL CLAIMS AND RETURNED GOODS MUST BE ACCOMPANIED BY THIS BILL.

CUSTOMER COPY



AMERICAN FENCE COMPANY, INC.

SOLD TO ASARCO INC. (792-3010)

ADDRESS P.O. Box 5747 TSN. AZ. 85703

DATE 06-12-90	CUST. OR. NO. T-650	SOLD BY RICHARD	CASH <input checked="" type="checkbox"/>	CHECK <input type="checkbox"/>	CHARGE <input checked="" type="checkbox"/>	<input type="checkbox"/> MASTERCARD NO.	<input type="checkbox"/> VISA CARD NO.
-------------------------	-------------------------------	---------------------------	---	-----------------------------------	---	---	--

QTY	DESCRIPTION	PRICE	AMOUNT	QTY	DESCRIPTION	PRICE	AMOUNT
	11-2 FABRIC				TOP RAIL TIES		
	11-2 FABRIC				TENSION WIRE		
	FABRIC				GATES X 1 3/8" FRAME		
	FEET O.D. TOP RAIL				GATES X 1 3/8" FRAME		
	1 5/8" O.D. POSTS X FENCE				GATES X D.D. 1 3/8"		
	1 5/8" O.D. POSTS X FENCE				GATES X D.D. 1 3/8"		
	2" O.D. X FENCE-DRILL				GATES X FRAME		
	2" O.D. X FENCE-DRILL				O.D. TOP RAIL SLEEVES		
	2 1/2" O.D. X FENCE-DRILL				HOG RINGS		
	2 1/2" O.D. X FENCE-DRILL				BARBED WIRE		
	O.D. X FENCE-DRILL				FORK LATCHES		
	O.D. X FENCE-DRILL				WING LATCHES		
	O.D. X FENCE-DRILL				L BOLTS		
	TENSION BARS				INDUSTRIAL HINGES		
	TENSION BARS				GATE HINGES		
	O.D. RAIL ENDS				POST HINGES		
	END BANDS			8	2-PT IMP. BARB WIRE	29 ⁰⁰	232 00
	END BANDS			500	1/8" FENCE STAYS	34	170 00
	TENSION BANDS			1000	1/32 T-POST CLIPS	04	40 00
	TENSION BANDS						
	X EYE TOPS						
	X EYE TOPS						
	O.D. BALL CAPS						
	O.D. BALL CAPS						

PLEASE READ THE TERMS ON THE REVERSE SIDE WHICH ARE A PART OF THIS CONTRACT.

LOADED BY Mary

MERCHANDISE
REC'D BY X

77247

ALL CLAIMS AND RETURNED GOODS MUST BE ACCOMPANIED BY THIS BILL.

CUSTOMER COPY

SUB TOTAL	442 00
SALES TAX	30 96
DELIVERY CHARGE	
TOTAL	472 96
DEPOSIT	
AMOUNT DUE	

#125

Patagonia Excavating Co
Bx 482
Patagonia Arizona 85624

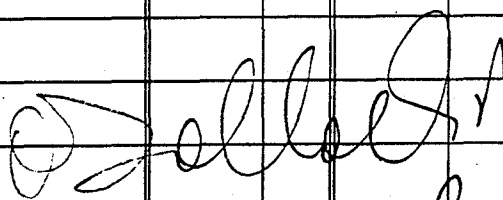
Original
C-3 NMP

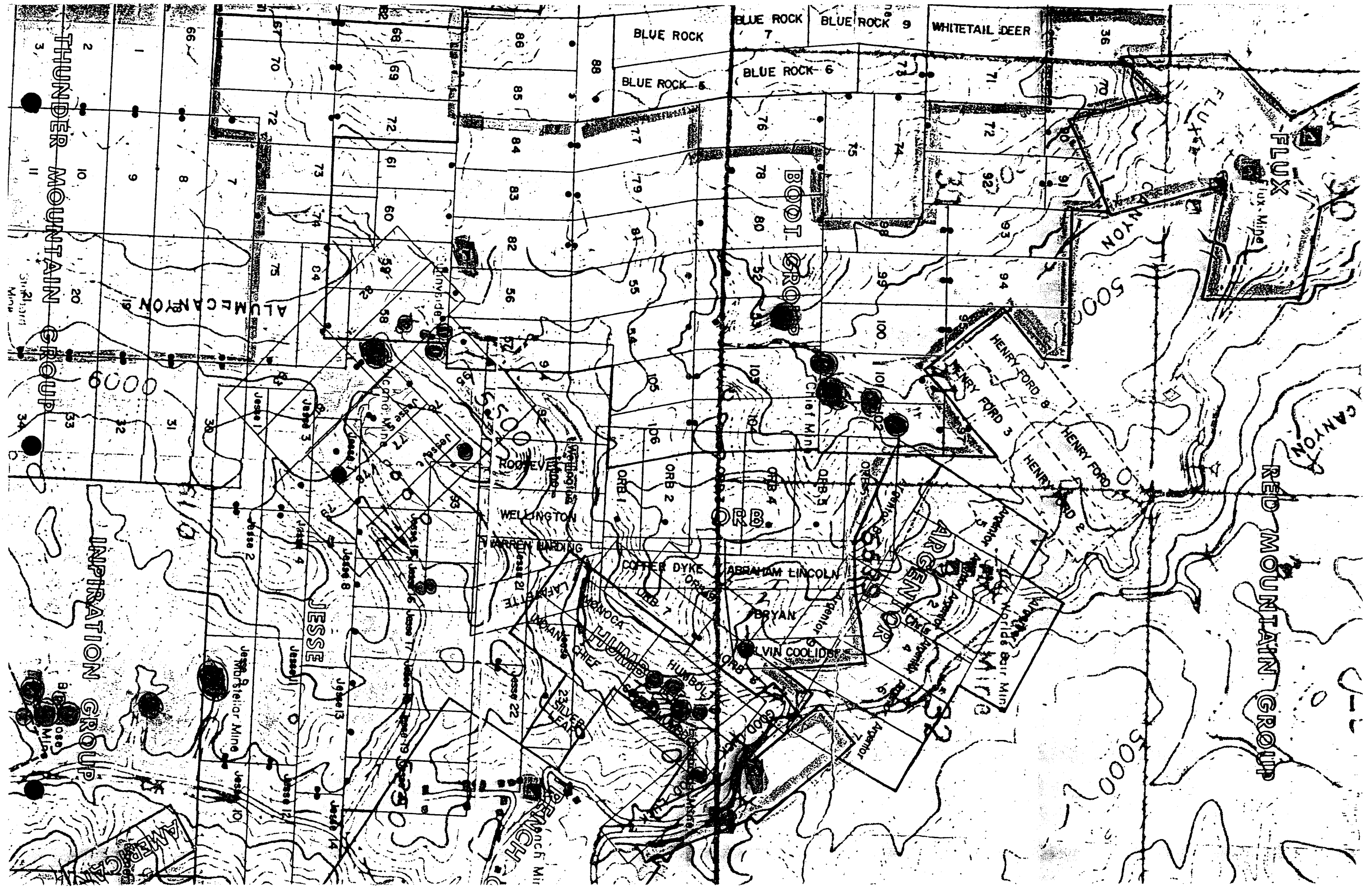
TO ASARCO Inc.
Southwest Exploration Dept.

TERMS

DATE 4-19-70

4X4 Pickup rent			
2 Week Rent	350	00	
Rental Tax 25	17	50	
	<u>\$ 367</u>	50	
Includes 30 gal gas			
1 TX 1500 Tire			


 See exp.



JDS

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

June 22, 1990

Mr. L.A. Robbennott
Manager of Mineral Lands
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, OK 73123

Fencing Old Workings
Thunder Mountain Project
Santa Cruz County, AZ

Dear Mr. Robbennott:

As a follow-up to my letter of April 19, 1990, I inform Kerr-McGee that Asarco has completed fencing the old mine workings as stated in T. Dalla Vista's memo and map attached. The work complies with the State Mine Inspector's order, and costs \$4,348.00, chargeable to the project.

Sincerely,

James D. Sell /mek

James D. Sell

JDS:mek
Att.

cc: F.T. Graybeal
W.L. Kurtz
W.D. Gay
W.K. John - Kerr-McGee

ASARCO

Southwestern Mining Department

June 20, 1990

ASARCO Incorporated

TO: T. E. Scartaccini
FROM: Tony Dalla Vista
RE: Fence Old Workings/SWED Claims Group
Santa Cruz County, Arizona

JUN 21 1990

Sr. Exploration

Fencing of the Old Mine Workings comprised in Sections 8 & 31, T22S, R16E, and Sections 5 & 6, T23S, R16E, was completed on June 15, 1990. The Ventura Mine Section 1, T23S, R15E, (2 Adits) remains to be fenced.

A list of the completed areas is shown below:

<u>AREA</u>	<u>LOCATION</u>	<u>TYPE OF WORKINGS</u>
<u>Chief Mine</u>	Sec. 31, T22S R16E	3 shafts 2 adits
<u>Humbolt Mines</u> (Incl. one shaft on Humbolt/Trench Boundary)	Sec. 32, T22S R16E Sec. 5, T23S R16E	3 shafts 10 adits 1 Decl.
<u>Upper Humbolt</u> (Volcano, Wellington Sunnyside Mines)	Sec. 5 & 6, T23S, R16E	1 open stope 1 shaft 4 adits
<u>South of Trench Camp</u> (Access Road to Upper Humbolt)	Sec. 5, T23S R16E	3 adits 1 shaft
<u>Blue Nose Mine</u> (Little Jim)	Sec. 8 T23S R16E	1 shaft 1 decl. 1 adit/stope 4 adits
<u>Marstellar Mine</u>	Sec. 8, T23S R16E	2 caved shafts 1 decl/stope
<u>Derek Mine</u>	Sec. 8, T23S, R16E	1 adit

TOTAL FOOTAGE - 4 STRANDS BARBED WIRE 2894'

COSTS:

Labor/Contract 2894' @ .85	\$2,459.90
Hourly Labor 7 man-hours @ \$6/hour	<u>42.00</u>
TOTAL LABOR	\$2,501.90

MATERIALS:

Posts, wire, clips, staple, stays, etc.	\$1,496.93
Rental 4x4 for 1½ week (Lee Kuhy's) include gas,ruined tire	<u>350.00</u>
TOTAL COST	<u>\$4,347.93</u>

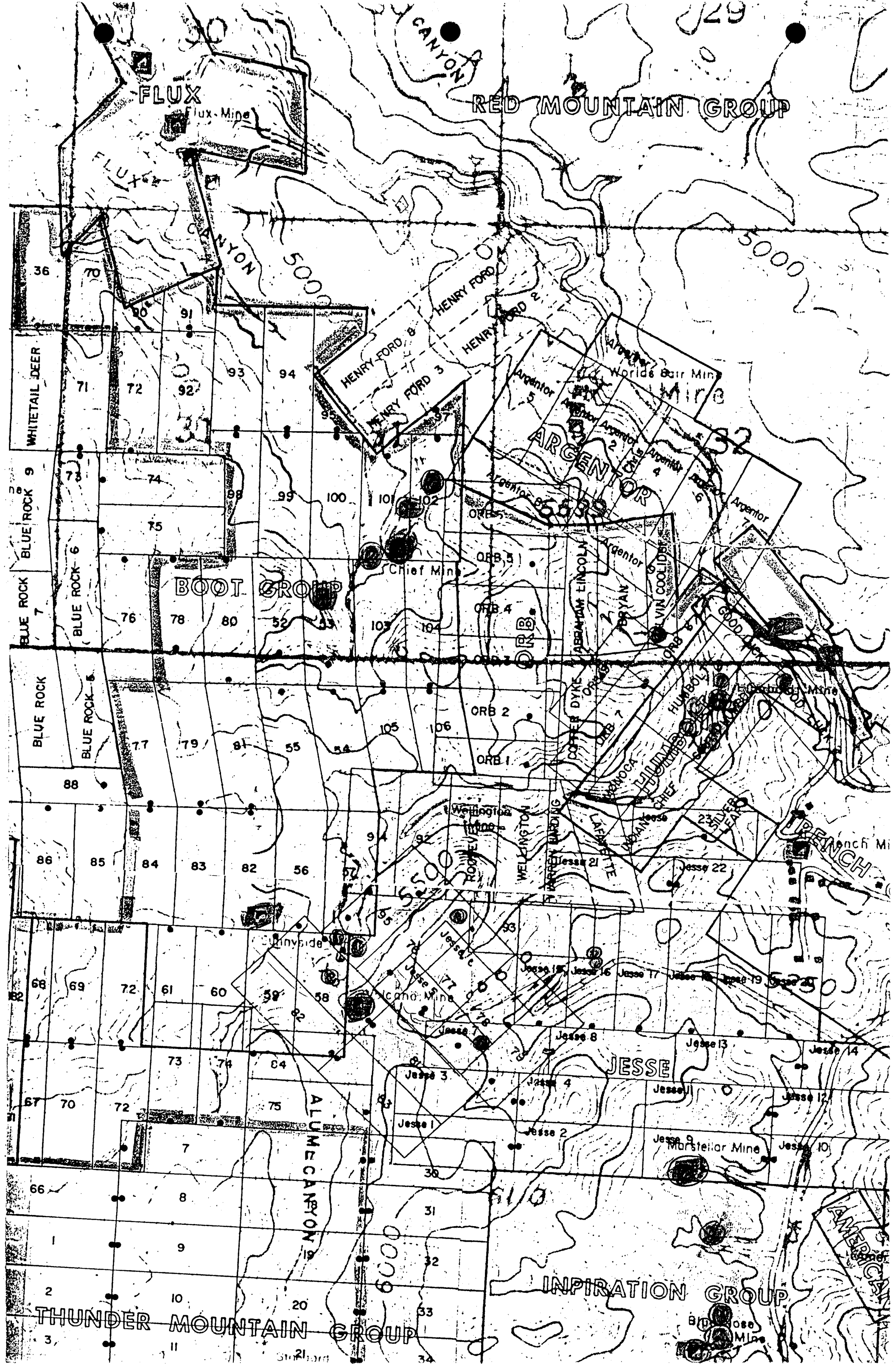


Tony Dalla Vista

TDV/mck
encls. - Map & Invoice

cc: JSell - w/encls.
PJMaley - w/o encls.

cc: J.D. Sell
W.D. Gay



rewrote
Same type for ~~Thunder at~~ Thunder Mountain
also
see change on forms

● Sec. A-A' 250' .9 → ? what's this

$$\begin{array}{r} 2150 \\ 1500 \\ \hline 1350 \end{array}$$

In situ candidate — fracture control aerologization

$$\begin{array}{r} 12,000' \\ 20 \\ \hline 24000 \end{array}$$

$$\begin{array}{r} 250,000 \\ 20 \\ \hline 12,500 \end{array}$$

$$\begin{array}{r} 140 \\ 800 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 9 \\ 10 \\ \hline 19 \end{array}$$

36,200

$$\begin{array}{r} 20 \\ 80 \\ \hline 1400 \end{array}$$

$$\begin{array}{r} 18.90 \times 500 \\ 19.70 \times 500 \\ 22.00 \times 400 \\ \hline 28000 \\ 27100 \\ 30000 \\ 60000 \end{array}$$

avg

$$\begin{array}{r} 18.90 \\ 500 \\ \hline 9450 \end{array}$$

$$\begin{array}{r} 19.70 \times 300 \\ \hline 5910 \end{array}$$

Total

$$\begin{array}{r} 280 \\ \times 19 \\ \hline \end{array}$$

$$\begin{array}{r} 1400 \\ \hline \end{array}$$

30040

$$\begin{array}{r} 10 \\ 80 \\ \hline 500 \end{array}$$

$$\begin{array}{r} 1200 \\ 3600 \\ 1200 \\ \hline 4800 \end{array}$$

Storm Water Management

ASARCO

JDS

Technical Services Center

R.A. Peterson Jr.

Director

D.E. Holt

Engineering Manager

D.A. Robbins

Environmental Sciences Manager

M.G. King

Research Manager

September 30, 1992

Stormwater Notice of Intent

P.O. Box 1215

Newington, VA 22122

RE: Notice of Intent For Stormwater General Permit

Asarco Incorporated ("Asarco") hereby submits the enclosed Notices of Intent (NOI's) for coverage of stormwater discharges associated with industrial activity under the NPDES General Permit issued by the United States Environmental Protection Agency.

These properties for which NOI's are being submitted are currently leased by Asarco for the sole purpose of exploring for commercial grade mineral deposits. Asarco is filing an NOI for the entire extent of each leased property as a protective measure, notwithstanding Asarco's belief that it should not be held responsible for stormwater discharges from previous mining activity conducted by other operators at the site. Asarco is not the proper operator of abandoned mining facilities that it is not disturbing by its activities on properties that it is leasing for exploration purposes. In these situations, Asarco is less the operator of the abandoned facilities than the owner, who has permitted and continues to permit uncontrolled discharges to occur.

*KM wants this clarified, as they are now
the claim owner - but have not done any work & they
do not like this
statement
by
P Jones
7/19/93*

Please direct any questions on these properties to me at the letterhead address, or call (801) 262-2459 ext. 210.

Thank you for your assistance in this matter.

Very Truly Yours,

Gregory A Knapp
Gregory A. Knapp
Senior Environmental Scientist

ASARCO

Exploration Department
Southwestern United States Division

June 23, 1993

Mr. Phil Jones, District Landman
Kerr-McGee Corporation
Minerals Exploration Division
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Stormwater Information

Dear Mr. Jones:

Enclosed are the following:

1. Letter dated October 22, 1992 with attachments. This began the process with the E.P.A.
2. Eight folders which contain the Stormwater Management Plan. Note that in folders Blue Nose Mine (Unknown), Marsteller Mine and Humbolt Mine you will find a letter dated April 13, 1993 that is self-explanatory.
3. Notice of Termination by Asarco to E.P.A. These eight terminations are unsigned. When we receive signed copies from our New York Office, we will send them to you. *KM needs copies of these even without the NY signature. Send copies. WDG*
4. Federal Register for your information and records. *via P. Jones 7/19/93*
5. Copy of "Storm Water Management for Industrial Activities." This again is for your information and records.

If you need any further information, please call.

Very truly yours,

W. D. Gay
W.D. Gay
Land Engineer

WDG:mek
Encs.

cc: F.T. Graybeal (w/o encs.)
J.D. Sell (w/o encs.)
P.J. Maley (w/o encs.)

KERR-MCGEE CORPORATION
Kerr-McGee Center, Oklahoma City, Oklahoma 73125.

Exploration and Production Division

TELECOPIER COVER LETTER

FAX NO.: 602/792-3934

DATE: July 19, 1993

TO: J.D. SELL/ASARCO

FROM: PHIL JONES

NUMBER OF PAGES, INCLUDING COVER LETTER: 3

IF TRANSMISSION IS IMPAIRED, PLEASE CONTACT BARBARA AT 405/270-2492.

THANK YOU.

TIME FAX SENT: _____



Storm Water Management For Industrial Activities

Thunder Water

Developing Pollution Prevention Plans And Best Management Practices

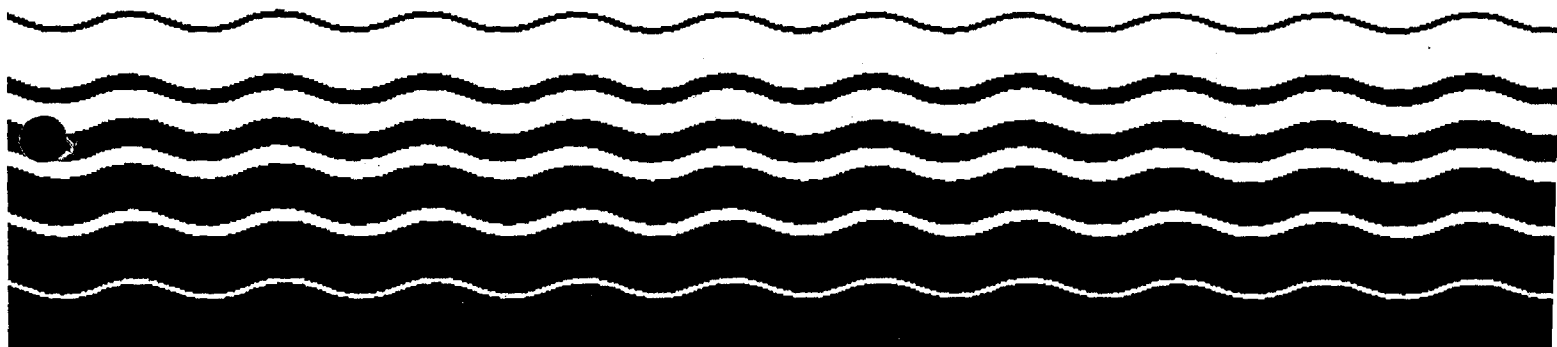
*Blue Eagle
Blue Nose
California
Chief
Volcano
Wellington
(all being handled
by Mining Dept.)*

SUMMARY GUIDANCE

★ 1992 ★
THE YEAR OF
CLEAN WATER



*Celebration +
Commitment*



FOREWORD

This booklet provides industrial facilities with summary guidance on the development of storm water pollution prevention plans and identification of appropriate Best Management Practices (BMPs). It provides technical assistance and support to all facilities subject to pollution prevention requirements established under National Pollutant Discharge Elimination System (NPDES) permits for storm water point source discharges.

EPA's storm water program significantly expands the scope and application of the existing NPDES permit system for municipal and industrial process wastewater discharges. It emphasizes pollution prevention and reflects a heavy reliance on BMPs to reduce pollutant loadings and improve water quality. This booklet provides summary guidance in both of these areas.

The document summarized here was issued in support of EPA regulations and policy initiatives involving the development and implementation of a National storm water program. The document itself is Agency guidance only. It does not establish or affect legal rights or obligations. Agency decisions in any particular case will be made applying the laws and regulations on the basis of specific facts when permits are issued or regulations promulgated.

The document and this booklet will be revised and expanded periodically to reflect additional pollution prevention information and data on treatment effectiveness of BMPs. Comments from users will be welcomed. Send comments to U.S. EPA, Office of Wastewater Enforcement and Compliance, 401 M Street, SW, Mail Code EN-336, Washington, DC 20460.

Industrial Guidance Executive Summary

Table of Contents

	<u>Page</u>
Overview of Pollution Prevention Plan Requirements	1
Figure -- Seven Phases for Developing and Implementing Industrial Storm Water Pollution Prevention Plans	2
Planning and Organization Phase	3
(A) Forming Your Pollution Prevention Team	3
(B) Building on Existing Environmental Management Plans	3
Assessment Phase	5
(A) Developing a Site Map	5
(B) Materials Inventory	5
(C) Identifying Past Spills and Leaks	6
(D) Non-Storm Water Discharges	6
(E) Existing Monitoring Data	7
(F) Site Evaluation Summary	7
BMP Selection and Plan Design Phase	8
(A) Good Housekeeping	8
(B) Preventative Maintenance	8
(C) Visual Inspections	9
(D) Spill Prevention and Response	9
(E) Sediment and Erosion Control	10
(F) Management of Runoff	10
Implementation Phase	11
(A) Implementing Appropriate Controls	11
(B) Employee Training	11
Evaluation Phase	12
(A) Annual Site Compliance Evaluation	12
(B) Recordkeeping and Internal Reporting	12
(C) Plan Revisions	12
General Requirements	13
(A) Deadlines for Plan Development and Implementation	13
(B) Required Signatures	13
(C) Plan Location and Public Access	14
(D) Director-Required Plan Modifications	14

Industrial Guidance Executive Summary

Table of Contents (Continued)

	<u>Page</u>
Special Requirements	15
(A) Special Requirements for Discharges Through Municipal Separate Storm Sewer Systems	15
(B) Special Requirements for EPCRA, Section 313, Reporting Facilities	15
(C) Special Requirements for Salt Storage Piles	15
Other References	16
Worksheet #1 -- Member Roster	
Worksheet #2 -- Developing A Site Map	
Worksheet #3 -- Material Inventory	
Worksheet #3A -- Description of Exposed Significant Material	
Worksheet #4 -- List of Significant Spills and Leaks	
Worksheet #5 -- Non-Storm Water Discharge Assessment and Certification	
Worksheet #6 -- Non-Storm Water Discharge Assessment and Failure to Certify Notification	
Model Plan	

A BRIEF GUIDE TO REQUIREMENTS FOR DEVELOPING AND IMPLEMENTING POLLUTION PREVENTION PLANS FOR INDUSTRIAL ACTIVITIES

Storm water runoff is part of the natural hydrologic cycle. However, human activities, particularly urbanization, can alter natural drainage patterns and add pollutants to the rainwater and snowmelt that run off the earth's surface and enter our Nation's rivers, lakes, streams, and coastal waters. In fact, recent studies have shown that storm water runoff is a major source of the pollutants that are damaging our sport and commercial fisheries, restricting swimming, and affecting the navigability of many of our Nation's waters.

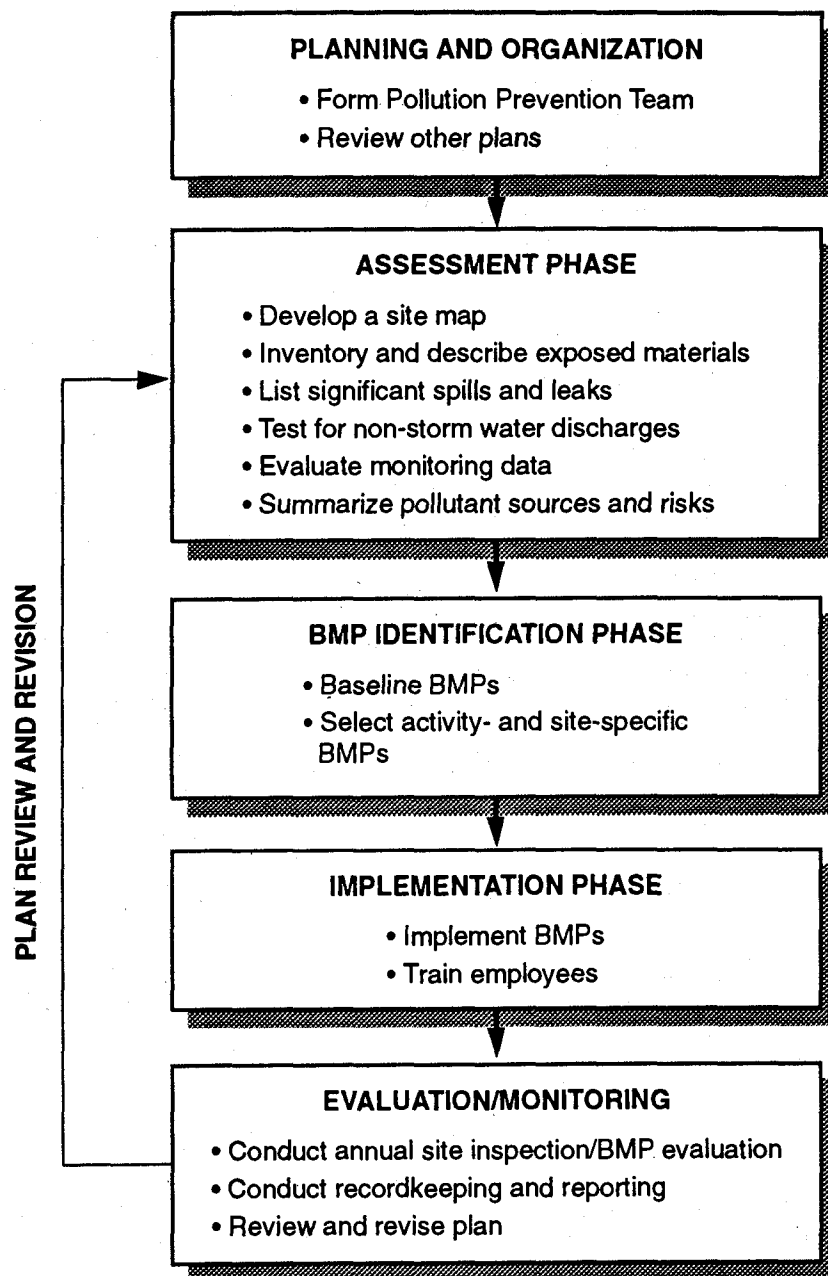
The States and many municipalities have been taking the initiative to manage storm water discharges more effectively. Recognizing the importance of this problem, Congress also directed the U.S. Environmental Protection Agency (EPA) to develop a Federal program under the Clean Water Act to regulate certain high-priority storm water sources. The issuance of storm water discharge permits under the National Pollutant Discharge Elimination System (NPDES) is a major part of the Agency's efforts to restore and maintain the Nation's water quality. Discharges of storm water runoff from industrial facilities must now be covered by an NPDES permit. To deal with the thousands of industrial facilities which are now required to be covered by storm water permits, EPA strongly encourages the use of general permits. Under the NPDES program, a general permit authorizes discharges from a number of sources. To address storm water discharges from industrial facilities located in the States and territories that have not been delegated NPDES permitting authority, EPA issued *NPDES General Permits for Storm Water Discharges Associated with Industrial Activity* in the September 9 and September 25, 1992, Federal Register. (A complete list of these States and territories to which EPA's permits apply may be found on page 16 of this document.)

Under the *NPDES General Permit for Storm Water Discharges Associated with Industrial Activity*, EPA requires the development and implementation of a pollution prevention plan — designed to reduce pollution at the source, before it can cause environmental problems that cost the public and private sectors in terms of lost resources and expensive environmental restoration activities.

OVERVIEW OF POLLUTION PREVENTION PLAN REQUIREMENTS

This guide provides background information on pollution prevention planning requirements for permittees under the general permit. As shown on the chart on the following page, pollution prevention plan requirements provide you with a step-by-step process for ensuring that pollutants are not making their way into the storm water discharges from your site. Specifically, the pollution prevention plan requires that you select and implement Best Management Practices (BMPs). BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution in runoff from your site. The five major phases of developing a pollution prevention plan are (1) planning and organization; (2) assessment; (3) BMP selection and plan design; (4) implementation; and (5) evaluation and site inspection. A set of worksheets and a model plan at the end of the document are provided to further clarify pollution prevention plan requirements. All permit holders under EPA's *NPDES General Permit for Storm Water Discharges Associated with Industrial Activity* must meet a number of general requirements. In addition, permittees who are subject to reporting requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), (also known as Title 3 of the Superfund Amendment and Reauthorization Act [SARA]), will have to meet special requirements under EPA's general permit. These requirements are listed in boxes throughout this guide, and then elaborated upon in the final section.

A more detailed manual on how to develop and implement a pollution prevention plan is available at a modest cost from the National Technical Information Service. The manual, titled *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices*, provides much more specific information than this brief guide. Instructions for ordering the detailed manual and a listing of other references that you may find useful can be found at the end of this guide.



GENERAL REQUIREMENTS

- Develop schedule
- Obtain required signatures
- Follow plan location and public access requirements
- Modify plan

SPECIAL REQUIREMENTS

- Plan for discharges through MS4s
- Plan for EPCRA, Section 313 facilities
- Plan for salt storage piles

411E

SEVEN PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS

PLANNING AND ORGANIZATION PHASE

Before you start putting your Storm Water Pollution Prevention Plan together, there are two steps that will facilitate the development of your plan. These steps are designed to help you organize your staff and make preliminary decisions: (A) decide who will be responsible for developing and implementing your Storm Water Pollution Prevention Plan, and (B) look at other existing environmental facility plans for consistency and overlap.

(A) Forming Your Pollution Prevention Team

As part of developing and implementing your pollution plan, you should (1) designate a specific individual or team who will develop, implement, maintain, and revise your pollution prevention plan, and (2) identify these individuals and describe each person's responsibilities at the site.

Since facilities differ in size and capacity, the number of team members will also vary. Designating one person may be appropriate as long as that individual is qualified to design and implement the plan. The plan should identify those people on site who are most familiar with the facility and its operations; these people, in turn, should provide structure and direction to the storm water management program. In all cases, someone in a senior management position must have overall responsibility for the plan.

The pollution prevention team is responsible for the following:

- Implementing all general permit and pollution prevention plan requirements
- Defining and agreeing upon an appropriate set of goals for the facility's storm water management program
- Being aware of any changes that are made in plant operations to determine whether any changes must be made to the Storm Water Pollution Prevention Plan
- Maintaining a clear line of communication with plant management to ensure a cooperative partnership.

Worksheet #1 (located at the end of this guide) is an example of an appropriate form on which to list the team members. To complete this worksheet, list the pollution prevention team members by name, facility position (title), and phone number; include a brief description of each member's specific responsibilities. This list can be directly incorporated into the Storm Water Pollution Prevention Plan, but it should also be displayed or posted within the facility so that other plant employees are aware of who is responsible for storm water management.

(B) Building on Existing Environmental Management Plans

The pollution prevention team also must evaluate existing environmental management plans for consistency and determine which, if any, provisions can be incorporated into the Storm Water Pollution Prevention Plan.

Other related plans may include the Preparedness, Prevention and Contingency Plan (40 CFR Parts 264 and 265), the Spill Control and Countermeasures requirements (40 CFR Part 112), the National Pollutant

Discharge Elimination System Toxic Organic Management Plan (40 CFR Parts 413, 433, and 469), and the Occupational Safety and Health Administration (OSHA) Emergency Action Plan (29 CFR Part 1910).

Although you should build on relevant portions of other environmental plans as appropriate, it is important to note that your Storm Water Pollution Prevention Plan must be a comprehensive, stand-alone document.

ADDITIONAL REQUIREMENTS FOR FACILITIES SUBJECT TO REPORTING UNDER EPCRA, SECTION 313, FOR WATER PRIORITY CHEMICALS—EPCRA contains additional reporting requirements for designated hazardous waste management facilities. EPA's Baseline General Permit contains the following specific requirements for such facilities:

- The team must designate a person who will be accountable for spill prevention at the facility and identify this person in the plan.
- The designated person is responsible for setting up necessary spill emergency procedures and reporting requirements to isolate, contain, and clean up spills and emergency releases of Section 313 water priority chemicals.

ASSESSMENT PHASE

After identifying who is responsible for developing and implementing your plan and organizing your planning process, you should proceed to this next step—a pollutant source assessment. This is where you take a look at your facility and determine what materials or practices are (or may be) a source of contaminants to the storm water running off your site. To complete this phase, you will (A) create a map of the facility site to locate pollutant sources and determine storm water management opportunities, (B) conduct a material inventory, (C) evaluate past spills and leaks, (D) identify non-storm water discharges and illicit connections, (E) collect or evaluate storm water quality data, and (F) summarize the findings of this assessment. To select the most appropriate and effective control measures, consider that potential pollutant sources include areas where materials are handled or stored, outdoor processing areas, loading and unloading areas, and onsite waste management and disposal areas.

(A) Developing a Site Map

A site map is a complete illustration of site features. At a minimum, the site map must include information on the following:

- Discharge points ("outfalls")
- Drainage patterns
- Identification of the types of pollutants likely to be discharged for each drainage area
- Direction of flow
- Surface water bodies, including any proximate stream, river, lake, or other water body receiving storm water discharges from the site
- Structural control measures (physically constructed features used to control storm water flows)
- Locations of significant materials exposed to storm water
- Locations of industrial activities (such as fueling stations, loading and unloading areas, vehicle or equipment maintenance areas, waste disposal areas, storage areas).

Worksheet #2 (located at the end of this guide) provides guidance on completing your site map.

(B) Materials Inventory

Each facility must inventory the types of materials that are handled, stored, or processed onsite. "Significant materials" are of particular concern and are defined as follows:

Significant Materials: *Raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA, Section 313; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges [40 CFR 122.26(b)(12)].*

To complete the materials inventory, the facility must do two specific tasks:

- List materials that have been exposed to storm water in the past 3 years (focus on areas where materials are stored, processed, transported, or transferred).
- Provide a narrative description of methods and location of storage and disposal areas, materials management practices, treatment practices, and any structural/nonstructural control measures.
 - Structural practices are fixed equipment such as berms, detention ponds, or grassed swales.
 - Nonstructural practices may include regularly scheduled actions such as sweeping or inspections.

Worksheet #3 (located at the end of this guide) will assist you in conducting a material inventory for your Storm Water Pollution Prevention Plan. If any of the significant materials on your site have been exposed to storm water in the 3 years prior to the effective date of your permit, complete **Worksheet #3A** and include it in your plan.

(C) Identifying Past Spills and Leaks

Provide a list of significant spills and leaks of toxic or hazardous that have occurred in the past 3 years. "Significant spills" includes releases in excess of reportable quantities, defined as follows:

Reportable Quantity (RQ) Discharge: An RQ release occurs when a quantity of a hazardous substance or oil is spilled or released within a 24-hour period of time and exceeds the RQ level assigned to that substance under CERCLA or the Clean Water Act. These levels or quantities are defined in terms of gallons or pounds. Regulations listing these quantities are contained at 40 CFR 302.4, 40 CFR 117.21 and 40 CFR 110.10.

Permittees are encouraged to list spills and leaks of nonhazardous materials as well as spills of hazardous materials in their pollution prevention plans.

Worksheet #4 (located at the end of this guide) can help you organize this list of leaks and spills. The areas on your site where significant leaks or spills have occurred are areas on which you should focus very closely when selecting BMPs.

(D) Non-Storm Water Discharges

To certify that your facility has been tested or evaluated for non-storm water discharges, you must:

- Identify potential non-storm water discharges
- Describe the method used and results of any test and/or evaluation for such discharges
- Indicate the location of the onsite drainage points that were checked during the test or evaluation
- Provide the date of the test or evaluation. (If you cannot test or evaluate potential non-storm water discharges, notice must still be made by certification.)

Examples of non-storm water discharges include any water used directly in the manufacturing process (process water), air conditioner condensate, noncontact cooling water, vehicle wash water, or sanitary wastes.

To check for non-storm water discharges, you can use one of the following three common dry weather tests: visual inspection; plant schematic review; and/or dye testing.

Worksheet #5 (located at the end of this guide) will assist you in conducting a non-storm water discharge assessment and certification for outfalls at your site. If you are unable to test and/or provide certification for the presence of non-storm water discharges, please refer to **Worksheet #6**.

(E) Existing Monitoring Data

Where existing storm water sampling data are available, the facility must (1) provide a summary of any existing storm water sampling data and (2) describe the sample collection procedures used.

(F) Site Evaluation Summary

This step is critical, as it will become the foundation for the rest of the Storm Water Pollution Prevention Plan. Facilities must fulfill the following requirements:

- Provide a narrative description of activities with a high potential to contaminate storm water at your site, including those associated with materials loading and unloading, outdoor storage, outdoor manufacturing or processing, onsite waste disposal, and significant dust or particulate generating activities
- Describe any pollutants of concern that may be associated with such activities.

Once you have completed the above steps in your pollutant source assessment, you should have enough information to determine which areas, activities, or materials may contribute pollutants to storm water runoff from your site. With this information, you can select the most appropriate BMPs to prevent or control pollutants from these areas.

BMP SELECTION AND PLAN DESIGN PHASE

Once you have identified and assessed potential and existing sources of storm water contamination at your facility, the next step is to select the proper Best Management Practices (BMPs) that will address these pollutant sources. To satisfy the requirements of this phase, you must provide a narrative description of the BMPs you have selected for your site. At a minimum, your plan must incorporate the following eight "baseline" BMPs: (A) good housekeeping, (B) preventive maintenance, (C) visual inspections, (D) spill prevention and response, (E) sediment and erosion prevention, (F) traditional storm water management practices, (G) other BMPs as appropriate, (H) employee training, and (I) recordkeeping and reporting. A number of these BMPs are discussed below.

(A) Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. Often the most effective first step towards preventing pollution in storm water from industrial sites involves merely using good common sense to improve the facility's basic housekeeping methods. The following are some simple procedures that a facility can consider incorporating into an effective good housekeeping program:

- Improve operation and maintenance of industrial machinery and processes.
- Implement careful material storage practices.
- Maintain up-to-date material inventory.
 - Identify all chemical substances present in the workplace.
 - Label all containers showing name and type of substance, stock number, etc.
- Schedule routine cleanup operations.
- Maintain well-organized work areas.
- Train employees about good housekeeping practices.

(B) Preventive Maintenance

Each permittee must develop a preventive maintenance program that involves inspections and maintenance of storm water management devices and routine inspections of facility operations to detect faulty equipment. Equipment (such as tanks, containers, and drums) should be checked regularly for signs of deterioration.

EPCRA, SECTION 313, FACILITY PREVENTIVE MAINTENANCE INSPECTION REQUIREMENTS—All areas of the facility must be inspected for the following at appropriate intervals as specified in the plan:

- Leaks or conditions that would lead to discharges of Section 313 water priority chemicals
- Conditions that could lead to direct contact of storm water with raw materials, intermediate materials, waste materials or products
- Piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas for leaks, wind blowing, corrosion, support or foundation failure, or other deterioration or noncontainment.

(C) Visual Inspections

Regular visual inspections are your means to ensure that all of the elements of the plan are in place and working properly to prevent pollution of storm water runoff from your facility. Consider the following when conducting visual inspections:

- Designate qualified, trained plant personnel to regularly inspect the facility's equipment and areas, track results of inspections, make necessary changes, and maintain records of all inspections
- Ensure that inspection records note when inspections were done, who conducted the inspection, what areas were inspected, what problems were found, and what steps were taken to correct any problems.

These records should be kept with the plan. EPA's general permit requires that records be kept until at least one year after coverage under the permit expires.

(D) Spill Prevention and Response

Areas where spills are likely to occur and their drainage points must be clearly identified in the storm water pollution prevention plan. You should ensure that employees are aware of response procedures, including material handling and storage requirements. Also ensure that there is access to appropriate spill cleanup equipment.

SPILL PREVENTION PLAN CONSIDERATIONS:

- Install leak detection devices.
- Adopt good housekeeping practices.
- Perform regular visual inspections to identify areas for potential leaks or spills.
- Recycle, reduce, and reuse process materials to minimize waste onsite.

SPILL RESPONSE PLAN CONSIDERATIONS:

- Identify a spill response team to implement the spill response plan.
- Identify safety measures.
- Include procedures for notifying appropriate authorities (police, fire, hospital, Publicly Owned Treatment Works [POTW], etc.) in the event of a spill.
- Describe spill containment, diversion, isolation, and cleanup practices.

EPCRA, SECTION 313, FACILITY SPILL PREVENTION AND RESPONSE REQUIREMENTS—When a leak or spill of a Section 313 water priority chemical has occurred, the contaminated soil, material, or debris must be removed promptly and disposed of in accordance with Federal, State, and local requirements and as described in the Storm Water Pollution Prevention Plan. These facilities are also required to designate a person responsible for spill prevention, response, and reporting procedures.

(E) Sediment and Erosion Control

The facility's pollution prevention plan must identify activities that present a potential for significant soil erosion and measures taken to control such erosion. More information on sediment and erosion control BMPs can be found in the reference section of this guide.

(F) Management of Runoff

Permittees must describe existing storm water controls found at the facility and any additional measures that can be implemented to improve the prevention and control of polluted storm water. Examples include: vegetative swales, reuse of collected storm water, infiltration trenches, and detention ponds.

IMPLEMENTATION PHASE

At this point, you have designed your Storm Water Pollution Prevention Plan and the plan has been approved by facility management. Under the implementation phase, you must (A) implement the selected storm water BMPs, and (B) train all employees to carry out the goals of the plan.

(A) Implementing Appropriate Controls

In implementing the plan, a facility will:

- **Develop** a schedule for implementation. For example, your schedule might include a deadline for putting improved housekeeping measures into practice. Some controls may be immediately put into action; others will be phased in.
- **Assign** specific individuals with responsibility for implementing aspects of the plan and/or monitoring implementation.
- **Ensure** that management approves of your implementation schedule and strategy, and schedule regular times for reporting progress to management.

(B) Employee Training

Permittees must develop an employee training program that covers such topics as spill prevention and response, good housekeeping, and material management practices.

The goals of a training program are to teach personnel, at all levels of responsibility, the components and goals of the storm water pollution prevention plan and to create overall sensitivity to storm water pollution prevention concerns. The plan must include a schedule for training programs.

EPCRA, SECTION 313, FACILITY REQUIREMENTS—There are additional training requirements for employees and contractor personnel who work in areas where EPCRA, Section 313, water priority chemicals are used or stored. These individuals must be trained in the following areas, at least once per year:

- Preventive measures, including spill prevention and response and preventive maintenance
- Pollution control laws and regulations
- The facility's Storm Water Pollution Prevention Plan
- Features and operations of the facility that are designed to minimize discharges of Section 313 water priority chemicals, particularly spill prevention procedures.

EVALUATION PHASE

Now that your Storm Water Pollution Prevention Plan has been put to action, you must keep it up-to-date by regularly evaluating the information you collected in the Assessment Phase and the controls you selected in the Plan Design Phase. Specifically, you must (A) conduct site evaluations, (B) keep records of all inspections and reports, and (C) revise the plan as needed.

(A) Annual Site Compliance Evaluation

Qualified personnel must conduct site compliance evaluations at appropriate intervals, but at least once a year (at least once in 3 years for inactive mining sites). As part of your compliance evaluations, you are required to carry out the following:

- Inspect storm water drainage areas for evidence of pollutants entering the drainage system.
- Evaluate the effectiveness of BMPs (for example, determine if your site cleaner or gauge whether employees are more familiar with good housekeeping measures and spill prevention/response practices).
- Observe structural measures, sediment controls, and other storm water BMPs to ensure proper operation.
- Revise the plan as needed within 2 weeks of inspection, and implement any necessary changes within 12 weeks of the inspection.
- Prepare a report summarizing inspection results and followup actions, identifying the date of inspection and personnel who conducted the inspection.
- Sign the report and keep it with the plan.

(B) Recordkeeping and Internal Reporting

Your facility must record and maintain records of spills, leaks, inspections, and maintenance activities for at least one year after the permit expires. For spills and leaks, records should include information such as the date and time of the incident, weather conditions, cause, and resulting environmental problems.

(C) Plan Revisions

Major changes in a facility's design, construction, operation, or maintenance will necessitate changes in that facility's Storm Water Pollution Prevention Plan.

GENERAL REQUIREMENTS

This section provides guidance on some of the administrative requirements related to organizing and developing your Storm Water Pollution Prevention Plan. The guidance covers (A) deadlines for plan development and implementation, (B) required signatures, (C) requirements for plan location and access, and (D) Director-required plan modifications.

(A) Deadlines for Plan Development and Implementation

Schedule for Plan Development and Implementation		
Part IV.A.		
Type of Facility	Deadline for Plan Development	Deadline for Plan Implementation
Facilities discharging storm water associated with industrial activity on or before October 1, 1992	April 1, 1993	October 1, 1993
Facilities beginning to discharge storm water after October 1, 1992, but on or before December 31, 1992	60 days after commencement of discharge	60 days after commencement of discharge
Facilities beginning to discharge storm water associated with industrial activity on or after January 1, 1993	48 hours prior to commencement of discharge (upon submittal of NOI)	48 hours prior to commencement of discharge (upon submittal of NOI)
Oil and gas exploration, production, processing, or treatment operations discharging a reportable quantity release in storm water after October 1, 1992	60 days after release	60 days after release
Industrial facilities rejected or denied from the group application process	365 days after date of rejection or denial	545 days after date of rejection or denial
Note: The Director may grant a written extension for plan preparation and compliance for new dischargers (after October 1, 1992) upon showing of good cause.		

(B) Required Signatures

As with the Notice of Intent (NOI), your plan must be signed by an "authorized representative," who is a person at or near the top of your facility's management chain (the president, vice president, or a production manager) who has been delegated the authority to sign and certify this type of document.

EPCRA, Section 313, Facility Plan Certification Requirements—The plan must be reviewed and certified by a Registered Professional Engineer and recertified every 3 years or after the plan is significantly changed. This certification that the plan was prepared in accordance with good engineering practices does not relieve the facility owner or operator of responsibility to prepare and implement the plan, however.

(C) Plan Location and Public Access

Although all plans are required to be maintained onsite, some NPDES storm water permits may require that facilities submit copies of their Storm Water Pollution Prevention Plans to the Director for review. Examine your permit carefully to determine what submittal requirements apply to your facility. Plans and all required records must also be kept at least one year after the permit expires.

(D) Director-Required Plan Modifications

Upon reviewing your plan, the permitting authority may find that it does not meet one or more of the minimum standards established by the pollution prevention plan requirements. In this case, the permitting authority will notify you of the changes that you must make to improve the plan.

SPECIAL REQUIREMENTS

In addition to the minimum "baseline" BMPs discussed in previous sections, facilities may be subject to additional "special" requirements. Not all facilities will have to include these special requirements in their Storm Water Pollution Prevention Plan. Be sure to check your permit closely for these conditions. In particular, EPA's general permit includes special requirements for (A) facilities that discharge storm water through municipal separate storm sewer systems, (B) facilities subject to EPCRA, Section 313, reporting requirements, and (C) facilities with salt storage piles.

(A) Special Requirements for Discharges Through Municipal Separate Storm Sewer Systems

Industrial facilities that discharge storm water through a large or medium municipal separate storm sewer system (serving a population of 100,000 or more) must comply with any applicable conditions established by the municipality's storm water management program. These facilities will be notified by the municipality. Examples of conditions could include additional monitoring requirements and/or additional source control requirements.

(B) Special Requirements for EPCRA, Section 313, Reporting Facilities

In addition to the other special requirements identified in this guide, the following specific control requirements must be practiced in areas where Section 313 water priority chemicals are stored, handled, processed, or transferred:

- Provide containment, drainage control, and/or diversionary structures (prevent or minimize runoff by installing curbing, culverting, gutters, sewers, or other controls, and/or prevent or minimize exposure by covering storage piles).
- Prevent discharges from liquid storage areas (store liquid materials in compatible storage containers and/or provide secondary containment designed to hold the volume of the largest storage tank plus precipitation).
- Prevent discharges from material storage areas (install drainage and/or other control measures).
- Prevent discharges from loading/unloading areas (use drip pans and/or implement a strong spill contingency and integrity testing plan).
- Prevent discharges from handling/processing/transferring areas (use covers, guards, overhangs, door skirts and/or conduct visual inspections or leak tests for overhead piping).
- Prevent discharges from all the above areas (use manually activated valves with drainage controls in all areas, and/or equip the plant with a drainage system to return spilled material to the facility).
- Introduce facility security programs to prevent spills (use fencing, lighting, traffic control, and/or secure equipment and buildings).

(C) Special Requirements for Salt Storage Piles

Salt storage piles used for deicing or other commercial purposes must be enclosed or covered to prevent exposure to storm water (except when salt is being added or removed from the pile). Please note that piles do not need to be enclosed or covered where storm water is not discharged to waters of the United States. Compliance with this requirement must be met as expeditiously as practicable, but no later than 3 years after the NOI is submitted.

OTHER REFERENCES

In addition to this summary, other documents are available to assist in the preparation and implementation of pollution prevention plans. These documents include the guidance manual Storm Water Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-006, September 1992), which is available from the National Technical Information Service [NTIS Order No. PB 922 359 69] at (703) 487-4650.

For any other information and guidance, please call EPA's National Storm Water Hotline at (703) 821-4823. From the Hotline, you may obtain numerous documents, including:

- ▲ September 9, 1992, Federal Register (57 FR 41236) - Final NPDES General Permits for Storm Water Discharges Associated with Industrial Activity; Notice

- Applicability:

For the States of Alaska, Arizona, Florida, Idaho, Louisiana, Maine, New Hampshire, New Mexico, Oklahoma, South Dakota and Texas; for Indian lands located in Alaska, Arizona, California, Colorado (including the Ute Mountain Reservation in Colorado), Florida (two tribes), Idaho, Maine, Massachusetts, Mississippi, Montana, New Hampshire, Nevada, North Carolina, North Dakota, Utah, Washington and Wyoming; for Federal facilities in Colorado and Washington; for Federal facilities and Indian lands in Louisiana, New Mexico, Texas, and Oklahoma; and for the territories of Johnston Atoll, and Midway and Wake Island.

- ▲ September 25, 1992, Federal Register (57 FR 44438) - Final NPDES General Permits for Storm Water Discharges Associated with Industrial Activity; Notice

- Applicability:

For the States of Massachusetts and Puerto Rico; for American Samoa and Guam; for Indian lands located in New York; and for Federal facilities in Delaware.

POLLUTION PREVENTION TEAM

MEMBER ROSTER

Worksheet #1

Completed by: _____

Title: _____

Date: _____

Leader: _____

Title: _____

Office Phone: _____

Responsibilities:

Members:

(1) _____

Title: _____

Office Phone: _____

Responsibilities:

(2) _____

Title: _____

Office Phone: _____

Responsibilities:

(3) _____

Title: _____

Office Phone: _____

Responsibilities:

(4) _____

Title: _____

Office Phone: _____

Responsibilities:

DEVELOPING A SITE MAP

Worksheet #2

Completed by: _____

Title: _____

Date: _____

Instructions: Draw a map of your site including a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by EPA's General Permit.

EPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
 - Flow diversion structures
 - Retention/detention ponds
 - Vegetative swales
 - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials
- Locations of past spills and leaks
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
 - Fueling stations
 - Vehicle/equipment washing and maintenance areas
 - Area for unloading/loading materials
 - Above-ground tanks for liquid storage
 - Industrial waste management areas (landfills, waste piles, treatment plants, disposal areas)
 - Outside storage areas for raw materials, by-products, and finished products
 - Outside manufacturing areas
 - Other areas of concern (specify: _____)

MATERIAL INVENTORY

Worksheet #3

Completed by:

Title:

Date:

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last 3 years.

[illegible]

Date:

Description of Material Management Practice (e.g., pile covered, drum sealed)

Date:

Definitions: Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.

[illegible]

**NON-STORM WATER DISCHARGE
ASSESSMENT AND CERTIFICATION**

Worksheet #5

Completed by: _____

Title: _____

Date: _____

Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation

CERTIFICATION

I, _____ (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (type or print)

B. Area Code and Telephone No.

C. Signature

D. Date Signed

**NON-STORM WATER DISCHARGE ASSESSMENT AND
FAILURE TO CERTIFY NOTIFICATION**

Worksheet #6

Completed by: _____

Title: _____

Date: _____

Directions: If you cannot feasibly test or evaluate an outfall, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.

Important Notice: A copy of this notification must be signed and submitted to the Director within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification Is Infeasible	Description of Potential Sources of Non-Storm Water Pollution

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations, and that such notification has been made to the Director within 180 days of _____ (date permit was issued), the effective date of this permit.

A. Name & Official Title (type or print)

B. Area Code and Telephone No.

C. Signature

D. Date Signed

Double Scoop Ice Cream Company

**40 Wonka Drive
Anytown, OK 12345**

December 1992

Storm Water Pollution Prevention Plan

Emergency Contact: Cheryl Glenn	Work Phone: (101) 555-1234
Title: Plant Manager	Emergency Phone: (101) 555-6929
Secondary Contact: Rachel Meyers	Work Phone: (101) 555-3923
Title: Engineering Supervisor	Emergency Phone: (101) 555-6789
Type of Manufacturer: Ice Cream Manufacturer	
Operating Schedule: 8:00 a.m. - 11:30 p.m.	
Number of Employees: The plant has 21 employees, including part time staff. Shifts overlap all day.	
Average Wastewater Discharge: 5,000 gallons per week	
NPDES Permit Number: OK1234567	

POLLUTION PREVENTION TEAM

MEMBER ROSTER

Worksheet #1

Completed by: Cheryl Glenn

Title: Plant Manager

Date: December 12, 1992

Leader: Cheryl Glenn

Title: Plant Manager

Office Phone: (101) 555-1234

Responsibilities: Signatory authority; coordinate all stages of plan development and implementation; coordinate employee training program; keep all records and ensure reports are submitted.

Members:

(1) Stephen Michaels

Title: Production Supervisor

Office Phone: (101) 555-3923

Responsibilities: Note any process changes; help conduct inspections.

(2) Rachel Meyers

Title: Engineering Dept. Supervisor

Office Phone: (101) 555-5870

Responsibilities: Responsible for implementing the Preventive Maintenance program; oversee inspections.

(3) Isaac Feldman

Title: Maintenance Dept. Supervisor

Office Phone: (101) 555-0482

Responsibilities: Mr. Feldman is the spill response coordinator; Oversees "good housekeeping."

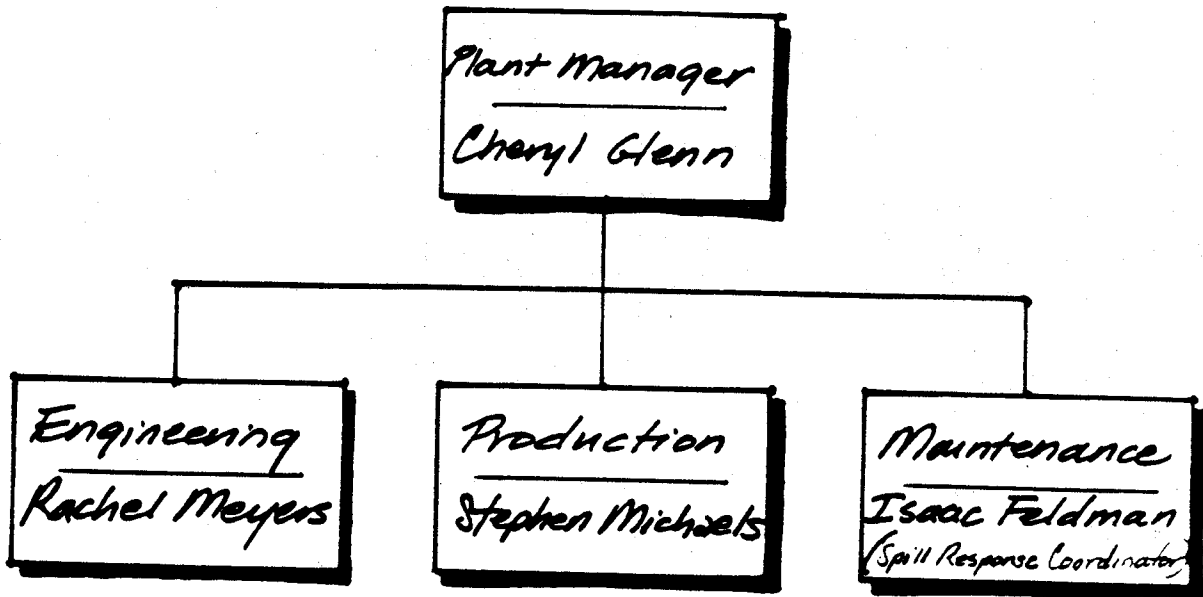
(4) Group Activities

Title: _____

Office Phone: _____

Responsibilities: Developing the plan elements, choosing storm water management options.

Pollution Prevention Team Organization Chart



Double Scoop Ice Cream Company

- Storm Water Pollution Prevention Plan Comparison with SPCC Plan

Double Scoop Ice Cream Plant has an SPCC plan in operation for its aboveground fuel storage tank. Overlaps are noted below:

- Isaac Feldman is the SPCC Coordinator and reports directly to Cheryl Glenn. He will be the Storm Water Spill Prevention and Response Coordinator.
- A complete description of potential for oil to contaminate storm water discharges including quantity of oil that could be discharged.
- Curbing around aboveground fuel storage tank identified on site map.
- Expanded SPCC schedules and procedures to include Storm Water Pollution Prevention Plan requirements.
- Incorporated SPCC plan training into storm water training programs on spill prevention and response.
- Relevant portions of the SPCC plan will be included in this plan.

DEVELOPING A SITE MAP

Worksheet #2

Completed by:

Title:

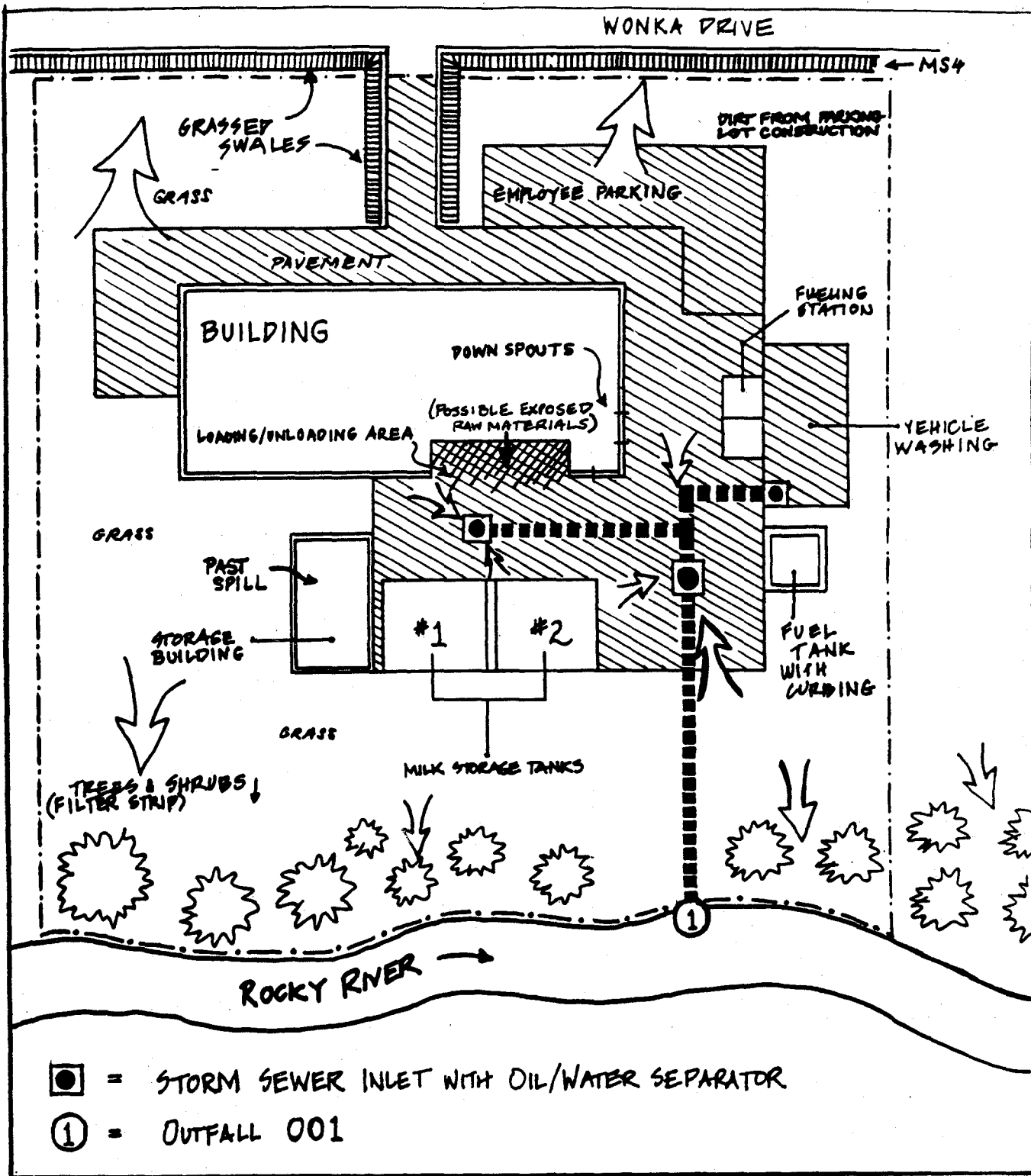
Date:

Cheryl Glenn
Plant Manager
December 12, 1992

Instructions: Draw a map of your site including a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by EPA's General Permit (see example maps in Figures 2.3 and 2.4).

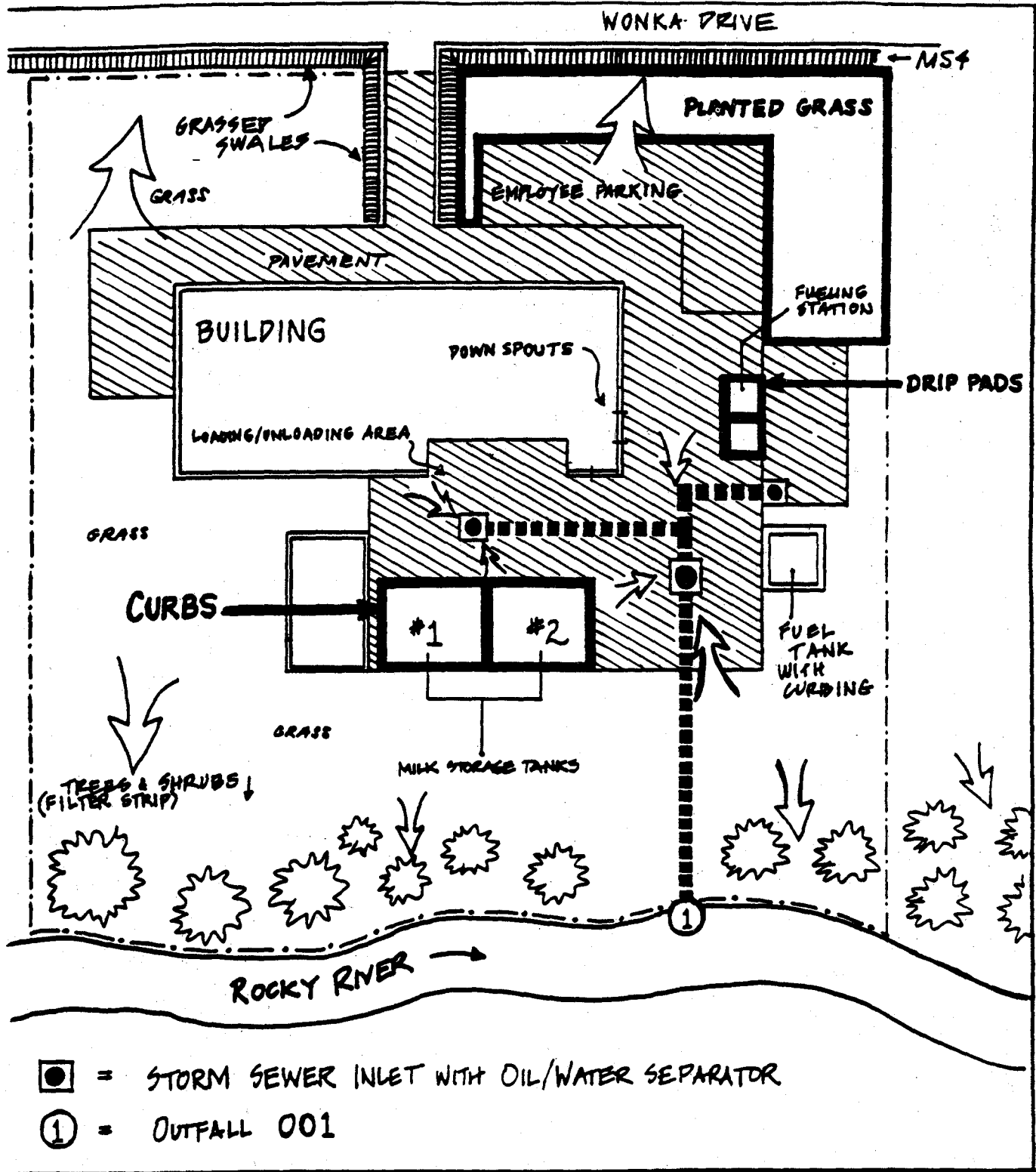
EPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
 - Flow diversion structures
 - Retention/detention ponds
 - Vegetative swales
 - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials (see Section 2.2.2)
- Locations of past spills and leaks (see Section 2.2.3)
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
 - Fueling stations
 - Vehicle/equipment washing and maintenance areas
 - Area for unloading/loading materials
 - Above-ground tanks for liquid storage
 - Industrial waste management areas (landfills, waste piles, treatment plants, disposal areas)
 - Outside storage areas for raw materials, by-products, and finished products
 - Outside manufacturing areas
 - Other areas of concern (specify: _____)



DOUBLE SCOOP ICE CREAM COMPANY

**PRE-BMP SITE MAP
MARCH 1, 1993**



DOUBLE SCOOP ICE CREAM COMPANY

POST-BMP SITE MAP
MARCH 1, 1993

MATERIAL INVENTORY

Worksheet #3

Completed by: Cheryl Glenn

Title: Plant Manager

Date: December 12, 1992

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last three years.

Material	Purpose/Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
Butter fat	truck unloading area during transfer to liquid ingredient storage and milk vat storage.	72,600 gal/wk	—	2,000 gal/wk	NO	Truck loading area outside and possible exposure with ruptured tanks.		✓
Milk solids								
Whey solids								
Corn Syrup	Truck unloading area during transfer to sweetener storage.	7,100 gal/wk	—	—	yes	Truck loading area outside with possible exposure as a result of leaking tanks.	✓	
Liquid sugar								
Ice cream	Inside freezers for final product shipping.		35-40,000 lbs.		NO	NO		✓
Cleaners:								
Granular	Dry cleansers in dry storage area (indoors)	400 lb/wk	—	—	NO	Yes. Possible storage exposure during transfer to dry storage area.		✓
Chlorshire-O								
H.D.C. - 3B								

Power Spray-R

MATERIAL INVENTORY

Page 2

Worksheet #3

Completed by:

Cheryl Glenn

Title:

Plant Manager

Date:

December 12, 1992

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last three years.

Material	Purpose/Location	Quantity (units)			Quantity Exposed in Last 3 Years	Likelihood of contact with storm water. If yes, describe reason.	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
<u>Cleaners:</u>								
liquid	Cleaners are	100 gal/wk	—	—	NO	Yes-if material tanks		✓
M.R.S.-200-0	stored outside					stored outside.		
Acidize - 0	under cover							
Microsan								
<u>Fuels:</u>								
gasoline	above ground	250 gal/wk	—	—	NO	Yes - possible exposure in the event of defective tanks or transfer of materials from tanks to containers		✓
motor oil	750 gallon storage tank	20 gal/wk	—	—	NO			✓
soaps		40 gal/wk	—	—	NO			✓
detergents								

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL

Worksheet #3A

Completed by:

Title:

Date:

Cheryl Glenn

Plant Manager

December 12, 1992

Instructions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see Appendix B of the manual.

[illegible]

LIST OF SIGNIFICANT SPILLS AND LEAKS

Worksheet #4

Completed by: Cheryl Glenn

Title: Plant Manager

Date: December 12, 1992

Directions: Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility in the three years prior to the effective date of the permit.

Definitions: Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.

1st Year Prior										
Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
				N	O	N	E			
2nd Year Prior										
Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
1/21/91		✓	STORAGE BLOC	LIQUID SUGAR	10 ga.	Tank #2	leaky valve	contained and mopped spill - transferred	true	installing curbing around tank - to be completed -
3rd Year Prior										
Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Description				Response Procedure		Preventive Measures Taken
				Type of Material	Quantity	Source, If Known	Reason	Amount of Material Recovered	Material No Longer Exposed to Storm Water (True/False)	
				N	O	N	E			

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION		Worksheet #5 Completed by: <u>Rachel Meyers</u> Title: <u>Engineering Department Supervisor</u> Date: <u>3/1/93</u>			
Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation
12/24/92	001	visual inspection	No discharge observed		R. Meyers and S. Goodhope
1/19/93	001	visual inspection	Significant flow; oil	vehicle wash ongoing at time	R. Meyers and S. Goodhope
2/5/93	001	visual inspection	small amount of discharge observed; clear	suspected to be delayed storm water discharge from storm that occurred 2/1/93	R. Meyers and S. Goodhope
	* See details in attached field notebook.				
CERTIFICATION					
I, <u>Cheryl Glenn</u> (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.					
A. Name & Official Title (type or print) <u>Cheryl Glenn</u>			B. Area Code and Telephone No. <u>(101) 555-1234</u>		
C. Signature <u>Cheryl Glenn</u>			D. Date Signed <u>3/2/93</u>		

CERTIFICATION

I, Cheryl Glenn (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (type or print)

Cheryl Glenn

B. Area Code and Telephone No.

(101) 555-1234

C. Signature

Cheryl Green

D. Date Signed

3/2/93

FIELD NOTEBOOK

for non-storm water discharge inspections

INSPECTION TEAM:

R. Meyers

S. Goodhope

Completed by: Rachel Meyers

Date: 12/24/92

Time: 10:50 am

Time since last rain: 42 hours

Quantity of last rain: 0.12 inches

Flow observed: NO

SIGNATURE: Rachel Meyer

Completed by: Rachel Meyers

Date: 1/19/93

Time: 3:20 pm

Time since last rain: 5 days

Quantity of last rain: 0.5 inches

Flow observed: YES

DESCRIPTION: No odor; clear color
(soap suds); oily sheen; some
sediment.

Temperature: cold (37.5°F)

Volume: collected ten gallons/minute in buckets

Comments: Vehicle wash ongoing at time of inspection.
THIS was the source of the flow.

SIGNATURE: Rachel Meyers

Completed by: Rachel Meyers

Date: 2/5/93

Time: 12:15 pm.

Time since last rain: 96 hours

Quantity of last rain: 2.5 inches

Flow observed: YES

DESCRIPTION: No odor; clear; some sediments;
few small pieces of paper (trash)

Temperature: cold (42.3°F)

Volume: Collected one gallon in 5 minutes.

Comments: We suspect that the flow was left over from
storm that occurred on 2/1/93 (4 days ago)

SIGNATURE: Rachel Meyer

Double Scoop Ice Cream Company

Site Assessment Inspection

February 10, 1993

Evaluate the site for pollutants.

There are five areas where material handling and storage activities take place.

- The storage building contains tanks of corn syrup, liquid sugar, and the granular cleansers. The tanks were examined for possible leaks. We found that the valve on the liquid sugar tank #2 was faulty and had leaked approximately 10 gallons of liquid sugar. Although this leak occurred on 1/21/92, the faulty valve was not discovered until now. All other tanks are secure. Areas around the tanks were swept clean to determine if leaks or spills were prevalent.
- The milk storage tanks were then examined for leaks or exposure. Upon closer examination, it was found that the number 1 tank was leaking a small amount of milk to the drainage system. This leak may be the reason for the high concentration of biochemical oxygen demand found in the sample taken from the storm water discharge. The tank was temporarily fixed to ensure that no further contamination would result. A replacement tank was ordered on February 6, 1993, and was expected to arrive within 5 business days. The milk storage tanks shall be examined on a daily basis to further prevent possible exposure to the storm water collection system and receiving stream.
- We inspected the fueling station to see if there were any leaks. The general area surrounding the fueling station was clean but we observed that gasoline and motor oil falls during fueling. In accordance with standard operating conditions, facility personnel hose down the area during vehicle washing and the drain is connected to the storm sewer. We detected this connection on 1/19/93 during one of the non-storm water discharge assessment visual inspections. Since this discharge is not allowed under our general permit, we are in the process of submitting a separate permit application specifically for the discharge of vehicle wash water.
- We examined the fueling station which is adjacent to the vehicle washing area. Vehicle washing cleaners are used here and any empty or open containers were removed from the area.

- We next looked at the loading and unloading docks where raw materials and various cleansers are delivered. The transfer of goods from incoming trucks to storage areas is a source of pollution. Although no problems were noticed, the pollution prevention team has developed a spill prevention and response plan to clean up spills quickly and report them if necessary.
- The last area we inspected was the runoff field below the employee parking lot. Here we noticed a significant amount of erosion resulting from recent construction to expand the parking lot.

Describe existing management practices.

Grass was lightly planted around the parking lot after recent construction. The fuel storage tank has curbing around it in accordance with our SPCC plan. Also, the maintenance crew regularly picks up trash and empty containers from around the storage tanks, loading and unloading areas, and the vehicle washing areas. Used oils are collected in containers and taken to a recycling facility. In addition, we installed two oil/water separators at the drains into our underground storm sewer leading to the Rocky River. These separators are indicated on the site map.

Double Scoop Ice Cream Company

Existing Monitoring Data

Although our NPDES permit for process wastewater does not require storm water sampling, we sampled our storm water on one occasion in response to a questionnaire we received from the National Association of Ice Cream Makers. They were collecting information to submit as part of their comments on EPA's proposed general permit.

Date of Sampling	8/30/91
Outfall Sampled	001
Type of Storm	1 inch light rainfall (lasted 2 days)
Type of Samples	Grab samples taken during first hour of flow

Data		
Parameter	Quantity	Sample Type
BOD	250 mg/l	Grab
TSS	100 mg/l	Grab
pH	7.2 s.u.	Grab
Oil and grease	5.0 mg/l	Grab

Based upon the high concentration of BOD in the storm water samples collected, pollution prevention team is considering possible potential sources of BOD. We will look at storage areas housing butter fat, milk, and whey solids tanks.

Double Scoop Ice Cream Company

Summary of Pollutant Sources

March 5, 1993

Based on the site assessment inspection conducted on 12/1/92, the pollution prevention team identified four potential sources of pollutants:

- Oil and grease stains on the pavement in the fueling area indicate oil and grease may be picked up by storm water draining to the storm sewer. This area drains into the storm sewer leading to the Rocky River.
- Sediment and erosion potential in the field below the employee parking lot because of thinly planted grass.
- Potential for spills or leaks from liquid storage tanks, including the fuel storage tank, based on a spill that occurred on 1/21/92 and the leak that was detected in the milk storage tank. These pollutants would drain into the piped outfall into the Rocky River.
- Use of a toxic cleaning agent may result in a pollution problem if handled improperly.

Double Scoop Ice Cream Company

**Description of Storm Water Management Measures Taken
Based on Site Assessment Phase**

March 5, 1993

These measures correspond to the pollutant sources identified on the preceding page.

Oil and grease from fueling area.

We installed drip pads around the fuel pumps to pick up spilled gas and oil during truck refueling. These will be inspected regularly to make sure they are working well.

Sediment and erosion in the field below the employee parking lot.

We planted grass in this area to reduce potential for erosion.

Leaks/spills from liquid storage tanks.

We are in the process of installing curbing around the outdoor liquid storage tanks that will contain the volume of the largest tank in case a spill should occur. The spill response team has developed procedures to clean up this area should a spill occur. We are incorporating spill response procedures from our SPCC plan.

Toxic cleaning agent.

We have discontinued the use of this agent and are replacing it with a non-toxic cleaning agent.

POLLUTANT SOURCE IDENTIFICATION
(Section 2.2.6)

Worksheet #7

Completed by: Cheryl Glenn

Title: Plant Manager

Date: 3/5/93

Instructions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1. Oil and grease on pavement in fueling area	Oil and water separators installed in storm water drain	Install drip pads
2. Erosion in field below employee parking lot	Planted some grass after construction; grassed swales along Womka Drive	Plant more grass
3. potential for spills from liquid storage tanks (leak detected in milk tank #1 - past spill on 1/21/92)	Curbing around fuel storage tank (see SPCC plan)	Replace milk tank #1; replace valve on liquid sugar tank #2; install curbing around other outside tanks; spill prevention response plan; etc.
4. Use of toxic cleaning agent.		Use non-toxic cleaning agent
5. Trash in loading/unloading fueling areas	Regular trash pickup (daily) by maintenance crew; collect and recycle used oil.	Train staff in good housekeeping practices.
6.		
7.		
8.		
9.		
10.		

BMP IDENTIFICATION
(Section 2.3.1)

Worksheet #7a

Completed by: Cheryl Glenn

Title: Plant Manager

Date: 3/5/93

Instructions: Describe the Best Management Practices that you have selected to include in your plan. For each of the baseline BMPs, describe actions that will be incorporated into facility operations. Also describe any additional BMPs (activity-specific (Chapter 3) and site-specific BMPs (Chapter 4)) that you have selected. Attach additional sheets if necessary.

BMPs	Brief Description of Activities
Good Housekeeping	Collect and recycle used oil; regular trash pick up; train staff in basic clean up procedures (sweeping loading & unloading areas, etc.)
Preventive Maintenance	Daily inspection of outside milk tanks; replace faulty valve on sugar tank #2; replace leaking milk tank #1
Inspections	Daily inspection of outside milk tanks; bi-monthly inspections of drip pads, curbing, loading/unloading areas, grassed areas, drainage system.
Spill Prevention Response	Install curbing around outside liquid storage tanks; fuel tank has curbing; install drip pads at fueling station.
Sediment and Erosion Control	Plant grass around new parking area.
Management of Runoff	Grassed swales along Wonka Drive; (2) oil/water separators in storm drain system
Additional BMPs (Activity-specific and Site-specific)	Order non-toxic cleaning agent.

Double Scoop Ice Cream Company

Employee Training Program

Who:

Line Workers
Maintenance Crew
Shipping and Receiving Crew

When:

Employee meetings held the first Monday of each month to discuss:

- Any environmental/health and safety incidents
- Upcoming training sessions
- Brief reminders on good housekeeping, spill prevention and response procedures, and material handling practices
- Announce any changes to the plan
- Announce any new management practices

In-depth pollution prevention training for new employees

Refresher courses held every 6 months (October and March) addressing:

- Good housekeeping
- Spill prevention and response procedures
- Materials handling and storage

Employee Training Program Topics:

Good Housekeeping

- Review and demonstrate basic cleanup (sweeping and vacuuming) procedures.
- Clearly indicate proper disposal locations.
- Post signs in materials handling areas reminding staff good housekeeping procedures.
- Be sure employees know where routine clean-up equipment located.

Spill Prevention and Response

- Clearly identify potential spill areas and drainage routes
- Familiarize employees with past spill events -- why they happened and the environmental impact (use slides)
- Post warning signs in spill areas with emergency contacts and telephone numbers
- Introduce Isaac Feldman as the Spill Response Coordinator and introduce his "team"
- Drill on spill clean-up procedures
- Post the locations of spill clean-up equipment and the persons responsible for operating the equipment

Materials Handling and Storage

- Be sure employees are aware which materials are hazardous and where those materials are stored
- Point out container labels
- Tell employees to use the oldest materials first
- Explain recycling practices
- Demonstrate how valves are tightly closed and how drums should be sealed
- Show how to fuel vehicles and avoid "topping off"

IMPLEMENTATION
(Section 2.4.1)

Worksheet #8

Completed by:

Title:

Date:

Cheryl Glenn
Plant Manager
3/30/93

Instructions: Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Req'd. Action	Person Responsible for Action	Notes
Good Housekeeping	1. <i>Develop training program</i>	<i>3/10/93</i>	<i>Glenn</i>	
	2. <i>Conduct training</i>	<i>6/1/93</i>	<i>Glenn</i>	
	3.			
Preventive Maintenance	1. <i>Replace valve on sugar tank #2</i>	<i>3/1/93</i>	<i>Feldman</i>	
	2. <i>Install new milk tank #2</i>	<i>2/15/93</i>	<i>Feldman</i>	
	3.			
Inspections	1. <i>Develop inspections schedule</i>	<i>4/1/93</i>	<i>Glenn</i>	
	2.			
	3.			
Spill Prevention and Response	1. <i>Install curbing around milk storage tanks</i>	<i>4/30/93</i>	<i>Meyers</i>	
	2. <i>Install drip pads</i>	<i>4/1/93</i>	<i>Feldman</i>	
	3. <i>Develop / Implement Spill Prevention / Response training</i>	<i>4/1/93 - DEVELOP 6/1/93 - TRAIN</i>	<i>Feldman</i>	
Sediment and Erosion Control	1. <i>Plant grass around parking area</i>	<i>4/15/93</i>	<i>Feldman</i>	
	2.			
	3.			
Management of Runoff	1. <i>BMPs already in place</i>			
	2.			
	3.			
Additional BMPs (Factory specific and site-specific)	1. <i>Substitute non-toxic cleaning agent</i>	<i>2/28/93</i>	<i>Michael's</i>	
	2.			
	3.			

EMPLOYEE TRAINING (Section 2.4.2)

Worksheet #9

Completed by:

Title:

Date:

Cheryl Glenn
Plant Manager
3/2/93

Instructions: Describe the employee training program for your facility below. The program should, at a minimum, address spill prevention and response, good housekeeping, and material management practices. Provide a schedule for the training program and list the employees who attend training sessions.

[illegible]



United States
Environmental Protection Agency
Washington DC 20460
(EN-336)

Official Business
Penalty For Private Use \$300

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A182.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Blue Eagle
Santa Cruz County
 , AZ

 , 30, T22S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A188.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Blue Nose
Santa Cruz County
 , AZ

 , 5 , T23S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A191.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

California
Santa Cruz County
 , AZ

 , 30, T22S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A186.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Chief
Santa Cruz County
 , AZ

 , 31, T22S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A185.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Volcano
Santa Cruz County
 , AZ

 , 6 ; T23S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

U.S. Environmental Protection Agency
National Pollutant Discharge Elimination System (NPDES)
STORM WATER GENERAL PERMIT COVERAGE NOTICE

March 5, 1993

Dear Operator:

Your Notice of Intent (NOI) for the facility noted below has been processed by the U.S. Environmental Protection Agency. This facility is authorized to discharge storm water associated with industrial or construction activity under the terms and conditions imposed by EPA's NPDES storm water general permit issued for use in the state of Arizona. Your facility's NPDES storm water permit number is AZR00A183.

EPA's storm water general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial or construction site. Enclosed is a summary guidance document designed to assist you in the development and implementation of your PPP. The summary is organized according to the phases of the pollution prevention planning process. A set of worksheets and an example of a pollution prevention plan are provided for your assistance. As a facility authorized to discharge under this storm water general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:

Wellington
Santa Cruz County
 , AZ -

 ,
 , 6 , T23S, R16E

OPERATOR:

Asarco Inc-sw Exploration Div
Po Box 5747
Tucson, AZ 85703-0747

If you have general questions concerning the storm water program, or need to obtain a copy of the permit, please call the Storm Water Hotline at (703) 821-4823.

March 31, 1993

M.G. Lee
Tucson Office

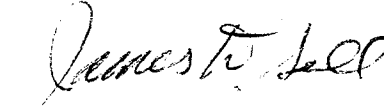
Exploration Claims
Patagonia Mountains
Santa Cruz Co., AZ

Your verbal concern over the continued activity and/or disposition of the claim blocks within the Kerr-McGee and Noranda exploration agreements was stated on Monday, March 30, 1993.

As I stated, the New York office is presently negotiating with the two companies and resolution is expected.

Further input on the Storm Water Management problems of the Patagonia Mountain region is greatly appreciated.

JDS:mek



James D. Sell

cc: G.D. Van Voorhis
F.T. Graybeal

FILE

KERR-MCGEE CORPORATION
Kerr-McGee Center, Oklahoma City, Oklahoma 73125

Exploration and Production Division

TELECOPIER COVER LETTER

ASARCO Incorporated

AUG 30 1993

SW Exploration

FAX NO.: 602/624-3369 and 602/798-7782

DATE: August 27, 1993

TO: P.J. MALEY AND J.D. SELL/ASARCO

FROM: PHIL JONES

NUMBER OF PAGES, INCLUDING COVER LETTER: 3

IF TRANSMISSION IS IMPAIRED, PLEASE CONTACT BARBARA AT 405/270-2492.

THANK YOU.

8/27/93

Bill Leedy - Geologist
Kerr McGee

Ph. 405-270-3967
FAX 270-3010

Km Landman is
Phil Jones

TIME FAX SENT: _____

**KERR-McGEE CORPORATION**

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

August 27, 1993

EXPLORATION AND PRODUCTION DIVISION

Writer's Telephone #405/270-3878

FAX (602) 624-3369FAX (602) 798-7782

Mr. P. J. Maley and
Mr. J. D. Sell
ASARCO Incorporated
P. O. Box 5747
Tucson, Arizona 85703

Re: Thunder Mountain Project
Project No. 02-007-0000
Santa Cruz County, Arizona

Gentlemen:

The purpose of this letter is to advise you of Kerr-McGee's desire to receive an assignment of certain ASARCO claims and as the time to pay rentals due on these claims is rapidly approaching, to have ASARCO pay rentals due on or before August 31, 1993. Your assistance in expediting payment of the rentals on behalf of Kerr-McGee is very much appreciated. We will, of course, reimburse you for the rentals and any expenses you will incur on our behalf. The claims that Kerr-McGee desires to retain are as follows:

Boot Group 52 ✓	Boot Group 78 ✓
53 ✓	79 ✓
54 ✓	80 ✓
55 ✓	81 ✓
56 ✓	103 ✓
57 ✓	105 ✓
77 ✓	106 ✓

A plat showing the location of these claims is also attached to help you in identifying the specific claims we desire to retain in the event the claim names as we know them are not correct.

In addition, please provide me with a written statement regarding the completeness of all reclamation on the Subject Lands. I am anticipating receiving something indicating that the U.S. Forest Service has inspected the premises and determined that your performance bond can be released. Any other assurance that all reclamation which might be required has been completed will be appreciated.

Mr. P.J. Maley
Mr. J.D. Sell
ASARCO Incorporated
August 27, 1993
Page 2

Please also provide me with copies of the eight Notices of Termination (NOT's) which ASARCO may have filed with the E.P.A. Have NOT's been filed on all the facilities on the captioned project on which a NOI were filed? Kerr-McGee trusts that it is ASARCO's intention to pursue with diligence the securing of the NOT's. Your assistance in these matters is much appreciated.

Yours very truly,

KERR-McGEE CORPORATION



J. Phil Jones
District Landman

JPJ/bg

Attachment

xc: F. T. Graybeal
ASARCO Incorporated
180 Maiden Lane
New York, NY 10038

Harold Holmberg
Julian McNeely

ASARCO

Exploration Department
Southwestern United States Division

June 23, 1993

Mr. Phil Jones, District Landman
Kerr-McGee Corporation
Minerals Exploration Division
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Stormwater Information

Dear Mr. Jones:

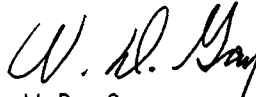
Enclosed are the following:

1. Letter dated October 22, 1992 with attachments. This began the process with the E.P.A.
2. Eight folders which contain the Stormwater Management Plan. Note that in folders Blue Nose Mine (Unknown), Marsteller Mine and Humbolt Mine you will find a letter dated April 13, 1993 that is self-explanatory.
3. Notice of Termination by Asarco to E.P.A. These eight terminations are unsigned. When we receive signed copies from our New York Office, we will send them to you.
4. Federal Register for your information and records.
5. Copy of "Storm Water Management for Industrial Activities." This again is for your information and records.

If you need any further information, please call.

Very truly yours,

WDG:mek
Encs.


W.D. Gay
Land Engineer

cc: F.T. Graybeal (w/o encs.)
J.D. Sell (w/o encs.)
P.J. Maley (w/o encs.)

June 18, 1993

G.D. Van Voorhis

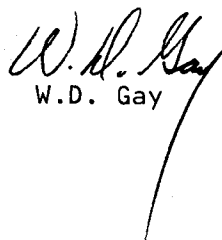
Environmental Protection Agency
Notice of Termination for
Thunder Mountain Project

Please sign and return the eight (8) enclosed forms to me, so that we can terminate Asarco's association with each of the areas.

The process of termination was done with the advice of Mr. Doug McAllister and Mr. Rob Anderson, Lawyers for Fennemore Craig in Phoenix.

If you need any more information, please call.

WDG:mek
encs.


W.D. Gay

cc: F.T. Graybeal (w/o encs.)
J.D. Sell (" ")
J.L. Woods (" ")

Post-it[®] routing request pad 7664
BRAND

ROUTING - REQUEST

Please

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READ

☐

HANDLE

☐

APPROVE

and

☐

FORWARD

☐

RETURN

☐

KEEP OR DISCARD

☐

REVIEW WITH ME

To

*Talk to
Moley about
TVN Store
Problem/Outlets
Solved*

Date _____

From _____



**KERR-McGEE CORPORATION
LAND DEPARTMENT**

Kerr-McGee Center
Oklahoma City, Oklahoma 73125
Fax: 405-270-4142

TELECOPIER COVER LETTER

PRIORITY

TO: J.D. SELL & P.J. MALEY

FAX #: 602-624-3369

FROM: PHIL JONES

DATE: JULY 21, 1993

NUMBER OF PAGES INCLUDING COVER LETTER: 4

IF TRANSMISSION IS IMPAIRED PLEASE CONTACT: SHERYL

AT (405) 270-3873 AS SOON AS POSSIBLE.

THANK YOU

KERR-McGEE CORPORATION

COMMENTS:

8/9/93
Will be handled
by M. Lee & P. Maley
after chatting
w/ them.
A handwritten signature in dark ink, appearing to be "JTS", with a long horizontal line extending to the right.



KERR-McGEE CORPORATION

KERR MCGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

July 21, 1993

EXPLORATION AND PRODUCTION DIVISION
Via Fax: (212) 510-1978
Hard Copy Via U.S. Mail

Mr. Frederick T. Graybeal
ASARCO Incorporated
180 Maiden Lane
New York, NY 10038

Re: Thunder Mountain Project
Project Number 02-007-0000
Operating Agreement dated 10-1-72
as amended, Santa Cruz County, AZ

Dear Mr. Graybeal:

I am in receipt of a copy of your letter of May 28, 1993 addressed to Harold Holmberg, advising Kerr-McGee that ASARCO desired to terminate the Operating Agreement as amended, in its entirety.

Kerr-McGee has now received the Summary Report-Thunder Mountain Project dated 7-14-93 from James D. Sell. This report and data is being evaluated. We will advise you whether or not Kerr-McGee desires to be assigned interest in any of the Subject Land. Please advise as to completeness of all reclamation on the Subject Lands. In all probability, Kerr-McGee will not want to accept any assignments and will not want to maintain open roads and thus your activities toward reclamation could proceed to completion.

I am also in receipt of a package which arrived about June 29 from W. D. Gay, Land Engineer. The cover letter regarding Stormwater Information is dated June 23. The package purports to contain 5 items.

The first item is a letter dated 10-22-92 from William D. Gay to Mr. Gregory A. Knapp, Senior Environmental Scientist, in Salt Lake City. This letter transmits 11 copies of Notice of Intent for Storm Water Discharges. The facilities on which NOI's were completed are, Sunnyside, Blue Eagle, Wellington, Flux, Volcano, Chief, Blue Nose Unknown, Blue Nose, Ventura, Marsteller, and California. Also attached is a copy of the 10-1 letter from Gregory A. Knapp to Distribution List regarding Notices of Intent for Stormwater Discharges, and a copy of a 9-30-92 letter to Stormwater Notice of Intent, Newington, VA, from Gregory A. Knapp. This letter contains the following statement:

"Asarco is filing an NOI for the entire extent of each leased property as a protective measure, notwithstanding ASARCO's belief that it should not be held responsible for stormwater discharges from previous mining activity conducted by other operators at the site. Asarco is not

the proper operator of abandoned mining facilities that it is not disturbing by its activities on properties that it is leasing for exploration purposes. In these situations, Asarco is less the operator of the abandoned facilities than the owner, who has permitted and continues to permit uncontrolled discharges to occur."

The second item mentioned in the 6-23 letter from Mr. Gay is eight folders which contain Stormwater Management Plans for Sunnyside Mine, Wellington Mine, Volcano Mine, Blue Nose Mine (Unknown), Blue Nose Mine, Marsteller Mine, Chief Mine, and Humbolt Mine.

The third item mentioned in the 6-23 letter is Notice of Termination by Asarco to E.P.A. Mr. Gay mentions that the eight terminations are unsigned and when he receives signed copies from New York he would send us a copy. No copies of any Notice of Termination by Asarco to E.P.A. signed or unsigned were transmitted with the other data. We cannot determine whether the Notices of Terminations apply to the eight mines as set forth above. Further, we note that the facilities listed under item 2 on which NOI's were filed and the mines listed under item 3 on which stormwater plans were submitted are not identical.

We would appreciate receiving copies of any Notices of Termination which Asarco might have filed with the E.P.A. Kerr-McGee feels that having filed Notices of Intent for Stormwater Discharges with the E.P.A., it is now Asarco's responsibility to secure Notices of Termination as well. It would appear that Asarco has made application for such terminations and we assume that it is Asarco's intention to follow through until such terminations are secured on the Subject Lands. In addition, we feel that Kerr-McGee may have been "implicated" by Mr. Knapp's broad brush statement made in his letter of 9-30-92 to Stormwater Notice of Intent. It is difficult to determine to whom the comments are meant to apply but Kerr-McGee is the owner of certain of the lands subject to the captioned agreement and on which certain NOI's were filed. We feel that further explanation is due including, if Kerr-McGee is the intended offending owner, why we were not notified of such conditions as are alleged to exist at the time they were discovered.

Your continued assistance in resolving these matters is appreciated.

Yours very truly,
KERR-MCGEE CORPORATION



J. Phil Jones, CPL
District Landman

xc: Harold Holmberg
George Christiansen

J. D. Sell
P. J. Maley
ASARCO Incorporated
P. O. Box 5747
Tucson, AZ 85703

FAX (602) 624-3369

G. A. Knapp
ASARCO Incorporated
3422 South 700 West
Salt Lake City, Utah 84119-4191

FAX (801) 261-2194