ROBERT H. RUGGERI
ATTORNEY AND COUNSELOR
125 NORTH MAIN
MOAB, UTAH 84532

P. O. Box 310

ROBERT H. RUGGERI

TELEPHONE: 259-5611

September 29, 1983

State of Utah
Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Attention: Thomas N. Tetting

RE: Red Rock Mine Plan Review #2
S & S Mining Company
ACT/037/050
San Juan County, Utah

Dear Mr. Tetting:

This letter is written in response to the certified letter of September 27, 1983, from your office concerning the above entitled matter and as a supplement to my letter to you dated September 23,1983, and which will serve as a supplement to S & S Mining's Reclamation Plan.

Rule M-3 (2) (d) DWH and Rule M-5 P.G.L. Soil Analysis.
After receiving your telephone call Monday, September 26, 1983, stating that Terra Tech had not received soil for analysis I contacted Robin Groff. He assured me again that the original soil samples had been received by Terra Tech more than two months ago and that water samples requested by Terra Tech had been hand delivered to Terra Tech on Monday, September 12, 1983. These samples were apparently used up in making the permability tests of the soil. We are advised by Terra Tech that the soil is impervious (.24 x 10-3 Darcy) under saline water conditions equivalent to bentonite clay.

I am attaching herewith a new drawing and design showing that no dam as such is necessary and that the pond will adequately control all waste water.

With respect to soil analysis for potential toxicity, electrical conductivity, sodium absorbtion ratio and pH. Terra Tech called and stated they had completed the electrical conductivity (1.152 ~~ohm~~ Mho/cm^2) the P. H. and sodium absorbtion ratio will be completed on Tuesday, October 4, 1983. Written results of the testing will be furnished to you directly from Terra Tech at our request.

With respect to Rule M-5 PGL we do commit to testing of soil prior to soil redistribution.

Rule M-3 (5) (c) TNT

Holes have been plugged and are available for your inspection.

Rule M-10 (11) DWH.

I am attaching herewith a copy of a letter addressed to Mr. Steve McNeal of

the Division of Environmental Health, Bureau of Water Pollution Control, written in response to his request that the freeboard be increased on the existing ponds and that the embankment be built higher to contain the water on the mine property on the lower pond as a condition precedent to the letter of approval. His conditions have been complied with as you can see from reading the letter of September 28, 1983, and we anticipate his letter of approval shortly at which time a copy will be furnished you.

Sincerely,

Robert H. Ruggeri

Robert H. Ruggeri

RHR:jj
Encls.

Box [illegible]
[illegible], Utah
[illegible]

Terra [illegible], Inc.
[illegible]
Salt Lake City, Utah 84[illegible]

Attention: Brip Paterson

RE: [illegible] Rock Mine Plan Review [illegible]
[illegible] Mining
[illegible]/058
San Juan County, Utah

Dear Mr. Paterson:

You have recently performed soil [illegible] from [illegible] upon the Red Rock Mine in San Juan County, [illegible]. Apparently, in the alluvial cover and [illegible] you have developed from the soil [illegible] electrical conductivity, sodium absorption [illegible] and permeability be furnished in writing to the [illegible] Resources & Energy, 4241 State Office Building, Salt Lake City, 84114, attention: Thomas W. Tetting, [illegible] review. Please also furnish a copy of the results to Steven M. [illegible], Division of Environmental Health, Box 2500, Salt Lake City, Utah 84110.

We understand that this written verification of the results you have of the testing will be completed on Tuesday or [illegible], October 4, 5, 1983.

Your cooperation in sending this information directly to the State of Utah will be appreciated.

Sincerely,

Robin Groff

RG:jj
cc: Thomas W. Tetting

P. O. Box 414
Moab, Utah 84532
September 28, 1983

RECEIVED
SEP 30 1983
DIVISION OF OIL, GAS & MINING

Department of Health
Division of Environmental Health
P. O. Box 2500
Salt Lake City, Utah 84110

Attention: Steven R. McNeal

RE: Red Rock Mine
S & S Mining Company
ACT/037/050
San Juan County, Utah

Dear Mr. McNeal:

Mr. Stocks and Mr. Rockwell have increased the freeboard on the two upper ponds to a depth of three feet and added overflow pipes from both ponds. The water now being discharged from the ponds is free of sediments. It then flows down the hill to the pond at the toe of the waste dump.

The berm for the pond has been increased by five feet in height to contain the water on the property temporarily.

The improvements which you requested are complete and ready for your inspection. We hope that you can issue your letter of approval soon so that it can be presented to the Division of Natural Resources and Energy.

We understand that the letter from you is an essential part of our submittal. Your help will be appreciated.

Sincerely,

Robin Groff
Consultant

RG:jj
cc: Tom Tetting

ROBERT H. RUGGERI
ATTORNEY AND COUNSELOR
125 NORTH MAIN
MOAB, UTAH 84532
P. O. Box 310
TELEPHONE: 259-5611

ROBERT H. RUGGERI

September 23, 1983

State of Utah
Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Attention: Thomas N. Tetting

RE: Red Rock Mine Plan Review #2
S & S Mining Company
ACT/037/050
San Juan County, Utah

Dear Mr. Tetting:

Reference is made to your letter to me dated April 12, 1983, concerning the above entitled matter and the progress that has been made in an effort to comply with your requirements.

In anticipation of the meeting to take place between Robin Groff and the Department on September 30, 1983, I am writing to see if we are in agreement about the matters that remain to be completed. I will discuss the matters in the order presented.

Rule M-3 (3) - DWH

As we discussed on the telephone this week with respect to the map that was presented, it does presuppose that it will be an excavation pond without an artifical embankment. We have been under the impression that your on-site inspection has verified this point and that the projected location is suitable.

Rule M-3 (2) (d) - DWH

What we both are now waiting for is a soil analysis. We are in the process of obtaining a soil analysis and have been advised on the telephone that the soil is impervious and should be acceptable to you. The analysis of the soil sample made should be available to you on September 30, when you are here. We believe that after you have checked the soil sample that you will be convinced that the pond bottom will not need to be lined with bentonite because the native soil contains the characteristics of bentonite, is impervious and will, in fact, be better than a bentonite lining.

With respect to the sketch presented and your comment that the dam should be revised to provide for a more stable structure, we believe that the new design that will be presented to you on September 30 will demonstrate that no dam is necessary and that the excavated pond will adequately control all waste water.

Rule M-3 (5) (c) - TNT

With respect to the plugging of drill holes connected with the operation, I have been advised by Mr. Rockwell that all holes incurred in the sub-surface operation have been plugged and are available for your inspection at any time.

With respect to drill holes that have not been encountered by the underground operation, I have been advised that they have either been plugged or are in the process of being plugged and will be available for your inspection on September 30th.

Rule M-5 - PGL

As you know the surety information has now been provided. Based on our telephone conversation, I assume that no additional information need be done.
The revision of the mine plan life was completed and forwarded to you in Mr. Groff's letter of May 24, 1983, in which he requested that the M-4 (Item #17) Form MR-1 be amended to show the estimated duration of the mine to be four years instead of the eight years originally projected.

Rule M-10 (6) (12) - TLP

Initially the requested soil analysis did not include tests to be performed for potential toxicity, electrical conductivity, sodium absorbtion ratio. We have now requested that these items be included in the analysis and should be available for your inspection September 30th.

Topsoil Protection

The restored top soil will be seeded with a seed mixture as set forth in the initial filing.

Soil Redistribution

The soil analysis requested is in the process of being completed. We have had assurance from Terra-Tech that this analysis will be available, but we are continuing our pressure on them to get this information to us so it will be available to you on September 30th.

Soil once redistributed will be prepared for seeding by disking, and/or harrowing, etc. in accordance with the detailed schedule of reclamation techniques presented to you by Mr. Jody Bierschied on your on-site inspection tour. These techniques are the same as those referred to in the next paragraph under Volume. In keeping with the written schedule heretofore provided to you we believe these have been incorporated in the reclamation plan.

Volume:

With respect to the techniques that will be used on road reclamation, I am advised that Mr. Jody Bierschied was present with your representative on the claims and that you have been furnished with a detailed

schedule of road reclamation techniques, including fertilization, seedbed preparation disking, ripping, harrowing and mulching, which you have accepted and have found to be adequate and proper under the circumstances.

If, for any reason I am in error in this we will make further contact with Mr. Bierschied so you can again review with him the techniques proposed for this reclamation.

Rule M-10 (8) - DWH

You state this section was not addressed by the operator. The operator has taken the position that it has addressed itself to this particular problem in that the only storm surface draining structure will be the sediment pond which is located on a hill crest. If the application is lacking in some respect I wish you would be good enough to furnish specifics so that we can comply with your requirements.

Rule M-10 (11) - DWH

I am advised by Mr. Robin Groff that in consultation with Mr. Steve McNeal of the Division of Environmental Health, Bureau of Water Pollution Control, that he requires a letter from the applicant setting forth that the freeboard has been increased on the existing ponds and the embankment has been built higher to contain the water on the mine property on the lower pond, as a condition precedent to the issuance of the letter of approval. Here again, I am advised that the applicant is in the process of complying with this requirement. This matter will be available for your inspection on September 30th and a letter advising Mr. McNeal will have been sent and the required approval letter should be forthcoming.

After you have had an opportunity to read this letter, if there are shortcomings I will appreciate a telephone call so that I can advise Mr. Groff in time to correct them prior to your inspection trip.

Sincerely,

Robert H. Ruggeri

Robert H. Ruggeri

RHR:jj

TerraTek Research

October 5, 1983

RECEIVED
OCT 7 1983
DIVISION OF
OIL, GAS & MINING

Mr. Thomas N. Tetting
Utah State Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Tetting:

Six soil samples were submitted for determination of pH and sodium adsorption ratio (SAR) from the Red Rock Mine in San Juan County, Utah. Large agglomerations of soil were disaggregated and all samples were seived using a 2 mm screen (U.S. Mesh No. 10). Saturation paste extracts were then formed using approximately 2 parts soil to 1 part deionized water. The mass of soil in each extract was approximately 100 grams. The saturated soils were allowed to stand for one hour. The pH of each slurry was then obtained using an Orion Model 701A pH meter. The slurries were allowed to stand overnight. Filtrate was recovered from each extract by vacuum membrane filtration (0.45 micron membrane) and the concentrations of sodium, calcium and magnesium were obtained by atomic adsorption spectrometry.

The SAR was calculated after the method of Richards (1954). SAR is defined as follows:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{2+} + Mg^{2+}}{2}}}$$

where Na, Ca and Mg concentrations are expressed in milliequivalents per liter. Test results are summarized in Table 1.

Table 1

Soil Sample Test Results

Terra Tek Sample	TS&R Sample	pH	mg/l			meq/l			SAR
			Na	Ca	Mg	Na	Ca	Mg	
6417	1 ft	7.78	45.2	46.0	22.2	1.97	2.30	1.83	1.37
6418	2 ft	7.93	30.3	189.0	280.0	1.32	9.43	23.0	0.33
6419	3 ft	8.19	73.0	69.0	60.0	3.18	3.44	4.94	1.45
6420	4 ft	8.28	68.0	33.0	43.5	2.96	1.65	3.58	1.83
6421	5 ft	8.41	45.7	18.0	25.4	1.99	0.90	2.09	1.15
6422	6 ft	8.43	63.0	25.0	32.0	2.74	1.25	2.63	1.97

UNIVERSITY RESEARCH PARK • 420 WAKARA WAY • SALT LAKE CITY, UTAH 84108 • (801) 584-2400

If you have any additional questions, please give me a call.

Sincerely,

Mike Holland
Geologist

MH/alm

cc: R. Groff
TS&R Mining

S. R. McNeal
Division of Environmental Health

Richards, L.A., ed., 1954. Diagnosis and Improvement of Saline and Alkali Soils: USDA Agriculture Handbook 60, Washington, D.C., U.S. Government Printing Office.

128 East First North
Moab, Utah 84532

May 24, 1983

Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Attention: Tom Tetting

RE: Red Rock Mine Plan
T. S. & R. Mining
Act/037/050
San Juan County, Utah

Dear Mr. Tetting:

This is a request to amend Rule M-4 (Item #17, Form MR-1) of the Red Rock Mining & Reclamation Plan to read: Estimated duration of mining operations will be four (4) years.

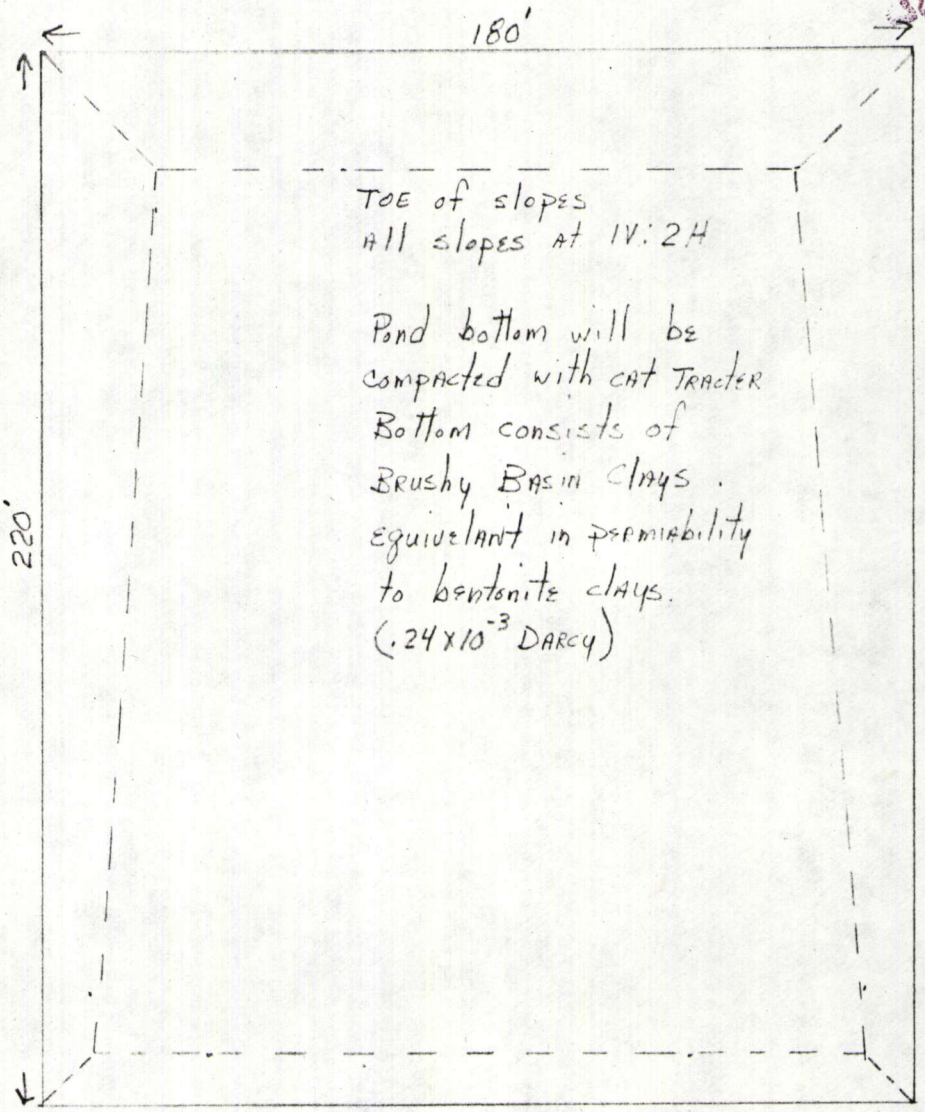
T. S. & R has not yet received information on the technical characteristics of the clay samples taken from the 3 meter by 3 meter by 2 meter test pit dug on location of the proposed impoundment facility for the evaporation of mine water. These results have been promised to us by the end of May. Upon receiving the results of these tests, T. S. & R. can make a determination on the design and schedule for construction of the impoundment facility. Meanwhile, T. S. & R. has been working plugging drill holes on the surface, which were not taken care of in the initial explorationof the property. All readily recognizable holes have been plugged but more work is anticipated as construction of the pond begins. Old drill holes with collapsed collars can not be accurately pinpointed until the topsoil has been removed to the clay. More cementing is anticipated at that time.

Thank you,

Robin Groff
Consultant

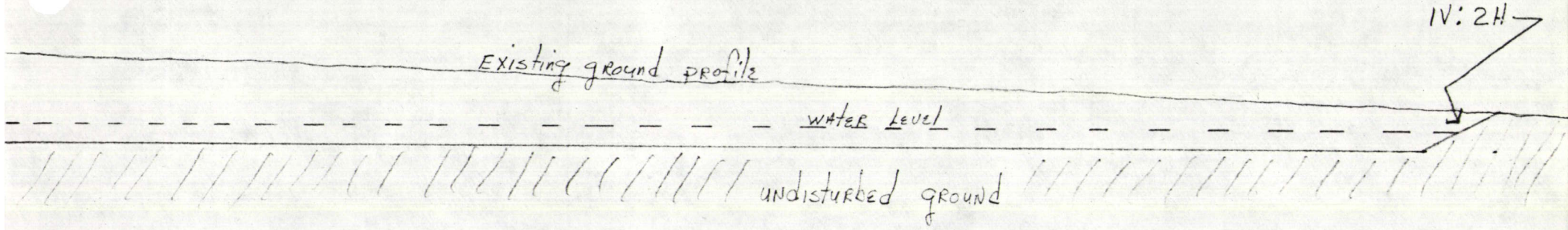
RG:jj

Proposed Pond Site
9-25-83
1" = 40'
Plan View



Note: No dams or embankments of disturbed soil to be used. All containment walls of the pond will be existing undisturbed clays.

Proposed Pond Site
9-25-83
1" = 20'
Profile



Scale 1" = 50'
9-24-83
R G

N

Note: Upon reclamation 40,000 sq. ft. Topsoil will be redistributed over pond site covering it with one foot of topsoil. The remainder of the topsoil will be used on mine site to up the topsoil cover to a one foot depth over the entire disturbed area.

X - Sec.
Road width
Topsoil S.P.
15' pond
3' T.S.S.P.
1320'

Topsoil will be seeded to provide erosion control. No other controls are anticipated as the access road will be diverted.

Note: we add 3000 yd³ of topsoil will be stored on drill rig. 6000 yd³ of chips will removed to inlets dur