

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712

(602) 795-6097

Briscoe - Dean Schloss
-10-

HOW TO USE THIS

Use back LETTER TO SAVE TIME.
Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

DATE: July 18, 1979

By rental lease-purchase of the TDZE for \$6700/month included in the \$10,000/week budget.

My hypothesis on supplemental cash flow from the heap has been presented as follows:

A. Push 15,000 - 20,000 tons per day with TDZE from heap onto pad.

B. Put under CN beach each

DATE:

day at least 15,000 tons and recover \$1 per ton using cyanide.

368

Following are all cyanide beach results from 5/31/79 not even on surface...

100 FT Sample - Heavy surface
 5 samples each 100 FT length - 5 =

100 ft sample + 3.00 ml C100 ml

#	Oil	Gas	\$ H ₂ O	\$ H ₂	\$ Total
1	.012	.36	3.00	2.88	5.88
2	.015	.42	3.75	3.36	7.11
3	.015	.36	3.75	2.88	6.63
4	.018	.15	4.50	1.20	5.70
5	.009	.09	2.25	.72	2.97
6	.012	.15	3.00	1.20	4.20
7	.015	.15	3.75	1.20	4.95
8	.018	.12	4.50	.96	5.46
9	.006	.12	1.50	.96	2.46
10	.006	.27	1.50	1.68	3.18
11	—	.18	—	1.44	1.44
12	.003	.12	.75	.96	1.71
13	.012	.21	4.50	1.68	6.18
14	.012	.09	3.00	.72	3.72
15	.006	.09	1.50	.72	2.22
16	—	.24	—	1.92	1.92
17	.030	.12	7.50	.96	8.46
18	.018	.06	4.50	.48	4.98
19	.009	.09	2.25	.72	2.97
20	.003	.21	.75	1.68	2.43
21	.033	.06	5.25	.48	5.73
22	—	.09	—	.72	.72
23	.018	.03	1.50	.24	1.74
24	.012	.15	3.00	1.20	4.20
25					
26	.015	.15	3.75	1.20	4.95
27					

367

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712
(602) 795-6097

Prison - Dean - Schless

- 11

HOW TO USE THIS

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

DATE:

Pushing 15,000 tons/day [in day]
yields the following:

$$\text{Tons / month} = (15,000 \text{ TPD})(20 \text{ DPM}) = 300,000 \text{ Tons}$$

$$\frac{\text{Gross Recovery Value}}{\text{Month}} = (\$1 \text{ per ton})(300,000 \text{ tons}) = 300,000 \text{ per month}$$

This budget would possibly be \$50,000 per month - higher diesel, etc. and samplers.

BY

DATE:

I would suggest that we test heap surface ore on test pad using 4' wide - as with our open pit ore.

The TPAE would accomplish a large test (10,000 tons) quickly.

360

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712
(602) 795-6097

FOR Trisco - Dean - Schloss
- 12 -

HOW TO USE THIS

DAY/TIMER

Time-Saver LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

DATE:

Leach Cycle for 30,000 tons Heap Ore

Pad Requirements 300' x 200', extend
out 70' x 180' or an expansion of
4 times of the surface area.

Additional Surface Area = 77,400 sq'

Truck Trail = 3,500'

Trucks Hauled = $(125) \left(\frac{1000 \text{ cu yd}}{1 \text{ min}} \right) \left(\frac{100 \text{ min}}{1 \text{ hr}} \right) = \frac{12,500,000}{\text{hr}}$

Haulage Hours Required = 36,9 hr

4 Haulage Shift Days

REPLY

DATE:

with water haulage & compacting,
completion of the pad would
require 6 - 8 hr days

BY

365

Episco - Dear - Schloss
 - 13 -

HOW TO USE THIS

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

REFERENCE

DATE:

A. Done, time to push 7-15,000 ton lifts onto pad from north end of heap = 1 day

B. Lay lines and Spray second day

C. Saturation Time

$$75,000 \text{ Tons} (10\%) = 3000 \text{ Tons}$$

$$\text{No. Sprays} = 8 \times 12 = 96$$

$$\text{CFM} = 96 (5) = 480 \text{ GPM or } 2 \text{ Ton/min}$$

$$\text{Saturation time} = \frac{3000 \text{ Tons}}{2 \text{ Ton/min}} = 2.5 \text{ hours (One Full Day)}$$

DATE:

D. Leaching (CN) = 2 days

E. Push to Push is 4 days

F. Prod. and Flow

$$4 \text{ days} \rightarrow 30,000 \text{ tons}$$

Production	Value
11 tons	30,000
11 tons	30,000

Southwestern Exploration Assoc., Inc.
 4500 E. SPEEDWAY, SUITE 14
 TUCSON, ARIZONA 85712
 (602) 795-6097

FOR *Brianne Dean Schless*
 - 14 -

HOW TO USE THIS

DAY/TIMER

Time-Saver LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

DATE:

The combined processing of the Heap + Open Pit uses:

Day	FOOSE	Server	Heap	Open Pit
Mon	Push Heap	Open Pit	75,000 Tons of Runoff ↓ 400,000	7,000 Tons of Runoff ↓ 15,000
Tue	Open Pit			
Wed				
Thurs				
Fri				

REPLY

DATE:

This would be \$400,000 Gross Per Month with expenses (Subst) of about \$35,000.

This would persist for over a year, depending higher values at depth in the heap and open pit.

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712
(602) 795-6097

Priscoe - Dean - Schloss
- 15 -

HOW TO USE THIS

POSTER

Time-Saver LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

DATE:

Required for cyanide recovery will
be a 200 ATM generation chamber.
Cindy + Louis Engle are going to make
a bid on constructing the chamber.

Also, some new PVC and components
will be required to replace very
old and "leaky" sections.

BY

DATE:

Sincerely,

Priscoe - Dean - Schloss

EY

362

TESTING

Water Retention



Barrel filled with
ore - 150 #

Water was added
and allowed to drain
through bottom.

Water drained for
3 days

Wgt. ore = 150 #
Retained H₂O = 18.65 #

Total # 168.65

11% water retained

EFFICIENCY STUDIES

Previous Conclusions

Average + 1 mesh (Triumph) 45.5%

Range is from 32 to 47%

mesh % Retained

	<u>Coarse</u>	<u>Fines on Top</u>
4	57.41	10
8	64.81	51
28	77.57	70
48		77
80		88
200		95

Density Index

(Previous Tombstone)

	<u>#/FT³</u>	<u>Tonnage Factor</u>
Ball		
Ball	39.71	20.06
Coarse (+3 ^m)	85.20	22.42
-4 mesh	57.25	20.56

DAY/TIMER

Time-Saver

Southwestern Exploration Associates
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712

LETTER

2-43

IN REFERENCE TO: *Assay's without P.O.'s*

FIRST CLASS MAIL

INTER-OFFICE

FOR

R. F. Hewitt

HOW TO USE THIS

DAY/TIMER

Time-Saver

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

REPLY

FOLD

DATE

7/16/79

DATE

FOLD

Dick - Attached is a bill from Skyline Labs without a P.O. number. This is contrary to our previous agreements about P.O.'s.

I have oked this bill.

In the future, bills without P.O. authorization will be deducted from your salary check.

C. T. Schloss

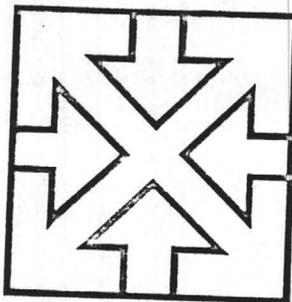
SIGNED

J. A. Barovic

SIGNED

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



**Southwestern
Exploration Associates, Inc.**

July 13, 1979

4500 E. Speedway, Suite 1-
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

Mr. Tom Schloss
FAMCO
1700 Broadway, 22nd Floor
New York, N.Y. 10019

Dear Tom,

Enclosed please find the cash disbursements for the period of
7/12/79 to 7/13/79, for the S.E.A. Hydromet-T.H.L. Trust Account.

Thank you,

Judy M. Urias

Judy M. Urias
Asst. Bookkeeper

JMU
P-418

356

S.E.A. HYDROMET - T.H.L. TRUST ACCOUNT

<u>DATE</u>	<u>PAID TO</u>	<u>PURPOSE</u>	<u>CHECK #</u>	<u>AMOUNT</u>
		Balance Forward		340.52
7/12/79		Deposit wired into account		1,500.00
7/13/79	S.E.A. Hydromet	To cover payroll	1149	800.00
7/13/79	McKesson Chemical (P.O. 6112)	Chemicals	1150	478.85
7/13/79		Transfer charge		.50
7/13/79	Willett Transport Equipment (P.O. 4530)	Three months rent on equipment	1151	421.20
		Balance		139.97
		EXPENSES:		
		Mountain Bell Phone Bill		221.33
		Approx. gross payroll		1,150.00
		Approx. amount needed to cover expenses		1,231.36

RECEIVED JUL 16 1979

July 13, 1979

JUL 16 1979
By *JAB*

Memo to: Mr. W. E. Speer, SEA; cc: TMS, JAB, RFH

From : J. G. Dean

Subject: Tombstone Ore Samples - Coordination of Geology,
Mineralogy, Metallurgy.

Dear Ed:

The two high-grade samples shipped by UP 7/5 were received 7/12; although it takes about a week, delivery is right to the door here which saves time and pick-up expense on this end compared with airport delivery 17 miles away.

Sample 002209, representative of the Mn-rich rocks on the south end of the heap with Jacobs fire assays of Au 0.01 and Ag 7.30 Toz/T, seems also to be quite rich in copper, e.g. .5%, some as the silicate and some as the carbonate. Soluble copper gives problems both in thiosulfate and cyanide leaching, and of course the manganese oxides are notoriously refractory in direct leaching. Although this is a very interesting sample, it was concluded that a time-consuming leaching study had best be postponed at this critical point in our program.

Sample 002253 from the northern end of the heap assaying Au .005, Ag 12.85, is very rich in sulfides, notably pyrite. It is presumed that the gold and silver values are at least partially dispersed in the base metal sulfides, some of which are very refractory to direct leaching. So again it was concluded that an extractive research program had best be postponed.

The Tombstone ores are reported to be uniquely rich in silver halides, and these compounds are the most directly soluble in leaching with thiosulfate and cyanide. Metallic silver and silver sulfides are, of course slowly soluble in cyanide with aeration. Other forms of silver such as those mentioned above may be only fractionally soluble, while any silver locked in the silicates paralleling, say, copper in chrysocolla is totally insoluble.

These considerations suggest the importance of introducing a metallurgical extraction factor between fire assay values and dollar appraisal; it can range from 0 to 100%, depending on the minerals present, the extraction reagent and the method of treatment.

It appears that we face a real conglomerate of mineralogy on the heap, complicated by mixing in previous operations as well as leaching to varying degrees of effectiveness. We can expose new surfaces by moving and also crushing, but extractive results may have to be judged by actual recoveries. However, clues from the mineralogy may help and may really be of value as we sample new ores in place.

JGD:bm

JGD

355

RECEIVED JUL 17 1979

REVIEWED

2-41

JUL 17 1979

July 12, 1979

By JGD

Memo to: J. A. Briscoe, SEA; cc: T. H. Schloss, R. F. Hewlett

From : J. G. Dean

Subject: Selection and Evaluation of Tombstone Ore Samples.

Dear Jim:

We have been applying pretreatments and leach tests to the various ore samples supplied by Ed and Dick. Although the actual data available are quite limited, they are supplemented by more extensive qualitative observations and the combined information seems to merit discussion.

We applied first comparable thiosulfate and cyanide leaches to the 10 lb shale and quartzite sample from the north ramp (Ed's #62379B), as described in the memo to Dick of July 3. The fire assay results from Jacobs are summarized below:

	Ag	Au
Initial results, sample prepared by Jacobs	1.000	.005
Feed pulp prepared by JGD -----	1.85	.01
Tails from thiosulfate leach -----	1.80	.005
Tails from cyanide leach -----	1.35	.02

The first two samples should have been identical, unless Jacobs did not conform to the Richard's minimum sample guide as a function of particle size. It would be of interest to have their full practice in handling this type of material, and also their evaluation of the precision which can be expected from their fire assays.

The second point of interest is that the figures for gold have a whimsical quality. My subsampling was with a very fine grind with meticulous mixing and splitting. These data rather conclusively suggest that we cannot use fire assay of tails as a guide to leaching unless we can achieve more precision. Your suggestions on this point will be appreciated.

If we can accept the silver assays, at least on the fine pulps, as more precise, then we can conclude that the thiosulfate was ineffective in leaching the silver (2.7% dissolution) and that the cyanide was only slightly more effective (27% dissolution). These observations are qualitatively in accord with my sulfide precipitation tests, especially as to the ineffectiveness of the thiosulfate.

Similar tests on some of the other samples supplied by Ed in this same shipment suggest that the low silver values resist dissolution even under ideal conditions. There seems no evidence of the usual silver carrying minerals; rather there is a suggestion that the silver may be present as refractory silicates. Can mineralogy help us find some more responsive feeds?

JGD:bm

John

354

RECEIVED JUL 16 1979

2-40
July 10, 1979
REVIEWED

Memo to: R. F. Hewlett, TEI; cc: T. H. Schloss, FAMCO

JUL 16 1979

By *JMB*

From : J. G. Dean

Subject: Pretreatment of Mn-rich Emerald Mine Rock, S. End of Heap.

Dear Dick:

The second part of your memo, Tombstone Pilot Leach, has been studied with interest and is serving to guide leaching experiments on the Mn-rich ore. The tests were started with Ed's sample 623792, which according to Jacobs fire assay contains 0.015 Au and 2.45 Toz Ag/T.

The general plan was to pretreat the ore with sulfuric acid so as to open up the manganese and jarosites, reduce the manganese oxides so as to liberate the gold and silver, then raise the redox potential, e. g. with hypochlorite, to solubilize the gold, then leach with 20% salt or cyanide, somewhat in accord with pp. 27-8 of your memo.

The 5lb sample of ore was first reduced to -14 mesh by 4 passes through the rolls, then a $\frac{1}{2}$ split was reduced to -100 mesh by dry rod milling. The sulfuric acid treatment was started on a 200g split, referring to your table of reagent costs, with the idea that a reasonable upper limit of acid consumption might be 50 cents/T solution or \$1.50/T ore.

This amount of acid did not provide the required acid pulp, but led to a buffered solution in which it was difficult to maintain a definite pH. So it was decided to start over with a first objective of determining the acid requirements for pretreatment.

After some experimentation, the following procedure evolved: 50g of ground ore was mixed with 150ml of 2 N H_2SO_4 (98g/l or approx. 10%) for 30 minutes, the pulp suction filtered, and the residual acid titrated with N NaOH, first to the methyl orange changepoint (pH 4) then to the phenolphthalein end point (pH 8).

The acid consumption by this test turned out to be very large: about 500 lb/t on a 100% basis or 700 lb on a 70% basis. It was also found that there was a substantial dissolution of metal salts in addition to the very large amount of calcite present, which strangely enough did not include much iron although the final pH was less than 2. The final pulp looked like a gel and tended to retain a large amount of liquid even with suction filtration.

This large consumption of acid, equivalent to about 25% of ore weight in reactive components, coupled with the physical problems, suggested difficulties with subsequent steps, starting with a large consumption of ferrous chloride or other reductant, and compounded by a problem of achieving a balance with the final oxidant, not to mention contamination of the leach with metal salts.

353

July 10, 1979

In spite of all these problems, the Mn-rich ores with their high metal values, appear to have real potential and merit perhaps extended research attention. This will take time and money and can hardly be recommended at the present time as a simple matter of economic common sense.

The iron-rich ores or limonitic clays discussed on pp. 24-6 of your memo are perhaps less complicated chemically than the Mn ores, but may present more of a physical problem in heap leaching because of the impervious clay content. Your pretreatment suggestions are noted and I am planning next to take a look at these ores. In the meantime, if there is any way to blend this type of ore into a heap so as to offset the problem with too much clay, this might be the best way to get started without having to wait for guidance from exploratory lab tests.

As of the moment, I still feel very strongly that the best way to achieve some progress is to set up some idealized 200T heaps of unleached ore containing good values with attention to a promising size mix, e.g. a -4" heap with, say, 50% $-\frac{1}{4}$ ", and apply a cyanide leach with pH control, coupled with deaerated zinc precipitation.

Tom mentioned that you have some ideas on how to drop some Contention ore from the sides of the exposed fault and haul it by scraper to a heap. From what I have seen of this ore at the Eocene mill, this might be a very good approach taking priority over complicated chemical pretreatments.

Regards,



JGD:bm

Comments

7/16/79 2:42 pm

I agree with the above. I'm not received a copy of RFH memo referenced by J.D. to my knowledge.

RECEIVED JUL - 9 1979

2-39/AB

FAMCO /

1700 Broadway • New York, New York 10019 • (212) 247-0420

REVIEWED

JUL 10 1979

By *[Signature]*

*Very good
see
mem*

TOMBSTONE EXPLORATION, INC.

2 Week Program

TO: Dick Hewlett
James Briscoe
John Dean

FROM: Tom Schloss

DATE: July 6th, 1979

OBJECTIVE: (Clear, Concise, Quantifiable)

1. Test metallurgy by leaching on test leach pad. Ore should be at value higher than break even cost.
2. Develop cash flow to finance # 3 by leaching ore from the heap on a larger scale.
3. Cash flow to finance
 - (a) Drilling for ore control.
 - (b) Drilling in open pit areas to improve for leach.

PROBLEM: (What factors stand in way of achieving objectives)

1. Inadequate knowledge and experience of metallurgy and ore types
2. Capital to develop efficient;
 - (a) Drilling program feed control
 - (b) Metallurgy
3. Time - causing disillusionment of capital.

SOLUTION I : (To achieve objectives)

Conserve cash to insure best number of chances of finding ore of sufficient quality to test plant operation and start cash flow.

IMPLEMENTATION:

Take known data and assign priorities to five target areas.

1. Fully describe for each target all of the characteristics and reason why chosen including ore types, screen analysis, AA results

351

IMPLEMENTATION: (contd.)

1. contd.
quick cyanide analysis, estimate of amount of tonnage, history and references.
- (.5 day per target x 5=2.5 days)
2. "Mountain and Valley" each to 5' to 10'
3. Scrape each side with dozer and send in scrapper to pick up 100 tons.
4. In highest priority target area, split that heap in half and crush half.
- (5 - 7 days)
5. Take sample for each of new 6 piles and send to Jacobs.
6. Test each leach area separately.
- (Concurrent with # 4 per target take 2 to 3 days)
7. Use straight cyanide for each test as a control test unless John approves another type of test.
8. Analyze results to determine:
 - (a) Cost for reagents.
 - (b) Time to set up and process heap.
 - (c) Best approach to crushing decision.
 - (d) Type and size for plant.

RESULTS:

1. Five areas analyzed with 100 tons each in a short time.
2. Knowledge of results in 48 hours after first "Mountain and Valley".
3. Ability to go back and dig holes with back hoe to quantify this quantity and quality of ore. (Implement Solution II).
4. Five chances to find ore.

COST:

1. Scrapper	No/Charge
2. Dozer @ 6/hour for 2.5 days	\$144.00
3. Five large samples sent to Jacobs	\$250.00
4. Labor	

SOLUTION II:

Fully analyze one given area (East I).

- | | |
|------------|--|
| 2 days | 1. Use back hoe to drill 4 to 10 holes. |
| 5 days | 2. Send assays to Jacobs for assaying. |
| 2 - 3 days | 3. Test heap leach ore from holes. May have to wait for results from Jacobs. |

350

Page 3
Tombstone Exploration, Inc.
July 6, 1979 - contd.

RESULTS:

1. Knowledge about one area.
2. Ability to extract information on this ore.
3. If results are poor then must start whole process over.
4. 10 Tons of ore per/hole x 4 to 10 holes = 40 ton to 1000 tons.

COST:

- | | | | |
|----|-----------|---|---------------|
| 1. | Back Hoe | - | \$400.00 |
| 2. | Man & Gas | - | \$ 30.00 |
| 3. | Lab Fees | - | \$200 - \$500 |
| 4. | Labor | - | |

Tom

THS/avc

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712

(602) 795-6097

P. 418

SAMPLES FROM
TOMBSTONE

+

FOR DR. JOHN DEAN

HOW TO USE THIS

DAYTIME

line back LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

DATE:

7/5/79

Enclosed are the total rejects from samples 2209 and 2253 that Mr. Tom Schlose requested for you. Sample 2262 was not included because the re-assay showed only 0.01 Au and 2.05 Ag (oz/ton) rather than the 0.13 Au and 2.65 Ag first reported by the Assay lab. Sample 2209 was collected from the Au-rich rocks on the south end of the heap; and sample 2253 came from the northern end of the heap. The assay values in oz/ton are: 2209 - .01 Au, 7.30 Ag; 2253 - .005 Au, 12.85 Ag. Both of these samples are hand picked and are not representative of the entire heap. If I can be any more help, please call

BY

Ed Speer

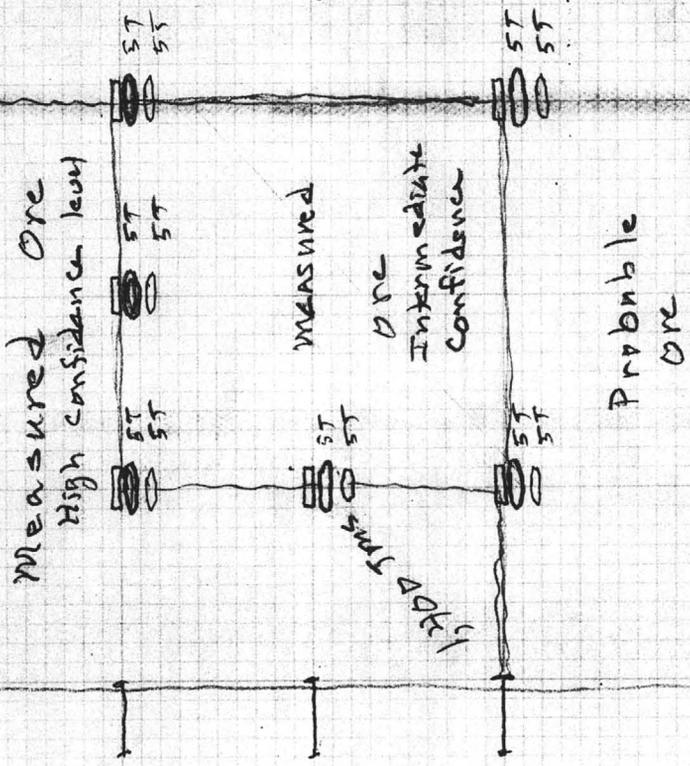
REPLY

DATE:

BY

348

Cu 500 T

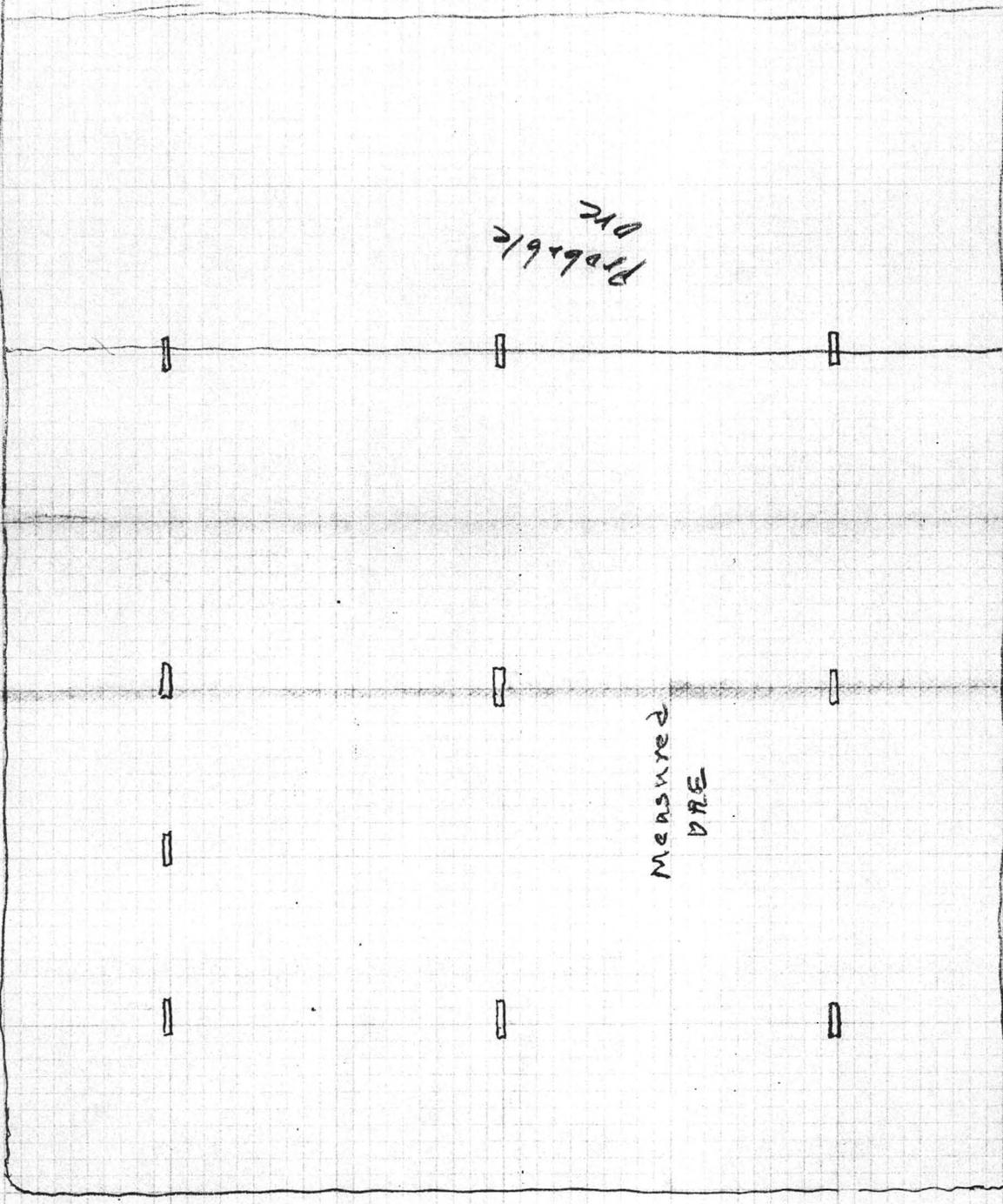


H.G. Measured Ore
T.C.
Probable
Possible

2-58

= 7,000 T
= 5,600
= 9,000
= 12,600
35,000 T = 50

Cas II



Possible DRE

Probable DRE

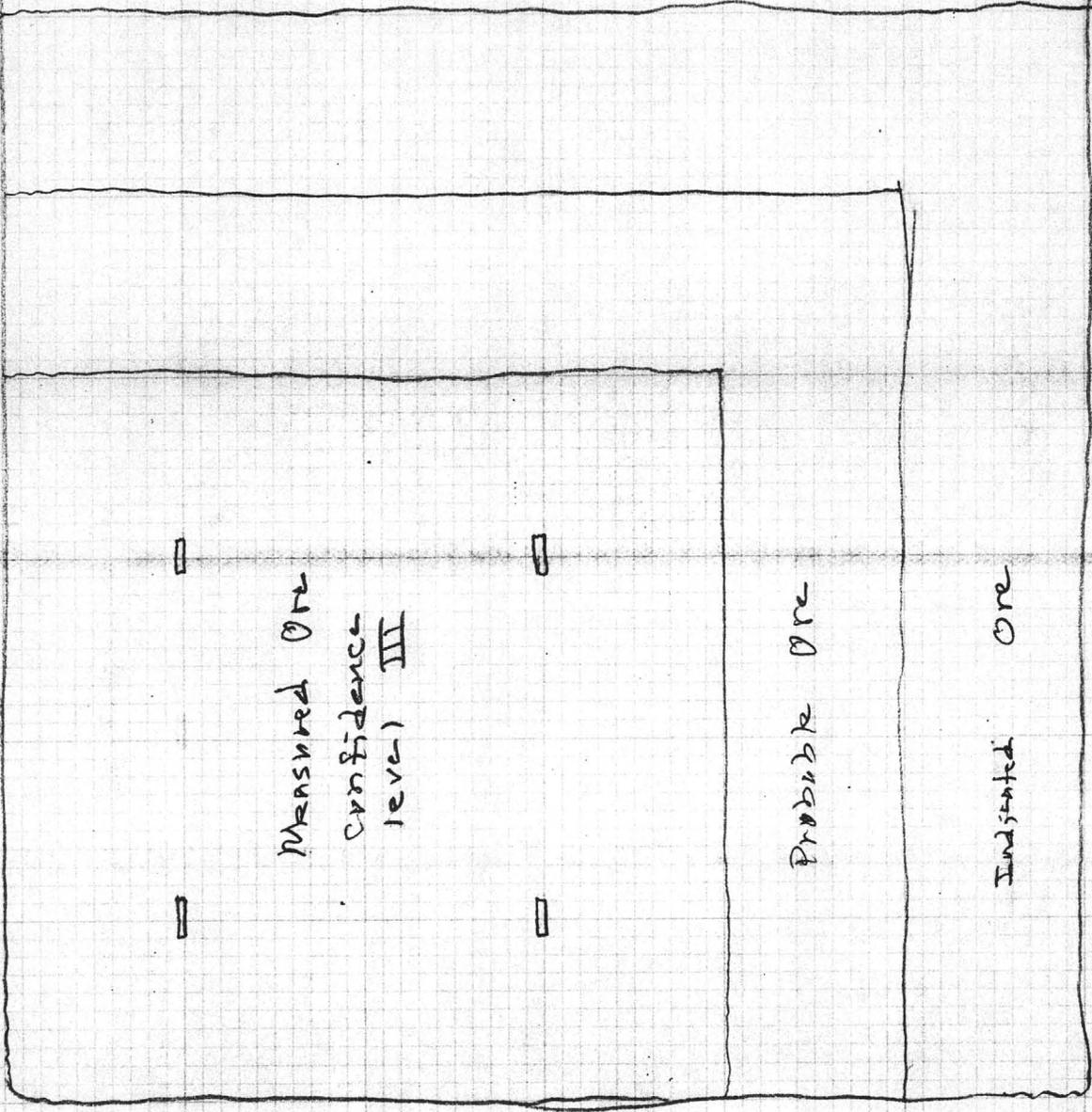
MEASURED
DRE

= 42,000 T
 = Not applicable
 = 16,800
 = 16,800
 = 75,600

H.C. Measure & DRE
 I.C.
 Probable
 Possible

Sample Tonnage
 from 10 back hoe holes
 10' long, 10' deep 4 1/2' wide
 approx 10 tons/hole
 yielding 100 tons
 or additional 100 tons available at any time.

SE II



Measured Ore
Confidence
level III

Probable Ore

Indicated Ore

H.C. Measured Ore	=	Not applicable
III C. Measured Ore	=	22,400 Tons
Probable "		12,600
Indicated "		<u>15,400</u>
		50,400

2-38

$$20 \times 6 = \# 120$$

$$\begin{aligned} \text{hole size } 10' \text{ long} \times 10' \text{ deep} \times 2' \text{ wide} \\ = 200 \text{ f}^3 \div 18 \text{ f}^3/\text{ton} = 11.1 \text{ tons} \quad \text{say } 10 \text{ tons} \end{aligned}$$

$$50' \times 50' \times 10' \div 18 \text{ f}^3/\text{ton} = 25,000 \text{ f}^3 \div 18 \text{ f}^3/\text{ton}$$

$$= 1,388.89 \text{ tons} / 50 \times 50 \text{ block}$$

Say 1,400 tons

Intermediate confidence level.

Case I

Assumptions:

1. Cost of back hoe on hourly basis for only as many hours as used \$ 25/hr.

2. Time to dig a 10' long x 10' deep x 2' wide sample trench & split pile = 1 hr.

Dig 6 sample pits

$$\begin{array}{r} 6 \times \$ 25 = \\ + 6 \times 8.75 = \end{array} \quad \begin{array}{r} \$ \\ 150 \end{array}$$

Take 7 100 lb samples -

channel type on edge of dump -

- 3" fraction taken by Dusty E.

$$\frac{1}{2} \text{ hr/sample} \times 7 = 3.5 \text{ say } 2 \text{ hrs} \times 8.75 = \underline{35}$$

Assay @ \$ 20/sample - propst

An Ag Assay x 13 samples

$$\begin{array}{r} 260 \\ \$ 445 \end{array}$$

Yield in tons of sample
60 tons

Cost/ton

H.C. measured	445 ÷ 7,000	\$ 0.06	Total	445 ÷ 35,000
I.C.	"	5,600 .08		
Prob.	"	9,000 .05	=	\$ 0.01

Case II

Assumptions: Same as Case I

Dig 5 additional
sample pits.

$$5 \times \$25 = \$125$$

Assay $5 \times \$20$

$$\begin{array}{r} 100 \\ \hline \$/ 225 \end{array}$$

Yield in tons of sample.
50 tons

Case III

Assumptions; Same as Case I

Dig 4 back hoe cuts

$$4 \times 25 = 100$$

Time $\frac{1}{2}$ day

$$\text{Assay: } 4 \times 20 = \frac{100}{200}$$

yield in tons
40 tons

Cost/Ton measured ore

III & measured ore	$200 \div 22,400$	= \$ 0.01
Prob.	$" \div 12,600$	= 0.02
Poss	$" \div 15,400$	= 0.01
	$200 \div 50,400$	= 0.004

Cost for 5 targets \times \$ 200 = \$ 1,000
Time 2.5 days
Measured ore \approx 250,000 tons

Advantages of the back hole test

1. Data is cumulative i.e. - for each additional hole information increases tonnage measured in arithmetic if not geometric progression & accuracy can be tuned to tech. requirements.
2. Tests can be repeated accurately & sample size of each type can be adjusted to any required amount.
4. Develops measured tonnage in a cost effective way - cost initially is 0.4 cents/ton.
5. Is standard way of testing.

Disadvantages of mountain & valley method

1. I think costs unrealistic
2. Sample is essentially a large "grab" sample and cannot be extrapolated accurately to define "ore" in standard way
Thus no "ore" developed.
3. Sample cannot be repeated.

4. Digging technique destroys the integrity and geometry of dump making future projections more difficult.

JAB,
Your copy

S.E.A. HYDROMET - T.H.L. TRUST ACCOUNT

<u>DATE</u>	<u>PAID TO</u>	<u>PURPOSE</u>	<u>CHECK #</u>	<u>AMOUNT</u>
		Balance Forward		340.52
7/12/79		Deposit wired into account		1,500.00
7/13/79	S.E.A. Hydromet	To cover payroll	1149	800.00
7/13/79	McKesson Chemical (P.O. 6112)	Chemicals	1150	478.85
7/13/79		Transfer charge		.50
7/13/79	Willett Transport Equipment (P.O. 4530)	Three months rent on equipment	1151	421.20
		Balance		139.97
		EXPENSES:		
		Mountain Bell Phone Bill		221.33
		Approx. gross payroll		1,150.00
		Approx. amount needed to cover expenses		1,231.36
				<u>1,000</u>
				\$ 231.36

Tom will bring with him Thursday,

338

2-37

July 3, 1979

Memo to: R. F. Hewlett, TEI; cc: T. H. Schloss, J. A. Briscoe
From : J. G. Dean REVIEWED

Subject: Experimental 200T Heap Leaches.

JUL 10 1979

By JAB

very good

Dear Dick:

The first installment of your memo on the above subject, dated 6/27, has been received and studied with careful interest. A few comments designed to be helpful are given below.

Leachable values in the heap are likely to be concentrated in: 1) fines which were not adequately contacted by cyanide, 2) coarse fractions impervious to solution contact, and 3) refractory ores such as the manganese which hold the values locked in insoluble matrices. Ores of this type may also include jarosite, and perhaps sulfides, and several other types.

In setting up an experimental heap, it is important insofar as practical to have some idea of the types of ore present, the leachable surface exposed per unit weight, the values present, e.g. the total by fire assay, the ultimately leachable with the solution being used, and the recovery likely by the technique being used.

At this stage, perhaps the more sure-fire technique would be to get a cut from the heap with a good percentage of fines which may have been missed due to channelling compounded by the 30+' lifts, and apply a conventional cyanide leach with deaeration and zinc precipitation, following the practice of Louis and Charlie Escapule.

If it is possible to set up a similar heap with freshly crushed ore of a similar type and apply a similar cyanide leach, we should get some measure of the leachable values missed because of simple inaccessibility. Every time you reduce the average particle size by half, the area is doubled. In progressing from 4" lumps to 100 mesh, the area is increased more than a thousand times. The effect on leaching may be substantially greater because of the fractures along faces of value concentration.

If these straightforward tests show promise, we can move to variations designed to unlock additional values and achieve better recoveries. Perhaps by that time we will have been able to make exploratory runs on a small scale to help guide the pilot tests.

In addition to piloting the chemistry, my suggestion is that we all conform in splitting samples for assay or leach tests with the Richards table available from Jim. At -4", one needs several tons and this must be reduced in stages to get down to -100 mesh when a 30g sample can be split for fire assay or testing. At -1/2", say for a barrel test, one needs from 75 to 3200lb, depending on the ore, and this is why Hazen uses big towers to get conclusive results.

JGD:bm

JGD

337

*Verify
containing*

2-35
JAB
July 3, 1979

REVIEWED

Memo to: R. F. Hewlett, TEL

JUL 10 1979

From : J. G. Dean

By JMBvery nice

Subject: Comparative Thiosulfate and Cyanide Leaches of N. Ramp Ore.

Dear Dick:

The first experiments on the ore samples described in Ed Speer's letter of 6/27 were designed primarily to allow a comparison of thiosulfate and cyanide. The ore sample used was shale and quartzite from the north ramp; fire assay by Jacobs indicated 0.005Toz Au and 1.40Toz Ag/T.

The ore as received had been crushed to approximately -3/8". It was stage crushed to -14 mesh by 4 passes through the rolls, and then reduced to -100 mesh in a rod mill. The ground ore was dried at 105°C and a 75g sample split out for head assay.

This fairly fine grind was selected not only to facilitate representative sampling at manageable size, but to provide good solution access to the silver compounds. Comparisons of ultimate leaching with fire assays of the heads seemed likely to give maximum information as to comparative leaching action.

The leaching technique was simply to mix 150g of the -100 mesh ore with 450ml of leach solution and agitate by simple rotation in a closed bottle. After 5 hours the slurries were suction filtered with a 15cm. Buchner, the pregnant liquor recovered, and then the tails were thoroughly washed, dried, and sent back to Ed Speer for fire assay.

The thiosulfate leach solution was prepared by dissolving 2.5g/liter (5lb/T) of the pentahydrate with 0.2g/l sodium carbonate as protective alkalinity. Analysis of the solution before and after leaching gave the following results:

	Leach	Pregnant
Sodium thiosulfate, g/l ----	2.5	2.0
pH -----	7.3	6.5

There was thus some increase in acidity and decomposition of about 20% of the hypo in spite of the protected conditions.

The cyanide leach was carried out in an identical way with 1g/l sodium cyanide and 0.5g/l lime. It progressed smoothly and was easier to filter than the hypo, possibly due to the lime. It gave a positive Ag₂S test in comparison with the hypo which remained clear on the addition of Na₂S.

The fire assays and such special leach tests provide useful information leading up to barrel, column, and heap tests. Ore size is a dominant variable which relates to sample size and surface area; if we can control it and work with representative heaps, we should maximize progress toward a cash flow.

JGD:bm; cc: TMS, JAB-WES

Regards,

JGD

June,
your copy

S.E.A. HYDROMET - T.H.L. TRUST ACCOUNT

DATE	PAID TO	PURPOSE	CHECK #	AMOUNT
		Balance Forward		923.15
7/3/79	Nellie Cashman Apts.	Rent	1139	188.70
7/3/79	First National Bank	\$10.00 deposit for 3 new accounts	1140	30.00
7/5/79	Richard A. Jeanne	Mileage reimbursement	1141	7.31
7/6/79		Deposit wired into account		8,000.00
7/6/79	McKesson Chemical (P.O. 6153)	Freight	1142	193.88
7/6/79	Bud Anderson (P.O. 6152)	Contract labor	1143	22.50
7/6/79	Richard F. Hewlett	Expenses	1144	1,100.24
7/6/79	VOID		1145	VOID
7/6/79	S.E.A. Hydromet, Inc.	To cover payroll and payroll taxes	1146	4,000.00
7/6/79	VOID		1147	VOID
7/6/79	Dr. John Dean	Ref. to 7/2/79 bill	1148	3,040.00
		Balance		340.52
7/10/79	JACOBS ASSAY	24-ASSAYS FOR Au's & Ag's	1149	208.00
			BALANCE	132.52

REVIEWED
JUL 10 1979
BY *[Signature]*

Account will need approximately \$1,500.00 to cover July 6, 1979 payroll

	GROSS	NET
R.F.H.	500 ⁰⁰ 12.50	365 ²⁴
DUSTY	350 ⁰⁰ 8.75	291 ⁹¹
ED	300 ⁰⁰ 7.50	230 ⁰¹
GARY	72 ⁵⁰	66 ⁸⁵

1222⁵⁰ 954⁰¹

~~\$1,500~~ will be sent 1st pm



2-34

TO: JAB 7/7/79

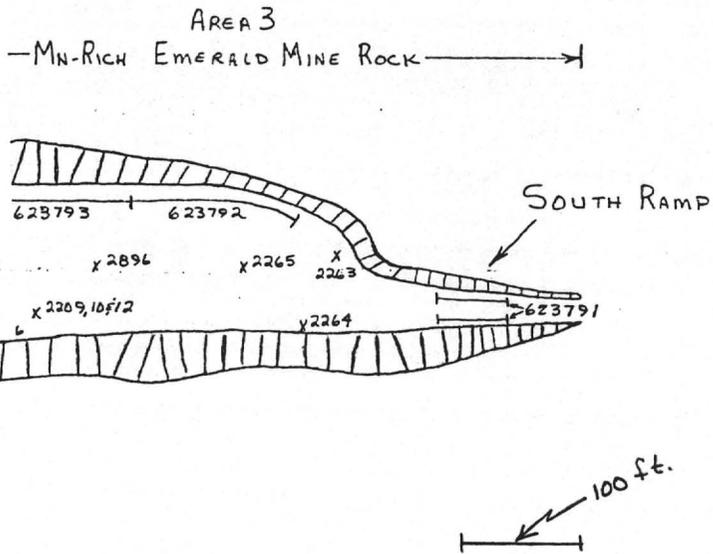
REVIEWED

JUL 9 1979

By JAB

Jim
Here is a copy of my map of the Tombstone heap. This redrawing reflects the pace measurements I made in the field. I will use this base to plot sample trenches.

ED



RE-ORDER No. with Dispenser-B2467L / Refills-B2471L © DAY-TIMERS, Allentown, Pa. 18001

TOMBSTONE HEAP
TOMBSTONE DISTRICT
COCHISE COUNTY, ARIZONA

SCALE APPROX 1 INCH = 100 FEET

W.E. Speer July, 1979

NOTES:

This is a rough field sketch supported by a few pace measurements only. Samples 623791-8 are 50 to 80 lb each and were collected along traverses as indicated. Collected by WES. All other samples are 5 lb grab samples.

555

2-33

JAB,
you copy

REVIEWED
JUL 9 1979
By _____

S.E.A. HYDROMET - T.H.L. TRUST ACCOUNT

<u>DATE</u>	<u>PAID TO</u>	<u>PURPOSE</u>	<u>CHECK #</u>	<u>AMOUNT</u>
		Balance Forward		923.15
7/3/79	Nellie Cashman Apts.	Rent	1139	188.70
7/3/79	First National Bank	\$10.00 deposit for 3 new accounts	1140	30.00
7/5/79	Richard A. Jeanne	Mileage reimbursement	1141	7.31
7/6/79		Deposit wired into account		8,000.00
7/6/79	McKesson Chemical (P.O. 6153)	Freight	1142	193.88
7/6/79	Bud Anderson (P.O. 6152)	Contract labor	1143	22.50
7/6/79	Richard F. Hewlett	Expenses	1144	1,100.24
7/6/79	VOID		1145	VOID
7/6/79	S.E.A. Hydromet, Inc.	To cover payroll and payroll taxes	1146	4,000.00
7/6/79	VOID		1147	VOID
7/6/79	Dr. John Dean	Ref. to 7/2/79 bill	1148	3,040.00
		Balance		340.52

Account will need approximately \$1,500.00 to cover July 6, 1979 payroll

JUL 9 1979
By *[Signature]*

REVIEWED

2-32

532

2-31

RECEIVED JUL - 9 1979

FAMCO /

1700 Broadway • New York, New York 10019 • (212) 247-0420

M E M O R A N D U M

TO: Ms. Jane Talley
 Mr. Richard Hewlett
 Mr. James Briscoe ✓

FROM: Tom Schloss

RE: Purchase Order Policy

DATE: July 2, 1979

APPROVED
 JUL 9 1979
 By *[Signature]*

I have asked Jane to introduce the following check procedures.

Please open three (3) accounts at the Speedway Bank of First National Bank of Arizona with the following authorized signatures:

- James Briscoe
- Jane Talley
- Chris Dodson
- Judy Uris
- Thomas H. Schloss
- Dwight E. Lee

- (1) T.E.I. - Main Account:
 Purpose: Collection of funds, wiring of funds for project and collection of money from smelter.
- (2) T.E.I. - Salary Account:
 Purpose: For weekly salaries at Tombstone
- (3) T.E.I. - Operating Account:
 Purpose: For Dick Hewlett to write checks from Tombstone as long as he has a prior purchase order number from S.E.A. and that purchase order number is on each check. Please send signature card to Dick for this account.

On charge accounts to the Tombstone project, a prior purchase order number should be also be obtained and written on each charge slip.

Any exception to the purchase order system should be reported directly to myself or Dwight. In the event that Dwight or myself are not available Jim would be next in line to report to.

Thank you for your help.

Tom

THS/avc

331

JAB,

your copies

REVIEWED

JUL 4 1979

By *[Signature]*

<u>DATE</u>	<u>PAID TO</u>	<u>PURPOSE</u>	<u>CHECK #</u>	<u>AMOUNT</u>
		Balance Forward		617.67
6/21/79	Richard F. Hewlett	To cover portion of South-west Salt bill	1129	600.00
		Adjustment - deposit		.81
		Adjustment		[.13]
		Deposit		.20
6/22/79	U. S. Postmaster	Overnight Delivery	1130	7.90
6/28/79	Bud Anderson (P.O. 6193)	Contract labor	1131	180.00
6/28/79		Deposit wired into account		4000.00
6/28/79			1132	VOID
6/28/79	TWA	Freight-ship samples to Dr. J. Dean	1133	68.00
6/28/79	Robert Cowan (P.O. 6184)	Equipment rental	1134	1000.00
7/2/79	University of Southern CA (P.O. 6205)	Publication	1135	9.75
7/2/79	S. E. A. Hydromet Inc.	To cover payroll	1136	1700.00
7/2/79	Merchandise Research (P.O. 4548)	Supplies	1137	129.75
		Balance		923.15
		June Payroll Taxes		2223.08
		7/4/79 Payroll		1507.14
	Richard F. Hewlett	Reimbursements as follows:		1100.24
	C. J. Rains	Propane		94.91
	Wally Dunn	Equipment rental		42.00
	Arjay Auto Supplies	Diesel fuel and oil		207.64
	Archies Auto	Batteries, oil, belts		362.89
	Chevron	Gas & oil for vehicle		245.27
	Patio Pools	Dia. Earth		29.43
	Gambles	Sprinklers		51.98
	Surplus City	Sprinklers		66.12
				1100.24
		Amount needed to cover above expenses after balance:		3907.31

330

2-30

CORRECTION OF PREVIOUS CASH DISBURSEMENTS

BALANCE WAS NOT AFFECTED*

<u>DATE</u>	<u>PAID TO</u>	<u>PURPOSE</u>	<u>CHECK #</u>	<u>AMOUNT</u>
6/19/79			1124	VOID
6/19/79	Mountain Bell	June 1, 1979 Telephone bill	1125	339.69
6/20/79	Keenan Supply (P.O. 6258)	Supplies	1126	48.13
6/20/79	Greyhound	Freight charge to Tombstone	1127	3.50
6/20/79	Bud Anderson (P.O. 6257)	Contract Labor	1128	115.00
		Balance		617.67
6/20/79		Payroll		1846.85

*All information remains the same,
check numbers were incorrectly placed.

Southwestern Exploration Associates
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712

DAY/TIMER
Time-Saver

LETTER

2-29

IN REFERENCE TO: P-418

FIRST CLASS MAIL INTER-OFFICE

FOR JAB

HOW TO USE THIS

DAY/TIMER
Time-Saver LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

REPLY

FOLD

DATE 7/3/79

Should I mail the payroll checks to the employees in Tombstone? or will it be awhile before Tom Schloer sends ~~me~~ another deposit.

SIGNED

JMC

DATE 7/3/79 FOLD

2:42 PM

Hold till we get confirmation of wire of cash
JAB

SIGNED

TOMBSTONE

ADDITIONAL EXPLORATION WORK RECOMMENDED

1. Map of the heap
 - A. Surveying (Brunton & Tape/wheel) \$160 8 manHours
 - B. Drafting \$50 4 manHours

2. Ore reserve sampling
 - A. Backhoe trenching (3,000 feet), \$600 50 manhours
 - B. Collecting bulk samples (27 total) \$2500 50 hrs Backhoe
100 lbs @ \$640 32 manhours
 - C. Assaying (Au & Ag - \$10 @, crush, pulp, Assay, etc) \$270 \$270

3. Screen Analyses
 - A. Collect bulk sample (from backhoe trenches) \$300 1 TON Backhoe & Truck
 - B. Separation by size fractions - Screening \$500 ABM(?) \$500 (?)
 - C. assaying of each size fraction
Splitting, crushing, split, pulp Au & Ag \$ \$100 \$100

\$5,120⁰⁰ (EST)



AREA 1

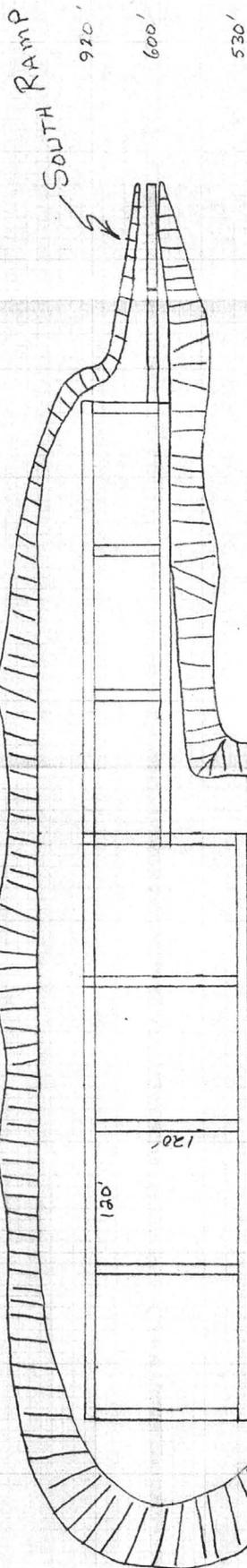
120'
75'

AREA 2

120'
120'

AREA 3

60'
60'



3,080 ft of Trenching
at 60'/hr. = 52 hours

22 Trench Samples of
120' X 3' X 5' each
5 Trench Samples of
60' X 3' X 5' each

TOMBSTONE HEAP
PROPOSED BACK HOE
TRENCHING

WES 7/79

JUNE 1979

1435 S. 10th AVE.

P.O. BOX 1889

DUPLICATE

Jacobs Assay Office

Registered Assayers



2-27
PHONE 622-0813
JAB

Certificate No. 60231

TUCSON, ARIZONA 85702 ¹³ 29 June 1979

Sample Submitted by Mr. Southwestern Exploration Ass. Inc.

SAMPLE MARKED	Hu OZ/TON	X	Hu OZ/TON	SAMPLE MARKED	Hu OZ/TON	X	Hu OZ/TON
623791	0.010		1.50	2251	TRAXE		1.25
2	0.015		2.45	52	0.010		4.20
3	0.010		1.20	53	0.005		12.85
4	0.010		0.60	60	0.005		0.95
5	0.010		0.70	61	0.005		0.70
6	0.010		1.90	62	0.010		2.05
7	0.005		2.55	63	0.010		6.80
623798	0.010		1.40	64	TRAXE		2.05
2209	0.005		7.30	65	TRAXE		2.10
2210	TRAXE		1.15	66	0.005		0.60
2212	TRAXE		1.40	2846	0.010		6.65
2267	TRAXE			750.7 Fine Silver	5.9 Fine Gold		
2268	"			740.2 Fine Silver	5.4 Fine Gold		

* Gold Figured \$35.00 per oz. Troy

Very respectfully,

Charges \$ 208.00

[Signature]

ESTABLISHED 1881 JUL 1975 SOUTH 10TH AVENUE



JACOBS ASSAY OFFICE

REGISTERED ASSAYERS

PHONE 622-0813 1435 SOUTH 10TH AVE.

TUCSON, ARIZONA 85713

June 30, 1979

Southwestern Exploration Assoc. Inc.
4500 East Speedway
Suite #14
Tucson, Ariz. 85712

Assaying

6-29---Cert. #60231-----\$ 208.00

Total-----\$ 208.00

APPROVED

JUL 10 1979

By *[Signature]*

FILE

P 418
Tombsstone

324

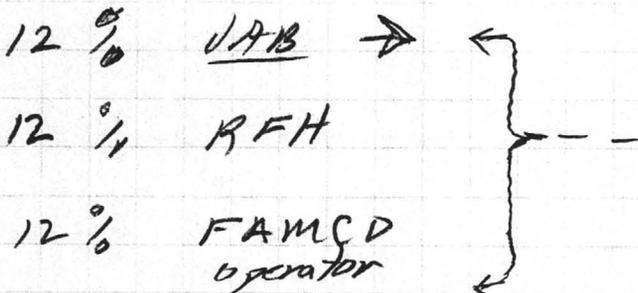
P-418

AMAX, INCO, Behre Dolberg ²⁻²⁶

T.C. 11:24 → 12:36

T. T. Schloss - FAMCO

T. S. Wants to change financial picture.



TC #

12:36 -

7-700

CMD

Computer - hasn't been shipped - big hold up at Logan Airport - may not be in before Friday & it must be installed before 30th to get income tax credit.

Review Assay billing 1,200 samples for \$18,000

JUL 4 1979 2-25

By *JGD*

JOHN G. DEAN

401 -- 934-0060

Elmdale Road, Box ~~230~~₁₀₂, Route 2, North Scituate, Rhode Island 02857

June 28, 1979

Mr. James A. Briscoe, President
Southwestern Exploration Associates
4500 E. Speedway
Tucson, Arizona 85712

Dear Jim: Re: Handling Samples & Feed Materials.

As we discussed last week, particle size is an important variable, not only in sampling, but throughout assaying and metallurgical testing. The Richards table relating minimum permissible sample weight to particle size which you Xeroxed is a useful guide and can be supplemented by the text as well as the very detailed discussion in Taggart 19-1 to 208.

Your suggestion of being able to refer to standard operating procedures struck a sympathetic chord with Tom and me. We don't have to write out the procedure each time it is used, but if we have it on file, we can give a reference to it.

It is also very helpful in my experience to have an indication of the assay method and even the assayer or organization reporting the results. Much of the data around on gold and silver ores, particularly, has to be accepted with caution since the samples often were taken without the necessary precautions, and then were unprofessionally prepared and assayed, e.g. the AA machine can give very fictitious results because of poor standards and matrix effects.

These same general considerations also apply to metallurgical testing. It is necessary for conclusive interpretation of the results to identify the significant variables such as sample weight and particle size, composition of leach solution and volume-to-sample weight, method of agitation, temperature and time, pH, assay method, etc. Once a standard method is adopted, a simple reference by number will suffice.

Once the procedures are in order, the data can be accepted and interpreted from that framework. We can then introduce a factor for the metallurgical extraction to be expected by a given method of treatment. This factor is, of course, very important in calculating the gross dollar return, starting with, say, fire assay data. For example, in the hypo leach to date, the silver extraction may be as low as 1%. With a head assay of 1 Toz/T Ag., gross return would be $1 \times .01 \times \$8 = \$.08/T$. If processing costs are even 10 cents/T, we have a negative cash flow. It is not practical to forge ahead on the basis of multiplying assay data X dollars/oz x heap tonnage, as I know you will agree.

JGD:bm; cc: THS

With best regards,

John

322

2-24
J. A. Brunel
June 27, 1979

REVIEWED

JUL 4 1979

By AB

Memo to: Richard F. Hewlett, TEI

From : J. G. Dean

Subject: Silver Leaching with Thiosulfate.

Dear Dick:

During our phone conversation this morning you mentioned that the 13,000 pounds of sodium thiosulfate purchased to date had virtually all disappeared from the solutions in the heap leaching operations. This startled me since at \$.20/lb, just the \$2600 cost of this reagent would require the production of over 300 Toz silver just to meet the costs.

You suggested that spraying in the sunshine increased the rate of decomposition and that just spraying at night might be helpful. A review of the reference material suggests some additional points of interest.

Sodium thiosulfate, as you know, is used as an analytical standard. One of the suggestions given for preparing the standard is to boil the water to eliminate air and carbon dioxide. Both dissolved oxygen and carbonic acid greatly accelerate the decomposition.

Spraying, day or night, would thus appear to aggravate the problem. Would it be possible to use seep hoses as currently being used for irrigation as a substitute for the sprays?

I also found that the pH is a very major factor in the stability, e. g. just adding 0.1g/l Na_2CO_3 greatly prolongs the life of analytical solutions. If the pH were simply raised in the recycle solution or at the heap, the hypo life might be greatly extended.

Any contact with sulfuric acid or hypochlorite from the pretreatment of the heap will, of course, cause almost instant destruction of hypo and is to be avoided as completely as possible.

I also found a reference in the Ency. Chem Tech. 1, 14, p. 111, to the effect that ammonium thiosulfate as a substitute for hypo dissolves silver halides much more rapidly, is much easier to recycle efficiently, and has twice the life of the sodium solution. With all these cumulative advantages involving multiple factors, it might merit investigation.

I have also gone through the thiosulfate analysis by preparing an iodine solution by dissolving 1.00g I_2 with 10g KI in a small volume of water and diluting to one liter. It gives a sharp blue endpoint when titrated against thiosulfate solutions plus starch.

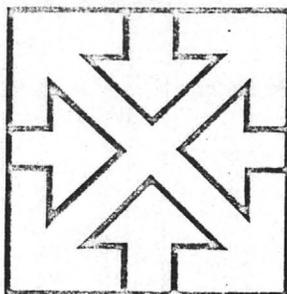
JGD:bm; cc: THS

JSL

321

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



JAB
2-23 4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

Southwestern Exploration Associates, Inc.

June 27, 1979

Dr. John Dean
Box 101 Route 2
North Scituate, RI 02857

Dear Dr. Dean:

This package contains the samples from Tombstone, Arizona that you requested. These are representative splits of the 50 to 80 pound samples that I collected from the heap on Saturday, June 23, 1979. My samples were crushed to 1/4 - 1/2 inch before splitting down to the samples in this package. In an attempt to get representative material, I collected the original samples along traverses of 30 to 50 feet each in areas of immediate interest on the heap. The sample descriptions follow:

- 623791 Mn-rich Emerald Mine rock, South ramp
- 623792 Mn-rich Emerald Mine rock, South End of heap
- 623793 Mn-rich Emerald Mine rock, South End of heap
- 623794 Ls-rich rock middle of heap
- 623795 Ls-rich rock middle of heap
- 623796 Contention Mine rock, North End of heap
- 623797 Contention Mine rock, North End of heap
- 623798 Shale and Quartzite, North ramp

The first three samples could be treated separately, or added together to get a single sample representative of the manganese-rich rock on the south end of the heap.

I should also point out the limitations of the sampling I have done. I collected only the less than four inch fraction, which generally makes up 60 to 80% of the total dump material. Therefore, my sampling represents only the more readily leachable material, and not the total dump material. Likewise, my samples are few in number and were collected from the surface of the dump. Additional sampling, especially at depth through the dump, is needed to properly evaluate the entire dump. However,

Dr. John Dean

2

June 27, 1979

these samples are the most representative collected to date and test results on them will be indicative of the dump as a whole.

Fire assays on my samples are being done by a firm in Tucson, and results may be ready by Friday, June 28, 1979. We are of course saving the sample rejects (crushed to 1/4 - 1/2 inch).

If I can help you in any way, please feel free to call.

Best regards,

Ed Speer
W. Edward Speer

WES:dlr
P-418

2-22 J. A. Bruswe
June 26, 1979

REVIEWED

JUL 4 1979

By J. A. Bruswe

Memo to: Richard F. Hewlett, TEL

From : J. G. Dean

Subject: Silver Leaching with Thiosulfate and Precipitation
with Zinc.

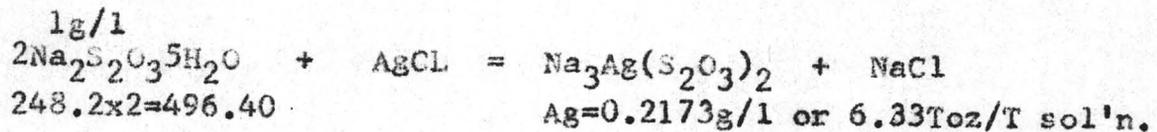
Dear Dick:

We greatly appreciated our visit with you and specially want to express sincere thanks to you and Mickey.

Although I was apprehensive about some aspects of the present thiosulfate process, I want to help you constructively to give it every chance. So I have reviewed the available reference material and carried out a few small scale experiments in the lab.

Since the hypo dissolves primarily the silver halides, I started out by preparing an experimental batch of pregnant liquor by agitating 5 times the calculated amount of old silver chloride with 1 g/l thiosulfate solution.

Dissolution was quite slow, but after a few hours a pregnant solution was obtained somewhat in accord with the following:



A point of special interest is that the starting silver chloride contained some of the black subhalide, Ag-AgCl, due to exposure to light, and this part seemed resistant to dissolution, just as it is in the photographic process.

Precipitation of the silver with zinc powder was rapid as you have observed, but the presence of sulfides was observed. Additional experiments with zinc powder and the fresh hypo solution also suggested that sulfides were being formed, perhaps by reduction of the thiosulfate by the zinc or liberated hydrogen.

To check this point, a sample of the dried precipitate we brought back was treated with dilute sulfuric acid which is supposed to dissolve selectively the zinc, leaving the silver behind. The residue was brown, suggestive dominantly of silver sulfide. No metallic silver particles could be observed under the microscope. Treatment of the brown residue with hot 6N nitric acid slowly dissolved everything but the DE, and addition of normal HCl to the filtrate gave a heavy white precipitate, AgCl.

These observations: the refractory nature of Ag-AgCl, and the precipitation of Ag₂S in place of crystalline silver, might have important implications on the process. Your comments and suggestions for further work will be of special interest.

JGD:bm; cc: THSchloss

R. F. Hewlett

2.

June 26, 1979

P. S.

The composition of the silver precipitate sampled 6/20 was approximately as follows:

Zn + ZnS (6N H ₂ SO ₄ soluble) -----	60.0%
Ag + Ag ₂ S (6N HNO ₃ soluble) -----	8.0
Diatomaceous earth -----	32.0



John G. Dean

SAMPLE SUBMITTAL

TO: JACOBS ASSAY OFFICE
1435 S. 10 AV.
TUCSON, AZ

622-0813

6/26/79
PROJECT 4

FROM: SOUTHWESTERN EXPLORATION ASSOCIATES, INC
4500 E. SPEEDWAY #14
TUCSON, AZ 85712 795-6097

SAMPLE PREP - Crush each sample to 1/4-1/2 inch, split to 1 lb and pulverise, split and handle pulp as usual. Return rejects and pulps

<u>SAMPLE #'S</u>	<u>MATERIAL</u>	<u>ELEMENTS</u>	<u>METHOD</u>
623791	Rock & Fines	Au, Ag	Fire Assay
623792	"	"	"
623793	"	"	"
623794	"	"	"
623795	"	"	"
623796	"	"	"
623797	"	"	"
623798	"	"	"

JACOBS ASSAY
SOUTHWESTERN EXPLORATION ASSOCS.

P. 282
PROJECT 418
6/26/79

<u>SAMPLE #</u>	<u>MATERIAL</u>	<u>ELEMENTS</u>	<u>METHOD</u>
2209	Rock chips	Au, Ag	Fire Assay
2210	"	"	"
2212	"	"	"
2251	"	"	"
2252	"	"	"
2253	"	"	"
2260	"	"	"
2261	"	"	"
2262	"	"	"
2263	"	"	"
2264	"	"	"
2265	"	"	"
2266	"	"	"
2896	"	"	"
2267	BULLION..(small)	Ag	Fire Assay
2268	" (LARGE)	Ag	"

MISC: June 25, 1979. Left Tucson for Tombstone at 1:06 P.M. and arrived in Tombstone at 2:54 P.M. Purpose of this trip is to acquaint myself with problems that have been occurring on the Tombstone project, and specifically to determine what kind of silver will be melted down from a leaching activity conducted over the weekend. This leaching activity has been conducted using hyposolution, specifically for silver within the leach, and specifically within areas 1, 2 and 3, thus 3 on 1, 2 on 2, and 2 on 3 described by Tom Schloster in his visit last week. During this visit, and also carrying complete copies of our financial activities for Dick's use and preparing reports for Tom Schloster, and in transmitting to Dick S.E.A. Daytimer 3 copy memo forms to increase his communication with the Tucson office.

TIME: 3:03 DATE: June 25, 1979
PROJECT NO: 418
FIELD NO:

OFFICE NO:

STATE: Arizona COUNTY:
AREA: Tombstone
T: R: SEC:

FIELD PLOT: Arrive at the south end of the dump. One blue late '60, early '70 vintage sedan and one red as well as a low bed, parked in front of the trailer laboratory, although no visible activity around the lab. The pumps are working and it can be seen that the fluid flow into the barren solution tank is running full bore, I would estimate at 75 to 100 gallons per minute. It is not clear whether this is fresh water make up or barren solution. Dick's car is not in evidence. Several cars parked around the gun factory.
COMMENTS:

MISC:

TIME: 3:06 DATE: June 25, 1979
PROJECT NO: 418
FIELD NO: P-JAB-74-1

OFFICE NO:

STATE: Arizona COUNTY:
AREA: Tombstone
T: R: SEC:

FIELD PLOT:
COMMENTS: Looking north at the plant area.

MISC:

TIME: 3:17 DATE: June 25, 1979
PROJECT NO: 418
FIELD NO: P-JAB-74-2

OFFICE NO:

STATE: Arizona COUNTY:
AREA: Tombstone
T: R: SEC:

FIELD PLOT:

STATE: Arizona COUNTY:

AREA: Tombstone

T: R: SEC:

FIELD PLOT: Photo 7, an effort to show this lack of action on the wiggler sprinklers and photo 8 shows the Cat D6, making an effort to push dump material.

COMMENTS:

MISC:

TIME: 3:35

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-9

OFFICE NO:

STATE: Arizona COUNTY:

AREA: Tombstone

T: R: SEC:

FIELD PLOT:

COMMENTS: The acid tanks with connecting pipes sawn in half, obviously no longer active as of this date.

MISC:

TIME: 3:36

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-10

OFFICE NO:

STATE: Arizona COUNTY:

AREA: Tombstone

T: R: SEC:

FIELD PLOT:

COMMENTS: Interior of the acid tank, showing all epoxy lining material having been eaten away and the tank slowly being eaten by the sulfuric acid. It is only a matter of time until the tank is entirely eaten through, and, in fact, a welding rig is sitting next to the tank and it looks as though one of the spigots had recently been eaten through and had been rewelded. However, I concluded it is simply a matter of time until the tank is full of holes and completely useless. Obviously, plastic pipe is being sawn loose and reclaimed for some other use.

MISC:

TIME: 3:44

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-11

OFFICE NO:

STATE: Arizona COUNTY:

AREA: Tombstone

T: R: SEC:

FIELD PLOT:

COMMENTS: Plant with filters next to semi-truck body, barren solution running into barren tank and thence overflowing into preg

tank, again diluting pregnant solution.

MISC:

TIME: 3:45

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-12

OFFICE NO:

STATE: Arizona

COUNTY:

AREA: Tombstone

T: R:

SEC:

FIELD PLOT:

COMMENTS: Dick arrives at plant. Obviously not working on paper work.

MISC:

TIME:

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-13

OFFICE NO:

STATE: Arizona

COUNTY:

AREA: Tombstone

T: R:

SEC:

FIELD PLOT:

COMMENTS: Dick stirring jerry rig with powered drying oven precepts. Fellow in white hard hat at the plant is obviously not Dusty Escapol(ph) though it may be Ed Rice. I would estimate the pregnant solution coming off of the dump and into the pregnant pond is probably about 25 to 30 gallons a minute with a like amount of material being shunted off into the pregnant pond so that the total volume is maybe 60 gpm. Another 25 gpm or more must be fresh water and is being pumped up where possible to the dump.

MISC:

TIME: 3:52

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-14

OFFICE NO:

STATE: Arizona

COUNTY:

AREA: Tombstone

T: R:

SEC:

FIELD PLOT:

COMMENTS: D 6B pushing material onto the lifts #2. Note: proportion of coarse material to fines. Fines is where most of the values are; coarse material is what is going onto lifts.

MISC:

TIME:

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-15

OFFICE NO:

STATE: Arizona
AREA: Tombstone
T: R:

COUNTY:

SEC:

FIELD PLOT:

COMMENTS: Another view of area of cat work in which win rows built up by the Cat are almost all fragments from 3" to 1' in size.

MISC:

TIME:

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-16; P-JAB-74-17

OFFICE NO:

STATE: Arizona
AREA: Tombstone
T: R:

COUNTY:

SEC:

FIELD PLOT:

COMMENTS: Photo 16 shows spray on lifts. My previous note about the sprinklers not working was somewhat inaccurate or for some reason the pumps had been turned down. Dick drove around the edge of the dump to adjust the wigglers and they now seem to be working relatively well. However, as can be seen from this photo and photo 17, coverage of the dump is still not good. Rainbirds would be obviously much better. The reason that the wigglers were gone to was because the Rainbirds dissolved in the acid, which is no longer being used. It is not clear why we don't go back to the Rainbirds.

MISC:

TIME:

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-18

OFFICE NO:

STATE: Arizona
AREA: Tombstone
T: R:

COUNTY:

SEC:

FIELD PLOT:

COMMENTS: See above for description. Note lack of good distribution of leach solution.

MISC:

TIME: 4:07

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-19

OFFICE NO:

STATE: Arizona
AREA: Tombstone
T: R:

COUNTY:

SEC:

FIELD PLOT:

COMMENTS: Looking southeast along Number 1 lift, I suppose, of area #2

310

TIME: 4:52

DATE: June 25, 1979

PROJECT NO: 418

FIELD NO: P-JAB-74-23

OFFICE NO:

STATE: Arizona

COUNTY:

AREA: Tombstone

T: R:

SEC:

FIELD PLOT:

COMMENTS: The interior of the zinc feeder.

DAY/TIMER

Time-Saver

2-19

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712
(602) 795-6097

LETTER

IN REFERENCE TO: *P 418 - Check
disbursement record*

Hand Deliver

FIRST CLASS MAIL INTER-OFFICE

FOR

*R. F. Hewlett, U.S.
SEA Hydromet Inc.
Tombstone, Ariz*

HOW TO USE THIS

DAY/TIMER

Time-Saver

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

DATE: *6/25/79*

*Dick: I herewith transmit to you
all of the check disbursement records for the period
of 3-8-79 to 6-20-79 and checks 1-32 &
starting with an official printed register 1001-1127.
There are 13 pages in these records. Your
signature below shows receipt of the above.*

REPLY

Received R.F. Hewlett

307

~~25 working days~~ / 6/23/79

~~Working days~~

300,000 / Mo. Gross Revenue Budget

<u>Item</u>	<u>weekly</u>
Payroll	\$ 2400
Rent	46 ²⁵
Tele	50
Electric	100
Vehicle	75
Fuel	
Gas	100
Diesel	150
Chemicals	
Hypo	2000
Do Eo (Diatomaceous Earth)	25
Zinc	625
H ₂ SO ₄	280
NaOCl	200
NaCl	350
Smelting	
Borax	300
Soda Ash	100
L.P.	40
Dozer	1750
Royalty	1875
	<hr/>
	10,466. ²⁵

PROJECT 418
TOMBSTONE, ARIZONA

2-18

June 23, 1979

Owe Presently

1. Misc. Supplies

Do Es (RFH)

Sprinklers (RFH)

Fuel

≈ \$ 200

2. 6 Days D-6 Robert Cowan

\$ 1680

3. Mr. Colvin \$ 500

Pump

PVC

Wire

etc.

4. Pond
Liners

\$ 1300

Dozing 6/23/79

Date	Area 1			Area 2			Area 3		
	Doze	Level	Rip	Doze	Level	Rip	Doze	Level	Rip
6/25 Mon	(Lift 1)								
Tue	(Lift 1)	(Lift 1)	(Lift 1)						
Wed	(Lift 2)								
Thurs	(Lift 3)	(Lift 2)	(Lift 2)						
Fri	(Lift 3)	(Lift 3)	(Lift 3)						
Sat		Spray							
Sun									
Mon				(Lift 1)					
Tue				(Lift 2)	(Lift 1)	(Lift 1)			
Wed				(Lift 2)	(Lift 2)	(Lift 2)			
Thurs					Spray			(Lift 1)	
Fri							(Lift 1)	Lift 1 (Lift 1)	
Sat							Lift 2	Level 2 Lift 2	
Sun							Spray		
Mon									
Tue									
Wed									

JMB on
Friday 6/23/79

Activities

FILE P-410 2-17

Work on lifts 1-2-~~3~~ set up test leacher.
exactly like the USBM-Reno for a. N. slope $\frac{1}{2}$ in ore.
^{prep.} & documented proposal of chemistry to be used, & then
wait for approval.
Terminate Dorer for present
don't work on any other pads.

3. Leach ^{lifts} 1-2-~~3~~

4. Melt Daily - ~~to~~ Mail to Tucson Daily
with return receipt requested mail

5. Keep accurate, concise records which ~~are~~ can be checked by any independent professional. This should be done on a form or forms.

Materials balance is the key.
To include but not limited to:

- a. Daily record of dimensions under each $\frac{1}{2}$ tonnage calculated for that run & supporting data measurements etc.
- b. Record of thru put - Hours of leach/shift
- c. Down time etc titrate return type to determine barren strength.
- d. Determining H₂O balance/shift
- e. Weigh out zinc level/shift.

6. WES - Take sample of
a. Emerald Ore - hi MnO₂ ore - from Dump
b. Contention Ore

Get a 1 page memo from RFH specifying his opinion of the best option for leaching Mn Ore

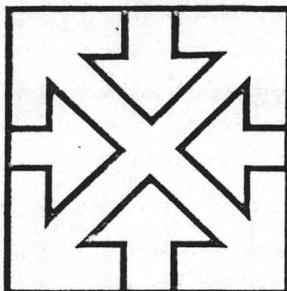
8. Come up with budget for for above.

Objectives of above

1. To document silver production from a specific amount of heap ore, lifts 1, 2, 3.
Processed from 6/22 to 6/27
Fri " wed
2. Have documented budget for the above by 6/23/79
3. Have test leach pads & action plan with proper miner-like record keeping forms, and budget by 6/26/79
4. Have 1 page "best option" report from R.F.H. on metallurgy to use on Mn-Ox ore.

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

2-16

James A. Briscoe, President
Registered Professional
Geologist

**Southwestern
Exploration Associates, Inc.**

FILE

P-418
Tombstone

June 22, 1979

Mr. Richard F. Hewlett
Vice President
S.E.A. Hydromet, Inc.
Nellie Cashman Apts.
Cottage # 2
121 E. 5th
Tombstone, AZ 85638

6/23/79 Transmitted by phone
to RFH, SC #7582 9/19/91 9:19-9:57 AM
by JAB

Re: Tom Schloss, Dr. John Dean Visit - Evaluation of
Progress - Setting of Objectives, Activities, and
Record Keeping for the Next Week and Plans for the
Future

Dear Dick,

Since yesterday afternoon, I have spent approximately eight (8) hours reviewing progress at Tombstone with Tom Schloss and metallurgical consultant John Dean. John was engaged by Tom to help us with what appear to be definite problem areas, but particularly because of unsatisfactory performance at Tombstone to date. Without going into a great deal of detail, we are at least four (4) weeks behind your projections, and 400% over budget.

Our original objectives of Tombstone were to expend in the range of \$25,000 to make insitu tests of your metallurgical techniques, which you warranted would verify the techniques and put us into profitable production with a substantial cash flow. Up to this time, we have:

1. expended approximately \$100,000,
2. changed metallurgical approaches several times with inadequate documentation, and
3. have not scientifically verified nor documented even the negative results, to my knowledge.

Obviously, it is imperative to do the following:

1. Pick one metallurgical test at a time and follow it through to completion, with careful documentation that can be corroborated by other engineering or metallurgical investigators -- negative as well as positive information to be reported in an unbiased manner.
2. Layout the goals and specific objectives of a meaningful, concise, and reproducible metallurgical program.
3. Layout a tight operating budget for such a testing program.
4. Determine a realistic timetable and action plan for the above.

If the above is carefully done and realistic, I am sure that I will be able to endorse it, and I feel that Tom will underwrite it, assuming John Dean's technical approval. Without such a careful re-evaluation and plan, I would have no option but to recommend termination of further work.

The above summarizes in only very brief outline form our problems to date and the intermediate term solutions to these problems. Of even more critical importance is what we do in the next seven (7) days. Tom, John Dean, and I have discussed this in great detail. It is absolutely imperative that you carry out, to the best of your ability, and in the highest professional manner, the following seven-day action plan to meet the stated objectives. I think it is obvious that the continuation of the program depends on this. I think it is also obvious that no changes should be made without documentation and verbal O.K. from Tom and/or myself.

The activities and objectives to be reached are as follows:

ACTIVITIES

1. a) as a maximum, construct the following:

Area #1 - 3 lifts
Area #2 - 2 lifts
Area #3 - 2 lifts

- b) set up test leaches exactly like the USBM-Reno for
1) North slope dump "ore" and 2) Manganese dump
"ore";
 - c) after completion of the above, terminate the dozer
for the present;
 - d) prepare documented proposal of chemistry to be used
and wait for approval.
2. a) do not work on any other pads until written notice from
Tom or myself;
- b) put Dusty in charge of heap. Have him do all physical
work there during the day and have Ed Rice take over
the night shift and report to Dusty. Dusty should
report to you. You are not to take any physical part
of the heap activities but only concern yourself with
engineering work, i.e.:
- 1) chemistry-metallurgy
 - 2) budget
 - 3) engineering and quantification
3. Leach areas 1, 2, & 3.
4. Melt percipitates daily. Mail these to Tucson daily by
return receipt requested mail.
5. Keep accurate, concise, records which can be checked by
any independent professional. This should be done on a
form or forms of your own design, to include, but not
limited to, the following:
- a) daily record of dimensions of dump under leach and
tonnage calculated for that area, plus supporting
data, measurements, etc.
 - b) record of through-put -- hours of leach per shift,
down time, etc.
 - c) titrate return hypo solution to determine barren
strength, and for presence of zinc.

- d) determination of H₂O balance per shift; i.e. H₂O added to replace that lost to evaporation, absorption in dump, or loss through pad.
- e) weigh out of zinc used per shift.

NOTE: Materials balance is the key.

- 6. W. Edward Speer will take sample of:
 - a) Emerald ore -- high MnO₂ ore from dump
 - b) North Ramp ore
- 7. Prepare a two (2) page memo specifying your opinion of the best option for leaching Mn ore.
- 8. Come up with a realistic budget for the above.

OBJECTIVES

- 1. Document silver production from a specific amount of heap ore, specifically from areas 1, 2, & 3, processed from 6/22/79 to 6/27/79.
- 2. Have documented budget for the above by the evening of 6/23/79.
- 3. Have test leach pads (as in Activities, #1b, sections 1 & 2) and an action plan with proper miner-like record keeping forms and budget by 6/26/79.
- 4. Have two (2) page "best options" report on metallurgy to use on Mn Ox ore by 6/26/79.

On or before the dates specified above, mail, by registered, return receipt requested mail, one copy of all paperwork required above to Tom Schloss in New York, one copy to John Dean in Rhode Island, and one copy to myself in Tucson. Also be prepared to discuss all of the material in concise, brief terms on the morning of June 27, 1979.

Richard F. Hewlett
June 22, 1979
Page 5

Dick, I do not expect to have to tell you the details of how to do and document your job. I do expect, at minimum, the above outlined documentation, but it should not be limited to the above. It is your responsibility to do what is necessary for documentation and you will be held accountable for any omissions.

Very truly yours,

James A. Briscoe

JAB:cmd

P-418

cc: Tom Schloss
Dwight Lee
Dr. John Dean



Southwestern
Exploration
Associates

Dick Hewlett

Hand Delivered by
W. Edward Speer

Receipt Signature

R F Hewlett

R. F. Hewlett

6/23/79 WES

4500 E. SPEEDWAY, SUITE 14, TUCSON, ARIZONA 85712 (602) 795-6097

296

DAY/TIMER

Time-Saver

Southwestern Exploration Assoc., Inc.
4500 E. SPEEDWAY, SUITE 14
TUCSON, ARIZONA 85712

(602) 795-6097

LETTER

2-15

IN REFERENCE TO:

P-418 Prospecting Permits

FIRST CLASS MAIL INTER-OFFICE

FOR JAB

HOW TO USE THIS

DAY/TIMER

Time-Saver

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

DATE: June 20, 1979

FOLD

Attached are two (2) copies each of two (2) Prospecting Permits (#73608 & 73609). These are for Secs. 29 & 32 (on the colored map, attached) which S.E.A. acquired in April for the Tombstone Project. Please see CDG's memo of April 13 which outlines a procedure which was followed: i.e., Application No. 73608 - \$680 was paid + \$20 for surety bond; Application No. 73609 - \$1,203.78 was paid + \$20 for surety bond -- Total paid: \$1,883.78 for both sections.

This amount paid covers us for one year only (April 24, 1979 through April 23, 1980) but we have the option to renew each year up to April 23, 1984. Therefore, we gain nothing by letting these slide (or lapse) now. If we wish to retain these permits, you need to sign (two spots on each, at red x's).

Please route all material back to me -- Thanks!

FOLD

P-418

BY

Chris
Chris

FOLD

REPLY

DATE:

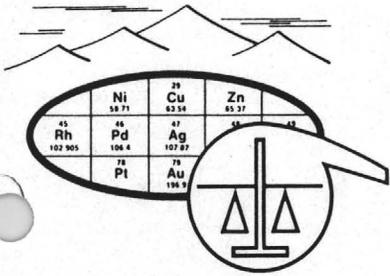
6/21/79

I've signed the above documents. Please pass xerox copies of them on to Tom Schloss & Dwight Lee at FAMCO. Until further notice, we won't be acquiring any more land at Tombstone per TEW's file memo # , a copy of which also pass on to FAMCO.

J.B.

BY

295



SKYLINE LABS, INC.
 P.O. Box 50106 • 1700 West Grant Road
 Tucson, Arizona 85703
 (602) 622-4836

FILE Tombstone - 2-14

Charles E. Thompson
 Arizona Registered Assayer No. 9427

 William L. Lehmbeck
 Arizona Registered Assayer No. 9425

 James A. Martin
 Arizona Registered Assayer No. 11122

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au oz/ton	Ag oz/ton						
1	A Crust	0.005	0.60						
2	Crust	0.010	1.13						
3	Fe Crust	0.005	0.46						
4	Fe C	0.010	0.95						
5	Emerald	0.010	2.87						
6	N. Ramp	0.010	2.95						
7	T.C. Doz	0.005	0.16						
8	Mn 1	0.020	1.56						
9	Mn 2	0.110	11.67						
10	Mn 3	5.480	0.82						

TO: SOUTHWESTERN EXPLORATION ASSOCIATES
 4500 E. Speedway Blvd., Suite 14
 Tucson, Arizona 85712
 Attn.: Mr. Ed Speer
 cc: Mr. Richard Hewlett
 Tombstone, AZ 85638

REMARKS:
 Single fire assay
 Project: 418
 P.O. #4611

CERTIFIED BY:

DATE REC'D:
 6/4/79

DATE COMPL.:
 6/19/79

JOB NUMBER:
 TFO 055

294

Stevenson Bishop McCreddie Inc.

122 East 42nd Street

New York, New York 10017

212 - 697-3390

2-13

*Copy to
✓ Jim Bruneau*

*Reviewed
x [Signature]*

JUL 5 1979

By

[Signature]

June 18, 1979

TO: LIMITED & SPECIAL LIMITED PARTNERS
MINERAL EXPLORATION COMPANY, LTD.

FROM: THE GENERAL PARTNERS

PROGRESS REPORT

Gentlemen:

We are pleased to make our 2nd Quarter distribution for MECL. With a little luck, we will be able to continue our rate of payment through the end of the year.

As a result of the increase in price, your partnership has been able to retire \$400,000 of the Morgan loan this year: \$300,000 of this year's payment and \$100,000 which was not able to be paid in the last year plus interest through September 30, 1979. In addition, MECL has retired \$125,000 of the \$250,000 note to Merchant-Sterling Corporation plus interest through July 1, 1979 on that note. This leaves the partnership with a \$125,000 note payment to Merchant next year and a final \$300,000 reserve payment to the Morgan Bank. After these payments, MECL will receive the next \$2,968,000 directly before resuming the 14/49:35/49 ratio of payments from Sterling Mineral Venture.

With this distribution to you in the 2nd Quarter, your partnership will have paid out to the partners \$370,000 so far this year and we would expect to have a distribution similar to the current distribution in the 3rd and 4th Quarters. The level of the 3rd and 4th Quarter distribution, however, is highly dependent on the price of mercury throughout the remainder of the year.

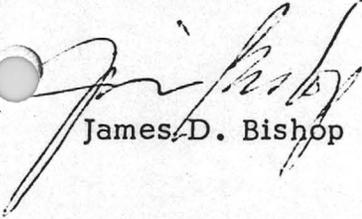
We know it has been a long wait to achieve these type of results, which are in keeping with our original projections, and we hope that the world market holds in this area, which we believe is the level necessary for other mines throughout the world to make a normal profit without government subsidy.

Mineral Exploration Company, Ltd.
Progress Report
June 18, 1979

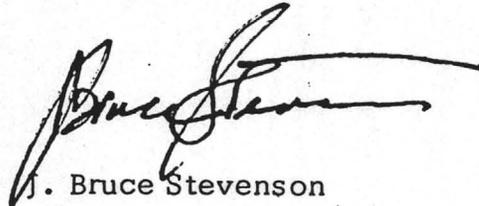
In the meantime, we will keep you abreast of any developments and, should you have any questions, we would look forward to discussing them with you in more detail.

With best personal regards,

Sincerely,



James D. Bishop



J. Bruce Stevenson

js
enclosure

RECEIVED JUN 18 1979

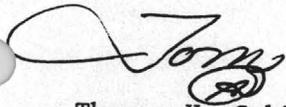
June 13th, 1979

Dear Jim:

Enclosed please find the preliminary agreement
between TEI and John Dean.

I look forward to seeing you next week.

Very truly yours,



Thomas H. Schloss
Chairman of the Board

THS/avc

Encl.

FAMCO /

1700 Broadway • New York, New York 10019 • (212) 247-0420

291

A G R E E M E N T

REVIEWED

JUN 19 1979

By *JMB*

BY and BETWEEN a joint venture of TOMBSTONE EXPLORATION, INC. at 1700 Broadway, New York, New York and AUSTIN EXPLORATION AND MINING CORPORATION hereinafter referred to as the combined TEI.

and

John G. Dean, Chemical and metallurgical consultant of N. Scituate, R.I., hereinafter referred to as DEAN,

and

Whereas TEI is concerned with processing ores and related materials, particularly for the recovery of gold and silver by heap leaching,

and

Whereas DEAN is specially qualified both by training and experience in the processing of ores, particularly for the recovery of precious and other metals by extractive chemical metallurgy,

It is agreed by the parties as follows:

1. PROGRAM AND OBJECTIVE:

A. DEAN will consult with Richard Hewlett and report to TEI on the following areas:

1. Will devise adequate scientific procedures for determining reliable test information for the laboratory in Tombstone.
2. Deep chemistry analysis of effectiveness of extraction processes on different ore types to facilitate the processing of the gold, silver, and other ores by TEI.
3. Aid in interpretation and summation of data from the lab to arrive at economic alternatives and decisions to be used in the preparation of the heap leaching process.

2. SCHEDULE AND TERMS

A. DEAN will devote a minimum of two days a month to this program and will reserve an additional two days a month to be applied flexibly in accord with the needs of the project with the written agreement of the other party.

B. DEAN's activities will be based at his R.I. facilities, but time will be partially made available for work elsewhere in accord with the reasonable needs of the project.

C. TEI will pay DEAN at the rate of \$300.00 (three hundred dollars) a day and will also pay expenses associated with work such as for travel, special services, supplies, equipment, etc., if agreed to in advance, in writing or by phone, followed up by a confirming letter.

D. This Agreement will become effective on the date of execution and will extend on a monthly basis for a minimum period of six months. It will continue thereafter subject to termination by either party on giving one month advance notice in writing.

3. RIGHTS AND LIABILITIES

A. DEAN agrees to keep confidential all of TEI's confidential business and technical information as long as it shall retain a degree of confidentiality giving value to its protection from competitors. All information disclosed

by TEI to DEAN in the performance of this Agreement will not be without TEI's prior written consent to any third party or used by DEAN for DEAN's benefit. This Agreement shall not apply to any information which is now public knowledge; which is properly provided to DEAN without restriction by an independent third party; or which DEAN can show already in his possession at the time of receipt from TEI. It is understood however, that the similarity or identity of such confidential information discussed above to any information already within the public domain shall be considered and treated as "confidential information".

B. DEAN recognizes an obligation to perform all work on a best efforts professional basis, but it is agreed that DEAN cannot and will not accept liability or responsibility for the methods used, the character of the experiments and tests carried out, the results obtained, the conclusions drawn, casualties drawn, casualties to personnel or property, or for any use which shall be made of the work performed. TEI will protect and save DEAN harmless from any claim arising out of the program.

IN WITNESS whereof, the parties hereto have caused this Agreement to be executed in duplicate this _____ day of _____, 1979.

BY: Dean
John G. Green, Ph.D.
Chemical & Metallurgical
Consultant

BY: _____
Thomas H. Schloss
TEI

SOUTH-WESTERN
EXPLORATION ASSOCIATES
6783 CAMINO PRINCIPAL
TUCSON, ARIZONA 85715

(602) 885-2319

DAY/TIMER

Time-Saver

LETTER

2-11

IN REFERENCE TO: *TOMBSTONE PROJECT*

FIRST CLASS MAIL INTER-OFFICE

FOR

JAB

HOW TO USE THIS

DAY/TIMER

Time-Saver

LETTER TO SAVE TIME.

Type or write your reply in the space below. Then mail the white copy to us and keep the pink copy for your files. You'll save time and effort, and we'll have your answer much faster! Thank you.

MESSAGE

TUESDAY

DATE *6/12/79*

FOLD

Jim,

Tom Schloss wants you to call him at home the evening you return to Tucson. He wants to briefly update you on developments in the Tombstone Project.

SIGNED

ED

REPLY

DATE *6/14/79*

Thanks

Don 6/13/79

TC # 7524

JAB

SIGNED

288

2-10
RECEIVED JUN 11 1979

June 5th, 1979

FIRST NATIONAL BANK OF ARIZONA
University Medical Office
Tucson, Ariz. 85712

Gentlemen:

Enclosed please find check # 30051 in the amount
of \$3,500.00 to be deposited in the following acct.

S.E.A. HYDROMET T.H.L. TRUST
ACCT. # 957-06641

Thank you for your attention and consideration
regarding this request.

Sincerely,

Tom Schloss
Thomas H. Schloss
Chairman of the Board

THS/avc

REVIEWED

JUN 15 1979
By *[Signature]*

FAMCO / 1700 Broadway • New York, New York 10019 • (212) 247-0420

287

RECEIVED JUN 11 1979

2-9

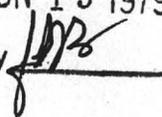
FAMCO/

1700 Broadway • New York, New York 10019 • (212) 247-0428

June 4, 1979

REVIEWED

JUN 15 1979

By 

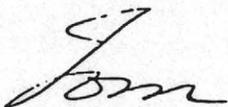
Mr. Bill Height
P.O. Box 1445
Grand Island, Nebraska 68801

Dear Bill:

Enclosed please find a check in the amount of \$7,500.00.

This check was supposed to go out on Friday, but did not go out until today.

Sincerely,



Thomas H. Schloss
Chairman of the Board

THS/avc

Encl.

286

MAY 1979

Agreement between JAMES BRISCOE hereinafter called JAB and THOMAS H. SCHLOSS, DWIGHT E. LEE AND FAMCO or other investors designated by SCHLOSS OR LEE (hereinafter called INVESTORS).

Investors desired to invest and JAB desires to sell present interest and future interest on the following basis in the mineral rights described below in the following manner:

<u>DOLLARS INVESTED</u>	<u>% OWNERSHIP IN MINERAL AREA</u>	<u>TIMING OF CASH TRANSFER</u>
\$ 25,000	25%	on signing
50,000	30%	when required but not less than 14 days from signing
75,000	35%	
100,000	40%	by May 31, 1979
125,000	45%	
150,000	50%	
175,000	55%	
200,000	60%	

MINERAL RIGHTS

Mineral rights shall include but not be limited to the rights listed in the preliminary draft of lease agreement dated February 7, 1979, between TOMBSTONE DEVELOPMENT COMPANY (hereinafter referred to as either Lessor or TDC) and KARIN LAKE EXPLORATION COMPANY (hereinafter referred to either as Lessee or JAB). JAB intends to develop the patent and unpatent claims described in the TDC agreement and including the 200 acres of certain claims situated in the immediate vicinity of the townsite of Tombstone. Those claims consist of the Content, Cocopah, North Point, Contentment, Empire, Tranquil, Silver Belt, Silver Red, Contention, New Year, Cincinnati, Head Center, Yellow Jacket and Flora Morrison claims plus the Vigna Mine Tour claims. Also included above, but not specifically mentioned is the heap located on the TDC property.

Although the lease speaks of surface rights it is understood to mean for the agreement, surface rights as well as underground mining if the economics warrant. We have the right to clarify or correct or

perfect any inconsistencies that may be present in the current TDC lease. What may be part of the same ore body or offset from the TDC are the Tombstone Extension, Tombstone Mineral Reserve (TMR), and the State of Maine area. The State of Maine area and other claims are chiefly owned by the Escapules and concern only the T2001 underground ore zones on a joint venture with the Escapules. The Seth Horn and Robbers Roost area are potential porphyry copper targets. Although it is not planned at this time to explore or mine the porphyry copper area it is understood that at a later time when an agreement is reached with owners of these areas, investors would participate in the same manner through their ownership in the TDC agreement.

SIGNING

A. Upon signing of this agreement \$25,000 will be paid to JAB to be used to start the chemical process plant defined. These funds will pay for the initiation of spray leaching. Any resulting cash flow and or remaining part of the \$25,000 will be used to lease a crusher to process certain parts of the heap, to verify the process and determine what the cost will be based on the type of ore to be processed. After these results have been obtained and analyzed then a decision will be made to continue or terminate the program. Attachment 1 is the current estimate for the use of funds for the first \$25,000.

B. If continued, an additional \$25,000 to \$50,000 will be used to sample the heap if appropriate, and to increase the daily capacity of the heap plus to start building the plant for the leaching operation. Based upon these cost configurations a decision will be made to continue or terminate.

C. The rest of the funds will be raised by Memorial Day, but credited as raised and needed and used according to JAB directive to: first, process the heap; second, to sample and drill the open pit potential; and third, to secure the mineral rights of the areas currently not under contract at this time.

DEPOSIT OF FUNDS, DISBURSEMENT AND BOOKKEEPING

Funds will be deposited to the THL (Tombstone Heap Leach) Trust account #957-06641 1st National Bank of Arizona University Medical Branch, Tucson, Arizona.

All disbursements will be by the purchase order system used throughout S.E.A., Inc. organization.

During the expenditure of the first \$25,000, Phase A items over \$100 will be approved by J. A. Briscoe.

During Phase B, the expenditure of the second 25 to 50 thousand dollars, items over \$250 will be approved by J. A. Briscoe.

J. A. Briscoe, singly; bookkeeper J. E. Talley and Business Service Manager C. M. Dodson, jointly; will have capability to write checks against this THL checking account.

The Day Timer record keeping system, in use throughout the S.E.A., Inc. organization, will be used to keep time and expense records for all employees of the Tombstone Leach Project.

Bills in support of the expenses for the operation will be submitted to the partnership on a bimonthly basis.

Books will be kept on the operation, with these subject to examination by the partners during normal working hours.

ATTACHMENT 1

Required capital investment for the slope leach is as follows:

A.	Power hook-up		\$2400
B.	Electric		2000
C.	Pump installation/electric		1000
D.	Water line installation		2040
E.	Spray lines/manifolds		100
F.	Directional rainbirds		80
G.	Preg pond		100
H.	Laboratory		100
I.	Building		200
J.	Plants		2200
K.	Tanks		1000
L.	Chemicals		
1.	Resin-SR-3	100#	650
2.	Lime	1000#(.087)	87
3.	Salt		
4.	NaOCl	5-55 gal	247.50
5.	Na ₂ S ₂ O ₃	300#	73.80
6.	NaCN	1000#	561.50
7.	Na ₂ S	400#	99.20
8.	Powd. Zinc	100#	66.20
M.	Insurance and bond		4500
N.	Management		4000
O.	Labor		2000
P.	Misc.		<u>1495</u>
			25,000

Crushing

Rate

Crushing

Duration

200 Tons per Day

400 "

600 "

1000 "

3000 "

250 months

125 "

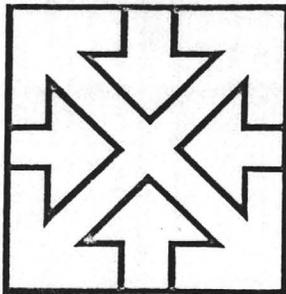
83.3 "

50 "

16.7 "

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



2.8

4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

Southwestern Exploration Associates, Inc.

May 30, 1979

Mr. Richard F. Hewlett
Nellie Cashman Apts.
Cottage #2
121 E. 5th
Tombstone, AZ 85638

Dear Dick,

In view of the situation yesterday, May 29, with the three (3) returned checks (two of your own and one of S.E.A. Hydromet's), Jim has directed that no more expenses for the Tombstone Project (or any other future projects) be paid for out of any personal accounts. The normal channels at S.E.A. require a Purchase Order; therefore, all future purchases for the job must have Purchase Orders prior to purchase and all receipts must be returned to the S.E.A. office.

In regard to the \$2,500 which was deposited to your account on Friday, May 25, we are requesting that all receipts for items already purchased be returned to the front office and that a check for the remaining amount be made out to the S.E.A. Hydromet-THL Trust account and sent to our office without delay. (Receipts totaling \$817.92 of this \$2,500 were hand delivered to our office on May 23.)

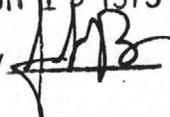
We regret having to handle the Tombstone job in this manner, but it is the only way we can prevent incidents such as yesterday's from occurring. In a telephone conversation this morning, Dwight Lee approved this decision as the only logical alternative.

Talk to you soon,


Christine M. Dodson

REVIEWED

JUN 15 1979

By 

/cmd
P-418

279

FAMCO/

1700 Broadway • New York, New York 10019 • (212) 247-0428

RECEIVED JUN 2 1979

2-7
XAB

REVIEWED

JUN 14 1979

By 

May 25th, 1979

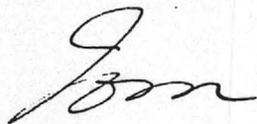
Mr. James Briscoe
SOUTHWESTERN EXPLORATION ASSOC.
4500 E. Speedway
Suite 14
Tucson, Ariz. 85712

Dear Jim:

I appreciate your letter of May 22, 1979. Our ability to proceed based upon financial considerations rather than legal, makes this project run more smoothly.

I hope you had a good trip to Japan and both Dwight and I look forward to hearing all about it upon your return.

Very truly yours,



Thomas H. Schloss
Chairman of the Board

cc: Mr. Leo Smith

THS/avc

Encl.

May 22, 1979

Mr. Thomas H. Schloss
Chairman of the Board
FAMCO
1700 Broadway, 22nd Floor
New York, N. Y. 10019

Re: Project 418 - Amendment by Mutual Agreement
of Letter of Agreement of March 7, 1979

Dear Tom:

As per your telephone call to me at my room (1194) in the Los Angeles Hilton Hotel, 5/22/79, from 6:36 to 7:37 A. M. California time, we have agreed to extend our Letter Agreement of March 7, 1979 in the following way:

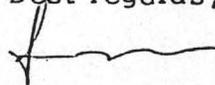
WHEREAS the March 7, 1979 Letter of Agreement between James A. Briscoe and Thomas H. Schloss - Dwight E. Lee was signed 60 days ago, and that because of various circumstances beyond the control of both parties, no Joint Venture Agreement mentioned in that letter has been consummated, NOTICE is hereby given that it is the intent of both parties to continue under that letter of March 7, 1979 until the Joint Venture Agreement is consummated.

In paragraph 6 of the March 7, 1979 letter the date referred to as 5/31/79 for the contribution of \$100,000 minimum capital to achieve 40% interest shall be changed to: "unspecified date dictated by the requirement of capital" to achieve that same interest.

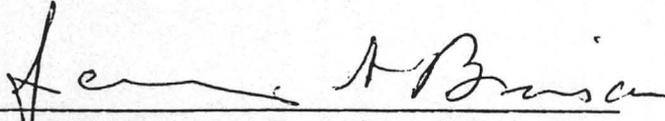
Our signatures below indicate agreement to the above.

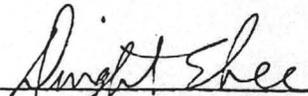
I'll look forward to working toward completion of the Joint Venture Agreement upon my return from Japan in about three weeks.

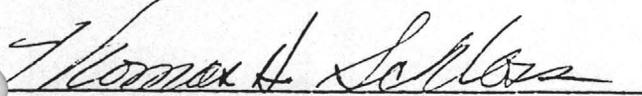
Best regards,


James A. Briscoe

SIGNATURES INCLUDING
AGREEMENT TO THE ABOVE:


James A. Briscoe, President S.E.A. Inc.


Dwight E. Lee, President FAMCO


Thomas H. Schloss, Chairman of the Board FAMCO

2-7

May 22, 1979

Mr. Thomas H. Schloss
Chairman of the Board
FAMCO
1700 Broadway, 22nd Floor
New York, N. Y. 10019

Re: Project 418 - Amendment by Mutual Agreement
of Letter of Agreement of March 7, 1979

Dear Tom:

As per your telephone call to me at my room (1194) in the Los Angeles Hilton Hotel, 5/22/79, from 6:36 to 7:37 A. M. California time, we have agreed to extend our Letter Agreement of March 7, 1979 in the following way:

WHEREAS the March 7, 1979 Letter of Agreement between James A. Briscoe and Thomas H. Schloss - Dwight E. Lee was signed 60 days ago, and that because of various circumstances beyond the control of both parties, no Joint Venture Agreement mentioned in that letter has been consummated, NOTICE is hereby given that it is the intent of both parties to continue under that letter of March 7, 1979 until the Joint Venture Agreement is consummated.

In paragraph 6 of the March 7, 1979 letter the date referred to as 5/31/79 for the contribution of \$100,000 minimum capital to achieve 40% interest shall be changed to: "unspecified date dictated by the requirement of capital" to achieve that same interest.

Our signatures below indicate agreement to the above.

I'll look forward to working toward completion of the Joint Venture Agreement upon my return from Japan in about three weeks.

Best regards,

James A. Briscoe

SIGNATURES INCLUDING
AGREEMENT TO THE ABOVE:

James A. Briscoe, President S.E.A. Inc.

Dwight E. Lee, President FAMCO

Thomas H. Schloss, Chairman of the Board FAMCO

276

May 22, 1979

Mr. Thomas H. Schloss
Chairman of the Board
FAMCO
1700 Broadway, 22nd Floor
New York, N. Y. 10019

Re: Project 418 - Amendment by Mutual Agreement
of Letter of Agreement of March 7, 1979

Dear Tom:

As per your telephone call to me at my room (1194) in the Los Angeles Hilton Hotel, 5/22/79, from 6:36 to 7:37 A. M. California time, we have agreed to extend our Letter Agreement of March 7, 1979 in the following way:

WHEREAS the March 7, 1979 Letter of Agreement between James A. Briscoe and Thomas H. Schloss - Dwight E. Lee was signed 60 days ago, and that because of various circumstances beyond the control of both parties, no Joint Venture Agreement mentioned in that letter has been consummated, NOTICE is hereby given that it is the intent of both parties to continue under that letter of March 7, 1979 until the Joint Venture Agreement is consummated.

In paragraph 6 of the March 7, 1979 letter the date referred to as 5/31/79 for the contribution of \$100,000 minimum capital to achieve 40% interest shall be changed to: "unspecified date dictated by the requirement of capital" to achieve that same interest.

Our signatures below indicate agreement to the above.

I'll look forward to working toward completion of the Joint Venture Agreement upon my return from Japan in about three weeks.

Best regards,

James A. Briscoe

SIGNATURES INCLUDING
AGREEMENT TO THE ABOVE:

James A. Briscoe, President S.E.A. Inc.

Dwight E. Lee, President FAMCO

Thomas H. Schloss, Chairman of the Board FAMCO

275

May 22, 1979

Mr. Thomas H. Schloss
Chairman of the Board
FAMCO
1700 Broadway, 22nd Floor
New York, N. Y. 10019

Re: Project 418 - Amendment by Mutual Agreement
of Letter of Agreement of March 7, 1979

Dear Tom:

As per your telephone call to me at my room (1194) in the Los Angeles Hilton Hotel, 5/22/79, from 6:36 to 7:37 A. M. California time, we have agreed to extend our Letter Agreement of March 7, 1979 in the following way:

WHEREAS the March 7, 1979 Letter of Agreement between James A. Briscoe and Thomas H. Schloss - Dwight E. Lee was signed 60 days ago, and that because of various circumstances beyond the control of both parties, no Joint Venture Agreement mentioned in that letter has been consummated, NOTICE is hereby given that it is the intent of both parties to continue under that letter of March 7, 1979 until the Joint Venture Agreement is consummated.

In paragraph 6 of the March 7, 1979 letter the date referred to as 5/31/79 for the contribution of \$100,000 minimum capital to achieve 40% interest shall be changed to: "unspecified date dictated by the requirement of capital" to achieve that same interest.

Our signatures below indicate agreement to the above.

I'll look forward to working toward completion of the Joint Venture Agreement upon my return from Japan in about three weeks.

Best regards,

James A. Briscoe

SIGNATURES INCLUDING
AGREEMENT TO THE ABOVE:

James A. Briscoe, President S.E.A. Inc.

Dwight E. Lee, President FAMCO

Thomas H. Schloss, Chairman of the Board FAMCO

274

RECEIVED MAY 21 1979

2-6

COREY & KITTLE, P. C.

ATTORNEYS AT LAW

BARRY M. COREY
JAY S. KITTLE
PATRICK J. FARRELL
THOMAS A. STOOPS

SUITE 509 TRANSAMERICA BUILDING
177 NORTH CHURCH AVENUE
TUCSON, ARIZONA 85701
(602) 882-4994

May 18, 1979

Southwestern Exploration Associates
4500 East Speedway, Suite 14
Tucson, Arizona 85712

Attn: James A. Briscoe
Re: Tombstone Heap Leach Project

Dear Jim:

Enclosed herewith is a copy of the brief letter I received from Leo M. Smith dated May 14, 1979.

Sincerely yours,

Jay

Jay S. Kittle

JSK:ceg
enclosure

2.5

VERITY, SMITH & KEARNS, P. C.

ATTORNEYS AT LAW
902 TRANSAMERICA BUILDING
177 NORTH CHURCH AVENUE
TUCSON, ARIZONA 85701

TELEPHONE
(602) 623-6961

VICTOR H. VERITY
LEO N. SMITH
DESMOND P. KEARNS
LARRY D. CLARK
PATRICIA G. MUNGER
REBECCA SITTERLY

May 14, 1979

Mr. Jay S. Kittle
Corey & Kittle
Attorneys at Law
507 Transamerica Building
Tucson, Arizona 85701

Re: Tombstone Heap Leach Project

Dear Jay:

I have reviewed the modifications sent with your letter of May 9. Since a number of the changes are substantive, I will be back in touch after my clients have had a chance to digest the same.

Very truly yours,

Leo N. Smith

LNS/dmd

cc: Thomas H. Schloss
Dwight E. Lee

RECEIVED MAY 15 1979

272



BRUCE F. HABBITT
GOVERNOR

Arizona
State Land Department

1624 WEST ADAMS
PHOENIX, ARIZONA 85007
602 - ~~255-4631~~ 255-4631

May 15, 1979

RECEIVED MAY 16 1979



OFFICE OF
STATE LAND COMMISSIONER

John M. Little, Acting

Southwestern Exploration Associates, Inc.
4500 E. Speedway, Suite 14
Tucson, Arizona 85712

Re: PP-73608 & PP-73609

Gentlemen:

On May 1, 1979 the Restoration and Damage Bonds for the above referenced prospecting permit applications were returned to you for signature.

Please sign and return them to this Department immediately.

Yours truly,

Lee S. Miller,
Land Case Examiner

Ret'd
5/15/79
via Ret. REC.

OPERATING AGREEMENT

(No Change)

W I T N E S S E T H:

(No Change)

1. Definitions

(a) (No Change)

(b) "Non-Operators" shall mean TEI and AEM, together with their respective successors and assigns, including additional equity owners, if any.

(c) "Area of Interest" shall mean the following described area in Cochise County, Arizona:

(i) those certain areas delineated in the maps attached hereto as Exhibit D;

(ii) (No Change)

(iii) (No Change)

(d) (No Change)

(e) (No Change)

(f) (No Change)

(g) (No Change)

(h) (No Change)

(i) (No Change)

(j) "Exploration" or "Exploration Operations" when used herein shall refer to the activity or work of prospecting and searching for ores and minerals on, in or under the Project Properties and drilling, examining, measuring and sampling a mineral deposit in order to gain knowledge of the size, shape, position and characteristics to determine the value of the deposit and all other activity or work performed outside a Development Block.

269

(k) (No Change)

(l) (No Change)

(m) (No Change)

(n) (No Change)

(o) (No Change)

(p) (No Change)

(q) "Exploration Block" shall mean such portions of the Project Properties so designated for intensive exploration operations which might lead to the subsequent designation of such Properties as a Development Block.

2. (No Change)

3.

(a) (No Change)

(b) Unless this Agreement sooner terminates pursuant to the provisions of Section 24 below, the undivided interest of TEI in and to the Project and in and to the Project Properties shall increase in relation to the amounts initially contributed by TEI to the Project, and the interest of AEM shall decrease in a corresponding amount, pursuant to the following schedule:

268

200,00

Cumulative Funds Furnished to the Project by TEI*	Undivided Interest of TEI	Funding Intervals
\$ 75,000.00	35%	**
\$100,000.00	40%	**
\$125,000.00	45%	**
\$150,000.00	50%	**
\$175,000.00	55%	**
\$200,000.00	60%	***

40

24%

By 5/31/79

*Cumulative Funds shall include all funds heretofore contributed by TEI and by its predecessor in interest pursuant to that certain letter agreement dated March 7, 1979, between Thomas H. Schloss and Dwight Lee (predecessors in interest to TEI) and James A. Briscow.

**Upon the voluntary contribution by TEI or within seven days of call of project in accordance with approved expenditure plans.

*** Upon voluntary contribution by TEI or within seven days of call of project in accordance with approved expenditure plans, but in any event no later than September 30, 1979.

(c) (No Change)

(i) The Project shall make capital calls at intervals no more frequent than twenty (20) days per call, all subject, however, to the provisions of subparagraph (v) below:

(ii) (No Change)

(iii) (No Change)

(iv) (No Change)

(v) (No Change)

(vi) If TEI acquires less than 50.1% undivided interest, and if the Project or if AEM elects to proceed to obtain additional outside funding, it is agreed and understood by TEI that its undivided interest in the Project may be subject to further reduction (which reduction shall not reduce the undivided interest of TEI to not less than the percentage that contributions made by TEI bears to the total amount contributed to the Project). As an example of the maximum reduction in TEI's undivided interest, assume that TEI were to contribute \$100,000.00; assume further that at the time of computation of the reduction the total contributions by TEI, AEM and any outside funding totalled \$1,000,000.00; in such case, TEI's undivided interest would be reduced to no less than $100,000/1,000,000$ (10%) undivided interest. If TEI's undivided interest in the Project is thus reduced to 10% or less, TEI shall be obliged to relinquish its undivided interest to the other parties in the Project in return for a 10% net profit interest as described in Section 11 (c) below.

(vii) For purposes of computing the total contributions as described in paragraph (vi) above, the contribution of AEM shall be assigned a value of \$133,333,33;

(d) (no change)

4. Project Plans (no change)

(a) (no change)

(b) (no change)

(c) Until such time as capital contributions by TEI equal or exceed \$200,000.00, each party shall communicate to Operator and the other Party in writing within seven (7) days after receipt of a Plan approved by the Operating committee, its approval or disapproval

260

of the proposed Plan. After such time as capital contributions by TEI equal or exceed \$200,000.00, each party shall communicate to Operator and the other party in writing within thirty (30) days after receipt of a proposed Plan, its approval or disapproval of the proposed Plan. Failure to reply shall constitute an election not to commit to the Plan. Except as set forth below, no Plan shall become effective without the approval of both parties. If any party or parties elect not to commit to such Plan, such Plan shall not become effective nor be carried out unless a party elects to proceed with the Plan for its own account, subject to the provisions of section 11 below.

5. Operating Committee

An Operating Committee comprised of two representatives of each of the non-operators shall be established. Each party may designate one or more alternates to serve in the absence of each of the designated representatives. The names of the designated representatives and of any alternates shall be filed in writing with the Operator. Each representative shall have a vote equal to one-half of that percentage interest owned by the party which he represents. Except as otherwise specifically provided in this Agreement, decisions of the Operating committee shall require the approval of those representatives representing a majority interest in the Project. Meetings of the Operating Committee may be held by telephone provided all members of the Operating Committee participate simultaneously by a conference call, and may be called by the Operator or by the representative of any of the parties. The Operating Committee shall meet at no less than semi-annual intervals at the Project's operations office (it being anticipated that such office shall be located either in Tombstone or in Tucson, Arizona). A party may change its representative (or any alternate representative) by notice to the Operator and to the other parties in writing. All decisions relating to the time and manner of distribution of Project proceeds shall be made by

the Operating Committee. Subject to the provisions of Section 3, any calls upon the parties for funds or advances to the Project shall also be made by the Operating committee. All reports from Operator shall be directed to all of the members of the Operating Committee. No business shall be transacted by the Operating Committee without all members participating.

6. (no change)

7. Land Acquisition

All interest heretofore acquired by the parties hereto or their agents within the Area of Interest shall be subject to the terms of this Agreement. Any interests within the Area of Interest hereafter acquired during the term of this Agreement shall be acquired by the Project pursuant to a Plan or pursuant to the consent of all of the Non-Operators and the acquisition costs shall be Project costs. Nevertheless, interests within the Area of Interest may be acquired by less than all the Non-Operators without the consent of the non-committing parties subject to the provisions of Section 11 below. In the event any party hereto proposes to acquire any additional lands or mineral rights within the Area of Interest, such party shall notify the other parties of such proposal by written notice setting forth in such notice a description of the lands or interests, costs of acquisition, and the facts upon which the proposing party bases its conclusions that such lands should be acquired by the Project. During the term of this Agreement, Operator shall not acquire any interest within the Area of Interest for its own account without first obtaining the prior written approval of all of the parties.

8. (WE SUGGEST DELETING THIS SECTION)

(If all the parties wish to terminate or dispose of the Projects' interest in a certain area, they can agree to do so. If only some of the parties wish to dispose of their interest in a certain area, they may do so pursuant to the provisions of Section 12)

9. Operator's Powers and Rights

In accordance with the terms and conditions of each effective Plan, Operator shall have full, complete and exclusive control, charge and supervision of the Project Properties and the personal property included in the Project and all Project Operations conducted thereon. Operator shall conduct Project Operations to the best of its ability and in accordance with the terms and conditions of each effective Plan using modern techniques and good and economical mining practice. All operations shall be conducted with due regard for the development and preservation of said Project Properties and Project capital and in keeping with applicable federal, state and local laws and ordinances and regulations. Operator shall conduct its operations hereunder as an independent contractor and all work performed and equipment furnished by Operator shall at all times be in Operator's direct control and supervision. Pursuant to the provisions of each Plan, Operator shall select the means, manner and method of performing Project Operations. Operator shall abide by directions from the Operating Committee as to the end results to be accomplished, but Operator shall assume the sole responsibility for directing its employees and equipment as to the manner and means of accomplishing the same.

NOTE: It is the position of TEI that the parties to the Agreement are adequately protected by the insurance required in Section 13, and that TEI should not be required to be a co-insurer.

- 10. (no change)
- (a) (no change)

263

(b) (No Change)

(c) to keep the Project Properties free from liens and encumbrances occasioned by its operations hereunder, except only the lien hereinafter granted to Operator, provided that adequate funds are provided Operator to discharge obligations which might occasion such liens.

(d) to furnish the Operating Committee on or before the 20th day following the close of each calendar month with a statement of minerals produced from the Project Properties.

(e) to pay from available funds all royalties payable under the terms of each lease or agreement, as provided in the Accounting Procedure, a copy of which is attached hereto as Exhibit A;

(f) to pay from available funds all costs, expenses and liabilities accruing or resulting from Project Operations and to account to Non-Operators in accordance with the provisions of the Accounting Procedure; in the event the terms of the Accounting Procedure conflict with any of the provisions hereof, this Agreement shall be deemed to control;

(g) (No Change)

(h) (No Change)

11.

(a) (No Change)

(b) Any party hereto who has elected not to commit itself to a proposed Development Plan which becomes an effective Project Plan shall not, for that reason alone, be deemed to have withdrawn from the Project, but such Non-Committing Party shall be deemed to have relinquished to the Committing Parties its share of any production from such Development Block, or the proceeds therefrom, and shall have no further interest in such production or proceeds until such time as the non-committing party has paid to the committing parties in the same proportions as the respective interests of the committing parties at that time bear to each other an amount equal to the total of the following:

(i) 300% of all Exploration Operations costs and expenses, plus

(ii) 200% of all Development Operations costs and expenses, plus

(iii) 150% of the Project's royalty, overriding royalty and other lease burdens, if applicable, and the production taxes accruing on and with respect to the ores received by the Committing Parties;

provided, however, that unless the Non-Committing Parties has within twelve months from the commencement of the Development Plan paid to the Operator for the collective account of the Committing Parties, an amount equal to the total of (i) plus (ii) plus (iii) above, the interest of the Non-Committing Party thereafter shall be subject to dilution provisions of subparagraph (c) of this Section 11. In the event the interest of a Non-Committing Party in the Production from such Development Block, or the proceeds therefrom, is reinstated by payment of the amount set forth above, that interest shall commence only upon such payment in full and shall not be retroactive.

(c) In the event the Non-Committing Party has not paid the amounts described in (i), (ii), and (iii) of subparagraph (b) above within the twelve-month period provided therein, the Non-Committing Party's undivided interest in the Development Block and the Development Plan therein shall be reduced to that percentage of the entire undivided interest therein that the Non-Committing Party's pro-rata share of Exploration expenditures for such Development Block bear to total exploration expenditures for such Development Block provided that if such non-Committing Party's undivided interest in the Development Block is reduced to ten percent or less, such Non-Committing Party's undivided interest in and to the Development Block and in and to the Project Properties constituting the same shall terminate subject only to the retention by the Non-Committing Party of a non-working 10% "Net Profits Interest" (as described in Exhibit B attached hereto and made a part hereof) in and to the proceeds, if any there be, taken by the Committing Parties, their successors or assigns, from the Project Properties constituting such Development Block (as such Project Properties exist as of the date of such termination).

12. Transfer of Interest

(a) Should any party desire to dispose of part or all of its interest in this Agreement to a prospective purchaser, such party shall advise the other party in writing of its desire and of the terms and conditions of such desired disposition including the consideration in lawful money of the United States or its equivalent which it is willing to accept for such interest together with all other pertinent terms and conditions of such disposition including the identity of the prospective purchaser, and the facts on which the transferring party based its calculations. Within thirty (30) days after the receipt of such written notice, the other parties shall have the option of acquiring the interest proposed to be disposed of on the terms and conditions and for the consideration proposed.

If more than one of the other parties elect to exercise such option, the acquisition shall be pro-rated according to each other parties' interest in the Project. If the interest offered to be disposed of by disposing party is not so acquired by the other parties within the time provided, the disposing party shall have the right for a period of ninety (90) days from the expiration of the aforementioned thirty-day period to dispose of such interest to the prospective purchaser indicated in the aforementioned notice upon substantially the same terms and conditions and for a consideration specified in such notice; provided, however, that such interest may not be disposed of unless the purchaser, concurrently with said sale and purchase, delivers to the other parties in a form acceptable to them a written and enforceable assumption by the purchaser of the obligations of the disposing party under this Agreement. If such interest is not disposed of within such ninety-day period, it must first be re-offered to the other parties prior to any subsequent disposition thereof. Any proposed sale of stock in the corporations which are parties to this Agreement, or their successors interest shall be subject to the provisions of this Section 12.

(b) DELETE

(c) The right of first refusal granted in subparagraph (a) of this Section 12 shall not apply to any mortgage, pledge or hypothecation by the disposing party of all or any portion of its interest in this Agreement and in the Project Properties; provided, however, that no such mortgage, pledge or hypothecation shall be made without the consent of the other parties to this Agreement, which consent shall not be unreasonably withheld. Any such mortgage, pledge or hypothecation which is approved by the other parties to this Agreement and effectuated is and shall be made expressly subject to this Agreement and shall be subject to the condition that on any realization of the security, any person thus acquiring an interest shall deliver to other parties in a form acceptable to them a written and enforceable assumption of the obligations of the disposing party under this Agreement as they relate to the interests so acquired, and any such mortgage, pledge or hypothecation shall not be valid until the written notice thereof has been delivered to the other parties. In the event the holder of any such

mortgage, pledge or hypothecation realizes on its security interest in this Project, the other parties hereto shall have the right, within thirty (30) days after such realization, to purchase from such holder such realized security interest for an amount equal to the unsatisfied obligation of the former interest holder, together with reasonable attorney's fees, interest and cost.

(d) (No Change)

13. Insurance (No Change)

14. Term

Subject to the rights of surrender and withdrawal as provided herein and unless sooner terminated or further extended by mutual agreement, this Operating Agreement shall terminate December 31, 1990.

15. Disposition of Production

Provided that operating expenses have been paid and provision has been made for reasonable operating reserves, each of the parties shall have the right to take in kind its proportionate share of all ores and minerals produced from the Project Properties in such form as the Operating Committee deems appropriate and convenient. Any extra expenditures incurred by reason of the taking in kind by any parties of their proportionate share of said ores and minerals so produced shall be borne by each such party and each such party shall be required to construct, operate and maintain, all at its own expense, any and all facilities which may be necessary to receive, store and dispose of its share of production at the time it is produced. In this regard, each party desiring to take in kind its proportionate share of said ores and minerals so produced shall carry adequate insurance to protect against loss or theft thereof. In the event any party shall fail to make the arrangements necessary to take in kind its proportionate share of ores and minerals, such party shall be fully liable for any costs incurred by the Operator or by the Project in preserving or storing such proportionate share. Operator shall exercise reasonable care in receiving and storing in kind production on behalf of a party, but its liability in

connection therewith shall be limited to a sum not to exceed \$1,000.00. If any party is not taking its share of such ores and minerals in kind, any proceeds received by the Project for such party shall be distributed or accounted for quarterly to such party; provided, however, that Operator shall be entitled to retain and apply any proceeds of Production accruing to any party hereto on any unsatisfied expenses chargeable against such party as herein provided, as well as toward reasonable operating reserves. Under normal circumstances, it is the intention of the parties that ores and minerals produced from the Project Properties shall be shipped to a metal refiner, who will then deduct its costs and either hold refined ores and minerals on behalf of the Project or distribute to Project the sale proceeds thereof.

16. Taxes

Operator shall pay from available funds as the same become due and payable, all taxes (excluding income taxes) levied or assessed against the Project Properties and the production therefrom and against all personal property acquired in operations hereunder including, but not limited to, ad valorem, production, severance, sales, use and like taxes; provided that the Operating Committee or any of the parties shall have the right to contest in the courts or otherwise, the validity or amount of any such taxes if it deems the same unlawful, unjust, unequal or excessive and to take such other steps or proceedings as it may deem necessary to secure a cancellation, reduction, readjustment or equalization thereof before the same shall be required to be paid.

17. Rentals and Other Obligations

Operator shall pay from available funds any and all rentals, if any, which may become due and payable on the Project Properties. Operator agrees to follow good and customary practices in the matter of administering said properties and to do all work necessary and to make all payments necessary within the time required by any instrument under which interests in the Project Properties were acquired and to do whatever else is reasonably necessary to maintain the interests of the parties in the Project Properties and charge the Joint Account for the same.

18. Operator's Lien

Non-Operators hereby grant to Operator a lien upon their respective interests in the Project and the Project Properties and in

the jointly owned equipment and other property and upon their interests in all production as security for payment of costs chargeable to them, together with any interest payable thereon. Operator shall have the right to bring any action at law or in equity to enforce collection of such indebtedness with or without foreclosure of such lien.

19. Change of Operator

(a) Operator may resign from its duties and obligations at any time upon written notice of not less than 180 days given to Non-Operators. If Operator shall become bankrupt, subject to compliance with requirements of Section 12 hereof, it shall cease to be Operator without need of any further action other than selection, by the Operating Committee, of a successor operator. Provided that TEI has contributed capital of at least \$200,000.00, the Operating Committee may, subject to the provisions of paragraph (b) below, discharge the Operator upon no less than one-hundred-eighty (180) days prior written notice by a vote of the Operating Committee representatives holding a majority in interest in and to the Project. In the event that a shorter notice period is desired, Operator shall be paid for each day less than the normal 180 day notice period, an amount equal to an average day's compensation for the 180 day period immediately preceding receipt of the aforesaid notice.

(b) If any Non-Operator shall at any time consider that the Operator is in default of performance of any of its duties and obligations hereunder, such Non-Operator shall give the Operator and other Non-Operators written notice thereof setting forth in detail the matters wherein default is claimed. If, within thirty (30) days from its receipt of such notice, Operator does not either correct the matters of which complaint is made or show cause why such matters do not constitute a default, then thereafter, subject to the provisions of paragraph (a) above, one or more Non-Operators then owning a majority of the interest in the Project may, upon a finding of such a default of Operator and that the default is continuing, remove the Operator and select a successor. The Operator, upon ceasing to act in such capacity for any reason, and upon being fully compensated, including such costs as may be occasioned by the aforesaid termination, shall deliver to its successor the custody of all of the assets, records, books and other property, both real

and personal, of the Project, and shall not acquire, nor consult upon, any mineral properties within the area of interest for a period of two (2) years. The successor Operator shall assume the responsibilities and duties of, and shall have the rights granted to the Operator pursuant to this Agreement.

20. Relationship of the Parties (No Change)

21. Laws and Regulations and Force Majeure

(a) This Agreement shall be subject to all valid and applicable laws and official rules and regulations; and, in the event this Agreement or any of the provisions hereof or the operations contemplated hereby are found to be inconsistent with or contrary to any such valid laws or official rules or regulations, the latter shall be deemed to control and this Agreement shall be regarded as modified accordingly and, as so modified, to continue in full force and effect.

(b) In the event of Operator being rendered unable wholly or in part, by force majeure applying to its operations, to carry out its obligations under this Agreement, it is agreed that the obligations of the Operator so far as they are affected by such force majeure shall be suspended during the continuance of any inability so caused, but for no longer period; and such cause shall, so far as possible, be remedied with all reasonable dispatch. The term "force majeure", as employed herein, shall mean acts of God, strikes, lock-outs or other industrial disturbances, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials in open market, any state or federal laws, regulations or other matters beyond the reasonable control of the Operator, whether similar to matters beyond the reasonable control of the Operator, whether similar to matters herein specifically enumerated or not; provided, however, that performance shall be resumed within a reasonable time after such cause has been removed; and provided further that the Operator shall not be required against its will to adjust any labor dispute or to question the validity of or to refrain from judicially testing the validity of any state or federal order, regulation or law. This Agreement shall not terminate while operations hereunder are prevented by reason of any cause in this subparagraph.

22. Notices (No Change)

23. Information to Parties; Confidentiality
(No Change)

NOTE: The word "prohibis" in the fourth line
from the bottom should be "prohibit"

24. Termination; Furnishing of Data

Each party shall, as soon as possible following termination pursuant to Section 14 hereof, complete the discharge of all of its proportional share of accrued or outstanding obligations to the other parties or to third parties incurred under this Agreement and not previously met. Any party, upon termination and upon discharge of the above mentioned obligations, may, if it so chooses, quitclaim to the other parties its interest in the Project Properties, or in any portion thereof. Upon termination of this Agreement, each of the parties shall be entitled to all information acquired under the Project, including copies of all maps, data and reports which can be reproduced and which have not theretofore been furnished, but any original work product of Operator shall remain the property of Operator.

25. Headings for Convenience Only (No Change)

26. Miscellaneous

(a) (No Change)

(b) (No Change)

(c) (No Change)

(d) In the event the interest of a party in the Project Properties involuntarily becomes subject to the claims of that party's creditors, and such creditors seek to realize on the party's interest in the Project Properties to satisfy obligations owing to them, then the other parties hereto shall have the right to purchase the interest of such Party in the Project Property pursuant to the terms of Section above.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement effective as of the date first set forth above.

TOMBSTONE EXPLORATION, INC.

By: _____

AUSTIN EXPLORATION & MINING CORPORATION

BY: _____

This shall serve to acknowledge that SOUTHWESTERN EXPLORATION ASSOCIATES, INC. ("SEA") as the initial Operator under the preceding Operating Agreement, acknowledges that it has read and understands the provisions thereof. The execution by SEA shall serve as its agreement to serve as Operator pursuant to and in accordance with the terms and conditions thereof.

SOUTHWESTERN EXPLORATION ASSOCIATES, INC.

DATE: _____ BY: _____

EXHIBIT A

ACCOUNTING PROCEEDURE

I. GERERAL PROVISIONS

A. Definitions (No Change)

B. Accounting Records

Operator shall maintain the accounts and records required by the Agreement in accordance with generally accepted accounting principals consistently applied, including such separate accounts and records as are required for any Exploration or Development Block. Operator shall not dispose of any such records for any calendar year within five (5) years of the end of such calendar year without the prior written consent of the parties. Subsequent to such five (5) year period, and prior to disposal of such records, Operator shall offer to transmit the same to the parties at their expense. Thereafter, the parties shall have thirty (30) days within which to make satisfactory arrangements with Operator for the transmittal of such records. Following such thirty (30) day period, Operator shall be free to destroy accounts and records which are at least five (5) years old.

C. Audits

1. (No Change)

2. (No Change)

3. Reasonable expenses incurred by Operator with regard to an annual audit of project's account as aforesaid shall be an expense of the project.

4. Unless objected to in writing by the Operating Committee within twenty four (24) months from receipt, all financial statements and audit reports shall conclusively be presumed to be true and correct. In the event of such written objection, only the item or items specifically objected to shall remain open for adjustment until resolved by the parties pursuant to the agreement.

D. Accounting Period (No Change)

II. CHARGES TO THE JOINT ACCOUNT FOR DEVELOPMENT AND OPERATIONS

Charges to the Joint Account shall mean all costs pursuant to transactions under this Agreement, including preliminary costs of investigation of the area of interest by Operator, including report preparation and associated expenses, as well as all costs of prepar-

ation and review of the agreement to which this exhibit is attached and costs related to further exploration, development, construction, mining, the concentration and beneficiation of production and smelting refining, or treatment of such production, the loading and transporting of production, weighing, sampling, assaying and impurity penalties, laboratory and testing costs, and all other operations related thereto conducted according to industry practice, including, without limitation, costs such as:

- A. Rentals and Royalties (No Change)
- B. Travel and Related Expenses (No Change)
- C. Services

1. The cost of contract services (including those of Operator as set forth in greater detail in Exhibit E of the Agreement to which the Exhibit A is attached) including cost of power, light, heat and effluent disposal, outside consultants; , attorneys; and auditor' fees and travel and related expenses (except for special audits or legal services performed for or requested independently by any party).

2. (No Change)

D. (No Change)

E. 1. (No Change)

2. (No Change)

EXHIBIT B

"NET PROFITS INTEREST"

The term "Net Profits Interest" as used in the Operating Agreement to which this Exhibit is attached shall mean the share of net profits from the operation of the subject premises retained and reserved by a party pursuant to subparagraph (c) of Section 11 thereof. Net profits for any calendar month shall be determined by deducting from gross revenues all costs and expenses incurred in connection with or attributable to the exploration, development and exploitation of the subject premises. 'Gross revenues' shall mean the gross receipts from the sales of the products resulting from the exploitation of the subject premises. With regard to the distribution in kind of production, such distribution shall be assigned a value equal to their market value at the time of such distribution for purposes of computing "gross revenue" as aforesaid. Costs and expenses in connection with or attributable to the exploration, development and exploitation of the subject premises shall mean all those costs and expenses incurred by the non-withdrawing party in the exploration, development and exploitation of the subject premises from and after the date on which the withdrawing party withdraws, as evidenced by notice in writing. Such costs and expenses shall include, but not be limited to, the costs and expenses of exploring, developing, mining, milling, smelting, refining, administrative overhead, including legal and accounting expenses, freight, insurance and marketing the products resulting from the exploration, development and exploitation of the subject premises; all royalties, rental payments, taxes, (other than taxes on income) and property payments resulting therefrom; the costs of all buildings, structures, machinery and equipment; and in the event of plant or mine expansion involving construction or replacement of buildings, machinery, structures and equipment, the cost of all such items. Interest charges incurred by the non-withdrawing party in financing its operations on the subject premises shall be chargeable in determining net profits. Net profits for any calendar month as determined above, shall be reduced by the costs and expenses of any prior calendar month or months which previously have not been recovered from gross revenues of such prior calendar month or months. Accounting for gross revenues and costs and expenses shall be on the accrual basis and in accordance with generally accepted accounting principles.

EXHIBIT C

SCHEDULE OF INSURANCE COVERAGE

(No Change)

EXHIBIT D

EXHIBIT E

(S.E.A. shall insert a description of its standard charges)

RECEIVED MAY 1 1979

Fenico

Jim

Bruce



"We think there's a limit to what they'll do,
after all, these are civilized countries."

246

2-3

RECEIVED MAY 21 1979

FAMCO / 1700 Broadway • New York, New York 10019 • (212) 247-0428

REVIEWED
JUN 14 1979
By *[Signature]*

May 11th, 1979

Mr. Dick Hewlett
Mr. James Briscoe
SOUTHWESTERN EXPLORATION ASSOC.
4500 E. Speedway
Suite 14
Tucson, Ariz. 85712

Dear Dick & Jim:

During the next reporting cycle our priorities should be to assure optimum cash flow by processing in situ parts of the heap. Secondly we should try to sharpen the focus of future expenditures to one unified flowsheet.

Our objective will be to create a master tabulation of ore types with their response to specific extractive treatments and other operating costs:

Ore Types:

- 1. Silver Chloride
- 2. High-Iron & Clay
- 3. Jarosite, $K Fe_3(OH)_6SO_4 \cdot 2$
- 4. Oxidized Sulfides
- 5. Silicious Interstitite
- 6. Sulfide Ores
- 7. Manganese Oxides
- 8. Carbonareous Ores

Define the following characteristics for each of the ore listed above:

- 1. Approximate amount of ore and location.
- 2. Anticipated method and cost to move ore to leach.
- 3. Gold and Silver and other economic recoverable minerals in ore.
- 4. Anticipated recoveries under various alternative extraction methods.
- 5. Capital budget required.
- 6. Labor
- 7. Power requirement—gasoline, diesel, or electrical.
- 8. Screening requirement.
- 9. Pre-treatment amount + time + temperature.

contd.

245

Mr. Dick Hewlett
Mr. James Briscoe
Page 2
May 11th, 1979, contd.

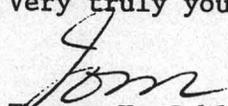
10. Selling rates.
11. Filtration requirements
12. Crushing sizes and requirements and recoveries.
13. Anticipated weekly cash flow.

Again, as I see it, we are going to try and learn and quantify as much as possible about processing each of the ores so we can expand what we are doing to the rest of the heap, then the open pit and secondarily to other projects not in this area. This is the planning which we need to undertake to maximize our success, minimize our risks and to communicate to our investors.

John Dean, at my request, wrote the enclosed letter. I have attempted to summarize this information. I am sure we can improve my analysis.

Please let me know.

Very truly yours,


Thomas H. Schloss
Chairman of the Board

THS/avc

Encl.

cc: Dr. John Dean

JOHN G. DEAN

401 - 934-0060

Elmdale Road, Box 230, Route 2, North Scituate, Rhode Island 02857

May 1, 1979

FAMCO, Inc.
1700 Broadway
New York, N. Y. 10019

Attention: Mr. T. H. Schloss, Chairman of the Board

Statement for April, 1979

SERVICES:

Review of 250 page report from Southwestern Exploration Associates, conference discussion in R. I. supplemented with extended phone discussions and correspondence.

Two day portion of time worked ---- \$600.00

Respectfully submitted,

John G. Dean
John G. Dean

JGD:bm

May 1, 1979

Memo to: T. H. Schloss, FAMCO

From : J. G. Dean

Subject: Further Development of Specific Plans for Tombstone Project.

Dear Tom:

In response to your request, additional suggestions beyond those in my memo of April 24 are given below to help with the planning and development of priorities for the Tombstone project.

The most critical need is to sharpen the focus for process selection and to assign priorities to assure optimum cash flow and ultimate selection of a unified flowsheet providing maximum profit.

Perhaps the best place to start in doing this is to prepare a master tabulation of ore types with their response to specific extractive treatments, somewhat along the lines sketched on the enclosed sheet. The more auxiliary information which can be included, such as gold and silver content, anticipated recoveries, etc., the better.

One of the big problems in treating tailings, dumps, and prior heaps is coping with uncertain mixtures of ore types and pretreatments. Perhaps the suggested tabulation will help select the most versatile unified treatment most likely to give the best overall results. It would be a great step forward to start with the best possible process sequence and put all resources behind its rapid development.

We certainly want to avoid basic chemical incompatibilities, such as acid-alkali systems, oxidation-reduction conflicts, and destruction of leaching reagents by residues from pretreatments. We also want to minimize surprises from loss of reagents by leakage, absorption, adsorption, ion exchange, decomposition, etc; and we want to minimize the research required to perfect the final gold and silver recovery steps. These concerns, stemming from experience, urge the selection of the simplest sure-fire flowsheet with a crystal-clear best-efforts plan in advance.

Dick is in the best position to evaluate his extensive work and select the best flowsheet sequence. For anyone else to help effectively in this important step, more information on test variables and methods will be required.

My enthusiasm from preliminary appraisal centers in the IPS system with incorporated additives selected to induce percolation and liberate values. This approach seems to merit high priority for conclusive tests with ideal feed and processing

May 1, 1979

sequence and detail.

Perhaps a relatively ideal feed which is already minus 3" can be found for start-up and will be amenable for an IPS heap leach with a minimum of capital expense for crushing and sizing equipment. In order to treat the main heap, it would seem that at least one substantial crusher will be required; perhaps it can be operated by a direct diesel or gasoline drive, thereby reducing energy costs and saving the expense of providing more electrical capacity.

With respect to reagents, cyanide leaching followed by zinc precipitation, and possibly preceded by a compatible chemical pretreatment in association with IPS preparation, seems the most versatile and sure-fire approach. Historically, cyanidation has displaced both salt and thiosulfate leaching with very good reasons in my experience. This is, of course, just a suggestion designed to encourage Dick to review his options, starting with a penetrating analysis of his data and extending through a flow sheet showing capital equipment requirements and projected operating costs.

The enclosed tabulation is just a draft designed to help visualize the complex of factors involved and the importance of following them all the way through to a unified and clarified plan. For example, the pretreatment must be as versatile as possible to handle the typical spread of ore types. It also affects the final recovery method and the value and character of the finished products.

There seems a good possibility that there are advantageous places for both heap and tank leaching with respect to ore types, pretreatments, and other variables. Close cooperation with Eocene and perhaps with the Escapuls could be very helpful in evolving the best possible treatment methods.

Please call on me if clarification or further comments are needed.

Best regards,



JGDean:bm

Ore Types vs. Processing Methods and Variables

Ore Type	ACID						ALKALINE
	IPS HEAP LEACH	H ₂ SO ₄ + additives	NaOCl + NaCl	Combinations	Na ₂ S ₂ O ₃	Cyanide	
1 Silver chloride (horn silver)	*	-	-	-	*	*	
2 High-iron + clay	*	*	-	*	-	*	
3 Jarosite, $KFe_3(OH)_6(SO_4)_2$	*	*	-			*	
4 Oxidized sulfides	*	-	-			*	
5 Silicious interstitial	*			*		*	
6 Sulfide ores	*		*			*	
7 Manganese oxides	*	*					
8 Carbonaceous ore			*			*	
Pre-precipitation	Ag Au		iron	Na ₂ S exchange		Zn Zn	

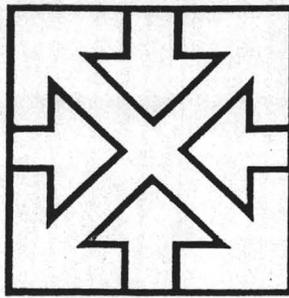
VARIABLES

	IPS HEAP	CYANIDE TESTING
Ore type	✓	✓
Screen analysis	✓	✓ e.g. 70-200 mesh
Pretreatment	✓ e.g. NaOCl, H ₂ SO ₄ , etc.	✓ e.g. NaOCl, lime, etc.
Leach reagent concn	✓	✓ e.g. NaCN, 6% IT.
Liquors, solids ratio	✓	✓ e.g. 25% solids
Aeration	—	✓
Agitation	—	✓
Time	✓	✓ e.g. 2 hr. intervals
Temperature	✓	✓
Percolation	✓	—
Settling rate	—	✓
Residual reagent concn	✓	✓ e.g. free cyanide pH.
Filtration characteristics	✓	✓
Au & Ag concentration	✓	✓
Recovery	✓	✓ Taggart, pp 19-187-189. H. H. ...

954
5/1/79

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- worldwide Mobilization



4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

**Southwestern
Exploration Associates, Inc.**

May 11, 1979

Barbara Burg
Arizona State Land Department
1624 W. Adams
Phoenix, Arizona

Re: Withdrawal of Prospecting Permit Applications #76127 & #76155.

Dear Ms. Burg,

This is to inform you of our intent to withdraw from consideration our Applications for Prospecting Permits Nos. 76127 & 76155 filed on April 26, 1979 for Section 18, Township 20 south, Range 22 east, 603 acres.

Thank you for your time.

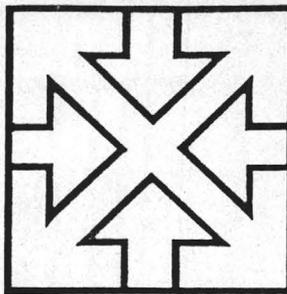
Sincerely,

Clark D. Green
Geologist/Landman

CDG/slr
P-418

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- remote sensing • color aerial photography
- interpretation-image processing
- worldwide Mobilization



4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

**Southwestern
Exploration Associates, Inc.**

May 11, 1979

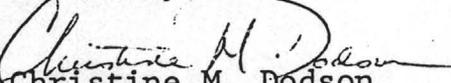
Mr. Alan Talesnick
Parcel, Meyer & Schwartz
2250 Energy Center
717 17th Street
Denver, CO 80202

Dear Mr. Talesnick:

At the request of Mr. Tom Schloss of FAMCO, we are enclosing a copy of the Operating Agreement between Tombstone Exploration Inc. and Austin Exploration and Mining Corporation.

Should you have any questions, please do not hesitate to call either Tom Schloss or our lawyer who handled this, Mr. Jay Kittle, Corey & Kittle, 509 Transamerica Bldg., Tucson, AZ (602) 882-4994.

Sincerely,

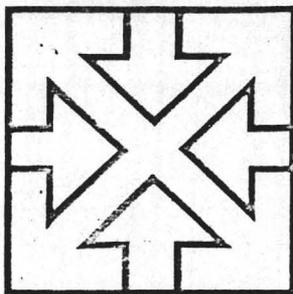

Christine M. Dodson
Mgr., Business Services

/cmd
P-418

cc: Tom Schloss
Jay Kittle

Consultants in:

- base & precious metals • uranium
- coal • geothermal • environment
- photo sensing • color aerial photography
- interpretation-image processing
- Worldwide Mobilization



4500 E. Speedway, Suite 14
Tucson, Arizona 85712
(602) 795-6097

James A. Briscoe, President
Registered Professional
Geologist

**Southwestern
Exploration Associates, Inc.**

May 10, 1979

Mr. Tom Schloss
FAMCO
1700 Broadway
22nd Floor
New York, NY 10019

Dear Tom,

Just a short note to explain all the enclosures:

1. envelope from Jay Kittle containing complete copy of proposed revisions to the Operating Agreement between Tombstone Exploration, Inc. and Austin Exploration and Mining Corporation.
2. P-418 Tombstone Mining District Statements for March 31, 1979 and April 15, 1979.
3. P-418 Cash Expenditures Ledger - two copies, one full size, one reduced, (April 8 - April 29).
4. P-418 Draft of P-418 Cash Expenditures during first quarter, made by Southwestern Exploration Associates, Inc. two copies, one full size, one reduced.
5. Memo from W. Ed Speer relating his observations of his trip to Tombstone, Wednesday, May 2, 1979.
6. Memo from Clark Green (Land Status) update on Mineral Prospecting Permit Applications in Tombstone. Unfortunately, I thought you had received this memo during your last visit to S.E.A. -- hope it is still useful to you.

Mr. Tom Schloss
May 10, 1979
Page 2

A holdup at Jay's office prevented our making it to the Post Office in time to send this overnight delivery May 9. I hope the delay has not caused too much inconvenience. (Federal Express is coming to Tucson at the end of May, so that should speed deliveries up quite a bit!)

Sincerely,


Christine M. Dodson
Mgr., Business Services

/cmd
P-418

236



ENGELHARD INDUSTRIES WEST, INC.
 ENGELHARD MINERALS & CHEMICALS CORPORATION
 1250 NORTH GROVE STREET, ANAHEIM, CALIFORNIA 92806 • (714) 630-5390 • TELEX:18-1555

2-2

May 10, 1979

Copy to J B
 D H

RECEIVED MAY 18 1979

Rev. 5/18/79

Mr. T. Schloss
 FANCO, INC.
 1700 Broadway
 New York, N. Y. 10019

FILE

Tombstone P-418

Dear Tom:

In reference to our conversation of May 1st with respect to the refining and purchase of silver and gold dore bullion which you expect to produce shortly from your Tombstone Exploration Company mine in Tombstone, Arizona, I am pleased to confirm our terms for the refining and purchase of these materials.

- Material: Silver and Gold Bearing Dore Bullion
- Quality: Of two qualities classified as follows:
 - (a) Silver - Greater than 93%
 - Gold - Less than 10%
 - (b) Gold - Greater than 93%
 - Silver - Less than 10%
- Quantity: In lots of a size and shipped at intervals most suitable to you.
- Treatment Charge: Variable, depending upon the size of individual shipments and the quality of material as noted above.

Individual Lot Size (Troy Ounces)	Per Troy Ounce Net Weight Received	
	Quality A	Quality B
Less than 1000	\$0.15	\$0.25
1000 - 4999	0.10	0.15
5000 & over	0.05	0.10

235

Mr. T. Schloss
FANCO, INC.

Page 2
May 10, 1979

Refining
Charges:

As per the following schedule:

	<u>Per Troy Ounce Recovered</u>	
	<u>Quality</u>	<u>Quality</u>
	<u>A</u>	<u>B</u>
Gold	\$1.75	\$1.25
Silver	0.06	0.08

Recovery:

As per the following schedule:

	<u>Percent of Assayed Content</u>	
	<u>Quality</u>	<u>Quality</u>
	<u>A</u>	<u>B</u>
Gold	99.0	99.5
Silver	99.5	99.0

Purchase:

Recovered gold and silver to be purchased at the following terms:

Gold - At the London PM fixing price per troy ounce.

Silver - At the Engelhard selling base price less \$0.02 per troy ounce.

Quotational
Period:

Prices for silver and gold would be fixed on the following basis:

(a) 90% of the recoverable silver and gold content based on Engelhard provisional assays or, at our option, on the advised assays would be priced on the fifth business day following the date of receipt or the date of sampling, if representation is requested.

(b) The balance of recoverable silver and gold based on final weights and assays would be priced on the date of settlement. If, on the date of settlement, final weights and assays have not been completed, the balance would be priced on the next business day following the date such final weights and assays have been established.

234

Mr. T. Schloss
FANCO, INC.

Page 3
May 10, 1979

Payment: The provisional value determined in (a) less estimated treatment and refining charges would be paid three (3) business days following the pricing date. The balance would be paid promptly following the date of final settlement. Any overpayments by Engelhard arising from differences in quantities paid for is refundable to Engelhard based upon the values applied to such differential quantities.

We would be pleased to arrange alternate pricing terms if desired and subject to mutual agreement.

Settlement: Six (6) weeks from the date of receipt or the date of sampling, if representation is requested.

Minimum Charge: \$150 per lot.

Delivery Point and Special Terms: F.O.B. Engelhard Industries West, Inc., 1250 North Grove Street, Anaheim, CA. 92806, and subject to our standard terms and conditions of sale.

Risk of Loss and Title: Risk of loss and title to each lot of material would remain with Fanco, Inc. until actual receipt of such material by Engelhard, at which time risk of loss and title would transfer to Engelhard.

Quote Validity: Our quotation is valid for sixty (60) days from the date above. Thereafter, terms and conditions may be continued or changed as dictated by cost and market conditions.

With respect to the mechanics of processing material received for refining, upon receipt, individual lots would be verified as to weight, assigned a refining control number and formally acknowledged. Each lot would be melted to homogenize it, and

Mr. T. Schloss
FANCO, INC.

Page 4
May 10, 1979

the melt sampled for the purpose of assay. Your authorized representative is invited to attend and witness the melting and sampling process and to verify weights. Settlement would be based on the after-melt weight and the assayed content of the sample drawn at the time of sampling. The assay can be made subject to assay exchange and this procedure, with the appropriate splitting limits, is attached.

We appreciate this opportunity to provide our quotation and trust that this quotation will meet with your approval. We look forward to being of service to you in the near future. I apologize for the delay in providing this quotation and hope that it has not inconvenienced you greatly.

Very truly yours,



R. L. Searle
Executive Vice-President

RLS:slk

ENGELHARD

ENGELHARD INDUSTRIES WEST, INC.
ENGELHARD MINERALS & CHEMICALS CORPORATION
1250 NORTH GROVE STREET, ANAHEIM, CALIFORNIA 92806 • (714) 630-5390 • TELEX:18-1555

ASSAY EXCHANGE PROCEDURE

1. The samples from each lot would be divided into four parts of which one part would be submitted to customer for assay, one part would be retained by Engelhard for assay, and two parts would be sealed and held in reserve.
2. The assays would be performed independently by customer and Engelhard and then exchanged verbally or in writing.
3. Assays within the designated splitting limits would be averaged and the exact mean of the reported assays would be the basis for final settlement.
4. If the assays exceed the splitting limit, at the option of either party, a reassay would be performed and the results re-exchanged. If no agreement is reached or the reassays exceed the splitting limit, one of the reserve samples would be submitted to a mutually agreed upon umpire for assay.
5. Final settlement would then be based on the middle assay of the umpire assay, the customer assay, and the Engelhard assay. The party whose assay is more at variance with the umpire assay would pay the cost of the umpire assay.

231

SCHEDULE OF SPLITTING LIMITS

BULLION

<u>COPPER ASSAY</u>		<u>Split</u>
Percent		<u>Units</u>
25% and over		0.50
<u>SILVER ASSAY</u>		<u>Split</u>
Parts Per 1,000		<u>Parts Per 1,000</u>
	Up to and including 1.00	0.20
Over 1.00	up to and including 5.00	0.50
Over 5.00	up to and including 25.00	1.00
Over 25.00	up to and including 100.00	2.00
Over 100.00	up to and including 350.00	3.00
Over 350.00	up to and including 800.00	2.50
Over 800.00	up to and including 950.00	1.50
Over 950.00		1.00
<u>GOLD ASSAY</u>		<u>Split</u>
Parts Per 1,000		<u>Parts Per 1,000</u>
	Up to and including 50	0.15
Over 50	up to and including 100	0.25
Over 100	up to and including 300	0.50
Over 300		1.00
<u>PLATINUM AND/OR PALLADIUM ASSAY</u>		<u>Split</u>
Parts Per 1,000		<u>Parts Per 1,000</u>
	Up to and including 0.50	0.10
Over 0.50	up to and including 1.00	0.15
Over 1.00	up to and including 5.00	0.20
Over 5.00	up to and including 10.00	0.30
Over 10.00	up to and including 25.00	0.50
Over 25.00	up to and including 50.00	0.75
Over 50.00	up to and including 100.00	1.00
Over 100.00	up to and including 350.00	2.00
Over 350.00	up to and including 500.00	3.00
Over 500.00	up to and including 800.00	4.00
Over 800.00		5.00

TO: UJAB

FROM: WES

DATE: May 6, 1979

RE: My trip to Tombstone on Wednesday, May 2, 1979, to inspect the heap leaching operation.

On May 2 I traveled to Tombstone, Arizona to see first-hand Dick Hewlett's heap leaching operation and to study its application to our uranium exploration program in New Mexico. However I was immediately struck with the inefficiency caused by the use of used equipment and the lack of proper supplies. I plainly saw several cases of excessive down time, delayed schedules and costly additional work that was due to non-functioning, used equipment and lack of proper supplies and equipment. In particular, scheduling of work that is of a consecutive nature is difficult, if not impossible, when one does not know if equipment is going to work when it is supposed to, or if one piece of equipment fails and this causes additional delays in the overall program. This was evident at Tombstone in the few hours that I was there where, for instance, the major expense for the day was delivery of a tanker trunk of sulphuric acid which had to be stored in a makeshift, unanticipated storage tank because the intended storage tank leaked and the sprinkler system was not yet in operation due to the use of salvaged, used pumps and plastic pipe. This situation reminded me of an expression a friend of mine used to use, "A dollar waiting on a dime." In the case at Tombstone, the lack of \$20 worth of plumbing and electrical supplies disrupted the entire day's work for about seven people and resulted in schedule disruptions which will take several days to correct.

My recommendation is obvious. Enough money should be appropriated to the job in order to get it done with new equipment and plenty of the necessary supplies before the job is underway. It can easily be seen that, given the present situation, some minor mechanical problem could come up and prevent the entire project from being completed. In other words the project could become a complete failure based on the failure or inappropriate use of a piece of used equipment. Of course, much more likely is that the project will take twice as long to accomplish as need be, resulting in an overall greater cost than if new equipment and sufficient supplies were utilized in the first place.

WES
WES/kar
P-418



BRUCE E. BABBITT
GOVERNOR

Arizona
State Land Department

1624 WEST ADAMS
PHOENIX, ARIZONA 85007
602 - ~~203500~~ 255-4631



OFFICE OF
STATE LAND COMMISSIONER

John M. Little, Acting

May 1, 1979

Southwestern Exploration Associates, Inc.
4500 E. Speedway, Suite 14
Tucson, Arizona 85712

Re: PP-73608 & PP-73609

Gentlemen:

Returned herewith the Restoration and Damage Bonds for the above referenced prospecting permit applications along with their cover letter from your agent.

Please sign both bonds and return within a reasonable period of time.

Yours truly,

Lee S. Miller
(MS) Lee S. Miller,
Land Case Examiner

Enclosures: 3

Southwestern Exploration Associates, Inc.
4500 E. Speedway
Tucson, Arizona 85712

TUCSON REALTY
& TRUST CO.



"Since
Territorial
Days"

RECEIVED MAY 2 1979

SUBJECT: Restoration & Damage Bonds

DATE: April 23, 1979

FOLD
MESSAGE

Enclosed are two Restoration & Damage bonds to be filed with the State. Please be sure the bonds are signed before sending them to Phoenix. As I indicated on the phone, I will prepare the necessary applications and get them to you in tomorrow's mail; they will require Mr. Briscoe's signature.

If you have any questions, please don't hesitate to call us.

Sincerely,

Diana
Diana L. Wilson
Bond Dept.
/dw
enc.



REPLY

DATE OF REPLY

REPLY TO

SIGNED

INSURANCE • REAL ESTATE • PROPERTY MANAGEMENT • RISK MANAGEMENT • MORTGAGES
HOME OFFICE: 20 S. Stone, P.O. BOX 990, Tucson, Arizona 85702 — (602) 624-0451

