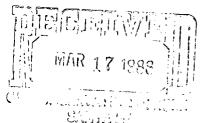
GW -

## GENERAL CORRESPONDENCE

YEAR(S):

Sunterva GAS PROCESSING COMPANY
P.O. BOX 1869 BLOOMFIELD, NM 87413 (505) 632-8033



March 9, 1988

Mr. Roger C. Anderson Environmental Engineer Oil Conservation Division Energy, Minerals and Natural Resources Department P.O. Box 2088 Santa Fe, NM 87504

Re: Kutz Canyon Gas Plant -Waste Discharge Plan GW-45

Dear Mr. Anderson:

Enclosed are Sunterra's responses to your letter dated January 22, 1988. Please note that OCD's questions are italicized with Sunterra's response in regular type.

If further information is required, please advise.

Sincerely,

vice President and General Manager

JR/scg Enclosure

#### PROCESSING UNITS

1. The text of the plan states methanol, Ambitrol and ethyl mercapton are used in the process. Please submit the material safety data (MSD) sheets for these and any other chemicals used at the facility.

MSD sheets are included as Appendix 2 for all chemicals used at the Kutz Plant.

2. Exhibit 5 shows the flare lines are routed directly into the lined pond without going through the oil/water separator. No flare lines from Kutz No. 1 go to the flare or the proposed flare pond. Is the exhibit drawn incorrectly?

Exhibit 5 in the waste discharge plan was drawn in error. A new Exhibit 5 is included showing the correct flare and wastewater routings.

#### WASTEWATER CHARACTERIZATION

1. The text states open drains drain wash down water in the compressor buildings. Are there any soaps or degreasers used for cleaning? If so, please submit the MSD sheet for each chemical. Are the floors of the compressor buildings constructed of an impervious material? Are the curbed to prevent contaminant runoff to the surrounding soil? Are any other process facilities curbed?

Compressors are steamed cleaned and hand wiped. Sometimes N/L cleaner is used. Stoddard solvent (mineral spirits) is used for parts cleaning. MSD sheets are in Appendix 2.

The compressors have contained concrete sumps under floor level. These sumps will drain to the collection box where the oil will be separated out by the hydrocarbon/water separator. The compressor building floors are concrete painted with floor sealant. The compressor buildings are not bermed.

None of the process facilities are bermed. However, our plan states we will berm all pumps and oil storage areas. These bermed areas will be vacuumed out with our portable pump and tank and the collected contaminants will be deposited in collection box for separation by the hydrocarbon/water separator. The separated hydrocarbons will be put into storage for recycle.

2. Fire fighting training sessions use approximately 2,000 gallons per session. Where is the training held? Is a burn pit used? If so, what is its location? If a pit is not used, where is the water disposed of?

Most fire fighting is done with C3 (propane) as the fuel. Once a year we fill the fire fighting pit with river water and add 50 gallons of naphtha, allowing it to burn for training. When training is complete, we stand by as the naphtha burns off. The water in the pit evaporates. The pit is shown on Exhibit 5.

Sands

#### PLANNED PROCESS CHANGES

1. There are several process chemicals identified in this section of the plan. Submit MSD sheets for all chemicals that are or will be used at the facility.

Appendix 2 contains all the MSD data sheets for all chemicals used at the plant.

#### TRANSFER AND STORAGE OF PROCESS FLUIDS AND EFFLUENTS

1. The text states the collection boxes shown on Exhibit 5 are underground and of block-concrete design. Are there leak detection systems for these drains? If there is not a leak detection system in place or planned, submit an inspection method and schedule that is frequent enough to ensure integrity of the boxes. If leak detection systems are planned, submit the construction designs for review. A method and schedule for initial testing of the boxes must be submitted prior to plan approval.

The collection boxes will have a leak detection system installed. The design is shown in Exhibit 11.

Initially the boxes will be filled with river water and the sump observed for four hours to check for leaks. The sumps will be checked on a regular basis to insure integrity.

2. This section also states Sunterra plans to do integrity testing of the underground wastewater pipelines. Submit the proposed method and schedule.

After installation of drainage piping, each section will be plugged and filled with river water. We will monitor for four hours to check for leaks. We will test wastewater piping integrity every five years.

#### EFFLUENT DISPOSAL

- 1. The text states the leak detection system of the proposed lined pond will be monitored daily. Submit a Contingency Plan that will be followed if fluids are observed in the sump. The procedures should include but are not limited to the following.
  - a. Notification of the OCD.
  - b. Analysis of the fluids to determine their origin, and supply the OCD with the analysis results.
  - c. If fluid is from the pond, notify OCD of proposed work (including liner repair) and provide follow-up information to the OCD of actions taken.
  - If, during daily monitoring, fluids are detected in the sump of the proposed double lined pond, Sunterra will notify the Aztec office of OCD. A sample of the fluid will be analyzed to determine if the pond liner is

leaking. If the fluid is coming from a leak in the liner, Sunterra will notify OCD of the leak and proposed remedy to repair the leak. OCD will be notified of Sunterra's progress in fixing the leak and other follow-up information requested by OCD.

#### MISCELLANEOUS

1. Exhibit 5 has an area labeled proposed flare pond. Is this pond going to be lined with leak detection? If this pond is not going to be lined, a demonstration must be made that any fluids entering this pond will not pose a threat of groundwater contamination. If a lined pond is proposed, submit the construction plans for review.

Sunterra proposes a bentonite lined pond as a flare pond. The purpose of the pond is for use as a liquid seal to prevent flash back of the flare system. Liquid level will be controlled with the use of automatic liquid level control. River water will be used for makeup due to loss by natural evaporation and additional evaporation caused by the heat release of the flare. The construction plans are shown in Exhibit 12.

2. Exhibit 5 also shows what appears to be a pit south of the K-station. Identify this pit and its present function. What did this pit receive in the past? Will this pit be used in the future? If so, what for? If it is to be abandoned, submit a closure plan for review.

This pit was used in the past to collect inlet gas scrubber purges for the Y-station compressors. This scrubber purge has been rerouted into the existing flare pond. Sunterra proposes that this scrubber purge will pass through the hydrocarbon/water separator in our discharge plan. This pit will be closed and any tainted soils will be used as partial backfill of the existing flare pond as it is closed.

3. There is no mention of solid waste disposal in the plan. What is the final disposition of all solid wastes generated at the plant?

The solid wastes produced at the Kutz plant are disposed of in the following manner:

Oil, air, glycol, fuel and gas filters, oily rags, wastepaper, and pall rings are picked up by Waste Control of New Mexico. Pall rings include frac sand, formation fines, carbonate scale and ferrous oxide.

Iron sponge material (treated wood chips) are spread out on the ground away from the process area (after being steamed out in the vessel to remove sulfur and hydrocarbons). These chips are allowed to neutralize naturally, becoming an inert substance.

Activated charcoal is treated the same way, steamed out in the vessel and spread out on the ground away from the process area.

Dehydrator molecular sieve material (alumina-silicate) and ceramic balls are spread out around the plant area where excessive moisture collects.

All used (waste) oil is collected in a used oil tank and sold to Mesa Petroleum to be recycled. The waste oil collection tank will be on a concrete and bermed slab.

Lean oil reclaimer, generators, reciprocating compressors, turbine compressors, air compressors, expander/compressors, and automotive oils are the only sources of waste oils.

All used barrels are to be stored on concrete slab, to be returned to vendors. These include muriatic acid, caustic soda, air compressor oil, expander oil, N/L cleaner, and cooling tower chemicals.

4. There is no mention of an SPCC plan in the application. If the facility has prepared and submitted an SPCC plan to the USEPA, please supply a copy to the OCD for inclusion in the discharge plan.

A review of the files indicates that an SPCC has not been prepared and submitted to the EPA.

5. Are there any laboratory facilities at the plant? If so, identify all chemicals used in the lab and their final disposition.

The lab at the Kutz Plan is primarily a chromatographic lab and not a wet chemistry lab. Approximately 5 gallons/year of a combination of K-F reagent, dilute HCl, DEA and glycol are collected and disposed of in the pond. Sunterra proposes that this small amount of liquid be placed in the hydrocarbon/water separator in our discharge plan.

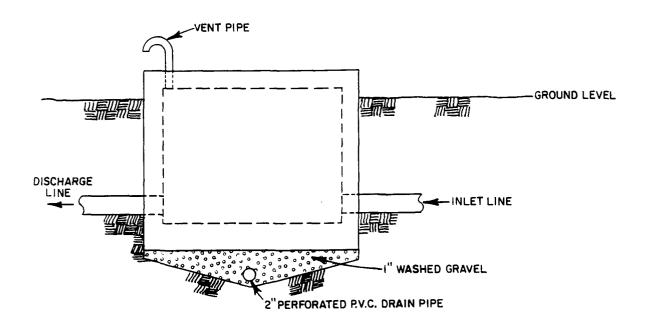
6. There is no mention in the plan of waste oil. How is waste lube oil disposed of? The plan states that oil from the separator will be placed in storage for recycle. Where will it be stored? Is the storage area bermed to contain any leaks or spills? How and where will the oil be recycled? Is there any other source of waste oil?

**.** . .

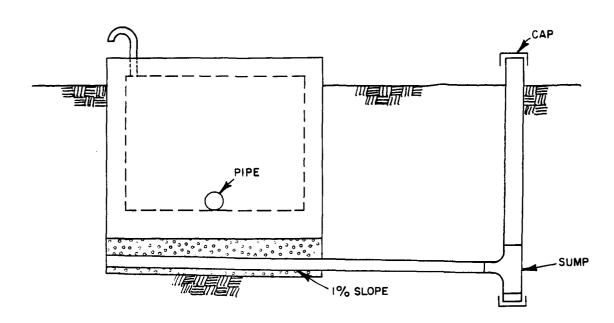
Please see response to item 3 above.

#### EXHIBIT II

## KUTZ PLANT GENERAL DESIGN FOR ALL WASTE WATER COLLECTION BOXES



### FRONT VIEW

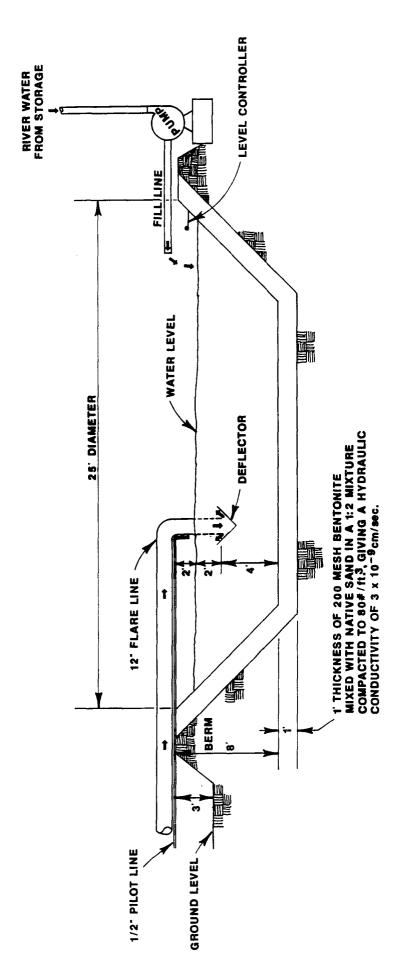


SIDE VIEW

# **EXHIBIT 12**

# KUTZ PLANT FLARE POND DESIGN

NOT TO SCALE

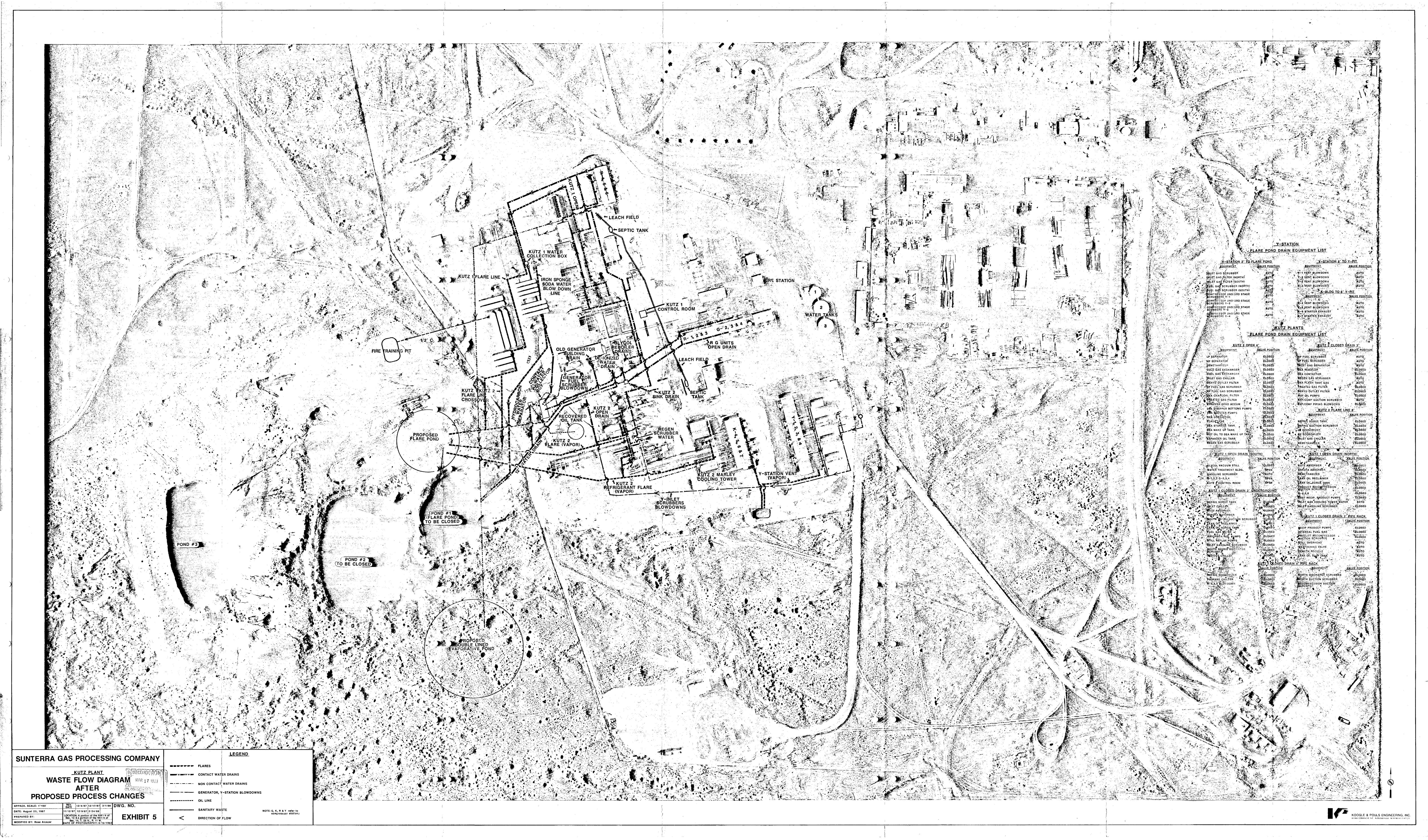


#### APPENDIX 2

#### MATERIAL SAFETY DATA SHEETS

#### CHEMICALS CURRENTLY USED IN THE KUTZ PLANTS

Engi	ne 0il	Use	Vendor
1.	DTE 797	Turbines	Mobil
2.	Pegasus 490	Clarks	Mobil
3.	DTE 25	Refrig. Compressors	Mobil
4.	Rarus 427	Inst Air Compsrs	Mobil Mobil
5.	Rarus 827	Start Air Compsrs	Mobil
Clea	ning Solvents		
6.	N L Concentrate	Soap, Grease Clnr	Lenn & Fink
7.	Solvent - Mineral Spirits	Parts Cleaner	Dial Oil
·.8.	Sepelec	Elec. Contact Clnr	Zep
`9.	Zep Lemonex	Sanitary Cleaner	Zep
10.	Zep-D-Ice	De-icer	Zep
Trea	ting Chemicals		
11.	IWE 7044	Clg Twr Treating	Ind. Water Eng Inc
12.	Bromicide Tables	Clg Twr Treating	Great Lakes Chem.
13.	IWE 6030C	Clg Twr Treating	Ind. Water Eng Inc
14.	IWE 4015L	Clg Twr Treating	Ind. Water Eng Inc
15.	Methano1	Thaw Hydrates	Weskem
16.	Hydrochloric Acid	Deionizer System	Weskem
17.	Diethanolamine (DEA)	Process Chem. KII	Van Waters & Rogers
18.	Lean Oil (Naphtha)	Process Chem KI	Triangle Refineries
19.	Ambitrol FL	Engine coolant	Weskem
20.	Ureabor	Weed killer	Weskem
21.		Process chem KI	Weskem
22.	Corexit 7669 (anti-foam)	Process chem KII	Weskem
23.	Technihib 7020	Corrision Inhibtr	Unichem
24.	Scentinel A (Ethyl-mercaptan)	Propane Odorizer	Weskem
25.	Diethylene Glycol	Process chem KII	Dow Chemical
`^26.	Karl Fisher Re-agent	Lab Analysis	J.T. Baker Chem Co
27.		Deionizer	Weskem
28.	IWE 100	Clg Twr Treating	Ind. Water Eng Inc
29.	IWE 7200	Clg Twr Treating	Ind. Water Eng Inc
30.	IWE 6135	Clg Twr Treating	Ind. Water Eng Inc





## UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE

Suite D, 3330 Pan American Highway NE Albuquerque, New Mexico 87107

FEB 1 2 1989

February 11, 1988

OIL CONSERVATION DIVISION SANTA FE

Mr. William J. Lemay, Director Oil Conservation Division State of New Mexico State Land Office Building P.O. Box 2088 Santa Fe, New Mexico 87504-2088

Dear Mr. Lemay:

This responds to your public notice in which two proposed groundwater discharge plans were described. We have reviewed the plans and have not identified any resource issues of concern to our agency in the following:

GW-45, Sunterra Gas Processing Company, San Juan County Bloomfield, NM. GW-39, El Paso Natural Gas Company, San Juan Gas Processing Plant, San Juan County, Farmington, NM.

These comments represent the views of the Fish and Wildlife Service. If you have any questions concerning our comments, please contact Tom O'Brien at FTS 474-7877 or (505) 883-7877.

Sincerely yours,

John C. Peterson Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico Regional Administrator, Environmental Protection Agency, Dallas, Texas Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement, Albuquerque, New Mexico

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATUFAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION "OIL CONSERVATION DIVISION —
Notice is hereby given that pursuant to the New Mexico Water
Quality Control Commission Regulations, the following discharge plants
have been submitted for approval to
the Director of the Oil Conservation
Division, State Land Office Building,
P.O. Box 2088, Santa Fe, New
Mexico 87504-2088; Telephione (505)
827-5800

827-5800:

GW-45) Sunterra Gas Processing Company, Kutz Carryon Gas Prant, John Renner, General Manager, P.O. Box 1859, Bloomfield, New Mexico 37413, his submitted for approval a ground water discharge plan application for its Kutz Carryon Gas Plant located in the SW/4 of Section 12, NE4 Section 13/8 SE/4 Section 14, Township 128 North, Range 11: West, NMPM, San Juan County, New Mexico; Approximately 4,200 gallons per day of process waste water will be disposed of in the COD approval double fined evaporation pond with leak detection. The total dissolved solids of the wastewater is approximately 1,500 milligrams per filer (mg/1); Ground water in most likely to be affected by any discharge at the surface la spallow perchatt water with total dissolved solids (TDS) concernitationly of (GW-45) Sunterra Gas Process

will be reclaimed to collect storm water runoff from the facility (GW-39) El Paso Natural Gas (Company, San Juan Gas Processing Plant, John Craig, Vice President, P.O. Box 4990, Farmington, New Mexico 87499, has submitted for Mexico 87499, has submitted for approval a ground water discharge plan for wastewater that does not come in contact with hydrocarbons (non contact) for its facility located in Section 1, Township 29 North, Pange 15 West, NMPM, San Juan County New Mexico. Approximately 22,000 gallons per day of non-contact process wastewater with a total dissolved solids content of accordinate. solved solids content of appointmate ly 1400 mg/1 will be land applied on a 28-acre parcel on the east side of the facility. Discharge will be by sideroil trigation except in the months of December and January when the effluent will be stored. Ground water, most likely to be affected by the discharge is at a depth of 70 feet with an average total dissolved solids concentration of approximately 4500 mg/1.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. Prior to ruling on any proposed discharge plan or its ly 1400 mg/1 will be land applied on a

on any proposed discharge plan or its modification, the Director of the Oil modification, the Director of the Oil
Conservation Division shall allow at
least thirty (30) days after the date of
publication of this notice during which
comments may be submitted to him
and a public hearing may be requested by any interested person.
Requests for public hearing shall set
forth the reasons why a hearing
should be held. A hearing will be held
if the Director determines; there is if the Director determines there is

if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commissionat Santa Fe, New Mexico, on this 3rd day of February.

STATE OF NEW MEXICO.

OIL CONSERVATION DIVISION.

SEA L.

Journal, February 11, 1988

Journal, February 11, 1988

STATE OF NEW MEXICO County of Bernalillo

CRAIG E. P.	MEYERS being duly sworn declares and
newspaper is duly qualified to Section 3, Chapter 167, Session	ADV. MCK of the Albuquerque Journal, and that this opublish legal notices or advertisements within the meaning of on Laws of 1937, and that payment therefore has been made or the notice, a copy of which is hereto attached, was published in tily edition,
	times, the first publication being on theday
of Felilwaly	, 198, and the subsequent consecutive
	My Meyers.
YLVIA L. NUANES  BELIC-NEW MERICO  H. SECRETARY OF STATE	Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this/
11-18-89	PRICE #30.98
EDJ-15 (R-2/86)	Statement to come at end of month.

ACCOUNT NUMBER C80932

#### AFFIDAVIT OF PELICATION

No. 21317

STATE OF NEW MEXICO, County of San Juan:

Betty Shipp being duly
sworn, says: That he is the National Ad Manager of
THE FARMINGTON DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the
hereto attached <u>Legal Notice</u>
was published in a regular and entire issue of the said FARMINGTON DAILY TIMES, a daily newspaper duly qualified for the purpose within the
meaning of Chapter 167 of the 1937 Session Laws of the State of New
Mexico forOne /c/n/c/u/i/c/(days) (weeks) on the same day as
follows:
First Publication Wednesday February 10, 1988
Second Publication
Third Publication
Fourth Publication
and that payment therefor in the amount of \$ 40.35
has been made. Betty Dupp
Subscribed and sworn to before me this 12th day of February , 19 88.
NOTARY PUBLIC, SAN JUAN COUNTY, NEW MEXICO  My Commission expires: 1888 23, 1990

#### Publication

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL

RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to the New Mexico Water
Quality Control Commission Regulations, the following discharge plans
have been submitted for approval to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe. New
Mexico 87504-2088, Telephone (505) 827-5800.

(GW-45) Sunterra Gas Processing Company, Kutz Canyon Gas
Plant, John Renner, General Manager, PO Box 1869, Bloomfield, New Mexico 87413, has submitted for approval a ground
water discharge plan application for its Kutz Canyon Gas Plant
located in the SW/4 of Section 12, NE/4 Section 13, SE/4
Section 14, Township 28 North, Range 11 West, NMPM, San
Juan County, New Mexico. Approximately 4,200 gallons per
day of process waste water will be disposed of in an OCO
approval double lined evaporation pond with leak detection.
The total dissolved solids of the wastewater is approximately
1,500 milligrams per liter (mg/1). Ground water most likely to 1,500 milligrams per liter (mg/1). Ground water most likely to be affected by any discharge at the surface is shallow perched water with total dissolved solids (TDS) concentrations of 8000 to 18,000 mg/1. Deeper ground water is at a depth of about 200 feet with estimated TDS concentrations between 2000 and 4000 mg/1. Two of the three unlined ponds presently being used for disposal will be closed and reclaimed. The third unlined pond will be retained to collect storm water runoff, from the facility. !

(GW-39) El Paso Natural Gas Company, San Juan Gas Processing Plant, John Craig, Vice President, PO Box 4990, Farmington, New Mexico 87499, has submitted for approval ground water discharge plan for wastewater that does not come in contact with hydrocarbons (non contact) for its facility located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico. Approximately 22,000 gallons per day of non-contact process wastewater with a total dissolved solids content of approximately 1400 mg/1 will be land applied on a 26-acre parcel on the east side of the facility. land applied on a 25-acre parcer on the east side of the facility.

Discharge will be by sideroll irrigation except in the months of December and January, when the effluent will be stored. Ground water most likely to be affected by the discharge is at a depth of 70 feet with an average total dissolved solids concentration of approximately 4500 mg/1.

Any interested persons may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division and may proposed discharge.

address given above. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and

information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation
Commission at Santa Fe, New Mexico, on this 3rd day of February. To be published on or before February 13, 1988.

STATE OF NEW MEXICO OIL CONSERVATION DIVISION WILLIAM J. LE MAY

Legal No., 21317 published in the Farmington Daily Times. : Farmington, New Mexico on Wednesday, February 10, 1988.



## ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

GARREY CARRUTHERS
SOVERNOR

February 3, 1988

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

	Re:	NOTICE OF PUBLICATION
		•
Advertising Manager		
Albuquerque Journal		
717 Silver SW		
Albuquerque, NM 87102		

Dear Sir:

Please publish the attached notice one time immediately on receipt of this request. Please proofread carefully, as any error in a land description or in a key word or phrase can invalidate the entire notice.

Immediately upon completion of publication, please send the following to this office:

- 1. Publisher's affidavit in duplicate.
- 2. Statement of cost (also in duplicate).
- 3. CERTIFIED invoices for prompt payment.

We should have these immediately after publication in order that the legal notice will be available for the hearing which it advertises, and also so that there will be no delay in your receiving proper payment.

Please publish the notice not later than February 13, 1988

Sincerely,

WILLIAM J. LEMAY

Director

WJL:dp

Attachment

## NOTICE OF PUBLICATION STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 3rd day of February. To be published on or before February 13, 1988.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY, Director

SEAL



## ENERGY, MICHALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

GARREY CARRUTHERS

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

January 22, 1988

#### CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. John Renner, General Manager Sunterra Gas Processing Company P.O. Box 1869 Bloomfield, NM 87413

> RE: Discharge Plan GW-45 Kutz Canyon Gas Plant San Juan County, New Mexico

#### Dear Mr. Renner:

The Oil Conservation Division has received and is in the process of reviewing the above-referenced discharge plan application. The plan submittal, dated December 21, 1987, was received by the OCD December 22, 1987. The following comments and requests for additional information are based on our review of the data provided in the plan and observations from site inspections on April 22, 1987 and June 22, 1987.

#### PROCESSING UNITS

- 1) The text of the plan states methanol, Ambitrol and ethyl mercapton are used in the process. Please submit the material safety data (M.S.D.) sheets for these and any other chemicals used at the facility.
- 2) Exhibit 5 shows the flare lines are routed directly into the lined pond without going through the oil/water separator. No flare lines from Kutz No. 1 go to the flare or the proposed flare pond. Is the exhibit drawn incorrectly?

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- 2) Fire fighting training sessions use approximately 2000 gallons per session. Where is the training held? Is a burn pit used? If so, what is its location? If a pit is not used, where is the water disposed of?

#### PLANNED PROCESS CHANGES

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#### TRANSFER AND STORAGE OF PROCESS FLUIDS AND EFFLUENTS

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- Analysis of the fluids to determine their origin, and supply the OCD with the analysis results.
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- There is no mention of an SPCC plan in the application. If the facility has prepared and submitted an SPCC plan to the USEPA please supply a copy to the OCD for inclusion in the discharge plan.
- 5) Are there any laboratory facilities at the plant? If so, identify all chemicals used in the lab and their final disposition.
- There is no mention in the plan of waste oil. How is waste lube oil disposed of? The plan states that oil from the separator will be placed in storage for recycle. Where will it be stored? is the storage area bermed to contain any leaks or spills? How and where will the oil be recycled? Is there any other source of waste oil?

Submission of the information requested in this letter will allow our review of your application to continue. If you have any questions, please contact me at 827-5885.

Sincerely,

Roger C. Anderson Environmental Engineer

cc: OCD - Aztec

#### P 612 458 033

#### receipt for certified mail

NO INSURANCE COVERAGE PROVIDED NOT FOR INTERNATIONAL MAIL

#### (See Reverse)

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#### STATE OF NEW MEXICO

#### ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

#### **OIL CONSERVATION DIVISION**

GARREY CARRUTHERS

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87504 (505) 827-5800

December 2, 1987

#### CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Gary Jordan Sunterra Gas Processing Company P. O. Box 1869 Bloomfield, New Mexico 87413

RE: Discharge Plan GW-45 Kutz Canyon Gas Plant San Juan County, New Mexico

Dear Mr. Jordan:

The Oil Conservation Division has received a copy of your correspondence to the Bureau of Land Management dated October 30, 1987. Any surface waste disposal relating to your processing plant will be a major part of the discharge plan you have been requested to submit to this office.

The following comments and requests for additional information are based on our review of the proposal.

- A core hole is to be drilled near the center of the proposed pond. A
  hole such as this may provide a direct conduit for the pond waters to any
  permeable zones underlying the pond. It is advisable to leave the
  subsurface directly below the pond undisturbed.
- 2. A second core hole is proposed for "just outside the proposed pond." How far below the pond is the core hole to be? How will this hole be plugged? Can this hole be converted and used as a monitor well?
- 3. The location of the proposed pond is not given in the proposal. Please supply a diagram showing its relation to the plant.
- 4. Construction details of the proposed pond were not supplied. Provide with the discharge plan detailed construction plans to include at a minimum, dimensions, compaction calculations, wave calculations, freeboard calculations, berm strength calculations and piping schematics.

The proposed geologic and hydrologic investigation can provide an excellent demonstration that the use of an unlined pond will not impact ground water. The clarifications requested in this letter are required if an unlined pond is to be used as your disposal method.

Mr. Gary Jordan
December 1, 1987
Page 2

During our phone conversation you informed me that you were evaluating alternate methods of disposal. Other methods, such as lined ponds with leak detection, have different criteria for site investigations, design and construction. A detailed proposal for the method you choose must be submitted as part of the discharge plan application.

If you have any questions, please do not hesitate to call me at (505) 827-5885.

Sincerely,

Roger Anderson

Environmental Engineer

RA:sl

cc: OCD - Aztec

Mr. Hindell Greer - B.L.M.

#### ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

#### OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87504 (505) 827-5800

November 3, 1987

Bureau of Land Management Caller Service 4104 Farmington, New Mexico 87401

ATTENTION: Lindell Greer

Dear Mr. Greer:

Per your request today, I have enclosed copies of laboratory analyses of samples taken from Sunterra's Kutz Plant cooling tower and three ponds. Also enclosed are the New Mexico Water Quality Commission Standards for ground water.

If you have any questions, please contact me at 827-5884.

Sincerely,

Jami Bailey Geologist

Enc.

JB:sl

## Sunterva GAS PROCESSING COMPANY P.O. BOX 1869 BLOOMFIELD, NM 87413 (505) 632-8033

October 30, 1987

Mr. Lindell Greer
Bureau of Management
Caller Service \$4104.
Farmington, NM 87499-4104

RE: SF 075309

Dear Mr. Greer:

During our phone conversation on October 28, 1987, we discussed the possibility of installing a single lined evaporative pond at our Kutz Plant. Exhibit 1 is an orthophoto of the Kutz Plant showing the present pond system. Exhibit 2 is results of sampling of the three ponds at the Kutz Plant that were duplicate samples taken by us and the New Mexico Oil Conservation Division (OCO). The sample results are a worst case scenario as we plan to install a hydrocarbon/water separator. This separator will remove essentially all of the hydrocarbons in the wastewater.

Exhibit 3 is a proposal for geologic and hydrologic investigations to provide information as to probable rates and paths for seepage from a single lined pond. The investigation will also provide depth to groundwater and its chemical nature.

As we discussed in our phone conversation, Sunterra must provide a Wastewater Discharge Plan to OCD by December 23, 1987. We would appreciate your prompt review of the enclosed information.

If further information is required, please call me at (505) 768-6700.

1

Gary Jordan

cc: Mr. David Boyer - OCD

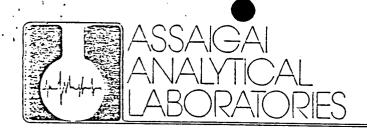
Mr. John Renner - Sunterra

### KUTZ PLANT SAMPLING LOCATIONS Duplicate Sampling with OCD 4/22/87

#### Sample I.D.

- 1. Water Sample of Kutz #1 Cooling Tower Sump
- 2. Water Sample of Flare Pond #1 Southwest Corner
- 3. Water Sample of Pond #2 Middle of North Side
- 4. Water Sample of Pond #3 Southwest Corner

Exhibit



TO: Sunterra Gas Processing

ATTN: Gary Jordan PO Box 2106

Albuquerque, NM 87103

DATE: 29 May 1987

0661

SAMPLE ID : #1

ANALYTE .	ANALYTICAL	RESULTS	NOMINAL	DETECTION LIMITS
As .	<0.05	mc / 1		0 05 /3
Ba	<1.0			0.05 mg/l
Cđ	<0.01			1.0 mg/l
Cr ·	<0.05			0.01 mg/l
СИ	<0.01			0.05  mg/l
F		mg/l		0.01 mg/l
Pb				0.01 mg/l
Total Hg		mg/l		0.01  mg/l
NO 3 as N	0.0023			0.002  mg/l
Se	<0.01			0.01  mg/l
Ag	0.019			0.002  mg/l
Benzene	<0.05			0.05  mg/l
Toluene ·	<0,001			0.001  mg/l
CCL 4	<0.001			0.001  mg/l
	<0.01		•	0.01  mg/l
1,2 Dichloroethane	<0.001			0.001  mg/l
1,1 Dichloroethylene	<0.001			0.001  mg/l
1,1,2,2 Tetrachlcroethylene				0.001  mg/l
1,1,2 Trichloroethylene	<0.001	mg/l		0.001  mg/l
Ethyl Benzene	<0.001			0.001  mg/l
Xylenes	<0100 <u>1</u>		•	0.001  mg/l
Methylane Chlorida	<0.001	mg/l		0.001  mg/l
CCT 3	<0.001			0.001  mg/l
1,1 Dichloroethane	<0.001	mg/l		0.001 mg/l
EDB	<0.001			0.001 mg/l
1,1,1 Trichloroethane	<0.001	mc/l		0.001 mg/l
1,1,2 Trichloroethane	<0.001			0.001 mg/l
1,1,2,2 Tetrachloroethane	<0.001		• :	0.001 mg/l
Vinyl Chloride	. <0.001	mg/l		0.001 mg/l
Cu ·		mg/l		0.01 mg/l
Cl		mg/l	• •	1 0 /7
Fe		mg/l	•	0.3 mg/l
Mn	- 0.03	mg/1		0.01 mg/l
SO 4		mg/l		1.0 mg/l
Zn	0.072			0.003 mg/l
Al	<0.1			0.1  mg/l
В	0.357			0.04  mg/l
Co	<0.03			0.03 mg/l
Mo	<0.05			0.03 mg/l 0.05 mg/l
Ni	0.150	ma/1		0.01  mg/l
7300 Jefferson, N.E. • Alb	uquerque, New	Mexico 871	09 • (50	5) 345-8964

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely, .

Jennifer V. Smith, Ph.D.

Laporatory Director

. 87-0692-0

#### SONTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO

REPORT TO:	David Boyer	S.L.D. No. OR-
LEST CIET 10:	N.M. Oil Conservation Division	DATE REC. 4-27-37
	P. 0. Box 2088	DATE REC.
	Santa Fe, N.M. 87504-2088	PRIORITY
PHONE(S):		CODE: [8   2   2   3   5
SUBMITTER:	David Boyer	CODE: 12 16 10 1
	CTION CODE: (YYMMDDHHMMIII)   817   014   24	
	WATER , SOIL , FOOD , OTHER:	
	~ Juan ; CITY: Bloomfreld	······································
	E: (Township-Range-Section-Tracts) 3 8 N+ / 1/ 14	
	UESTED: Please check the appropriate box(es) below to indic:	
	er possible list specific compounds suspected or required.	3,000
		CTRACTABLE SCREENS
	· · · · · · · · · · · · · · · · · · ·	Aliphatic Hydrocarbons
(754) Aromai	ic & Halogenated Purgeables [ (760)	Organochlorine Pesticides
(765) Mass S	pectrometer Purgeables (755)	Base/Neutral Extractables
(766) Trihalo	methanes (758)	Herbicides, Chlorophenoxy acid
Other	Specific Compounds or Classes [759]	Herbicides, Triazines
		Organochiorine Pesticides
	(761)	Organophosphate Pesticides
O	[ (767)	Polychlorinated Biphenyls (PCB's)
	(764)	Polynuclear Aromatic Hydrocarbons
	(762)	SDWA Pesticides & Herbicides
Remarks:	interio - Kutz Cooling Town	a.
nemarks: 10	- Aus Cocur Con	20
FIELD DATA:		and the second of the second o
pH= 7.5 Ca	nductivity= 1300 umbo/cm as 9°C; Calorine Residual:	=mg/l
Dissolved Oxygen	=mg/l; Alkalimity=mg/l; Flow Rate	
Depth to water	ft.; Depth of weil ft.; Performion Interval	- ft.; Casing:
Sampling Location	c, Methods and Remarks (i.e. odars, esc.)	
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	e results in this shock accuracy reflect the results of my field	
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	eserved as foilows:	Annual services and the services are the services and the services and the services and the services and the services are the
	No Preservation; Sample stored at room temperature.	ا هم من <u>سا</u> مصرياً أن المصرياً على النواج المراجعين المراجعين المحاجم المحاجم المحاجم المحاجم المستقدين المحاجم
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P-Ice P-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Sample stored in an ice bath (Not Frozen).  Sample Preserved with Sodium Thiosulfate to remove chloring	e residual.
P-Ice P-Na_SO_ CHAIN OF CUS	Sample stored in an ice bath (Not Frozen).  Sample Preserved with Sodium Thiosulfate to remove chloring TODY	
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#### THIS PAGE FOR LABORATORY RESULTS ONLY

(73) Aliphatic Purpose   (73) Barbidists	This sample was tested using the analytical screen	ing method(s)	checked below:	
(753) Aliphatic Burgeables (1-3 Carbona)   (751) Aliphatic Eydrocarbona   (758) Mass Spectrometer Purpubles   (768) Mass Spectrometer Purpubles   (768) Mass Spectrometer Purpubles   (768) Early Station   (768) Carbonal (166) Expection   (768) Early Station   (769) Early Early Station   (769) Early E	PURGEABLE SCREENS		EXTRACTABLE SCREENS	
(754) Aromatic & Halogenated Purpables   (756) Base/Nottra Estratibles   (756) Thislomathanas   (756) Thislomathanas   (758) Herbiddar, Chlerophenony acid   (758) Herbiddar, Chlerophenony acid   (758) Herbiddar, Chlerophenony acid   (759) Organochloriae Pasticides   (759) Organochloriae   (759) Organochlo			<del></del>	
(785) Mass Spectrometer Purgeables   (785) Bass/Neutral Extractables   (785) Close Tribalomethanes   (785) Close Tribalometh		* * * * * * * * * * * * * * * * * * * *		
(788) Esticides, Chlorophenoxy scid   (788) Esticides, Chlorophenoxy scid   (769) Organochlorine Patticides   (769) Organochlorine   (7				•
Other Specific Compounds or Classes    (789) Berbeideds, Triazinas   (760) Organophosphate Pathiddes   (761)		-		
Green Deptacement   Green		•	· · · · · · · · · · · · · · · · · · ·	
(761) Organophosphate Pesticides (767)   (767) Peyroliciated Biphysis (PCB's)   (764) Polymuclase Aromatic Bydrocarbona   (762) SDWA Perticides & Herbicides				
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ABBREVIATIONS USED:  N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT  T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)  [ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPECXMATE QUANTITATION  LABORATORY REMARKS:  CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes  No  Seal(s) broken by:  not  not  date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis:  1/4/67  Analyst's signature:				
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TR = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)  [ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPECXMATE QUANTITATION  LABORATORY REMARKS:  CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes  No  Seal(s) broken by:	*			
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No Seal(s) broken by: MAT Marin date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 14/67 Analyst's signature: Marin Collection  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Marin Corp.				
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No A. Seal(s) broken by: MAT MALLA date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 5/4/87 Analyst's signature: Market C. Control of the statements in this block.  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Market Sample and with the statements in this block.	4 ** *			
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No W. Seal(s) broken by: MAT Market date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 1/4/57 Analyst's signature: Market West Control of the statements in this block.  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Market Sample and with the statements in this block.				
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No W. Seal(s) broken by: MAT Market date: I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 1/4/47 Analyst's signature: Market West Color I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Market William Sample and With the statements in this block.				
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No L. Seal(s) broken by: Met Maked date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 1/4/87 Analyst's signature: Make C. Constant of the statements in this block.  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Make C. Constant of the statements of this sample and with the statements in this block.	LABORATORY REMARKS:			
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No W. Seal(s) broken by: MAT Maked date:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 1/4/87 Analyst's signature: Make C. Char  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Make C. Char	and the second of the second o	-		
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No A Seal(s) broken by:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis:     July	Section 3 Mills			
CERTIFICATE OF ANALYTICAL PERSONNEL  Seal(s) Intact: Yes No A Seal(s) broken by:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 5/4/87 Analyst's signature: Hary C. Hary  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: May have reviewed and concur with the analytical results for this sample and with the statements in this block.	and the second s		man of the second of the secon	
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Seal(s) Intact: Yes No D. Seal(s) broken by:  I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 5/4/87 — Analyst's signature: Many C. Con.  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Many C. Con.	CERTIFICAT	TE OF ANALY	TICAL PERSONNEL TO THE THEFT OF THE PERSONNEL	Contract of the Contract of th
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.  Date(s) of analysis: 5/4/87 —. Analyst's signature: Hary C. C.  I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Analysis of this sample and with the statements in this block.		and the second s	and the state of t	7 • \$1
Date(s) of analysis: 5/4/87 Analyst's signature: Mary C. Electric I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature: Reviewers signature:	I certify that I followed standard laboratory procedu	res on handlin	g and analysis of this sample unless otherwise note	d and
I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.  Reviewers signature:   Reviewers signature:	P. ()	رحسساد فلارسا	esuits for this sample.	0.43
Reviewers signature: Knegerhei	A Transfer to a contract to a	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	the for this sample and with the statement in the	block
	$\mathcal{L}$	minitaries test	and for sine somble and aire and sequentities in this	JIOCK.
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New Mexico Health and ent Department SCIENTIFIC LABORATO LON 100 Camino de Salud NE Albuquerque, NM 87106 — (505) 841-2555

FOR OCD USE -- Date Owner Notified\_

## AAL WATER CHEMISTRY and NITROGEN ANALYSIS

111-						
DATE RECEIVED I I N	AB COD	R E □ 59300	□ 59600 <del> X</del> X	OTHER: 82	235	
Collection DATE C4122187	3115	e location	SUNTERRA	- Ku;	PIS	シルア
Collection TIME	INFORM		500 1200			
Callected by — Personi Agency		tion site description		Coo	LIUG 104	DER
Callected by Person Agency  TO VER / HNOELSO	√ /OCD					
====================================			<del>-</del> -			
ENVIRONMENT		ΩN				
SEND NM UIL CUNS	SERVATION DIVISI Office Bldg, PO	UN Rox 2088				
	NM 87504-2088	507200				
Attn: David Boy	<u>·</u>		<del>'</del>			
Attit. — Martin Atti	J. b		*************	Comment		
Phone: 827-58	312			Station/ well code		
SAMPLING CONDITIONS				Owner	· · · · · · · · · · · · · · · · · · ·	
□ Bailed □ Pump	Water level	1	Discharge		Sample type	
♥ Dipped □ Tap					GRAR	
PH (00400) 7.5 (STRUD)	Conductivity (Uncorrecte	φ) // μmho	Water Temp. (00010)	9 °C	Conductivity at 25	i°C (00094) µmho
Field comments		·····			<u> </u>	Amino
( )=2	VOC Farm	ب جيم ٢	Emmonts	,	<del></del>	
			· 			
SAMPLE FIELD TREATMEN						
No. of samples	F: Whole sample (Non-filtered)	F: Filtered in f	nbrane filter	2 ml H₂SO₄/	L added	
XNA: No acid added □ 0	Other peccific		oml conc. HNO3 a	ddod Fil	\ /ml formi	ag WNO added
			3 a	aded []	A. AMI LOME	= 3
ANALYTICAL RESULTS from						·
NA	Units	Date analyzed	From F,	NA Sample	:	Date :
Conductivity (Corrected) 25°C (00095)	1943 umno	5/ <u>i</u> .k •			Ān	alyzed .
		í	区 Caicium	225	mg/T	5/14
☐ Total non-filterable residue (suspended)			1 = -	4,64		
(00530)	mg/l		[入 Potassium ]		mg/l	<u> </u>
Tother pt/	8.30	<u> 575 </u>	Magnesium .	47	mg/1	5/14
☐ Other:	•		· 区 Socium	223	mg/7	
Culei.			IN Sicarconat	<b>=</b> 336	mg/T	5/5
A-H-SO.			[何 Chiloride	44	mg/l_	515
☐ Nitrate-N +, Nitrate-N			Sulfate	22		35/12
total (00630)	mg/l		-1./ <del></del> -			5//4
☐ Total Kieldani-N	mg/l		- Total Soli	cs <u>/54</u>		
	mg/l		1 12 - 403		<u> </u>	5/5
☐ Chemical oxygen demand (00340)	mg/l					•
☐ Total organic carbon	mg/r					
( )	mg/l		- Cation/	Anion Ba	lance	
☐ Other:	<del></del>	<del></del>	Analyst	Date R	eported Revie	wed by
			<u> </u>	5	20 37 0	<u></u>
Laboratory remarks				······································		
		· · · · · · · · · · · · · · · · · · ·				
				<del></del>		
<del></del>						

Phone or Letter?\_

. u '

	CATIONS						ANIONS	
ANALYT	E MEQ.	PPM	DET	r.LIMIT	1	ANALYTI	E MEQ.	PPM
Mg		225.00 47.00 223.00 4.68	< <	3.0 10.0 10.0 0.5		HCO3 S04 Cl	5.51 18.46 1.24	336.00 886.00 44.00
Mn Fe	0.00	0.00				NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00
SUMS	24.91	499.68					25.21	1266.00
TDS (me	asured) =	1562.00	ppı	n.		*** ** \$	,	37 - 1. <b>16</b> -
Ion Ba	lance =	98.82	ક				e No. out/By	=8701468 ISI 5/14/67



New Mexico Health and SCIENTIFIC LABORAT C. 700 Camino de Salud NE

ant Department

Albuquerque, NM 87106 — (505) 841-2555

and NY HOGEN ANALYSIS

DATE: RECEIVED		NB 4-11 -5-7	USER CODE 59300	59600 ÅX	отнея: 822	235	
Collection DATE 04   22   87		SITE	Campin incomes	SUN TERRA	_	TZ PLANT	
Collection TIME		ATION	Collection site description				
Collected by — Person/A	ency	ン /OCD		·	Coor	ING TONER	l
	<i>DD D D D D D D D D D</i>				7		
. E	NVIRONMENT	TAL BUREAU		•			
SEND N	M OIL CONS	SERVATION DI	VISION , PO Box 2088	<b>3</b>			— I
		NM 87504-208					
<b>—</b>	David Boy	/er		<u> </u>	<b> </b>	······	
	_				Station/	· · · · · · · · · · · · · · · · · · ·	
•	e: 827-58				well code Cwner		
SAMPLING COI	NDITIONS  Pump	Water level		Olasha ana	!	Complete	
	□ Tap	Angres leves		Discharge		Sample type  CRAB	
pH (00400)	(Strip)	Conductivity (Unco		Water Temp. (00010)	Ç •c	Conductivity at 25°C (00094)	(mba
Field comments		l	1325 µmho		7 (	<u> </u>	rwho
				<del></del>			
SAMPLE FIELD	TREATMENT	Г — Check prope	er boxes		•		
No. of samples	/	Whole sample	F: Filtered in	field with □ A: 2	2 ml H <sub>2</sub> SO <sub>4</sub> /l	L added	
submitted	/	(Non-filtered)	0.40 µmen	norane mer			
NA: No aci	d added 🗀 C	Other-specify:	□ A:	5ml conc. ENO <sub>3</sub> ac	ided 🖂	A: 4ml fuming HNO <sub>3</sub> a	dded.
ANALYTICAL B	ESULTS from	SAMPLES					•
Conductivity (C	Corrected)		Units Date analyze	From,	NA Sample	: Data Analyzed	
25°C (00095)	···	<del></del>	umho	T Caleium		mg/1	
☐ Total non-filtera residue (suspe				1 = -			→
(00530) 			. mg/l	Potassium _		mg/T	
목 Other: Cr.	L. A.A. T	2,006	5/27	Magnesium _		mg/T	
☐ Other:				Socium	<del></del>		
A-H <sub>7</sub> SO <sub>4</sub>				I ☐ Sicartonatu			
☐ Nitrate N ÷ Nit	trate-N			in Chiorice _		=5/1 =5/1	— <u>j</u>
total (C0630)  Ammonia-N tot	=1 (00610)		mg/l	Sulfate	<u> </u>		<del></del> ]
☐ Total Kleidant-N	, ,		, mg/1	- ☐ Total Solid		mg/T	<del></del>
( )  Chemical oxyg	en		, mg/l				<del></del> .
. demand (0034)	<sup></sup>		mg/l	- U			
☐ Total organic ca	aroon		mg/l	- Cation/A	nion Ba	lance	
☐ Other:		· · · · · · · · · · · · · · · · · · ·	•. ———	Analyst		eported Reviewed by	
			· · · · · · · · · · · · · · · · · · ·	-	6	1 187 ( Call	1
Laboratory remark	<b>S</b>					0 1	
FOR OCD USE	: Date C	Wmer Notifi	ed .	Phone or Lett	er?	Initals	



TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

SAMPLE ID : #2

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETECTION LIMITS
As .	0.28	mg/l	0.05 mg/l
Ba	<1.0		1.0 mg/l
Cđ	<0.01		0.01 mg/l
Cr	<0.05	•	0.05 mg/l
CN ·	0.03	-	0.01 mg/l
F	0.70		0.01 mg/l
Pb		mg/l	0.01 mg/l
Total Hg	<0.002		0.002 mg/l
NO 3 as N	<0.01	-	0.01 mg/l
Se	0.020	_	0.002 mg/l
Ag	<0.05		0.05 mg/l
Benzene	0.14		0.001 mg/l
Toluene	0.24		0.001 mg/l
CCL 4	<0.01		0.01 mg/l
1,2 Dichloroethane	<0.001	_	0.001 mg/l
1,1 Dichloroethylene	<0.001	_	0.001 mg/l
1,1,2,2 Tetrachloroethylene			0.001 mg/l
1,1,2 Trichlorcethylene	<0.001	•	0.001 mg/l
Ethyl Benzene	0.011		0.001 mg/l
Xylenes		mg/l	0.001 mg/l
Methylene Chloride		mg/l	0.001 mg/l
CCI 3	<0.001		0.001 mg/l
1,1 Dichloroethame	<0.001	_	0.001 mg/l
EDB	<0.001	-	0.001 mg/l
1,1,1 Trichlorsethane	<0.001		0.001  mg/I
1,1,2 Trichloroethane	<0.001		0.001  mg/l
1,1,2,2 Tetrachloroethane	<0.001		0.001  mg/I
Vinyl Chloride	<0.001		0.001  mg/l
Cu		mg/l	0.01  mg/l
C1 .		mg/l	1.0  mg/l
Fe	2.68	mg/l	0.3  mg/l
Mn	0.39	mg/l	0.01  mg/l
SO 4	771	mg/l	1.0  mg/l
Zn	0.034	mg/l	0.008  mg/l
Al		mg/I	0.1 mg/l 0.04 mg/l 0.03 mg/l
В	0.376		0.04  mg/l
Co	<0.03		0.03  mg/l
Mo	<0.05		0.05 mg/l
Ni	0.182	mg/l	0.01  mg/l

DATE: 29 May 1987 0661

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director

## SCIFMTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106 841-2570



REPORT TO:	David Boyer	S.L.D. No. OR-611 699			
	N.M. Oil Conservation Division	DATE REC. 4-27-17			
•	P. O. Box 2088				
	Santa Fe, N.M. 87504-2088	PRIORITY			
DUONE(e).		CODE: 18 12 12 13 15 1			
PHONE(S):	David Payar				
SUBMITTER:					
SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 817101412121/1215151 10461					
SAMPLE TYPE: WATER , SOIL , FOOD , OTHER: CODE:					
COUNTY: Son Jan; CITY: Bromfield CODE: [ ] ]					
LOCATION CODE: (Township-Range-Section-Tracts) $[3]8N+/1/W+/13+/1/[(10N06E24342)]$					
ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens					
required. Whenever possible list specific compounds suspected or required.  PURGEABLE SCREENS  EXTRACTABLE SCREENS					
(753) Alipha		Aliphatic Hydrocarbons			
		Organochlorine Pesticides			
		Base/Neutral Extractables			
(766) Trihal	omethanes [758]	Herbicides, Chlorophenoxy acid			
Other		Herbicides, Triazines			
닏		Organochlorine Pesticides			
		Organophosphate Pesticides			
		Polynderinated Biphenyls (PCB's) Polyndelear Aromatic Hydrocarbons			
H		SDWA Pesticides & Herbicides			
		}			
Remarks:	untern Kuts Fors / lugs				
PIELD DATA	A Committee of the comm	The second secon			
pE= 6,5; Conductivity= 261 Qumbo/cm at 4,5 °C; Chlorine Residual= mg/1					
Dissolved Oxyger	=mg/l; Alkalinity=mg/l; Flow Rate				
Depth to water	ft.; Depth of well ft.; Perforation Interval	- ft.; Casing: /			
Sampling Location, Methods and Remarks (i.e. odors, etc.) Olywale, H.C. odorsanceroccie of					
C 7	$\frac{1}{2} \log \frac{1}{2} = \frac{1}{2} \left( \frac{1}{2} \log \frac{1}{2} \right)$	Resement aft should			
Suntere fond = 1 (ucon) - Received all skoul					
- where water 12xcent scritic sample west side to retite with					
I certify that the results in this block accurately reflect the results of my field analyses, observations and					
This form accompanies Septum Vials, Glass Jugs, and/or					
	reserved as follows:				
NP: No Preservation; Sample stored at room temperature.					
P-Ice Sample stored in an ice bath (Not Frosen).					
	Sample Preserved with Sodium Thiosulfate to remove chloring	residual.			
CHAIN OF CU	his sample was transferred from				
	and sample was transferred from	to			
at (location) on : and that					
the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No Signatures					
Dignatures					
For OCD L	Ise: Date Owner Notified Phone o	r Letter? Initials			

#### THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:					
PURGEABLE SCREENS  [753] Aliphatic Purgeables (1-3 Carbons)  [754] Aromatic & Halogenated Purgeables	EXTRACTABLE SCREENS  (751) Aliphatic Hydrocarbons  (760) Organochlorine Pesticides				
(765) Mass Spectrometer Purgeables	(755) Base/Neutral Extractables				
(766) Trihalomethanes	(758) Herbicides, Chlorophenoxy acid				
Other Specific Compounds or Classes	•	(759) Herbicides, Triazines			
	<del></del>	(760) Organochlorine Pesticides (761) Organophosphate Pesticides			
		(767) Polychlorinated Biphenyls (PCB's)			
		(764) Polynuciese Aromatic Hydrocarbons			
		(762) SDWA Pesticides & Herbicides			
	ALYTICA	L RESULTS			
COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC.		
holoconted oursealler	U.D				
dromatic purposeller					
bearing !	100	<u>.</u>			
Tilyene	9%				
ethyllensens	TIR.				
of while	TIR.	man of the control of			
In-Ixaline	25	e e e e e e e e e e e e e e e e e e e	· .		
n- witche	T.R.		· .		
			· _		
• DETECTION LIMIT • *	25 47/2	+ DETECTION LIMIT +			
ABBREVIATIONS USED:					
N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT					
T R = DETECTED AT A LEVEL BELOW	THE STATED	DETECTION LIMIT (NOT CONFIRMED)			
[ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION					
	<del></del>				
LASCRATORY REMARKS TABLE PART	a elution	re light unatuated was	mode		
detected noth the abstract	Jertin.	I detate but not ille	theel.		
The state of the s					
			·		
CERTIFICA	TE OF ANALY	TICAL PERSONNEL			
Seal(s) Intact: Yes No Seal(s) broken by: not scaled date:					
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.					
Date(s) of analysis: a/2/26 Analyst's signature: //www.l-ldlern					
I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.					
Reviewers signature: L'moucher		The second secon	م سبد بید دهسمین		
4					



New Mexico Health and E int Department SCIENTIFIC LABORATORI ION 700 Camino de Salud NE Albuquerque, NM 87106 — (505) 841-2555

### GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

PATE RECEIVED 4 2 13 1 NO.	CODE USER 59300	o 🗆 59600 🛱 o	THER: 822	.35
Collection CATE 64122187	SITE   Sample location			LANT
Callection TIME / 255	ATION			
Callected by — Person/Agency	Collection site description	n	Povo	
COVER HUOFESON	/OCD		1	
- FULL DOMMENTAL	DUDCAH			·
ENVIRONMENTAL SEND NM OIL CONSERV	ATION DIVISION	•		
FINAL State Land Off	fice Bldg, PO Box. 208	8 •		
Santa Fe, NM 8	37504-2088			<del></del>
Attn: David Boyer		<del></del>	l	
Ohana. 027 5012			Station/ well code	
Phone: 827-5812			Owner	
SAMPLING CONDITIONS		I Disabassa	1	0
☐ Bailed ☐ Pump Wate ☐ Tap	er level	Discharge.		Sample type  GRAB
pH (00400) Con	iductivity (Uncorrected)	Water Temp. (00010)		Conductivity at 25°C (00094)
pH (00400) 6.5 (SZz/2) Con	SKID µmho	<del></del>	4,5 °C	μmho
Field comments	YOC Sheet E	en commos ra	nto	
			. 7	
SAMPLE FIELD TREATMENT —	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	
	Vhole sample SF: Filtered in 0.45 µme	field with A: 2 A: 2	ml H <sub>2</sub> SO <sub>4</sub> /1	_added
XNA: No acid added □ Other		<del></del>	·	. And Frinder UNO added
i Other	r-specify: LiA:	ome cone. and ad	ded A	: 4ml fuming HNO <sub>3</sub> added
ANALYTICAL RESULTS from SA				
NA	Units Date analyze	From,	NASAMP	Date
Conductivity (Corrected) 25°C (00095)	66 jumno slick .		NASAMP	Analyzad .
	<del></del>	🛱 Calcium	292	mg/1 5/14
Total non-filterable residue (suspended)		1 <i>-</i>		
		N Potaccium	741	me/T /s/i3
(CC530)	mg/l	_ X Potassium _	<u>7,41</u> 34	
☐ Cther:	mg/l	Magnesium _	36	· mg/1 5//12
, , , ,	mg/l	Magnesium	36 30≾	mg/1 5//12 mg/1 5//13
☐ Other: ☐ Other: ☐ Other:	mg/l	Magnesium Sodium Sicarbonate	36 304 = 702	mg/1 5/12 mg/1 5/13 mg/1 5/5
Cther: Cther: Cther: A-H-SC4	mg/l	Magnesium Sodium Sicarbonate Chioride	36 304 = 702 88	mg/1 5/14 mg/1 5/13 mg/1 5/5 mg/1 5/5
☐ Other: ☐ Other: ☐ Other:	mg/l	Magnesium Sodium Sicarbonate	36 304 = 702	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12
Cther: Cther: Cther: Nitrate-N+, Nitrate-N total (00630) Ammonia-N total (00610)		Magnesium Sodium Sicarbonate Chioride	36 305 702 28 629	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5
Cther: Cther: Cther: Nitrate-N +, Nitrate-N total (00630)	mg/lmg/l	Magnesium Sodium Sicarbonate Chloride Sulfate	36 305 702 28 629	mg/1 5/14 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12
Cther: Cther: Cther: Cther:  Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldani-N	mg/lmg/lmg/l	Magnesium Sodium Sicarbonate Chloride Sulfate	36 305 702 28 629	mg/1 5/14 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/13
Cther: Cther: Cther: Cther:  A-H-SC.  Nitrate-N +, Nitrate-N total (00630)  Ammonia-N total (00610)  Total Kjeldani-N ( ) Chemical oxygen demand (00340)	mg/lmg/l	Magnesium Sodium Sicarbonate Chloride Sulfate	36 305 702 28 629	mg/1 5/14 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/13
Cther: Cther: Cther:  Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldani-N ( ) Chemical oxygen demand (00340) Total organic carbon ( )	mg/lmg/lmg/l	Magnesium Sodium Sicarbonate Chioride Sulfate Total Solid	36 305 702 88 629 is 229	mg/1 5/12 mg/1 5/12 mg/1 5/5 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/14
Cther: Cther: Cther: Cther:  Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldani-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Cther:	mg/l mg/l mg/l	Magnesium Sodium Sicarbonate Chloride Sulfate	36 305 702 88 629 is 229	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/12 68 mg/1 5/12
Cther: Cther: Cther:  Nitrate-N + Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldani-N ( ) Chemical oxygen demand (00340) Total organic carbon ( )	mg/l mg/l mg/l	Magnesium Sodium Sicarbonate Chloride Sulfate Total Solid	36 305 28 88 629 is 229	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/12
Cther: Cther: Cther: Cther:  Nitrate-N +, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldanl-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Cther: Cther:	mg/lmg/lmg/lmg/lmg/lmg/lmg/l	Magnesium Sodium Sicarbonate Chloride Sulfate Total Solid	36 305 28 88 629 is 229	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/12 68 mg/1 5/12
Cther: Cther: Cther: Cther:  Nitrate-N+, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldanl-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Cther: Cther:	mg/l mg/l mg/l	Magnesium Sodium Sicarbonate Chloride Sulfate Total Solid	36 305 28 88 629 is 229	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/12 68 mg/1 5/12
Cther: Cther: Cther:  Nitrate-N+, Nitrate-N total (00630) Ammonia-N total (00610) Total Kjeldanl-N ( ) Chemical oxygen demand (00340) Total organic carbon ( ) Cther: Cther:	mg/lmg/lmg/lmg/lmg/lmg/lmg/l	Magnesium Sodium Sicarbonate Chloride Sulfate Total Solid	36 305 28 88 629 is 229	mg/1 5/12 mg/1 5/13 mg/1 5/5 mg/1 5/5 mg/1 5/12 68 mg/1 5/12 68 mg/1 5/12

	CATIONS				ANIONS	
ANALYT	E MEQ.	PPM	DET.LIMIT	ANALYT	E MEQ.	PPM
Ca Mg Na K	14.57 2.96 13.40 0.19	292.00 36.00 308.00 7.41	< 3.0 < 10.0 < 10.0 < 0.5	HCO3   SO4   C1	11.50 13.10 2.48	702.00 629.00 88.00
Mn Fe	0.00	0.00		NO3   CO3   NH3   PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
SUMS	31.11	643.41			27.09	1419.00
TDS (me	easured) =	2288.00	ppm	٠.	ten english	
Ion Ba	lance =	114.85	8		e No. out/By _	=8701469 CD Shylyr

.



New Mexico Health and SCIENTIFIC LABORATO 700 Camino de Salud NE Albuquerque, NM 87106 --- (505) 841-2555

int Department

DATE- RECEIVED	20 87 NO	B-11-2-2-12-12-12-12-12-12-12-12-12-12-12	USER 59300	□ 59600 💢 C	OTHER: 822	235
Collection DATE O 4 22 87		SITE INFORM- ►	Sample location -	UTERRA -	,	PLANT
Collection TIME		ATION	Collection site description			
Cuttected by Persony Ag	NOERSON	) /OCD			_Pos	20
SEND N FINAL S REPORT TO	INVIRONMENT IM OIL CONS State Land	AL BUREAU ERVATION DIV Office Bldg M 87504-208	, PO Box. 2088	3		
· Phon	e: 82 <i>T</i> -58	12			Station/ well code	
SAMPLING CO			•		Owner	
□ Bailed	☐ Pump ☐ Tap	Water level		Discharge		Sample type  GRAG
рн (00400) 6,	5 (Strijo)	Conductivity (Unco	rrected) DL/Dμmho	Water Temp. (00010)	4.7°C	Conductivity at 25 °C (00094)  µmho
Field comments	(See V	•		mments		-
				,		
SAMPLE FIELD	TREATMENT	— Check prope	er boxes -			
No. of samples submitted  No. No. aci		Whole sample (Non-filtered)	Filtered in 0.45 µmer	norare mer	2 ml H₂SO₄/l	Ladded A: 4ml fuming HNO3 added
ANALYTICAL R	ESULTS from	SAMPLES	······································	<u> </u>		
☐ Conductivity (C 25°C (00095)	<i>, O</i> ₹		Units Date analyzed	From,	NA Sample	: Data Analyzed
☐ Total non-filtera residue (suscei (00550) ☐ Cither: ☐ Cither: ☐ Cither:	ncec)	lap scro	mg/l	Calcium Potassium Magnesium Sodium		mg/l mg/l mg/l
A-H-SC.	<del></del>		· · · · · · · · · · · · · · · · · · ·	☐ Bicarbonats		
☐ Nitrate-N = ,			mg/l	Chloride Sulfate		mg/1
☐ Ammonia-N == ☐ Total Kjeldani-N ( )			mg/l	Total Solid	is	
☐ Chemical oxyg demand (00340 ☐ Total organic ca	)		mg/l			
( ) C Other: C Other:			mg/l	Cation/A	Date R	lanceeported   Reviewed by
Laboratory remark	5 ].Oml	HNO3 ald	led at SLD.		1	+00
					7	Jan 190
FOR OCD USE	: Date C	wner Notifie	ed	Phone or Lett	er?	Initals

#### ICAP SCAN

SLD Lab No. <u>TOP 226</u>
Analyst <u>OR 5/6/87</u>

Date Reported: 05/18/87

ELEMENT	ICAP VALUE(mg/l)	AA VALUE(mg/l)
Aluminum	40.1	
Barium	0.4	
Beryllium		
Boron	0.3	
Cadmium	40.	
Calcium	360.	
Chromium	40.1	
Cobalt	40.05	
Copper	20.	
Iron	1.4	
Lead	40.1	
Magnesium	43.	
Manganese	<u> 0.52 </u>	
Molybdenum	<u> </u>	
Nickel	40.1	,
Silicon	18.	
Silver	20.1	
Strontium	45	
	ر.ا	
Vanadim	40.1	
zinc	40.1	
Arsenic		
Selenium		
Mercury		
		,
<del></del>	-	<del> </del>
***************************************	**************************************	



#### GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE: 1 112 16	المريونين	(B) 72 + 337 - 72	USER _	<del>````</del>	024	235	
RECEIVED SAFE	1.2 7   37   NO	I o	USER 59300	Lun			
04112187		INFORM-	SAUT	BREA - Ru	ITZ PL	ANT	
Collection TIME	·	ATION	Collection site description		2		
Collected by - Person/A		/0CD			POND		
					]		
E	ENVIRONMENT	AL BUREAU		:			
SEND	VM OIL CONS	SERVATION DIV	ISION -	•			
FINAL SEPORT	State Land	Office Bldg,	PO Box2088	3 '	<u> </u>		
TO		M 87504-2088			<u> </u>		
Attn:	David Boy	/er /	16-17-6-37			<del> </del>	
Phon	ie: 827-58				Station/ well code		
			MAY 29 193	7	Owner		
SAMPLING CO	□ Pump	<del>,</del>			<u></u>	l Samala tuna	
☐ Salled	☐ Tap	Water level	HEERVAT	-Discharge-		Sample type	
pH (00400)	7	Conductivity (Uncon	rected)	Water Temp. (00010)		Conductivity at 25°	C (00094)
1/5	trip)		©≾ (Co)·µmho		∑\ .c		μmho
Field comments			•			-	
					<del></del>		
SAMPLE FIELD	TREATMENT	Г — Check proper	boxes				
No. of samples	, DNE	Whole sample	F: Filtered in	1 1 4 /	ml H <sub>2</sub> SO <sub>4</sub> /	L added	
submitted	/ .1=	(Non-filtered)	. 0.45 μme	morane iliter			
☐ NA: No ac	dadded 🗆 C	Other-specify: 🕦	□A:	Sml conc. HNO <sub>3</sub> ad	ided 🖽	A: 4 <del>mi fumin</del>	g illio added
ANALYTICAL F	ESULTS from	SAMPLES	· · · · · · · · · · · · · · · · · · ·	<del>-</del> <del></del>		<u></u>	304
NF. NA			Jnits Date analyze	d F. NA		Units	Date analyzed
☐ Canductivity (C	Corrected)			☐ Calcium (00915)		mg/l _	
25°C (00095)		- ' ' ' ' '	mho	_ ☐ Magnesium (00925)		mg/l _	
☐ ∓ctai non-filtera	ıble			☐ Socium (00930) ☐ Potassium (00935)		mg/l _ mg/l _	
residue (suspe (00530)	nded)		ng/i	☐ Sicarponate (00440		mg/l _	
Cthen		· · · · · · · · · · · · · · · · · · ·		☐ Chloride (00940)		mg/l _	
☐ Cther:				Sulfate (00945)  G. Total filterable residu		mg/l _	
☐ Ctren			<del></del>	(dissoived) (70300)		mg/l _	
NF. A-1-SC.				Cther.			
□ Nitrate N±, Ni	t-ap-N			F. A-H <sub>2</sub> SO <sub>4</sub>			
total (0C630)			<del></del> [ب <del>و</del> م	Nitrate-N+, Nitrate	-N	. /	
☐ Ammonia-N to		i	mg/l	dissolved (00631)	<u> </u>	4 mg/l _	5/12
☐ Total Kjeldahl-I	<b>'</b>		mg/\	Ammonia-N dissolv	ed //.		5/2
☐ Chemical oxyg				(00608) Total Kjeldahl-N		111971 -	
demand (0034 ☐ Total organic c		i	mg/l	<del>-</del> / ( )	36	<u>,9                                    </u>	<u> </u>
( )			mg/l	Other:		· · ·	
☐ Other:				Analyst	l Date R	leported Review	ved by
C Other:			<del></del>	-			9
Laboratory remark	CS .			_ <u>L</u>		· · · · · · · · · · · · · · · · · · ·	
	<del></del>	····					
		·		·			
			1	71	2	T_2=1	
FUR UCD US	L Date (	Owner Notifie	α	Phone or Lett	er:	Inital	<u> </u>



TO: Sunterra Gas Processing ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

DATE: 29 May 1987

0661

SAMPLE ID : #3

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETECTION LIMITS	3
As	<0.05	ma/1	0.05 mg/l	
Ba	<1.0		1.0 mg/l	
Cd	<0.01		0.01 mg/l	
Cr	<0.05		0.05 mg/l	
CN	<0.01		0.01 mg/l	
F .	0.65		0.01 mg/1	
Pb		mg/l	0.01 mg/l	
Total Hg	<0.002		0.002 mg/l	
NO 3 as N	<0.01		0.01 mg/l	
Se	0.016		0.002 mg/l	
Ag	<0.05		0.05 mg/l	
Benzene	0.004		0.001 mg/l	
Toluene	0.012		0.001 mg/l	
CCL 4	<0.01		0.01 mg/l	
1,2 Dichloroethane	<0.001		0.001 mg/l	
1,1 Dichloroethylene	<0.001		0.001 mg/l	
1,1,2,2 Tetrachloroethylene	<0.001		0.001 mg/l	
1,1,2 Trichloroethylene	<0.001		0.001 mg/l	
Ethyl Benzene	<0.001		0.001 mg/l	
Xylenes	<0.001		0.001 mg/l	
Methylene Chloride	<0.001		0.001  mg/l	
CCL 3	<0.001	mg/l	0.001  mg/l	
1,1 Dichloroethane	<0.001		0.001  mg/l	
<b>三</b> 3	<0.001		0.001  mg/I	
1,1,1 Trichloroethane	<0.001		0.001  mg/l	
1,1,2 Trichlorcethane	<0.001		0.001  mg/l	
1,1,2,2 Tetrachlorcethane	<0.001		0.001  mg/l	
Vinyl Chloride	<0.001		0.001  mg/l	
Cu	<0.01		0.01  mg/l	
Cl . ·	107	mg/l	1.0  mg/l	
Fe		mg/l	0.3  mg/l	
Mn		mg/l	0.01  mg/l	
SO 4		mg/l	1.0  mg/l	
Zn -	0.066		0.008  mg/l	
Al .	<0.1		0.1  mg/l	
B	0.139		0.04 mg/l	
Co	<0.03		0.03 mg/l	
Mo Ni	<0.05		0.05 mg/l	
Ni	0.186	mg/l	0.01  mg/l	

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director

#### SCLENTIFIC LABORATORY DIV 700 Camino de Salud NE Albuquerque, NM 87106 841-2570

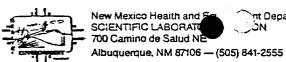


S.L.D. No. OR- 690 David Boyer REPORT TO: 4-2787 N.M. Oil Conservation Division DATE REC. P. O. Box 2088 Santa Fe, N.M. 87504-2088 PRIORITY \_\_USER CODE: | 8 | 2 | 2 | 3 | 5 | 827-5812 PHONE(S): David Boyer CODE: |2 | 6 | 0 | SUBMITTER: SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) [817101412131 SAMPLE TYPE: WATER X, SOIL , FOOD , OTHER: \_; CITY: Floonfield CODE: | | | LOCATION CODE: (Township-Range-Section-Tracts) 21810+/1/10+/13+/1/1 ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical acreens required. Whenever possible list specific compounds suspected or required. PURGEABLE SCREENS EXTRACTABLE SCREENS [ (753) Aliphatic Purgeables (1-3 Carbons) [ (751) Aliphatic Hydrocarbons (754) Aromatic & Halogenated Purgeables (760) Organochlorine Pesticides (755) Base/Neutral Extractables (765) Mass Spectrometer Purgeables [ (766) Trihalomethanes (758) Herbicides, Chlorophenoxy acid Other Specific Compounds or Classes (759) Herbicides, Triazines م المعتبي على سبيا إلى المصلح الارتبية في الأن الرابيين الراب (760) Organochlorine Pesticides [ (761) Organophosphate Pesticides [767] Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides mo/cm 25 2/ C; Chlorine Residual= \_\_\_\_mg/l mg/l; Flow Rate \_\_ flat Depth of well \_\_ ft.; Perforation Interval Sampling Location, Mestinois and Remarks (i.e. odors, etc.) I certify that the results in this bibox accurately pollect the results of my field analyses, observations and activities (signature coilector): Meshod of Shipment to the Lab: This form accompanies Septum Vials, \_\_\_\_ Glass Jugs, and/or Samples were preserved as follows: No Preservation; Sample stored at room temperature. P-Ice - Sample stored in an ice bath (Not Frozen). P-Na S.O. Sample Preserved with Sodium Thiosulfate to remove chlorine residual. CHAIN OF CUSTODY I certify that this sample was transferred from at (location) the statements in this block are correct. Evidentiary Seals: Not Sealed \_ Seals Intact: Yes \_ No \_ Signatures Phone or Letter?

For OCD Use: Date Owner Notified

#### THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screen  PURGEABLE SCREENS  (753) Aliphatic Purgeables (1-3 Carbons)  (754) Aromatic & Halogenated Purgeables  (765) Mass Spectrometer Purgeables  (766) Trihalomethanes  Other Specific Compounds or Classes		EXTRACTABLE SCREENS  (751) Aliphatic Hydrocarbons (760) Organochlorine Pesticides (753) Base/Neutral Extractables (753) Herbicides, Chlorophenoxy acid (759) Herbicides, Triazines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides	
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.
armatio pedirearling	N.D.		
belownoted Shadwarkons	N.D		
		2.1	<del></del>
	<u> </u>		-
	·	· · · · · · · · · · · · · · · · · · ·	
* DETECTION LIMIT * *	50 77/2	+ DETECTION LIMIT +	<del></del>
ABBREVIATIONS USED:  N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [ RESULTS IN BRACKETS ] ARE UNCONE	THE STATES	DETECTION LIMIT (NOT CONFIRMED)	
LABORATORY REMARKS:			
	. ·		
	, , ) ) (1.55 pm)		
Seal(s) Intact: Yes No . Seal(s) broken by I certify that I followed standard laboratory procedu that the statements on this page accurately reflect to Date(s) of analysis: 5/4/87 :- Analyst's significant control of the statements of the state	res on handlin he analytical r		i and
I certify that I have reviewed and concur with the Reviewers signature:	<del></del>	this sample and with the statements in this	block.



nt Department . .



DATE RECEIVED	resident LLA	B	USER 59300	- <del> </del>	отнея 822	225		
Cotlection DATE	STE IN	SITE	Sample to cation		01112111			
Collection TIME		INFORM- >		SUNTERRA	- Kut	2 /6/	9W T	
Collected by — Person/Ag	PERSON	/OCD	Collection site description		Po	ב סני	2	
BOYER/A		7000		<del></del> -	¬	<u>-</u>		
c	NVIRONMENT	TAI RIIREAII						
SEND N	M OIL CONS	ERVATION DIV	/ISION: ···					
FINAL S	State Land	Office Bldg.	• PO Box: 208	8				
2000	Santa Fe, 1	IM 87504-208	8					
Attn:	David Boy	/er						
Phon	e: 827-58	12			Station/ well code			
SAMPLING COM		<b></b>			Owner			
	□ Pump	Water level	<del></del>	Discharge		Sample hm		
☼ Dipped	□ Tap	11010110101		Discharge		Sample type		
pH (00400) 7	STRIP >	Conductivity (Unco	mected) µmho	Water Temp. (00010)	21 00	Conductivity	y at 25°C (00094)	μmho
Field comments	See 11.		<del></del>		\			
	Jee 1	CC Fin	MYACA	TIL MENTS	<del>)</del>	-		
		· · · · · · · · · · · · · · · · · · ·	······································	·	· · · · · · · · · · · · · · · · · · ·			
SAMPLE FIELD	TREATMENT	— Check grape	er boxes - Dza	Fitteres only				
No. of samples	□NE	Mhala assala	Filtered in	field with	2 ml H₂SO₄/l	Laddod		
submitted	_ UNF	(Non-filtered)	PAF: OAE-Amo	mbrane filter	2 mi H <sub>2</sub> SO <sub>4</sub> /i	L added		
XNA: No acid	dadded 🗆 C	other-specify:	□A:	5ml conc. HNO3 a	dded 🗆 A	: 4ml f	fuming HNO <sub>3</sub>	added
ANALYTICAL R	ESULTS from	SAMPLES						
NA			Units Date analyze	From Bre 5,	NA Sample	.•	Date	
Conductivity (C 25°C (00095)	crrected)	2500	umna 5/29 *	17 6.11 9.12 5	in compre		Analyzed	
☐ Total non-filtera	nie -	-	•		216	mg/1_	5/14	
residue (susper				X Potassium	21.5	 mg/l	slid	
∠ Other: p ≠ )		7116	mg/l	X Magnesium	. 44	mg/T	5/14	
☐ Other:				Sodium _	364	mg/7	5/14	
☐ Cther:				- Sicarbonat			3/5	
A-H-SO.			·	二 二 二 二 I Chiloride _	119		5/5	
☐ Nitrate-N+, Nit	rate-N			11 7 7	147		5/12	
total (00630)	-1/000100		mg/l	「Y Sulfate _			5/11	
☐ Ammonia-N tot	. ,	•	mg/l	- X Total Soli	ds 230	7 mg/1		<del></del>
( )			mg/l	- X - CO3	<u> </u>	<u> </u>	5/5	<del></del>
☐ Chemical oxyge demand (00340			mg/l					
☐ Total organic ca	arbon		mg/l			 -		
Cther:	:		mg/i	- Cation/A				
☐ Other:	<del></del>			Analyst		eported 28  57	Reviewed by	
Laboratory remarks	3					- 1-1		
					·····			
	·		-	************************************				·
FOR OCD HEE	':Data C	wner Notifie	ad	Phone or Let	ter?	Tn	itals	
TOW OOD GOD	י חשום (	MITCH NOCTERS	· <u> </u>		<u>-</u>			

	CATIONS					ANIONS		
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Ca Mg Na K	10.78 3.61 16.01 0.55	216.00 44.00 368.00 21.50	< 3.0 < 10. < 10. < 0.5	o i	HCO3 SO4 Cl	20.12 3.06 3.36	1228.00 147.00 119.00	
Mn Fe	0.00	0.00	÷		NO3 CO3 NH3 PO4	0.00 0.00 0.00	0.00 0.00 0.00 0.00	
SUMS	30.95	649.50	•			26.54	1494.00	
TDS (me	asured) =	2302.00	ppm				. ~	
Ion Ba	lance =	116.60	ફ		~	le No.	=8701472 Shxk7	7

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TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

SAMPLE ID : #4

SO 4

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ANALYTE	ANALYTICAL RESUL	TS NOMINAL DETECTION LIMITS
As ·	<0.05 mg/l	0.05 mg/l
Ba	<1.0 mg/l	1.0 mg/l
Cd	<0.01 mg/l	0.01 mg/l
Cr	<0.05 mg/l	0.05  mg/l
CN	0.03  mg/l	0.01  mg/l
F	0.60  mg/l	0.01  mg/l
Pb Watal Wa	0.11  mg/l	0.01  mg/l
Total Hg NO 3 as N	<0.002 mg/l	0.002  mg/l
Se	20.7 mg/l	0.01  mg/l
Ag	0.096 mg/l	0.002 mg/l
Benzene	<0.05 mg/l <0.001 mg/l	0.05 mg/l

DATE: 29 May 1937

0661

rount ing	10.002	mg/l	0.002	mg/l
NO 3 as N	20.7	mg/l	0.01	
Se	0.096		0.002	
Ag	<0.05		0.05	mg/1
Benzene	<0.001		0.001	
Toluene	<0.001		0.001	
CCL 4	<0.01		0.01	mg/l
1,2 Dichloroethane	<0.001	mg/l	0.001	
1,1 Dichloroethylene	<0.001 :		0.001	
1,1,2,2 Tetrachloroethylene	<0.001	mc/l	0.001	
1,1,2 Trichloroethylene	<0.001	mg/l	0.001	
Ethyl Benzene	<0.001	mc/l	0.001	
Xylenes	<0.001			
Methylene Chloride	<0.001		0.001	
CCL 3 .	<0.001		0.001	
1,1 Dichloroethane	<0.001		G.0G1	
EDB	<0.001		0.001	
1,1,1 Trichlorcethane	<0.001		0.001	
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1,1,2,2 Tetrachloroethane	<0.001	mg/l	0.001	
Vinyl Chloride	<0.001		0.001	_
Cu	<0.01			mg/l
Cl .	437			mg/l
Fe	<0.3			mg/1
Mn	<0.01			mg/l
		-		

1750 mg/l

<0.1 mg/l

0.515 mg/l

<0.03 mg/l

<0.05 mg/l

0.268 mg/l

<0.008 mg/1

1.0 mg/l

0.1 mg/l

0.04 mg/l

0.03 mg/l

0.05 mg/l

 $0.01 \, \text{mg/l}$ 

 $0.008 \, mg/l$ 

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director

87- 0688 -C

## 700 Camino de Salud NE Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

REPORT TO:	David Boyer	S.L.D. No. OR- 65 688
	N.M. Oil Conservation Division	DATE REG. 4-27-87
	P. O. Box 2088	
•	Santa Fe, N.M. 87504-2088	PRIORITY
PHONE(S):	827-5812 USE	R CODE: 18   2   2   3   5
SUBMITTER:	David Boyer	CODE: 12 16 10 1
	ECTION CODE: (YYMMDDHHMMIII)   81710 H 124	
	en e tres	_ CODE: []
<u> </u>	~ Jum ; city: Bloomfield	
1	E: (Township-Range-Section-Tracts) 2 8 N + / 1 / 1	
ì	and the second s	
	QUESTED: Please check the appropriate box(es) below to indic ver possible list specific compounds suspected or required.	care the type of analytical screens
	_	XTRACTABLE SCREENS
1 ==		Aliphatic Hydrocarbons
; <del></del>		) Organochlorine Pesticides ) Base/Neutral Extractables
(766) Trihal	-	) Herbicides, Chlorophenoxy acid
Other		Herbicides, Triazines
		) Organochlorine Pesticides
		) Organophosphate Pesticides ) Polychlorinated Biphenyls (PCB's)
		) Polynuclear Aromatic Hydrocarbons
		) SDWA Pesticides & Herbicides
Remarks:	SunTerra Kutz Pond 3 (1)	م مریع
		•
FIELD DATA:	1 A73-3980 212	
Tre	onductivity C; Chlorine Residua	
Dissolved Oxyger	n=mg/l; Alkalinity=mg/l; Flow Rate	
Depth to water	ft.; Depth of well ft.; Perforation Interval	a.; Casing
Sampling Location	on, Methods and Remarks (i.s. odors, etc.)	<del>-</del>
Fram la	vertant lots of Salt Care	to probable works
	MD ail	
I certify that the	he results in this block accuracely reflect the results of my fi	
	re collector): Visit Kan Metho	d of Shipmens to the Labratic Vanc
1	npanies Séprime Vials, Giass Jugs, and/or	
NP:	No Preservation; Sample stored at room temperature.	····
	Sample stored in an ice bath (Not Frozen).	
	Sample Preserved with Sodium Thiosulfate to remove chloring	ne residual.
CHAIN OF CU	and the second s	
	his sample was transferred from	to
at (location)	on	/ and that
the statements	in this block are correct. Evidentiary Seals: Not Sealed	Seals Intact: Yes  No
Signatures		
For OCD II	Ise: Date Owner Notified Phone	or Letter? Initials
י טיי יייי	- Page owner notified Filotte	or cocci Illicials _



#### THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:						
PURGEABLE SCREENS	EXTRACTABLE SCREENS					
(753) Aliphatic Purgeables (1-3 Carbons)	[ (751) Aliphatic Hydrocarbons					
(754) Aromatic & Halogenated Purgeables						
(765) Mass Spectrometer Purgeables		(760) Organochlorine Pesticides (755) Base/Neutral Extractables	1			
(766) Trihalomethanes		(758) Herbicides, Chlorophenoxy acid				
Other Specific Compounds or Classes		(759) Herbicides, Triazines				
		(760) Organochlorine Pesticides	į			
		(761) Organophosphate Pesticides				
	· · · · · · · · · · · · · · · · · · ·	(767) Polychlorinated Biphenyls (PCB's)				
	· · · · · · · · · · · · · · · · · · ·	(764) Polynuclear Aromatic Hydrocarbons				
		(762) SDWA Pesticides & Herbicides	Į			
The state of the s	<del></del>		ļ			
ΔNI	ΔΙ ΥΤΙς Δ	L RESULTS	{			
<del></del>						
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.			
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• DETECTION LIMIT • *	25-13/2	+ DETECTION LIMIT +				
ABBREVIATIONS USED:						
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T R = DETECTED AT A LEVEL BELOW						
[ BESULTS IN BRACKETS ] ARE UNCONF		•				
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LABORATORY REMARKS:	•					
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CERTIFICA'	TE OF ANAL	YTICAL PERSONNEL				
Seal(s) Intact: Yes No Seal(s) broken b	y: with	date:				
I certify that I followed standard laboratory procedu			d and			
that the statements on this page accurately reflect t			<del></del>			
Date(s) of analysis: 5/4/57 Analyst's si	*	Yun C. Elen	• •••,			
I certify that I have reviewed and concur/with the		ults for this sample and with the statements in this	s block			
		med for suit southing and with the seatchields in this	o occa.			
Reviewers signature: Knought						



New Mexico Health and nt Department SCIENTIFIC LABORATE Albuquerque, NM 87106 — (505) 841-2555

#### GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	字[字] N	11977 Suit	USER CODE 59300	o □ 59600 🛱X	отнея: 822	235		
Collection DATE OH   22   87  Collection TIME		SITE INFORM-	Sample location	SHUTERRA	- KuT	= PLA	UT	
/330 Collected by — Person/Agen	Gy	<del></del>	Collection site description	,	Powe	, 3		
	<del></del>	/0CD			7			
SEND NM FINAL St REPORT Sa TO Sa	OIL CONS	TAL BUREAU SERVATION DIV Office Bldg, NM 87504-2088	PO Box: 208	3				
Phone	: 82 <i>T</i> -58	112		• •	Station/ well code			
SAMPLING COND		· <del></del> .			Owner			
	Pump Tap	Water level		Discharge	-	Sample type	2AB	
pH (00400)	<u> </u>	Conductivity (Uncor	rected) 9 27) µmho	Water Temp. (00010)	2.1℃		at 25°C (00094)	µmho
Field comments	Ispa V	OC Com	<u> </u>	ments)		•		
SAMPLE FIELD T	DEATMEN	T — Check prope	r haves					
No. of samples	□ NF	. Whole sample	Filtered in	field with	2 ml H₂SO₄/l	added		
submitted  XNA: No acid		(Non-tiltered)	/ 3 0.45 μme	mbrane filter  5m1 conc. HNO, a			ming HNO,	added
ANALYTICAL RE	<del></del>		<del></del>					<del></del>
NA  Conductivity (Con		(	Jnits Date analyze	From £,	NA Sample	*	Date Analyzed	
25°C (00095)	· ·	4367	umho <u>5/7-4</u> -	- 4	011		5/14	•
Total non-filterable residue (suspendi (00530)			mg/l :	区 Celcium 区 Potessium	84 0,39	mg/1_ mg/1_	15/13	
☐ Cther:				Magnesium .	<i>5</i> 3	ms/i_	5/14	
☐ Other:				- 🔯 Sodium	835	=5/1_	5 (13	
A-H-50a				工区 Sicarbonat		=_/:_	<del>5/2</del>	
☐ Nitrate-N÷, Nitra	tro-N				456	=5/\_ 	3/3	
<b>≂</b> (00€30)	-		mg/l	Sulfate _	170		5/12	-
☐ Ammonia-N total ☐ Total Kjeldahl-N	(00610)		mg/l	- Total Soli		<u> 구 건교명/                                   </u>	5/19 /-	<del></del>
( ) ☐ Chemical oxygen			mg/1	- X - CO3	<u>.                                    </u>	[] [] [] [] [] [] [] [] [] [] [] [] [] [	5/5	<del></del> .
demand (00340)			mg/l	_				
☐ Total organic cart ( )	xon		mg/l	- Cation/	nion Ba	lance _		* 5 7 4
☐ Other:				Analyst	Date R		Reviewed by	· · · · · · · · · · · · · · · · · · ·
Laboratory remarks	- 11 -			<u> </u>	1-21	-01011		
		= 9.61		·				<del></del>
					·····		<u> </u>	
FOR OCD USE	Date (	wner Notifie	d	Phone or Let	ter?	Ini	tals	·

	CATIONS		-		ANIONS	
ANALYT	E MEQ.	PPM	DET.LIMIT	ANALYT	E MEQ.	PPM
Ca Mg Na K	4.19 4.35 36.32 0.01	84.00 53.00 835.00 0.39	< 3.0 < 10.0 < 10.0 < 0.5	HCO3   S04   C1	0.64 35.56 12.86	39.00 1707.00 456.00
Mn Fe	0.00	0.00		NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
SUMS	44.87	972.39			49.06	2202.00
TDS (me	easured) =	3172.00	ppm		<del></del>	÷
Ion Ba	lance =	91.46	ક	-	e No. out/By	=8701471

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#### PROPOSAL

The following proposal is for geologic and hydrologic investigations to furnish information as to the probable rates and paths of seepage from a pond with a single compacted-bentonite lining, and to describe the chemical nature of the ground water, both perched and beneath the regional water table, at the site.

The proposal also includes the installation of equipment for continued monitoring, if the pond is built, and sets forth a plan for continued monitoring after the pond is in service.

#### 1. Exploratory drilling

 $\cdot$  a. Near the center of the proposed pond, drill a 50-  $\rho$ ft core-hole, with air as the circulating fluid. Unconsolidated material above the bedrock would be described in detail, and a detailed core description of the bedrock would be made. Before each new core run, the hole would be sounded to determine whether perched ground water were present; if present, it would be sampled with a bailer.

Sections of core that represent dominant lithologies would be taken, preserved, and submitted for permeability analysis. For each, a plug would be cut and cleaned, and air- and water-saturated permeability determined.

The hole would be plugged and abandoned by filling with heavy bentonite mud.

At a location just outside the edge of the proposed pond and down-slope from the pond, drill a 50-ft corehole. The procedure would be as described above for the first core-hole. After coring and sampling of perched water has been completed, drill a 4 3/4-in hole to a point below the water table, using air. The estimated total depth of this hole is 300 ft. Set 2-in PVC casing, and allow the hole to stand for at least 24 hours; measure the depth to water and sample with a bailer. After a water sample is taken, pull the 2-in casing, mud up and run gamma-ray and resistivity logs for geologic correlation.

The purpose of this hole is to provide core information as to the first 50 feet below the surface, and to locate the depth to the saturated zone so that a monitor well, with casing cemented to near the water table, can be drilled at another location. This hole will be plugged and abandoned.  $\sigma_{ij}$ 

c. At each of two locations just outside the edge of the proposed pond and on roughly opposite sides of it, drill and sample a 50-ft core hole as described in item a, above. Plug each of these holes back to a point within the shallow-

est permeable zone, using bentonite slurry; place a suctioncup lysimeter in silica flour within the shallowest permeable zone for permanent monitoring. Install concrete pad and security cover.

- d. At a point near the edge of the proposed pond, install a permanent ground-water monitor well. Drill a 7 7/8-in hole to a point a few feet above the water table, as determined from the exploratory hole described in item b, above. Set and cement 5 1/2-in Schedule 80 PVC casing. Drill out and air-drill 4 1/2-in hole to total depth, estimated at about 300 ft; set 3-in threaded PVC liner from surface to total depth, with PVC screen section at water table. Measure water level and sample with bailer. Install concrete pad and security cover.
- e. Install additional lysimeters in shallow drill-holes if the investigation suggests that there is uncertainty as to the path that leakage might follow.
- f. Determine the datum elevation for each drill hole.

#### 2. Surface mapping, sampling

- a. Prepare a detailed geologic map at a scale of 1"=100' or larger, to show the outcrops of lithologic units found in the drilling described above, fractures and fracture density, the locations of seeps, and other hydrogeologic information.
- b. Prepare structure contour map(s) and iscpach map(s) as appropriate to show the distribution of permeable units in the upper 50 feet of the subsurface, based on the surface mapping and the drilling described above.
- c. Sample water reaching seeps, water in the seep below the lowest existing pond, and water in the lowest existing pond. Analyses would include volatile hydrocarbons, polynuclear aromatic hydrocarbons, major inorganic species, and metals.

#### 3. Rate-of-flow calculations

After information as to the distribution of permeability in the subsurface beneath the pond site has been obtained by means of the drill-hole logging, core-analysis, and mapping described above, estimates would be made of the rate of flow which might be expected if leakage from the pond were to occur and the fluid were to enter the natural materials. The estimates of rates of flow, and the projected change in chemical quality with time of water emerging at the surface, would be determined through the use of

an appropriate digital ground-water flow and/or mass-transport model.

#### 4. Continued monitoring

- a. As a part of the proposal, the instrumentation required for measuring the components of the mass balance (with respect to water delivered to the pond), and which would be installed as part of construction of the pond, is described. The instrumentation would include:
- i. precipitation gage, to determine the addition to the volume of water in the pond from rain and snow.
- ii. staff gage in pond, and survey to establish a stage-capacity curve, to permit calculation of the change-in-storage term of the mass balance. It is assumed that the pond will be surrounded by a berm which will divert runoff around it, so that no runoff will enter the pond.
- iii. evaporation pan, to allow determination of the rate of evaporation from the pond. It is proposed to construct the pan of large-diameter corrugated pipe, with closed end, set in the pond and filled to the level of the pond bottom with pond-bottom material. A staff gage would be provided for measuring the level in the pan, and a valve would be provided so that the pend could be filled with pond water as required.
- b. Monitoring procedure after installation of the pond would consist of the following:
- i. Quarterly measurement of water level in the ground-water monitor well, and sampling of the monitor well, the lysimeters, the pond water, the nearest perched-water seeps, and the effluent to the pond. Field conductivity and pH would be taken, and analyses made for volatile hydrocarbons. Other constituents may be added to the list if the initial sampling suggests that there are specific indicators which distinguish the effluent from natural waters.
- ii. Daily reading of a totalizing meter on the effluent line, the precipitation gage, the staff gage in the pond, and the staff gage in the evaporation pan. The daily readings would be used to calculate mass balance on a monthly basis, to determine by difference the rate of leakage from the pond. Because the pond is close to the plant, it is assumed that the readings would be taken daily by plant personnel and no recording instruments would be needed.

Sunteria GAS PROCESSING COMPANY
P.O. BOX 1869 BLOOMFIELD, NM 87413 (505) 632-8033

October 30, 1987

Mr. Lindell Greer
Bureau of Land Management
Caller Service 4104
Farmington, NM 87499-4104

RE: SF 075309

Dear Mr. Greer:

During our phone conversation on October 28, 1987, we discussed the possibility of installing a single lined evaporative pond at our Kutz Plant. Exhibit 1 is an orthophoto of the Kutz Plant showing the present pond system. Exhibit 2 is results of sampling of the three ponds at the Kutz Plant that were duplicate samples taken by us and the New Mexico Oil Conservation Division (OCO). The sample results are a worst case scenario as we plan to install a hydrocarbon/water separator. This separator will remove essentially all of the hydrocarbons in the wastewater.

Exhibit 3 is a proposal for geologic and hydrologic investigations to provide information as to probable rates and paths for seepage from a single lined pond. The investigation will also provide depth to groundwater and its chemical nature.

As we discussed in our phone conversation, Sunterra must provide a Wastewater Discharge Plan to OCD by December 23, 1987. We would appreciate your prompt review of the enclosed information.

If further information is required, please call me at (505) 768-6700.

Sincerely

Gary Jordan

cc: Mr. David Boyer - OCD

Mr. John Renner - Sunterra



#### MEMORANDUM OF MEETING OR CONVERSATION

Telephone	Personal	Time 1:40	PM	Date フ/シフ/	37	
Originating Party				Other Partie	<u> </u>	
John S	ShomakeR-6	eologist	Ja	wid Boye	e-06	
Remosentina Suntegra - Kuta						
Subject S	un Terna Di	scharge of	Plan			
		· · · · · · · · · · · · · · · · · · ·				
Discussion 1			·····			
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OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

July 20, 1987

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. John Renner General Manager Sunterra Gas Processing Co. P.O. Box 1869 Bloomfield, New Mexico 87413

RE: Discharge Plan GW-45 Kutz Canyon Gas Plant San Juan County, New Mexico

Dear Mr. Renner:

The Oil Conservation Division has received your request, dated July 16, 1987, for an extension for the submission of a discharge plan for the above referenced facility. The notification requiring the filing of a discharge plan was dated April 24, 1987.

Pursuant to Water Quality Control Commission Regulation 3-106.A. and for good cause shown, Sunterra Gas Processing Co. is hereby granted an extension to December 23, 1987 for the submission of a discharge plan for your Kutz Canyon Gas Plant. This extension is granted to allow for engineering and safety evaluation of process changes that will conserve water and reduce waste water volumes.

Pursuant to Water Quality Control Commission Regulation 3-106.A. and for good cause shown, you are further granted an extension to April 24, 1987 to discharge without an approved discharge plan. This extension is granted to allow for receipt and review of the required discharge plan.

If you have any questions or comments please feel free to contact Dave Boyer at (505) 827-5885.

Sincerely,

WILLIAM J. LEMAY

Director

WJL/RA/cr

cc: OCD-Aztec

# SUNTERRA GAS PROCESSING COMPANY

P. O. BOX 1869 • BLOOMFIELD, NEW MEXICO 87413 (505) 632-8033

July 16, 1987

Mr. William J. Lemay, Director Oil Conservation Division New Mexico Energy, Minerals and Natural Resources Dept. P.O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Re: Kutz Canyon Gas Plant Discharge Plan

Dear Mr. Lemay:

Your letter dated April 24, 1987, required Sunterra to prepare and submit to your office a Waste Discharge Plan for the Kutz Plant. Since receipt of your letter, Sunterra has worked diligently on defining the plant waste water discharges. We have also looked at several process changes to conserve water and reduce the volume(s) discharged. We are presently evaluating these process changes from an engineering and safety standpoint.

We request, pursuant to Section 3-106(A) of the New Mexico Water Quality Control Commission, an extension of 120 days from the due date of August 25, 1987, in order to properly evaluate the above mentioned process changes, to submit the Waste Discharge Plan. If you approve our request, this plan will be in your office prior to December 23, 1987. We also request that we be permitted to operate without an approved discharge plan in accordance with Section 3-106(B) for 120 days after December 23, 1987 for the reasons outlined above.

If further information is required, please advise.

Sincerely,

Øohn Renner > General Manager

JR:ls

# SUNTERRA GAS PROCESSING COMPANY



P. O. BOX 1869 • BLOOMFIELD, NEW MEXICO 87413 (505) 632-8033

June 3, 1987

Mr. William J. LeMay, Director New Mexico Energy & Minerals Department Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

Re: Discharge Plan - Kutz Plant

Dear Mr. LeMay:

Our letter to you dated May 7, 1987 promised to provide the lab results of the duplicate samples which were taken on April 22, 1987, and we are enclosing these lab results at this time for your information. We were also informed that all prior lab analyses will be required to be submitted in connection with the discharge plan application. Accordingly we are submitting at this time the lab reports from samples which were obtained at Kutz and Lybrook in December of 1986.

Within the near future we will be in a better position to proceed with a plan preparation schedule, and we will continue to keep you advised of our progress. In the meantime, we would appreciate receiving copies of your lab reports when they become available, and we look forward to working with you in the future.

Very truly yours,

Gary L. Jordan

GLJ/kam

**Enclosures** 

cc: Southern Union Company
Attn: Mr. Thomas E. Morton, Jr.

Powell, Goldstein, Frazier & Murphy Attn: Mr. G. William Speer

Mr. Ted Morse, Sunterra Mr. John Renner, Sunterra

Keleher & McLeod, P.A. Attn: Mr. Henry F. Narvaez

LUSS JAM 6/8 2653 86342 Application John Rennen 632 6033 3PM 6/19 86652 END WORK where sible joining Basin Mispos ( 6/18/8) 6 4 months Hen 1) 5 reading

Sprayers - 125 ppm time 1000

pond - 300 ppm Softer hit water fram taule - Man ppm (usel 5-60 kbs) 5/22/87 3:30pm wind w, 10-15 mpH)
5prayer - 12ppm (5-60 Gaste) #3, 15broke
pond - 8ppm, 11ppm (5-60 Gaste) #3, 15troke
n - 560, 590ppm (100-1600 Gaste) #3, 15troke 11 -50ppm, 100 Soppm (MSA 1-800) 3, Islande 11 -200, 7200 (Draggon 0-200) 3, 15T. Start-WK 10 AM 6/22 Farmington 26968 ReTurn Sentage-modnight 6/22 87308

L 34,7334,10W Ather and walshirt NW 1/4500 1/4 Lower Funca Steel. "" June Jackane & Course / Cakare? Cen K. 870632 1400 - Simple strong lag Salamie M. J. Moles house anator & tear lamps Dely Braton Order garage Maxine Wetch 2335 RQ 334-6065, 478, 2335 RQ Deille Sine 16 Donafic Drille 35, 25 St to Minne River, More & Morit 96 Chensul 4 These \* well south to have blournow webite pome on set well wired in home to NW) Summes '83 - sactoduel & after complaint in late & discolerations son down Mrs Wolch south not retes by honoco longs (America Chea - Hempilon) Somether & line on (well in garage) al wat come.

Pw Janke at Schneider Cest. 100 jank and Salt at Joan 100 ) Spea Well at Weath - 4902 21 20 dech, loge > 4902 21 Well UNE ( 1202 1 50 dumbum) Tusted dufferent M. Spuns, OK NOW Amoco fits - workman
Sauf Lower Bit to be
Taken out of service sing Soon Teh al pourte well Sowne nangy from Marray & al Lay ares. Due who spring pool.
To one sample, sample, sample, sung, (Annie R. ley 334-5647 d #18,2343 Aziec 87410 ma along road - Sall take all Gostery (Hwy Row Journa New 87 House 870632 1245

Refultioned - Sacre Stock of (3) 10 hears 2 yard " porameters"	B) Sement Sealor wing of good of the sealor	Destroy Mender las las expensions at wast of arrangement	12 x Lenger That some some 1 such to discuss of those of a light coun court out.		
4:30 PM - John Romes Sun Terras - Met To 100 K at hole due bes backhar arangement	the stand of the second of the	T God t	new port man	Sendona, Med has saus Kulas Sen'the Connection Soulast Wew pond Is have non- ental wastwater with bowten't smen what we	

the contract parties in the contract of the contract of

### KUTZ PLANT SAMPLING LOCATIONS Duplicate Sampling with OCD 4/22/87

#### Sample I.D.

- 1. Water Sample of Kutz #1 Cooling Tower Sump
- 2. Water Sample of Flare Pond #1 Southwest Corner
- 3. Water Sample of Pond #2 Middle of North Side
- 4. Water Sample of Pond #3 Southwest Corner

#### DECEMBER 1986

#### Gasoline Plant Sampling Locations

- K-l Water sample taken near Kutz #l drain inlet to flare pond
- K-2 Water sample taken near Kutz #2 drain inlet to flare pond
- K-3 Sludge sample taken near Kutz #1 drain inlet to flare pond
- K-4 Sludge sample taken near Kutz #2 drain inlet to flare pond
- K-5 Wasted iron sponge sample from Kutz #2 plant
- K-6 Water sample from upper spring below Kutz flare pond
- K-7 Water sample from lower spring below Kutz flare pond
- L-1 Water sample taken at Lybrook flare pond
- L-2 Sludge sample taken at Lybrook flare pond
- L-3 Water sample taken in arroyo downstream from Lybrook flare pond



TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

DATE: 29 May 1987

0661

SAMPLE ID : #1

ANALYTE	ANALYTICAL	RESULTS 1	NOMINAL DETECTION LIM	ITS
As ,	<0.05	mg/l	0.05  mg/l	
Ba		mg/l	1.0 mg/l	
Cd	<0.01		0.01 mg/l	
Cr	<0.05		0.05 mg/l	
CN	<0.01		0.01  mg/l	
F		mg/l	0.01  mg/l	
Pb		mg/l	0.01 mg/l	
Total Hg	0.0023	_	0.002 mg/l	
NO 3 as N	<0.01		0.01  mg/l	
Se	0.019		0.002  mg/l	
Ag	<0.05		0.05  mg/l	
Benzene	<0.001		0.001  mg/l	
Toluene	<0.001		0.001  mg/l	
CCL 4	<0.01		0.01  mg/l	
1,2 Dichloroethane	<0.001	mg/l	0.001  mg/l	
1,1 Dichloroethylene	<0.001		0.001  mg/l	
1,1,2,2 Tetrachloroethylene	<0.001		0.001  mg/l	
1,1,2 Trichloroethylene	<0.001		0.001  mg/l	
Ethyl Benzene	<0.001		0.001  mg/l	
Xylenes	<0.001		0.001  mg/l	
Methylene Chloride	<0.001		0.001  mg/l	
CCL 3	<0.001		0.001  mg/l	
1,1 Dichloroethane	<0.001	mg/l	0.001  mg/l	
EDB	<0.001		0.001  mg/l	
1,1,1 Trichloroethane	<0.001	mg/l	0.001  mg/l	
1,1,2 Trichloroethane	<0.001	mg/l	0.001  mg/l	
1,1,2,2 Tetrachloroethane	<0.001	mg/l	0.001 mg/l	
Vinyl Chloride	<0.001	mg/l	0.001  mg/l	
Cu	0.03	mg/l	0.01  mg/l	
Cl	44	mg/l	1.0  mg/l	
Fe	<0.3	mg/l	0.3  mg/l	
Mn	0.03	mg/l	0.01  mg/l	
SO 4	913	mg/l	1.0  mg/l	
Zn	0.072	mg/l	0.008  mg/l	
Al		mg/l	0.1  mg/l	
В	0.357	mg/l	0.04  mg/l	
Co	<0.03		0.03  mg/l	
Mo	<0.05		0.05  mg/l	
Ni 7000 + K	0.150		0.01 mg/l	
7300 Jefferson, N.E. • Alb	uquerque, New	Mexico 8710	9 • (505) 345-8964	

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D.

Laboratory Director



SOLD TO: PNM

ATTN: Kent Kantz

Alvarado Square

Albuquerque, NM 87158

DATE: 9 January 1987

2152

SAMPLE ID: K-1

ANALYTE	ANALYTICA	L RESULTS	NOMINAL DE	<b>TECTION</b>	LIMITS	
As	0.15	mg/l	0.00	02 mg/l		
Ba		mg/l		05  mg/l		
Cđ	<0.01			01  mg/l		
Cr	<0.05			01  mg/l		
Pb	<0.05			0.5  mg/l		
Hg	<0.002	mg/1		02  mg/l		
Se	0.02			02  mg/l		
Ag	<0.05					
Corrosivity	<6.35			05 mg/l		
pH	7.17	mmpy		35 mmpy		
Reactivity	non-rea	action.	0.0	71		
CN	<0.01		.0	31 /3	•	
TDS			<b>U.</b> (	01 mg/l		-
120	7204	mg/l		1 mg/l		
VOLATILE ORGANICS					•	
Benzene	1.34	mg/l		01 mg/l		
Toluene	0.732	mg/l		01  mg/l		
Ethyl benzene	0.048	mg/l		01  mg/l		
Carbon tetrachloride	<0.01			01  mg/l		
Chloroform	<0.01			01  mg/l		
1,1-dichloroethane	<0.01			01  mg/l		
1,2-dichloroethane	<0.01			01  mg/l		
1,1-dichloroethylene	<0.01			01 mg/1		
1,2-dichloropropane	<0.01	mg/1		01  mg/l		
1,2-dichloropropylene	<0.01			01 mg/1		
Methylene chloride	<0.01			01 mg/1		
Tetrachloroethylene	. <0.01			01  mg/l	•	
1,2-trans-dichloroethyl	ene (0.01	ma/_		01  mg/l		
1,1,1-trichloroethane	0.579			01  mg/l		
1,1,2-trichloroethane	<0.01	ma/ T		$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
Trichloroethylene	<0.01			01  mg/I		
		₩¥/ <del>1</del>	. 0.1	/ L MG/ L		

REFERENCES: "Test Methods for Evaluating Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer W. Smith, Ph.D.

Laboratory Director



SOLD TO: PNM

ATTN: Kent Kantz

Alvarado Square

Albuquerque, NM 87158

DATE: 9 January 1987

2152

SAMPLE ID: K-2

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
As	<0.002 mg/1	0.002 mg/l
Ba	<0.005 mg/l	0.005 mg/l
Cd	<0.01 mg/l	0.01 mg/l
Cr	<0.05  mg/l	0.05 mg/l
Pb	<0.05 mg/l	0.05 mg/l
Hg	<0.002 mg/l	0.002 mg/l
Se	0.03 mg/l	0.002 mg/l
Ag	<0.05 mg/l	0.05 mg/l
Corrosivity	<6.35 mmpy	
PH	6.92	0.01
Reactivity	non-reactive	
CN	<0.01 mg/l	0.01 mg/l
TDS	1800 mg/l	1 mg/l
VOLATILE ORGANICS		
Benzene	0.962  mg/l	0.01 mg/l
Toluene	0.708 mg/l	0.01 mg/l
Ethyl benzene	0.034  mg/l	0.01 mg/l
Carbon tetrachloride	<0.01 mg/1	0.01 mg/l
Chloroform 1,1-dichloroethane	<0.01 mg/1	0.01 mg/l
1,1-dichloroethane	<0.01  mg/l	0.01 mg/l
1,2-dichloroethane	<0.01 mg/l	0.01 mg/l
1,1-dichloroethylene	<0.01 mg/l	0.01 mg/l
1,2-dichloropropane		0.01 mg/l
1,2-dichloropropylene	< 0.01 mg/l	0.01 mg/l
Methylene chloride	< 0.01 mg/l	0.01 mg/l
recracuroroethylene	<0.01  mg/l	0.01  mg/l
1,2-trans-dichloroethyl	ene 0.470 mg/l	0.01 mg/l
1,1,1-trichloroethane	0.550  mg/l	0.01 mg/l
1,1,2-trichloroethane		0.01 mg/l
Trichloroethylene	<0.01  mg/l	0.01 mg/l

REFERENCES: "Test Methods for Evaluating Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director



ATTN: Kent Kantz

Alvarado Square

Albuquerque, NM 87158

DATE: 9 January 1987

2152

SAMPLE ID: K-3

ANALYTE	ANALYTICAI	L RESULTS	NOMINAL :	DETECTION	LIMITS
As	0.05	mg/l	. 0	.002 mg/l	
Ba	<0.005			.005 mg/l	
Cd	<0.01			0.01 mg/l	
Cr	<0.05	mg/l		0.05  mg/l	
Pb	<0.05	mg/l		0.05  mg/l	•
Hg	<0.002	mg/l		.002 mg/l	
Se	<0.002	mg/l		.002 mg/l	
Ag	<0.05	mg/l		0.05  mg/l	•
Corrosivity		mmpy ·	•	6.35 mmpy	•
pH	7.01			0.01	
Reactivity	non-rea				
CN	<0.01			0.01  mg/l	
Ignitibility	>60		•		
PCB	<1	ug/g	•	1 ug/g	
					Ø
VOLATILE ORGANICS					
Benzene	2.7	ug/g		0.1 ug/g	
Toluene		ug/g		0.1 ug/g	
Ethyl benzene	5.3			0.1 ug/g	
Carbon tetrachloride	<0.1			0.1 ug/g	
Chloroform		ug/g		0.1 ug/g	
1,1-dichloroethane		ug/g		0.1 ug/g	
1,2-dichloroethane	<0.1	ug/g		0.1 ug/g	
1,2-dichloropropane	<0.1	ug/g		0.1 ug/g	
1,2-dichloropropylene			:	^ 4/	
Methylene chloride	<0.1			0.1 ug/g	
1,1,2,2-tetrachloroeth			•	0.1 ug/g	
Tetrachloroethylene	<0.1			0.1 ug/g	
1,2-trans-dichloroethy				0.1 ug/g	
1,1,1-trichloroethane	<0.1	ug/g		0.1 ug/g	
1,1,2-trichloroethane				0.1 ug/g	
Trichloroethylene	<0.1	ug/g	· .	0.1 ug/g	

<0.01 ug/g

0.01 ug/g

1 ug/g

1 ug/g

1 ug/g 1 ug/g

1 ug/g

#### ACIDS

2-chlorophenol

2-nitrophenol Phenol 2,4-dimethylphenol 2,4-dichlorophenol 2,4,6-trichlorophenol p-chloro-m-cresol 2,4-dinitrophenol Pentachlorophenol 4-nitrophenol	<0.01 ug/g	0.01 ug/g
BASES		
Acenaphthene Fluoranthene Napthalene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi)perylene	3 ug/g 5 ug/g <1 ug/g	1 ug/g

REFERENCES: "Test Methods for Evaluating Solid Waste, - Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

5 ug/g

2 ug/g

<1 ug/g</pre>

<1 ug/g
<1 ug/g</pre>

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Fluorene

Pyrene

Phenanthrene

Dibenzo(ah)anthracene

Indeno(1,2,3-cd)pyrene

Jennifer V. Smith, Ph.D. Laboratory Director



DATE: 9 January 1987

ATTN: Kent Kantz

2152

Alvarado Square

Albuquerque, NM 87158

SAMPLE ID: K-4

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
As	<0.05 mg/1	0.002 mg/l
Ba	0.34 mg/l	0.005  mg/l
Cd	<0.01  mg/l	0.01 mg/l
Cr	<0.05 mg/l	0.05 mg/l
Pb	<0.05 mg/l	0.05 mg/l
Нg	<0.002  mg/l	0.002 mg/l
Se	<0.002 mg/1	0.002  mg/l
Ag	<0.05 mg/l	0.05  mg/l
Corrosivity	<6.35 mmpy	6.35 mmpy
Нq	8.05	0.01
Reactivity	non-reactive	
CN	< 0.01 mg/1	0.01  mg/l
Ignitibility	>60°C	,
PCB	<1 ug/g	1 ug/g
VOLATILE ORGANICS		·
Benzene	<0.1 ug/g	0.1 ug/g
Toluene	<0.1 ug/g	0.1 ug/g
Ethyl benzene	<0.1 ug/g	0.1 ug/g
Carbon tetrachloride	<0.1 ug/g	0.1 ug/g
Chloroform	<0.1 ug/g	0.1 ug/g
1,1-dichloroethane	<0.1 ug/g	0.1 ug/g
1,2-dichloroethane	<0.1 ug/g	0.1 ug/g
1,2-dichloropropane		0.1 ug/g
1,2-dichloropropylene		0.1 ug/g
Methylene chloride	<0.1 ug/g	0.1 ug/g
1,1,2,2-tetrachloroeth		0.1 ug/g
Tetrachloroethylene	<0.1 ug/g	0.1 ug/g
1,2-trans-dichloroethy		0.1 ug/g
	<0.1 ug/g	0.1 ug/g
1,1,2-trichloroethane	— · · ·	0.1 ug/g
Trichloroethylene	<0.1 ug/g	0.1 ug/g

### ACIDS

2-chlorophenol 2-nitrophenol Phenol 2,4-dimethylphenol 2,4-dichlorophenol 2,4,6-trichlorophenol p-chloro-m-cresol 2,4-dinitrophenol Pentachlorophenol 4-nitrophenol	<0.01 ug/g	0.01 ug/g
BASES	·	
Acenaphthene Fluoranthene Napthalene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi)perylene Fluorene Phenanthrene Dibenzo(ah)anthracene	<pre>&lt;1 ug/g &lt;1 ug/g</pre>	1 ug/g
Indeno(1,2,3-cd)pyrene Pyrene	<1 ug/g <1 ug/g	1 ug/g 1 ug/g

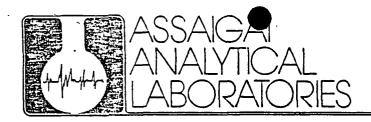
REFERENCES: "Test Methods for Evaluating Solid Waste, - Physical/ Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V Smith, Ph.D.

Laboratory Director



DATE: 9 January 1987

ATTN: Kent Kantz

2152

Alvarado Square

Albuquerque, NM 87158

SAMPLE ID: K-5

ANALYTE	ANALYTICAI	RESULTS	NOMINAL DETECTION LIMITS	
As	<0.05	mg/l	0.002 mg/l	
Ba	<0.05	mg/l	0.005 mg/l	
Cđ		mg/l	0.01 mg/l	
Cr	<0.05		0.05  mg/l	
Pb	<0.05	mg/l	0.05  mg/l	
Hg		mg/l	0.002  mg/l	
Se	<0.002	mg/l	0.002  mg/l	
Ag	<0.05	mg/l	0.05  mg/l	
Corrosivity	<6.35		6.35 mmpy	
Н	6.80		0.01	
Reactivity	non-rea	active		
CN	<0.01	mg/l	0.01 mg/l	
Ignitibility	>60	°C	_	
PCB .	<1	ug/g	1 ug/g	
VOLATILE ORGANICS	•			
Benzene	<0.1	ug/g	0.1 ug/g	
Toluene	<0.1		0.1 ug/g	
Ethyl benzene	<0.1	ug/g	0.1 ug/g	
Carbon tetrachloride	<0.1	ug/g	0.1 ug/g	
Chloroform	<0.1	ug/g	0.1 ug/g	
1,1-dichloroethane	<0.1	ug/g	0.1 ug/g	
1,2-dichloroethane	<0.1		0.1 ug/g	
1,2-dichloropropane	<0.1	ug/g	0.1 ug/g	
1,2-dichloropropylene			0.1 ug/g	
Methylene chloride	<0.1	ug/g	0.1 ug/g	
1,1,2,2-tetrachloroetha	ne <0.1	ug/g	0.1 ug/g	
Tetrachloroethylene	<0.1	ug/g	0.1 ug/g	
1,2-trans-dichloroethyl	ene <0.1	ug/g	0.1 ug/g	
1,1,1-trichloroethane	<0.1	ug/g	0.1 ug/g	
1,1,2-trichloroethane	<0.1	ug/g	0.1 ug/g	
Trichloroethylene		ug/g	0.1 ug/g	

### ACIDS

2-chlorophenol 2-nitrophenol Phenol 2,4-dimethylphenol 2,4-dichlorophenol 2,4,6-trichlorophenol p-chloro-m-cresol 2,4-dinitrophenol Pentachlorophenol	<0.01 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g <12.8 ug/g Uo39 H.W. <0.01 ug/g <0.01 ug/g <0.01 ug/g	0.01 ug/g
Pentachlorophenol 4-nitrophenol	<0.01 ug/g <0.01 ug/g	0.01 ug/g 0.01 ug/g

### BASES

REFERENCES: "Test Methods for Evaluating Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Raporatory Director



ATTN: Kent Kantz

Alvarado Square

Albuquerque, NM 87158

DATE: 9 January 1987

2152

SAMPLE ID: K-6

ANALYTE	ANALYTICAL RE	SULTS NOMINAL DETE	CTION LIMITS
As Ba Cd Cr Pb Hg Se Ag Corrosivity pH Reactivity	<pre>&lt;0.002 mg/: &lt;0.005 mg/: 0.045 mg/: &lt;0.05 mg/: 0.13 mg/: &lt;0.002 mg/: 0.31 mg/: &lt;0.05 mg/: &lt;6.35 mmp; 7.77</pre>	1 0.005 1 0.01 1 0.05 1 0.05 1 0.002 1 0.002 1 0.05 Y 6.35	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
CN TDS  VOLATILE ORGANICS	non-reactiv <0.01 mg/ 6864 mg/	0.01	. mg/l . mg/l
Benzene Toluene Ethyl benzene Carbon tetrachloride Chloroform 1,1-dichloroethane 1,2-dichloroethylene 1,2-dichloropropane 1,2-dichloropropylene Methylene chloride Tetrachloroethylene 1,2-trans-dichloroethyl 1,1,1-trichloroethane 1,1,2-trichloroethane Trichloroethylene	ene <0.01 mg/	1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01 1 0.01	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

REFERENCES: "Test Methods for Evaluating Solid Waste, -Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D.

Laboratory Director



DATE: 9 January 1987

ATTN: Kent Kantz

2152

Alvarado Square

Albuquerque, NM 87158

SAMPLE ID: K-7

. ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
As	<0.002 mg/l	0.002 mg/l
Ba	<0.005 mg/l	0.005  mg/l
Cd	0.060  mg/l	0.01  mg/l
Cr	<0.05 mg/l	0.05  mg/l
Pb	0.18  mg/l	0.05  mg/l
Hg	<0.002 mg/l	0.002  mg/l
Se	0.54  mg/l	0.002  mg/l
Ag	<0.05 mg/l	0.05  mg/l
Corrosivity	<6.35 mmpy	6.35 mmpy
pН	7.82	0.01
Reactivity	non-reactive	
CN	<0.01 mg/1	0.01 mg/l
TDS	9882 mg/l	1 mg/l
VOLATILE ORGANICS		
Benzene	<0.01 mg/l	0.01 mg/l
Toluene	< 0.01 mg/l	0.01 mg/l
Ethyl benzene	<0.01 mg/l	0.01 mg/l
Carbon tetrachloride	<0.01 mg/l	0.01 mg/l
Chloroform	< 0.01 mg/l	0.01 mg/l
1,1-dichloroethane	< 0.01 mg/1	0.01 mg/l
1,2-dichloroethane	< 0.01 mg/1	0.01  mg/l
1,1-dichloroethylene	<0.01 mg/l	0.01  mg/l
1,2-dichloropropane	<0.01  mg/l	0.01  mg/l
1,2-dichloropropylene	<0.01 mg/l	0.01  mg/l
Methylene chloride	< 0.01 mg/1	0.01 mg/l
Tetrachloroethylene	<0.01 mg/l	0.01  mg/l
1,2-trans-dichloroethyl		0.01 mg/l
1,1,1-trichloroethane		0.01  mg/l
1,1,2-trichloroethane	<0.01 mg/l	0.01  mg/l
Trichloroethylene	< 0.01  mg/l	0.01 mg/l

REFERENCES: "Test Methods for Evaluating Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V Smith, Ph.D. Laboratory Director



DATE: 9 January 1987 Kantz 2152

ATTN: Kent Kantz Alvarado Square

Albuquerque, NM 87158

SAMPLE ID: L-1

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
✓As  ✓Ba  ✓Cd  ✓Cr  ✓Pb  ✓Hg  ✓Se  ✓Ag  Corrosivity  pH  Reactivity  ✓CN	0.80 mg/l 0.43 mg/l <0.01 mg/l <0.05 mg/l <0.05 mg/l <0.002 mg/l 0.06 mg/l <0.05 mg/l <6.35 mmpy 9.15 non-reactive <0.01 mg/l	0.002 mg/l 0.005 mg/l 0.01 mg/l 0.05 mg/l 0.05 mg/l 0.002 mg/l 0.002 mg/l 0.05 mg/l 0.05 mg/l 0.05 mg/l 0.05 mg/l 0.05 mg/l
TDS VOLATILE ORGANICS	2900 mg/l	1 mg/l
Benzene  Toluene  Ethyl benzene  Carbon tetrachloride  Chloroform  1,1-dichloroethane  1,2-dichloroethylene  1,2-dichloropropane  1,2-dichloropropylene  Methylene chloride  Tetrachloroethylene  1,2-trans-dichloroethyle  1,1,1-trichloroethane  1,1,2-trichloroethane  Trichloroethylene	0.473  mg/l	0.01 mg/l

REFERENCES: "Test Methods for Evaluating Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer W. Smith, Ph.D. Laboratory Director



DATE: 9 January 1987

ATTN: Kent Kantz

Albuquerque, NM 87158

Alvarado Square

SAMPLE ID: L-2

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETE	CTION LIMITS
As	0.09	mg/l	0.002	mg/l
Ba	0.18		0.005	
Cđ	<0.01		0.01	
Cr	0.05	mg/l	0.05	•
Pb	<0.05	mg/l	0.05	<b>-</b>
Hg	<0.002	mg/l	0.002	mg/l
Se	<0.002		0.002	
Ag	<0.05		0.05	
Corrosivity	<6.35	mmpy	6.35	mmpy
PH	7.32		0.01	•
Reactivity	non-rea		•	
CN	<0.01	_mg/l	0.01	mg/l
Ignitibility	>609	-		
PCB	<b>&lt;</b> 1	ug/g .	1	ug/g
VOLATILE ORGANICS	:			· ·
Benzene	. 0.5	ug/g	0.1	ug/g
Toluene		ug/g		ug/g
Ethyl benzene	8.0			ug/g
Carbon tetrachloride				ug/g
Chloroform	<0.1	ug/g	0.1	ug/g
1,1-dichloroethane	<0.1	ug/g	0.1	ug/g
1,2-dichloroethane	<0.1		0.1	ug/g
1,2-dichloropropane			0.1	ug/g
1,2-dichloropropylene	<0.1	ug/g		ug/g
Methylene chloride	<0.1	ug/g		ug/g
1,1,2,2-tetrachloroeth Tetrachloroethylene	ane <0.1	ng/a		ug/g
Tetrachloroethylene	<0.1	ug/g		ug/g
1,2-trans-dichloroethy				ug/g
1,1,1-trichloroethane	<0.1	ug/g		ug/g
1,1,2-trichloroethane	<0.1	ug/g		ug/g
Trichloroethylene	<0.1	ug/g	0.1	ug/g

### ACIDS

2-chlorophenol 2-nitrophenol Phenol 2,4-dimethylphenol 2,4-dichlorophenol 2,4,6-trichlorophenol p-chloro-m-cresol 2,4-dinitrophenol Pentachlorophenol 4-nitrophenol BASES	<0.01 ug/g <0.01 ug/g <0.01 ug/g <0.05 ug/g 0.25 ug/g 0.28 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g <0.01 ug/g	0.01 ug/g
Acenaphthene Fluoranthene Napthalene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(k) fluoranthene Chrysene Acenaphthylene Anthracene Benzo(ghi) perylene Fluorene Phenanthrene Dibenzo(ah) anthracene Indeno(1,2,3-cd) pyrene Pyrene	<pre>&lt;1 ug/g   1 ug/g &lt;1 ug/g</pre>	1 ug/g

REFERENCES: "Test Methods for Evaluating Solid Waste, -Physical/ Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Laboratory Director



TO: PNM

DATE: 21 January 1987

2159

ATTN: Kent Kantz Alvarado Square

Albuquerque, NM 87158

SAMPLE ID: L-3

ANALYTE	ANALYTICAL RESULTS	NOMINAL DETECTION LIMITS
As	0.25 mg/l	0.05 mg/l
Ва	<0.05  mg/l	0.05  mg/l
Cđ	0.013  mg/l	0.01  mg/l
Cr	<0.05 mg/l	0.05  mg/l
Pb	<0.05 mg/l	0.05  mg/l
Hg	<0.002 mg/l	0.002 mg/l
Se	0.03  mg/l	0.002  mg/l
Ag	< 0.05  mg/l	0.05  mg/l
Corrosivity	<6.35 mmpy	6.35 mmpy
PH	9.04	0.01
Reactivity	non-reactive	
CN	<0.01 mg/l	0.01  mg/l
TDS	3056  mg/l	1 mg/l

REFERENCES: "Test Methods for Evaluatin Solid Waste,-Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D.

Laboratory Director



TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

DATE: 29 May 1987

0661

SAMPLE ID : #2

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETECTION LIMITS
As	0.28	mg/l	0.05  mg/l
Ва		mg/l	1.0 mg/l
Cd	<0.01		0.01 mg/l
Cr	<0.05		0.05 mg/l
CN ·		mg/l	0.01 mg/l
F		mg/l	0.01 mg/l
Pb		mg/l	0.01 mg/l
Total Hg	<0.002		0.002 mg/l
NO 3 as N	<0.01		0.01 mg/l
Se	0.020		0.002 mg/l
Ag	<0.05		0.05 mg/l
Benzene	0.14		0.001 mg/l
Toluene		mg/l	0.001 mg/l
CCL 4	<0.01		0.01 mg/l
1,2 Dichloroethane	<0.001		0.001 mg/l
1,1 Dichloroethylene	<0.001		0.001 mg/l
1,1,2,2 Tetrachloroethylene	<0.001	<del></del>	0.001 mg/l
1,1,2 Trichloroethylene	<0.001	_	0.001 mg/l
Ethyl Benzene	0.011	-	0.001  mg/l
Xylenes		mg/l	0.001 mg/l
Methylene Chloride		mg/l	0.001  mg/l
CCL 3	<0.001		0.001 mg/l
1,1 Dichloroethane	<0.001	mg/l	0.001 mg/l
EDB	<0.001		0.001 mg/l
1,1,1 Trichloroethane	<0.001	mg/l	0.001  mg/l
1,1,2 Trichloroethane	<0.001		0.001  mg/1
1,1,2,2 Tetrachloroethane	<0.001	mg/l	0.001  mg/l
Vinyl Chloride	<0.001		0.001  mg/l
Cu	0.03	mg/l	0.01 mg/l
Cl	89	mg/l	1.0 mg/l
Fe	2.68	mg/l	0.3  mg/l
Mn	0.39	mg/l	0.01  mg/l
SO 4	771	mg/1	1.0  mg/l
Zn	0.034	mg/l	0.008  mg/l
Al		mg/1	0.1  mg/l
В	0.376		0.04  mg/l
Co	<0.03		0.03  mg/l
Мо	<0.05		0.05  mg/l
Ni	0.182	mg/l	0.01  mg/l

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director



TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

DATE: 29 May 1987

0661

SAMPLE ID : #3

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETECTION LIMITS
As	<0.05	mg/l	0.05  mg/l
Ва		mg/l	1.0 mg/l
Cd	<0.01	-	0.01  mg/l
Cr	<0.05		0.05 mg/l
CN	<0.01	-	0.01  mg/l
F	0.65	mg/l	0.01 mg/l
Pb	0.08	mg/l	0.01  mg/l
Total Hg	<0.002	mg/l	0.002  mg/l
NO 3 as N	<0.01	mg/l	0.01  mg/l
Se	0.016	mg/l	0.002  mg/l
Ag	<0.05	mg/l	0.05  mg/l
Benzene	0.004	mg/l	0.001  mg/l
Toluene	0.012	mg/l	0.001  mg/l
CCL 4	<0.01	mg/l	0.01  mg/l
1,2 Dichloroethane	<0.001	mg/l	0.001  mg/l
1,1 Dichloroethylene	<0.001		0.001  mg/1
1,1,2,2 Tetrachloroethylene	<0.001	mg/l	0.001  mg/l
1,1,2 Trichloroethylene	<0.001		0.001  mg/l
Ethyl Benzene	<0.001		0.001  mg/l
Xylenes	<0.001		0.001  mg/l
Methylene Chloride	<0.001		0.001  mg/l
CCL 3	<0.001		0.001  mg/l
1,1 Dichloroethane	<0.001	_	0.001  mg/l
EDB	<0.001	_	0.001  mg/l
1,1,1 Trichloroethane	<0.001		0.001  mg/l
1,1,2 Trichloroethane	<0.001		0.001  mg/l
1,1,2,2 Tetrachloroethane	<0.001		0.001  mg/l
Vinyl Chloride	<0.001		0.001  mg/l
Cu	<0.01		0.01  mg/l
C1		mg/l	1.0  mg/l
Fe		mg/l	0.3  mg/l
Mn		mg/l	0.01  mg/l
SO 4		mg/l	1.0 mg/l
Zn	0.066	_	0.008 mg/l
Al		mg/l	0.1 mg/l
В	0.139	_	0.04 mg/l
Co	<0.03		0.03 mg/l
Mo	<0.05		0.05 mg/l
Ni	0.186	mg/l	0.01  mg/l

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director



TO: Sunterra Gas Processing

ATTN: Gary Jordan

PO Box 2106

Albuquerque, NM 87103

SAMPLE ID : #4

Ni

ANALYTE	ANALYTICAL	RESULTS	NOMINAL DETECTION LIMITS
As	<0.05	mg/l	0.05  mg/l
Ва	<1.0	mg/l	1.0 mg/l
Cd	<0.01		0.01  mg/l
Cr	<0.05	-	0.05  mg/l
CN	0.03	mg/l	0.01 mg/l
F		mg/l	0.01  mg/l
Pb		mg/l	0.01  mg/l
Total Hg	<0.002		0.002 mg/l
NO 3 as N	20.7	mg/l	0.01  mg/l
Se	0.096		0.002  mg/l
Ag	<0.05	mg/l	0.05  mg/l
Benzene	<0.001	mg/l	0.001 mg/l
Toluene	<0.001	mg/l	0.001  mg/l
CCL 4	<0.01	mg/l	0.01  mg/l
1,2 Dichloroethane	<0.001	mg/l	0.001  mg/l
1,1 Dichloroethylene	<0.001	mg/l	0.001  mg/l
1,1,2,2 Tetrachloroethylene	<0.001		0.001  mg/l
1,1,2 Trichloroethylene	<0.001		0.001  mg/l
Ethyl Benzene	<0.001		0.001  mg/l
Xylenes	<0.001	-	0.001  mg/l
Methylene Chloride	<0.001		0.001  mg/1
CCL 3	<0.001		0.001  mg/l
1,1 Dichloroethane	<0.001		0.001  mg/l
EDB	<0.001	_	0.001  mg/l
1,1,1 Trichloroethane	<0.001		0.001  mg/l
1,1,2 Trichloroethane	<0.001		0.001  mg/l
1,1,2,2 Tetrachloroethane	<0.001		0.001  mg/l
Vinyl Chloride	<0.001		0.001  mg/l
Cu	<0.01	_	0.01  mg/l
Cl		mg/l	1.0  mg/l
Fe		mg/l	0.3  mg/l
Mn	<0.01		0.01  mg/l
SO 4		mg/l	1.0  mg/l
Zn	<0.008	_	0.008  mg/l
Al		mg/l	0.1 mg/l
В	0.515		0.04  mg/l
Co	<0.03	_	0.03  mg/l
Mo	<0.05	mg/l	0.05  mg/l

DATE: 29 May 1987

0661

0.268 mg/l

 $0.01 \, \text{mg/l}$ 

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW 846, EMSL-Cincinnati, 1982.

An invoice for services is enclosed. Thank you for contacting Assaigai Laboratories.

Sincerely,

Jennifer V. Smith, Ph.D. Laboratory Director

87-0692-C 754

# SCIENTIFIC LABORATORY DIVISION TO Camino de Salud NE

Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

22202M MO	David Boyer	692
REPORT TO:	N.M. Oil Conservation Division	S.L.D. No. OR- 692 DATE REC. 4-27-87
	P. 0. Box 2088	DATE REC. 4-27-87
	Santa Fe, N.M. 87504-2088	PRIORITY
PHONE(S):	827-5812	USER CODE: [8   2   2   3   5
SUBMITTER:	David Boyer	code:  2   6   0
SAMPLE COLLE	ction code: (YYMMDDHHMMIII)   8 7   0	\$12121/1214101 XDAB1
SAMPLE TYPE:	water □, soil □, food □, other:	CODE:
COUNTY:	n Juan ; CITY: Bloomf	code: [ ] ]
LOCATION COD	E: (Township-Range-Section-Tracts)   3   8   N +	111W+13+11 (10N06E24342)
	UESTED: Please check the appropriate box(es) belo	
	er possible list specific compounds suspected or requ	ired.
'   (mea\	PURGEABLE SCREENS	EXTRACTABLE SCREENS
7	tic Purgeables (1-3 Carbons) tic & Halogenated Purgeables	(751) Aliphatic Hydrocarbons (760) Organochlorine Pesticides
	Spectrometer Purgeables	(755) Base/Neutral Extractables
(766) Trihale	•	(758) Herbicides, Chlorophenoxy acid
Other	Specific Compounds or Classes	(759) Herbicides, Triazines
		(760) Organochlorine Pesticides
		(761) Organophosphate Pesticides
		(767) Polychlorinated Biphenyls (PCB's)
		(764) Polynuclear Aromatic Hydrocarbons
		(762) SDWA Pesticides & Herbicides
Remarks: Sc	interra - Kutz Cooling	tower
DIETO DATA.	1	
PIELD DATA:	nductivity= 1300 umho/cm at 9°C; Chlorin	a Residual— mg/l
-	=mg/l; Alkalinity=mg/l; Flow Rate_	j
	ft.; Depth of wellft.; Perforation In	
		Total List, Casting.
Sampling Locatio	on, Methods and Remarks (i.e. odors, etc.)	ver shuldown previous
- Disher	& zrom sump, cooling lot	ver sun aowa presion
week	/ /	<i>y</i>
I certify that th	ne results in this block accurately reflect the results	of my field analyses, observations and
activities.(signatu	re collector):	Method of Shipment to the Labeton Carried
This form accom	panies Septum Vials, Glass Jugs, and	l/or
Samples were pr	eserved as follows:	
	No Preservation; Sample stored at room temperatu Sample stored in an ice bath (Not Frozen).	re.
×-100.		ove chlorine residual
CHAIN OF CU	Sample Preserved with Sodium Thiosulfate to remo	
I certify that th	nis sample was transferred from	to
		on and that
	n this block are correct. Evidentiary Seals: Not Sea	
Signatures		
- ·		
Eon OCD II	se: Date Owner Notified	Phone or Letter? Initials



## THIS PAGE FOR LABORATORY RESULTS ONLY

PURGEABLE SCREENS  (753) Aliphatic Purgeables (1-3 Carbons)  (754) Aromatic & Halogenated Purgeables  (765) Mass Spectrometer Purgeables  (766) Trihalomethanes  Other Specific Compounds or Classes		EXTRACTABLE SCREENS  (751) Aliphatic Hydrocarbons (760) Organochlorine Pesticides (755) Base/Neutral Extractables (758) Herbicides, Chlorophenoxy acid (759) Herbicides, Triazines (760) Organochlorine Pesticides (761) Organophosphate Pesticides (767) Polychlorinated Biphenyls (PCB's) (764) Polynuclear Aromatic Hydrocarbons (762) SDWA Pesticides & Herbicides	
	ALYTICA CONC.	L RESULTS  COMPOUND(S) DETECTED	CONC.
COMPOUND(S) DETECTED	[PPB]	COMPOUND(S) DETECTED	[PPB]
aromatia surandles	N.D.		
halosenostest aruran bler	N.D.		
		·	
			<del> </del>
* DETECTION LIMIT * *	100 48/2	+ DETECTION LIMIT +	
	THE STATED	DETECTION LIMIT (NOT CONFIRMED) OR WITH APPROXIMATE QUANTITATION	
ABORATORY REMARKS:			
			<del></del>
		· · · · · · · · · · · · · · · · · · ·	
CERTIFICAT	TE OF ANALY	TICAL PERSONNEL	
eal(s) Intact: Yes No L. Seal(s) broken by		saalid date:	
certify that I followed standard laboratory procedur that the statements on this page accurately reflect t			d and
certify that I have reviewed and concur with the		//	block
eviewers signature: Kmeyerhi			. J.UCR.



New Mexico Health and Envir ent Department SCIENTIFIC LABORATORY DON 700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

## GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED - 27	1) NO. 402-1468	USER 59300	o □ 59600 💢X	OTHER: 82	235	
Collection DATE 04   32   87  Collection TIME	SITE INFORM- ► ATION	Sample location	SUN TERRA	- Kui	2 )	PLAUT
Gallected by — Person/Agency  DO V & R		Collection site description		Cool	LING	TOWER
ENVIROR SEND NM OIL FINAL State REPORT Santa  Attn: David	NMENTAL BUREAU CONSERVATION DIV Land Office Bldg Fe, NM 87504-208	<b>,</b> PO Box. 2088	8	Station/		
Phone: 82 SAMPLING CONDITION				Well code Owner	······································	
☐ Bailed ☐ Pump  ☑ Dipped ☐ Tap			Discharge		Sample typ	_
PH (00400) 7.5 (STA	Conductivity (Unco	orrected) 300 μmho	Water Temp. (00010)	9 ℃		y at 25°C (00094) μmho
Sield comments /			omments	: >		
SAMPLE FIELD TREAT						
No. of samples / submitted	□ NF: Whole sample (Non-filtered)	F: Filtered in 0.45 μmer	field with A:	2 ml H₂SO₄/	L added	
NA: No acid added	Other-specify:	□A:	5m1 conc. HNO <sub>3</sub> a	dded □	4m1 f	uming HNO <sub>3</sub> added
ANALYTICAL RESULTS		Units Date analyzed	4	<del></del>		
Conductivity (Corrected) 25°C (00095)	ialle	umho	From,	_	:	Date Analyzed
☐ Total non-filterable residue (suspended) (00530) ☐ Other: ☐ Other:	8.30	mg/l	Calcium Potassium Magnesium Sodium Bicarbonat	47 223	mg/1 mg/1 mg/1 mg/1 mg/1	5/14
A-H₂SO <sub>4</sub>			Chloride _	44	mg/1	<u> 5/5</u> .
<ul> <li>□ Nitrate-N + , Nitrate-N total (00630)</li> <li>□ Ammonia-N total (00610)</li> <li>□ Total Kjeldahl-N ( )</li> <li>□ Chemical oxygen demand (00340)</li> <li>□ Total organic carbon ( )</li> <li>□ Other:</li> <li>□ Other:</li> </ul>		mg/l	Sulfate	nion Ba	2_mg/1 ⑦	5/12 5/19 5/5
Laboratory remarks						

	CATIONS						ANIONS		
ANALYT	E MEQ.	PPM	DE	r.LIMIT	<u> </u>	ANALYTI	E MEQ.	PPM	
Ca Mg Na K	11.23 3.86 9.70 0.12	225.00 47.00 223.00 4.68	< <	3.0 10.0 10.0 0.5	İ	HCO3 SO4 Cl	5.51 18.46 1.24	336.00 886.00 44.00	0
Mn Fe	0.00	0.00			į Į	NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00	0
SUMS	24.91	499.68					25.21	1266.0	0
TDS (me	asured) =	1562.00	pp	m		: `			ថ
Ion Ba	lance =	98.82	8				e No. out/By	=870146 B 5144	8 17



New Mexico Health and Environment SCIENTIFIC LABORATORY DISTON
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and MITHOGEN ANALYSIS

DATE RECEIVED -	127 87 N	18 Hay 527	USER 59300	59600 XX	OTHER: 82	235	
Collection DATE 04 22 8	7	SITE INFORM- ▶	Sample location		- Ku	TZ PLANT	
Collection TIME	,	ATION	Collection site description			ING TOWER	
Collected by — Person	HNDERSO	رير /OCD		***************************************	Coor	ING TOWER	
SEND FINAL REPORT TO	ENVIRONMENT NM OIL CONS State Land Santa Fe, N	TAL BUREAU SERVATION DIV Office Bldg NM 87504-208	• PO Box: 208	3			
Attı	n: <u>David Bo</u> y	/er		1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			
Pho	one: 827-58	12			Station/ well code		
SAMPLING C					Owner		
☐ Bailed  ☐ Dipped	☐ Pump ☐ Tap	Water level		Discharge	• • • • • • • • • • • • • • • • • • • •	Sample type	
pH (00400)	s (strip)	Conductivity (Unco		Water Temp. (00010)	Ç •c	Conductivity at 25°C (00094)	
Field comments		L	3 DD)µmho		/	L	μmho
ļ	***************************************	*************					
		Г — Check prope					
No. of samples submitted	' / 🗆 NF	Whole sample (Non-filtered)	F: Filtered in 0.45 μme	field with  mbrane filter  A: 2	2 ml H <sub>2</sub> SO <sub>4</sub> /	L added	
□ NA: No a	icid added   C	Other-specify:	□A:	5m1 conc. HNO3 ac	ided 🗖	A: 4ml fuming HNO <sub>3</sub>	added
ANALYTICAL	RESULTS from	SAMPLES	<u> </u>		·		
NA Conductivity			Units Date analyze	From,	NA Sample	: Date Analyzed	
25°C (00095  Total non-filte residue (sus (00530))  Other: Other:	erable	Υ.	mg/l	Calcium Potassium Magnesium Sodium		mg/l mg/l mg/l mg/l	
A-H₂SO₄				Bicarbonate		mg/1	
☐ Nitrate-N+, total (00630) ☐ Ammonia-N	total (00610)		mg/l	☐ Chloride _ ☐ Sulfate _ ☐ Total Solid		mg/1 mg/1 mg/1	
☐ Total Kjeldah ( ) ☐ Chemical ox demand (003	ygen 340)		mg/l				
☐ Total organic ( ) ☐ Other:	carbon		mg/l	Cation/A		lanceeported Reviewed by	- <u>-</u>
☐ Other:  Laboratory rema	arks			-	6	1 187 ( Coll	7
FOR OCD U	SE Date C	wner Notifie	2d	Phone or Lett	er?	Initals	<i>}</i>

87-0689-C 754

## SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

REPORT TO:	David Boyer	s.L.D. No. OR-015.689
REFORT TO.	N.M. Oil Conservation Division	DATE REC. 4-27-47
•	P. 0. Box 2088	DATE REC.
	Santa Fe, N.M. 87504-2088	
		PRIORITY
PHONE(S):		
SUBMITTER:	David Boyer	CODE: 12   6   0
SAMPLE COLLE	ection code: (уумморнимии)   8171014121	21/12/51/12/51
_	WATER , SOIL , FOOD , OTHER:	• • • • • • • • • • • • • • • • • • •
	~ Jan ; CITY: Bloomfield	
LOCATION COL	DE: (Township-Range-Section-Tracts) $ 2 8 N+/ 1 l$	$\sqrt{13 + 13 + 11}$ (10N06E24342)
ANALYSES REC	QUESTED: Please check the appropriate box(es) below to indic	ate the type of analytical screens
required. Whenev	rer possible list specific compounds suspected or required.	WITH A COMA DE E. COMPENSO
(758) Alinha		XTRACTABLE SCREENS ) Aliphatic Hydrocarbons
' <u></u> ', ` '		Organochlorine Pesticides
<b>=</b>		Base/Neutral Extractables
(766) Trihal	-	Herbicides, Chlorophenoxy acid
· ·		Herbicides, Triazines
		Organochlorine Pesticides
		Organophosphate Pesticides
		Polychlorinated Biphenyls (PCB's)
	(764)	Polynuclear Aromatic Hydrocarbons
	[ (762)	SDWA Pesticides & Herbicides
Remarks:	unterra Kutz Pons / (up	001)
remarks	and some for the sound of the s	
· · · · · · · · · · · · · · · · · · ·		
FIELD DATA:	onductivity=26/Oumho/cm at 4/5 °C; Chlorine Residual	
	<del></del>	
	mg/l; Alkalinity= mg/l; Flow Rate	
	ft.; Depth of wellft.; Perforation Interval	
Sampling Location	on, Methods and Remarks (i.e. odors, etc.) Olywale,  eva fond #1 (uppar)	Doca of Doca
_ Sun!	eva tond + (upper)	Received all skary
- LL 20f	Tenrale, lescept septie, Sample	West side to version piff
I certify that th	re collector): Method	d of Shipment to the Laboratory Callege
This form accon	panies Septum Vials, Glass Jugs, and/or	d of simplifient to the Lab. Note that
	reserved as follows:	
☐ NP:	No Preservation; Sample stored at room temperature.	
P-Ice	Sample stored in an ice bath (Not Frozen).	}
P-Na SO	Sample Preserved with Sodium Thiosulfate to remove chloring	e residual.
CHAIN OF CU	STODY	
I certify that th	his sample was transferred from	to
at (location)	on	and that
the statements i	n this block are correct. Evidentiary Seals: Not Sealed 🔲 S	Seals Intact: Yes No No
Signatures		
For OCD U	lse: Date Owner Notified Phone of	or Letter? Initials



LAB. No.: OR- 689

## THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:						
PURGEABLE SCREENS		EXTRACTABLE SCREENS				
(753) Aliphatic Purgeables (1-3 Carbons)		(751) Aliphatic Hydrocarbons				
(754) Aromatic & Halogenated Purgeables		(760) Organochlorine Pesticides				
(765) Mass Spectrometer Purgeables		(755) Base/Neutral Extractables				
(766) Trihalomethanes		(758) Herbicides, Chlorophenoxy acid				
Other Specific Compounds or Classes		(759) Herbicides, Triazines				
r-1		(760) Organochlorine Pesticides				
		(761) Organophosphate Pesticides				
		(767) Polychlorinated Biphenyls (PCB's)				
		(764) Polynuclear Aromatic Hydrocarbons				
<u></u>		(762) SDWA Pesticides & Herbicides				
	····	[ (102) SDWA Testicides & Herbicides				
		L DECULTO				
ANZ	ALY IICA	L RESULTS				
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.			
	[PPB]		[PPB]			
I halasemantad amandha	ND					
Massageriocses Mendesyles	M. W.					
aromatice sursealler						
sergend 1	100					
Toluene	86	·				
ethulbennene	TIR.					
n. xulerne	TIR.					
and wife me	25					
0 - seulene	T.R.					
- Seigeras						
* DETECTION LIMIT * *	1 1 2001					
* DETECTION LIMIT * 1	25 48/1	+ DETECTION LIMIT +				
ABBREVIATIONS USED:  N D = NONE DETECTED AT OR ABOVE T R = DETECTED AT A LEVEL BELOW [ RESULTS IN BRACKETS ] ARE UNCONF	THE STATED	DETECTION LIMIT (NOT CONFIRMED)				
LABORATORY REMARKS: Three early	a elesti	my light userstueted come	number			
lated to 1 to 1	- 1	1111 1 1 1 1	1-1. 1			
- alsered was the processor	rzación	d deleter ful soit salva	efect o			
	/	/				
CERTIFICAT	TE OF ANALY	TICAL PERSONNEL	)			
			į			
Seal(s) Intact: Yes No Seal(s) broken by						
I certify that I followed standard laboratory procedu			i and			
that the statements on this page accurately reflect t	he analytical r	esults for this sample.	ļ			
Date(s) of analysis: 0/2/86 . Analyst's sig	gnature: //	my l-lden				
I certify that I have reviewed and concur with the			block.			
Reviewers signature: Kneyerhen			i			



New Mexico Health and Environment SCIENTIFIC LABORATORY DISTRICT ON 700 Camino de Salud NE Albuquerque, NM 87106 — (505) 841-2555

# GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 4	127 8 1 N	1B WC-14/09	USER 59300	o □ 59600 💢X	OTHER: 82	235		
Collection DATE 64   22   87 Collection TIME		SITE INFORM-► ATION	Sample location Sun	ITGRRA -		LANT		
1255 Collected by — Person/	Agency	Allon	Collection site description	1	Poso	1		
BOYSE / F	JUDGESOA	\ OCD\ ر			7			
SEND FINAL REPORT TO	State Land	SERVATION DIN Office Bldg NM 87504-208	P0 Box. 2088	8				
Pho	ne: 827-58	112			Station/ well code			
SAMPLING CO		114.			Owner			
☐ Bailed	☐ Pump	Water level		Discharge		Sample type	•	
⊠ Dipped	□ Тар					GRA	18	
pH (00400)	STrip	Conductivity (Unco	rrected) ∠/D μmho	Water Temp. (00010)	24.5 °C	Conductivity	at 25°C (00094) بر	mho
Field comments	1-11	7	1	or Commi	/ 1			
	<del>((</del>	ec voc	sheer F	0 100110114	ma)			,
	·				<del>,</del>			
SAMPLE FIEL	D TREATMEN	T — Check prope	er boxes					
No. of samples submitted		Whole sample (Non-filtered)	F: Filtered in 0.45 μme	field with A:	2 ml H₂SO₄/	L added		
ANA: No ac	cid added 🗆 C	Other-specify:	□A:	5ml conc. HNO <sub>3</sub>	added 🌉	4ml f	uming HNO <sub>3</sub> ac	lded
ANALYTICAL	RESULTS from							•
NA ☐ Conductivity ( 25°C (00095)			umho5/2 \$	From,	NA SAMP	-	Date Analyzed	
☐ Total non-filter residue (susp (00530)	rable		mg/l	Calcium Potassium Magnesium	292 7.41 36	mg/1_ mg/1_ mg/1	5/14   8 13   5/14	
☐ Other:				Sodium	308	mg/1	5/13	
☐ Other:			<del></del>	Bicarbonat			5/5	
A-H₂SO₄				Chloride	88		5/5	_
□ Nitrate-N+, N total (00630)	litrate-N		mg/l	Sulfate	629		15/12	
☐ Ammonia-N to	otal (00610)		mg/l	Total Soli	ids 22	38 mg/1	3/19	
☐ Total Kjeldahl	-N		mg/l	Ki Co2		0	5/5	
☐ Chemical oxy demand (003			mg/l					·
☐ Total organic			mg/l					
☐ Other:				7	Anion Ba		Daviewed by	
☐ Other:				Analyst			Reviewed by	
Laboratory remar	rks	11 = 170						
		H = 6.72		***************************************			**************************************	
				***************************************				
FOR OCD US	E Date C	wner Notifie	ed	Phone or Let	ter?	In	itals	

	CATIONS				ANIONS	
ANALYT	E MEQ.	PPM	DET.LIMIT	ANALYI	E MEQ.	PPM
Ca Mg Na K	14.57 2.96 13.40 0.19	292.00 36.00 308.00 7.41	< 3.0 < 10.0 < 10.0 < 0.5	HCO3   SO4   C1	11.50 13.10 2.48	702.00 629.00 88.00
Mn Fe	0.00	0.00		NO3   CO3   NH3   PO4	0.00 0.00 0.00	0.00 0.00 0.00 0.00
SUMS	31.11	643.41			27.09	1419.00
TDS(measured) = 2288.00			ppm	=		and the second
Ion Balance = 114.85			%		le No. out/By	=8701469° Q Sh4 47



New Mexico Health and Environment SCIENTIFIC LABORATORY DISJON 700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555



7 1		46	HOED	······································		W		
DATE RECEIVED		AB 1/4-526	USER 59300	□ 59600 🖎 C	OTHER: 822	235		
Collection DATE 04 22 87	ICAP- 2		Sample location			PEANT		
Collection TIME		INFORM- ► ATION		o jedicit - j	<u>~u/L</u>			
Colleged by — Person(A			Collection site description	POND 1				
Collected by — Person/A	NOBREON	ノ /OCD				<u> </u>		
E	ENVIRONMENT	TAL BUREAU		•		·····		
SEND 1	MM OIL CONS	SERVATION DIV	/ISION	_				
		Office Bldg,		3				
TO	Santa Fe, I	NM 87504-208		•		**************************************		
Attn:	Attn: David Boyer							
					Station/			
Phon	ie: 827-58	312			well code Owner	<del> </del>		
SAMPLING CO	NDITIONS				Owner			
☐ Bailed	☐ Pump	Water level		Discharge		Sample type		
Dipped	☐ Tap					GRAB		
pH (00400) 6,	5 (Strip)	Conductivity (Unco	rrected) 26/0 µmho	Water Temp. (00010)	4. T.C	Conductivity at 25°C (00	094) µmho	
Field comments	1/1/				74.7	<u> </u>		
	(See L	10C Shee	TF87 CE	mmenlo)		-		
				·			:	
	TREATMEN	T — Check prope				<u> </u>		
No. of samples submitted	□ NF	F: Whole sample (Non-filtered)	F: Filtered in	field with  The A: 2	2 ml H₂SO₄/l	L added		
				<del></del>				
☐ NA: No aci	d added 🗆 C	Other- <i>specify:</i>	□A:	oml conc. HNO3 ac	ided X	4ml fuming HN	0 <sub>3</sub> added	
ANALYTICAL R	ESULTS from	n SAMPLES		to sudden to beginning the ' H		······································	,	
MA HL			Units Date analyze		ofered Au	: Date		
☐ Conductivity (C	Corrected)		-	From,	MY Sambie	Analyzi	ed .	
25°C (00095)			ımho	-				
☐ Total non-filtera	nble			Calcium		mg/1		
residue (suspe				Potassium		mg/1		
(00530) X Other:	70	CAP SCAU	mg/l	Magnesium _		mg/1		
Sther:	4-	33114					<del></del>	
☐ Other:				Sodium		mg/1	<del></del>	
		<u> </u>		☐ Bicarbonate	·	mg/1		
A-H₂SO₄				🗐 Chloride _		mg/1		
☐ Nitrate-N+, Ni total (00630)	trate-N		mg/l	Sulfate		mg/1 ·		
☐ Ammonia-N tot	ral (00610)		mg/l	Total Solid		mg/1		
☐ Total Kjeldahl-I	• •				ــــــــــــــــــــــــــــــــــــــ			
( )	<del></del>		mg/l	-   Ll	<u> </u>		<del></del>	
☐ Chemical oxyg demand (0034			mg/l					
☐ Total organic ca	•		3''					
( )			mg/l	- Cation/A	nion Bai	lance		
☐ Other:				Analyst	Date R	eported Reviewed by	0 4 4	
☐ Other:	<del></del>	· · · · · · · · · · · · · · · · · · ·		-		18 87	(lallow	
Laboration remarks								
J	Laboratory remarks 1.0 ml HNO3 added at SLD.							
	***************************************	***************************************	**********			Juger	************	
<u> </u>	<del></del>		•	71 -	0	<u>У (I</u>		
FOR OCD USE	E Date (	Owner Notifie	.d	Phone or Lett	er:	Initals		

## ICAP SCAN

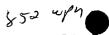
SLD Lab No. <u>ICP 226</u>
Analyst <u>QB 5/6/87</u>

Reviewed by: S/18/87

ELEMENT	ICAP VALUE(mg/1)	AA VALUE(mg/l)
Aluminum	40.1	
Barium	0.4	
Beryllium	40,)	
Boron	0.3	
Cadmium	40.	
Calcium	360.	
Chromium	40.	
Cobalt	40.05	
Copper	40.1	
Iron	1.4	
Lead	40.1	
Magnesium	43.	
Manganese	0.52	
Molybdenum	<0.1	
Nickel	40.1	
Silicon	18.	
Silver	40.1	
Strontium	45	
Tin	20.1	
Vanadium	<0:1	
Zinc	40.1	
Arsenic	· · · · · · · · · · · · · · · · · · ·	
Selenium		
Mercury		



New Mexico Health and Environment SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555



## GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	4 21187	NO. WE -1469	USER CODE _ 59300	D 59600 🛣 O	<sub>THER:</sub> 82	235	
Collection DATE	·   /	SITE INFORM- ▶	Sample location		ITZ PL	-ANT	
Collection TIME		ATION	Collection site description				
Collected by — Pe		/0CD	***************************************		POND		
SEND FINAL REPORT TO	NM OIL O State La Santa Fe	MENTAL BUREAU CONSERVATION DI and Office Bldg e, NM 87504-208	💃 PO Box. 2088	3			
A	Attn: <u>David</u>	Boyer	White Let		Station/		
F	hone: 827	-5812	MAY 2.3 10.3		well code		
	CONDITIONS		MAL PULL	<u>'</u>	Owner		
☐ Bailed  ☐ Dipped	□ Pump □ Tap	-Water level		-Discharge -		Sample type GRAB	
pH (00400)	NStrip)	Conductivity (Unc	orrected)	Water Temp. (00010)	3	Conductivity at 25	
Field comme		<u>′                                      </u>	DS OD) µmho	9	<u> </u>	L	μmho
No. of samp submitted	oles /	IENT — Check prop  Whole sample (Non-filtered)  □ Other-specify:	F: Filtered in 0.45 μme	field with	ml H₂SO₄/ ded ☆	A: 4ml fumin	rg_IINO3 added
	AL RESULTS 1	from SAMPLES	<del></del>				/
NF, NA	vity (Corrected)	<del></del>	Units Date analyzed	☐ Calcium (00915)		Units ma/l	Date analyzed
25°C (000			μmho	_ ☐ Magnesium (00925)		mg/l _ mg/l _	
(00530)	-filterable suspended) -		, mg/l	□ Sodium (00930) □ Potassium (00935) □ Bicarbonate (00440) □ Chloride (00940)		mg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/lmg/l	
☐ Other: ☐ Other:	<u></u>			□ Sulfate (00945)		mg/l	
☐ Other:	_			Total filterable residue (dissolved) (70300)	-	mg/l	
NF, A-H₂SO₄				☐ Other:		<del></del>	
☐ Nitrate-N				F, A-H <sub>2</sub> SO <sub>4</sub>			
total (006	a-N total (00610)		. mg/l . mg/l	Nitrate-N+, Nitrate-I	N O.O	) 4 mg/l	5/12
☐ Total Kjeld			. mg/l	dissolved (00631) Ammonia-N dissolve		<u> </u>	dr.
☐ Chemical demand (			. mg/l	(00608) Total Kjeldahl-N			3/7
☐ Total orga				-	36	<u>-7</u> mg/l	<u> </u>
( □ Other:	, -		. mg/l	-			
☐ Other:	-			Analyst		leported Review 20 87 C	wed by
Laboratory re	emarks			. 1	101	<u>   - /   - (</u>	
		***************************************	***************************************			***************************************	
	***************************************				***************************************	***************************************	
FOR OCD	USE Dat	e Owner Notifi	ed	Phone or Lette	er?	Inital	.s

87-0690-C

## SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE

Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

REPORT TO:	David Boyer	S.L.D. No. OR	690			
	N.M. Oil Conservation Division	DATE REC	4-2787			
•	P. O. Box 2088					
	Santa Fe, N.M. 87504-2088	PRIORITY				
PHONE(S):	827-5812 USEF	CODE:   8   2   2	3 5			
SUBMITTER:	David Boyer	CODE:  2   6	0			
SAMPLE COLLE	ction code: (YYMMDDHHMMIII)   \$\frac{5}{7}\oldsymbol{0}\bullet \frac{4}{2}\alpha	31/131/15				
SAMPLE TYPE:	WATER [X], SOIL [_], FOOD [_], OTHER:	CODE:				
	n Juan ; CITY: Boomfield					
LOCATION COD	E: (Township-Range-Section-Tracts) $ 2 8 \mathcal{N}+/ / \mathcal{L} $	U+/13+/1/	(10N06E24342)			
	<b>UESTED</b> : Please check the appropriate box(es) below to indic er possible list specific compounds suspected or required.	ate the type of analy	tical screens			
-	• • • • • • • • • • • • • • • • • • • •	XTRACTABLE SCREE	ens			
(753) Alipha	tic Purgeables (1-3 Carbons) [ (751)	Aliphatic Hydrocarbo	ns			
.5.7.		Organochlorine Pestic	1			
1		Base/Neutral Extract	i			
[ (766) Trihalo		Herbicides, Chlorophe	enoxy acid			
Other		Herbicides, Triazines Organochlorine Pestic	idaa			
<u> </u>		Organophosphate Pes				
	· · · · · · · · · · · · · · · · · · ·	Polychlorinated Biphe	1			
		Polynuclear Aromatic				
	(762)	SDWA Pesticides &	Herbicides			
Remarks: Su	Tena fond a (Middle	·.)				
	Ludz					
FIELD DATA:						
$pH = \frac{7}{2} \cdot c_0$	onductivity=2500umho/cm at 210°C; Chlorine Residual	=mg/l	İ			
Dissolved Oxygen	=mg/l; Alkalinity=mg/l; Flow Rate					
Depth to water	ft.; Depth of wellft.; Perforation Interval	ft.; Casing:				
	n, Methods and Remarks (i.e. odors, etc.)					
Over show from sont I somble From North Side						
Black water, suspect ivon, no oil, particulates						
I certify that the results in this block accurately reflect the results of my field analyses, observations and						
activities. (signature collector): Was Sold activities.						
This form accompanies Septum Vials, Glass Jugs, and/or						
Samples were preserved as follows:						
NP: No Preservation; Sample stored at room temperature.						
P-Ice Sample stored in an ice bath (Not Frozen).						
P-Na S O Sample Preserved with Sodium Thiosulfate to remove chlorine residual.						
I certify that this sample was transferred from						
at (location) on and that						
the statements in this block are correct. Evidentiary Seals: Not Sealed Seals Intact: Yes No						
Signatures						

For OCD Use: Date Owner Notified \_\_\_\_\_ Phone or Letter? \_\_\_\_ Initials



## THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:						
PURGEABLE SCREENS EXTRACTABLE SCREENS						
(753) Aliphatic Purgeables (1-3 Carbons)		(751) Aliphatic Hydrocarbons				
(754) Aromatic & Halogenated Purgeables	(760) Organochlorine Pesticides					
(765) Mass Spectrometer Purgeables	(755) Base/Neutral Extractables					
(766) Trihalomethanes		(758) Herbicides, Chlorophenoxy acid				
Other Specific Compounds or Classes		(759) Herbicides, Triazines				
<u></u>		(760) Organochlorine Pesticides				
		(761) Organophosphate Pesticides				
		(767) Polychlorinated Biphenyls (PCB's)				
		(764) Polynuclear Aromatic Hydrocarbons				
		(762) SDWA Pesticides & Herbicides				
ستهرير والمراجع والمر						
ANA	ALYTICAL	. RESULTS				
COMPOUND(S) DETECTED	CONC.	COMPOUND(S) DETECTED	CONC.			
COMPOUND(S) DETECTED	[PPB]	COMPOUND(S) DETECTED	[PPB]			
+ 11		<u> </u>	1.29			
aromalie pydrocourfors	N.D.					
Salvaeneted Anadroearbons	N.D		1			
	1001					
			<u> </u>			
	1 11	·				
	<del>  </del>					
	<del> </del>					
·	}		j			
	<del>                                     </del>					
	l I					
<u> </u>						
* DETECTION LIMIT * *	5098/2	+ DETECTION LIMIT +				
ABBREVIATIONS USED:						
N D = NONE DETECTED AT OR ABOVE	THE STATED	DETECTION LIMIT				
T R = DETECTED AT A LEVEL BELOW						
[ RESULTS IN BRACKETS ] ARE UNCONF						
[ RESORIS IN BRACKETS   ARE CHOOM	IIIWED AND/O	WITH APPROXIMATE QUANTITATION				
LABORATORY REMARKS:						
LABORATORT REMARKS:						
			-			
CERTIFICA	TE OF ANALYI	CICAL PERSONNEL				
Seal(s) Intact: Yes No Seal(s) broken by	. most	an last				
· · · · · · · · · · · · · · · · · · ·		date:				
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and						
that the statements on this page accurately reflect the analytical results for this sample.						
Date(s) of analysis: 5/4/87 . Analyst's signature: fan (- Collection)						
I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.						
Reviewers signature: L Meyhhh						
·						



New Mexico Health and Enviro ant Department SCIENTIFIC LABORATORY DI ON 700 Camino de Salud NE Albuquerque, NM 87106 — (505) 841-2555



## GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

'   '	/ iiboquoiquo, i iii							
DATE RECEIVED 4	127 87 N	BWC-1470 6	JSER 59300	o □ 59600 🖎	OTHER: 82	235		
Collection DATE	2	. 3115	ample location	SUNTERRA		2 PLI	9A 2 T	
Collection TIME	7	INFORM- ► _ ATION		+400100000				
1315 Collected by — Person/	Agency		ollection site description	·	Pa	ND à	2	
BOYER / P	INDERSO!	<i>✓</i> /0CD [-				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
				-			***************************************	
	ENVIRONMENT	TAL BUREAU		•		·····	<del></del>	
SEND	NM OIL CONS	SERVATION DIVI	SION	0			***************************************	
HEPORT		Office Bldg, NM 87504-2088	PU DUX. 2000	J				
				and dispersions			,,,,,,	
Attn:	David Boy	ver						
Pho	ne: 827-58	112			Station/ well code			
		112			Owner			
SAMPLING CO	☐ Pump	I Managara I a val		Discharge		0		
Dipped	□ Fump □ Tap	Water level		Discharge		Sample type		
pH (00400)	7	Conductivity (Uncorre	ected)	Water Temp. (00010)			y at 25°C (00094)	
7(	STRIP		D μmho	, , ,	2/ °C			μmho
Field comments	(See 1)	OC Form	150208	niments	\			
***************************************		CO Y C PY	136 ( )	11011001100	<del>/</del>		***************************************	
		***************************************						,,,,,,,
SAMPLE FIELD	D TREATMENT	T — Check proper	boxes = Dra	E: Han Challe				
No. of samples		Mhala assala	F: Filtered in		2 ml H₂SO₄/			
submitted	☐ NF	(Non-filtered)		mbrane filter	2 mi m <sub>2</sub> 50 <sub>4</sub> /	L added		
NA: No ac	id added 🗆 C	Other-specify:	□A:	5ml conc. HNO3 a	dded 🗆	: 4m1 f	uming HNO	added
				3			3	
ANALYTICAL I	RESULIS TROIT		nits Date analyze	1				
Conductivity (	Corrocted)	<u> </u>	nto Date unaryze	From Bre S.	NA Sample	:	Date	
25°C (00095)	———	2500 µm	nho <u>5/29°</u>	_   ,			Analyzed	•
□ Total non filter	-hl-		r ·	🛕 Calcium	216	mg/1_	5/14	
☐ Total non-filter residue (suspe				X Potassium		mg/1	<114	
(00530)	1	7.48 m	ıg/l	-   <del>47</del>			5/14	
☑ Other: ph	/	7.70	<del>3\beta</del>	_ X Magnesium		mg/1_	<u> </u>	<del></del>
☐ Other:		***************************************		- Sodium	364	mg/1_	- 5/176	<del></del>
				☐ ☐ Bicarbonat	e <u>1228</u>	<u>}_mg/1</u>	<u> 5/5</u>	
A-H₂SO₄				Chloride _	119	mg/1	5/5	
☐ Nitrate-N+, N total (00630)	litrat <del>e-</del> N			Sulfate	147	mg/1	5/12	
☐ Ammonia-N to	otal (00610)		ng/l ng/l	Total Soli			5/19	<del></del>
☐ Total Kjeldahl-			ş <u> </u>				-1-	<del></del>
( )		m	ıg/l	-   XI <u> </u>	<u> </u>	>	5/5	<del></del>
☐ Chemical oxyg demand (0034		m	ıg/l					
☐ Total organic o					e 1 1 mm * 1			
( )		m	ıg/l	- 🛛 Cation/	Anion Ba	lance .	·	
☐ Other:	-			Analyst	Date R		Reviewed by	
					5 .	28 87	Q9	
Laboratory remark	ks							
		***************************************	***************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		<del></del>	***************************************	
	<del></del>	~~~~~~					·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
FOR OCK HE	F Data 0	wner Notified		Phone or Let	ter?	Tn	itals	
FOR OCD US.	n . Dare O	MITEL HOLTTEON			· <del></del>			

	CATIONS				ANIONS	
ANALYT	E MEQ.	PPM	DET.LIMIT	ANALYT	E MEQ.	PPM
Ca Mg Na K	10.78 3.61 16.01 0.55	216.00 44.00 368.00 21.50	< 3.0 < 10.0 < 10.0 < 0.5	HCO3 S04 C1	20.12 3.06 3.36	1228.00 147.00 119.00
Mn Fe	0.00	0.00		NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
SUMS	30.95	649.50			26.54	1494.00
TDS (me	easured) =	2302.00	ppm			×-
Ion Ba	lance =	116.60	8	-	e No. out/By _	=8701472 <u>shukaj</u>

### .87- 0688 -C

### SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE

Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

REPORT TO:	David Boyer	S.L.D. No. OR
	N.M. Oil Conservation Division	DATE REC. 4-29-87
•	P. 0. Box 2088	
	Santa Fe, N.M. 87504-2088	PRIORITY
PHONE(S):	827-5812	USER CODE:   8   2   2   3   5
SUBMITTER:	David Boyer	CODE: 12   6   0
SAMPLE COLLE	CTION CODE: (YYMMDDHHMMIII)   8   7   0	112121/1313101 1981
SAMPLE TYPE:	WATER [2], SOIL [1], FOOD [1], OTHER:	CODE:
COUNTY:	~ Gran ; CITY: Bloomfre	20 CODE:
	E: (Township-Range-Section-Tracts)   <u> 名   8   パ +</u>	
	UESTED: Please check the appropriate box(es) below	
•	er possible list specific compounds suspected or requi- PURGEABLE SCREENS	ed. EXTRACTABLE SCREENS
	tic Purgeables (1-3 Carbons)	(751) Aliphatic Hydrocarbons
	tic & Halogenated Purgeables	(760) Organochlorine Pesticides
(765) Mass	Spectrometer Purgeables	(755) Base/Neutral Extractables
[ (766) Trihalo	methanes	(758) Herbicides, Chlorophenoxy acid
Other	Specific Compounds or Classes	(759) Herbicides, Triazines
<u> </u>		(760) Organochlorine Pesticides
		(761) Organophosphate Pesticides
		(767) Polychlorinated Biphenyls (PCB's)
닏		(764) Polynuclear Aromatic Hydrocarbons
<u> </u>		(762) SDWA Pesticides & Herbicides
Remarks:	sentera Kutz Pond 3	(lower)
	218-3980 2LE	
FIELD DATA:		,
	onductivity C; Chlorine	
	=mg/l; Alkalinity=mg/l; Flow Rate_	
	ft.; Depth of wellft.; Perforation Inte	rvaiit.; Casing:
	exious and remarks (i.e. odors, ecc.)	respect on bombe wrote.
<i>(</i> -1)	na oil	July 21, super
- ,	e results in this block accurately reflect the results	of my field analyses, observations and
activities.(signatu	re collector): Ward Rough	Method of Shipment to the Lab: Hand carry
This form accom	panies Septum Vials, Glass Jugs, and	Method of Shipment to the Lab: Hand carrier
	eserved as follows:	
☐ NP:	No Preservation; Sample stored at room temperatur	e.
P-Ice	Sample stored in an ice bath (Not Frozen).	
CHAIN OF CU:	Sample Preserved with Sodium Thiosulfate to remove STODY	ve chlorine residual.
I certify that th	is sample was transferred from	to
at (location)		n and that
the statements in	n this block are correct. Evidentiary Seals: Not Seale	d Seals Intact: Yes No
Signatures		

For OCD Use: Date Owner Notified \_\_\_\_\_ Phone or Letter? \_\_\_\_ Initials



LAB. No.: OR- 688

### THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screen	ning method(s)	checked below:	
PURGEABLE SCREENS		EXTRACTABLE SCREENS	_
(753) Aliphatic Purgeables (1-3 Carbons)		(751) Aliphatic Hydrocarbons	.•
(754) Aromatic & Halogenated Purgeables		(760) Organochlorine Pesticides	
<del></del>			
(765) Mass Spectrometer Purgeables		(755) Base/Neutral Extractables	•
(766) Trihalomethanes		(758) Herbicides, Chlorophenoxy acid	
Other Specific Compounds or Classes		(759) Herbicides, Triazines	
		(760) Organochlorine Pesticides	
		(761) Organophosphate Pesticides	
		(767) Polychlorinated Biphenyls (PCB's)	
	<u>-</u>	[ (764) Polynuclear Aromatic Hydrocarbons	
		(762) SDWA Pesticides & Herbicides	
AN	ALYTICA	L RESULTS	
COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic surreafter	I GAD !		
AND AND AND	NUD		
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	1		
* DETECTION LIMIT * *	2548h		
* DETECTION LIMIT * 1	1 2) 19/2	+ DETECTION LIMIT +	
ABBREVIATIONS USED:			
N D = NONE DETECTED AT OR ABOVE	THE STATED	DETECTION LIMIT	
T R = DETECTED AT A LEVEL BELOW			
		OR WITH APPROXIMATE QUANTITATION	
[ RESULTS IN BRACKETS ] ARE UNCONE	IRMED AND/C	R WITH APPROXIMATE QUANTITATION	
LABORATORY REMARKS:			
CERTIFICA	TE OF ANALY	TICAL PERSONNEL	
Seal(s) Intact: Yes No Seal(s) broken b	v: not	ealed date:	
I certify that I followed standard laboratory procedu	res on handling	and analysis of this sample upless otherwise note	d and
that the statements on this page accurately reflect			a anu
Date(s) of analysis: 5/4/87 . Analyst's si		//	
I certify that I have reviewed and concur with the	analytical resul	of for this sample and with the statements in this	block.
Reviewers signature: Kneyenhen			
			<del>- 2</del>



### MEMORANDUM OF MEETING OR CONVERSATION

			<del> </del>		<u> </u>
Telephone	Personal	Time 08/5		Date 2/11/83	
	Originating Party	•		Other Parties	
Roger	anders		Ke	ely Crossman	BW/HW
<i>,</i>				<i>-</i>	BID
Subject Deta	rimination of	HW fro	m	characteristic	)
				·····	
Discussion	10 0	0.4		-/	
				if spent of	
Mon.	sponge.	was He	O La	c- Ettoched). Bo	gsis
, 1	analysis	_ ~			
Kelly	said it do	es not	app	en to be t	4W.
I sai	I we we have I wo	re gain	o To	control w	Rece
and s	how it we	as dis	pasie	<u></u>	
Conclusions or	Agreements				
)istribution		Sig	gned	1/) 1	

# Hauser Laboratories

January 14, 1987 Test Report No. C36-1211

CLIENT:

Southern Union Processing Company

P. O. Box 1869

Bloomfield, New Mexico 87413 Attention: Ralph Morris

P. O. #13784-8268

MATERIAL:

One (1) bag of wood chips received 12/12/86 and identified as "wood chips from iron sponge."

TESTING:

- 1. Chemical analysis for ignitability, sulfide, and corrosivity according to <u>Test Methods for Evaluating</u> Solid Waste, SW-846.
- 2. Prior to analysis for pH (corrosivity) and sulfate the sample was extracted in hot water. Sulfate analyzed according to EPA method 375.4
- 3. Prior to anlaysis of iron, for ferrous sulfate, the sample was ashed, dissolved in acid and analyzed by atomic absorption spectroscopy.
- 4. The reaction product of mercaptans is sulfide and is determined as indicated in #1 above.

### RESULTS:

Analysis	Method	Obtained Value
Ignitability	1010	>170 <sup>0</sup> F
Reactivity Sulfide Cyanide	9030	<pre>&lt; l mg/L not required</pre>
Corrosivity, pH	9040	6.3
Reaction product of mercaptans		see sulfide
Ferrous sulfate, FeSO4		1.41 %
Total iron		26.2 %

TESTS SUPERVISED BY:

TESTS CONDUCTED BY:

Michael Cheney Chemical Technician

Olga Piel

Chemical Technician

Pamela Shepard

Analytical Chemist/Inorganic Supervisor

file: S0U010

mc

# Hauser Laboratories

January 14, 1987
Test Report No. C36-1211

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Southern Union Processing Company

P. O. Box 1869

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P. O. #13784-8268

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Total iron		26.2 %

TESTS SUPERVISED BY:

Analytical Chemist/Inorganic Supervisor

TESTS CONDUCTED BY:

Michael Cheney Chemical Technician

Olga Piel

Chemical Technician

file: SOU010

ms

Russel Buss 904 Mountain View agtec, NM 87410



New Mexico Health and Environment SCIENTIFIC LABORATORY DISJON 700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555



## GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

Sample type   Sample type		27/87 N		USER 5930	o □ 59600 💢X	OTHER: 82	235		
Collected by - Phenoculagency / OCD   Confection bits description   Palab		INFORM- ►	Sample location	SHUTERRA	- Kur	Z PLA	PUT-		
ENVIRONMENTAL BUREAU  BEND  NM OIL CONSERVATION DIVISION State Land Office Bldgs, PO Box. 2088  Attn: _David_Boyer.  Phone: 827-5812  Bailed   Pump   Water level   Discharge   Sample type   Conductivity (Uncorrected)   Pump   Water level   Discharge   Conductivity at 25°C (00094)  Field comments   Car Vox Somm Spicetiffs   A: 2 mil H2 SOa/L added   Conductivity at 25°C (00094)  SAMPLE FIELD TREATMENT - Check proper boxes  No. of samples   NF: Whole sample   Submitted   A: 2 mil H2 SOa/L added   Conductivity (Nor-Ritiered)   The Soample   So	1330			Collection site description		Paul	, ?		
Minal   State   Land Office   Bldg,   PO   Box   2088   State   Land Office   Bldg,   PO   Bldg,   PO   Box   2088   State   Land Office   Bldg,   PO   Bldg,	Collected by — Person/A	Agency	/0CD					***************************************	
Phone: 827-5812    Sample   Pump   Water level   Discharge   Sample type   C.R.A.B.   Pump   Water level   Discharge   C.R.A.B.   Pilo   Conductivity (Uncorrected)   Water Temp. (00010)   C.R.A.B.   Pilo   Conductivity (Uncorrected)   Water Temp. (00010)   C.R.A.B.B.   Pilo   Conductivity (Uncorrected)   Water Temp. (00010)   C.R.A.B.B.B.B.B.B.B.B.B.B.B.B.B.B.B.B.B.B	END INAL IEPORT O	NM OIL CONS State Land Santa Fe, I	SERVATION DIV Office Bldg, NM 87504-2088	PO Box. 208					
AMPLING CONDITIONS    Bailed		_		<del>70888848</del> 84488	***************************************				<b></b>
Bailed						Owner			
Conductivity (Uncorrected)   Water Temp. (00010)   Conductivity at 25°C (00094)   Conductiv	☐ Bailed	□ Pump	Water level	_	Discharge		Sample type	e ar	
SAMPLE FIELD TREATMENT — Check proper boxes   SAMPLE FIELD TREATMENT — Check proper boxes   No. of sample   NF: Whole sample   NF: Filtered in field with   0.45 \( \text{pmembrane filter} \)   A: 2 \( \text{ml H}_2 \text{SO}_4 / L \) added   A: 4 \( \text{ml f uming } \text{HNO}_3 \) added   A: 4 \( ml	pH (00400)	2 (	Conductivity (Uncor	rected)	Water Temp. (00010)	7 / 00		at 25°C (00094)	umho
No. of samples submitted  NF: Whole sample (Non-filtered)  NA: No acid added  Other-specify:	Field								
NALYTICAL RESULTS from SAMPLES   NA   Sample:   Date   Analyzed   Sec (00095)   U367   µmho   3/26	No. of samples submitted	□ NF	Whole sample (Non-filtered)	F: Filtered in 0.45 µme	mbrane filter			uming HNO <sub>2</sub> a	ıddeo
Conductivity (Corrected)	NALYTICAL F	RESULTS from	SAMPLES		<u> </u>	1			
□ Total non-filterable residue (suspended) (00530)   mg/l	☐ Conductivity (0	Corrected)			From <u>F</u> ,	NA Sample	:		•
Bicarbonate 39 mg/l	☐ Total non-filters residue (suspe (00530)) ☐ Other: ☐ Other:		·		Potassium	53	9 mg/1 mg/1_		
Nitrate-N +, Nitrate-N total (00630)   mg/l					7 77			3/5	
Chemical oxygen demand (00340) mg/l Cation/Anion Balance	total (00630)			•	Sulfate _	170	7_mg/1_	5/12	
□ Total organic carbon ( )	( ) ☐ Chemical oxyg	 gen			CO3	Á	3 mg/l	5/5	<del></del>
□ Other:	☐ Total organic c	•			Cation/	Anion Ba	lance		
5   26   87 CT	Other:				Analyst			Reviewed by	
Laboratory remarks  PH = 9.61	Laboratory remark	e pH =	9.61						

	CATIONS				ANIONS	
ANALYT	E MEQ.	PPM	DET.LIMIT	ANALYI	E MEQ.	PPM
Ca Mg Na K	4.19 4.35 36.32 0.01	84.00 53.00 835.00 0.39	< 3.0 < 10.0 < 10.0 < 0.5	HCO3   SO4   Cl	0.64 35.56 12.86	39.00 1707.00 456.00
Mn Fe	0.00	0.00		NO3 CO3 NH3 PO4	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
SUMS	44.87	972.39			49.06	2202.00
TDS (me	asured) =	3172.00	ppm			
Ion Ba	lance =	91.46	8	-	e No. out/By _	=8701471 <u>O</u> Shekit

P. O. BOX 1869 • BLOOMFIELD, NEW MEXICO 87413 (505) 632-8033

May 7, 1987

Mr. William J. LeMay Director New Mexico Energy & Mineral Department Oil Conservation Division P.O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

RE: Discharge Plan Kutz Plant

Dear Mr. LeMay:

We acknowledge receipt of your letter of April 24 requiring the filing of a discharge plan for our Kutz Plant. Gathering of preliminary information is already in progress. As soon as we receive the analyses of your samples taken on April 22, and have a better definition of our needs the plan: preparation schedule will be completed. Analysis of the duplicate samples, which we took, are expected next week and will be shared with your department.

Thank you for the copy of the regulations and preparation guide. We will be in contact as soon as the analytical data is available.

Sincerely,

**J**ohn Renner General Manager

JR:c1b

cc: R. Buss

G. Jordan

H. Navarues

D. Boyer - NMOCD-Aztec

OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-5800

April 24, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. John Renner General Manager Sunterra Gas Processing Co. P.O. Box 1869 Bloomfield, New Mexico 87413

RE: Discharge Plan requirement Kutz Canyon Gas Plant San Juan County, New Mexico

Dear Mr. Renner:

Under the provisions of the Water Quality Control Commission (WQCC) regulations, you are hereby notified that the filing of a discharge plan is required for your existing Kutz Canyon Gas Plant located in Section 13, Township 28 North, Range 11 West (NMPM), San Juan County New Mexico.

This notification of discharge plan requirement is pursuant to Sections 3-104 and 3-106 of the WQCC regulations. The discharge plan, defined in Section 1-101.P of the WQCC Regulations, should cover all discharges of effluent or leachate at the plant site or adjacent to the plant site. A copy of the regulations is enclosed for your convenience. Also enclosed is a copy of an CCD guide to the preparation of discharge plans for gas processing plants. Three copies of your discharge plan should be submitted for review purposes.

Section 3-106.A. of the regulations requires a submittal of the discharge plan within 120 days of receipt of this notice unless an extension of this time period is sought and approved for good cause. Section 3-106.A also allows the discharge to continue without an approved discharge plan until 240 days after written notification by the director that a discharge plan is required. An extension of this time may be sought and approved for good cause.

If there are any questions on this matter, please feel free to call David Boyer or Roger Anderson at (505) 827-5812 as they have the assigned responsibility for review of all discharge plans.

Sincerely,

William J. LeMay Director

WJL/RCA/cr

Enclosure

xc: OCD-Aztec

Gary Jordan, Sunbelt Mining

STATE OF NEW MEXICO OIL CONSERVATION DIVISION



### MEMORANDUM OF MEETING OR CONVERSATION

		<del></del>	
Telephone Personal	Time	Date	1/1/87
Originating Pa		<u>Other</u>	Parties
Russell Buss Southern Uni Subject Spent ino		R. and.	wan OCD
Southern Une	g-n		
Subject Spent ino	n Spange	A Kit	3 Bas Plant.
Discussion He receiv	red my let	ter and ha	been working
an a way to dispo	ne at their	uron spona	e. BLM would
not let them dispo			
not either due t			
an the disposal se	-		
ital the plant set e			
for compast and			1 .1
this as we do not			
nor the patential reac		1	
insectariles etc. u	le also wou	Il loose tr	och of the elocat
Conclusions or Agreements	stion of all	the materio	0.
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I Told King w			
. site the week	1/2	0/87 m n	, trasation
ola D.P.		<i>H</i>	
Distribution	Sig	gned	7
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STATE OF NEW MEXICO

### ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



GARREY CARRUTHERS

February 18, 1987

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Russel Buss 904 Mountain View Aztec, N.M. 87401

RE: IRON SPONGE REFUSE DISPOSAL

Dear Mr. Buss:

The OCD has evaluated the laboratory analysis of the spent iron sponge you supplied. Based on 40 CFR 261 Subpart C, Characteristics of Hazardous Wastes, and consultation with Environmental Improvement Division Hazardous Waste personnel, it appears the spent iron sponge has oxidized to the point it will not be classified as a hazardous waste. Therefore, this waste can be disposed of by landfill procedures.

Prior to final disposal, the site must be approved by this office. If a commercial or community landfill is utilized, the local EID Field Office should be notified. The following are the criteria that will be used by OCD in determining the appropriateness of the site and must be supplied by the disposer:

- 1. Location in 1/4, 1/4. Section , Township , and Range .
- 2. Name and address of land owner.
- 3. Depth to ground water.
- 4. Description of soil and underlying geological formation.

The following construction criteria will be required:

- 1. Refuse will be deposited below ground.
- 2. Refuse will be covered with a minimum of twelve (12) inches of dirt.
- 3. The dirt will be mounded to insure water runoff and no pooling of water above the refuse.

- 4. The area will be protected and properly signed to ensure there is no unauthorized dumping or entry.
- 5. Only oxidized, non-hazardous spent iron sponge will be disposed of at that particular location.

Please be advised that approval of a disposal site and method does not relieve you of liability should your disposal result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

If there are any questions, do not hesitate to contact me at (505) 827-5885.

Sincerely,

ROGER C. ANDERSON

Environmental Engineer

RCA:dp

cc: OCD-Aztec

Garry Jordan - Sunbelt Mining

## Hauser Laboratories

January 14, 1987 Test Report No. C86-1211

CLIENT:

Southern Union Processing Company

P. O. Box 1869

Bloomfield, New Mexico 97413 Attention: Ralph Morris

P. O. #13784-8263

MATERIAL:

One (1) bag of wood chips received 12/12/86 and

identified as "wood chips from iron sponge."

TESTING:

1. Chemical analysis for ignitability, sulfide, and corrosivity according to <u>Test Methods for Evaluating</u> Solid Waste, SW-846.

Prior to analysis for pH (corrosivity) and sulfate the sample was extracted in hot water. Sulfate analyzed according to EPA method 375.4

3. Prior to anlaysis of iron, for ferrous sulfate, the sample was ashed, dissolved in acid and analyzed by atomic absorption spectroscopy.

4. The reaction product of mercaptans is sulfide and is determined as indicated in #1 above.

### RESULTS:

Analysis	Method	Obtained Value
Ignitability	1010	>170°F
Reactivity Sulfide Cyanide	9030	< l mg/L not required
Corrosivity, pH	9040	6.3
Reaction product of mercaptans		see sulfide
Ferrous sulfate, FeSO <sub>4</sub>		1.41 %
Total iron		26.2 %

TESTS SUPERVISED BY:

TESTS CONDUCTED BY:

Michael Cheney Chemical Technician

Olga Piel

Chemical Technician

Pamela Shepard

Analytical Chemist/Inorganic Supervisor

file: SOU010

ms



TONEY ANAYA GOVERNOR

December 15, 1986

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501-2088 (505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Russell A. Buss, President Southern Union Processing Co. P. O. Box 1869 Bloomfield, New Mexico 87413

RE: IRON SPONGE DISPOSAL

Dear Mr. Buss:

As per our phone conversations of December 8 and 9, 1986, I am enclosing copies of correspondence between the N.M. Environmental Improvement Division and the Bureau of Land Management, and a USEPA determination on the exemption of iron sponge refuse pursuant to the oil and gas waste exemption of RCRA. EPA has determined that waste "iron sponge" is not exempt and, therefore, subject to the RCRA hazardous waste regulatory program if it is determined to be hazardous.

As we discussed, the spreading of the iron sponge should allow it to oxidize. Please be aware of the hazards of iron sulfide and take the proper precautions to prevent the formation of H<sub>2</sub>S gas or the ignition of the iron sponge. Please submit your plans to accomplish oxidation, the topography and ground water level where the iron sponge is spread and the security measures to be taken to prevent unauthorized entry and/or disposal and to assure the protection of ground water.

There may also be unanticipated compounds present that may be classified as hazardous, therefore, after it is determined that oxidation is complete, you are required to test and analyze the refuse for the following:

- 1. RCRA EP-Toxicity
- 2. RCRA Ignitability
- 3. RCRA Reactivity
- 4. Presence of iron sulfide
- 5. Presence of mercaptans
- 6. Presence of halogenated hydrocarbons

Once these tests are completed, please supply a copy of the analysis for our review. After review of the data, a determination on disposal method will be made.

If I can be of further assistance or if there are any questions, please do not hesitate to call me at (505) 827-5885.

Sincerely,

ROGER C. ANDERSON

Environmental Engineer

RCA:dp

Enc.

cc: OCD-Aztec





## **Procedures Aid Iron Sponge Disposal**

Brett Jay Davis Project Engineer Physichem Technologies, Inc. Austin

## Procedures Aid Iron Sponge Disposal

Editor's Note: Spent iron sponge can exhibit the hazardous characteristics of ignitability and reactivity as defined in U.S. Environmental Protection Agency regulations, CFR 40. However, if properly handled prior to disposal, it is not considered a hazardous waste under federal regulations, and may be disposed of without the extensive testing, paperwork and permitting required of hazardous waste disposal. As a manufacturer of iron sponge, Physichem Technologies Inc. provides the following guide to proper handling of spent iron sponge. These pre-disposal handling procedures developed by Physichem have been approved by the Texas Railroad and Water Commissions, and are generally accepted throughout the domestic oil patch.

### By Brett Jay Davis

AUSTIN, TX.—Iron sponge consists of hydrated iron oxide uniformly impregnated on a substrate material, most commonly wood. It is used to remove hydrogen sulfide and mercaptans from gas and light liquid hydrocarbon streams.

H2S removal produces iron sulfides and water, while mercaptan removal produces iron mercaptides and water. Both iron sulfides and iron mercaptides can be dangerous materials, and if not properly handled can be pyrophoric (self-igniting). In addition, these compounds can release deadly hydrogen sulfide gas and/or sulfuric acid gas when contacted by acidic compounds.

BRETT JAY DAVIS is a project engineer with Physichem Technologies Inc., with primary responsibility for production operations at Physichem's iron sponge plant in Waelder, Tx. His other duties include engineering and design of gas and liquid treating systems for sulphur removal. He has authored computer programs for gas measurement as well as treating, and has presented numerous seminars on natural gas sweetening. Davis received a bachelors in chemical engineering from the University of Texas at Austin. He is a member of the Gulf Coast Gas Measurement Society, the Gas Processors Suppliers Association, and the American Gas Association.

Fortunately, waste iron sponge will revert to non-hazardous iron oxide fairly rapidly in the presence of air. If precautions are taken to ensure this exothermic reaction proceeds without producing enough heat to ignite the waste, iron sponge can be disposed of as a simple, non-hazardous waste.

Spent iron sponge will often become slightly "cemented" in the sweetening vessel, and thus can be quite difficult to remove. Whether or not this is the case, the recommended removal procedure is to "wash" spent iron sponge from the vessel with water. This washing ensures the spent material is completely wetted.

After removal from the vessel, the spent iron sponge should be spread into a thin layer on the ground, or preferably a cement slab. Once spread to a thickness of a few inches, the material should be periodically raked and rewetted for a few days.

When the material has sufficiently reoxidized so that it is no longer potentially ignitable, spent iron sponge may be disposed of as a non-hazardous waste. This determination is commonly made when the spent iron sponge is no longer black, but has become uniformly another color ranging from gray-red to red-brown to deep red. The spent iron sponge should not come into contact with acidic solutions, either before or after it is judged safe for disposal, to avoid possible reaction.

If these pre-disposal techniques are followed, most states allow the disposal of spent iron sponge by burial onsite, or when accepted by the licensed operator, in a public landfill. Some states may require an inexpensive disposal permit or test for evolvable H2S gas.

In all cases, the proper state regulatory agencies should be contacted prior to spent from sponge disposal. These agencies are always cooperative in helping a waste generator develop safe and legal disposal plans. Physichem Technologies Inc. is also available to assist operators in developing proper handling and disposal techniques. For information contact the company at P.O. Box 15484, Austin, Tx. 78761; phone 1-800-531-5169 (1-800-252-8157 in Texas).

# Proper Handling and Disposal of Spent Iron Sponge

### INTRODUCTION

As a manufacturer of iron sponge, Physichem Technologies, Inc. has encountered a great deal of confusion as to the accepted legal handling and disposal methods for the spent material. Spent iron sponge is primarily composed of a mixture of iron sulfides/mercaptides and iron oxides on a supporting wood chip/ shaving substrate. If not properly handled prior to disposal, this spent material can take on the characteristics of a hazardous waste as defined in the Code of Federal Regulations, Title 40 (40 CFR), Part 261. Disposal of a hazardous waste involves extensive chemical testing, large volumes of paperwork for the necessary permits, and expensive handling, transportation, and disposal costs. In order to help producers of spent iron sponge avoid the unnecessary time and expense associated with disposal as a hazardous waste, this paper will discuss predisposal handling procedures that are currently accepted by the hazardous and solid waste regulatory agenices in Texas and several of the surrounding states.

### DISCUSSION

### **Chemical Composition**

Iron sponge consists of hydrated iron oxide (Fe<sub>2</sub>O<sub>3</sub>·xH<sub>2</sub>O) uniformly impregnated upon a substrate material. Most commonly, this substrate material is wood. The product is used to remove hydrogen sulfide (H<sub>2</sub>S) and mercaptans (RSH) from gas and liquid streams. As indicated by Equation 1, the H<sub>2</sub>S removal reaction produces iron sulfides (e.g., Fe<sub>2</sub>S<sub>3</sub>) and water. In a similar fashion, mercaptan removal produces iron mercaptides and water.

$$2Fe_2O_3 \cdot xH_2O + 6H_2S \rightarrow 2Fe_2S_3 + 6H_2O$$
(desulturization) (1)

$$2Fe2S3 + 3O2 \rightarrow 2Fe2O3 + 6S(s)$$
(reversion) (2)

Iron sulfides and iron mercaptides can be dangerous materials. If not properly handled, they can be pyrophoric (selfigniting) and can release deadly hydrogen sulfide gas and/or sulfuric acid gas when contacted with acidic compounds.

Fortunately, waste iron sponge will revert back to iron oxide in the presence of air (oxygen) fairly rapidly, as indicated in Equation 2. If precautions are taken to insure that this exothermic reaction proceeds without producing enough heat to ignite the waste, the spent iron sponge can be disposed of as simply a non-hazardous solid waste.

### **Hazardous Wastes**

tt is the responsibility of the waste producer to make the determination of

whether a waste is hazardous. This determination is based upon the guidelines presented in 40 CFR, Part 261. Iron sponge and iron sulfides/mercaptides are not specifically listed as hazardous materials in this statute.

However, in 40 CFR, Part 261, Subpart C, several characteristics of hazardous wastes are listed. A waste that exhibits any of these characteristics is considered hazardous. The definition of the characteristic of ignitability includes any waste that "is not a liquid and is capable, under standard temperature and pressure, of causing fire through . . . spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard." The definition of the characteristic of reactivity includes any waste that "is a . . . sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment."

In a July 12, 1985 memorandum, the Office of Solid Waste and Emergency Response of the Environmental Protection Agency (EPA) defined as hazardous those wastes that release more than 500 mg H<sub>2</sub>S per Kg of waste. Tests run by a consultant for the EPA Region 5 office in Chicago found that spent iron sponge generated by a large mid-western utility did not produce more than 500 mg H<sub>2</sub>S per Kg by the test specified in the EPA memorandum. These results support the premise that spent iron sponge does not exhibit the characteristic of reactivity, as presently defined.

As described above, spent iron sponge can possess the characteristic of *ignitability* if allowed to re-oxidize too quickly. Although contact with large quantities of an acidic compound may not yield the characteristic of *reactivity*, such contact should not be permitted to occur.

### **Regulatory Agencies**

40 CFR gives the EPA the authority to regulate hazardous wastes on the Federal level. In many states, enforcement of the regulations in 40 CFR and any additional state statutes is performed by local agencies.

### Proper Handling and Disposal Procedures

The following is a summary of the recommended spent iron sponge handling and disposal procedures in Texas, Oklahoma, Kansas, Louisiana, and New Mexico.

#### **TEXAS**

In Texas, the responsibility for hazardous waste management belongs to the Texas Water Commission. All non-hazardous wastes associated with production of natural gas and oil are the responsibility of the Texas Railroad Commission. Thus, disposal of spent iron sponge is regulated by the Railroad Commission unless it is determined to be hazardous waste.

As discussed above, the classification of spent iron sponge as non-hazardous is very advantageous to the waste generator. Several pre-disposal handling techniques recommended by the Railroad Commission will insure that the spent iron sponge is not hazardous waste while it undergoes reversion in air. These pre-disposal handling procedures must be followed to insure that spent iron sponge does not fit the characteristics of a hazardous waste during its reversion to pre-dominately iron oxide, which is a non-hazardous material.

Following reversion, the material can be disposed as a non-hazardous solid waste. If these procedures are not followed and the spent material is not immediately disposed, then it may have to be transported to a Water Commission authorized hazardous waste landfill. Obviously, such disposal would require sophisticated and expensive handling techniques along with voluminous paperwork.

Spent iron sponge often will become slightly "cemented" in the sweetening vessel and, thus, can be quite difficult to remove. Whether or not this is the case, the recommended removal procedure is to always "wash" the spent iron sponge from the vessel with water. This washing insures that the spent material is completely wetted. After this material is removed from the vessel, it should be spread into a thin layer upon the ground or preferably onto a cement slab. Once spread to a thickness of only several inches, the material should be periodically raked and rewetted for a few days.

When the material has sufficiently reoxidized such that it no longer presents
the potential hazardous characteristic of
ignitability, even when allowed to dry, it
can be buried. This determination is commonly made when the spent iron sponge
is no longer black but has become uniformly another color ranging from grayred to red-brown to deep red. The spent
iron sponge should not come into contact
with acidic solutions, either before or
after the above determination is made.
This procedure will insure that the hazardous characteristic of reactivity is
avoided. Usually, no permits are required

for either the pre-disposal handling the on-site disposal process for the hazardous material. This permit exemption is described in the Texas Solid Waste Disposal Act, section 4(f).

However, if the waste cannot be buried on-site, arrangements must be made through a licensed landfill operator for final disposal. The landfill operator may require that several chemical tests be performed on the material to meet his legal obligations to confirm that the spent iron sponge is non-hazardous. And because of the unpredictable timing of the waste's reversion reaction, these tests may be required before each disposal.

### **OKLAHOMA**

Disposal of wastes associated with the exploration and production of oil and gas in the state of Oklahoma is regulated by the Corporation Commission. The proper disposal techniques for spent iron sponge are included in the Commission pamphlet entitled "Guidelines for Petroleum and Emergency Field Situations in the State of Oklahoma."

Spent iron sponge should be "land-filled on-site or other suitable site with the approval of the land owner and the District Manager of the Oklahoma Corporation Commission Oil and Gas Conservation Division." The Corporation Commission does not consider spent iron sponge to be a hazardous waste. However, as an added safety precaution to avoid the possible dangers associated with the reversion of the iron sulfides/mercaptides, it is recommended that the spent iron sponge pre-disposal techniques previously detailed be followed prior to landfill disposal.

### **KANSAS**

The Department of Health and Environment must be given a detailed plan for the disposal of spent iron sponge including the expected volumes. The generator of spent iron sponge must contact the Department with disposal plans prior to implementation. Both on-site and public landfill disposal are allowed in Kansas.

The Department requires the purchase of an inexpensive permit, valid for one year, prior to on-site disposal. County landfills are available for spent iron sponge disposal and there are no restrictions on the transportation of the material. However, it is again recommended that the pre-disposal treatment techniques be followed prior to disposal and especially before transportation to a county landfill.

### LOUISIANA

Both the Department of Environmental Quality and the Office of Conservation regulate the disposal of spent iron sponge. The generator of this material should contact both agencies with disposal plans prior to implementation. Both on-site and public landfill disposal are allowed.

The Office of Conservation requires that the pre-treatment techniques listed

previously be followed before disposial. They also specify a test for evolvable H<sub>2</sub>S be performed to determine when the spent iron sponge has completed the reversion process. The Department of Environmental Quality requires that a permit be obtained prior to on-site disposal.

### **NEW MEXICO**

The generator of spent iron sponge must notify the Energy and Minerals Department of disposal plans. Both on-site and public landfill disposal are allowed.

On-site disposal is allowed if the material will not come into contact with acidic compounds or groundwater. The Department recommends that the disposal site be marked with a sign that includes the statement "buried iron sulfide, add no acid." Public landfill disposal is recommended in the southeast portion of the state because of the low depth of the groundwater. Again, it is recommended that the pre-disposal techniques for spent iron sponge be followed in New Mexico.

### CONCLUSIONS

Spent iron sponge is potentially hazardous. If left unattended, dry, and piled, this material can self-ignite, possibly producing flames which could be disastrous in a dry area or near the oil/gas well itself. If the spent iron sponge is con-

tacted with large quantities of acidic compounds, potentially lethal gases may be evolved. In order to avoid these dangerous situations, several simple, inexpensive pre-disposal handling procedures are recommended by the Texas Railroad Commission. These procedures apply equally well in Texas and many other states.

Spent iron sponge will rapidly undergo reversion from iron sulfides/mercaptides back to iron oxide in the presence of air. Keeping the waste wetted and raked while in a thin layer insures that the material will not self-ignite. Additionally, the spent material should be kept away from acidic materials.

Once these procedures have been carefully followed and the reversion is sufficiently complete, the spent iron sponge can be disposed by burial on-site or, when accepted by the licensed operator, in a public landfill. In some states, permits are required prior to disposal.

In all cases, the proper state regulatory agencies should be confacted with a proposal for spent iron sponge disposal. These agencies are always cooperative in aiding the waste generator to develop disposal plans that are safe and legal. However, these same agencies take a very dim view of those generators requesting assistance only after an accident has occurred.

### **WASTE DISPOSAL AGENCIES**

AREA	ADDRESS	PHONE NUMBER
EPA Region 6 (Arkansas, Louisiana, New Mexico, Oklahoma, Texas)	EPA Region 6 1201 Elm Street Dallas, Texas 75270	214-767-2600
EPA Region 7 (Iowa, Kansas, Missouri, Nebraska)	EPA Region 7 324 East 11th Street Kansas City, Missouri 64101	816-374-5493
Kansas	Department of Health and Environment Building 321 Topeka, Kansas 66620	913-862-9360
Louisiana	Department of Environmental Quality Solid Waste Division PO Box 94307 Baton Rouge, Louisiana 70804	504-342-9091
New Mexico	Energy and Minerals Department Oil Conservation Division PO Box 2088 Santa Fe, New Mexico 87504—20%	505-827-5812
Oklahoma	Corporation Commission Oil and Gas Conservation Division Jim Thorpe Office Building Oklahoma City, Oklahoma 73105	405-521-2301
Texas	Railroad Commission 1701 N. Congress Ave. Austin, Texas 78711	512-463-7288
	Water Commission 1700 N. Congress Ave. Austin, Texas 78711	512-463-7830

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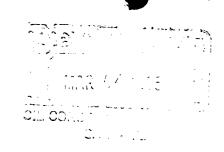
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Orticle el discussed With you on telephone 12-4-86. Please call me if you have question @ 505-632-8033 or 632-8038







February 27, 1985

Energy and Minerals Department P.O. Box 2088 State Land Office Building Santa Fe, New Mexico 87501

Gentlemen:

Please be advised of the noted changes in the capacities of Southern Union Refining Company Gas Processing Plants. The address is also changed.

Regarding the Lovington facility, the Lovington Refinery of Southern Union Refining Company was closed down as of September 1, 1984. It has been out of service since that date. Any correspondence regarding the oil refinery should be sent to the Hobbs address. Any correspondence regarding the gas processing plants should be sent to the Bloomfield address, to the attention of Mr. Russel Buss, Vice President.

Yours truly,

Russel Buss Vice President

Natural Gas Liquids Production

RAB:bb

	ММс		_	Production—1,000 gail			Average based on the past 12 months)				
Company, plant, location	Gas capacity	Gas through- put	Process method	Ethane	Prop.	isobut.	Normal or unsplit butane	LP-gas mix	Raw NGL mix	Debut. nat. gaso.	Othe
MGPC—Fairview, Richland Co., 24-25n-58e	6.0	3.9	3		8.4			7.9			
hell Western E&P Inc.—Cabin Creek, Fallon Co., 18-10n-58e	1.9	1.9	3						7.0		
Little Beaver, Fallon Co., 17-4n-62e	0.4	0.4	3 4					:	1.4		
South Pine, Wibaux Co., 10-11n-57erue Oil Co.—Bob Rhodes, Richland Co.,	1.2	1.2							5.4		
ne 4-25n-58etex Oil Co.—Stateline, Richland Co.,	4.0	1.0	3		2.3				8.1		
nw1/4 sw1/4 8-23n-59e	12.0	3.0	3		8.9				8.0		111.
Total	70.0	35.3			42.9	8.2	6.4	13.4	39.2	1.5	1.
NEBRASKA ities Service Co.—Kimball, Kimball Co.,										٠	
10-12n-55w	1.5	1.0	3						5.0		
farathon Oil Co.—*West Sidney, Cheyenne Co., 4-12n-50w	12.0	2.1	2		2.8		2.1			1.7	
		3.1	_		2.8		2.1		5.0	1.7	
Total	13.5	3.1			2.8		2.1	• • • •	5.0	1.7	•••
NEW MEXICO  Adobe Oil & Gas Corp.—Antelope Ridge, Lea Co., 15-23s-34e	30.0	11.0	7						24.0		• • •
moco Production Co.—*Empire Abo, Eddy Co., 3-18s-27e	42.0	40.8	7	84.5	49.8		23.6			23.5	
abot Corp.—Hobbs, Lea Co., 28-18s-36e	61.0	22.3	7						43.1		• • •
ities Service Co.—Abo, Eddy Co., 35-17s-27e Bluitt, Roosevelt Co., 15-8s-36e	4.0 25.0	4.0 25.0	7 2						8.0 99.0		
Burton Flats, Eddy Co., 14-20s-28e NMPM.	. 8.0	3.0	7						11.0		
onoco Inc.—Maljamar, Lea Co., sw se 21-17s-32e	50.0	36.7	7						135.3		
n2-n2 14-29n-11w Chaco, San Juan Co., sw4 16-26n-12w	558.0 594.0	379.6 409.8	1 2						311.3		
Jai No. 3, Lea Co., nw4-sw4 33-24s-37e Jai No. 4A, Lea Co., se4-se4 31-23s-37e and	225.0	95.9	2						605.0 .121.2		
s2-sw4 32-23s-37e	185.0	97.2	1						68.2		
s2-sw4 32-23s-37e	71.0	44.8	† 1		(52.7) 8.4		(64.7) 11.8			(72.0) 13.3	
Wingate McKinley Co., 16&17-15n-17w as Co. of New Mexico, Division of New Mexico Public Service Co.—Avalon,			- <del>-</del>		(366.9)	(101.6)	(189.9)			(260.9)	
Eddy Co., 9-21s-27e	30.0	14.6	<u>-</u> 2						13.0		
Parathon Oil Co.—Indian Basin, Eddy Co., 23-21s-23e	210.0	109.9	7						184.5		<sup>11</sup> 14.
lesa Petroleum Co.—South Blanco Creek,							••••				•
6-7w-23n linerals inc.—Hobbs, Lea Co., sw½-sw½-	6.0	2.6	3						13.5		
ne½ 36-18s-36e Kermac. Eddy Co., 12 4-21s-31e	45.0 6.0	40.8 3.6	7 6					55.6 1.9			
titchell Energy & Development Corp.— Pecos Diamond No. 1, Eddy Co	20.0	5.1	7						7.7		
Pecos Diamond No. 2, Eddy Co	20.0	5.1	7 7						7.7		
White Ranch, Chaves Colorthern Natural Gas Co.—Hobbs, Lea Co.,	7.5	1.5	7						6.9		110.
6-19s-37e	220.0	114.0	2						137.0		
s2 se4 7-18s-28e Eunice, Lea Co., ne4 3-22s-37e	43.0 80.0	NR NR	7 7								
Lee, Lea Co., sw4 se4 30 nw4-ne4-31- 17s-35e Lusk, Lea Co., nw4 ne4 19-19s-32e	35.0	NR	7 2								
outhern Union Refining Co.—Kutz No. 1, San	60.0	NR		• • • • •							• •
Juan Co., nw4 13-28n-11w Kutz No. 2, San Juan Co., nw4 13-28n-11w	100.0 85.0	67.4 74.3	2 7				• • • •		175.6 230.3		
Lybrook, Rio Arriba Co., nw1/4 14-23n-7w	85.0	51.5	7						177.1		
enneco Oil Co.—Gallegos Canyon, San Juan Co., se <sup>1</sup> / <sub>4</sub> -sw <sup>1</sup> / <sub>4</sub> -13-25n-10w NMPM exaco—Buckeye, Lea Co., se <sup>1</sup> / <sub>4</sub> of se <sup>1</sup> / <sub>4</sub>	19.4	5.4	7						22.1		٠.:
36-17s&18s-34e, I mi se of Buckeye Eunice No. 1, Lea Co., 27 22s-37e	25.0 105.0	7.7 78.4	6 7		73.1	11.8	38.0		83.1 0.6	57.2	5206
pperary Corp.—Denton, Lea Co., 2-7-155-37e arren Petroleum Co.—Eunice, Lea Co.,	15.0	4.0	7						35.0		113
ne4 3-22s-37e	NR	50.3	7						249.6		
Monument, Lea Co., sw4 36-19s-36e Saunders, Lea Co., 34-14s 33e	NR NR	48.7 28.5	7 6					· · · ·	212.4 220.2		
Snyder Ranch, Eddy Co., sw4-sw4 15- 19s-31e	NR	12.0	7	,	, .				19.8		
Vada, Lea Co., sw2-sw4-nw4 23-10s-33e	NR	8.9	6		131.3	11.0	75.4		55.8		
Fractionation. (Figures in parenthesis do not re	3,255.2	2,078.4 narv produ	ction, and a	<b>84.5</b> are not add		11.8 totals).	73.4	57.5	3,278.0	94.0	224.
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NORTH DAKOTA maco Production Co.—Killdeer, Dunn Co.,	2.5		_								11.
6 14E+ OA											
6-145n-94w	2.5	1.4	2		14.0			17.0	3.8		110.

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January 24, 1979

Mr. Eddie Seay Oil Conservation Division P.O. Box 1980 Hobbs, New Mexico 88240

Dear Mr. Seay:

Per your request, attached are maps of surface pits operated by Southern Union Refining Company in New Mexico. The maps show the section, township, and range of the location of the pits per your request. If you have any further questions, please notify.

Very truly yours,

Russel a. Buss

Russel A. Buss General Manager

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KUTZ PLANT

OPERATOR	PLANT	DESIGN CAPACITY MMCF/D
Amoco Production Company P. O. Box 68 Hobbs, New Mexico 88240	Empire Abo Gasoline	42
Cabot Corporation 7120 I-40 West Amarillo, Texas 79106	Hobbs	65
Cities Service Company Box 300 Tulsa, Oklahoma 74102	Bluitt Abo Burton Flats	27 4 7.5
Conoco Inc. Box 2197 Houston, Texas 77001	Maljamar	36
El Paso Natural Gas Company P. O. Box 1492 El Paso, Texas 79978	Jal No. 1 Jal No. 3 Jal No. 4 Blanco Chaco San Juan River Wingate	303 225 185 558 594 71 (1) 1,328,000 Gal/D
Florida Hydrocarbons Company P. O. Box 973 Hobbs, New Mexico 88240	Antelope Ridge	30 -
Gas Company of New Mexico First International Building Dallas, Texas 75270	Indian Hills	30
Getty Oil Company Eunice, New Mexico 88231	Eunice No. 1 Eunice No. 2 Grama Ridge (Shut Down)	130 40 15
Intrastate Gathering Corporation P. O. Box 32999 San Antonio, Texas 78216	Gallup	1.2
Liquid Energy Corporation P. O. Box 618 Artesia, New Mexico 88210	Pecos Diamond	
Marathon Oil Company Box 1324 Artesia, New Mexico 88210	Indian Basin	180
Mesa Petroleum Co. P. O. Box 2009 Amarillo, Texas 79189	South Blanco	6
Minerals, Inc. P. O. Box 1320 Hobbs, New Mexico 88240	Hobbs Kerr Mac	45 6
Navajo Refined Helium Company Box 312 Otis, Kansas 67565	Red Rock	4
Northern Natural Gas Company 2223 Dodge St. Omaha, Nebraska 68102	Hobbs	222
Pecos River Gas Plant, Ltd. P. O. Box 5939 Roswell, New Mexico 88202	White Ranch	7.5
Perry Cas Processors, Inc. P. O. Box 7059 Odessa, Texas 79760	Antelope Ridge	10
Phillips Petroleum Company Bartlesville, Oklahoma 74004	Artesia Eunice Hobbs (Shut Down) Lee Lovington (Shut Down) Lusk	43 80 38 35 10 60

OPERATOR	PLANT	DESIGN CAPACITY MMCF/D
Southern Union Refining Company	Kutz Canyon	1 <del>100-</del> 125
501 N. Linam P.O. Box 1869	Kutz No. 2	85
Hobbs, New Maxico 88240 BLOOMFIELD N. M. 87413	Lybrook	85
Texaco Inc. Box 3109	Buckeye	23
Midland, Texas 79702		
Tipperary Resources Corporation Box 3179	Denton	15
Midland, Texas 79702		
Warren Petroleum Corporation	Eunice	70
P. O. Box 2100	Snyder Ranch	22.6
Houston, Texas 77001	Monument	77
	Saunders Area	26
	Vada	10
Yates Petroleum Corporation	Yates Gathering and	(2) 5
207 So. 4th	Transwestern Processing	
Artesia, New Mexico 88210	Penasco Gas Processing	5 .
TOTAL	46	3,776.6

- (1) The Wingate Plant is a central fractionation plant that receives its feed from the Blanco and Chaco absorption plants.
- (2) The processing plant is owned and operated by Transwestern Pipeline Company for all gas gathered by Yates Petroleum and transported by Yates Petroleum with capacity of 3.25 MMCFPD.

### NEW MEXICO OIL REFINERIES, 1983

NAME AND ADDRESS	PLANT	RUNS TO BBLS/YEAR	STILLS BBLS/DAY	CAPACITY BBLS/DAY	EMPLOYEES
Caribou Four Corners, Inc. Box 457 Afton, Wyoming 83110	Kirtland (Shut Down)	-0-	-0-	3,500	0
Giant Refining Box 256 Farmington, New Mexico 87401	Bloomfield (Shut Down)	-0-	-0-	13,500	2
Giant Refining Star Route 3 Box 7 Gallup, New Mexico 87301	Ciniza	8,146,652	22,320	18,000	95
Navajo Refining Company P. O. Drawer 159 Artesia, New Mexico 88210	Artesia l	2,179,914	33,369 *(Navajo North *(Navajo South	*35,000 5,000) 30,000)	305
Plateau, Inc. Suite 200 4775 Indian School Road Albuquerque, New Mexico 87110	Bloomfield	3,769,409	10,327	16,900	68
Southern Union Refining Company Box 980 Hobbs, New Mexico 88240	Lovington 1	2,533,229	34,338	36,100	123
Southern Union Refining Company Box 980 Hobbs, New Mexico 88240	Monument (Shut Down)	-0-	-0-	5,400	0
Thriftway Oil Company Box 1367 Farmington, New Mexico 87401	Bloomfield	411,545	1,128	7,500	15
TOTAL	3	7,040,799	101,482	135,900	606

Receipts: 27,686,243 barrels crude and condensate

97.5% New Mexico origin

33,846,417 barrels total all receipts 97.4% New Mexico origin

Receipts of crude and condensate equal 36.8% of New Mexico Production for 1983, down from 39.5% in 1982.