AE Order Number Banner

Report Description

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NM - 29

SOUTHWEST WATER DISPOSAL

4/23/2013

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Hydrolgeologic Studies
Site Investigations
Remediation Plans

SITE ASSESSMENT
"SKIMMER PIT"
SOUTHWEST WATER DISPOSAL SITE
SE/4 SW/4 SECTION 32, T30N, R9W
SAN JUAN COUNTY, NEW MEXICO

Prepared For
SOUTHWEST WATER DISPOSAL, INC.
David Sweazey, President
Robert Dillard, Site Foreman

Prepared By

Mark E. Weidler, Professional Geologist
PG-2097 (WY), CPG-2488

August 20, 1993

5.0 RECLAMATION OR DISPOSAL OF CONTAMINATED SOIL

The skimmer pit was located on an area built-up of fill dirt as part of the earth work involved in creating the containment of the site's large evaporation pond. It appears the evaporation pond containment is built to approximately 18-20 feet above original grade. I measured the fall from the access road to grade to the south of the skimmer pit and found a fall of about 14 feet. Therefore, it appears that the bottom of the skimmer pit contamination is now approximately 1' to 2' above original grade of the site. No evidence of lateral seepage is evident inspecting the base of the fill on the south side. The north side of the fill abuts against an outcrop of Animas Formation bed rock which provides excellent containment.

As a result of these observations it appears to the investigator that the contamination described in this report is adequately contained on a near-term basis and poses no immediate threat to the environment. It should be remediated however, because the nature of the contamination and containment will not allow for natural biodegradation. **It is also the opinion of this investigator that excavation and transport to another site for remediation poses a greater threat to the environment than keeping the contaminated soil in its present site.** However, in the event you elect, or are required, to excavate the contaminated material for disposal at a NMOCD approved site or land farm elsewhere, it is important to account for a bulking factor of about 20 per cent. Therefore, the in-situ contaminated soil of 1,540 cubic yards will bulk to about 1850 cubic yards and the overburden from 510 cubic

SITE ASSESSMENT
"SKIMMER PIT"
SOUTHWEST WATER DISPOSAL SITE

1.0 INTRODUCTION

The "skimmer pit" investigated for this report was utilized for separation of crude oil type hydrocarbons from water accepted at the site for disposal. The pit was subsequently removed from use, backfilled with fill material, and leveled. During the backfilling procedure, the 'soils' utilized as fill material became heavily contaminated with crude oil sludge which had accumulated in the pit. The New Mexico Oil Conservation Division has requested that Southwest Water Disposal, Inc. conduct a site investigation and submit a plan of reclamation. This firm was retained by Southwest Water Disposal, Inc. to conduct the site investigation.

2.0 LOCATION AND DESCRIPTION OF SETTING

The water disposal facility operated by Southwest Water Disposal, Inc., is located approximately one mile north of the San Juan River between the communities of Blanco and Turley in eastern San Juan County, New Mexico (Refer to Figure 1). The facility is constructed in shale of the Animas Formation (Paleocene). Elevation of the facility is about 5730 feet MSL. Elevation of the San Juan River at is nearest point is about 5580 feet MSL. The alluviated river valley is approximately three-fourths mile wide in the vicinity and is nearly three-fourths mile south of the disposal facility. The alluviated valley contains the nearest significant surface and underground water. The terrain becomes rugged north

and west of the facility, with steep, deeply incised canyons in the Animas Formation.

3.0 INVESTIGATION OF "SKIMMER PIT"

On site personnel showed us the approximate location of the former pit. Because the surface has been leveled the outline of the old pit was not evident. A location near the center of an area encircled by the current access and egress road was selected and staked as test boring C-1 (see Figure 2). The test boring was made with a 3-inch hand auger designed for soil sampling. Samples were collected and tested on 1 to 2 foot intervals. Field testing was made by the headspace method. Pint glass jars are half-filled with sample, and sealed with aluminum foil. The sample is allowed to volatilize a minimum of 15 minutes in the jar, then is agitated for 1-minute, and tested with a pre-calibrated Thermo-Environmental 580-B organic vapor meter. In this case the instrument was calibrated with 250 PPM isobutylene test gas. The instrument utilizes a photo-ionization detector. Headspace testing results and description of samples collected from the boreholes are recorded in Appendix A. In addition, 5 samples collected for TPH analysis in the laboratory are listed both in Table 1 and Appendix A.

The locations of subsequent test borings were referred by direction and distance from test boring C-1. Therefore, North 30-6' refers to the sample collected at 6 feet below grade, 30 feet north of C-1. The contamination was defined both horizontally and vertically in this manner. Many of the borings could not be advanced to the base of contamination because of unpredictable

pebble and cobble gravel which cause auger refusal. Those that could be fully advanced show the bottom of the contamination consistently at the 12-13 foot level below grade. The thickest contamination is the hemisphere defined by South 43 to North 37 to Northwest 22. In this hemisphere contamination starts about 1-foot below grade and continues to 13 feet B.G. It appears this is the result of backfilling from northeast to southwest, displacing and squeezing the heavy oil ahead of the fill dirt. The vertical distribution of contamination is shown in the cross-sectional profiles enclosed as Figure 3.

4.0 DESCRIPTION AND CHARACTERIZATION OF CONTAMINATION

The contamination of the soils by crude oil in the pit is severe. This is reflected in the high TPH readings obtained in laboratory analysis of 5 samples collected from the pit. The laboratory analyses are listed in Table 1. Much of the light-end hydrocarbons have been lost by volatilization and weathering in the pit while it was in use. The residue is heavily weathered, viscous crude oil.

Based on the test boring data we estimate the **volume of contaminated soil to be about 1,540 cubic yards.** This is covered by about 510 cubic yards of relatively uncontaminated fill dirt, mainly on the northeast and east side. In the event of excavation it will be difficult to prevent some mixing of uncontaminated and contaminated soils.

Fortunately, **ground water has not been impacted** and it appears there is little risk of that occurring based upon the geological and hydrological setting.

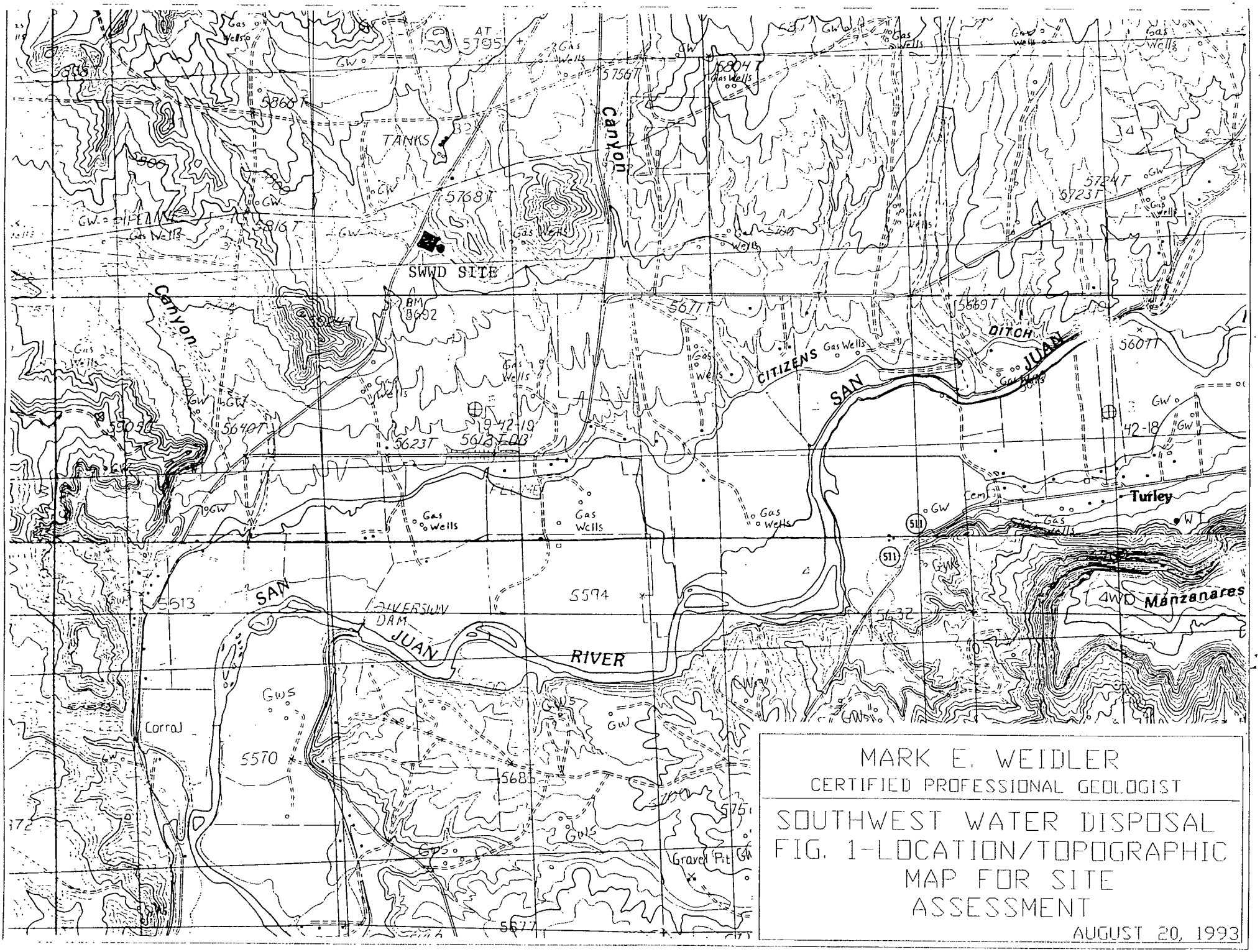
yards to about 612 cubic yards for trucking and disposal purposes after excavation.

Please let me know if you have questions regarding any findings or opinions expressed in this report. I appreciate the opportunity to provide the service and trust that my investigation will provide you the data on which you can make a decision on how to proceed.

Mark E. Weidler

MARK E. WEIDLER
PROFESSIONAL GEOLOGIST

FIGURES



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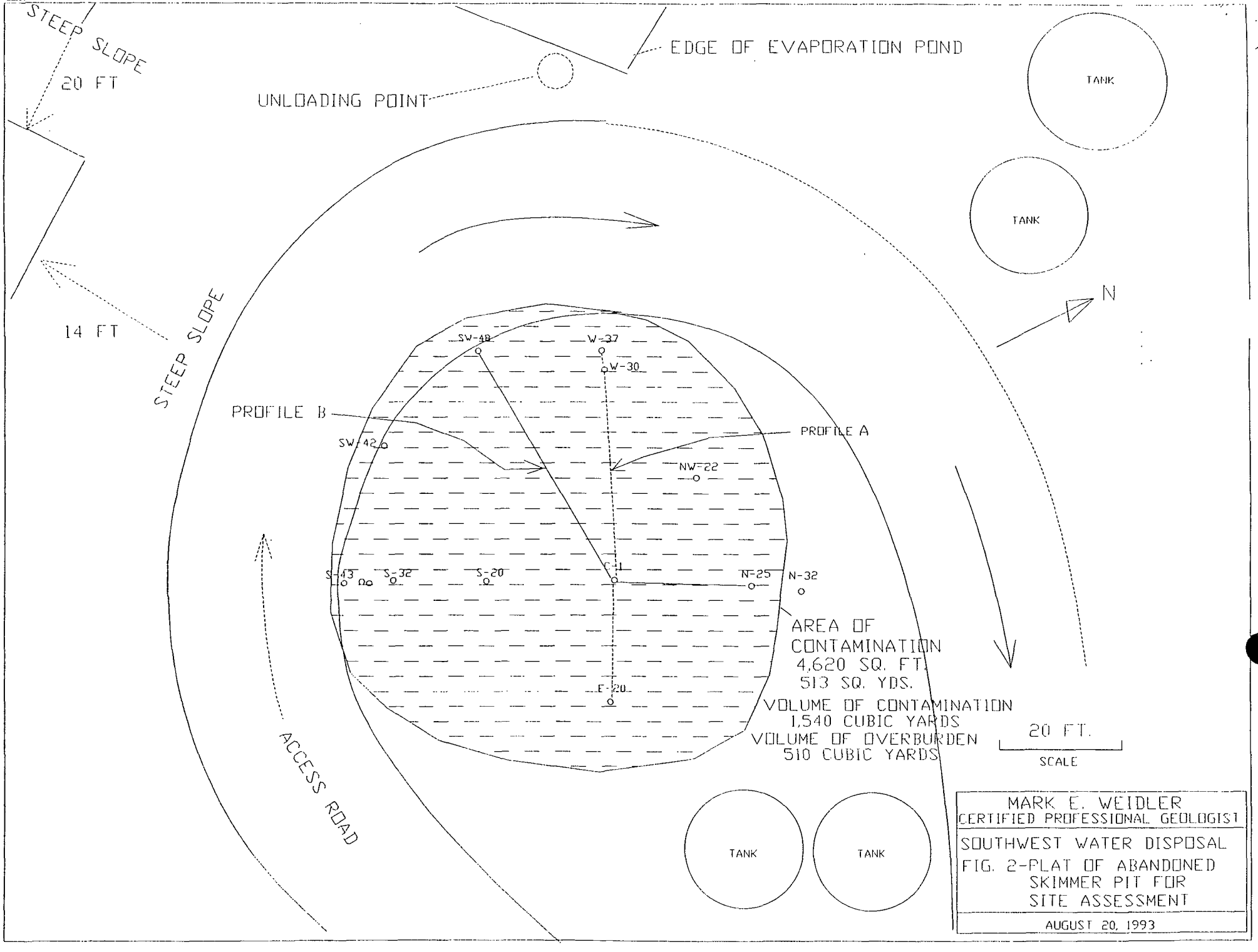
CERTIFIED PROFESSIONAL GEOLOGIST

SOUTHWEST WATER DISPOSAL FIG. 1-LOCATION/TOPOGRAPHIC MAP FOR SITE ASSESSMENT

AUGUST 20, 1993


STEEP SLOPE
20 FT
EDGE OF EVAPORATION POND
UNLOADING POINT
TANK
TANK
N
14 FT
STEEP SLOPE
SW-48
W-37
W-30
PROFILE B
PROFILE A
SW-42
NW-22
S-43
S-32
S-20
C-1
N-25
N-32
E-20
AREA OF
CONTAMINATION
4,620 SQ. FT.
513 SQ. YDS.
VOLUME OF CONTAMINATION
1,540 CUBIC YARDS
VOLUME OF OVERBURDEN
510 CUBIC YARDS
20 FT.
SCALE
ACCESS ROAD
TANK
TANK
MARK E. WEIDLER
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SOUTHWEST WATER DISPOSAL
FIG. 2-PLAT OF ABANDONED
SKIMMER PIT FOR
SITE ASSESSMENT
AUGUST 20, 1993

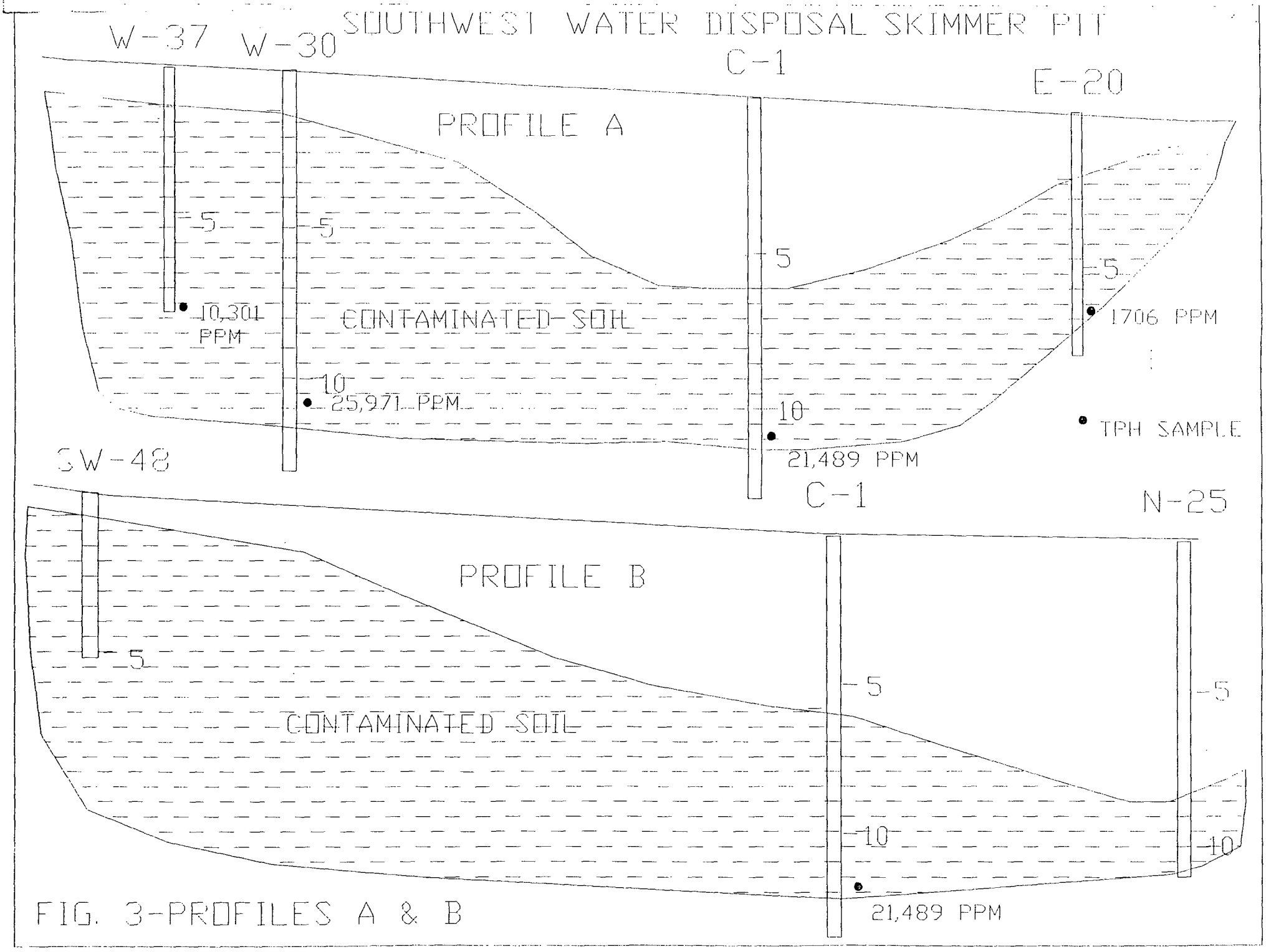

FIG. 3-PROFILES A & B

TABLES

TABLE 1
LABORATORY TESTING DATA

TEST BORING	DEPTH	TPH, PPM*
E-20	7'	1706
W-37	8'	10,301
C-1	11'	21,489
NW-22	10.5'	5,392
W-30	11'	25,971

*TPH-TOTAL PURGEABLE HYDROCARBONS
EPA METHOD 8015 (MODIFIED)

BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

CLIENT:	SOUTHWEST WATER DISPOSAL	SAMPLE MATRIX:	SOIL
CLIENT NUMBER:	60106	PRESERVATIVE:	COOL
PROJECT NAME:	SKIMMER PIT	REPORT DATE:	08/19/93
PROJECT LOCATION:	BLANCO, NEW MEXICO	DATE SAMPLED:	07/26/93
SAMPLE ID:	BORING C-1	DATE RECIEVED:	07/27/93
SAMPLE NUMBER:	S1107263	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	21489	0.8

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

ANALYZED BY

REVIEWED BY

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BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

CLIENT:	SOUTHWEST WATER DISPOSAL	SAMPLE MATRIX:	SOIL
CLIENT NUMBER:	60106	PRESERVATIVE:	COOL
PROJECT NAME:	SKIMMER PIT	REPORT DATE:	08/19/93
PROJECT LOCATION:	BLANCO, NEW MEXICO	DATE SAMPLED:	08/10/93
SAMPLE ID:	BORING W-30	DATE RECIEVED:	08/11/93
SAMPLE NUMBER:	S1108103	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	25971	0.8

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

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BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

CLIENT:	SOUTHWEST WATER DISPOSAL	SAMPLE MATRIX:	SOIL
CLIENT NUMBER:	60106	PRESERVATIVE:	COOL
PROJECT NAME:	SKIMMER PIT	REPORT DATE:	08/19/93
PROJECT LOCATION:	BLANCO, NEW MEXICO	DATE SAMPLED:	08/11/93
SAMPLE ID:	BORING W-37	DATE RECIEVED:	08/12/93
SAMPLE NUMBER:	S0808113	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	10301	0.8

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
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BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

CLIENT:	SOUTHWEST WATER DISPOSAL	SAMPLE MATRIX:	SOIL
CLIENT NUMBER:	60106	PRESERVATIVE:	COOL
PROJECT NAME:	SKIMMER PIT	REPORT DATE:	08/19/93
PROJECT LOCATION:	BLANCO, NEW MEXICO	DATE SAMPLED:	08/11/93
SAMPLE ID:	BORING E-20	DATE RECIEVED:	08/12/93
SAMPLE NUMBER:	S0708113	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	1706	0.8

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

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BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

CLIENT:	SOUTHWEST WATER DISPOSAL	SAMPLE MATRIX:	SOIL
CLIENT NUMBER:	60106	PRESERVATIVE:	COOL
PROJECT NAME:	SKIMMER PIT	REPORT DATE:	08/19/93
PROJECT LOCATION:	BLANCO, NEW MEXICO	DATE SAMPLED:	08/14/93
SAMPLE ID:	BORING NW-22	DATE RECIEVED:	08/15/93
SAMPLE NUMBER:	S2208143	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	5392	0.8

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

ANALYZED BY

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BIOTECH LABORATORIES

EPA METHOD 8015 (MOD)
PURGABLE AROMATICS

QUALITY ASSURANCE / QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	HEXANE
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	08/18/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B1508183	DATE ANALYZED:	08/18/93

ANALYTE	CONCENTRATION (mg/KG)	DETECTION LIMIT (mg/KG)
TOTAL PETROLEUM HYDROCARBON	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 8015
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

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APPENDIX

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TEST BORING LOG

TEST BORING NO. C-1 SITE: SOUTHWEST WATER DISPOSAL
DATE: 7/27/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
0-6'	<100		CLEAN FILL DIRT
7'	188		SAND, FINE TO MEDIUM
8'	489		SAND, FINE TO MEDIUM
9'	593		SAND, FINE TO MEDIUM
10'	435		CLAY, GRY/BLACK, STRONG HC ODOR
11'	450	21,489	CLAY, GRY/BLACK, STRONG HC ODOR
12'	38		CLAY, TAN
13'	12		SAND, COARSE, APPEARS CLEAN

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TEST BORING LOG

TEST BORING NO. 30-W SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/10/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
1.5'	375		CLAY, SANDY, BLACK W/OIL
3'	269		CLAY, SANDY, BLK & BRN, CONTAM.
5'	385		CLAY, BLK, OILY, SDY
7'	380		AS ABOVE
8'	375		CLAY,SDY, BRN
9'	347		CLAY, SDY, BLK & BRN
11'	321	25,971	CLAY, SDY, BLK
12'	132		CLAY, GRY TO TAN, SDY
13'	24		CLAY, TAN -GRY, SDY, LOOKS OK

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TEST BORING LOG

TEST BORING NO. W-37 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/11/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
1.8'	440		CLAY, BRN, SDY
3'	451		CLAY, BLK, SDY, HC ODOR
5'	501		CLAY, BLK, MOIST, OILY
6'	315		CLAY, BLK, MOIST, OILY
7'	325		CLAY, BLK, MOIST, OILY
8'	400	10,301	CLAY, BLK MOIST, HVY OIL SAT.

NOTE: Shut down at 2030 because dark. Hvy rain during night washed surface soil and water into hole, filling to 3-ft below grade. Elected to not re-enter test boring to deepen.

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TEST BORING LOG

TEST BORING NO. E-20 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/11/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
2'	51		CLAY, SDY, PEBBLY, BRN
3'	324		CLAY, SDY, PEBBLY, BLK & BRN
5'	362		CLAY, SDY, PEBBLY, BLK & BRN
6'	136		SAND, BRN, MED TO CRSE, UNCONSOL.
7'	507	1706	SAND, BRN, MED TO CRSE, UNCONSOL.
7.5'	44		SAND, BRN, MED TO CRSE, UNCONSOL.
8'	20		SAND, BRN, MED TO CRSE, UNCONSOL.

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TEST BORING LOG

TEST BORING NO. S-20 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/11/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
1'	349		CLAY, BLK, SDY, HC ODOR
1.5	20		SAND, BRN, SILTY

REFUSAL

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TEST BORING LOG

TEST BORING NO. N-25 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/14/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
2'	.7		CLAY, SILTY
4'	.7		CLAY, SILTY
6'	.7		CLAY, SILTY AND SANDY
8'	51		CLAY, SILTY
9'	155		CLAY, BLACK, HVY CONTAMINATION
10	83		CLAY, BLACK, CONTAM.
11	5.7		CLAY, GRY-BRN, SILTY & SDY

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TEST BORING LOG

TEST BORING NO. NW-22 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/14/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
2'	565		CLAY, BLK, SDY, CONTAMINATED
2.5'	306		CLAY, BLK, CONTAM.
4'	283		CLAY, BLK, SDY, CONTAM.
6'	323		CLAY, BLK, SDY, CONTAM.
8'	286		CLAY, BLK, SDY, CONTAM.
10'	311	5392	CLAY, BLK, SDY, CONTAM.
11'	314		CLAY, GRY-BRN, SDY
12'	437		CLAY, GRY-BRN, SDY
12.5	128		SAND, BRN, SILTY
13'	13		CLAY, GRY-BRN, SDY

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TEST BORING LOG

TEST BORING NO.S-32,38,40,43 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/16/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
S-32 1'	496		SAND/GRAVEL, REFUSAL
S-38 1'	400		AS ABOVE, REFUSAL
S-40 1'	420		AS ABOVE, REFUSAL
S-43 1'	434		AS ABOVE, REFUSAL
2.5'	44		GRAVEL & SAND, CLEAN, AUGER REFUSAL

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TEST BORING LOG

TEST BORING NO. SW-42, SW-48 SITE: SOUTHWEST WATER DISPOSAL
DATE: 8/16/93

SAMPLE METHOD: HAND AUGER

DEPTH	OVM, PPM	TPH,PPM	DESCRIPTION
SW-42 2'	NOT TSTD		BLACK OILY SAND AND GRAVEL
4'	NOT TSTD		BLACK OILY SAND AND GRAVEL
4.5'	NOT TSTD		AUGER REFUSAL
SW-48 2'	60		BLACK OILY SAND, SILT, CLAY
3'	354		BLACK OILY SILT AND CLAY
5'	374		BLACK OILY SOIL, ALMOST PURE OIL
5.2'			AUGER REFUSAL IN COBBLE GRAVEL

Tierra Environmental Corporation
Southwest Water Disposal Inventory

	Steel Connectors	
4"	Nipple 8"	2
4"	Nipple 6"	1
4"	Swedge 4" x 2"	2
4"	Change Over-Plug 4" x 2"	1
4"	Flat Plug	2
4"	"T"	1
4"	Flapper Valve	1
4"	Valves (Need Rebuilt)	
4"	Various pieces: Unions, Wings, Nipples and Hose Connections, Quick Couplings	
1¼"	Valves (New)	9
1" - 1¼"	1½" - 2" Assortment of Nipples, Collars, Unions	
4", 6", 8"	Hose Clamps, Assortment of	
4	Lights, Two Stands	
4", 6", 8"	Gaskets, Bolt	
	Jumper Cables, Set	1
8"	Valve	1
6"	Valve	2
	Fiberglass Boat and Oars, 10' x 5'	1
	Electric Motor, 150 Hp	1
	Electric Motor, 20 Hp	1
	6" Centrifical Pump	1
	Masport Pump (Vacuum)	1
	400 BBL Tanks	3
	210 BBL Tanks	3
	100 BBL Tank (Hot Oil)	1
	Air Compressors (1 Bad motor)	2
	Fuel Tank App 2500 Gal (Graves Oil)	1
	Trailer House 8 x 18	1
	First Aid Kit	1
	Helmet, Face Shield	1
	Face Mask	1

Water Can, 5 Gal		1
TV Set (Dave Jacquez)		1
Radio (Sid Knowlton)		1
Coffee Pot		1
Air Conditioner (Sid Knowlton)		1
Lights (Pond) (Rob Dillard)		2
Light (Inside Shed, Pond)		2

	Used Pipe	PVC		
1/2"	ScH 40	3JS		
2"	ScH 40	19 JTS		
2 1/2		45 JTS		
4"	ScH 40	23 JTS		
4"	Sewer Pipe	27 JTS	Light WT	
8"	Sch 40		2	
8"	Hose With Flanages		2	15' Each
	Several Short Lengths of All Sizes			

	Pond, ScH 40, In Use	
2 1/2"	ScH	38 JTs
4"	ScH 40	70 JTs
6"	ScH 40	20 JTs
8"	ScH 40	38 JTs
4"	Ys	2 JTs
8"	Ys	6 JTs
4"	Sewerpipe Light WT	47 JTs

	Pump Shed PVC	
8"	Ts	2
8"	Collars	3
8"	Change Over 8" - 6"	1
8"	Change Over 8" - 6"	1
8"	Bolt Flange, Pipe	1
6"	Collars	3
6"	Change Over Thread, Pipe	1
6"	Bolt Flange, Pipe	1
6"	Change Over Pipe 4" Thread	2
6"	3'ScH 80 Pipe	1
4"	Bolt Flange, Thread	2

4"	Collar	1
4"	90° L	1
4"	End Caps	2
4"	Change Over 4" - 3" Thread	2
4"	T	1
4"	Pipe, Male Thread	11
4"	Pipe, Female Thread	3
4"	'T' Sewerpipe Light WT	1
4"	90° L Light WT	1
4"	Collar Light WT	1
	Pump House PVC	
3"	Change Over Pipe Female Thread	10
3"	Change Over Pipe Male Thread	7
3"	Change Over Pipe, 3"-2"	10
3"	Plug Thread	2
3"	90° 'L' Pipe Thread	7
3"	Nipple 4"	1
3"	Flanges, Bolt Thread	8
3"	Change Over, Male Thread, Hose	11
2"	Collar	1
2"	'T'	1
2"	90° 'L'	8
2"	End Caps	5
$2^{1}/_{2}$	Change Over Collar $2^{1}/_{2}$ - $^{3}/_{4}$	8
1"	Collars	7
1"	90° - 'L'	4
	Small Boxes With Various Sizes Small Pvc Nipples and Connections	
36"	Pipewrench Alum	2
24"	Pipewrench Alum	1
15"	Crescent	1
12"	Crescent	1

End Wrenches	
3/8	
7/16	1
11/16	1
3/4	1
13/16	1
7/8	1
15/16	1
1"	1
1 1/16	1
1 1/8	1
1 1/4	1
Tap and Die Set	1
Hand Saws, Worn Out	1
Hole Saws	4
Sledge Hammer, No Handle	3
	1

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

MEMORANDUM

TO: **ANITA LOCKWOOD, Secretary**
Energy, Minerals & Natural Resources Department

FROM: **WILLIAM J. LEMAY, Director**
Oil Conservation Division

SUBJECT: **SUMMARY OF ACTIONS TAKEN BY THE OIL CONSERVATION DIVISION AT THE SOUTHWEST WATER DISPOSAL FACILITY NEAR BLANCO, NEW MEXICO**

DATE: **AUGUST 10, 1994**

The captioned facility as directed in the enclosed administrative order is currently in the process of being closed. This closure action was necessitated by a June 30th letter from the operator indicating that he and his company could no longer afford to operate the captioned facility because they were in essence broke. Southwest Water Disposal Inc. had complied with the Division permit which required the posting of a $25,000 cash bond which was deposited at the Citizen's Bank in Farmington, New Mexico. The July 1, 1994 Division Order provides for the operator to immediately stop accepting additional waste fluids. It also provides for the continual mixing of chemicals and aeration of the approximate 385,000 barrels of wastewater (currently 280,000 barrels) which was in the facility pit. Continuation of these operations are essential until the fluid is evaporated so that hydrogen sulfide gas cannot be generated at the facility. The Order also provided for a procedure whereby the employees at the facility and all necessary expenses such as chemicals and electric bills will be paid by the bank with the funds that were deposited there consisting of the $25,000 cash bond (C.D. No. 8049). When these funds are exhausted, we plan to access the oil plugging fund which currently has approximately $950,000 in it. Accessing these fund was announced to members of the New Mexico Oil and Gas Association and in particular Darwin Van De Graaff, Executive Director. We have no other available funds to use to respond to this situation. It is anticipated that approximately $160,000 will be required over an 8 month period to close the captioned facility. Most of the expense is in connection with spraying and treating of the wastewater. Evaporation will reduce eventually the level of the pond to a few inches so that we can then close the facility by leveling the surrounding berms and revegetating if necessary. It is essential to dispose of the water in the pit so that it will not cause groundwater contamination or provide a hazard to wildlife.

It is important to note that David Sweezey, President of Southwest Disposal Inc. is not receiving any compensation for acting as operator of the facility. We decided to utilize the staff of Mr. Sweezey so that there would be a continuation of operations because any interruption of operations as could occur with the installation of a new operator could result in failure to provide the necessary treatments and/or aeration on a daily basis which is so necessary to the prevention of hydrogen generation. Also, we were convinced that the staff at the facility would provide the most cost effective way to close the facility. A new operator would need to become familiar with all aspects of the evaporation and aeration process at this facility and this educational period could cause delay and result in the beginning of the H2S problem mentioned above. Also, it may be difficult to dislodge Mr. Sweezey if this was the option that we employed because he is the surface owner of the facility and would probably resist our efforts to install a new operator. All bills are okayed by our Santa Fe office before the bank pays them, but in essence the only bills that are being paid are those essential for the operation of the facility such as the electric bills, any third party maintenance of equipment, chemicals, and payroll at the facility (Mr. Sweezey is not being compensated for being the operator in name only). Our field office in Aztec checks this facility daily and we have had one instance of H2S generation which we immediately called to the attention of the operator who quickly responded by mixing chemicals and neutralizing the situation that caused the initial gas to be formed.

Our options for the future are limited by health and environmental considerations. We must keep that facility continually mixing chemicals and aerating. Our experience at Basin Disposal, another facility of this type, indicated the necessity for aeration and chemical treatment. Because we plan to use public money (plugging fund) we plan to call a "show cause hearing" and require Mr. Sweezey to submit financial statements and other information to show why he is not capable of financing the closing of this facility which was a condition of his initial permit. I anticipate pursuing cost recovery from Mr. Sweezey and all affiliated partnerships and corporations to the full extent of the law. However, we must proceed with the closure of this facility independent of the cost recovery efforts which will be employed. One option which is currently under consideration is to put out to bid the specs for operation of this facility in an RFP which would be in accordance with the State Procurement Rules. Rumors that this will take place however, has already disrupted morale and working conditions at the facility so we had to take actions to ensure those employed at the facility would stay employed until official notice by the Division. We cannot afford to have a walk out of personnel at this stage of pit closure. Also, the fact that emergency provisions are being taken now, when an emergency has not been declared, (emission of H2S gas from the facility), presents a situation that we have not encountered in the past. In fact, policies that OCD is employing in this situation have never been encountered in the past, so we have no precedent setting procedures to employ or historical guidance to go by. I feel confident that we are employing the right procedures given the circumstances. Our policy and actions should always reduce the risk of the facility generating hydrogen sulfide gas. All actions taken to date and those to be taken in the future, will reflect this essential element.

cc: Scott Spencer
Lyn Hebert
Rand Carroll
Roger Anderson
Frank Chavez

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

August 4, 1994

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

Sandy Williams
The Citizens Bank
500 W. Broadway
P.O. Box 4140
Farmington, NM 87499

RE: CERTIFICATE OF DEPOSIT NO. 8049---SOUTHWEST WATER DISPOSAL, INC.

Dear Ms. Williams:

Pursuant to our arrangement for the payment of bills under the OCD order dated June 24, 1994, sent to you by letter dated June 28, 1994, please transfer from the above-referenced account of Southwest Water Disposal, Inc. (SWD) which was assigned to the OCD (we have already sent you a deposit slip for SWD), the amount of $4,729.84 in order that SWD may make its payroll. Please also send a $690.00 check to Weskem-Hall Inc. at P.O. Box 2175, Farmington, NM 87499, Attention: Vivginia De Vargas for ten barrels of chemical. SWD is making the rest of the payment ($1,000.00) for the $1,690.00 of chemicals. According to our numbers, this leaves $1,070.77 in the account after Citizens Bank has deducted its fees. Please let me know if your numbers differ.

Thank you for your attention to this matter. If you have any questions, please call me at 505/827-5805.

Sincerely,

Rand Carroll, Counsel
New Mexico Oil Conservation Division

cc: David Swezey, SWD
Roger Anderson, OCD-Santa Fe
✓Denny Faust, OCD-Aztec

RECEIVED
AUG - 8 1994
OIL CON. DIV.
DIST. 3

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

August 4, 1994

RECEIVED
AUG - 5 1994
OIL CON. DIV.
DIST. 3

City of Farmington Electric Co.
800 Municipal Drive
Farmington, NM 87401
Attn: Cindy

RE: SOUTHWEST WATER DISPOSAL,INC. (SWD)---Account No. 59535-61488

Dear Cindy:

Pursuant to our conservation of this morning regarding a customer of yours, Southwest Water Disposal, Inc., it is the request of the State of New Mexico Oil Conservation Division (OCD) that the City of Farmington use $4,211.29 of the deposit of SWD held by the City for payment of SWD electric bills toward the SWD electric bill of $5,211.29 dated July 26, 1994. SWD has pledged to pay the remaining $1,000 toward that bill.

The OCD is in the process of accessing the New Mexico Oil and Gas Reclamation Fund to empty and cleanup the facility due to the inability of SWD to do so. Future electric bills for the SWD facility will be paid through use of the Reclamation Fund.

For background, the SWD facility is an OCD-permitted commercial facility which disposes of, through evaporation, the water that is produced along with oil and gas. Failure to keep the water in the facility aerated with required chemicals mixed in will result in the dangerous buildup of hydrogen sulfide gas which would threaten the public health and safety in the surrounding area. The OCD is working with SWD to prevent that from happening. Therefore the OCD has issued the enclosed order which requires the continued chemical mixing and aeration operations as well as the emptying and cleanup of the facility. Continued electric service is essential to these operations.

Your assistance in this matter, through the act of applying SWD's deposit to pay SWD's current bill, will be greatly appreciated. If you or anyone else with the City has any questions, please do not hesitate to call me or Roger Anderson or Bill LeMay here at the OCD. Again, thank you for your help.

Sincerely,

Rand Carroll

Rand Carroll
Legal Counsel
Oil Conservation Division

Enc.

cc: William J. LeMay, Director, Oil Conservation Division
Roger Anderson, Bureau Chief, OCD Environmental Bureau
David Swezey, Southwest Water Disposal, Inc.

MILLER, STRATVERT, TORGERSON & SCHLENKER, P.A.
LAW OFFICES

RANNE B. MILLER
ALAN C. TORGERSON
KENDALL O. SCHLENKER
ALICE TOMLINSON LORENZ
GREGORY W. CHASE
ALAN KONRAD
MARGO J. McCORMICK
LYNN G. SANDY
STEPHEN M. WILLIAMS
STEPHAN M. VIDMAR
ROBERT C. GUTIERREZ
SETH V. BINGHAM
MICHAEL H. HOSES
JAMES B. COLLINS
TIMOTHY R. BRIGGS
WALTER R. PARR
RUDOLPH LUCERO
DANIEL E. RAMCZYK
DEAN G. CONSTANTINE
DEBORAH A. SOLOVE
GARY L. GORDON
LAWRENCE R. WHITE

SHARON P. GROSS
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C. H. MOSS
MARTE D. LIGHTSTONE
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MICHAEL J. RAPPE
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JILL BURTRAM
TERRI L. SAUER
JOEL T. NEWTON
JUDITH K. NAKAMURA
THOMAS M. DOMME
DAVID M. THOMAS III
C. BRIAN CHARLTON
RUTH O. PREGENZER
MATTHEW URREA
KAREN L. AGOSTA
JEFFREY E. JONES

ALBUQUERQUE, N.M.
500 MARQUETTE N.W., SUITE 1100
POST OFFICE BOX 25687
ALBUQUERQUE, N.M. 87125
TELEPHONE: (505) 842-1950
FAX: (505) 243-4408

LAS CRUCES, N.M.
277 EAST AMADOR
POST OFFICE DRAWER 1231
LAS CRUCES, N.M. 88004
TELEPHONE: (505) 523-2481
FAX: (505) 526-2215

FARMINGTON, N.M.
300 WEST ARRINGTON
POST OFFICE BOX 869
FARMINGTON, N.M. 87499
TELEPHONE: (505) 326-4521
FAX: (505) 325-5474

SANTA FE, N.M.
136 LINCOLN AVE., SUITE 221
POST OFFICE BOX 1986
SANTA FE, N.M. 87504-1986
TELEPHONE: (505) 989-9614
FAX: (505) 989-9857

WILLIAM K. STRATVERT, COUNSEL
PAUL W. ROBINSON, COUNSEL

PLEASE REPLY TO SANTA FE

August 26, 1994

Ms. Lynn Hebert
Energy, Minerals and Natural
Resources Department
2040 S. Pacheco Street
Santa Fe, New Mexico 87505

VIA FACSIMILE

Re: Southwest Water Disposal, Inc.

Dear Counsel:

Southwest Water Disposal, Inc. will be able to maintain operations at the Blanco disposal facility through August 31, 1994. As we continue to negotiate the terms for the State's entry onto the site, I suggest that we agree on a planned takeover time of 7:00 a.m. on Thursday, September 1, 1994. This takeover time will coincide with a personnel shift change at the facility.

The State's contractor, Tierra Environmental, is urged to communicate with Southwest Water Disposal's on-site representative in advance of any takeover. Please have the appropriate representative from Tierra Environmental contact Sid Knowlton at the site as soon as possible.

Very truly yours,

MILLER, STRATVERT, TORGERSON
& SCHLENKER, P.A.

J. Scott Hall

JSH/mg
cc: Perry Nissler, Esq. (VIA FACSIMILE)

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

September 20, 1994

New Mexico DRUG FREE It's a State of Mind!

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

RECEIVED
SEP 21 1994
OIL CON. DIV.
DIST. 3

J. Scott Hall
P.O. Box 1986
Santa Fe, NM 87504-1986

Re: Southwest Water Disposal, Inc.

Dear Scott:

This letter is to confirm our conversation yesterday regarding fixtures, personal property and other improvements located at the surface evaporative pond in San Juan County (facility) owned by Southwest Water Disposal, Inc. (SWWD) and David Swezey. The Department understands that Mr. Swezey and others on behalf of SWWD will notify the Oil Conservation Division's district office in Aztec prior to removing any fixtures, personal property or other improvement.

The Department acknowledges that SWWD does have the right under the Consent to Enter to remove from the facility any property, equipment or materials not essential for the operation and closure of the facility. However, prior notification of any such removal will prevent any break in operations in the event SWWD seeks to remove an item that is essential to operation and closure of the facility.

You have requested that the Department's contractor prepare an inventory of the personal property it deems essential for the operation and closure. We are making that request and will supply you with the inventory as soon as possible.

Thank you for your assistance in this matter.

Sincerely,

Lyn Hebert
Deputy General Counsel

cc: Roger Anderson
Frank Chavez

VILLAGRA BUILDING - 408 Galisteo
Forestry and Resources Conservation Division
P.O. Box 1948 87504-1948
827-5830
Park and Recreation Division
P.O. Box 1147 87504-1147
827-7465

2040 South Pacheco
Office of the Secretary
827-5950
Administrative Services
827-5925
Energy Conservation & Management
827-5900
Mining and Minerals
827-5970

LAND OFFICE BUILDING - 310 Old Santa Fe Trail
Oil Conservation Division
P.O. Box 2088 87504-2088
827-5800

MEMORANDUM

Date: August 26, 1994

From: Lyn Hebert

To: Roger Anderson

Subject: Southwest Water Disposal, Inc.

Together with this memo I am faxing to you a letter from Scott Hall who represents Southwest Water Disposal, Inc. As you indicated you would be in Aztec Tuesday through Thursday of next week, you will be able to handle this transition including notification to our contractor. We hope we will have Southwest's written consent by then, but if necessary, we will file for injunctive relief on Wednesday in the event the consent has not been given.

I sent an executed contract to Tierra Environmental, Inc. yesterday. I shall drop of a contract and a purchase document for you the next time I come to OCD.

COPY

STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES DEPARTMENT
2040 S. Pacheco St.
Santa Fe, New Mexico 87505

August 30, 1994

AUG 31 1994

RECEIVED
SEP 19 1994
OIL CON. DIV.
DIST. 3

Consent to Enter and Agreement for Operation, Termination and Reclamation Southwest Water Disposal, Inc.
Commercial Surface Disposal Facility
San Juan County, New Mexico

WHEREAS, on or about May 17, 1988, Southwest Water Disposal, Inc. (SWWD) was granted a permit under OCD Rule 711 to operate a commercial clay-lined surface evaporative pond in San Juan County (the Facility), and

WHEREAS, SWWD has advised the Oil Conservation Division of the Energy, Minerals and Natural Resources Department (The State) that it can no longer operate said facility, and

WHEREAS, it is necessary to protect the public health, safety and general welfare from the possible emission of gas from the facility by continuing to operate the facility until its contents either evaporate or are otherwise disposed of,

NOW THEREFORE, SWWD does hereby grant the State, its agencies, officers, agents, employees, and contractors, the right to enter upon the lands described below for the purpose of operating, terminating and reclaiming:

A commercial surface disposal facility located in the SE/4 of the SW/4 Section 32, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico.

SWWD does hereby grant to the State, its agencies, officers, employees, agents, contractors and other entities designated by the State all its rights of entry into, over and upon the above-described property, including all necessary and convenient rights of ingress, egress and regress, with all materials and equipment to conduct operation, termination and reclamation of the facility, including but not limited to the temporary storage of equipment and materials, the right to borrow or dispose of materials, and all other rights necessary for operation, termination and reclamation of the project in accordance with standards set forth in the above-described permit and within the discretion of the State. Said right-of-entry for operation, termination and reclamation is granted for such time as maybe reasonably required to complete all such activities and inspections. At such time as the State's operation, termination and reclamation activities are completed, the State shall execute such documents as necessary to terminate the State's right of entry. This Consent is granted by

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 3
To Frank Chavez	From Lyn Hebert
Co.	Co.
Dept. 334-6178	Phone # 827-5550
Fax # 334-6170	Fax #

SWWD in order to permit the State to operate, terminate and reclaim the facility solely to avoid harm to the public.

With the exception of that Professional Services Agreement between the State of New Mexico and Tierra Environmental Corporation (Contract No. 95-521.25-057) awarded earlier on August 17, 1994 pursuant to the emergency procurement provisions of § 13-1-127 NMSA (1978), it is agreed that the work performed hereunder may be done by contractors for the State or by other entities designated by the State under contracts or Professional Services Agreements let by public, competitive bidding process to responsible offerors who submit responsive offers pursuant to the provisions of the State Procurement Code.

SWWD further agrees that any sale, assignment, mortgage or other encumbrance or conveyance of the facility real property shall be made subject to this Consent to Enter. Additionally, SWWD agrees to provide written notice to the State at least ten (10) days in advance of any such event.

SWWD and the State agree that any and all fixtures, accessions, improvements and other like property located at the facility as may be reasonably necessary for the operation and closure of the facility, may be utilized by the State or its contractors but that such fixtures, accessions, improvements and other like property shall not be removed, conveyed, sold, assigned, mortgaged, or otherwise encumbered by the State or its contractors in any way and, further, that the security interest therein belonging to any third party shall not be impaired or otherwise encumbered. It is further agreed that SWWD may remove from the facility any other property, equipment or materials not essential for the operation and closure of the facility.

This Consent to Enter shall be effective as of 7:00 a.m. (MST), on September 1, 1994.

This Consent to Enter may be executed in duplicate original counterparts which together shall constitute a single agreement.

Witness my hand this 30 day of August, 1994.

SOUTHWEST WATER DISPOSAL, INC.

NEW MEXICO OIL CONSERVATION DIVISION

By _____
William J. LeMay, Director

STATE OF COLORADO)
) ss.
COUNTY OF DENVER)

The foregoing Consent to Enter and Agreement for Operation, Termination and Reclamation was acknowledged before me this 30th day of AUGUST, 1994 by DAVID B SWEDA PRESIDENT on behalf of Southwest Water Disposal, Inc., a Colorado corporation.

NOTARY PUBLIC PERRY S. NISSLER STATE OF COLORADO

Notary Public

My Commission Expires:

Feb 7, 1995

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

The foregoing Consent to Enter and Agreement for Operation, Termination and Reclamation was acknowledged before me this 31st day of August, 1994 by William J. Lemay, Director of New Mexico Oil Conservation Division.

Notary Public

My Commission Expires:

Oct 28 1997

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

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

MEMORANDUM

TO: **ANITA LOCKWOOD, Secretary**
Energy, Minerals & Natural Resources Department

FROM: **WILLIAM J. LEMAY, Director**
Oil Conservation Division

SUBJECT: **SUMMARY OF ACTIONS TAKEN BY THE OIL CONSERVATION DIVISION AT THE SOUTHWEST WATER DISPOSAL FACILITY NEAR BLANCO, NEW MEXICO**

DATE: **AUGUST 10, 1994**

The captioned facility as directed in the enclosed administrative order is currently in the process of being closed. This closure action was necessitated by a June 30th letter from the operator indicating that he and his company could no longer afford to operate the captioned facility because they were in essence broke. Southwest Water Disposal Inc. had complied with the Division permit which required the posting of a $25,000 cash bond which was deposited at the Citizen's Bank in Farmington, New Mexico. The July 1, 1994 Division Order provides for the operator to immediately stop accepting additional waste fluids. It also provides for the continual mixing of chemicals and aeration of the approximate 385,000 barrels of wastewater (currently 280,000 barrels) which was in the facility pit. Continuation of these operations are essential until the fluid is evaporated so that hydrogen sulfide gas cannot be generated at the facility. The Order also provided for a procedure whereby the employees at the facility and all necessary expenses such as chemicals and electric bills will be paid by the bank with the funds that were deposited there consisting of the $25,000 cash bond (C.D. No. 8049). When these funds are exhausted, we plan to access the oil plugging fund which currently has approximately $950,000 in it. Accessing these fund was announced to members of the New Mexico Oil and Gas Association and in particular Darwin Van De Graaff, Executive Director. We have no other available funds to use to respond to this situation. It is anticipated that approximately $160,000 will be required over an 8 month period to close the captioned facility. Most of the expense is in connection with spraying and treating of the wastewater. Evaporation will reduce eventually the level of the pond to a few inches so that we can then close the facility by leveling the surrounding berms and revegetating if necessary. It is essential to dispose of the water in the pit so that it will not cause groundwater contamination or provide a hazard to wildlife.

It is important to note that David Sweezey, President of Southwest Disposal Inc. is not receiving any compensation for acting as operator of the facility. We decided to utilize the staff of Mr. Sweezey so that there would be a continuation of operations because any interruption of operations as could occur with the installation of a new operator could result in failure to provide the necessary treatments and/or aeration on a daily basis which is so necessary to the prevention of hydrogen generation. Also, we were convinced that the staff at the facility would provide the most cost effective way to close the facility. A new operator would need to become familiar with all aspects of the evaporation and aeration process at this facility and this educational period could cause delay and result in the beginning of the H2S problem mentioned above. Also, it may be difficult to dislodge Mr. Sweezey if this was the option that we employed because he is the surface owner of the facility and would probably resist our efforts to install a new operator. All bills are okayed by our Santa Fe office before the bank pays them, but in essence the only bills that are being paid are those essential for the operation of the facility such as the electric bills, any third party maintenance of equipment, chemicals, and payroll at the facility (Mr. Sweezey is not being compensated for being the operator in name only). Our field office in Aztec checks this facility daily and we have had one instance of H2S generation which we immediately called to the attention of the operator who quickly responded by mixing chemicals and neutralizing the situation that caused the initial gas to be formed.

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cc: Scott Spencer
Lyn Hebert
Rand Carroll
Roger Anderson
Frank Chavez

83941

SF - 1 SHORT FORM WARRANTY DEED—Rev. New Mexico Statutory Form THE VALLIANT CO. ALBUQUERQUE, N. M.

WARRANTY DEED

Mildred H. Dolan, a single woman, and Golda Dittmar, a single woman, for consideration paid, grant to Southwest Water Disposal, Inc., a Colorado corporation, whose address is 165 South Jersey Street, Denver, Colorado 80224, the following described real estate in San Juan County, New Mexico:

The Southwest Quarter of the Southeast Quarter (SW1/4 SE1/4) and the Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section Thirty-Two (32), in Township Thirty (30) North of Range Nine (9) West, N.M.P.M., San Juan County, New Mexico

FILED OR RECORDED
BOOK 1098 PAGE 912
SAN JUAN COUNTY, NEW MEXICO

JAN 31 1989
AT 9:55 O'CLOCK A M
Carol Pandy
COUNTY CLERK
Fay Tendlemon
DEPUTY
Rec # 613411 Fee $5.00

SAN JUAN COUNTY NEW MEXICO CLERK COURT STATE

with warranty covenants.

WITNESS our hand s and seal this 19th day of August, 1988

Mildred H. Dolan (Seal) Golda Dittmar (Seal)
Mildred H. Dolan, a single woman
Golda Dittmar, a single woman

(Seal) (Seal)

ACKNOWLEDGMENT FOR NATURAL PERSONS

STATE OF ~~NEW MEXICO~~ COLORADO
COUNTY OF LA PLATA } ss.

The foregoing instrument was acknowledged before me this 19th day of August, 1988, by ~~Mildred H. Dolan and~~ Golda Dittmar
(Name or Names of Person or Persons Acknowledging)

My commission expires: 11-15-90
(Seal)

Notary Public

ACKNOWLEDGMENT FOR CORPORATION

No. 100A. ATTORNEYS-ACKNOWLEDGMENT—Brailford Publishing, 15165 West 44th Avenue, Golden, Colorado 80401 — (303) 278-0644 — 5-80

STATE OF COLORADO,
Arvada County of Jefferson } ss.

The foregoing instrument was acknowledged before me this 24th day of August
19 88, by Mildred H. Dolan

My commission expires ~~Jan. 6, 1991~~ 5665 Field Road Arvada, ~~Colorado~~ 80004

WITNESS my hand and official seal.

Notary Public.

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

July 29, 1994

Mr. Roger Anderson
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Management and Oversight
Southwest Water Disposal Facility
San Juan County, New Mexico

Dear Mr. Anderson:

Referencing our telephone conversation of July 28, 1994, Blagg Engineering, Inc. is pleased to provide this cost estimate for short-term management and oversight of the Southwest Water Disposal Facility in San Juan County, New Mexico. It is our understanding that the NMOCD is seeking a qualified contractor to provide 24-hour manned oversight of the subject disposal facility to insure continuous and safe operations. Blagg Engineering has inspected the site and discussed the current operation with Mr. Denny Foust of the District III OCD office.

Blagg Engineering, Inc. will conditionally provide 24-hour manpower, supervision and record keeping for $13,132.00 per month. Blagg Engineering respectfully requests conditional approval to withdraw or amend this quote (either up or down) following review of detailed requisites that the NMOCD may have for this short term project.

NMOCD's consideration of Blagg Engineering for this emergency response is appreciated. Please contact myself at (505)632-1199 if you need additional information or clarification.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg,
President

JCB/ocd.qt

cc: Denny Foust, Dist. III

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

July 19, 1994

Sandy Williams
The Citizens Bank
500 W. Broadway
P.O. Box 4140
Farmington, NM 87499

RE: CERTIFICATE OF DEPOSIT NO. 8049---SOUTHWEST WATER DISPOSAL, INC.

Dear Ms. Williams:

Enclosed is another invoice the New Mexico Oil Conservation Division (OCD) requests that Citizens Bank pay, pursuant to the OCD order dated June 24, 1994, sent to you by letter dated June 28, 1994, from the above-referenced account of Southwest Water Disposal, Inc. (SWD) which was assigned to the OCD. The check should be issued to Weskem-Hall Inc. in the amount of $1,690.00 and sent to Weskem-Hall Inc. at P.O. Box 2175, Farmington, NM 87499, Attention: Virginia De Vargas. The payment is for ten barrels of chemicals needed by SWD.

If you have any questions, please call me at 505/827-5805.

Sincerely,

Rand Carroll, Counsel
New Mexico Oil Conservation Division

Enc.

cc: Virginia De Vargas, Weskem-Hall
Denny Faust, OCD-Aztec
David Swezey, SWD

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

To: Virginia De Vargas, Weskem-Hall Inc.

From: Rand Carroll, OCD Counsel

Date: July 19, 1994

Subject: Southwest Water Disposal, Inc. (SWD)

RECEIVED
JUL 20 1994
OIL CON. DIV.
DIST. 3

Pursuant to our previous arrangement, this letter will confirm that the State of New Mexico Oil Conservation Division will pay the $1,690.00 bill for the next ten barrels of potassium permanganate to be sold to SWD. Please fax (827-5741) us an invoice which will be sent to The Citizens Bank in Farmington for payment to Weskem-Hall, Inc. by cashier's check from Citizens Bank. Sandy Williams at the Citizens Bank Trust Department is our contact person.

If you have any questions, please call me.

cc: Denny Faust, OCD-Aztec
David Swezey, SWD
Sandy Williams, Citizens Bank

SWWO

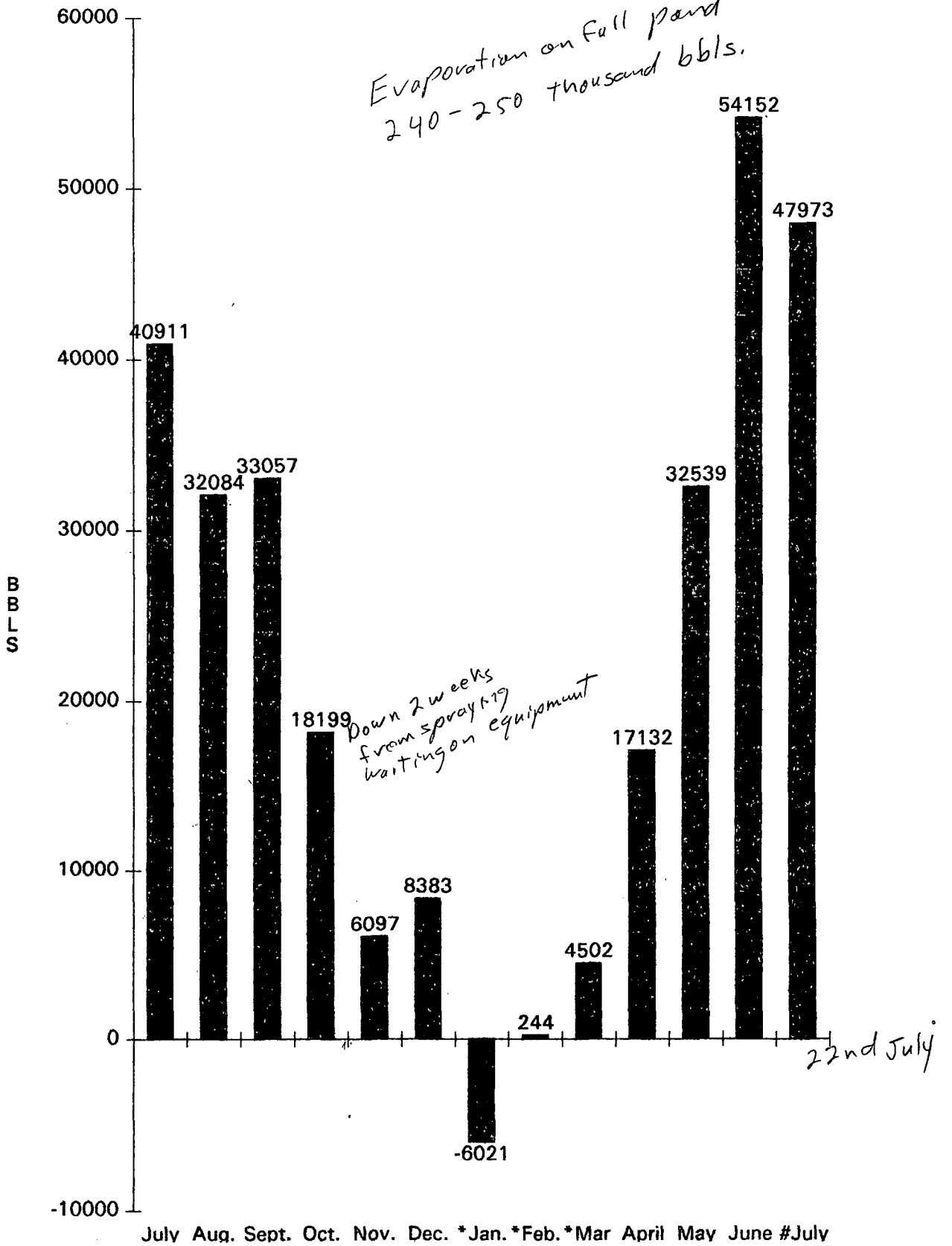
Statement of Operations

7/1/94 through 7/15/94

Southwest

Evaporation

July 1993 through July 22, 1994



*= no electriciy #= July1 through July 22, 1994

Oil and Gas
Production Equipment

U.S. Enertek, Inc.
4901 East Main Street
Farmington, NM 87402

505/326-1151
FAX: 505/325-0317

SWWD

June 21, 1994

State of New Mexico
Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Attn: Denny Foust

Dear Denny:

As in the past, we are sending this fax to you comfirming the contents of the load of sump tank disposal from U.S. Enertek, Inc. to be hauled tomorrow, June 23, 1994.

U.S. Enertek, Inc. affirms that no solvents or soap of any kind are used in our steam operations that result in steam run-off entering the collection sump. The collection sump water contains only city tap water, ancillary crude oil, and common separator/dehydrator wastes.

The water will be transported by Dawn Trucking in Farmington, NM and will be transported to Southwest Water Disposal in Farmington, NM.

ACKNOWLEDGMENT:

The above referenced conditions are true and correct.

Roberta F. Allen

ROBERTA F. ALLEN
U.S. ENERTEK, INC.
CORPORATE SECRETARY

xc: Southwest Water Disposal
File copy

ra

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

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

ADMINISTRATIVE ORDER 711-0002

ORDER REQUIRING IMMEDIATE CESSATION OF ACCEPTANCE OF WASTES AND REQUIRING CONTINUED CHEMICAL MIXING AND EVAPORATION OPERATIONS DURING CLOSURE AT COMMERCIAL DISPOSAL FACILITY OPERATED BY SOUTHWEST WATER DISPOSAL, INC.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of NMOCD Rule 711 and in response to your letter dated June 30, 1994, wherein you indicated that Southwest Water Disposal, Inc. (SWD) could no longer continue operating its commercial surface waste disposal facility as of July 1, 1994, the New Mexico Oil Conservation Division (NMOCD) issues the following order:

THE DIVISION DIRECTOR FINDS THAT:

1. The public health, safety and welfare is threatened by the cessation of operations of, as well as the failure to properly close, an oil and gas waste disposal facility owned by SWD near Blanco, New Mexico.

2. Said Blanco facility was permitted by the NMOCD letter dated May 17, 1988, as subsequently modified, which required the permitted Southwest Water Disposal Inc. to properly close said facility prior to abandonment.

3. To properly close the Blanco facility all fluids currently in storage must be properly disposed of before the physical structure can be leveled and reclaimed.

4. By letter dated June 30, 1994, SWD expressed its intent to violate the terms and and conditions of its permit on July 1, 1994, by ceasing operations and failing to close its facility in accordance with NMOCD permit.

IT IS HEREBY ORDERED THAT:

1. SWD shall cease accepting waste fluids.

2. SWD shall commence closure of its disposal facility by continuing chemical mixing and evaporation operations which are critical processes to the disposal of fluid inventory. Operations are to be conducted in accordance with all applicable OCD permits, orders, statutes, rules and regulations as well as any further NMOCD orders and directives. Any failure to continue required operations may constitute a violation(s) of Section 70-2-31 of the New Mexico Statutes Annotated which may subject SWD to all penalties, both civil and criminal, under that section.

3. SWD shall immediately notify the NMOCD of the failure of any supplier of services, which are essential to operations required for public health and safety of the facility, to deliver such services upon the request of SWD and provide the NMOCD with the name, address and phone and fax numbers of that supplier as well as the reason for that supplier's refusal to supply the services. If the reason is the refusal or inability of SWD to pay for the requested services, SWD shall also set forth the amount already owed the supplier as well as the amount due for the requested additional service. If the NMOCD pays any amounts due such suppliers from public funds, the amount of such public funds expended shall sought to be recovered by NMOCD from SWD and any other responsible parties.

4. If SWD wishes to contest this order, SWD may request a hearing at which the NMOCD will hear evidence on whether this order shall be modified, remain effective or be withdrawn.

Approved at Santa Fe, New Mexico, on this 1st day of July, 1994.

WILLIAM J. LEMAY, Director

ACKNOWLEDGEMENT OF RECEIPT

I, David Swezey, acknowledge receipt of the attached NMOCD Administrative Order 711-0002 issued July 1, 1994, regarding Southwest Water Disposal, Inc.

David Swezey, President
Southwest Water Disposal, Inc.

7/1/94
Date

IMPORTANT MESSAGE

FOR Frank

DATE 8/17 TIME 8:56 A.M. (circled) P.M.

M Arlinda Miller

OF

PHONE 632-3504

AREA CODE NUMBER EXTENSION

TELEPHONED	X	PLEASE CALL	✓
CAME TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		RUSH	
RETURNED YOUR CALL		SPECIAL ATTENTION	

MESSAGE

SIGNED J

LITHO IN U.S.A.

TOPS FORM 3002S

IMPORTANT MESSAGE

FOR Frank

DATE 8/10 TIME 9:32 A.M. (circled) P.M.

M Lucy Archuleta

OF

PHONE 632-2253

AREA CODE NUMBER EXTENSION

TELEPHONED	X	PLEASE CALL	X
CAME TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		RUSH	
RETURNED YOUR CALL		SPECIAL ATTENTION	

MESSAGE Overcover Pit

Larry [illegible] said "bunch of baloney" Clay lining will granulate

SIGNED J

LITHO IN U.S.A.

TOPS FORM 3002P

an Juan Basin

TIMES

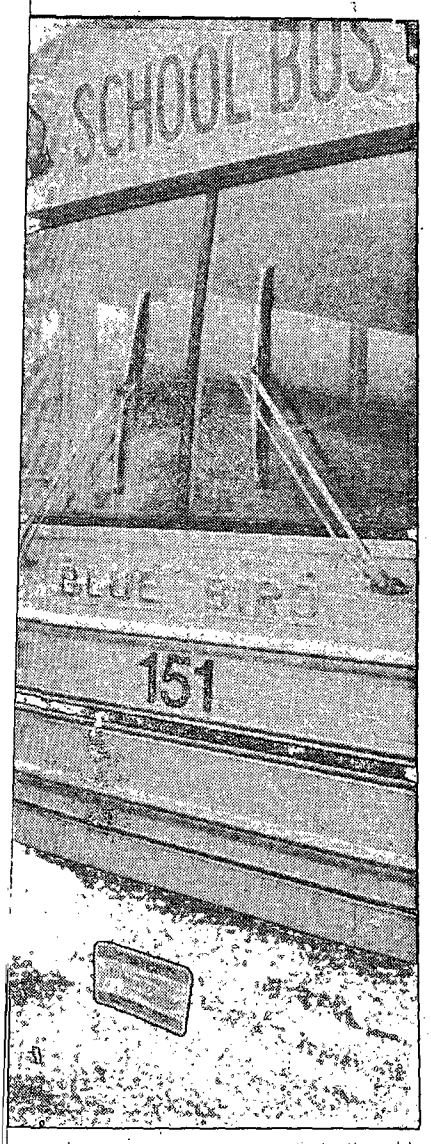
NEW MEXICO

Baseball

Dallas knocks Cincinnati from CMWS

Page B2

Two sections 25 cents



(Staff photo by Joe Kennedy)

ers on bus 151 Wednesday
ne Bloomfield bus yard.

Oil waste pit reported safe to residents

By Bill Papich
Daily Times staff

An oilfield waste disposal pit being built near Blanco won't create hydrogen sulfide gas, contaminate ground water, or poison Bloomfield's drinking water reservoir.

So say both the company building it and the state Oil Conservation Division, which has approved the pit's construction.

Those assurances come after a 57-signature petition was submitted earlier this month to the state division by residents living near the pit, who want to halt its construction. Meanwhile, construction has resumed.

The residents protesting the pit, led by Erlinda Miller who lives about a half-mile from it, also have contacted state Rep. Bill Richardson's office, requesting he investigate potential hazards.

But Richardson's office apparently has determined the pit poses no threat residents, prompting the company to resume construction.

The wastewater pit's construction had been delayed, pending an inquiry to Richardson's office after the petition was circulated, said Dave Swezey, owner of Southwest Water Disposal.

"I halted construction because I wanted to make everybody comfortable with what I was doing," Swezey said Wednesday. "Once I received assurance from the congressman's office, I felt it was appropriate to begin again," he added.

Swezey says the three-acre wastewater disposal pit — off County Road 4599 and about two miles north of Blanco — should be open for dumping by Sept. 30.

Wastewater disposal pits are evaporation ponds designed to eliminate wastewater associated with gas well drilling.

Swezey also reported he'll add $150,000 to San Juan County's economy in preparation for the facility's opening — paying for wages, materials and leasing of equipment.

Depite problems with hydrogen sulfide gas at another disposal pit in the county last year — Basin Disposal Inc., Swezey said his facility won't produce the gas.

A lawsuit pending against Basin Disposal alleges that hydrogen sulfide fumes that came from its evaporation pond caused people to become sick.

The Blanco evaporation pond will feature an aeration system to eliminate hydrogen sulfide producing anaerobic bacteria, Swezey said.

In addition, the system is designed so chlorine can be introduced to kill the bacteria — if for some reason the aeration system failed, he reported.

Sweze added that wastewater loads on every truck entering the dump will be monitored.

"We will turn people away with bad water," he said.

It took almost a year to get required permits and licenses from the state division to build the pit, in addition to approval from the state engineer's office, he said.

Frank Chavez, area manager for the state division's Aztec office, said the pit won't contaminate water aquifers approximately 150 feet underground. He noted it will be lined with clay that's compacted under supervision of a registered professional engineer.

And monitoring wells to detect possible seepage will be located 15 feet below the pit, he added.

Chavez said people shouldn't be concerned about the pit's contents contaminating the San Juan River or an irrigation ditch supplying water to Bloomfield's reservoir. The irrigation ditch is about a half-mile south of the pit, and the river is farther, he noted.

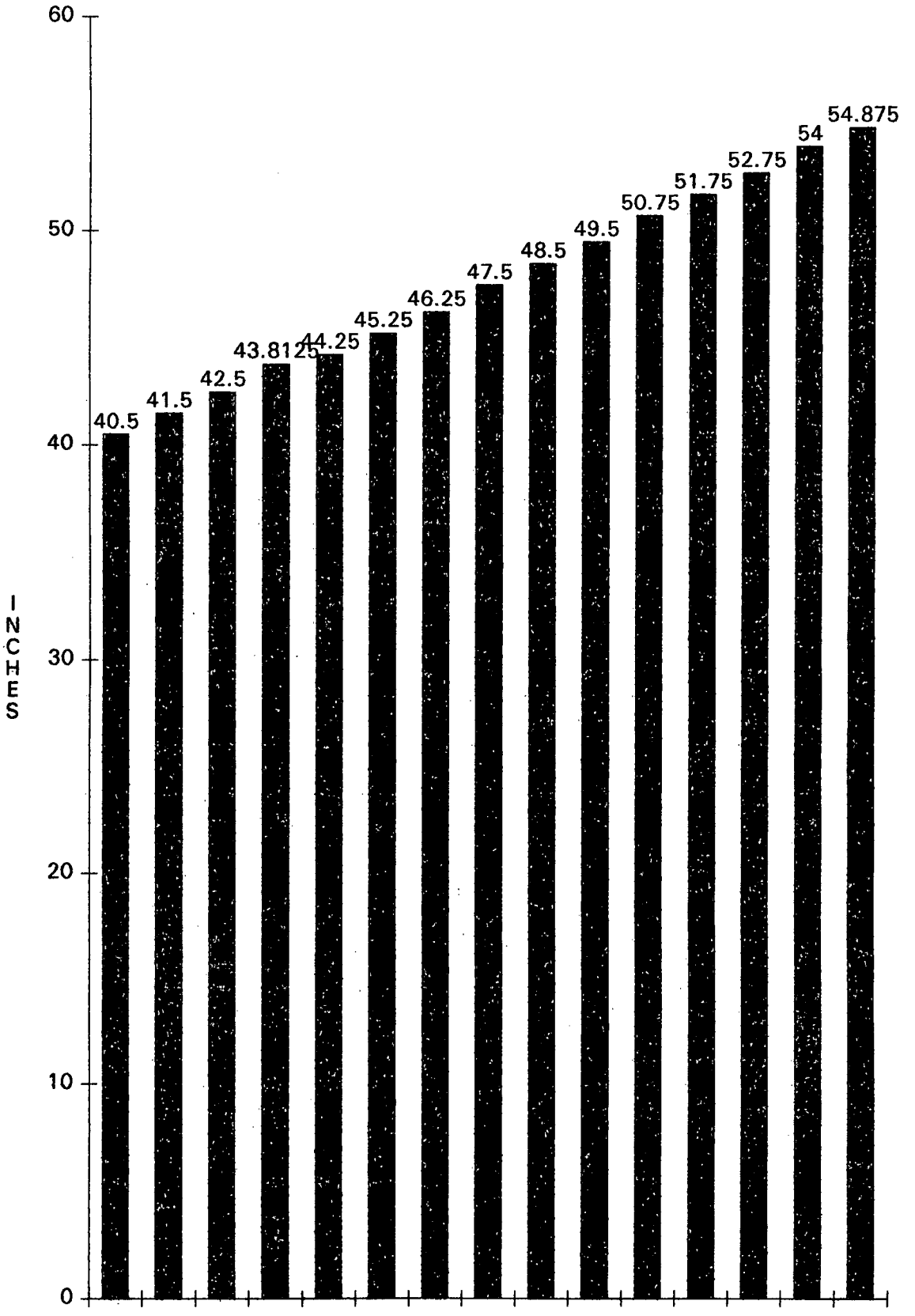
"People can dream up some kind of circumstance for that to happen," he said.

rate hike

at time, Statton added.
he past year, however, those costs changed much, and small fluctuations n paid by a "buffer" savings account.
ase rate, about 2.59 cents per kilowatt sn't changed, he said, noting the last base rate was changed was in 1983.
power costs for the utility may be reen it begins getting power for the first n the Navajo Dam Hydro-Electric Plant e next week, Statton said.
ility has a $5 million rate stabilization should pay for changes in the the base tton said. Money in the fund came from the city received from Public Service of New Mexico and Gas Company of xico, he said.

Pond Level

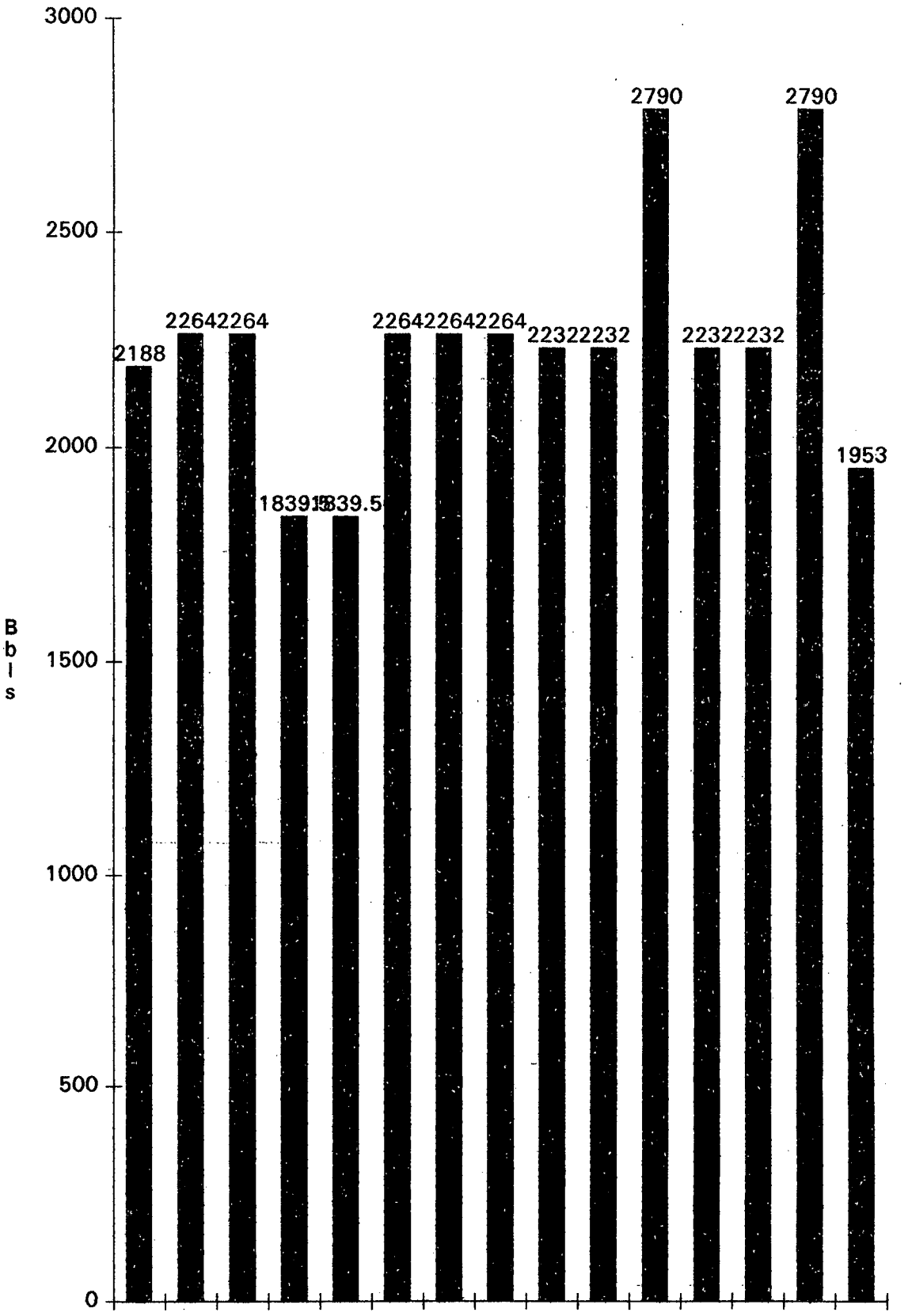
July1,1994-July15,1994



Daily Average of .9583 inches Total of 14.375 inches for the 15 day period

Water Evaporated

July1,1994-July15,1994



Daily Average of 2238.53 bbls. @ day. Total of 33578 bbls. for the 15 day period

Statement of Daily Operations 7/18/94

Check #	Date	Payee	Cost	For
4364	7/5/94	Sidney J. Knowlton	$500.00	Contract Labor (Basin)
4365	7/5/94	Johnny A. Jacquez	$450.00	Contract Labor (Basin)
4366	7/5/94	Robert K. Dillard	$113.66	Reimbursment (gas,etc)
4367	7/5/94	Fluid Technology	$8,470.00	Air pumps (Basin)
4368	7/5/94	Johnny Jacquez	$25.00	Contract Labor (Basin)
4369	7/5/94	Robert K. Dillard	$150.00	Contract Labor (Basin)
4370	7/6/94	Postmaster	$24.50	P.O. Box rent
4371	7/7/94	Sam's Club	$94.23	Comp. battery&Coffee
4372	7/7/94	Clannahan	$288.05	4-94 Land Payment
4373	7/7/94	Clannahan	$288.05	5-94 Land Payment
4374	7/7/94	US West	$260.50	505-632-1426 Facility
4375	7/7/94	US West	$567.45	505-334-9288 Office
4376	7/8/94	Barbara M. Dillard	$437.45	Payroll P.E.-6/30/94
4377	7/8/94	Robert K. Dillard	$912.18	Payroll P.E.-6/30/94
4378	7/8/94	Alan Stiles	$106.66	Payroll P.E.-6/30/94
4379	7/8/94	Johnny A. Jacquez	$506.61	Payroll P.E.-6/30/94
4380	7/8/94	Sidney J Knowlton	$627.98	Payroll P.E.-6/30/94
4381	7/8/94	Paul D. Jacquez	$625.68	Payroll P.E.-6/30/94
4382	7/8/94	VOID		
4383	7/8/94	Louis C. Davis	$574.43	Payroll P.E.-6/30/94
4384	7/8/94	David Swezey	$50.00	Travel Expense
4385	7/8/94	Robert K. Dillard	$387.88	Basin Design
4386	7/9/94	Barbara M. Dillard	$58.64	Office Supplies
4387	7/11/94	Dial Oil Company	$114.61	1-bbl. of oil for comp.
4388	7/11/94	Construction Supply	$64.03	Plumbing Parts
4389	7/16/94	Sidney J. Knowlton	$45.00	Vehichle use & gas
		Total:	$15,742.59	

There is also $2,059.54 put back for Futa, 941-Fica, and suta.

Deposits

Check #	Date	Payment From	Amount
27268	7/2/94	Caulkins Oil Company	$144.34
2372	7/9/94	Basin Disposal	$11,587.62
1068807	7/9/94	Texaco	$72.17
580448	7/10/94	Vastar (Arco)	$144.43
135485	7/11/94	Phillips Petroleum Company	$1,181.71
139682	7/14/94	Phillps Petroleum company	$414.95
bank dep.	7/7/94	N.M.O.C.D.	$5,310.29
			$18,855.51

3304 Longmire
College Station, Texas 77845

AUG 1 8 199.

Dillard 334-6369

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

327 9280

Client: COASTAL CHEMICAL CO.
Project Locatio Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Received: 08/07/93
Date Extracted -
TCLP: 08/10/93
Volatile: 08/10/93
Date Analyzed: 08/10/93

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	0.114	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	0.017	0.005	6.0
1,2-Dichloroethane	ND	0.005	0.5
1,1-Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.010	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Analyte not detected at stated limit of detection

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AUG1 9 1993
OIL CON. DIV
DIST. 3

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	92%	76 - 114%
Toluene - d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 3

To	From
ROB DILLARD	RANDY SCHMIR
Co.	Co. COASTAL CHEM.
Dept.	Phone #
Fax #	Fax #

FROM: IML-FARMINGTON

8:38AM P.01 1993

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **COASTAL CHEMICAL CO.**
Project Name: Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Analyzed: 08/10/93

Analyte	Retention Time (minutes)	Concentration (mg/L)
Toluene	13.19	0.328
Xylenes (total)	15.93	0.239
Trichlorotrifluoroethane	3.9	0.07 *
Unknown Hydrocarbon	8.23	0.02 *
Unknown Hydrocarbon	11.02	0.02 *

* - Concentration calculated using assumed relative response factor = 1

Comments: Trichlorotrifluoroethane (Freon) is a common laboratory contaminant.

References: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 Environmental Protection Agency, November 1992.
Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

Inter-Mountain Laboratories, Inc.
3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **COASTAL CHEMICAL CO.**
Project Name: Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Received: 08/07/93
Date Extracted -
TCLP: 08/10/93
BNA: 08/10/93
Date Analyzed: 08/10/93

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.040	200
m,p - Cresol	ND	0.040	200
1,4 - Dichlorobenzene	ND	0.040	7.5
2,4 - Dinitrotoluene	ND	0.040	0.13
Hexachlorobenzene	ND	0.040	0.13
Hexachloro-1,3-butadiene	ND	0.040	0.5
Hexachloroethane	ND	0.040	3.0
Nitrobenzene	ND	0.040	2.0
Pentachlorophenol	ND	0.040	100
Pyridine	ND	0.040	5.0
2,4,5 - Trichlorophenol	ND	0.040	400
2,4,6 - Trichlorophenol	ND	0.040	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	**	21 - 100%
Phenol - d6	3%	10 - 110%
Nitrobenzene - d5	65%	35 - 114%
2 - Fluorobiphenyl	67%	43 - 116%
2,4,6 - Tribromophenol	76%	10 - 123%
Terphenyl - d14	64%	33 - 141%

COASTAL CHEMICAL COMPANY, INC.

NOVEMBER 4, 1993

RECEIVED
NOV1 01993
OIL CON. DIV
DIST. 3

MR. ROB DILLARD
SOUTHWEST WATER DISPOSAL
P.O. BOX 308
FARMINGTON, NEW MEXICO 87499

SWUBJECT: WASTE WASH WATER DISPOSAL

DEAR ROB:

WE HAD A FLASH POINT PROBLEM [92 DEG F] WITH THE FIRST WATER SAMPLE TESTED AT INTER-MOUNTAIN LABORATORIES FOR THE RCRA CHARACTERICS TEST.

THE PRODUCT INVENTORY AT OUR FARMINGTON FACILITY DOES NOT DOES NOT INCLUDE ANY FLAMMABLE LIQUIDS.

A SECOND SAMPLE WAS TESTED BY ON-SITE TECHNOLOGIES, LTD.,FOR A CLOSED CUP FLASH POINT [E.P.A. METHOD 1010]. THE TEST RESULTS PROVIDED A FLASH POINT [150 DEG F], THAT MEETS THE NEW MEXICO REGULATORY LEVEL.

BY COPY OF THIS LETTER WE ARE REQUESTING THAT MR. DENNY FOUTZ OF THE NEW MEXICO OIL CONSERVATION DEPARTMENT, ADVISE IF WE MAY UTILIZE YOUR FACILITY AND SERVICES TO DISPOSE OF THE WASH WATER.

SINCERELY

Randy Schmitz

RANDY SCHMITZ
FACILITY MANGER

CC: MR DENNY FOUTZ

NACD
#10 COUNTY RD. 5911 / FARMINGTON, NEW MEXICO 87401 / PH. (505) 327-9280
NNAAWW

NACO
#10 COUNTY RD. 5911 / FARMINGTON, NEW MEXICO 87401 / PH. (505) 327-9280
N·A·W

Inter-Mountain Laboratories, Inc.

2508 W. Main Street
Farmington, New Mexico 87401

RCRA CHARACTERICS

CLIENT:	Coastal Chemical Co.		
PROJECT:	Farmington, NM		
Sample ID:	Wash Water		
Laboratory ID:	3469		
Sample Matrix:	Fluid	Report Date:	08/31/93
Preservative:	None	Date Sampled:	08/26/93
Condition:	Cool/Intact	Date Received:	08/25/93

Parameter	Analytical Result	Units	Regulatory Limit
Corrosivity	10.83	pH in s.u.	--
Reactivity - CN	< 0.1	mg/L	--
Reactivity - S	< 1.0	mg/L	--
Ignitability	92	°F	≤ 140

COMMENTS:

REFERENCE: Analyses performed following protocol defined in:
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, 1982, 1986.

RECEIVED
SEP - 2 1993
OIL CON. DIV.
DIST. 3

Reviewed

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To DENY FOUTZ	From RANDY SCHMITZ
Co.	Co. COASTAL CHEMICAL
Dept.	Phone # 327-9286
Fax #	Fax #

COASTAL CHEMICAL COMPANY, INC.
810 COUNTY RD. 5911 - FARMINGTON, N.M. 87401
RANDY SCHMITZ
Facility Manager
Office: (505) 327-9280
FAX (505) 327-9302

College Station, Texas 77845

...TERISTIC LEACHING PROCEDURE
...ATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

COASTAL CHEMICAL CO.

...ame: Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Analyzed: 08/10/93

Analyte	Retention Time (minutes)	Concentration (mg/L)
Toluene	13.19	0.328
Xylenes (total)	15.93	0.239
Trichlorotrifluoroethane	3.9	0.07 *
Unknown Hydrocarbon	8.23	0.02 *
Unknown Hydrocarbon	11.02	0.02 *

* - Concentration calculated using assumed relative response factor = 1

Comments: Trichlorotrifluoroethane (Freon) is a common laboratory contaminant.

References: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 Environmental Protection Agency, November 1992.
Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

RECEIVED
OCT 29 1993
OIL CON. DIV.
DIST. 3

Review

Inter-Mountain Laboratories, In

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: COASTAL CHEMICAL CO.
Project Name: Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981
Sample Matrix: Water
Condition: Cool, intact

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Received: 08/07/93
Date Extracted -
TCLP: 08/10/93
BNA: 08/10/93
Date Analyzed: 08/10/93

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.040	200
m,p - Cresol	ND	0.040	200
1,4 - Dichlorobenzene	ND	0.040	7.5
2,4 - Dinitrotoluene	ND	0.040	0.13
Hexachlorobenzene	ND	0.040	0.13
Hexachloro-1,3-butadiene	ND	0.040	0.5
Hexachloroethane	ND	0.040	3.0
Nitrobenzene	ND	0.040	2.0
Pentachlorophenol	ND	0.040	100
Pyridine	ND	0.040	5.0
2,4,5 - Trichlorophenol	ND	0.040	400
2,4,6 - Trichlorophenol	ND	0.040	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	**	21 - 100%
Phenol - d6	3%	10 - 110%
Nitrobenzene - d5	65%	35 - 114%
2 - Fluorobiphenyl	67%	43 - 116%
2,4,6 - Tribromophenol	76%	10 - 123%
Terphenyl - d14	64%	33 - 141%

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

Client: COASTAL CHEMICAL CO.
Project Locatio Farmington, NM
Sample ID: Wash Water
Laboratory ID: 3356 / C931981
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 08/12/93
Date Sampled: 08/06/93
Date Received: 08/07/93
Date Extracted -
TCLP: 08/10/93
Volatile: 08/10/93
Date Analyzed: 08/10/93

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	0.114	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	0.017	0.005	6.0
1,2-Dichloroethane	ND	0.005	0.5
1,1-Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.010	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	92%	76 - 114%
Toluene - d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

Inter·Mountain Laboratories, Inc.

2508 W. Main Street
Farmington, New Mexico 87401

RCRA CHARACTERICS

CLIENT:	Coastal Chemical Co.		
PROJECT:	Farmington, NM		
Sample ID:	Wash Water		
Laboratory ID:	3469		
Sample Matrix:	Fluid	Report Date:	08/31/93
Preservative:	None	Date Sampled:	08/25/93
Condition:	Cool/Intact	Date Received:	08/25/93

Parameter	Analytical Result	Units	Regulatory Limit
Corrosivity	10.83	pH in s.u.	---
Reactivity - CN	< 0.1	mg/L	---
Reactivity - S	< 1.0	mg/L	---
Ignitability	92	°F	< 140

COMMENTS:

REFERENCE: Analyses performed following protocol defined in:
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, 1982, 1986.

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATION

Client:	COASTAL CHEMICAL COMPANY		
Sample ID:	Wash Water	Date Reported:	07/22/93
Project ID:	Farmington, New Mexico	Date Sampled:	07/06/93
Lab ID:	B935854	Date Received:	07/07/93
Matrix:	Water	Date Extracted:	07/10/93
Preservation:	Cool	Date Analyzed:	07/20/93

Parameter	Result	PQL	Regulatory Level	Units
Arsenic	0.8	0.2	5.0	mg/L
Barium	ND	5	100.0	mg/L
Cadmium	ND	0.05	1.0	mg/L
Chromium	ND	0.05	5.0	mg/L
Lead	ND	0.2	5.0	mg/L
Mercury	ND	0.02	0.2	mg/L
Selenium	0.4	0.2	1.0	mg/L
Silver	ND	0.05	1.0	mg/L

ND - Not detected at stated Practical Quantitation Limit (PQL).

Reference: Toxicity Characteristic Leaching Procedure , Final Rule,Federal Register, 40 CFR 261-302. Part V, EPA Vol 55, No. 126, June 29, 1990

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September, 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September, 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September, 1986.

Analyst _____ Reviewed _____

ON SITE TECHNOLOGIES, LTD.

GENERAL WATER ANALYSIS

Attn:	*Randy Schmitz*	Date:	10/13/93
Company:	*Coastal Chemical Co., Inc.*	*Lab ID:*	*1258*
Address:	*#10 County Road 5911*	*Sample No.*	*#0576*
City, State:	*Farmington, NM 87401*	*Job No.*	*2-1000*

Project Name:	***Coastal Chemical***		
Project Location:	***Wash Water - Middle***		
Sampled by:		Date:	9/22/93 Time:
Analyzed by:	*Core*	Date:	9/28/93
Type of Sample:	*Water*		

Laboratory Analysis

Analysis	*Result*	*Method*
Flash Point, closed cup	>150 Deg. F	*EPA Method 1010*

* *Revised Report*

Approved by:
Date: 10/13/93

FAX: (505) 327-1496 • 24 HR. – (505) 327-7105 • OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE • SUITE F • P. O. BOX 2606 • FARMINGTON, NEW MEXICO 87499

ON SITE TECHNOLOGIES, LTD.

GENERAL WATER ANALYSIS

Attn:	*Randy Schmitz*	Date:	10/13/93
Company:	*Coastal Chemical Co., Inc.*	*Lab ID:*	*1258*
Address:	*#10 County Road 5911*	*Sample No.*	*#0575*
City, State:	*Farmington, NM 87401*	*Job No.*	*2-1000*

Project Name:	***Coastal Chemical***			
Project Location:	***Wash Water - Top***			
Sampled by:		Date:	9/22/93	Time:
Analyzed by:	*Core*	Date:	9/28/93	
Type of Sample:	*Water*			

Laboratory Analysis

Analysis	*Result*	*Method*
Flash Point, closed cup	>150 Deg. F	*EPA Method 1010*

* *Revised Report*

Approved by:
Date: 10/13/93

FAX: (505) 327-1496 ▪ 24 HR. – (505) 327-7105 ▪ OFF.: (505) 325-8786
3005 NORTHRIDGE DRIVE ▪ SUITE F ▪ P. O. BOX 2606 ▪ FARMINGTON, NEW MEXICO 87499

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

July 15, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-998

Mr. David Swezey, President
Southwest Water Disposal
P.O. Box 308
Farmington, New Mexico 87499

RE: **OCD Rule 711 Permit**
Southwest Water Disposal
San Juan County, New Mexico

Dear Mr. Sweezy:

The New Mexico Oil Conservation Division (OCD) administratively approved a commercial clay-lined surface evaporation pond for Southwest Water Disposal (SWWD) on May 17, 1988, prior to adoption of OCD Rule 711 which became effective June 6, 1988. Permitting procedures for Rule 711 were established under OCD Order R-8662. Under Ordering Paragraph (2) of R-8662, existing commercial surface disposal facilities are required to comply with the provisions of Rule 711 no later than 120-days after receipt of OCD's request.

The OCD is administratively bringing SWWD'S commercial surface disposal facility under Rule 711. This process will ensure that SWWD is in compliance with all current OCD rules and regulations. The **permit for the SWWD commercial surface disposal facility** located in the SE/4 SW/4, Section 32, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico, **is hereby approved in accordance with the OCD Rule 711** under the conditions contained in the enclosed attachment. The attached conditions of approval differ from the original permit pursuant to current facility requirements which have evolved through the formal hearing process for other OCD regulated disposal facilities. **The requirements contained in this approval will preempt all prior conditions and requirements.**

The operation, monitoring and reporting shall be as specified in the enclosed attachment. All modifications and alternatives to the approved disposal methods must receive prior OCD approval. You are required to notify the Director of any facility expansion or process modification and to file the appropriate materials with the Division.

Please be advised approval of this facility does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations. In addition, the OCD approval does not relieve you of liability for compliance with any other laws and/or regulations.

The Division shall have the authority to administratively change this permit to protect fresh water, human health and the environment. This permit modification and approval is for a period of five years. This **approval will expire on July 15, 1998** and you should submit an application for renewal in ample time before that date.

Please be advised that all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds in accordance with Order R-8952.

If you have any questions, please do not hesitate to contact Kathy Brown at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/kmb

Attachment

xc: Denny Foust, OCD Aztec Office

ATTACHMENT TO OCD 711 PERMIT APPROVAL
SOUTHWEST WATER DISPOSAL
COMMERCIAL SURFACE DISPOSAL FACILITY
(July 15, 1993)

POND OPERATIONS

1. Disposal will only occur when an attendant is on duty. The facility will be secured when no attendant is present.

2. No produced water will be received at the facility unless the transporter has a valid Form C-133 (Authorization to Move Produced Water) on file with the Division.

3. All produced water will be unloaded into tanks and the oil removed prior to disposal into the pond. Oil recovered will be stored in closed storage tanks or drums and then transferred to an OCD approved oil reclamation facility. Per Division General Rule 310, oil shall not be stored or retained in earthen reservoirs or in open receptacles. Any oil which is accidentally discharged into the pond will be removed within twenty-four (24) hours.

4. All above ground tanks containing fluids other than fresh water will be bermed to contain a volume one-third more than the largest tank or all interconnected tanks. All berms at the facility will be maintained in such a manner to prevent erosion. Berms will be inspected weekly and after any precipitation of consequence, and required maintenance will be performed immediately to maintain integrity of the berms.

5. The pond will have a minimum freeboard of eighteen (18) inches. If two consecutive readings of 0.1 ppm of H2S are obtained the pond will be lowered to the level where the aeration system will circulate the entire pond (ie. all fluids from the bottom of the pond). If overtopping occurs at any time, the freeboard will be lowered to prevent a reoccurrence.

6. The spray evaporation system will be operated such that all spray remains within the confines of the pond berm. The spray system will be operated only when an attendant is on duty at the facility. An anemometer with automatic shutdown will be installed and utilized such that the spray system will not operate when winds, sustained or in gusts, cause windborn drift to leave the confines of the pond berm.

7. All of the monitor wells for the evaporation pond will be inspected quarterly and records of such inspections will be made. Any wells with fluids will be sampled and analyzed for major cations and anions. Quarterly inspection records and chemical analyses will be submitted to the OCD Santa Fe and Aztec Offices by January 1, April 1, July 1, and October 1 of each year.

H2S PREVENTION & CONTINGENCY PLAN

1. All incoming loads of produced water will be tested for hydrogen sulfide (H2S) concentrations and the results recorded. Any loads with measurable H2S concentrations will be treated in a closed system. The treatment reaction will be driven to completion to eliminate all measurable H2S prior to disposal into the pond.

2. Daily tests will be conducted and records made of the pH in the pond. If the pH falls below 7.8 (more acidic), remedial steps will be taken immediately to raise the pH to 7.8.

3. Weekly tests will be conducted and records made of the dissolved sulfide concentration in the pond. If dissolved sulfides in the pond reach 15 ppm, the OCD will be notified immediately.

4. The aeration system will be operated to provide sufficient oxygen to the pond to maintain a residual oxygen concentration of 0.5 ppm one foot off the bottom of the pond. Tests will be conducted and records made to determine the dissolved oxygen levels in the pond according to the following procedure:

   a. Tests will be conducted at least once per 24-hour period.

   b. The sample for each test will be taken one foot from the bottom of the pond.

   c. The location of each test will vary around the pond.

   d. If any test shows a dissolved residual oxygen level of less than 0.5 ppm, immediate steps will be undertaken to oxygenate the pond and create a residual oxygen level to at least 0.5 ppm. Remedial measures may include adding chemicals or increased aeration.

   e. The OCD Aztec Office will be notified immediately if any test shows a dissolved residual oxygen level of less than 0.5 ppm.

5. Tests of ambient H2S levels will be conducted and records made. Such tests will be made at varying locations around the berm of the pond. Tests will be conducted twice per day. The wind speed and direction will be recorded in conjunction with each test.

6. If an H2S reading of 0.1 ppm or greater is obtained:

   a. A second reading will be taken on the down wind berm within one hour.

b. The dissolved oxygen and dissolved sulfide levels of the pond will be tested immediately and the need for immediate treatment determined.

c. Tests for H2S levels will be made at the fence line, downwind from the pond.

7. If two consecutive H2S readings of 0.1 ppm or greater are obtained:

a. The operator will notify the OCD Aztec Office immediately.

b. The operator will commence hourly monitoring on a 24-hour basis.

c. The operator will obtain daily analysis of dissolved sulfides in the pond.

8. If an H2S reading of 10.0 ppm or greater at the facility fence line is obtained:

a. The operator will immediately notify the OCD and the following public safety agencies.

State Police
County Sheriff
County Fire Marshall

b. The operator will initiate notification of all persons residing within one-half (1/2) mile of the fence line and assist public safety officials with evacuation as requested.

9. At least 600 pounds of treatment chemical will either be stored on-site or available at the facility within 12 hours. The frequency and volume of chemicals used to treat the pond will be determined by the actual measurements of H2S, dissolved sulfides, residual oxygen and pH.

POND CLOSURE AND LINING

1. SWWD will accept no fluids for disposal in the clay lined disposal pond after March 31, 1995. All existing water will be removed from the pond by September 1, 1995.

2. If the evaporation pond is to be used after September 1, 1995, the pond will be double-lined with leak detection in accordance with OCD guidelines. SWWD will submit engineering designs for OCD approval prior to any pond additions or modifications.

RECORDS & REPORTING

1. The operator will keep and make available for inspection all H2S monitoring and treatment records. Such records will be maintained for a period of two years from the date of reading.
2. Zero H2S readings do not need to be reported to the OCD. If H2S is observed at any time, the OCD may require submittal of all subsequent H2S readings.

3. The operator will keep and make available for inspection all monitor well inspection and sampling records. Such records will be maintained for a period of two years from the date of reading.

4. The operator will keep and make available for inspection records for each calendar month on the generator, source, location, volume and type of waste, analysis for hazardous constituents (if required), date of disposal, and hauling company that disposes of fluids or material in the facility. Such records will be maintained for a period of two (2) years from the date of disposal.

5. The operator will file forms C-112, C-117-A, and C-120-A with the Aztec District Office as required by OCD Rules 1112, 1117, and 1120.

6. The OCD will be notified of any break, spill, blow out, or fire or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

FACILITY CLOSURE

1. The OCD will be notified when operation of the facility is discontinued for a period in excess of six months or when the facility is to be dismantled.

2. When the facility is to be closed, no new material will be accepted. The operator will provide for removal of all fluids and/or wastes, closure of all pits and ponds, and cleanup of any contaminated soils and/or waters pursuant to a previously approved OCD closure plan. The area will be reseeded with natural grasses and allowed to return to its natural state.

3. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

SPOSAL

SW BD

RECEIVED
JUL 6 1993
OIL CON. DIV.
DIST. 3

SW WD

Pursuant to [illegible] be advised that we have a fully operational [illegible] at the yard

If I may be of any further assistance please advise.

Very truly yours,

Robert C Frank

Robert C Frank
Vice President

TIERRA
ENVIRONMENTAL CORPORATION

CORPORATE OFFICE
6846 S. Canton, Suite 100
Tulsa, OK 74136
918 [illegible]-4200

REGIONAL OFFICE
909 W. Apache
Farmington, NM 87401
505-327-[illegible]24

June 16, 1993

Bob Franks
Southwest Water Disposal, Inc.
P. O. Box 308
Farmington, New Mexico 87401

Dear Mr. Franks,

This letter reports the results of [illegible] collected by Tierra personnel in the San Juan Basin. At your request, Charles Perkins and [illegible] performed a limited analysis on the water [illegible] your Basin pit on June 2, 1993. The results were:

Dissolved oxygen - [illegible] from New Mexico Oil Conservation Division
Total Solids - 4.5 ppm
Hydrogen sulfide - 0.1 ppm

A range of additional tests may also be conducted according to [illegible] needs.

Tierra is pleased to offer [illegible] solid [illegible] Please contact [illegible] Direction. The charges for these services are determined [illegible]

Sincerely,

TIERRA ENVIRONMENTAL COMPANY INC.

L. Daniel (Dan) Homer, Ph.D.
Director of Research

6/17/93

May 27, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-990

who?

Mr. Robert C. Frank (or David Swezey)
Southwest Water Disposal
P.O. Box 308
Farmington, New Mexico 87499

RE: Hydrogen Sulfide Monitoring
Southwest Water Disposal
San Juan County, New Mexico

Dear Mr. Frank:

On May 17, 1988 the New Mexico Oil Conservation Division (OCD) administratively approved a commercial lined surface evaporation pond for Southwest Water Disposal (SWWD) located in the SE/4 SW/4, Section 32, Township 30 North, Range 9 West. NMPM, San Juan County, New Mexico. The approval letter referenced several documents submitted by SWWD which are part of the permit. One of these documents dated March 1988, committed to specific hydrogen sulfide (H2S) monitoring and contingency measures. To date the OCD has no records to indicate that SWWD has adhered to a majority of these commitments.

The OCD has received numerous complaints from residents located near your facility of pervasive odors and adverse health related symptoms. In addition, the OCD has recorded measurements of H2S at your facility on several occasions. Based on the harmful effects of H2S and the continuing complaints from residents of air born contaminants leaving the confides of your facility, the OCD requires SWWD conduct the following actions:

1. A grab sample will be taken one to three (1-3) feet from the bottom of the pond and analyzed for sulfides and sulfates. The analytical results will be submitted to the OCD Santa Fe Office and H2S by June 14, 1993.

2. An insitu measured of dissolved oxygen will be taken from the bottom of the pond within 24 hours of receipt of

this letter. The results will be submitted to the OCD Santa Fe + Aztec Offices within 24 hours after taking the measurement.

3. Submit a treatment plan and schedule to control the generation of hydrogen sulfide to the OCD Santa Fe + Aztec Offices by June 14, 1993. Include the composition, volume, and frequency of any chemical additives. Also include detailed engineering designs and schedules for any additions or modifications to the aeration and/or spray systems.

The SWWD permit to operate a commercial evaporation pond was administratively approved prior to adoption of OCD Rule 711 which is the current method for permitting commercial surface disposal facilities. The OCD is in the process of reviewing and modifying all commercial disposal facility permits to bring them in compliance with all current OCD rules and regulations. This process will ensure that all commercial disposal facilities are operating under Rule 711 permits.

Please note that the OCD is in the process of reviewing the SWWD facility permit to bring it under OCD Rule 711. Under Rule 711 the Division shall have the authority to administratively change the permit to protect fresh water, human health and the environment. Items which are being examined include facility maintenance, pond operations, monitor well sample results, and additional H_2S monitoring and contingency measures.

If you have any questions, please do not hesitate to contact Kathy M. Brown at (505) 827-5884.

Sincerely,

4. A fully operational H_2S detector shall be available for use at the SWWD Evaporation Pond.

William J. LeMay
Director

WJL/kmb

xc: Denny Foust, OCD Aztec Office

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

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

May 28, 1993

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-990

Mr. Robert C. Frank
Southwest Water Disposal
P.O. Box 308
Farmington, New Mexico 87499

RE: **Hydrogen Sulfide Monitoring**
Southwest Water Disposal
San Juan County, New Mexico

Dear Mr. Frank:

On May 17, 1988 the New Mexico Oil Conservation Division (OCD) administratively approved a commercial clay-lined surface evaporation pond for Southwest Water Disposal (SWWD) located in the SE/4 SW/4, Section 32, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico. The approval letter referenced several documents submitted by SWWD which are part of the permit. The attached document dated March 28, 1988, is part of the approval and commits to specific hydrogen sulfide (H2S) monitoring and contingency measures.

The OCD has received complaints from residents located near your facility of odors eminating from the pond. In addition, the OCD has recorded measurements of H2S at your facility on several occasions. Based on the harmful effects of H2S, the OCD requires SWWD conduct the following actions:

1. A grab sample will be taken one to three (1-3) feet from the bottom of the pond and analyzed for sulfides and sulfates. The analytical results will be submitted to the OCD Santa Fe and Aztec offices by June 14, 1993.

2. An insitu measurement of dissolved oxygen will be taken from the bottom of the pond within 24 hours of receipt of this letter. The results will be submitted to the OCD Santa Fe and Aztec offices within 24 hours after taking the measurement.

3. Submit a treatment plan and schedule to control the generation of hydrogen sulfide to the OCD Santa Fe and Aztec offices by June 14, 1993. Include the composition, volume, and frequency of any chemical additives, and the expected chemical reactions and mass balances. Also include detailed engineering designs and schedules for any additions or modifications to the aeration and/or spray systems.

4. Based on conditions in the March 28, 1988 approval document, SWWD is required to maintain a hydrogen sulfide detector at the facility. Within 48 hours of receipt of this letter SWWD will have a fully operational hydrogen sulfide detector available at the facility.

The SWWD permit to operate a commercial evaporation pond was administratively approved prior to adoption of OCD Rule 711 which is the current method for permitting commercial surface disposal facilities. The OCD is in the process of reviewing and modifying all commercial disposal facility permits to bring them in compliance with all current OCD rules and regulations. This process will ensure that all commercial disposal facilities are operating under Rule 711 permits.

Please note that the OCD is in the process of reviewing the SWWD facility permit to bring it under OCD Rule 711. Under Rule 711, the Division shall have the authority to administratively change the permit to protect fresh water, human health and the environment. Items which are being examined include facility maintenance, pond operations, monitor well sample results, and additional H2S monitoring and contingency measures.

If you have any questions, please do not hesitate to contact Kathy M. Brown at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/kmb

Attachment

xc: Denny Foust, OCD Aztec Office

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Certified Mail Receipt #P 987 892 062

April 29, 1993

Southwest Water Disposal
Attn: Robert C. Frank, Vice President
PO Box 308
Farmington, NM 87499

RE: Commercial Water Disposal Facilities Annual Laboratory Analysis of Leak Detection System Fluids and Comparison to Pond Fluids

Dear Mr. Frank:

You are hereby directed to initiate an annual laboratory analysis of leak detection system fluids. The annual testing shall consist of sampling any fluids contained in the leak detection system of any commercial disposal pond to analyze for volatile aromatic hydrocarbons utilizing EPA method 602 and analyze for major cations/anions. A sample of pond water will also be analyzed for comparison. The Oil Conservation Division will split samples with the operators on this initial testing. Operators will furnish a satisfactory method for obtaining an uncontaminated water sample. Sampling should be completed by May 17, 1993.

Please contact Denny Foust at 505-334-6178 to schedule sampling and for any further information.

Yours truly,

Denny G. Foust
Environmental Geologist

XC: OCD-Environmental Bureau
DGF File
Environmental File

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Oil Conservation Division

Case Narrative

On May 17, 1993, three water samples were submitted to Inter-Mountain Laboratories - Farmington for analysis. The samples were received cool and intact and were designated "Southwest Water Disposal". Analyses for Purgeable Aromatics were performed on the water samples as per the accompanying chain of custody form.

BTEX analysis was performed by EPA Method 5030, Purge and Trap, and EPA Method 602.2, Purgeable Aromatics, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph, equipped with a photoionization detector. Target analytes were detected in one of the samples at levels above the stated detection limits, as indicated on the report sheets.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analysis of the samples reported herein are found in Standard Methods for Analysis of Water and Waste Water, 1992 and The Federal Register, Vol. 49, N0. 209, October, 1984.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Dr. Denise A. Bohemier,
Organic Lab Supervisor

OCD2607

Inter-Mountain Laboratories, Inc

2506 W. Main Street
Farmington, New Mexico 87401

Purgeable Aromatics

Duplicate Analysis

Lab ID:	2609Dup	Report Date:	06/01/93
Sample Matrix:	Water	Date Sampled:	05/17/93
Preservative:	Cool, HCl	Date Received:	05/17/93
Condition:	Intact	Date Analyzed:	05/29/93

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	1.17	0.78	0 - 3
Toluene	3.36	2.19	1 - 5
Chlorobenzene	ND	ND	NA
Ethylbenzene	ND	ND	NA
m,p-Xylenes	3.84	3.21	NE
o-Xylene	1.03	0.68	NE
1,3-Dichlorobenzene	ND	ND	NA
1,4-Dichlorobenzene	ND	ND	NA
1,2-Dichlorobenzene	ND	ND	NA

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Duplicate acceptance range not established by the EPA.

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc

2506 W. Main Street
Farmington, New Mexico 87401

Purgeable Aromatics

Matrix Spike Analysis

Lab ID:	2608Spk	Report Date:	06/02/93
Sample Matrix:	Water	Date Sampled:	05/17/93
Preservative:	Cool, HCl	Date Received:	05/17/93
Condition:	Intact	Date Analyzed:	05/29/93

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	ND	10.6	106%	39 -150
Toluene	10	ND	10.0	100%	46 - 148
Chlorobenzene	10	ND	9.18	92%	55 - 135
Ethylbenzene	10	ND	10.1	101%	32 - 160
m,p-Xylenes	20	ND	20.2	101%	NE
o-Xylene	10	ND	9.70	96%	NE
1,3-Dichlorobenzene	10	ND	7.37	74%	50 - 141
1,4-Dichlorobenzene	10	ND	6.83	68%	42 - 143
1,2-Dichlorobenzene	10	ND	5.30	53%	37 - 154

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Spike acceptance range not established by the EPA.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	100	88 - 110%
Bromofluorobenzene	79	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB34118

Report Date: 06/01/93
Date Analyzed: 05/29/93

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Chlorobenzene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
1,3-Dichlorobenzene	ND	0.20
1,4-Dichlorobenzene	ND	0.20
1,2-Dichlorobenzene	ND	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	102	88 -110%
Bromofluorobenzene	100	86 -115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter·Mountain Laboratories, In

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Oil Conservation Division

Project ID:	Southwest Water Disposal	Report Date:	06/01/93
Sample ID:	Evaporation Pond	Date Sampled:	05/17/93
Lab ID:	2609	Date Received:	05/17/93
Sample Matrix:	Water	Date Analyzed:	05/29/93
Preservative:	Cool, HCl		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	1.17	1.00
Toluene	3.36	1.00
Chlorobenzene	ND	1.00
Ethylbenzene	ND	1.00
m,p-Xylenes	3.84	2.00
o-Xylene	1.03	1.00
1,3-Dichlorobenzene	ND	1.00
1,4-Dichlorobenzene	ND	1.00
1,2-Dichlorobenzene	ND	1.00

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	95	88 -110%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Southwest Water Disposal**		
Sample ID:	Pond	Date Reported:	06/02/93
Laboratory ID:	2606	Date Sampled:	05/17/93
Sample Matrix:	Water	Time Sampled:	1430
Condition:	Cool/Intact	Date Received:	05/17/93

Parameter	Analytical Result	Units		Units
Lab pH	8.5	s.u.		
Lab Conductivity @ 25° C	37,300	umhos/cm		
Total Dissolved Solids @ 180°C	30,600	mg/L		
Total Dissolved Solids (Calc)	29,500	mg/L		
Total Alkalinity as CaCO3	19,400	mg/L		
Total Hardness as CaCO3	653	mg/L		
Bicarbonate as HCO3	19,800	mg/L	324.20	meq/L
Carbonate as CO3	1,900	mg/L	63.36	meq/L
Hydroxide as OH	0	mg/L	0.00	meq/L
Chloride	5,320	mg/L	150.15	meq/L
Sulfate	199	mg/L	4.15	meq/L
Calcium	10	mg/L	0.50	meq/L
Magnesium	153	mg/L	12.56	meq/L
Potassium	355	mg/L	9.07	meq/L
Sodium	11,830	mg/L	514.35	meq/L
Cations			536.48	meq/L
Anions			541.86	meq/L
Cation/Anion Difference			0.50	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 17th ed., 1989.

Reviewed by

Inter·Mountain Laboratories, In

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Oil Conservation Division

Project ID:	Southwest Water Disposal	Report Date:	06/01/93
Sample ID:	Monitor Well #10	Date Sampled:	05/17/93
Lab ID:	2608	Date Received:	05/17/93
Sample Matrix:	Water	Date Analyzed:	05/29/93
Preservative:	Cool, HCl		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Chlorobenzene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
1,3-Dichlorobenzene	ND	0.20
1,4-Dichlorobenzene	ND	0.20
1,2-Dichlorobenzene	ND	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	103	88 -110%
Bromofluorobenzene	99	86 -115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

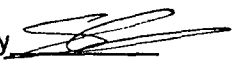
Inter·Mountain Laboratories, Inc

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Southwest Water Disposal**		
Sample ID:	Monitor Well # 10	Date Reported:	06/02/93
Laboratory ID:	2605	Date Sampled:	05/17/93
Sample Matrix:	Water	Time Sampled:	1400
Condition:	Cool/Intact	Date Received:	05/17/93

Parameter	Analytical Result	Units		Units
Lab pH	7.6	s.u.		
Lab Conductivity @ 25° C	32,000	umhos/cm		
Total Dissolved Solids @ 180°C	32,900	mg/L		
Total Dissolved Solids (Calc)	32,800	mg/L		
Total Alkalinity as CaCO3	523	mg/L		
Total Hardness as CaCO3	1,690	mg/L		
Bicarbonate as HCO3	637	mg/L	10.45	meq/L
Carbonate as CO3	0	mg/L	0.00	meq/L
Hydroxide as OH	0	mg/L	0.00	meq/L
Chloride	162	mg/L	4.58	meq/L
Sulfate	22,000	mg/L	459.25	meq/L
Calcium	322	mg/L	16.08	meq/L
Magnesium	215	mg/L	17.71	meq/L
Potassium	24	mg/L	0.61	meq/L
Sodium	9,710	mg/L	422.14	meq/L
Cations			456.55	meq/L
Anions			474.28	meq/L
Cation/Anion Difference			1.90	%

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 17th ed., 1989.

Reviewed by 

Inter·Mountain Laboratories, In

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Oil Conservation Division

Project ID:	Southwest Water Disposal	Report Date:	06/01/93
Sample ID:	Monitor Well #9	Date Sampled:	05/17/93
Lab ID:	2607	Date Received:	05/17/93
Sample Matrix:	Water	Date Analyzed:	05/29/93
Preservative:	Cool, HCl		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Chlorobenzene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20
1,3-Dichlorobenzene	ND	0.20
1,4-Dichlorobenzene	ND	0.20
1,2-Dichlorobenzene	ND	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	102	88 -110%
Bromofluorobenzene	99	86 -115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Southwest Water Disposal**		
Sample ID:	Monitor Well # 9	Date Reported:	06/02/93
Laboratory ID:	2604	Date Sampled:	05/17/93
Sample Matrix:	Water	Time Sampled:	1330
Condition:	Cool/Intact	Date Received:	05/17/93

Parameter	Analytical Result	Units		Units
Lab pH	7.8	s.u.		
Lab Conductivity @ 25° C	30,700	umhos/cm		
Total Dissolved Solids @ 180°C	30,900	mg/L		
Total Dissolved Solids (Calc)	31,300	mg/L		
Total Alkalinity as CaCO3	434	mg/L		
Total Hardness as CaCO3	1,350	mg/L		
Bicarbonate as HCO3	529	mg/L	8.68	meq/L
Carbonate as CO3	0	mg/L	0.00	meq/L
Hydroxide as OH	0	mg/L	0.00	meq/L
Chloride	238	mg/L	6.72	meq/L
Sulfate	21,100	mg/L	439.19	meq/L
Calcium	312	mg/L	15.56	meq/L
Magnesium	140	mg/L	11.51	meq/L
Potassium	21	mg/L	0.52	meq/L
Sodium	9,210	mg/L	400.39	meq/L
Cations			427.99	meq/L
Anions			454.59	meq/L
Cation/Anion Difference			3.01*	%

RECEIVED
JUN 3 1993
OIL CON. DIV.
DIST. 3

*Analyses rerun without significant difference.

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 17th ed., 1989.

Reviewed by

imi
Inter-Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Southwest Water Disposal	SWWD Evaporation Pond	
Sampler: (Signature) Connie L. Frank	**Chain of Custody Tape No.**	**Remarks**

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	cation/ anion	EPA 602			
Monitor Well #9	5/17/93	1:30 pm	2604	Water	3	X	X			
Monitor Well #10	5/17/93	2:00 pm	05	"	3	X	X			
Pond	5/17/93	2:30 pm	06	"	3	X	X			

FILE COPY

	Date	Time		Date	Time
Relinquished by: (Signature) Connie L Frank	5/17/93	4:10 pm	Received by: (Signature)	5/17/93	1610
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ ...a Avenue ...Wyoming 82801 ...) 672-8945

☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945

☐ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450

☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

10014

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML Contract No. #93-521-07-034B

OCD Sample No. 05179301 30

Collection Date: 1 | Collection Time | Collected by —Person/Agency: Denn -ous | /OCD

SITE INFORMATION

Sample location: Northwest ... Mesa

Collection Site Description: monitor well #9

Township, Range, Section, Tract: + + +

SEND FINAL REPORT TO:
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS ater level

☒ Bailed ☐ Pump ☐ Dipped ☐ Tap

Discharge

Sample type: Bailed

pH(00400)

Conductivity (Uncorrected): 8 000 mho

Water Temp. (00010): 17.5 °C

Conductiv at 25° C mho

Salinity 12.5‰

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	71
☒ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	742
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	747
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	77
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	601
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML Contract No. #93-52/-07-034B

OCD Sample No. 05179314000

Collection Date: 5 19 | Collection Time: 4'00 | Collected by—Person/Agency: D Foas | /OCD

SITE INFORMATION

Sample location: ...u we wa er is osr

Collection Site Description: SWWP Monitor Well 1

Township, Range, Section, Tract: + + +

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLING CONDITIONS ater level

☒ Bailed ☐ Pump ☐ Dipped ☐ Tap

Discharge

Sample type: Bailed

pH(00400)

Conductivity (Uncorrected) 50,000 mho

Water Temp. (00010) Cc ty at 25° C mho

-0C, 4.19 /

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

FIELD COMMENTS:

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	713
☒ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	7421
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	7470
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	774
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	601
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ANALYSIS REQUEST FORM

Contract Lab IML Contract No. #93-521-07-0348

OCD Sample No. 0517931430

Collection Date: 5 93 | Collection Time: 130 | Collected by —Person/Agency: D. Mc

/OCD

SITE INFORMATION

Sample location: SOC NE Quarter of Sec

Collection Site Description: SWWD Evaporation Pond

Township, Range, Section, Tract: + + +

SEND FINAL REPORT TO:
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

SAMPLE FIELD TREATMENT — *Check proper boxes*

No. of samples submitted:

- ☐ **NF:** Whole sample (Non-filtered)
- ☐ **F:** Filtered in field with 0.45 μ membrane filter
- ☐ **PF:** Pre-filtered w/45 μ membrane filter

- ☐ **NA:** No acid added
- ☐ **A:** HCL
- ☐ **A:** 2ml H_2SO_4/L added
- ☐ **A:** 5ml conc. HNO_3 added
- ☐ **A:** 4ml fuming HNO_3 added

SAMPLING CONDITIONS ater level

☐ Bailed ☐ Pump ☐ Dipped ☐ Tap

Discharge

Sample type: Produced water

pH(00400)

Conductivity (Uncorrected): 24000 mho

Water Temp. (00010): °C

Conductivity at 25° C: mho

FIELD COMMENTS:

Salinity 1890

LAB ANALYSIS REQUESTED:

ITEM	DESC	METHOD	ITEM	DESC	METHOD	ITEM	DESC	
☐ 001	VOA	8020	☐ 013	PHENOL	604	☐ 026	Cd	71
☒ 002	VOA	602	☐ 014	VOC	8240	☐ 027	Pb	742
☐ 003	VOH	8010	☐ 015	VOC	624	☐ 028	Hg(L)	747
☐ 004	VOH	601	☐ 016	SVOC	8250	☐ 031	Se	774
☐ 005	SUITE	8010-8020	☐ 017	SVOC	625	☐ 032	ICAP	601
☐ 006	SUITE	601-602	☐ 018	VOC	8260	☒ 033	CATIONS/ANIONS	
☐ 007	HEADSPACE		☐ 019	SVOC	8270	☐ 034	N SUITE	
☐ 008	PAH	8100	☐ 020	O&G	9070	☐ 035	NITRATE	
☐ 009	PAH	610	☐ 022	AS	7060	☐ 036	NITRITE	
☐ 010	PCB	8080	☐ 023	Ba	7080	☐ 037	AMMONIA	
☐ 011	PCB	608	☐ 024	Cr	7190	☐ 038	TKN	
☐ 012	PHENOL	8040	☐ 025	Cr6	7198	☐	OTHER	

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

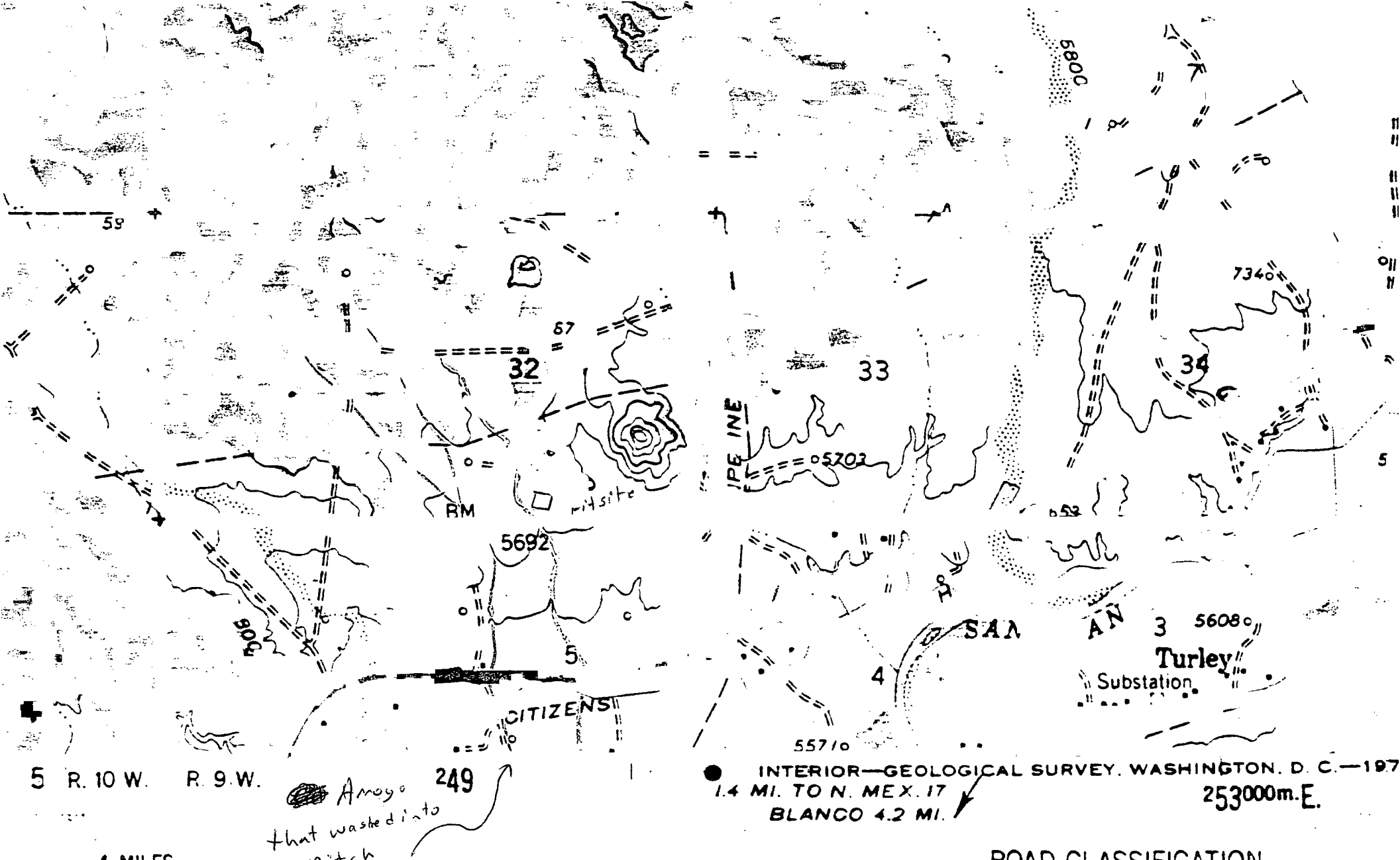
OIL CONSERVATION DIVISION

LABORATORY SAMPLE RECORD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	602	Cations / Anions					REMARKS
	Southwest Water Disposal								
SAMPLERS: (Signature) Denny Foust									
DATE TIME	STATION LOCATION								
05/17/93 13:30	Monitor well #9	3	2	1					#0517931330
05/17/93 14:00	Monitor Well #10	3	2	1					#0517931400
05/17/93 14:30	Evapi. Pond	3	2	1					#0517931430

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Denny J. Foust	5/17/93 1609		5/17/93 1610
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	SEALS INTACT ☐ YES ☐ NO (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time / Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files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BLANCO 4.2 MI.
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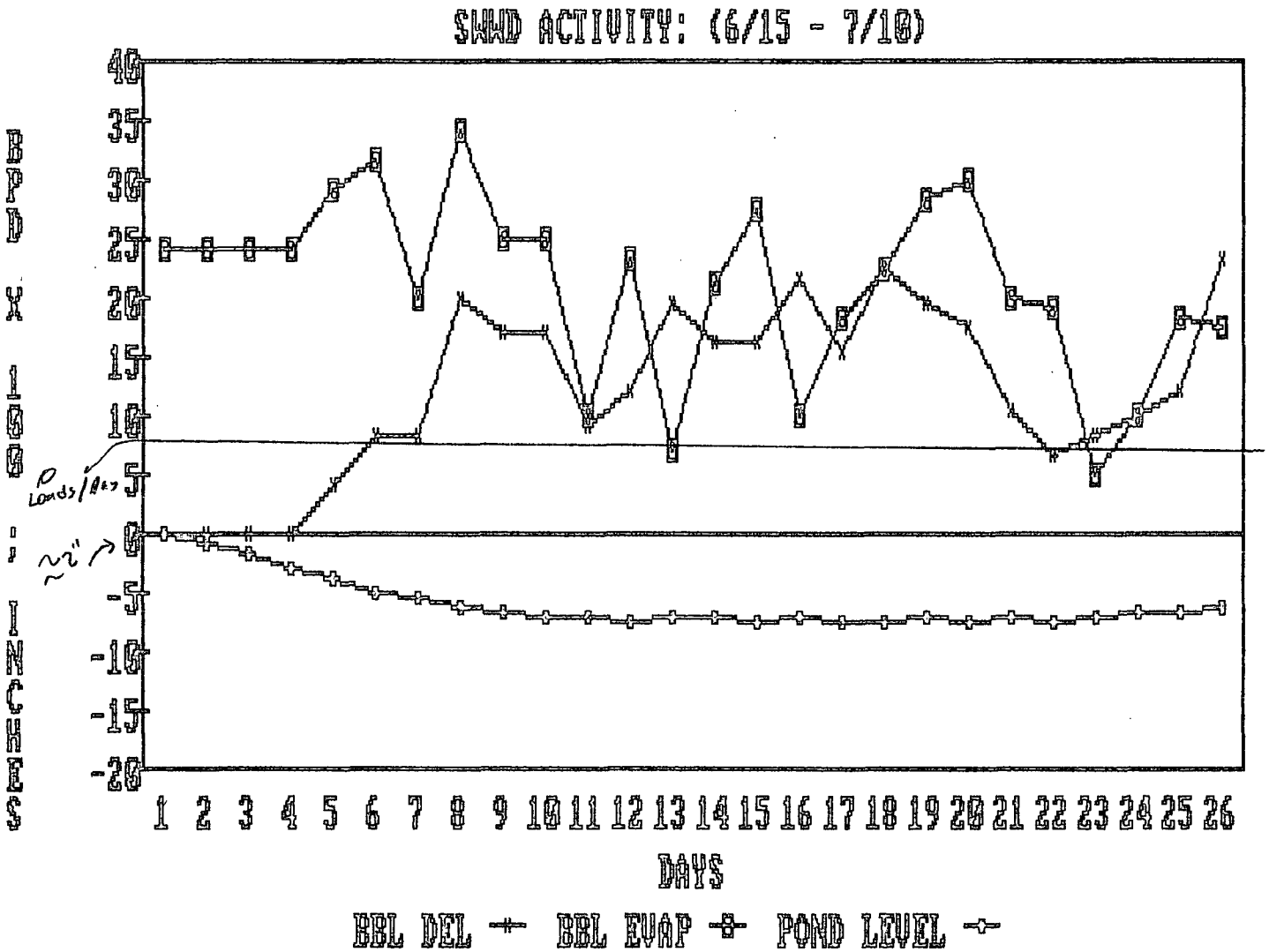
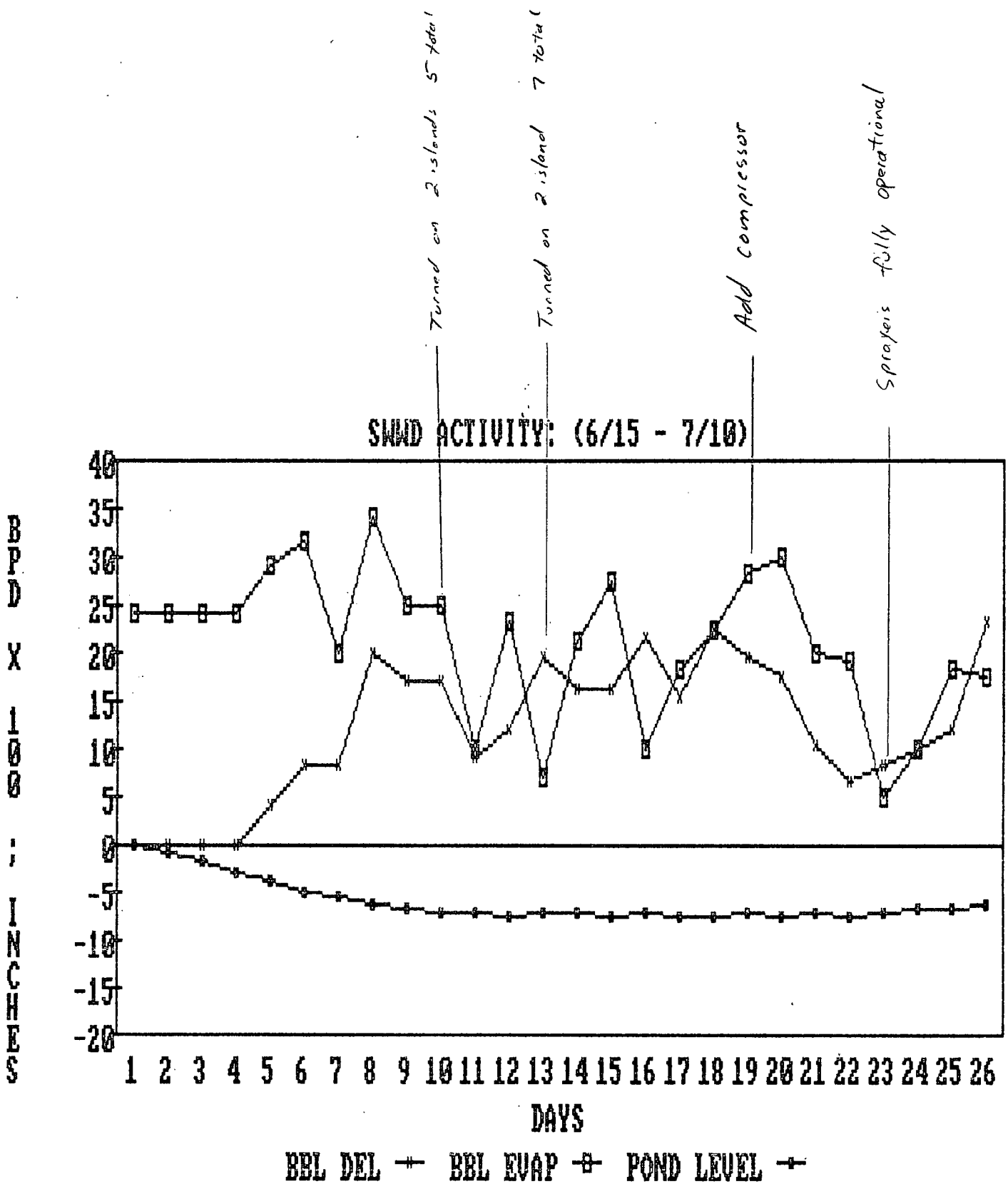
U.S. Route
State Route



12- -6 3/4" taken ~~3400~~ 1600 bbl

13 - -7 1/2 evap 3400

16 - -9 1/2


Turned on 2 islands 5 total
Turned on 2 island 7 total
Add compressor
Sprayers fully operational
SWMD ACTIVITY: (6/15 - 7/10)
BPD X 100 : INCHES
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35
30
25
20
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10
5
0
-5
-10
-15
-20
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DAYS
BBL DEL
BBL EVAP
POND LEVEL

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

CERTIFIED MAIL RECEIPT #P 988 786 235

September 18, 1992

Mr. Robert C. Frank, Vice-President
Southwest Water Disposal
P. O. Box 308
Farmington, NM 87499

RE: Prompt and prudent removal of oil and/or oil-water emulsions from your water disposal pit

Dear Mr. Frank:

Verbal requests for Southwest Water Disposal to remove oil or oil/water emulsions from the surface of the disposal pit located in N-32-30N-09W San Juan County, New Mexico have not received prompt and prudent responses from SWWD personnel. Prudent and prompt means immediately during daylight hours and during the next daylight hours for any requests for compliance issued after dark. It may be necessary to hire equipment specifically to remove oil from the pit. Oil on the SWWD pit violates Oil Conservation Division Rule 711-A-09 and Rule 03-A. Continuing lack of prompt and prudent response may result in closure of the facility, fines and ultimately cancellation of SWWD"s permit to operate. If we are having communication problems please come into the office and discuss the difficulties.

Yours truly,

Denny G. Foust
Environmental Geologist

XC: OCD-Environmental Bureau
Environmental File
DGF File

Process Equipment & Service Company, Inc.

5680 U.S. HIGHWAY 64 • 87401 / P.O. BOX 929 • 87499
FARMINGTON, NEW MEXICO
PHONE: (505) 327-2222 • FAX: (505) 327-7550

May 13, 1992

State of New Mexico
Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Attn: Mr. Denny Foust

Dear Mr. Foust,

With regard to our conversation of May 13, 1992, I am supplying the following information.

Process Equipment and Service Company, Inc. utilizes a steam cleaning operation in our repair facilities. The only vessels that we repair come from the oilfield and consist of dehydrators, separators and tanks. The steam cleaning process is as follows: Lee Acres tap water is run through a steam cleaner, into a collection pit, then into a separation tank that separates any oils or solids from the water.

We affirm that no hazardous wastes, solvents or soap of any kind is used in this operation. The waste water will be transported by C & J Trucking in Farmington, New Mexico to Southwest Water Disposal in Farmington, New Mexico.

ACKNOWLEDGEMENT:

The above referenced conditions are true and correct.

Ronald J. Opfer
Process Equipment and Service Company, Inc.

RJO/km

cc: Southwest Water Disposal

Oil and Gas
Production Equipment

U.S. Enertek, Inc.
4901 East Main Street
Farmington, NM 87402

505/326-1151
FAX: 505/325-0317

April 6, 1992

State of New Mexico
Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Attn: Denny Foust

Dear Mr. Foust:

With regard to our conversation of April 6, 1992 concerning the contents of the collection sump from U.S. Enertek, Inc., 4901 E. Main Street, Farmington, NM:

U.S. Enertek, Inc. affirms that no solvents or soap of any kind are used in our steam operations that result in steam run-off entering the collection sump. The collection sump water contains only city tap water, ancillary crude oil, and common separator/dehydrator wastes.

The water will be transported by Dawn Trucking in Farmington, NM and will be transported to Southwest Water Disposal in Farmington, NM.

ACKNOWLEDGMENT:

The above referenced conditions are true and correct.

Roberta F. Allen

ROBERTA F. ALLEN
U.S. ENERTEK, INC.
CORPORATE SECRETARY

xc: Southwest Water Disposal
File copy

ra

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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

March 22, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-245

RECEIVED
MAR 26 1991
OIL CON. DIV.
DIST. 3

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RE: Irrigation Pilot Project

Dear Mr. Frank:

The Oil Conservation Division (OCD) has received your request, dated March 12, 1991, to irrigate a test agriculture plot of not more than five acres with the treated water discharged from the previously approved water treatment pilot project.

Based on the information continued in your request, you are authorized to implement the test agriculture project with the following conditions:

1. All conditions contained in the January 31, 1991 approval for the produced water treatment pilot project remain in effect.

2. No water with a TDS in excess of 700 mg/l will be used for irrigation.

3. Analysis of the treated water will be conducted prior to spraying on the test plot. Analysis will be for the constitutents contained in your January 10, 1991 letter.

4. Analytical results of the treated water will be supplied to the OCD.

5. Irrigation water will not be allowed to pond or pool on the test plot.

6. Irrigation water will not be allowed to runoff the confines of the test plot.

This authorization is for the growing seasons for the crop chosen. If continued agriculture use of this water is desired after the test phase, an application for modification of your disposal permit must be submitted for review and approval

Please be advised that this authorization does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

If you have any questions, please contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Aztec Office

Fe @ Ch

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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

January 31, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-077

RECEIVED
FEB 27 1991
OIL CON. DIV.
DIST. 3

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RE: Produced Water Treatment Pilot Project
SWWD Disposal Facility
San Juan County, New Mexico

Dear Mr. Frank:

The Oil Conservation Division (OCD) has received your request, dated January 10, 1991, to initiate a small scale pilot project to treat produced water received at your facility to reduce total dissolved solids (TDS) concentrations to 700 mg/l or less. Treatment will be through physical and chemical techniques developed by Environaquatics Co. Treated water will be stored in the small unlined pit at the facility that was previously used for fresh water storage during facility construction.

Based on the information provided in your request you are authorized to implement the pilot project with the following conditions:

1. SWWD will submit MSD sheets for all chemicals to be used in the process.

2. SWWD will submit a process flow diagram for the proposed project.

3. Treated water will be stored in above ground tanks during treatment. All water will be tested prior to transfer to the unlined pond. No water with a TDS in excess of 700 mg/l will be placed in the small pit.

4. In addition to the tests proposed in the request, all fluids discharged to the small pit will be tested initially, and weekly thereafter, for Benzene, Toluene, Ethyl Benzene, and total Xylenes.

This authorization is for a period of four (4) months. On completion of the pilot project an application for modification of your disposal permit must be submitted for continuation of the project.

Please be advised that this authorization does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

If you have any questions, please contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Aztec Office

Q7 3e cy

SW WD

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

Mr. Roger Anderson
New Mexico Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504-2088

Subject: Produced Water Treatment Pilot Project
SWWD Disposal Facility
San Juan County, New Mexico

February 8, 1991

Dear Mr. Anderson,

Pursuant to your letter of January 31, 1991 attached please find the MSD sheets and a "basic" process flow diagram. We collected samples of "coal" water from two of the wells that we will participate in the pilot project and we are currently having them analysed for VOC's.

The results of the tests will be forwarded as they are available. We would like to modify our request slightly, to reflect that for the first phase of the pilot project we will only be treating coal water. As the project progresses we will test the unit on the water in the pond. The coal water is easier to treat.

As we are only going to initially treat coal water we ask that the frequency of testing for "BTX" be modified once a pattern has been established. We will make our recommendation for the modification once the pattern has been established. Until then we will follow your guidelines.

Environaquatics has informed me that they will use the Reverse Osmosis process for the first part of the test. The reject will be placed in the main pond. Once the project reaches it's designed capacity of 500 BWPD of discharge water, there will be approximately 100 BWPD of RO reject sent to the main pit.

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

The main pit is currently 1/4" above the full mark. When the pilot project actually starts (Approx. February 15, 1991) the main pond will be below the full mark. We are currently evaporating approximately 450 BWPD. At this evaporation rate the water level in the pond will be below the full mark prior to the start up date of the pilot project. This evaporation rate will allow SWWD to stay ahead of the volume of RO reject. In any case, we will not allow the pond to fill above the full mark during the test period.

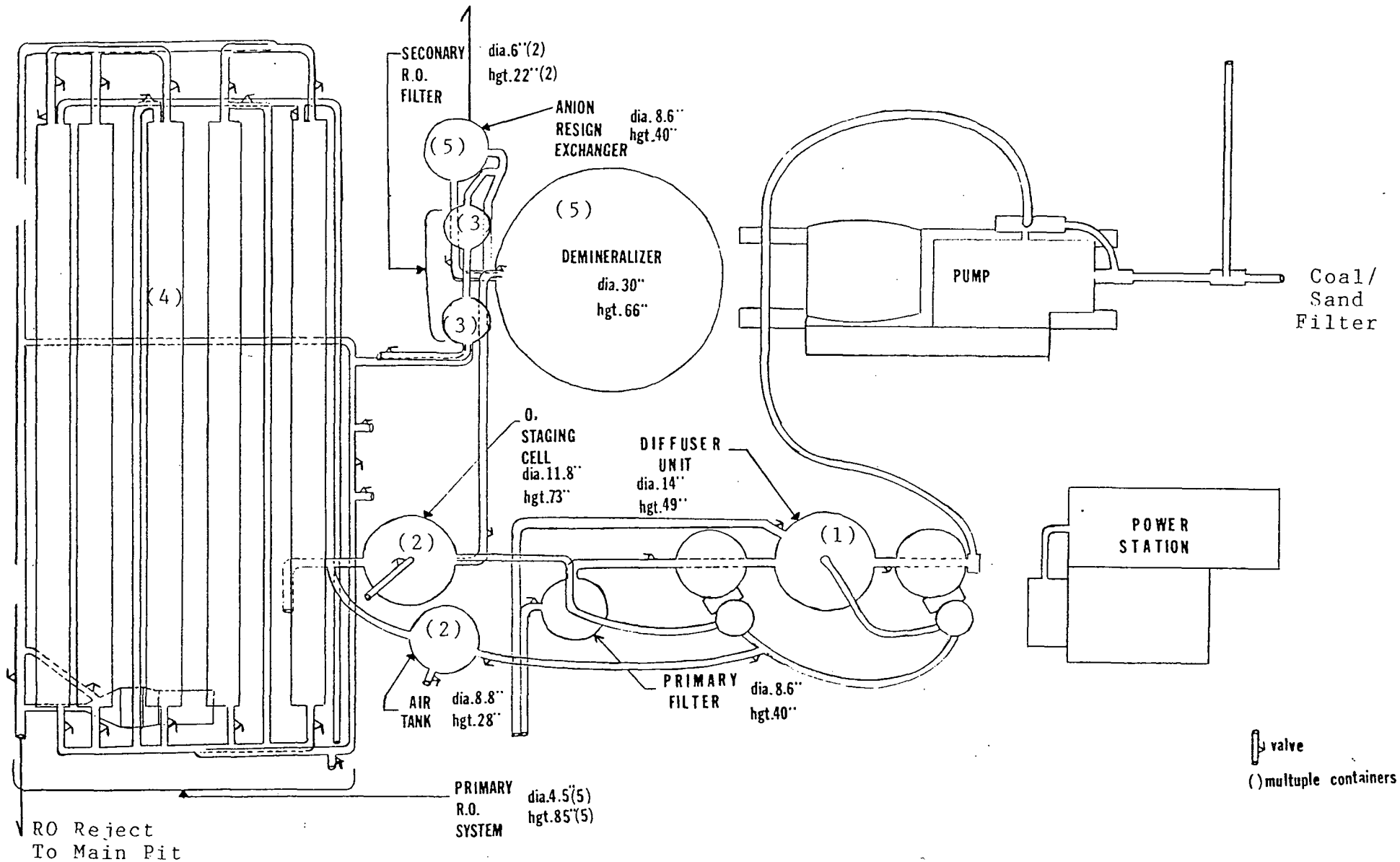
If you have any questions please contact me at your convenience. Thank you for your prompt response to our request for implementing the pilot project. It is greatly appreciated.

Very truly yours,

Robert C. Frank

Robert C. Frank
Vice President

1) Diffuser- Precipitate
2) Air stripper- CO_2, H_2, VOC
3) Primary RO Filter
4) RO unit
5) Cation/Ion Exchanger



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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

January 31, 1991

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-077

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RE: Produced Water Treatment Pilot Project
SWWD Disposal Facility
San Juan County, New Mexico

Dear Mr. Frank:

The Oil Conservation Division (OCD) has received your request, dated January 10, 1991, to initiate a small scale pilot project to treat produced water received at your facility to reduce total dissolved solids (TDS) concentrations to 700 mg/l or less. Treatment will be through physical and chemical techniques developed by Environaquatics Co. Treated water will be stored in the small unlined pit at the facility that was previously used for fresh water storage during facility construction.

Based on the information provided in your request you are authorized to implement the pilot project with the following conditions:

1. SWWD will submit MSD sheets for all chemicals to be used in the process.

2. SWWD will submit a process flow diagram for the proposed project.

3. Treated water will be stored in above ground tanks during treatment. All water will be tested prior to transfer to the unlined pond. No water with a TDS in excess of 700 mg/l will be placed in the small pit.

4. In addition to the tests proposed in the request, all fluids discharged to the small pit will be tested initially, and weekly thereafter, for Benzene, Toluene, Ethyl Benzene, and total Xylenes.

This authorization is for a period of four (4) months. On completion of the pilot project an application for modification of your disposal permit must be submitted for continuation of the project.

Please be advised that this authorization does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

If you have any questions, please contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA/sl

cc: OCD Aztec Office

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

New Mexico Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504-2088
Attn: Roger Anderson

January 10, 1991

Subject: Administrative Approval
Produced Water Treatment; Pilot Project
Sw/4 Section 32-T30N-R9W
San Juan County, New Mexico

Dear Mr. Anderson,

Southwest Water Disposal requests administrative approval to implement a produced water treatment pilot project at our existing disposal facility. The purpose of the pilot project is to demonstrate , on a small scale, that the produced water in our pond can be economically treated and put to a beneficial use, such as for farming purposes. During the pilot project we must have another outlet for the excess water. We would like to recycle the water back to Industry. The pilot project is requested for a period not to exceed four (4) months, ending on or about April 15, 1991.

We have contracted with the ENVIRONAQUATICS Co. to perform the work. We will utilize a process they have developed to treat the water. The process involves filtering - precipitation - oxidation - floculation - ion exchange > discharge. If necessary, a Reverse Osmosis (RO) process will be utilized as a last result. The project will process approximately 500 BWPD once it reaches capacity.

We are trying to avoid the RO, as it is our intention to treat 100% of the water and to ultimately recycle everything, including the precipitate and floculant. To this end, we request permission to collect up to 500 lbs of both the precipitate and floculant for testing. Throughout the remainder of the pilot project it is our intention to dump the precipitate and floculant back into the main pond.

The produced water will be cleaned by the above mentioned process down to a TDS of 700 mg/l or less. The discharged produced water will be monitored, at the discharge point, for quality control and then temporarily stored in a frac tank. We would like to store the water in the small pit that was dug (E-NE of the facility office) to store fresh water during the initial construction period. The water will be transferred to the small pit by pump and rented irrigation pipe. The water will then be either sold or if necessary given away to the Oil Industry for drilling and or completion procedures.

The test that will be conducted on a Daily basis will be as follows:

1. Total Dissolved Solids, ASTM. #180
2. ph
3. Conducivity & Temperature
4. COD (Chemical Oxygen Demand)

In as much as the water will be tested, and therefore clean entering into the frac tank we would like to request that, for the pilot project, we be allowed to utilize the small pit as it currently exists, ie... unlined. The pit was built of in-situ clay, however the construction was not monitored. If the frac tank should happen to be contaminated such that it does not meet the 700 mg/l parameters, that water will be returned to the main pit for recycling of the process.

If you should have any question regarding the process, please address them to Gary Lee at ENVIRONAQUATICS. His phone number is 325-3103. If there are any operational or permitting questions involving the site please contact me.

As I mentioned we will only be treating produced water and for the pilot project we will not be farming with the water. It is our intention to ultimately expand the process and implement farming, pending the outcome of the pilot project.

The small pit has a holding capacity of appproximately 1400 bbls. With this in mind we must find an outlet for the excess water during the pilot project. As mentioned earlier we would like to either sell the water to Industry, in an attempt to recoup some of our costs. If we can not sell the water we would like to give it away to Industry. In any case, we do not want to become involved in any water rights issues with the State Engineers Office. Your guidance in this matter would be greatly appreciated.

If I may be of any further assistance, please advise. The project will commence shortly after approval.

Very truly yours,

Robert C. Frank

Robert C. Frank
Vice President

cc: Gary Lee; ENVIRONAQUATICS
Dave Swezey; SWWD

@ cfy-7

ZC

OIL CONSERVATION DIVISION
RECEIVED

'90 AUG 7 AM 9 05

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

Carl L. Slingerland
STATE ENGINEER

August 3, 1990

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

Mr. David B. Swezey
Southwest Water Disposal
Post Office Box 10734
Farmington, New Mexico 87499

CERTIFIED RETURN
RECEIPT REQUESTED

Re: File No. 4305

Dear Mr. Swezey:

On July 31, 1990, Mr. John Garcia of the State Engineer staff inspected Blanco Evaporation Pond. He advises that there is inadequate freeboard at the pond and that the approved embankment has been raised approximately 2 feet above the design elevation. I am further advised that the pond water level was about 1/2 foot above the authorized design water level corresponding to a depth of 13.5 feet.

Your attention is invited to Item 2 of my September 12, 1988, letter to you which states in part "Any modification of the approved plans and specifications or design changes must be approved in writing by the State Engineer prior to undertaking such modifications." The construction of additional embankment and storage of water in excess of the approved 13.5 foot depth results in violation of your permit. Plans and specifications for construction of the raised embankment at Blanco Pond must be prepared by a registered professional engineer in New Mexico and shall be submitted to the State Engineer by August 17, 1990, for State Engineer review and approval.

It is hereby ordered, that forthwith, pursuant to Section 72-5-11 (NMSA 1978) (copy attached) that no additional water shall be pumped into Blanco Evaporation Pond until such time as the water depth recedes to maximum design depth of 13.5 feet. The water level in the Blanco Pond shall not exceed design elevation 13.5 until such time as plans and specifications to allow a higher water level have been prepared by a registered professional engineer in New Mexico and those plans and specifications have been approved by the State Engineer.

Please let me know if further discussion is necessary.

Sincerely,

Carl L. Slingerland
State Engineer

By
Eluid L. Martinez
Chief
Technical Division

ELM:CEM:dg

cc: David Boyer, OCD
George Madrid, Western Technologies
Art Kittell, Mayor, City of Bloomfield
Erlinda Miller

Don Lopez

Larry Ferus

STATE OF NEW MEXICO

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

July 26, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-299

RECEIVED
JUL 30 1990
OIL CON. DIV.
DIST. 3

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RE: Request to Re-Open
Blanco Disposal Facility

Dear Mr. Frank:

The Oil Conservation Division (OCD) has received your request, dated July 23, 1990, to re-open your Blanco disposal facility to accept produced waters that are free of floating hydrocarbons.

Based on the certification of a registered professional land surveyor that the pond has 2.57 feet of freeboard, your request to re-open is hereby approved. You may accept fluids for disposal in the pond up to the previously approved one and one-half foot freeboard level.

This approval is contingent on OCD's receipt and acceptance of the Western Technology Technical Report certifying the remedial maintenance work performed on the pond dikes.

If you have any questions, please contact Roger Anderson, at (505) 827-5884.

Sincerely,

William J. LeMay
Director

cc: OCD Aztec Office
EID - Farmington

SE Co

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

July 23, 1990

GARREY CARRUTHERS
GOVERNOR

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

CERTIFIED MAIL
RETURN RECEIPT NO. P918-402-333

RECEIVED
JUL 24 1990
OIL CON. DIV.
DIST. 3

Mr. Robert C. Frank,
Vice President
Southwest Water Disposal
P.O. Box 308
Farmington, NM 87499

Re: POND MAINTENANCE
BLANCO DISPOSAL FACILITY

Dear Mr. Frank:

The Oil Conservation Division (OCD) has received your request dated July 19, 1990, to perform remedial maintenance on the pond dike by leveling the top of the dike to the original permitted elevation. Your proposal is approved with the following conditions:

1. All added compacted clays will be keyed into the compacted clay of the original berm.

2. A registered engineer will supervise the compaction of additional clays and certify to the OCD that the new portions of the berm have a proctor density equal to or less than the existing berm. He is also required to certify the bond between the original berm and the newly added portions.

3. The top of the berm will be sloped away from the pond to prevent rain water runoff into the pond and alleviate the need for a rain diversion berm.

4. Produced water from the pond will be used for compaction of the clays.

Please be advised that approval of this proposal does not relieve you of liability should your operation result in the actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

Verbal approval to begin construction pursuant to the above conditions was granted on July 20, 1990.

If you have any questions, please call me at (505) 827-5884.

Sincerely,

Roger C Anderson

ROGER C. ANDERSON,
Environmental Engineer

RA/dp

cc: Aztec Office

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

July 19, 1990

New Mexico Oil Conservation Division
310 Old Santa Fe Trail Room 206
Santa Fe, New Mexico 87503

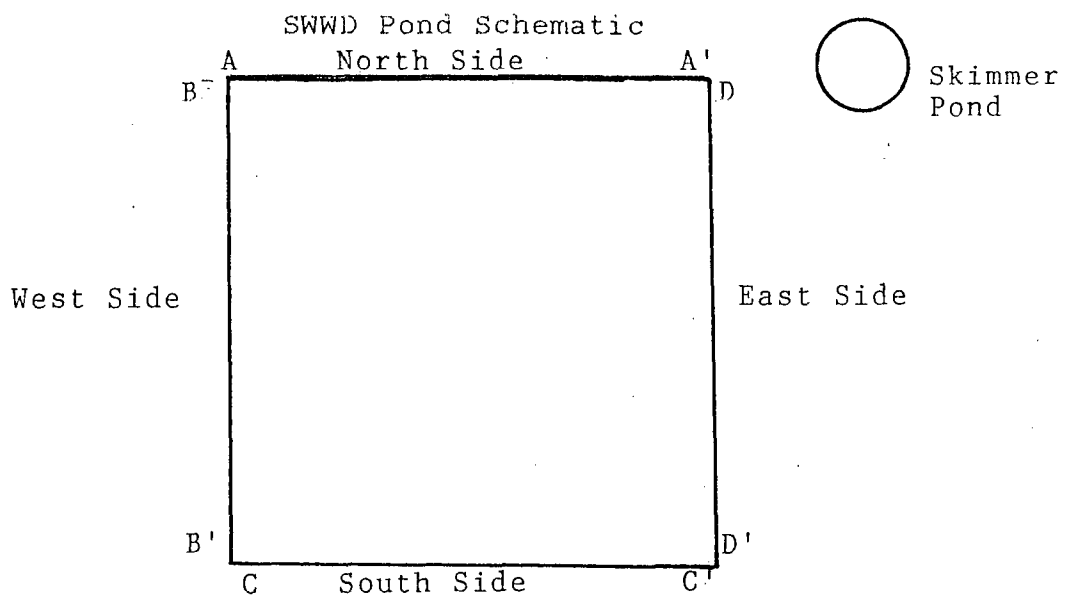
Attn: Roger Anderson

Subject: Leveling of Evaporation Pond

Dear Mr. Anderson,

Attached please find profiles of each side of the pond. The profiles were drafted by me from information supplied to me by High Country Surveys. Each profile is labeled with the labels corresponding to the map I've sketched below.

The highest part of the existing dike is in the NW corner. That elevation was arbitrarily chosen as 100.00. Shots were then taken of the current water level (98.02 as of 7/18/90) and of the dike elevations around the pond. The shots were taken approximately every 100'. The data was then plotted and is represented on the attached graphs.



SW WD

Through a conversation and subsequent recommendation by George Madrid, Western Technologies we request permission to raise the dike to the 100.00 elevation as follows:

1. Remove the existing rain diversion berm by pushing off to the outside of the dike.

2. Scarify the dike to a depth of 6".

3. Process clay at borrow area to optimum moisture.

4. Transport processed clay to fill area and compact with sheeps foot. Compaction to be monitored by Western Technologies.

5. Final grade to be set by surveyors.

6. Permanent maximum water level marker already set at 98.5.

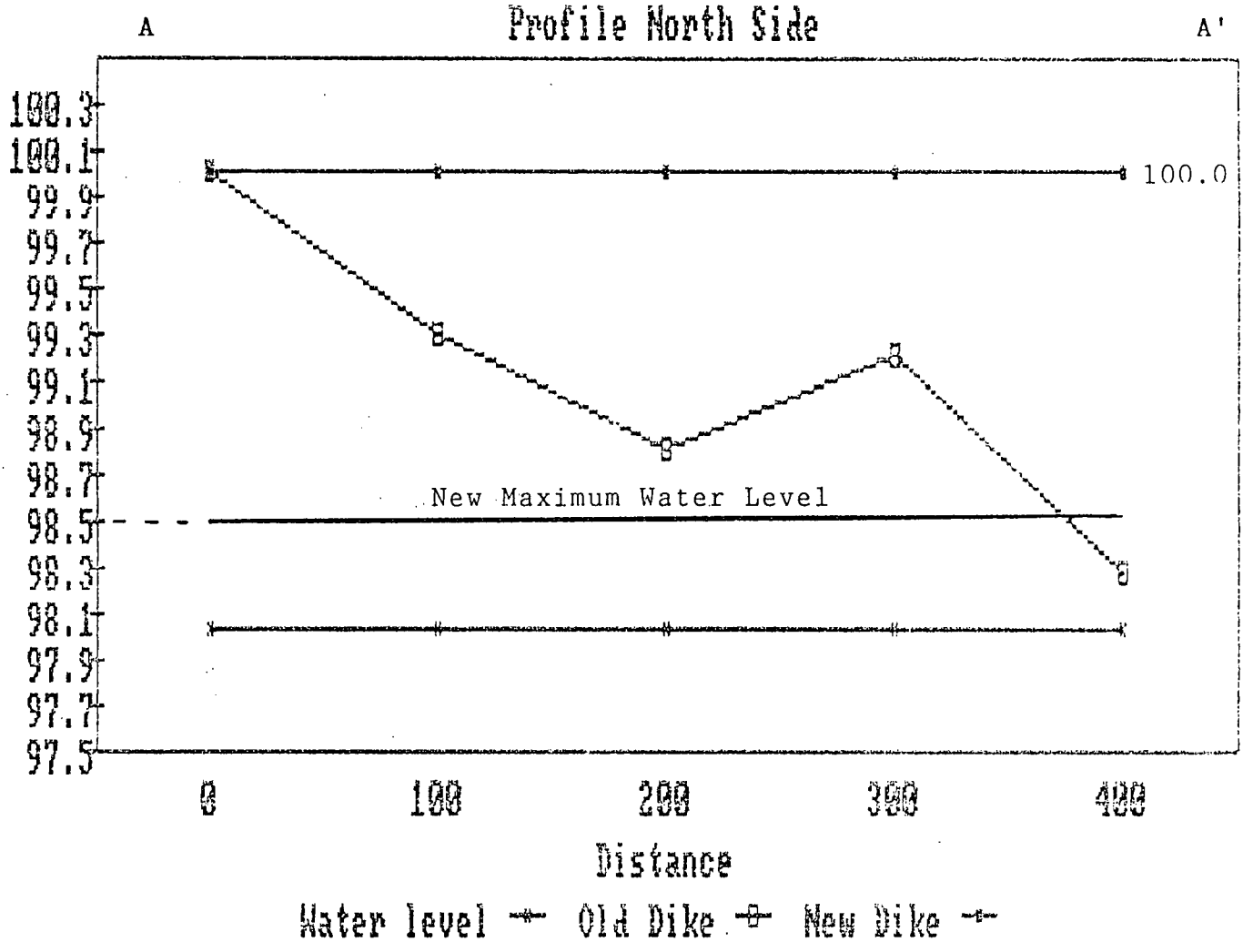
7. Roll back rain diversion berm.

The process outlined above is the recommendation of Western Technologies and is adopted by Southwest Water Disposal. If you are in accordance with the procedure and our request please advise at your earliest convenience as the work will commence immediately after your approval. As always if I may be of any further assistance, please advise.

Very truly yours,

Robert C. Frank

Robert C. Frank
Vice President


A
Profile North Side
A'
100.3
100.1
99.9
99.7
99.5
99.3
99.1
98.9
98.7
98.5
98.3
98.1
97.9
97.7
97.5
100.0
New Maximum Water Level
0
100
200
300
400
Distance
Water level
Old Dike
New Dike

Elevation

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

July 16, 1990

New Mexico Oil Conservation Division
310 Old Santa Fe Trail, Room 206
Santa Fe, NM 87503

Attn: Roger Anderson

Subject: Administrative Approval
Enlargement Commercial Evaporation Facility
SE 1/4, SW 1/4, Sec. 32-T30N-R9W
San Juan County, New Mexico

Dear Mr. Anderson:

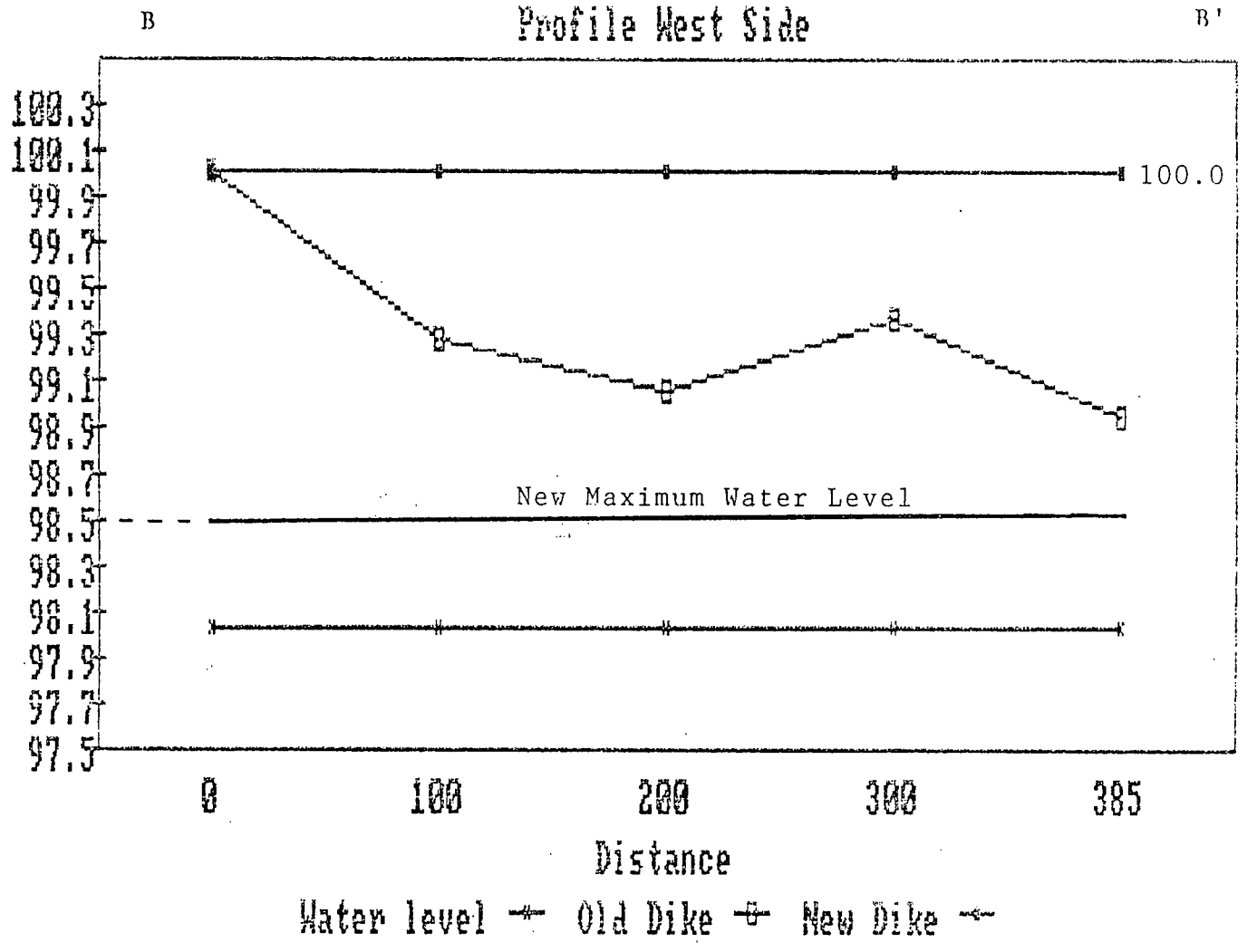
Southwest Water Disposal (SWWD) requests administrative approval to enlarge our existing facility by adding a triple lined commercial evaporation pond. The revised August 1988 Guidelines for Permit Application, Design and Construction of Waste Storage/Disposal Pits will be used, as presented and as applicable, for the format of this application.

I. General Information

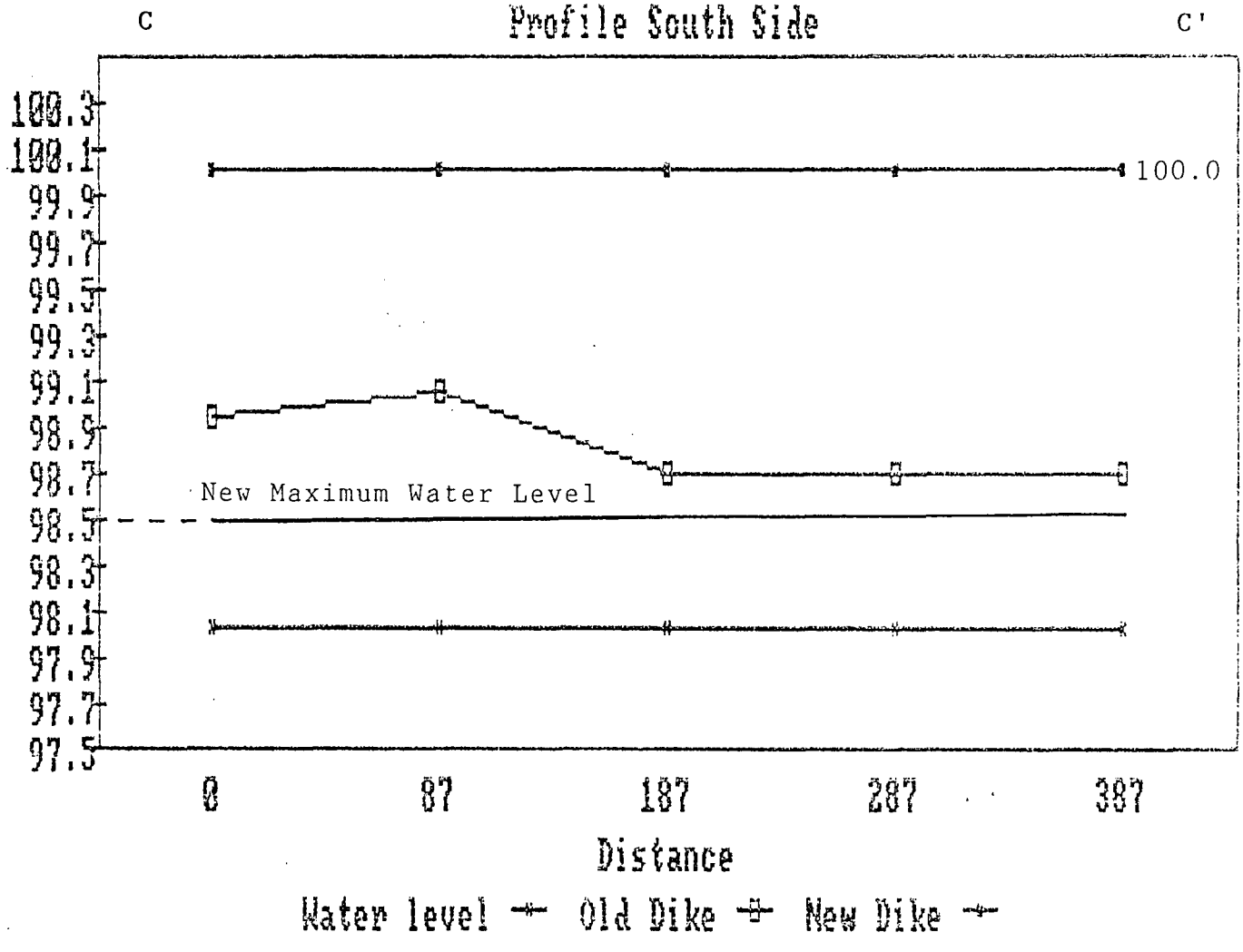
A. Owner: Southwest Water Disposal
P. O. Box 308
Farmington, NM 87499
(505) 325-8729

B. Contact Person: Robert C. Frank
P. O. Box 308
Farmington, NM 87401
(505) 325-8729

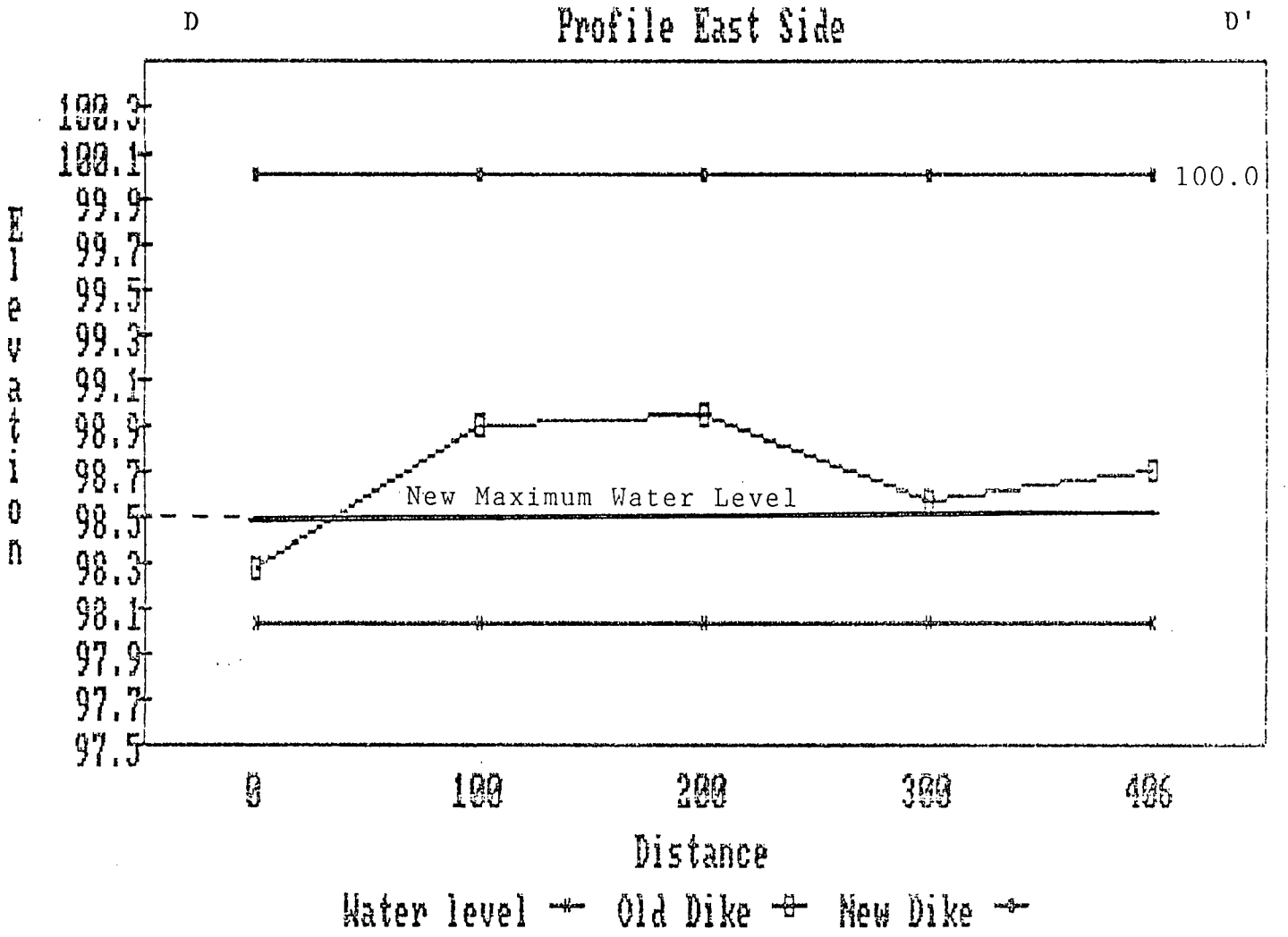
C. Location: SE 1/4, SW 1/4, Sec. 32-T30N-R9W. Attached please find a topo map and site plan for the proposed facility. The access will be gained from County Road 4599. The location of the unloading/holding tank is indicated on the site plan and will be the same as the old pond. The facility has been surveyed and actual plats are being drafted at this time. They will be forwarded as soon as possible.


B
Profile West Side
B'
100.3
100.1
99.9
99.7
99.5
99.3
99.1
98.9
98.7
98.5
98.3
98.1
97.9
97.7
97.5
100.0
New Maximum Water Level
0
100
200
300
385
Distance
Water level
Old Dike
New Dike

Elevation


C
Profile South Side
C'
100.3
100.1
99.9
99.7
99.5
99.3
99.1
98.9
98.7
98.5
98.3
98.1
97.9
97.7
97.5
100.0
New Maximum Water Level
0
87
187
287
387
Distance
Water level
Old Dike
New Dike

Elevation


D
Profile East Side
D'
100.0
New Maximum Water Level
Elevation
100.3
100.1
99.9
99.7
99.5
99.3
99.1
98.9
98.7
98.5
98.3
98.1
97.9
97.7
97.5
0
100
200
300
406
Distance
Water level
Old Dike
New Dike

D. The major purpose of this facility is for the disposal, by evaporation, of produced water from the San Juan Basin. The water will be trucked into location and unloaded into above ground tanks with the oil collected and stored for future treating and sale, and the water drained off the bottom into the original main pond and then pumped into the new pond. The pond will be equipped with an aeration system and a spray system. The aeration system will be operable from start-up, and the sprayers will be utilized as market conditions dictate.

E. Three copies of the application have been provided.

F. I hereby certify that I am familiar with the information contained in and submitted with this application and that such information is true, accurate, and complete to the best of my knowledge and belief.

Robert C. Frank
Signature

July 16, 1990
Date

Robert C. Frank

Vice President

II. General Description

A. Proposed Operations

1. The facility will be built pursuant to the attached diagram. The complete facility will be equipped with one unloading tank and four oil storage tanks. At this time the only fluids to be accepted are produced water from oil and gas operations.

2. A. Surface Impoundments:
Produced water will be the only effluent stored. Below please find a tabulation of the pond specifications.

	Area (sq.ft.)	Volume *(bbls)	Depth (ft.)	Slope (Inside & Outside)
New Pond	157,500	410,000	18.5	3:1

*approximate

SW WD

The subsurface consists of a sandy loam material. The subgrade will be prepared, placed in 6" to 9" lifts and compacted to 95% of proctor and +4% of optimum moisture. The actual values will be determined by an independent laboratory testing firm.

The liner company to be used at this time is Palco Linings, Inc. After the subgrade is installed, a 1' layer of compacted clay having an approximate permeability of 9.7 x 10 -9 cm/sec will be installed and compacted. The secondary liner will be made of 30 mil or greater PVC. The primary liner will be made of 30 mil or greater CPER or equivalent. The primary liner is resistant to sunlight, hydrocarbons, fungus, algae, bacteria and salt water. The secondary liner is resistant to hydrocarbons, fungus, algae, bacteria and salt water. Please see attached liner specifications and chemical compatibility data sheets. Each liner will be laid in the pond by rolls and then seamed together. The leak detection system will consist of 1" perforated lateral draining to a central 2" line, which will drain to a sump outside of the berm.

The freeboard will be 1.5', leaving the pond a maximum height of 18.5' of water. There will be no runoff or runon as the pond will be self-contained and the drainage diverted away from the pond. The pond is on a gentle slope with no major drainage problem. The arroyo will be rerouted so as not to interfere with the pond.

B. There are no drying beds anticipated at this time. If the need arises, the OCD will be notified prior to any such work being implemented.

C. Nothing anticipated.

3. A. Ancillary Equipment
The pond will be equipped with a commercial aeration system. The aeration system will be placed in the bottom of the pond and will consist of three rock diffusers. The location of the diffusers will be equidistant (as close as practical) from each other. They will be anchored to the pond bottom by bricks and/or sand tubes. Please see attached specifications. A second aeration system will be placed in the pond bottom as well. This system will consist of a network of perforated 1" and 2" PVC pipe. The system will be able to circulate either a liquid or gaseous medium.

Previous certification of these systems by a registered engineer in waste management has been given to the OCD in testimony presented at a hearing for another commercial disposal facility. The information is available as a matter of public record however a copy of the correspondence is attached for convenience.

The commercial aeration system will be purchased from Acquatic Eco-systems, Inc. The specification sheet for the diffusers and air blower are attached. The data for each is indicated by a check mark. There will be a total of eighteen diffusers with a capacity of 0.10 cfm or 1.8 cfm total. The blower will have a capacity of 3.6 cfm at a hydrostatic pressure of 5.0 psi. The efficiency of the blower will be reduced by altitude 20%; however, the rate will still be 2.88 cfm. The 2.8 cfm will be more than adequate to supply air to the diffusers.

The other system will consist of 2" PVC trunk line and 1" laterals. The laterals will be perforated in gangs on 20' centers with eight 1/32" holes per gang (please see attached). The PVC pipe will be anchored to the bottom with sand tubes. This system will be capable of pumping gaseous and/or liquid mediums. The liquid will be pumped by splitting the sprayer pump and introducing the liquid through a Venturi type hopper. The air will be supplied by a Masport pump (130 cfm @ 6 psi hydrostatic backpressure). There will be a total of 288 holes per side. There will be two sides with the sides alternating during operations. Each hole will allow 0.42 cfm to pass through it under 15 psi. pressure. The Masport delivers 20 psi. continuous. If necessary, the Masport pump can be replaced by a compressor.

The pond will be equipped with sprayers. The sprayers will be located on floating islands and along the banks. Please see attached diagram. The islands will be tethered to the sides of the pond. The islands will consist of at least one multi-head nozzle and eight jets. The exact configuration is not known at this time. The sprayers will be supplied by a centrifugal pump with a capacity of at least 1500-3200 gpm. based upon backpressure. The power supply for the pump will be either a natural gas or electric motor.

The spray system will only be operated during those periods when an attendant is on duty. During periods of high winds or gusts, the system will be turned off. During periods of slight to moderate winds, the pump will be restricted or the spray diverted to the upwind portions of the pond so as to maintain the salt or spray inside the pond.

At this time no other ancillary equipment is anticipated.

B. Spill/Leak Prevention and Procedure

1. Inasmuch as the pond will be triple lined, and with the pond sloped to a sump, there will be no other containment or cleanup apparatus necessary. If a leak is detected, the leak detection system will be pumped into the new pond or old pond and the leaking pond will be lowered until such depth as the water depth is below the leak. The liner will be repaired and the pond placed back into operation.

   If both ponds are full at the time the leak is detected, we will cease accepting water, the pond will be evaporated with the sprayers until the water depth is below the leak. The leak detection sump will be recycled to the main pond. Water will be hauled to other commercial disposal facilities.

   The OCD will be notified within one working day of any leaks.

2. The leak detection system will be the only means in which leaks are to be detected. The sumps will be inspected at least weekly. If leaks are detected, the procedure outlined above in B.1 will be followed.

Monitor wells 1, 2, 3 and 4 along the West side of the old pond will be plugged with cement and cut off below grade with the excavation operations of the new pond. Based upon the underlying geology, we do not believe that any leaks from the old pond would migrate upgradient. If there are leaks detected in the old pond, a monitor well will be drilled in the common dike on the SW corner of the old pond and a sample taken to determine if the water has migrated upgradient. If the water has migrated upgradient, then additional monitor wells will be drilled if necessary.

C. Closure Plan

1. The holding capacity of the pond, as mentioned previously, is approximately 410,000 bbls or 2,302,077 cu.ft. Salt generation calculations, based upon Stanley Zygmunt's work with the the New Mexico Energy Research Development Institute, indicates that the salt generated by passive evaporation will be 12,813 cu.ft. per year. The calculations were based on Sodium Chloride (NaCl) as the principle precipitate and an average TDS of 15000 ppm. At that rate, it will take approximately 180 years for the pond to fill with salt. With the spray system in operation, we expect up to a 10 fold increase in evaporation. That will decrease the life expectancy of the pond to 18 years, which is consistent with the project life of the pond.

   It is our intention to sell or bury the precipitated salts onsite in the plastic liner. The pond will then be covered with a PVC liner or clay to prevent any vertical leaching of salts by rain water. An analysis of the precipitated salts will be performed to ascertain if the salts may be buried onsite under the regulations existing at that time. If there are any concentrations of chemical compounds which are not permitted to be buried onsite, they will be extracted at that time. The extraction method will be determined at that time when the compounds are known.

SW WD

Through a conversation with Roger Kolv with Waste Management of Four Corners, operator of the San Juan County Landfill, the current regulations would allow the sludge/salt to be disposed of at the County Landfill if the sludge/salt had less than 30% liquid content and fell within the parameters of their permit.

The sludges/salts will be analyzed at the time of abandonment to determine if they will be acceptable at the onsite facility or the County Landfill. If the waste is not acceptable at the onsite facility or County Landfill, those unacceptable portions of the sludge/salt will be disposed of at the nearest hazardous waste disposal facility.

We do not anticipate, under the current regulations, that there will be any sludges/salts or chemical compounds evolve that will prohibit the disposal of these wastes at the onsite facility or the County Landfill. These are "solid wastes" going in and they will be solid wastes as they exit. The repeated evaporation of water may give concentrations of certain heavy metals that may have to be extracted; however, they cannot be qualified nor quantified at this time. Only at the time of abandonment will they become evident. At that time a determination will be made as to their final disposal.

During the drying period the leak detection sump will be monitored weekly and the pond will remain closed to any further dumping. If vandalism becomes a problem, the Sheriff's Department will be notified of the vandalism, breaking and entering of the facility. H_2S emission are very unlikely as the pond will be open to the atmosphere, completely in an aerobic state. However, the pond will be monitored weekly for H_2S emissions.

SOUTHWEST WATER DISPOSAL
P.O. Box 308
Farmington, NM 87499
505-325-8729

III. Site Characteristics

A. Hydrologic Features.

1. The nearest running water is the San Juan River, which is approximately 1-1/2 miles Southeast. The residences in the area are connected to the Blanco Water Users Association. There are no recorded water wells within 1 mile. The nearest recorded well is in the SE/4, SW/4, Sec. 6-T29N-R9W. The OCD collected water samples from wells in the area when the original pond was constructed. The analyses of said wells, if any, was not reported to SWWD. If any analysis was performed it will be in the OCD files.

2. Please see attached water analyses of monitor well 13, depth 74'.

3. The flow direction of ground water most likely to be affected by any leak is Southeasterly, based upon topography.

4. Please see 2 above.

B. Geologic Description of Pit Site

1. The pit site rests on a paleoerosional surface as evidenced by prior drilling of monitor well associated with the original pond. Several shallow test holes will be drilled to determine the soil mechanics. The soil type ranges from a clay/sand mixture to silt/sand mixture.

2. The name of the most shallow aquifer is unknown. The depth is approximately 73'.

3. Sandy Silt

4. Not available

SW WD

C. Flood Protection

1. The flooding potential at the pit site, with respect to major precipitation and/or runoff, is minimal at best as the pond will be maintained with at least a 1-1/2' freeboard. The facility is located at the base of a small rock cliff. Drainage off of the cliff will be routed to the West. An arroyo will be rerouted around the pond so as to not interfere with the pond. In any event, drainage away from the pond will be accomplished by diversion ditches cut on the uphill side of the facility.

2. The pond is well out of the 100 year flood plain.

3. The outside of the site will be checked after each major rainfall. The OCD will be notified of any significant erosion.

IV. Inasmuch as this pond is to be synthetically lined, no further information is necessary at this time.

V. General Construction Requirements

A. This pond will be out of any water courses.

B. 1. The natural evaporative capacity for the pond is approximately 307 BWPD. This is based on a net evaporation rate of 48"/year and 157,500 sq.ft. surface area. As mentioned earlier, sprayers will be installed as market conditions warrant. The anticipated enhanced evaporation rate is 3100 BWPD. The holding capacity of this pond is approximately 410,000 barrels of water. Being that this is a commercial operation with a relatively infinite market, the pond cannot be sized to known produced water volumes. As mentioned earlier, market conditions will dictate the operations of this facility.

2. Wave calculations for a pond with this small of a fetch is difficult. Interpolation of a graph supplied by the US Army Corp. of Engineers indicates that an unidirectional 40 mph sustained wind along the maximum fetch of 570' will generate a 6" wave. Sustained winds of this magnitude in this area are not common. The likelihood of a sustained wind along the maximum fetch is remote at best. The wave run-up is estimated at 3". The total wave action on the dike is 9". The average yearly rainfall for this area is 12". With the rainfall occurring over the entire year, we feel that an 18" freeboard is adequate.

3. Both the inside and outside slopes of the pond will be 3:1.

4. The traveling surface of the levee top will be twelve feet.

5. The pond will be equipped with a commercial aeration system consisting of three rock diffusers and an air blower. The second system will be a network of perforated PVC pipe laid in the bottom of the pond. The second system will be able to circulate either a liquid or gaseous medium. See II-3-A above.

C. Synthetically Lined Evaporation Pits

1. Materials
   a. The liners will be flexible
   b. Not applicable
   c. The liners will be at least 30 mils thick
   d. Both the primary liner and secondary liner will be resistant to hydrocarbons, salts, acidic and alkaline solutions, fungus, bacteria, and rot. In addition, the primary liner will be resistant to ultraviolet light. See II-2-A above.
   e. The pond will be equipped with a leak detection system.

2. a. The OCD office in Aztec will be notified at least 24 hours in advance of the primary liner installation.
   b. A drainage and sump leak detection system will be used.
   c. Not applicable

d. The leak detection system will consist of 1" perforated PVC laterals draining at a 2% grade to a 2" PVC mainline. The 2" PVC main line will drain at 1% to a corrosion proof sump which will be located outside of the berm. No point in the pond bottom will be greater than 20' from a detection line.

3. a. The bed of the pit and the inside and outside grades of the levee will be smooth, compacted to 95% of proctor, free of holes, rocks, stumps, clods, or other debris which could rupture the liner. The onsite characteristics should allow for the liners to be placed directly on the finished berm.
   b. An anchor trench will be excavated 6" wide, 12" deep, and set back from the slope break by 9". Sand tubes will be used to anchor the liner down.

4. a. The OCD office in Aztec will be notified at least 24 hours prior to secondary liner installation.
   b. The liner will be installed and the joints sealed pursuant to the manufacturer's specifications.
   c. The liner will rest smoothly on the pit bed and inner face of the levey and shall be of sufficient size to extend to the bottom of the anchor trench and back out a minimum of two inches from the trench on the side furthest from the pond. Folds in the liner will be located in the pit corners to compensate for temperature fluctuations.
   d. Two gas vents will be installed on each side of the pond. The vents will be completed through the clay liner. The liner will be resting on a sandy loam material which should be adequate for venting purposes. A sieve test will be run on the material to be certain no more than 5% of the material will pass through a 200 sieve. The vents will be located approximately 9" down from the berm break.
   e. Used casing or equivalent will be used to anchor the liner in the liner trench.
   f. Not applicable
   g. All sand or gravel placement will be completed so as to not jeopardize the liner on which it is placed.

h. All siphons and discharge lines will be directed away from the liner.

E. Clay Lined Pits
Not applicable

F. Skimmer Ponds/Tanks

1. Skimmer tanks will be used. Water will be drained from the bottom of the tanks into the pond.

2. As mentioned above, water will be drained from the tanks and subsequently the oil will be stored in the tank(s) for future treatment and sale to either Gary Refining, Thriftway Refining or Giant Refining.
   a. Not applicable.
   b. The skimmer tank will be corrosion resistant and open to the air on at least one side for leak detection purposes.
   c. Not applicable.
   d. The skimmer tank will be kept clean of appreciable oil.
   e. Not applicable

G. Fences and Signs

1. A fence will be constructed around the entire facility. The fence will be of sufficient strength to keep livestock out of the facility. The fence will be closed and locked at all times when the pond is not manned.

2. A sign at least 12" by 24" with 2" lettering will be placed at the facility entrance and will identify the owner/operator, location and emergency phone numbers.

H. 1. The leak detection sumps will be checked for leaks weekly.

2. The outside of the berms will be maintained so as to prevent erosion. After each rain the pond perimeters will be walked to inspect for washouts.

I. Contingency Plan

A. Immediately cease receiving fluids for disposal in the affected pond.

B. Drain the affected pond into the unaffected pond, if available. If the other pond is unavailable, commence evaporation and immediately haul water to one of the two currently available commercial disposal facilities listed below:

Basin Disposal: Sec. 3-T29N-R11W
Hicks Disposal: Sec. 15-T28N-R13W

The leak detection sump will be continually pumped and recycled into the affected pond until such time as the sump dries out. This will indicate the level in the pond at which the leak is located.

C. The location and cause of the leak will be determined and repaired. The liner will be tested for multiple leaks upon fill-up. If a second or additional leaks are found, the pond will be evaporated below the level and repaired as above. The subsequent repairs will be completed within 30 days of detection.

D. The fluids in the leak detection system will be removed and placed back in the pond, to be evaporated. The OCD will be notified within 24 hours of the detection of fluids in the sump. At that time the remedial actions, as outlined above, will be implemented.

E. Dissolved sulfides in the pond will be analysed monthly and the results will be kept at the office.

F. Air concentrations of H2S will be measured in tenths of a part per million and the ph will be measured twice daily around the perimeter of the pond. The prevailing winds are Southwesterly; therefore, the sampling points will be located on the northeast sides of the pond and tanks. The H2S concentrations and ph will be measured in the morning and afternoon.

G. If air concentrations of H2S reaches 1 ppm at the fence line for two consecutive monitor readings, or if dissolved sulfides in the pit water reaches 15 ppm, the OCD will be notified immediately; hourly H2S monitoring (24 hours per day, 7 days per week) will commence at the designated locations; pond water will be analysed for dissolved sulfides daily; and the below referenced treatment plan will be implemented so as to reduce dissolved sulfides in the pond and eliminate H2S emissions.

The pond will be treated on a regular basis with bleach (chlorine). The amount of bleach to be added is anticipated at 200 pounds per month. The bleach is 65% active. There is no schedule at this time as the amounts may vary as conditions as yet undetermined warrant. As mentioned previously, the pond will be maintained in an aerobic state by the two aeration systems and the sprayer system. Previous certification of these systems by a registered engineer in waste management has been given to the OCD in testimony presented at a hearing for another commercial disposal facility. The information is available as a matter of public record however a copy of the correspondence is attached for convenience. The bleach will be added as a matter or prudence. SWWD will maintain a granular bleach on location with a minimum of 200 pounds. If necessary liquid bleach will be introduced through the aeration system. However, bleach is unstable at these concentrations (12-16%) and, therefore, has a short shelf life. With the short shelf life (approximately 30 days), we cannot store any liquid chlorine. Material Safety Data Sheets (MSDS) will be located on the tanks containing the bleach. The employees will be properly trained in handling the bleach and proper safety equipment such as rubber gloves and safety goggles will be located near the tanks when handling the bleach.

Weskem, Inc. will be the supplier on the granular bleach. They have 1000# in stock at all times. Chemical Distributors, Inc., Farmington will be the supplier of the liquid bleach. They maintain 500 gallons of liquid bleach at their local yard. In addition, CDI has buil a bleach plant in El Paso, Texas. The plant is scheduled to be on line August 30, 1990. Final approval from the El Paso City Council is scheduled for hearing August 7, 1990. The plant will have the capacity of 25,000 gallons of 12-16% bleach per day. They've indicated that they will maintain their own transportation equipment. They would be able to deliver 5000 gallons of 12-16% active bleach daily to the facility if necessary. They would require 24 hour notice.

If for some reason there should be H2S in the water, the active chlorine will react with the H2S as follows:

$$H2S + 4Cl2 + 4H2O > H2SO4 + 8HCl$$

The net effect is that the bleach will combine with the H2S and water to produce H2SO4 (sulfuric acid) and HCl (hydrochloric acid). This will in turn lower the ph of the pond, which further prohibits the growth of bacteria.

Inasmuch as the pond is equipped with three aeration systems, we do not believe there will be an H2S problem. Furthermore, each load will be tested for H2S and treated prior to entering the pond. Once the water enters the pond, the H2S producing bacteria will be unable to survive in the aerobic pond.

Treatment Plan

1. Determine chlorine demand for sulfides, H2S and organics.

2. Initiate treatment with 65% active granular bleach on hand. Introduce liquid bleach from CDI yard.

3. Deliver and treat pond with sufficient bleach to reduce dissolved sulfides and prohibit the emission of H2S. The rate or treatment will be a maximum of 5000 gallons of 12-16% active bleach daily.

P 468 905 942

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NO INSURANCE COVERAGE PROVIDED
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(See Reverse)

Sent to Arthur J Lez

Street and No. 5204 Cedarwood

P.O., State and ZIP Code Farmington NM 87401

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P 468 905 922

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Sent to Ruby Tomlenson

Street and No. 984 Elizabeth St.

P.O., State and ZIP Code Eugene, OR 97402

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MAIL

If air concentrations of H2S reach 10 ppm at the fenceline, SWWD will notify the County Fire Marshal, County Sheriff's Department, New Mexico State Police, and the OCD. The actions to be taken by SWWD will be as follows.

Action Plan

1. Notify the parties as shown above.

2. Evacuate those persons residing within 1/4 mile of the fence line. Provide temporary housing at the Motel 6, Farmington, or at another motel as approved by SWWD. Each person requiring temporary housing will be provided a per diem for meals not to exceed $20.00. Temporary housing and the meal per diem to be provided as long as the H2S levels remain above 10 ppm at the fence line.

3. Any other actions or requirements imposed by the OCD after review of H2S emissions will be implemented after review of all alternatives and acceptance by SWWD. SWWD believes that protection of the general public is paramount and will take prudent actions to ensure the safety of the general public.

We would like to commence construction operations as soon as possible. If you have any questions or comments please contact me at your earliest convenience. I will expedite the response as the information requested is available.

Very truly yours,

Robert C. Frank
Vice President

SW WD

Notices Sent to the Following Addresses

Ruby Tomlenson
984 Elizabeth St.
Eugene, OR 97402

R. D. Teran
8754 S. 1260 E.
Sandy, UT 84070

Arthur Jaquez
5204 Cedarwood
Farmington, NM 87401

Felipe Jaquez
c/o Steve Jacquez
711 W. 31st St.
Farmington, NM 87401

Marquerite Jaquez
205 Jemez
Aztec, NM 87410

Annie Archuleta
7335 19th St.
Sacramento, CA 95822

Donald Archuleta
3020 Winchester
Rancho Cordova, CA 95670

Salamon Archuleta
571 6th Ave.
Durango, CO 81301

Telesforo V. Archuleta
282 Road 4599
Blanco, NM 87412

Henrietta Hays
4621 E. Caminito
Shingle Springs, CA 95682

Flora Lujan
104 Elder Dr.
Pacheco, CA 94553

Barbara Pfeiffer
12504 Harlow Ave.
Riverside, CA 92503

Viola Springal
1437 Balhon Dr.
Concord, CA 94521

Bureau of Land Management
1235 LaPlata Highway
Farmington, NM 87401

Ester Gonzales, et al
2167 US Hwy. 64
Bloomfield, NM 87413

P 468 905 946

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Sent to Annie Archuleta

Street and No. 7335 19th St.

P State and ZIP Code orra ento 95822

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Sent to Marquerite Jaquez

Street and No. 205 Jemez

P.O., State and ZIP Code Azlec, NM 87410

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Sent to Felipe Jaquez c/o Steve Jacquez

Street and No. 711 W. 31st St.

P.O., State and ZIP Code Farmington, NM 87401

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Sent to Telesforo Abul
Street and No. 282 Road 4599
P.O. State and ZIP Code anco NM 87412

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Sent to Salamon Archuleta
Street and No. 571 6th Ave.
P.O. State and ZIP Code Durango, CO 81301

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P 468 905 947

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(See Reverse)

Sent to Donald Archuleta
Street and No. 3020 Winchester
P.O. State and ZIP Code Rancho Cordova, CA 95670

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P 468 905 952

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(See Reverse)

Sent to Barbara Pfeiffer

Street and No. 2504 Harlow Ave.

P.O., State and ZIP Code Riverside CA 92503

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P 468 905 951

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Sent to Flora Lujan

Street and No. 104 Elder Drive

P.O., State and ZIP Code Pacheco, CA 94553

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P 468 905 950

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(See Reverse)

Sent to Henrietta Hays

Street and No. 4621 E. Caminito

P.O., State and ZIP Code Shingle Springs, CA 95682

Postage	S
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	S
Postmark or Date	

PS Form 3800, June 1985

*U.S.G.P.O. 1989-234-555

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CERTIFIED

P 468 905 950

MAIL

P 468 905 925

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
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(See Reverse)

Sent to Ester Gonzales, et al	
Street and No. 2167 US Hwy. 64	
P.O. State and ZIP Code Bloomfield, NM 87413	
Postage	$
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Restricted Delivery Fee	
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PS Form 3800, June 1985

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P 468 905 925

MAIL

P 468 905 924

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Sent to Bureau of Land Mgmt.	
Street and No. 1235 LaPlata Hwy.	
P.O. State and ZIP Code Farmington, NM 87401	
Postage	$
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Special Delivery Fee	
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PS Form 3800, June 1985

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P 468 905 924

MAIL

P 468 905 923

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Viola Springal	
Street and No. 1437 Balhon Dr.	
P.O. State and ZIP Code Concord, CA 94521	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985

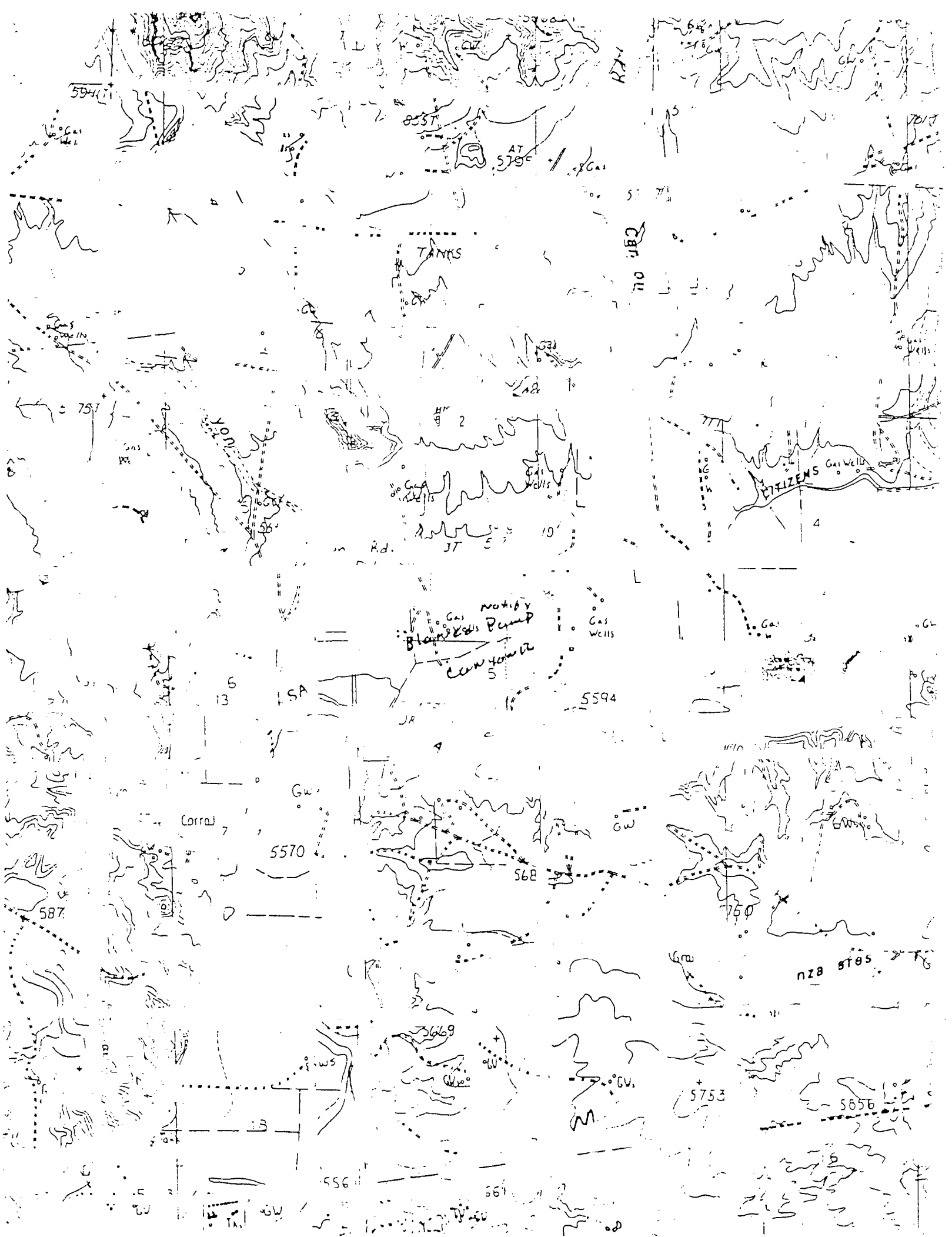
☆U.S.G.P.O. 1989-234-555

Fold at line over top of envelope to the right of the return address.

CERTIFIED

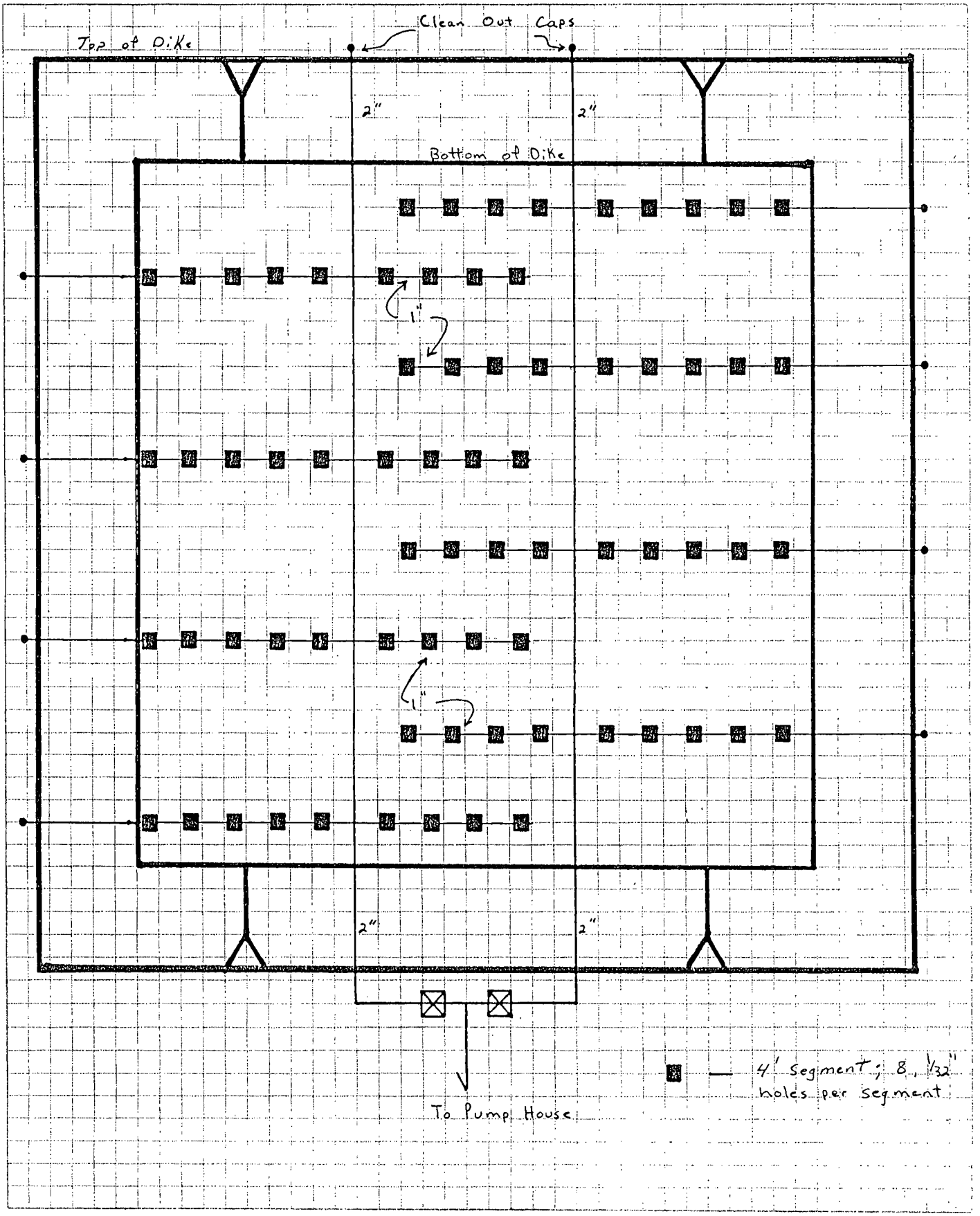
P 468 905 923

MAIL


TANKS
Gas Wells
CITIZENS
Gas Wells
Corral
5570
5594
5753
5656

Southwest Water Disposal

Aearation System Schematic



SUNCO TRUCKING AND WATER DISPOSAL
OXYGEN AND MIXING CALCULATIONS

Most criteria developed for oxygen uptake, relates to the treatment of municipal and domestic waste waters. These types of waste have been evaluated for many years and estimates of oxygen demand can be made for design purposes. The same theories and formulas should apply to the treatment of water produced from coal seams. However, very little is known about the oxygen demand of such waters. Generally, the power required to supply oxygen to a system is much less than the power required to provide adequate mixing. For many years waste water treatment design was based on maintaining a dissolved oxygen level of 2.0 mgl within the treatment basin. It was assumed at this level of dissolved oxygen, the oxygen demand would be supplied and there would be sufficient energy available to the waters to maintain adequate mixing. For purposes of this design and calculation we have assumed that the actual oxygen demand will be substantially less than that required in a domestic or municipal waste water treatment facility. The following calculations compute the Hp required to maintain a dissolved oxygen content of 0.5 mgl:

ASSUME THAT DISSOLVED O_2 RESIDUAL SHOULD EQUAL = 0.5 MGL

@ 6.5 mg Requires 27# O_2/Day

#O_2/Feet^3 Air = 0.0175

% Eff per foot of Immersion Depth = 1.0 for Coarse Bubble Diffusers. Use Immersion Depth of 12 feet.

S.O.R. = 1.12 # O_2/hour

$$\text{Air Q required} = \frac{1.12}{(0.0175 \times 0.01 \times 12)}/60 = 533 \text{ cfm}$$

Corrections for Inlet Conditions

Elevation = 6,000 Feet P = 14.696 psia

P_1 = Inlet Pressure Due to Altitude

14.696 - (6,000/2116.2) = 11.86 psia

T = Air Temperature @ Standard Conditions in Degrees R

= 68 + 460 = 528° R

T_1 = Blower Inlet Air Temperature in Degrees R

= 90+ 460 = 550° R

Calculate Flow Rate From PQ = MRT

M = PQ/RT

Where R = Specific Gas Constant = 53.3 x °R for Air

$$M = \frac{14.696 \times 533 \times 144}{53.3 \times 528} = 40 \text{ lb. m/ min.}$$

$$Q_2 = MRT_1/P_1$$

$$Q = \frac{40 \times 53.3 \times 550}{11.86 \times 144} = 687 \text{ I.C.F.M.}$$

Blower Brake Hp @ Average Inlet Conditions

$$BHP = \frac{0.227 \times Q_2 \times [(P_2/P_1)^{0.283} - 1]}{\text{Blower Efficiency}}$$

Use 2 Psi for Line Losses

$P_2 = 11.86 + (.4335 \times 12) + 2 = 19.06$

Assume Blower Efficiency of 0.7

$$BHP = \frac{0.227 \times 687 \times [(\frac{19.06}{11.86})^{0.283} - 1]}{0.7} = 32 \text{ hp}$$

It is our opinion that incoming waters will have a very small oxygen demand. Therefor, mixing to assure complete dispersion of available oxygen, will be critical to the successful operation of the facility.

The operator proposes to enhance evaporation by installing a high pressure spray system. This system will have two intake points at approximate third points in the pond, and will discharge back to the pond through high pressure spray nozzles attached to an island in the center of the pond. The proposal is to provide a pump with the capability of circulating 50,000 barrels per day during a 10 to 12 hour operating period. Based on a 12 hour operating period this would be equivalent to approximately 3,000 gallons per minute. At this rate the operator would have the capability of moving the complete pond in approximately 36 hours. This turnover would also be enhanced by the operation of the air system. In addition, the spray/evaporation system will also add oxygen to the pond. Based on this set of operating conditions, it is our opinion that the operator will be able to maintain the pond in an aerobic condition or will be able to return it to an aerobic condition if so required. These calculations are based upon the assumption that incoming waters will have very little oxygen demand. It is my understanding that the operator will also have chemical injection capabilities and that the operator will maintain close control over the quality of incoming waters. With aeration, recirculation, and chemical injection capabilities, the operator should have sufficient redundancy to maintain the ponds n odor free condition.

RICHARD P. CHENEY REGISTERED PROF. SURVEYOR

API WATER ANALYSIS REPORT FORM

Laboratory No.

Company	Sample No.	Date Sampled
Southwest Water Disposal		5-10-89

Field	Legal Description	County or Parish	State

Lease or Unit	Well	Depth	Formation	Water, B/D
	Monitor Well 13			

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	4940	214.6
Calcium, Ca	472	23.6
Magnesium, Mg	108	8.8
Barium, Ba		

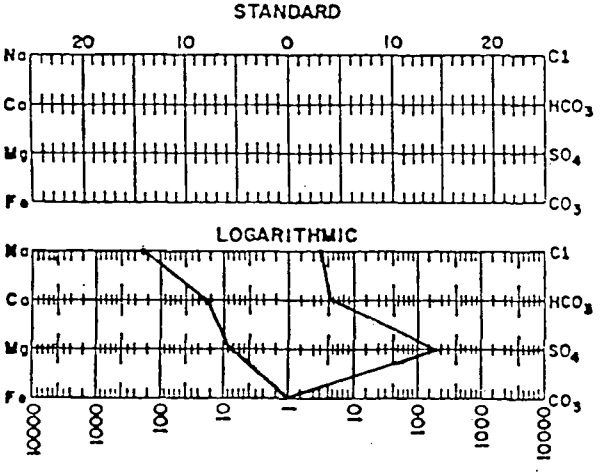
ANIONS		
Chloride, Cl	142	4.0
Sulfate, So_4	11400	237.5
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	334	5.5

Total Dissolved Solids (calc.)	17400
Iron, Fe (total)	
Sulfide, as H_2S	

OTHER PROPERTIES

pH	6.94
Specific Gravity, 60/60 F.	1.026
Resistivity (ohm-meters) 77° F.	.85

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS:

Clay Terry or Jon Little

Date Received	Preserved	Date Analyzed	Analyzed By
5-24-89		5-24-89	JL

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

July 12, 1990

GARREY CARRUTHERS
GOVERNOR

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

CERTIFIED MAIL
RETURN RECEIPT P 918 402 331

Mr. Robert C. Frank
Southwest Water Disposal
P.O. Box 308
Farmington, NM 87499

Re: **DISPOSAL POND OPERATIONS**

Dear Mr. Frank:

On June 7, 1990, Mr. Roger Anderson and Mr. William Olson of my staff inspected your facility and notified you that pond capacity exceeded the approved freeboard level of 18 inches, that the earthen skimmer pit contained excessive oil and that the fluid level in the skimmer pit was such that sections of the overhead protective bird netting were submerged. At that time you indicated your willingness to take corrective action to eliminate the problems.

On July 9, 1990, Mr. Charles Gholson of our Aztec Office visited the site and reported freeboard at less than 8 inches but no H_2S odors. This was followed by a visit on July 11th by Mr. Ernie Busch of our office and Frank Chavez, Aztec District Supervisor, that found the water level to be at the top of the compacted berm at the south end of the pond. Some additional soil that had been placed on top of the berm in low areas was observed to be saturated, but the cause of saturation (high fluid levels, spray drift or rainfall) was not determined.

Additionally, Mr. Chavez reported that the skimmer pit had several inches to a foot of oil and the netting continued to be submerged. Use of the earthen skimmer pit to contain oil is a violation of OCD rules and is contrary to your commitment that primary separation will occur in steel pits with oil gravity-fed to storage tanks and only water drained to the secondary clay-lined skimmer pit (SWWD letter dated 3/28/88).

Due to excessive fluids in the pit that may threaten the integrity of the structure in the event of high wind or heavy rainfall and due to the presence of oil in the skimmer pit in violation of **OCD Rule 310** and your approved operation plan, you are directed to take the following actions:

1. Effective midnight **July 12, 1990**, cease receiving fluids for disposal.

2. Using the spray evaporation system, immediately begin lowering the

level in the pond to attain the required minimum 18 inches of freeboard.

3. Immediately begin removal of oil in the skimmer pit to non-earthen pits or tankage.

4. Install a device (such as a staff gauge) to accurately measure water levels in the pond. After installation, the gauge shall be surveyed so that freeboard can be determined. The comparison level shall be the lowest elevation of the compacted clay berm. A report of the survey, including the location of the low point of the berm, shall be provided to OCD.

The prohibition on receiving fluids will remain in effect until such time as OCD verifies that a freeboard measuring device has been installed and surveyed, that a freeboard level of 18 inches has been attained, and that oil has been removed from the skimmer pit.

Before OCD will reauthorize Southwest Water Disposal to accept water for disposal containing floating or emulsified hydrocarbons, the current earthen skimmer pit system must be modified to prevent oil contact with soils. Plans and specifications for such modifications must be submitted to OCD for approval prior to construction. This requirement will not apply to water that does not contain hydrocarbons, such as coal gas water.

After Southwest Water Disposal is authorized to resume operations, failure to maintain required freeboard will subject you to enforcement action which may include civil penalties and/or a hearing to show cause why the permit should not be revoked.

If you have any questions, please contact **Mr. David Boyer or Mr. Roger Anderson of my staff at 827-5800.**

Sincerely,

William J. LeMay by David Catanach

WILLIAM J. LeMay,
Director

WJL\DB\dp

cc: David Boyer
Robert Stovall
OCD Aztec Office

STATE OF NEW MEXICO

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

May 17, 1989

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-535

RECEIVED
MAY 19 1989
OIL CON. DIV.
DIST. 3

Mr. Robert C. Frank, Vice-President
SOUTHWEST WATER DISPOSAL
P. O. Box 308
Farmington, New Mexico 87499

RE: Disposal of Fuel Tank Washwater

Dear Mr. Frank:

The request made in your letter of April 28, 1989, to be allowed to receive wastewater from washing of fuel tanks scheduled for removal at Northwest Pipeline's Gobenador Camp is hereby approved. The water proposed to be used is fresh river waster; any solvents used in the washing will invalidate the approval.

If you have any questions, please contact me at the above address or by phone at 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Aztec Office
Bob Seitzinger, NW Pipeline

STATE OF NEW MEXICO

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

May 4, 1989

RECEIVED
MAY 05 1989
OIL CON. DIV.
DIST. 3

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-543

Mr. Robert C. Frank, Vice-President
SOUTHWEST WATER DISPOSAL
P. O. Box 308
Farmington, New Mexico 87499

RE: Disposal of US Enertek Steamer Sump Water

Dear Mr. Frank:

The request made in your letter of April 19, 1989 to be allowed to receive steamer sump wastewater from US Enertek for disposal is hereby approved. The water is from cleaning of used oil production equipment prior to servicing and could be expected to contain constituents similar to those in the pond. By letter Enertek is affirming that no solvents are used in the cleaning. This approval is only for the wastewater described above and does not include disposal of any other liquid or solid wastes from the Enertek facility.

If you have any questions, please contact me at the above address or by phone at 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Aztec Office
EID - Farmington
US Enertek

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

February 14, 1989.

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

The Honorable Jeff Bingaman
United States Senator
United States Senate
Washington, D.C. 20510

Dear Senator Bingaman:

I have received your letter of February 2, 1989 pertaining to the San Juan County residents opposition to the construction and operation of an oil and gas produced water evaporation pond in their county.

The facility is the second licensed surface disposal operation for oil field waste in the Farmington area. The clay-lined waste disposal pond was permitted by the Oil Conservation Division (OCD) in May, 1988, after 12 months of review under our program to eliminate disposal of oil and gas waste in areas where ground water could be contaminated. Under OCD rules, permitting review is limited to proposed measures for ground water protection and general operating procedures to ensure that the facility is operated is a safe manner and receives only oil and gas waste fluids.

The OCD has fully reviewed SWWD's application and investigated their proposed site, geological and hydrological findings, operation procedures and construction proposal and feel the facility will pose no threat to ground water or its surroundings. The State Engineer Office has evaluated the construction proposal and has approved the design under its criteria for construction of dams. Additionally, subsurface monitoring and contingency plans will provide further assurance of safe operation. The OCD does not have the jurisdiction or legislative authority to administer rules or regulations dealing with zoning matters. This authority is vested in the county and local governments for land use planning.

If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

EGB/RA/sl

JEFF BINGAMAN
NEW MEXICO

United States Senate

WASHINGTON, DC 20510

February 2, 1989

Mr. Dave Bozer
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Bozer:

I have received the enclosed letter from the residents of San Juan County who oppose the oil field waste pit proposed by Southwest Water Disposal concerning the pit's environmental pollution.

I would appreciate you looking into this matter and reporting back to me on your findings. Thank you for your assistance in this matter.

Sincerely,

Jeff Bingaman
United States Senator

JB/drl
Enclosure

We the undersigned re[illegible]dents of San Juan County oppo[illegible] the oil field waste pit proposed by Southwest Water Disposal being built near Blanco on the grounds that concerns of environmental pollution are not being satisfied. We propose that this site be moved to an area that is not populated and cannot endanger peoples lives. We also reflect that we are against San Juan County being used as a dump area of such wastes.

RECEIVED
FEB - 9 [illegible]
OIL CONSERVATION DIVISION
SANTA FE

	PRINTED NAME	SIGNATURE	ADDRESS
1454	[illegible] Padilla	Mrs Andy Padilla	613 [illegible] Aztec NM
1626	Frances Leon Quintana	Frances Leon Quintana	1510 [illegible] Aztec
	Miguel Quintana	Miguel Quintana	" " " "
5737/2	[illegible] C. Chavez	Dennis C. Chavez	1890 US Hwy Bloomfield NM 87413
1455	[illegible]	[illegible]	[illegible]
1456	Emma Chavez	Emma Chavez	299 E [illegible] Blvd Aztec
1457	[illegible]		338 Rd [illegible] Aztec
1458	[illegible] Dwyer	[illegible]	650 Rio Grande Aztec
3400/2	[illegible] Solano	[illegible] Solano	266 San Juan Farmington
1459	Stella Montoya	Stella Montoya	1592 [illegible]
1460	[illegible]	[illegible]	[illegible] Farmington
1461	Cleofas Montoya	Cleofas Montoya	508 Pine St Aztec NM 87410
1462	Mary L. Chapman	Mary L. Chapman	114 W [illegible] Aztec
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible] Candelaria	Irene Candelaria	Blanco, NM
	[illegible] Candelaria	Joe F Candelaria	Blanco, NM
	[illegible] Candelaria	[illegible] Candelaria	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	Farmington [illegible] 87401
1463	[illegible] Gonzales	[illegible] Gonzales	[illegible]
1464	Patricia Baca	Patricia Baca	[illegible] Blanco NM
1465	R J Archuleta	R J ARCHULETA	2104 E 22nd ST.
1466	Maria Martinez	Maria Martinez	4103 [illegible] St Farmington
1467	Lucy Archuleta	Lucy Archuleta	330 Rd 4599 Blanco NM
	[illegible] Archuleta	[illegible]	" " 87412
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Oil

We the undersigned [illegible]sidents of San Juan County o[illegible]se the oil field waste pit proposed by Southwest Water Disposal being built near Blanco on the grounds that concerns of environmental pollution are not being satisfied. We propose that this site be moved to an area that is not populated and cannot endanger peoples lives. We also reflect that we are against San Juan County being used as a dump area of such wastes.

	PRINTED NAME	SIGNATURE	ADDRESS
81400	Abraham A. Chavez	Abe A Chavez	905 N. Aztec Blvd.
81401	Flavio D. Chavez	[illegible] D Chavez	603 White Ave Aztec, N.
81402	[illegible] Chavez	Gen Del	Blanco N.M 87412
81403	[illegible]	[illegible]	P.O. Box 1239 Aztec
81404	[illegible]		" " " "
81405	Christina Marquez	Christine Marquez	[illegible] Aztec
81406	[illegible] Marquez		[illegible] C. Marcen
81407	[illegible]	[illegible]	[illegible] McCartney Farm
9	[crossed out]		
10	[crossed out]		
11	[crossed out]		
81408	[illegible]	Marguerite [illegible]	202 [illegible] Ave Aztec
79784	Ella Barela	Ella Barela	308 [illegible]
79790	George Barela	George Barela	308 Gila Rd Az
80618	Rev Owen [illegible]	Rev Owen Gehring	500 N Mesaverde
80663	Clara Martinez	Clara Martinez	740 Hwy 64 Bloom
17	[crossed out]		
18	[crossed out]		
81435	Carol Polanco	Carol Polanco	1612 S [illegible] Az
81436	[illegible]	Emory Minium	Box 1780 Aztec N.M.
81437	[illegible] Aztec N.M.		Box 1780
81438	[illegible]	John Saiz	913 Apache Aztec NM
81439	Arlene Blackwood	Arline Blackwood	#58 [illegible] Farmington
	[crossed out]		
81440	[illegible]	Mary [illegible]	4115 [illegible] Aztec N.M. [illegible]
81441	[illegible] Williams	Veronica Williams	139 [illegible] Aztec N.M.
81442	Beatrice [illegible]	Beatrice [illegible]	[illegible]
81443	[illegible]		510 S [illegible] Aztec N.M.
81444	Maria Emma Chavez	Maria Emma Chavez	1389 [illegible] Hwy 64 Bloomfield

STATE OF NEW MEXICO

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

January 5, 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RE: SWWD Commercial Evaporation Pond
Section 32-T30N-R5W
San Juan County, New Mexico

Dear Mr. Frank:

On December 29, 1988, Mr. David Boyer, OCD Environmental Bureau Chief, met with you in Santa Fe to discuss the results of the latest permeability tests conducted on the clay material used in the liner at the above site. The results showed a 37% increase in hydraulic conductivity of material compacted with fresh water followed by leaching using synthetic produced water of 35,000 mg/l TDS, over the same material compacted and leached using only fresh water.

Since about 75% of the pond was compacted using fresh water, the pond is likely to experience a similar increase in permeability when produced water is added. Therefore, original calculations showing adequate seepage protection are no longer valid and can not be relied upon for estimates of the maximum time for use of the clay lined pond.

Using the more recent permeability information, infiltration calculations have been reworked with the most conservative data (i.e. highest permeability rate, minimum liner thickness). The results show liner saturation occurring between 60 and 257 days (depending on rate of pond rise), movement of the partially-saturated wetting front in the foundation material beneath the liner at a rate of 10.8 feet per year, and vertical migration ceasing after 5.8 years upon reaching the subsurface clay layer at an average depth of 63 feet. Only when downward vertical migration ceases and fluids begin to mound on the clay, will water be detected in the monitor wells.

To prevent fluid mounding and ensure that seepage fluids remain trapped in the partially-saturated (vadose) zone, pond life must be limited to a maximum of 5.8 years from estimated date of liner saturation. Detection of fluids prior to that time would indicate a construction defect or an unexpected increase in permeability. A copy of the calculations and supporting data is attached.

At the December 29, 1988, meeting you made certain commitments on behalf of SWWD and agreed to take action regarding replacement of the clay liner with a synthetic liner. These agreements are detailed below:

1. SWWD will accept no fluids for disposal in the clay lined disposal pond or skimmer pond after March 31, 1995. All existing water will be removed from the ponds by September 1, 1995. If the ponds are to be used after that date, it will be lined with a synthetic liner. (At the time of replacement, synthetic liner installation must conform with OCD guidelines then in effect.)

2. The ponds will be closed or replaced with an approved synthetic liner if OCD or EPA rules are adopted prior to 1995 that prohibit use of clay lined disposal facilities.

3. If fluids are detected in the monitor wells prior to closure of the clay lined ponds, SWWD will stop accepting fluids, implement the fluid contingency plan, and commence emptying and drying the ponds. Drying will be completed within 100 days unless fluid detection occurs in winter wherein drying will be completed as soon as possible but no later than the following summer.

The OCD concurred with these agreements and with this letter formalizes them in writing.

In addition to these agreements, several other technical matters were discussed:

1. If water is present, SWWD is to obtain a water sample for analysis from MW-13 prior to opening so that background levels of water constituents can be measured.

2. Based on MS-13 sample results, the "trigger" TDS level of 1500 mg/l listed in the fluid contingency plan of March 28, 1988, may need to be modified to reflect actual values.

3. The finalized drawings of the as-built plans, monitor well elevations, geologic logs, and isopach map of clay liner thickness are due by January 6. If a delay in providing this information is expected, please notify this office immediately.

OCD has recalculated liner saturation times using various pond depths. These are shown on page 10 of the attached calculations. SWWD is requested to keep track of the rate of filling of the pond and record the date when each one foot increase in fluid level occurs. This will provide a more realistic time for liner saturation than the 60-day value given on page 3 of calculations.

SWWD is reminded that pursuant to the commitment in the July 14, 1987, application all monitor wells must be checked for fluids at least monthly. SWWD must keep a record of the dates and observations, and should have them available for OCD review during site inspections. Checking of the monitor wells for fluids even after liner replacement will be necessary in the event seepage at some location has saturated the subsurface material and is migrating beneath the site.

The OCD believes that these agreements and modifications to the approved SWWD permit are necessary to provide maximum ground water protection from seepage discharges due to your operation. This letter provides written formalization of these and they will be included in the file as part of your permit. If you believe clarification or additional discussion on any of these issues is necessary, please contact Mr. Boyer as soon as possible at the above address and phone.

This letter lifts the restriction on commencement of operation stated in Mr. Boyer's letter of December 16, 1988. SWWD may begin accepting produced water for disposal as soon as a cash or surety bond in the amount of $25,000 has been provided to and accepted by OCD.

Sincerely,

for William J. LeMay, Director

WJL/DGB/sl

Attachment

cc: David Swezey
OCD Aztec Office

STATE OF NEW MEXICO

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

January 5, 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Robert C. Frank
Southwest Water Disposal
P. O. Box 308
Farmington, New Mexico 87499

RECEIVED
JAN 09 1989
OIL CON. DIV.
DIST. 3

RE: SWWD Commercial Evaporation Pond
Section 32-T30N-R5W
San Juan County, New Mexico

Dear Mr. Frank:

On December 29, 1988, Mr. David Boyer, OCD Environmental Bureau Chief, met with you in Santa Fe to discuss the results of the latest permeability tests conducted on the clay material used in the liner at the above site. The results showed a 37% increase in hydraulic conductivity of material compacted with fresh water followed by leaching using synthetic produced water of 35,000 mg/l TDS, over the same material compacted and leached using only fresh water.

Since about 75% of the pond was compacted using fresh water, the pond is likely to experience a similar increase in permeability when produced water is added. Therefore, original calculations showing adequate seepage protection are no longer valid and can not be relied upon for estimates of the maximum time for use of the clay lined pond.

Using the more recent permeability information, infiltration calculations have been reworked with the most conservative data (i.e. highest permeability rate, minimum liner thickness). The results show liner saturation occurring between 60 and 257 days (depending on rate of pond rise), movement of the partially-saturated wetting front in the foundation material beneath the liner at a rate of 10.8 feet per year, and vertical migration ceasing after 5.8 years upon reaching the subsurface clay layer at an average depth of 63 feet. Only when downward vertical migration ceases and fluids begin to mound on the clay, will water be detected in the monitor wells.

To prevent fluid mounding and ensure that seepage fluids remain trapped in the partially-saturated (vadose) zone, pond life must be limited to a maximum of 5.8 years from estimated date of liner saturation. Detection of fluids prior to that time would indicate a construction defect or an unexpected increase in permeability. A copy of the calculations and supporting data is attached.

At the December 29, 1988, meeting you made certain commitments on behalf of SWWD and agreed to take action regarding replacement of the clay liner with a synthetic liner. These agreements are detailed below:

1. SWWD will accept no fluids for disposal in the clay lined disposal pond or skimmer pond after March 31, 1995. All existing water will be removed from the ponds by September 1, 1995. If the ponds are to be used after that date, it will be lined with a synthetic liner. (At the time of replacement, synthetic liner installation must conform with OCD guidelines then in effect.)

2. The ponds will be closed or replaced with an approved synthetic liner if OCD or EPA rules are adopted prior to 1995 that prohibit use of clay lined disposal facilities.

3. If fluids are detected in the monitor wells prior to closure of the clay lined ponds, SWWD will stop accepting fluids, implement the fluid contingency plan, and commence emptying and drying the ponds. Drying will be completed within 100 days unless fluid detection occurs in winter wherein drying will be completed as soon as possible but no later than the following summer.

The OCD concurred with these agreements and with this letter formalizes them in writing.

In addition to these agreements, several other technical matters were discussed:

1. If water is present, SWWD is to obtain a water sample for analysis from MW-13 prior to opening so that background levels of water constituents can be measured.

2. Based on MS-13 sample results, the "trigger" TDS level of 1500 mg/l listed in the fluid contingency plan of March 28, 1988, may need to be modified to reflect actual values.

3. The finalized drawings of the as-built plans, monitor well elevations, geologic logs, and isopach map of clay liner thickness are due by January 6. If a delay in providing this information is expected, please notify this office immediately.

OCD has recalculated liner saturation times using various pond depths. These are shown on page 10 of the attached calculations. SWWD is requested to keep track of the rate of filling of the pond and record the date when each one foot increase in fluid level occurs. This will provide a more realistic time for liner saturation than the 60-day value given on page 3 of calculations.

SWWD is reminded that pursuant to the commitment in the July 14, 1987, application all monitor wells must be checked for fluids at least monthly. SWWD must keep a record of the dates and observations, and should have them available for OCD review during site inspections. Checking of the monitor wells for fluids even after liner replacement will be necessary in the event seepage at some location has saturated the subsurface material and is migrating beneath the site.

The OCD believes that these agreements and modifications to the approved SWWD permit are necessary to provide maximum ground water protection from seepage discharges due to your operation. This letter provides written formalization of these and they will be included in the file as part of your permit. If you believe clarification or additional discussion on any of these issues is necessary, please contact Mr. Boyer as soon as possible at the above address and phone.

This letter lifts the restriction on commencement of operation stated in Mr. Boyer's letter of December 16, 1988. SWWD may begin accepting produced water for disposal as soon as a cash or surety bond in the amount of $25,000 has been provided to and accepted by OCD.

Sincerely,

for William J. LeMay, Director

WJL/DGB/sl

Attachment

cc: David Swezey
OCD Aztec Office

STATE OF NEW MEXICO

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

December 16, 1988

CERTIFIED MAIL
RETURNED RECEIPT REQUESTED

Mr. Robert C. Frank
SOUTHWEST WATER DISPOSAL
P. O. Box 10734
Farmington, New Mexico 87499

RE: SWWD Commercial Evaporation Pond
Section 32-T30N-R5W
San Juan County, New Mexico

Dear Mr. Frank:

This letter is to inform you of the need for SWWD to perform additional laboratory permeability testing on compacted liner material before beginning accepting produced water for disposal in the pond. It also addresses the need for SWWD to complete bonding requirements by the December 30, 1988, date provided for in Oil Conservation Division (OCD) Order No. R-8662.

The results of the recent laboratory permeability tests on compacted liner material show permeabilities in the range of 10^{-8} to 10^{-9} cm/sec. These values, after use in appropriate seepage formulas, show that three feet of clay will ensure adequate ground water protection provided no construction flaws occurred during the placement and compaction of the clay material, and provided further that the addition of produced water does not reduce the compacted liner permeability. The fact that Western Technologies staff provided constant on-site supervision should minimize the possibility of construction flaws.

To prevent increases in permeability SWWD was to use produced water during compaction. This requirement is in the revised OCD guidelines (8/88) and was conveyed to you several times by OCD staff while discussing other items, most recently liner thickness (see 11/15 notes attached). During our phone conversation on December 12, you stated that only about 25% of the pit liner was compacted using produced water and 75% was compacted using river water.

Because river water was used, additional laboratory tests will be needed to estimate the magnitude of any permeability increase due to application of produced water to a clay compacted with fresh

water. Until the test described below has been completed and reviewed by OCD, SWWD is not to place water in the pond.

In a telephone conversation with you on December 14 I outlined the test method. Specifically the test is to be conducted as follows:

1. Using a sample of liner material, mold at 95% compaction with optimum moisture content using fresh river water

2. Measure the constant head permeability rate using a synthetic produced water solution of 2% NaCl, 1% $NaHCO_3$ and 0.5% Na_2SO_4 for a total solution concentration of 35,000 mg/l. Because enough liquid must pass through the specimen to displace remnant fresh pore water, effluent analyses or conductivity measurements should be used to compare total influent and effluent concentrations. Several sequential effluent measurements should be made to determine if concentrations approach steady state. The test should continue until both hydraulic conductivity and effluent concentrations reach or approach steadly state.

3. Repeat the test using fresh river water for compaction and leaching. Again measure hydraulic conductivities and effluent concentrations.

4. When submitting results include dates of tests and all measurements of hydraulic conductivity and effluent concentrations.

At the end of the first test (using synthetic produced water), submit the results to OCD for review. After OCD review, SWWD will be notified whether produced water can be accepted for disposal. If the results show large and significant changes in permeability, additional clay placement using produced water for compaction may be required. Such a requirement will not be imposed until all parties have had an opportunity to discuss in full with OCD the results and implications of the tests.

In addition to ground water protection from the compacted clay liner, low permeability natural materials and a deep protected water table were also assumed based on initial site testing. These conditions were to have provided additional fresh water protection in the event of liner leakage. A network of monitoring wells is to provide early warning in the event of liner seepage, allowing ample time for corrective action. During construction of the pond and boring of the monitor wells, thick zones of sand were detected beneath the pond and ground water was encountered at approximately 70 feet (vs. at 150 feet as expected. See attached letters.)

Because of these facts some additional monitoring may be required. This will be determined after OCD receives and evaluates all of the as-built information including geologic logs, and surveyed locations and elevations of the monitoring wells. During the December 12 phone call, you agreed to provide us with this information by January 6, 1989. In the meantime, you should immediately obtain and sample the ground water from any wells containing fluids so we will have a baseline reading before the pond receives significant volumes of water.

In accordance with Order No. R-8662 (attached), SWWD must comply with the bonding requirements of said order by December 30, 1988. Please contact Ms. Diane Richardson at (505) 827-5806 for forms or other information.

The information we are requesting, and any additional work or monitoring that may be required as a result of our evaluation, are necessary both for protection of the ground water and for SWWD's sizeable investment in the project. If there are any flaws in the construction, early warning will enable quick action to be taken before movement of fluids into a water supply aquifer occurs, which would require costly remedial action and cleanup.

Regarding any confusion over SWWD requested or OCD required changes in construction specifications or procedures after permit approval, such approval or direction was sometimes given verbally and not always followed by confirmation. While this might have been quick and convenient at the time, it has led to problems such as detailed in this letter. For this I take responsibility, and will ensure that approval of future changes will be by letter or, at a minimum, by sending you a certified copy of our phone notes.

If you have any questions, please contact me at 827-5812.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

Enclosures

cc: Dave Swezey
William J. LeMay, OCD Director
OCD Aztec Office

STATE OF NEW MEXICO

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

October 4, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Erlinda Miller
Box 817
Bloomfield, New Mexico 87413

Dear Mrs. Miller:

The Oil Conservation Division (OCD) has received your letter dated September 1, 1988 requesting review of the permit for the construction and operation of a produced water disposal pit issued to Southwest Water Disposal Company (SWWD). The facility is now under construction 2½ miles northeast of Blanco (T30N, R09W, S32.34).

I am enclosing a memorandum dated August 10, 1988 which details the review procedures for commercial surface disposal facilities. The memorandum should answer some of your concerns.

In addition to the information in the memorandum, I wish to emphasize the following points:

1. The facility will receive only produced water. No sludges, tank bottoms, or drilling muds are approved for disposal. Any oil mixed with water will be skimmed from steel tanks and stored in above ground tanks.

2. Construction details of the ponds were approved by engineers from both this office and the State Engineer. Among the areas evaluated were storage capacity, stability, liquid freeboard, seepage, and flood protection. Construction is required to be supervised by a registered professional engineer who will certify the facility was constructed as approved.

3. The facility is located out of and away from main arroyos in the area. One small arroyo will be diverted around the facility to prevent both erosion and possible water seepage to the dry monitor wells.

4. The facility has a clay liner that is being compacted to the same standards as required by EPA for waste disposal facilities. Twelve leak detection wells have been completed into the shallow dry sediments above the shale-sandstone bedrock. These are to be monitored on a regular basis for the presence of any fluids.

5. The facility operator was required to demonstrate financial responsibility by posting a substantial bond prior to receiving approval. This ensures financial resources for site reclamation, and demonstrates his intention to operate the facility in a safe and responsible manner.

Because of both the distance from a surface or usable ground water source, and the engineering and operational requirements placed on the facility, it is extremely improbable that there will be any water quality impacts from the site.

We understand the concern of many residents that this type of facility can be unpleasant to live next to, however, we at the OCD do not have the jurisdiction or legislative authority to hold public hearings or administer rules or regulations dealing with county zoning or land use planning. Until these measures are in place, there is no authority to control where these facilities are located. Our hearing process provides for permits to be issued if local geohydrology is adequate to prevent contamination of fresh water supplies and that the facility is built to minimize the possibility of H_2S generation.

Because of your concern and the concern of others, we took the initial step of notifying occupants within sight of the facility (Page 2 of enclosed memorandum). This was beyond our authority at the time, but we felt it necessary in light of the problems encountered with the Basin Disposal facility. We now have incorporated adjacent landowner notification in new rules adopted this past June.

If I or other Division personnel can be of any further assistance in this matter, please do not hesitate to call our Aztec or Santa Fe offices.

Sincerely,

Roger C. Anderson
Environmental Engineer

RCA:sl

Enclosure

cc: OCD-Aztec Office

STATE OF NEW MEXICO

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

October 5, 1988

The Honorable Bill Richardson
U.S. Representative
U.S. Courthouse B-26
South Federal Place
Santa Fe, New Mexico 87501

ATTN: Sam Taylor

Dear Congressman Richardson:

Your letter dated September 8, 1988 pertaining to Erlinda Miller has been forwarded from the Health and Environment Department to this agency for response.

The Oil Conservation Division (OCD) understands the concerns of the citizens in the vicinity of the disposal facility. I am enclosing the correspondence to Ms. Miller in response to her questions.

The owner/operator of the disposal facility has met with the residents on several occasions in an attempt to alleviate their concerns. He was very cooperative during the permit review, and has adhered to all permit conditions during construction.

The OCD will continue to monitor the facility during the construction phase and during its operation. The cooperation previously exhibited from the operator and his stated commitment to operate the facility in a safe and environmentally sound manner indicate to our satisfaction that any problems that may be encountered will be corrected as expeditously as possible.

If this agency can be of any further assistance in this matter, please contact David Boyer, Environmental Bureau Chief, at (505) 827-5812.

Sincerely,

William J. LeMay, Director

Enclosure

WJL:RA:sl

cc: OCD - Aztec Office

September 1, 1988

Erlinda Miller
Box 817
Bloomfield, NM 87413

Sen. Pete Domenici
ATTN: Tony Gallegoes
Fed. Building US Court R10013
Albuquerque, NM 87102

ALSO

Sen. Bill Richardson
ATTN. Sam Taylor
548 Awga Fria
Santa Fe, NM 87501

Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
ATTN: Roger Anderson
P.O. Box 2008
Santa Fe, NM 87504-2088

Dear Sir:

In inquiring about the oil & gas disposal pit that is being constructed by Southwest Water Disposal near Blanco, I find that there are questions that are not answered in all the paper work that I submitted to you. I also find that there are not enough rules and regulations to warrant companies like Southwest Water Disposal from putting in pits and endangering peoples lives, land and water.

In my findings I am not satisfied that everything that could be done to protect individuals like ourselves from such projects was done. I would like to see that more protection be given to citizens that are in rual areas that are as helpless as we are due to lack of regulations.

On August 31, we had another rain that caused the arroyo to enter the irrigation ditch that was pictured in one of the Daily Times articles that I submitted earlier. My concern remains the same about drainage from the pit area.

Would you please review my questions and see it there are faults in either the construction or the application of the permits concerning this pit. My concerns have not changed.

Sincerely,

Erlinda Miller

Erlinda Miller

ONSTRUCTION AND OPERATIONAL ONCERNS

	Reference	Question
1.		Rescue Plan/equipment for rescue of man or beast which accidently could fall into the pit?
2.	7/14/87 P.4	Salt generation calculation need to be part of permit package.
3.	7/14/87 P.4	Facilities must meet Upper Colorado Salimity Act if it produces 250 tons/year or more. How many tons is generated with 13,022 ft.
4.	7/14/87 P.4	Support statement that area is covered with 65% vegetation.
5.	7/14/87 P.4	What market conditions will force the addition of a spray system?
6.	7/14/87 P.4	Better define "artificial means to expidite evaporation".
7.	7/14/87 P.4	Explain in more detail how monitor well will be used to remove the contaminating water.
8.	7/14/87 P.4	Assume ground water-flow should be determined not assumed.
9.	7/14/87 P.4	Shallowest aquifer needs to be determined.
10.	7/14/87 P.4	Berm, diversion ditch needs to be sized for worse use possibility.
11.	7/14/87 P.4	By using worse case of rainfall, amount, it should be shown that pit will not flood with 1.5' free board.
12.	7/14/87 P.4	All compaction should be no less than 95% proctor (refrence on (10/28/87 Southwest Water Southwest Water Disposal, SWWD, letter).
13.	7/14/87	Fence security of facility should be chain link, not barbed wire, to keep people/wildlife out of area.
14.	7/14/87	SWWD talks about San Juan Basin produced water has no H2S. Will disposal facility only accomodate SJB materials. If from other states, is there an interstate problem?
15.	10/28/87 P.4	More detail is needed to see how & when the shut down policy will be developed.
16.	10/28/87 P.4	Mailing addresses are incorrect. What kind of research was done on notifying residents?
17.		Shouldn't be "certified" by a regestered engineer?
18.		All construction by native clay will be screened/crushed so that no materials is larger than 100 cm.
19.	3/18/88 P.3	Monitor wells should be completed either for entire column or 12 more for areas above sandstone.
20.	3/18/88 P.3	Re-route of major arroyo should be designed by registered engineer and constructed to accomodate the worst possile problem.
21.	4/28/88	Aeriation System - Recommend that all exposed construction aread be gravel with +-3" gravel instead of relying on re-vegetation during facility operation. Re-vegitation is more suited for final clean-up.

22. 3/28/87 P.5 Operation should cease if liquid are detected in the monitoring well until the liquid is identified.

23. #4 P.5 Sampling should be down wind of any breeze greater than 5mph in A.M & P.M.

24. #3 P.6 Better plans should be developed to notify area residents of danger.

25. Does SWWD need to apply for National Pollution Discharge Elemination System permit?

ADMINISTRATIVE ACTION

Request Director of the Division (OCD) to order immediate cessation of the construction fo the SWWD facility by showing of proper cause (Rule 711 K).

1. Compliance of Division rule 711
   a. Rule 711 A2 - SWWD failed to shoe the proper land owners of record with-in 1/2 mile of the site.
   b. Rule 711 A8 - SWWD failed to demonstrate that reconstruction of the adjacent arroyo would be constructed to appropriate standards to meet a 24 hour 100 year storm. Also that the berm to be built to control surface water is demonstrated to be built to withstand the same prptectors as the arroyo reconstruction.
   c. Rule 711 A8 - SWWD failed to demonstrate that the capability to protect fresh water resources under an emergency condition. (Example irrigation ditch and San Juan River within a mile from site.)
   d. Rule 711 A9 - SWWD failed to meet the notive requirements of the rule by not giving written notice of the permit application to the owners of surface lands and occupants there within 1/2 mile of site.
   e. Rule 711 G - SWWD failed to propose proper secure measures of the facility when no attendent is present. (Chain link fence.)
2. Protection of public safety.
   a. By allowing this facility to operate before all the problems are solved and all the questions are answered on the troubled operations of a simular facility in nearby Bloomfield is risky at best towards the health and welfare of the residents in the area.
   b. Bloomfield facility (Basin Disposal, BD) after more than one year is still producing hydrogen sulfide gas. Chemical treatment has also not eliminated the problem. BD has received approval to drill an injection well and will be its primary disposal method. The SWWD facility has no injection well and in their 9/16/87 letter to OCD stated that such a method was not fisable due to the geological nature of the Entrada formation. Without this back up option, the SWWD facility has high potential to cause public health problems or at least be a "nuisance".
   c. The road that will be used for access to the pit will be thru BLM land. The road will be going through an arroyo. SWWD plans to go thru the bed of the arroyo without any

protection of spillage in this water way. If there was a spill the contamination would go directly to San Juan River.

d. The paved road from either direction of the pit is a county road. This county road at this time is in such poor condition that I fear that there will be additional problems. The road in places is not wide enough to handle two trucks that will be hauling materials into the pit. Also, the road will need a great amount of additional maintance in order to handle this additional large truck traffic. There are three places that within a 2 1/2 mile distance from Blanco that a high pressure gas line is in the bed of the road. At one particular place there is only 30 inches of covering over this line. I have lived here in this area all my life and in my lifetime this gas line has reptured twice. I feel that this additional 24 hour truck traffic will encourage such happenings. In the last 15 years we have also had four deaths on this same 2 1/2 mile distance and many more accidents that have been very serious.

e. What will OCD do if SWWD goes Bankrupt? The $25,000 bond will not be enough to clean up if a Bankruptcy occurs. Besides, what will be our position after SWWD has ruined our land? My father now owns the section of land that is directly below the pit. Besides, the farm that is below the ditch. If a break in the pit did occur then the farm and the land below the pit would be ruined. The farm is one of the best farms in this area.

STATE OF NEW MEXICO

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

August 22, 1988

Ms. Patricia Baca
BLANCO WATER ASSOCIATION
P.O. Box 425
Blanco, New Mexico 87412

Dear Ms. Baca:

I am responding to your letter of August 11 in which you raised several concerns about the water disposal facility now under construction about 2 1/2 miles northeast of Blanco (30N.09W.32.34). Enclosed is a memorandum dated August 10 from Jami Bailey of my office to the Oil Conservation Division (OCD) Director. The memo addresses and answers many of your concerns.

In addition to the information in the memorandum, I wish to emphasize the following points:

1. The facility will receive only produced water. No sludges, tank bottoms, or drilling muds are approved for disposal. Any oil mixed with water will be skimmed from steel tanks and stored in above ground tanks.

2. Construction details of the ponds were approved by engineers from both this office and the State Engineer. Among the areas evaluated were storage capacity, stability, liquid freeboard, seepage, and flood protection. Construction is required to be supervised by a registered professional engineer who will certify the facility was constructed as approved.

3. The facility is located out of and away from main arroyos in the area. One small arroyo will be diverted around the facility to prevent both erosion and possible water seepage to the dry monitor wells.

4. The facility has a clay liner that is being compacted to the same standards as required by EPA for waste disposal facilities. Twelve leak detection wells have been completed into the shallow dry sediments above the shale-sandstone bedrock. These are to be monitored on a regular basis for the presence of any fluids.

5. The facility operator was required to demonstrate financial responsibility by posting a substantial bond prior to receiving approval. This ensures financial resources for site reclamation, and demonstrates his intention to operate the facility in a safe and responsible manner.

Because of both the distance from a surface or ground water source, and the engineering and operational requirements placed on the facility, it is extremely improbable that there will be any water quality impacts from the site.

This Division is committed to ensuring that this and other oil and gas waste disposal operations in the San Juan Basin operate in a safe and responsible manner. Without such disposal facilities being made available, the likelihood of water contamination becomes much greater since waste has been and would continue to be dumped illegally in pits, arroyos and directly into the irrigation ditches and rivers.

If this office can provide you with additional technical information on the design or operation of the disposal facility, please contact us at the above address or phone.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB:sl

Enclosure

cc: OCD - Aztec
Milton Archuleta, Blanco
Richard Mitzelfelt, NMEID - Santa Fe
Robert M. Gallegos, NMEID - Santa Fe
David Tomko, NMEID - Farmington

STATE OF NEW MEXICO

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

August 10, 1988

M E M O R A N D U M

TO: WILLIAM J. LEMAY, Director
Oil Conservation Division

FROM: JAMI BAILEY, Geologist
Environmental Bureau

SUBJECT: SOUTHWEST WATER DISPOSAL, A COMMERCIAL SURFACE DISPOSAL FACILITY NEAR BLANCO, NEW MEXICO

On May 17, 1988 a permit was issued to David Swezey of Southwest Water Disposal (SWWD) to operate a commercial facility for the surface disposal of only produced water. Construction of the facility, which began this week, was contingent upon review and approval of the pit dike design by the State Engineer Office. The permit for SWWD was issued prior to the adoption of OCD Rule 711 which regulates commercial surface waste disposal facilities.

The permit to SWWD was issued after nearly a year of OCD examination of technical issues which included the following:

1. Local geohydrology. The depth to the shallowest aquifer is ±150' at this location, although a shallower water well is located over a mile away. The Citizens Ditch is 3,000' to the south; the San Juan River is 6,500' to the southeast.

   Protection of ground water was carefully examined and monitor wells are required at the site so that any leakage from the clay-lined pit will be intercepted on site. These monitor wells will be checked on a regular schedule.

   OCD staff hydrogeologists calculated infiltration rates from a clay-lined pond and they feel confident that minimal fluid loss will occur. To prevent shrinkage of the clay liner in the presence of salts, produced water will be used in compaction of the top 2'-3' of the liner. A contingency plan has been signed by Mr. Swezey detailing actions to be taken by SWWD in the event leakage of fluid occurs. In addition, flood protection measures will be taken to prevent any surface water contamination.

Only produced water will be accepted at the facility for disposal in the surface pit. Steel tanks will be used for skimming incidental oil from the water, and oil will be stored in tanks.

2. H_2S generation. The conditions which led to H_2S generation at Basin Disposal have been eliminated in the design of SWWD's facility. A proven aeration system as well as a circulation system are incorporated in the design of the pit and will be operational upon start up of the facility. Stratification of the pit water which led to anerobic bacterial activity and H_2S generation at Basin Disposal will not be allowed to occur at SWWD. H_2S levels of incoming fluid will be monitored, and if necessary, loads will be isolated and treated prior to disposal in the pit. H_2S levels will also be monitored at the facility boundary, and if necessary, a signed contingency plan will go into effect to alleviate any problems.

Public notice of SWWD's application for a commercial surface disposal facility was published in the Farmington newspaper on October 13, 1987. Four residences are located over one-half mile away, but were identified to be within sight of the proposed facility location. Although it was not required, on December 9, 1987 the OCD sent personal copies of the public notice to each of these residences:

V. Archuleta 282 C.R. 4599
Blanco, N.M. 87412

V. Archuleta 284 C.R. 4599
Blanco, N.M. 87412

"Skip" Miller 292 C.R. 4599
Blanco, N.M. 87412

Occupant* 318 C.R. 4599
Blanco, N.M. 87412

Occupant*'s name was not available from the County Assessor, and this letter was returned to the OCD as undeliverable at that address.

No response to these notices was received by OCD or by SWWD.

The Environmental Bureau believes that SWWD should not be strictly compared to Basin Disposal. The nearest occupied home is approximately 3500' away rather than 300'; there is no comparable concentration of residents or businesses; and H_2S control is incorporated in the design of the facility.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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August 22, 1988

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P.O. Box 425
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4. The facility has a clay liner that is being compacted to the same standards as required by EPA for waste disposal facilities. Twelve leak detection wells have been completed into the shallow dry sediments above the shale-sandstone bedrock. These are to be monitored on a regular basis for the presence of any fluids.

5. The facility operator was required to demonstrate financial responsibility by posting a substantial bond prior to receiving approval. This ensures financial resources for site reclamation, and demonstrates his intention to operate the facility in a safe and responsible manner.

Because of both the distance from a surface or ground water source, and the engineering and operational requirements placed on the facility, it is extremely improbable that there will be any water quality impacts from the site.

This Division is committed to ensuring that this and other oil and gas waste disposal operations in the San Juan Basin operate in a safe and responsible manner. Without such disposal facilities being made available, the likelihood of water contamination becomes much greater since waste has been and would continue to be dumped illegally in pits, arroyos and directly into the irrigation ditches and rivers.

If this office can provide you with additional technical information on the design or operation of the disposal facility, please contact us at the above address or phone.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB:sl

Enclosure

cc: OCD - Aztec
Milton Archuleta, Blanco
Richard Mitzelfelt, NMEID - Santa Fe
Robert M. Gallegos, NMEID - Santa Fe
David Tomko, NMEID - Farmington

The need for permitted commercial disposal facilities in the San Juan Basin has been identified. Improper disposal of produced water has led to contamination of ground water along the river systems in the Northwest, and the OCD is diligently working to prevent contamination by illegal dumping of produced water.

BLANCO WATER ASSOCIATION
P.O. BOX 425
BLANCO, NEW MEXICO 87412

August 11, 1988

Mr. Dave Boyer
Oil Coservation Commission Director
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

The Blanco Water Association Board of Direcors wants to inform you of a potential danger to the safety of our drinking water. There is a sludge plant planned on acreage near the San Juan River off of County Road 4599, in the community of Pump Canyon. It is an area where retirees and ranchers reside and where recreational facilities are located.

Our major concern is that this sludge plant will contain petroleum by-products that may contaminate water systems. This plant is being built near an arroyo, that has in the past, during a heavy rain storm, washed into the Bloomfield Irrigation District ditch. This ditch furnishes the City Of Bloomfield and several domestic water associations with raw water for its treatment plant. There is a high risk area between Bloomfield and Blanco that uses untreated water for household use from this ditch, as do many private cistern and well water consumers. The Blanco Water Association also has wells and a network of PVC distribution lines in that area. Another major concern is that should petroleum by-products penetrate our lines and wells, who would clean up our water supply and replace these lines with ductile iron pipes to prevent the same from happening again?

Should this waste penetrate our water supply either by direct flow or by seepage it would pose a very serious health problem for a very large area and for many people. In addition to the contamination danger there is the problem of odor and other problems relative to an open pit.

Would you please investigate this project? If we can be of further assistance, contact Milton Archuleta, association president, by mail at County Road 4599 #330, Blanco, New Mexico 87412, or by phone at (505) 632-2253. Milton would appreciate a report of your findings as soon as possible.

Sincerely,

Patricia Baca

Patricia Baca, Manager

STATE OF NEW MEXICO
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

August 12, 1988

Senator Christine Donisthorpe
P. O. Box 746
Bloomfield, New Mexico 87413

RE: Southwest Water Disposal Facility near Blanco New Mexico.

Dear Senator Donisthorpe:

Enclosed is a copy of a memorandum from Jami Bailey of our Environmental Bureau to me, concerning the captioned project. I know this has been a concern to you and many of the residents in northwest New Mexico, especially since the Basin Disposal Facility has generated hydrogen sulfide gases during periods of hot weather.

I am sure you are familiar with our need for water disposal facilities in the northwest part of the state. Without these facilities brine water would be dumped illegally which could contaminate our fresh water supplies in that area. We understand the concern of many residents that this type of facility can be unpleasant to live next to, however, we at the Oil Conservation Division do not have the jurisdiction or legislative authority to hold public hearings or administer rules or regulations dealing with county zoning or land use planning. Until these measures are in place, there is no authority to control where these facilities are located. Our hearing process provides for permits to be issued if local geohydrology is adequate to prevent contamination of fresh water supplies and that the facility is built to minimize the possibility of H_2S generation.

Because of your concern and the concern of others, we took the initial step of notifying occupants within sight of the facility (Page 2 of enclosed memorandum). This was beyond our authority at the time, but we felt it necessary in light of the problems encountered with the Basin Disposal Facility. We now have incorporated adjacent landowner notification in new rules adopted this past June. We will also provide copies of future public notices to the county commission and area legislators.

If I or Division personnel can provide you with additional information or be of any further service in this matter, please do not hesitate to call our Aztec or Santa Fe offices.

Very truly yours,

William J. Lemay
Director

WJL:sl

Enclosure

cc: Tom Bahr
Anita Lockwood

STATE OF NEW MEXICO

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

August 10, 1988

M E M O R A N D U M

TO: WILLIAM J. LEMAY, Director
Oil Conservation Division

FROM: JAMI BAILEY, Geologist
Environmental Bureau

SUBJECT: SOUTHWEST WATER DISPOSAL, A COMMERCIAL SURFACE DISPOSAL FACILITY NEAR BLANCO, NEW MEXICO

On May 17, 1988 a permit was issued to David Swezey of Southwest Water Disposal (SWWD) to operate a commercial facility for the surface disposal of only produced water. Construction of the facility, which began this week, was contingent upon review and approval of the pit dike design by the State Engineer Office. The permit for SWWD was issued prior to the adoption of OCD Rule 711 which regulates commercial surface waste disposal facilities.

The permit to SWWD was issued after nearly a year of OCD examination of technical issues which included the following:

1. Local geohydrology. The depth to the shallowest aquifer is ±150' at this location, although a shallower water well is located over a mile away. The Citizens Ditch is 3,000' to the south; the San Juan River is 6,500' to the southeast.

   Protection of ground water was carefully examined and monitor wells are required at the site so that any leakage from the clay-lined pit will be intercepted on site. These monitor wells will be checked on a regular schedule.

   OCD staff hydrogeologists calculated infiltration rates from a clay-lined pond and they feel confident that minimal fluid loss will occur. To prevent shrinkage of the clay liner in the presence of salts, produced water will be used in compaction of the top 2'-3' of the liner. A contingency plan has been signed by Mr. Swezey detailing actions to be taken by SWWD in the event leakage of fluid occurs. In addition, flood protection measures will be taken to prevent any surface water contamination.

Only produced water will be accepted at the facility for disposal in the surface pit. Steel tanks will be used for skimming incidental oil from the water, and oil will be stored in tanks.

2. H_2S generation. The conditions which led to H_2S generation at Basin Disposal have been eliminated in the design of SWWD's facility. A proven aeration system as well as a circulation system are incorporated in the design of the pit and will be operational upon start up of the facility. Stratification of the pit water which led to anerobic bacterial activity and H_2S generation at Basin Disposal will not be allowed to occur at SWWD. H_2S levels of incoming fluid will be monitored, and if necessary, loads will be isolated and treated prior to disposal in the pit. H_2S levels will also be monitored at the facility boundary, and if necessary, a signed contingency plan will go into effect to alleviate any problems.

Public notice of SWWD's application for a commercial surface disposal facility was published in the Farmington newspaper on October 13, 1987. Four residences are located over one-half mile away, but were identified to be within sight of the proposed facility location. Although it was not required, on December 9, 1987 the OCD sent personal copies of the public notice to each of these residences:

V. Archuleta 282 C.R. 4599
Blanco, N.M. 87412

V. Archuleta 284 C.R. 4599
Blanco, N.M. 87412

"Skip" Miller 292 C.R. 4599
Blanco, N.M. 87412

Occupant* 318 C.R. 4599
Blanco, N.M. 87412

Occupant*'s name was not available from the County Assessor, and this letter was returned to the OCD as undeliverable at that address.

No response to these notices was received by OCD or by SWWD.

The Environmental Bureau believes that SWWD should not be strictly compared to Basin Disposal. The nearest occupied home is approximately 3500' away rather than 300'; there is no comparable concentration of residents or businesses; and H_2S control is incorporated in the design of the facility.

The need for permitted commercial disposal facilities in the San Juan Basin has been identified. Improper disposal of produced water has led to contamination of ground water along the river systems in the Northwest, and the OCD is diligently working to prevent contamination by illegal dumping of produced water.

NEW MEXICO
HEALTH AND ENVIRONMENT
DEPARTMENT

Post Office Box 968
Santa Fe, New Mexico 87504-0968

GARREY CARRUTHERS
Governor

LARRY GORDON
Secretary

CARLA L. MUTH
Deputy Secretary

ENVIRONMENTAL IMPROVEMENT DIVISION
WATER MANAGEMENT BRANCH
DRINKING WATER SECTION

August 10, 1988

Milton Archuleta, President
Blanco Water Association
County Road 4599 #15
Blanco, New Mexico 87412

Dear Mr. Archuleta:

Thank you for your letter of August 3, 1988 concerning the sludge plant that is planned for your area. The Environmental Improvement Division (EID) has no authority over this operation. Authority falls exclusively with the Oil Conservation Division (OCD). The OCD has jurisdiction and authority over all matters relating to control of water pollution from oil, natural gas and carbon dioxide gas.

I understand that the site will be located about one-half mile south of the Bloomfield Irrigation ditch. Provisions in the Regulations Governing Water Supplies state that a pollution source should not be located less than 200 feet from a potential pollution source.

The OCD has performed a detailed study of the site and will do extensive monitoring once the operation is in place. Any additional questions concerning this project should be addressed to:

Dave Boyer, Bureau Chief
Oil Conservation Division
310 Old Santa Fe Trail - Room 206
Santa Fe, New Mexico 87501

Phone: 827-5800

The EID is available to address any concerns and answer any questions you may have concerning your water quality. Please contact me at 827-2782, if I can be of further assistance.

Sincerely,

Robert M. Gallegos
Acting Program Manager
Drinking Water Section

RMG/er

xc: Jon F. Thompson, Acting Director,
Environmental Improvement Division
Stuart P. Castle, Acting Bureau Chief Ground Water Bureau
Dave Boyer, Bureau Chief Oil Conservation Division
Dave Tomko, Program Manager, Farmington Field Office

NEW MEXICO
HEALTH AND ENVIRONMENT
DEPARTMENT

Post Office Box 968
Santa Fe, New Mexico 87504-0968

GARREY CARRUTHERS
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Secretary

CARLA L. MUTH
Deputy Secretary

ENVIRONMENTAL IMPROVEMENT DIVISION
WATER MANAGEMENT BRANCH
DRINKING WATER SECTION

M E M O R A N D U M

TO: Dave Boyer, Bureau Chief,
Oil Conservation Division

FROM: Robert M. Gallegos, Acting Program Manager,
Drinking Water Section

SUBJECT: Location of Sludge Plant in Relation to Public Water Supply Wells or Surface Water Intake Structures

DATE: August 10, 1988

In reference to our conversation yesterday concerning the sludge plant planned for the Pump Canyon area, I am providing you with the locations of the public water supplies that received their drinking water from the Bloomfield Irrigation Ditch. The ditch is located about 1/2 mile south of the planned site. Refer to USGS quadrangles-15 minute series-Bloomfield and Aztec for the specific locations of the public water supplies.

Name	Depth	Latitude	Longitude	Location
Blanco WUA	30	36-44-02	107-49-06	29N.09W.07.344
City of Bloomfield	Surface	36-43-07	107-55-03	29N.10W.18.444
Harvest Gold	Surface	36-43-19	107-55-45	29N.10W.18.323
EPNG Blanco	Surface	36-43-05	107-55-15	29N.10W.19.212
EPNG Chaco	Surface	36-43-05	107-55-15	29N.10W.19.212

The City of Bloomfield in turn distributes drinking water to West Hammond MDWCA, Lee Acres Water Users Association and North Heights Bloomfield Water Association. The total population served by the public water supplies from the ditch is about 13,000 individuals.

Please contact Dave Tomko in the Farmington EID or myself if problems arise which may affect any of these public water supplies or if we can be of further assistance.

RMG/rmg

xc: Stuart P. Castle, Acting Bureau Chief Ground Water Bureau
Dave Tomko, Program Manager, Farmington Field Office
Oscar A. Simpson, Water Resource Specialist DWS

Blanco Water Association
P.O. Box 425
BLANCO, NEW MEXICO 87412

August 03, 1988

Mr. Michael Burkhart
Einvornmental Improvement Division Director
1190 Saint Francis Drive
Santa Fe, New Mexico 87503

Dear Mr. Burkhart;

The Blanco Water Association Board of Directors want to inform you of a potential danger to the safety of our drinking water.

There is a sludge plant planned on acreage near the river off County Road 4599 in the ranching community of Pump Canyon. Our concern is that this sludge plant will contain petroleum products and is being built near an arroyo that has in the past during a heavy rain storm washed into the Bloomfield Irrigation District Ditch. This ditch furnishes the city of Bloomfield and several domestic water associations with raw water for its treatment plant, but there is an area between Bloomfield and Blanco that uses untreated water for household use as do many cistern and well water consumers.

Should this waste penetrate our water supply either by direct flow or by under ground sepage it would pose a very serious health problem for our area.

In addition to the contamination danger there is the problems of odor and other related problems realtive to an open pit.

Please would you investigate this project. If we can be of further assistance contact Milton Archuleta, association president, by mail at County Road 4599 #15 Blanco, New Mexico 87412 or by phone at (505) 632-2253. Milton would appreciate it if you would give him a report of your findings as soon as possible.

Sincerely,

Patricia Baca

Patricia Baca, Manager

August 1, 1988

Erlinda Miller
Box 817
Bloomfield, New Mexico 87413

U.S. Sen Pete Domenici
Albuquerque Field Office
Federal Building U.S. Court House
Room 10013
Albuquerque, New Mexico 87102

Dear Sen. Pete Domenici,

I am writing this letter as a concerned citizen of our little community of Blanco. On Friday, July 29th, I found out that we were having an oil and gas disposal pit dug about 1/2 mile, by the flight of the crow, from my residence. I was aware of the pit about two weeks ago. I asked the constractor that is doing the dirt work about the location of this pit and his responce to me was "Up in the hills". The contractor contacted my father about an easment to get water for the compaction of the pit. My father verbally agreed to let the company come in the farm for their water.

Friday I noticed that there was some activity on the border of my father's land. Upon inquiring, I found that it was the location of the disposal pit. I called the EID and was told that an oil & gas operation would come under the Oil & Gas Commission. I was given a local office number to call. When I called, I was informed that this local office in Aztec had very little information and was given a name and number in Santa Fe. I called and talked to a fellow by the name of Dave Boyer. I stated my concern and he asked if he could return my call. About twenty minutes later a fellow by the name of Roger Anderson returned my call from the Commission. I asked and he answered some of my questions. Some of the questions of contention are: 1) Why weren't we informed of this project? Answer. We notified 4 people from your community. They are V. Archuleta, address #282 Rd. 4599, V. Archuleta, #284 Rd. 4599, Skip Miller, #292 Rd. 4599 and Occupant #310 Rd 4599, by the way Mrs. Miller, are you also Mrs. Skip Miller? My response was "Yes". I informed Roger that we had not received such a letter and also told him that we don't receive mail at our home address. Roger also told me that the letter that was sent to Occupant was returned. The other two letters were addressed to my father. Upon questioning my parents, I find that to their knowledge that did not receive such a letter. EID informed me that any letters of notification for such, to interested parties were always mailed "Certified". Roger informed me that they were mailed regular mail. No one in our community received any notification of such a project. 2) What can we do to stop this Project? All the necessary investigation and testing has been completed and also a Legal Notice was printed in the local newspaper and there was no response. We assumed that there was no objection to this project. It is too late. The Company that owns the project assures us that it will do everthing possible to make it acceptable to the community, was the response given by Roger.

We the residents of this community want to STOP this project as we have had a like project in Bloomfield that has caused many problems. Many of our people in this area including myself and my children have respitorial problems and of course we don't want to add to the list. Some of the

residents that lived by this project have moved as they were unable to handle the odors and the traffic. We feel that there are millions of acres that are actually "In the hills", that could be used for this purpose without having to endanger peoples lives.

I talked to the owner of the company, David Sweezy, Southwest Water Disposal, P.O. Box 10734, Farmington, NM 87499, and asked other questions concerning construction and security of the pit. I was informed that the pit would be fenced with barbed wire and that each load would be tested to make sure that it didn't contain materials or chemicals that the designed pit couldn't handle. I informed him that I was trying to do everything in my power to stop this project. I asked about the fencing becuase of the wild animal life and also because there are often livestock in the area. He told me that barbed wire was enough and that they wouldn't put anything else as it wasn't necessary. The estimated hours of dumping of the pit will be Monday thru Saturday, 8:30 - 6:00 except on Saturday only until 1:00 or by appointment.

We would aopreciate anything that your office could do to help us with this problem. since we were unaware to this project and since we are now aware of some of the problems that may arise in the future.

Sincerely,

Erlinda Miller

P.S. Also enclosed are signatures of other people in our community that feel the same way I do.

1. Teddie Alcon P.O. Box 47[illegible] Blanco, N.M. 87412
. Zeffredo Alcon Co. Rd 4599 Box 606 Blanco N.M 87412
. Woodrow L. Lucero 216 Rd #4599 Blanco N.M. 87412
. Vernon Wilks No 236 Rd 4599 Blanco N.M. 87412
5. Dessie Wilks #234 Rd 4599 Blanco, N.M. 87412
6. Pauline Montoya #181 Rd 4599 Blanco N.M. 8742
7. Leo Pacheco P.O. Box 1177 Bloomfield N.M. 87413
Lucy Archuleta 530 Rd. 4599 Blanco, N.M. 87412 632-3016
. Milton Archuleta " " " " " " " "
. Paul H. Jaquez P.O. Box 403 Blanco, N.M. 87412
Mrs. Effie Jaquez P.O. Box 403 Blanco, N.M. 87412
1. Mr. Chris Pacheco P.O Box 445 Blanco NM 87412
2. Isaac Jaquez P.O Box 6382 Navajo Dam N.M 87419

- [illegible] 200 Rd 4599 Blanco N Mex 87412
- Jaquez 200 Rd 4599 Blanco, N. Mex. 87412
4. Eugenia Flores Star Rt A Box 89 Rd 4599 Blanco N Mex 87412
- Michael McCoy 208 Rd 4599 Blanco NM
Faye Pugh 186 Rd 4599 Blanco, N. Mex 87412
Calvin H Pugh #186 Rd 4599 Blanco, N.M. 87412
Acella Montoya P.O. Box 1104 Blanco N. Mex 87412
William J Gurulé P.O. Box 473 Blanco, N. Mex. 87412
Patsy Vasquez P.O. Box 442 Blanco, N. Mex. 87412
Mr & Mrs Antonio Margaret monica Elisia Arellano
PO Box 392 Blanco New Mexico 87412
1. Janet Pinney 82 Rd. 4599 Blanco, N.M. 87412
2. Isabel D. Rodriguez 82 Rd 4599 Bl. 87412
- Vet A Sebek 52 CRD 4599 Blanco NM 87412
4. Helen Rolato 52 CRD 4599 Blanco N.M 87412
Patrick E. Valdez Box 1084 Blanco, N. Mex 87412
Elizabeth J. Valdez PO Box 1084 Blanco NM 87412
Joshua Shindledecker #9 Co road 4390, Blanco, N Mex. 87412
Shelly Shindledecker #9 Co Road 4380 Blanco N Mex 87412
Pete Valdez PO Box 476 Blanco N Mex 87412
8. Tonita Archuleta Road 4599 No 282 Blanco, N Mex
9. Marcella Jaquez Road 4599 N 400 Blanco N.M
Earl Goodenough Jr. P.O. Box 347, Blanco, N Mex 87412
Prudencio Rojas 450 - CR 4599 Blanco N Mex 87412
Amalia Martinez 449 - CR 4599 Blanco N Mex 87412
Katherine Malott CR 4599 #5 L Blanco N Mex 87412
4. Alex Rolato CR 4599 #54 Blanco N. Mex 87412.

Vicki Lobato 54 Rd. 4599 Blanco, N.M. 8741

35. Estella B. Groso 7 Rd 4599, Blanco, N.M. 8741

36. David C. Valdez #20 4599, Blanco, N. Mex 8741

37. Macbrio Archuleta CR 4599 Box 932 Blanco, N.M. 8741

38. Steve Chavez Hwy 511 #223 BLANCO N.M 8741Z

39. B. M. Prado Rd 4599 BLANCO NM 87

40. Teresa Lobato 116 W. Gladden Farmington, N.

41. Frank & Maria Hancock Rd 4599 #644 Blanco NM 87412

42. Marguerite Jaquez 205 Jemez Ave Aztec, N.M. 87410

Luciano M Jaquez 205 Jemez Ave Aztec, N.M. 87410

43. Ramon Ulibarri #652 Rd 4599 Blanco, N.Mex

44. Pat Montoya 211 Hwy 511 Blanco N.Mex. 8741

45. Donald R Candelaria 517 East Lin Aztec N. Mex 8741

46. Margaret Archuleta 626 4599 Blanco N M

47. Procopio Alcon P.O. Box 472 Blanco, N Mex

48. Chuck Selph 438 RD 4599 Blanco, N. Mex.

49. C. J. & Dorothy Wood 454 Rd. 4599 Blanco, N.M. 87412

50. Debbie Jacquez CR 4599 H. 475 Blanco N.M. 87412

51. Jo Anne Wood 456 Rd 4599 Blanco, NM 87412

52. Edwin P. Wiebe 476 Rd. 4599 Blanco, N.M. 87412

53. Anna Lee Wiebe 478 Rd 4599 Blanco N.M. 87412

54. Elizabeth L Wiebe 474 Rd 4599 Blanco N.M. 87412

55. Mr & Mrs Willard F Har 574 Rd 4599 Blanco N.M. 87412

56. Mr & Mrs. Willard R. Finley 572 Ft 4544 Ft 2071. 8.14 a

These are names of land owners within a 4 mile radius from the pit.

The # by the name indicate numbers of families.

There were about 25 more families that I was unable to contact as a lack of time.

Erlinda Miller

STATE OF NEW MEXICO

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

May 17, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
MAY 19 1988
OIL CON. DIV.
DIST. 3

Mr. David Swezey
SOUTHWEST WATER DISPOSAL
P. O. Box 10734
Farmington, New Mexico 87499

Dear Mr. Swezey:

The application for a commercial clay-lined surface evaporation pit for the disposal of produced water, to be located in the SW/4, SW/4, Section 32, T-30-N, R-9-W, San Juan County, New Mexico is hereby approved with the following conditions:

1. Construction of the pit may proceed when State Engineer approval is obtained. All copies of State Engineer correspondence should be filed with this office.

2. A registered professional engineer will submit as-built plans for the facility as soon as possible after construction.

3. Any facility expansion or modification, or any changes in the types of wastes disposed at the site must be approved by the Director of the Oil Conservation Division (OCD).

The facility application consists of the original application dated July 14, 1987 and additional submittals dated September 16 and October 28, 1987 and March 28, March 29, May 9, and May 11, 1988.

Please be advised that the approval of this application does not relieve you of liability should your operation result in actual pollution of surface or ground water which may be actionable under New Mexico laws or regulations.

On behalf of the staff at the OCD, I wish to thank you and your consultant for the cooperation shown during the application review.

Sincerely,

William J. LeMay
Director

WJL:JB:sl

cc: Frank Chavez, OCD-Aztec

STATE OF NEW MEXICO

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

April 18, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
APR 21 1988
OIL CON. DIV.
DIST. 3

Mr. David B. Swezey
Southwest Water Disposal
P. O. Box 10734
Farmington, New Mexico 87499

RE: Commercial Surface Disposal Facility
SW/4, SW/4, Section 32, T-30-N, R-9-W
San Juan County, New Mexico

Dear Mr. Swezey:

In response to your letter of March 28, 1988, the Oil Conservation Division wishes to clarify commitments made by you and to inform you of issues raised by the drillers log of Boring No. 1.

Monitor Wells

The discovery of an unconsolidated, fine to coarse grained sand at a depth of 7½ feet with a minimum thickness of 17½ feet indicates that additional borings must be performed to characterize the lateral extent and full thickness of the sand bed. These additional borings, drilled one foot beyond the bottom of the sand unit, may be converted to monitor wells with screens over the entire thickness of the sand. Any fluids found in these borings shall be analyzed for base-line data.

Aeration System

Spray evaporation use will not be allowed when mist or salt solids are carried beyond the berms of the evaporation pit. Dike walls will be maintained to prevent significant erosion.

Fluid Contingency Plan

Analyses of any fluids found in the required borings will be used to determine the TDS concentration at which Southwest Water Disposal will cease accepting fluids. If no fluids are found in the wells after completion, then any fluid later discovered in the wells will be analyzed to determine the source.

When the State Engineer Office issues a permit for the construction of the main evaporation pit, please forward a copy to us for our files.

The proposed Rule 711 dealing with the permitting and operation of commercial surface disposal facilities, and requiring a $25,000 bond for such facilities, will be presented to the Oil Conservation Commission for hearing on May 19, at 9:00 A.M., in Morgan Hall, State Land Office Building, Santa Fe.

If I may be of further assistance, please call me at (505) 827-5884.

Sincerely,

Jami Bailey
Geologist

JB:sl

cc: OCD - Aztec

STATE OF NEW MEXICO

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

January 21, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David B. Swezey
Southwest Water Disposal
P.O. Box 10734
Farmington, NM 87499

RE: Application for Commercial Disposal Facility

Dear Mr. Swezey:

On January 19, 1988, the State Engineer's Office issued an opinion that under certain circumstances an evaporation pond will fall under their jurisdiction for design and construction. A summary of the opinion is that a pond will fall within the limit of the State Engineer's Office Design Criteria if it impounds more than 10-acre feet and/or if an embankment height of the pond exceeds 10 feet.

By copy of this letter we are advising you that an application to construct the pond must be submitted to the State Engineer along with a copy of plans and specifications for their review and approval. Our review of your application will continue concurrently with the State Engineer's review.

If you have any questions on the State Engineer's Office requirements, contact Eluid L. Martinez, Chief Technical Division, State Engineer's Office, at (505) 827-6140. If there are any questions concerning the OCD's requirements please contact me at (505) 827-5885.

Sincerely,

Roger C. Anderson
Environmental Engineer

cc: Eluid L. Martinez, State Engineer's Office
Frank Chavez, OCD - Aztec
Bob Frank, Union Texas Petroleum

STATE OF NEW MEXICO
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

May 17, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David Swezey
SOUTHWEST WATER DISPOSAL
P. O. Box 10734
Farmington, New Mexico 87499

Dear Mr. Swezey:

The application for a commercial clay-lined surface evaporation pit for the disposal of produced water, to be located in the SW/4, SW/4, Section 32, T-30-N, R-9-W, San Juan County, New Mexico is hereby approved with the following conditions:

1. Construction of the pit may proceed when State Engineer approval is obtained. All copies of State Engineer correspondence should be filed with this office.

2. A registered professional engineer will submit as-built plans for the facility as soon as possible after construction.

3. Any facility expansion or modification, or any changes in the types of wastes disposed at the site must be approved by the Director of the Oil Conservation Division (OCD).

The facility application consists of the original application dated July 14, 1987 and additional submittals dated September 16 and October 28, 1987 and March 28, March 29, May 9, and May 11, 1988.

Please be advised that the approval of this application does not relieve you of liability should your operation result in actual pollution of surface or ground water which may be actionable under New Mexico laws or regulations.

On behalf of the staff at the OCD, I wish to thank you and your consultant for the cooperation shown during the application review.

Sincerely,

William J. LeMay
Director

WJL:JB:sl

cc: Frank Chavez, OCD-Aztec

STATE OF NEW MEXICO

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

January 15, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David B. Swezey
Southwest Water Disposal
P. O. Box 10734
Farmington, New Mexico 87499

RE: Application for SWWD Commercial Surface Disposal Facility SW/4, SW/4, Section 32, T30 North, R9 West, San Juan County, New Mexico.

Dear Mr. Swezey:

The Oil Conservation Division (OCD) has reviewed your October 28, 1987 submittal addressing our geologic, hydrologic and operational concerns stated in our August 27, 1987 letter. The discussions held at the December 17, 1987 meeting between the OCD Environmental Bureau staff, Bob Frank and you clarified the permitting issues remaining.

The following is a summary, taken from our meeting notes, of our concerns as discussed in the meeting, and the information needed and requirements that must be met by SWWD to complete permitting and for you to commence operation.

Construction Requirements

1. OCD will be notified one week prior to starting any earth work.

2. A licensed contractor will perform all earthwork under the supervision of a registered professional engineer. Following completion of construction, the registered P.E. will submit as-built plans for the facility.

3. Results of Proctor compaction tests performed during construction will be certified and submitted to the OCD along with the as-built plans.

4. No construction work will be performed using frozen earth materials.

5. All topsoil will be removed from the surface at the pit location and extending to the outside toe of the berms.

6. Berms will be keyed into the native undisturbed clay.

7. The outside slope of all berms will be 3:1.

8. Clay for compaction will be brought in from the hill on top, or if necessary, bentonite will be used to achieve maximum compaction and minimum permeability. Clay not meeting maximum permeability standards (1×10^{-7} cm/s) will be buried in the deepest part of the fill.

9. OCD requires 6" or less lifts for compaction during construction for the top 2 feet of the liner. Nine inches or less are the thickness limits for compaction of any fill below the top 2 feet. The total thickness of the compacted clay liner will be a minimum of 3 feet.

Skimmer Pit/Liquids Storage Area

1. OCD will require the use of an elevated or on-grade steel mud pit for use as primary skimmer pit. Primary separation will occur in steel pits with oil gravity-fed to storage tanks and water drained to the secondary clay-lined skimmer pit.

2. Solids from skimmer pits will be removed to the main pit unless another location is approved by the OCD.

3. Construction of the clay-lined skimmer pit will be the same as for the main clay-lined evaporation pit.

4. All above ground oil/water storage facilities shall be enclosed by diked fire walls that will form a reservoir having a capacity one-third larger than the enclosed tanks. Submit an as-built plat showing the location of pits, tanks, diked areas, etc.

Monitor Wells

1. Twelve monitor wells will be constructed as shown on the submitted plans, but with concrete pads at the surface extending out a minimum distance of 2 feet from the well.

2. The monitor wells shall be drilled into the first sandstone and be completed to admit water over the entire sandstone thickness or fifteen feet* (whichever is less). Wells shall be completed with native clays, bentonite or cement so as to prevent fluid movement along the well pipe from the surface to the top of the sandstone. Geologic logs and completion diagrams shall be submitted to OCD.

3. Placement of monitor wells will be as shown on the attached diagram.

4. The major arroyo will be rerouted for flood protection and to prevent flow of arroyo waters into the monitor wells.

Operating Procedures

1. No drilling muds will be accepted for disposal at SWWD.

2. No hazardous waste such as unspent acids, caustics, chlorinated solvents, etc., will be accepted for disposal at SWWD.

3. Prior to approval, information on the final disposition of any incidental and/or waste oil recovered at the facility must be submitted.

4. All berms will be inspected monthly and after any major storm event, and required maintenance will be performed immediately to maintain integrity of the berms.

5. All requirements of Order No. R-7940-A will be observed.

6. In accordance with OCD Rule 1120, a monthly water disposal report (Form C-120-A) will be filed with the OCD.

7. No produced water shall be received at the facility from motor vehicles unless the transporter has a valid Form C-133, Authorization to Move Produced Water, on file with the Division.

Aeration System

1. Submit to the OCD design specifications, operating schedule and anticipated start-up date of any spray evaporation system at least 30 days in advance of planned use.

* The monitor well screen length of 15 feet is an increase from the 5 feet shown in our meeting notes and will provide increased leak detection capability.

2. Conditions for spray evaporation use will be set by OCD after review of the information submitted.

H_2S

1. Each load of fluid received will be monitored for air concentrations of the H_2S in the transport vehicle.

2. Dissolved sulfides in the main evaporation pit will be analyzed monthly.

3. Air concentrations in tenths of parts per million (ppm) of H_2S and the pH of the pond will be monitored twice daily during operating hours. Records of such measurements shall be kept at the facility.

4. Submit a schedule of proposed sampling locations and sample times for H_2S monitoring.

Fluid Contingency Plan

1. Prior to permit approval a signed contingency plan will be submitted for OCD review, including but not limited to the following commitments:

   a) If fluid is detected in any monitor well, the OCD will be notified, fluids will be analyzed and the source determined;

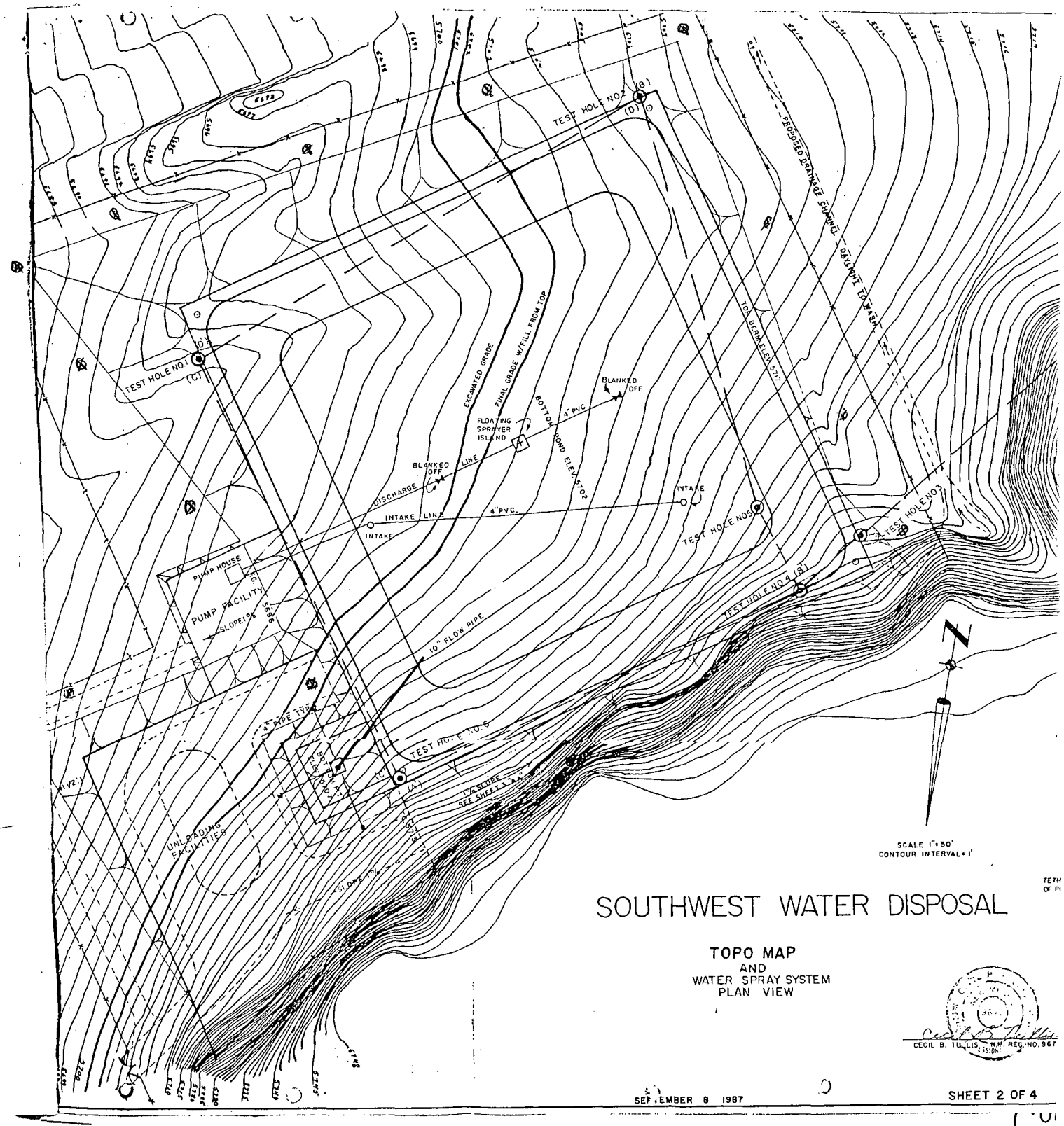
   b) Cease acceptance of fluids until the source is determined;

   c) If the liquids are determined to be pit water, submit proposals and timetable for removing the source, determining the extent and degree of contamination, and for mitigating contamination.

H_2S Contingency Plan

1. Prior to permit approval a signed contingency plan will be submitted for OCD review, including but not limited to the following commitments:

   a) Proposed H_2S measurement limits and action to be taken and/or treatment provided if H_2S monitored in the transport vehicle is above agreed upon levels.



SOUTHWEST WATER DISPOSAL

TOPO MAP
AND
WATER SPRAY SYSTEM
PLAN VIEW

CECIL B. TULLIS, N.M. REG. NO. 967

SEPTEMBER 8 1987

SHEET 2 OF 4

⊗ MONITOR WELL

b) If air concentration of H_2S reaches 1 ppm at the fence line for two consecutive monitor readings, or if dissolved sulfides in the pit water reaches 15 ppm, the OCD will be notified immediately, hourly H_2S monitoring (24 hours per day, 7 days per week) will commence at the designated locations, pond water will be analyzed for dissolved sulfides daily, and a treatment plan will be submitted to reduce dissolved sulfides in the pond and eliminate H_2S emissions.

c) If air concentration of H_2S at the fence line reaches 10 ppm at any time, public safety personnel, such as County Fire Marshal, County Sheriff's Department, and New Mexico State Police, and the OCD will be notified. SWWD must submit plans prior to permit approval for actions to be taken to protect public health and safety. Requirements for pond treatment action will be at least as stringent as those for detection of 1 ppm H_2S, and additional requirements to be imposed will be determined after OCD review.

The above information was discussed with you and informally agreed to by you pending your review of this letter summarizing the meeting's discussions. A commitment from you agreeing to these requirements, and to provide the requested necessary information will be necessary to complete review of the application.

If you feel that any of the understandings detailed above are different from what was discussed and agreed to in the December meeting, or if you feel additional clarification or information is needed by you, please contact Jami Bailey or Roger Anderson at 827-5884 or 827-5885.

Sincerely,

David G. Boyer
Environmental Bureau Chief

DGB:sl

Encl.

cc: Frank Chavez, OCD-Aztec

STATE OF NEW MEXICO

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

August 27, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David B. Swezey
Southwest Water Disposal
P.O. Box 10734
Farmington, New Mexico 87499

RE: Application for Unlined Commercial Surface Disposal Facility, SE/4, SW/4, Section 32, Township 30 North, Range 9 West, San Juan County, New Mexico.

Dear Mr. Swezey:

The staff of the Environmental Bureau has received your application for the above facility, and are responding with technical comments and requests for additional necessary information to continue with the review. They have apprised me of the nature of the application and its review status.

There is a need in the San Juan Basin for additional commercial facilities to dispose of produced water, drilling fluids, and other oil field wastes. Similar disposal in Southeast New Mexico is mainly by injection wells with the secondary method being surface disposal in areas having naturally saline water, or no ground water.

In order to obtain approval for an unlined pit facility, an adequate demonstration must be made that horizontal or vertical leakage from the facility will have no adverse affect on fresh water anywhere in the area in the foreseeable future. This requires extensive additional geotechnical information not required for a synthetically-lined facility. Also, because the location of your site is topographically upgradient from residences, the "Citizens Ditch" and shallow ground water of the San Juan River Valley, and because of the heightened public interest in surface disposal facilities due to problems with Basin Disposal (including odors and unauthorized seepage from their unlined mud disposal pits), your site will be under much greater public scrutiny than normally is the case. This could lead to citizen objections and requests for a hearing where their concerns may be heard. OCD may need additional technical information from you to adequately respond to such concerns, thereby delaying issuance of our order.

If you are able to make an adequate demonstration to OCD of minimal seepage, any later change in water quality (real or hypothesized) at any downgradient location will be blamed on your facility with resultant complaints to us and other agencies. Legal actions by private parties against you are possible. As the permitting agency with limited staff resources, we avoid becoming embroiled in disputes such as Basin's which have strong political and zoning overtones.

OCD's review of your application will be greatly expedited if you would consider a synthetic lining with a leak detection system for the pond. Public notice will be deferred by us until we hear from you on the issue of synthetic lining of the pond. If there is sufficient public interest within 30 days after issuing public notice, this application can be set for hearing before either an examiner or the commission. If you have any questions or wish to discuss this with me I can be reached at (505) 827-5802.

Sincerely,

WILLIAM J. LEMAY
Director

WJL:cr

cc: D.G. Poyer, OCD Santa Fe
OCD-Aztec

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
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August 27, 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David B. Swezey
Southwest Water Disposal
P.O. Box 10734
Farmington, New Mexico 87499

RE: Application for Unlined Commercial Surface Disposal Facility, SE/4, SW/4, Section 32, Township 30 North, Range 9 West, San Juan County, New Mexico.

Dear Mr. Swezey:

We have reviewed the plans and specifications in your application dated July 14, 1987 (received August 5), for the above-referenced evaporation pit. Before approval for the pit can be granted, a number of major geologic, hydrologic and operational concerns must be addressed.

1. General Crude Processing is no longer accepting waste oil for treating. What will be the disposition of waste oil accumulated at the facility? If the accumulated oil will be marketed to a refinery, the proposed facility will be considered a treating plant and must comply with OCD Rule 312 along with all reporting requirements.

2. No engineering details for construction of the skimmer pit were provided. Since it is to be used for oil recovery, it must be lined, or tanks used for separation pursuant to OCD Rule 310 which prohibits oil retention in earthen reservoirs or open receptacles. If a liner is used, please provide engineering diagrams for construction of the pit, including details on the liner (type, thickness and installation), size and construction of berms (size of lifts to be compacted, etc.), and piping and pumps to the main pit and storage tanks. Also include detailed diagrams and schematics for any tanks at the facility, along with their piping and operating procedures. The application states the inside slope of the skimmer pit would be 1:1. That steep a slope is unacceptable for approval. Tanks, as used at Basin Disposal, would seem to be an easier method to use to separate the fluids.

3. If fluids will be unloaded directly into the skimmer pit, precautions must be taken to prevent damage to the berms and pit walls. Please detail unloading procedures and construction plans that will prevent damage at this point and at the end of the discharge pipe between the skimmer and evaporation pit. Clarify maintenance plans on both inside and outside surfaces for all berms at the facility.

4. Exhibit 2 indicates that H_2S sensors will only be placed around the skimmer pit. How will H_2S generation be monitored around the evaporation pit? What procedures will be used for testing H_2S, HS^- and sludges in the main pit? Please indicate the type, model and calibration units of the H_2S sensors and alarm. If the alarm is sounded at 5ppm, how loud and continuous will it be, and who is to be notified? Since H_2S emission limits are set at 0.2ppm at property fence lines, how will this limit be measured and controlled. Since the facility will not be manned 24-hours per day, how will the responsible operator be notified if emissions occur at night?

5. Please provide a schematic of the plumbing system to be used in the pump house and spray system.

6. No engineering details for construction of the evaporation pit were provided. Please provide engineering diagrams for construction of the pit, including details on size and construction of the berms, amount of cut and fill, etc.

7. A geologic cross section of the facility site must be made, identifying the soil and formation lithology, thickness, and lateral extent. If you elect to line these pits with a synthetic liner and a leak detection system, only surface soil mapping and the strike and dip of the beds will be required. If you choose to construct these pits with only a native clay liner, much more detailed work will be required, including: A detailed cross section based on a minimum of four test holes; subsurface investigation to determine permeability, thickness, and continuity of clay under the pit. To be acceptable the clay must have a vertical permeability no greater than 10^{-7} cm/sec. The clay permeability given in the application is 1.7×10^{-7} cm/sec, almost twice that necessary. Additional compaction (to 95% or greater) will likely lower that value. Before operational approval is granted, lithologic logs of all monitor wells, results of compaction tests on the recompacted clay and additional permeability tests performed on the recompacted material will be necessary. The number and type of additional tests should follow the guidance given in the enclosed material from the Department of Interior's "Earth Manual".

8. The number and placement of the monitor wells, required for a clay liner in the pits, will be determined after the detailed subsurface investigations are complete. What are your plans for the type and size of casing to be used in the monitor wells? Submit proposed well installation diagrams and procedures. In case of fluid

migration from the pits, your contingency plan states that these wells will serve as conduits for removal of the contaminating water; these wells must therefore be adequate in size and construction.

9. Due to the location of property boundaries and residences in the area, a wind speed and direction gauge must be installed when spray evaporation equipment is installed. A strict policy of shutting down the spray system must be developed and followed whenever the spray is carried outside the inner face of the berm.

10. If anaerobic conditions develop that lead to pond odors, a system to circulate fluids to prevent stratification and to provide aeration throughout the pond will be required to be installed. You will be required to submit plans and specifications for the areation system for OCD review prior to construction of the pond.

11. Please indicate property boundaries on a map, along with names of owners of surrounding property.

12. Please furnish names and mailing addresses of the two residences that were visible from the proposed facility site.

Since you are proposing an unlined facility, it would be to your advantage to perform some baseline water quality sampling prior to beginning operation. OCD can assist you in selecting sample parameters and locations if you decide to do such sampling.

The OCD is preparing new Statewide regulations for surface disposal facilities that will include the requirement for posting of a bond for removal and cleanup of surface facilities. In your conversation with me earlier this month, you indicated a willingness to post such a bond prior to construction. We appreciate the offer, however we will also need to look at your financial ability to perform subsurface investigation and remedial work if the unlined pond is approved by OCD, but does not function as planned.

Enclosed for your use is a copy of the OCD Guidelines for the Design and Construction of Lined Evaporation Pits. If you have any questions, please contact David Boyer or myself at (505) 827-5884.

Sincerely,

Jami Bailey
Geologist

JB:cr

Encl.

cc: W.J. LeMay - Director OCD
OCD-Aztec

STATE OF NEW MEXICO

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

August 22, 1988

Ms. Patricia Baca
BLANCO WATER ASSOCIATION
P.O. Box 425
Blanco, New Mexico 87412

Dear Ms. Baca:

I am responding to your letter of August 11 in which you raised several concerns about the water disposal facility now under construction about 2 1/2 miles northeast of Blanco (30N.09W.32.34). Enclosed is a memorandum dated August 10 from Jami Bailey of my office to the Oil Conservation Division (OCD) Director. The memo addresses and answers many of your concerns.

In addition to the information in the memorandum, I wish to emphasize the following points:

1. The facility will receive only produced water. No sludges, tank bottoms, or drilling muds are approved for disposal. Any oil mixed with water will be skimmed from steel tanks and stored in above ground tanks.

2. Construction details of the ponds were approved by engineers from both this office and the State Engineer. Among the areas evaluated were storage capacity, stability, liquid freeboard, seepage, and flood protection. Construction is required to be supervised by a registered professional engineer who will certify the facility was constructed as approved.

3. The facility is located out of and away from main arroyos in the area. One small arroyo will be diverted around the facility to prevent both erosion and possible water seepage to the dry monitor wells.

4. The facility has a clay liner that is being compacted to the same standards as required by EPA for waste disposal facilities. Twelve leak detection wells have been completed into the shallow dry sediments above the shale-sandstone bedrock. These are to be monitored on a regular basis for the presence of any fluids.

5. The facility operator was required to demonstrate financial responsibility by posting a substantial bond prior to receiving approval. This ensures financial resources for site reclamation, and demonstrates his intention to operate the facility in a safe and responsible manner.

Because of both the distance from a surface or ground water source, and the engineering and operational requirements placed on the facility, it is extremely improbable that there will be any water quality impacts from the site.

This Division is committed to ensuring that this and other oil and gas waste disposal operations in the San Juan Basin operate in a safe and responsible manner. Without such disposal facilities being made available, the likelihood of water contamination becomes much greater since waste has been and would continue to be dumped illegally in pits, arroyos and directly into the irrigation ditches and rivers.

If this office can provide you with additional technical information on the design or operation of the disposal facility, please contact us at the above address or phone.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB:sl

Enclosure

cc: OCD - Aztec
Milton Archuleta, Blanco
Richard Mitzelfelt, NMEID - Santa Fe
Robert M. Gallegos, NMEID - Santa Fe
David Tomko, NMEID - Farmington

STATE OF NEW MEXICO

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

August 10, 1988

M E M O R A N D U M

TO: WILLIAM J. LEMAY, Director
Oil Conservation Division

FROM: JAMI BAILEY, Geologist
Environmental Bureau

SUBJECT: SOUTHWEST WATER DISPOSAL, A COMMERCIAL SURFACE DISPOSAL FACILITY NEAR BLANCO, NEW MEXICO

On May 17, 1988 a permit was issued to David Swezey of Southwest Water Disposal (SWWD) to operate a commercial facility for the surface disposal of only produced water. Construction of the facility, which began this week, was contingent upon review and approval of the pit dike design by the State Engineer Office. The permit for SWWD was issued prior to the adoption of OCD Rule 711 which regulates commercial surface waste disposal facilities.

The permit to SWWD was issued after nearly a year of OCD examination of technical issues which included the following:

1. Local geohydrology. The depth to the shallowest aquifer is ±150' at this location, although a shallower water well is located over a mile away. The Citizens Ditch is 3,000' to the south; the San Juan River is 6,500' to the southeast.

   Protection of ground water was carefully examined and monitor wells are required at the site so that any leakage from the clay-lined pit will be intercepted on site. These monitor wells will be checked on a regular schedule.

   OCD staff hydrogeologists calculated infiltration rates from a clay-lined pond and they feel confident that minimal fluid loss will occur. To prevent shrinkage of the clay liner in the presence of salts, produced water will be used in compaction of the top 2'-3' of the liner. A contingency plan has been signed by Mr. Swezey detailing actions to be taken by SWWD in the event leakage of fluid occurs. In addition, flood protection measures will be taken to prevent any surface water contamination.

Only produced water will be accepted at the facility for disposal in the surface pit. Steel tanks will be used for skimming incidental oil from the water, and oil will be stored in tanks.

2. H_2S generation. The conditions which led to H_2S generation at Basin Disposal have been eliminated in the design of SWWD's facility. A proven aeration system as well as a circulation system are incorporated in the design of the pit and will be operational upon start up of the facility. Stratification of the pit water which led to anerobic bacterial activity and H_2S generation at Basin Disposal will not be allowed to occur at SWWD. H_2S levels of incoming fluid will be monitored, and if necessary, loads will be isolated and treated prior to disposal in the pit. H_2S levels will also be monitored at the facility boundary, and if necessary, a signed contingency plan will go into effect to alleviate any problems.

Public notice of SWWD's application for a commercial surface disposal facility was published in the Farmington newspaper on October 13, 1987. Four residences are located over one-half mile away, but were identified to be within sight of the proposed facility location. Although it was not required, on December 9, 1987 the OCD sent personal copies of the public notice to each of these residences:

V. Archuleta 282 C.R. 4599
Blanco, N.M. 87412

V. Archuleta 284 C.R. 4599
Blanco, N.M. 87412

"Skip" Miller 292 C.R. 4599
Blanco, N.M. 87412

Occupant* 318 C.R. 4599
Blanco, N.M. 87412

Occupant*'s name was not available from the County Assessor, and this letter was returned to the OCD as undeliverable at that address.

No response to these notices was received by OCD or by SWWD.

The Environmental Bureau believes that SWWD should not be strictly compared to Basin Disposal. The nearest occupied home is approximately 3500' away rather than 300'; there is no comparable concentration of residents or businesses; and H_2S control is incorporated in the design of the facility.

The need for permitted commercial disposal facilities in the San Juan Basin has been identified. Improper disposal of produced water has led to contamination of ground water along the river systems in the Northwest, and the OCD is diligently working to prevent contamination by illegal dumping of produced water.

SOUTHWEST WATER DISPOSAL
P.O. Box 10734
Farmington, NM 87499
505-325-8729

July 14, 1987

Mr. Roger Anderson
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501-2088

Re: Unlined Commercial Evaporation Pit
SE/4, SW/4, Section 32-T30N-R9W
San Juan County, New Mexico

Dear Mr. Anderson:

Southwest Water Disposal (SWWD) requests administrative approval to build and operate an unlined commercial evaporation pit. In the absence of any specific guidelines for unlined pits, the "Guidelines for Application for Lined Evaporation Pit Permits" format will be utilized. Those portions that are not applicable to the design, construction or operation of an unlined will be left unanswered.

I. General Information

A. Southwest Water Disposal Owner/Operator
P.O. Box 10734
Farmington, NM 87499

B. Southwest Water Disposal Owner/Operator
P.O. Box 10734
Farmington, NM 87499

C. The facility will be located in the SE/4, SW/4 of Section 32-T30N-R9W (refer to Exhibit 1).

D. The purpose of the facility is to provide an economic and environmentally sound disposal site for produced water associated with the production operations of oil and gas wells. The primary purpose will be that of produced water disposal.

E. The original and two copies are enclosed for your review.

F. I hereby certify that I am familiar with the information contained and submitted with this application and that such information is true, accurate and complete to the best of my knowledge and belief.

David B. Swezey 7/15/87
(signature) (date)
David B. Swezey, General Manager

II. General Description

A. Proposed Operations

1. The facility will be located on privately owned land and will be used to contain and evaporate produced water associated with oil and gas production operations (refer to Exhibits 1 and 2). The produced water will be hauled in. Access will be gained from County Road 4599. The entire facility will be fenced so as to inhibit vandalism and unathorized dumping. The anticipated hours of operation are from 8:00 a.m. to 5:30 p.m. daily and 8:00 a.m. to 1:00 p.m. Saturday, closed Sunday. An attendant will be on the premises during all hours of operation. The facility will be locked closed during all hours of non-operation. A sign will be located at the entrance of the location indicating the owner, location, phone number, hours of operation and that only produced water will be accepted. Waste oil collected from the skimming pond will be periodically transported to General Crude Processing, Flora Vista, New Mexico for further processing. A run ticket for each load will be kept for a period of at least two years indicating the date, time of delivery, trucking company, source of the load, volume, operator of the well, pH, resistivity and temperature. The loads will be tested twice, once at the beginning and the second time half way through. An H_2S monitor with sensors will be installed around the skimmer pond. The sensors will be set to sound an alarm if the concentration exceeds 5 P.P.M. The monitor and sensors will be calibrated and tested per the manufacturer's specifications. As a back-up to the monitor, if H_2S is detected by sense of smell the load will be tested with a hand held tester at the point where the fluid enters the pond. The purpose of the hand held tester is to eliminate the possiblity that the strong unidirectional winds may carry the gas away from the sensors. SWWD will not accept produced water containing over 5 P.P.M. H_2S.

2a. Construction will commence after the facility is approved. Construction will take approximately three weeks. Start-up of operations, pending permit approval, are anticipated to begin August 15, 1987.

Skimmer Pit:

Dimensions: 50' x 50' x 10'
Inside Slope: 1:1
Outside Slope: 3:1
Holding Capacity: 3,000 Barrels
Evaporative Capacity: 1.5 B.W.P.D. (if clean)
Subgrade Description: Native Clay

Skimmer Pit: (continued)

Liner: Natural clay compacted to 90% of proctor (refer to Exhibit 3)
Liner Thickness: Minimum 2'
Installation Method: Native clay to be ripped up, replaced and compacted
Leak Detection: Monitor wells drilled around perimeter of location
Freeboard: 1.5'
Runoff-Runon Protection: The pit is located on the side of a broad, gentle ridge. A diversion ditch will be cut on the North side to catch any runoff.

Evaporation Pit:

The evaporative capacity is based on a net evaporation rate of 48 inches per year. The pan evaporation rate this area averages 60 inches per year. The average annual rainfall for this area is 12 inches per year.

Dimensions: 400' x 400' x 15' (approx. 2,280,000 ft^3)
Inside Slope: 3:1
Outside Slope: 3:1
Holding Capacity: 365,461 barrels (2,052,000 ft^3)
Evaporative Capacity: 312 B.W.P.D. (yearly average)
Subgrade Description: Native Clay
Liner: Natural clay compacted to 90% (refer to Exhibit 3)
Liner Thickness: Variable, 2' minimum
Installation Method: Native clay to be ripped up, replaced and compacted.
Leak Detection: 13 monitoring wells will be drilled andcased. Each well be drilled 5' into the first sandstone layer. The total depth will vary from 20' to 35' deep depending on the location of the well. The casing will be perforated in the sandstone layer. gravel packed over the perforations, backfilled to with 5' of surface and then cemented to surface. Liner to be of sufficient size so samples may be easily obtained.
Freeboard: 1.5'
Runoff/Runon Protection: The pit is located on a gentle sloping ridge. A diversion ditch will be cut on the North side of the pit to catch any runoff.

2b. No drying beds are anticipared. Salt generation calculations[1] indicate that at a designed evaporation rate of 312 B.W.P.D., only 13,022 ft^3 of salt will be formed on a yearly basis. Two assumptions were made to generate these figures. The first is that NaCl is the main precipitate. The second is that the average concentration (T.D.S.) is 15,000 ppm.
The freeboard capacity of the evaporation pit is approximately 2,052,000 ft^3. The salt generated by total evaporation of the initial fill-up will be approximately 42,053 ft^3. When the pit reaches freeboard capacity, the yearly salt generation, based on 312 B.P.D. will be 13,022 ft^3. At this evaporation rate the pit, when compensated for initial fill-up, will not fill up to freeboard capacity with precipitated salts for 154 years. The effect of loess material will be minimal as the area is 65% covered with natural vegetation and the project life of the facility is 50 years.
From time to time it may become necessary to remove solids from the skimmer pit. As it becomes necessary the solids will be removed and placed in the main evaporation pit.

3. The only ancillary equipment will be field office and a spray system complete with pump house (refer to Exhibit 2). The spray system will be installed as Market Conditions dictate. However, the plumbing necessary to operate the sprayer will be installed during the initial construction.

B. Spill/Leak Prevention Procedures/Contingency Plan

1. If a leak should be detected, the pond and monitoring wells will be the containment vessels. No further deliveries will be accepted. Artificial means will be employed to expedite the evaporation process. Due to the geologic nature of the site, downward percolation is less probable than horizontal migration. This being the case, the monitor wells will serve as the conduit to remove the contaminating water. The NMOCD will be promptly notified of any leaks.

2. The monitoring wells will provide the means in which to detect leaks. Each well will be checked on a monthly basis. If water is encountered in the well a sample will be collected and analyzed to determine if the water is from the evaporation pit. If the water is from the pit we will implement the contingency plan as outlined previously.

III. A. Hydrologic Features

1. The closest body of water is the Citizens ditch which receives water from the San Juan River. The Citizens ditch is 3,000' to the South and the San Juan River is 6,500' to the Southeast. There are no recorded water wells within one mile (SE SW Sec. 6-T29N-R9W, Gilbert Montoya, Owner). Most of the recorded wells are less than 50' deep and appear to be completedin the San Juan River Alluvium. The nearest occupied home is approximately 3,500' to the Southeast. The homes in this area receive their domestic water from the wells and Blanco Water Users Association, which receives its water from the San Juan River.

2. The total disolved solids in the San Juan River and Citizen's ditch are minimal. The concentration is expected to be less than 800 ppm. No water analysis was performed on either body of water.

3. The flow direction is unknown; however, a Southerly flow is indicated by topography.

B. One well was drilled outside the perimeter of the proposed site. The driller's log for each is attached. The depth to a permeable medium is 18' (see Exhibit 4). Upon drilling into the sandstone layer no water was encountered. The test well was drilled with air so any water encountered would have been easily determined. The stratigraphy of the area is characterized by stacked, massive layers of tan sandstone and blue-grey and grey clay. The top of the sandstone layer (18-22', Exhibit 4),immediately beneath the clay layer in which the pit is to be constructed, is characterized by fine grain to medium grain friable, poorly sorted, subangular sandstone containing less than 10% clay. The next facies (22-32', Exhibit 4) is characterized by fine grain, moderately friable, fair sorting, subround sandstone containing 20-30% clay. If water reaches this sandstone layer it is most likely to travel through the more permeable upper layer. Each monitor well will be drilled 5' into the sandstone cased through that point and perforated in this sandstone layer. The completion of each well will be as outlined previously. The permeability of the undisturbed clay will be low; however, it will not be as low as the compacted clay (1.9×10^{-7} cm/sec). The name of the shallowest aquifier if unknown; however, the depth is estimated to be ±150'. The depth was obtained from a cathodic protection groundbed drilled at the Amoco, Heath Gas Com K, No 1E location (Unit O, Sec. 32-T30N-R9W).

C. Flooding of this site is highly unlikely. The pit is located out of any established water courses and a diversion ditch will be cut on the uphill side of both the main pit aswell as the skimmer pond. The pit is located approximately 130' vertically from the San Juan River. Flooding of the pit by rainfall is unlikely as the pit has a freeboard of 1.5'. Rainfall amounts of this magnitude are remote at best as the yearly average rainfall is only 12".

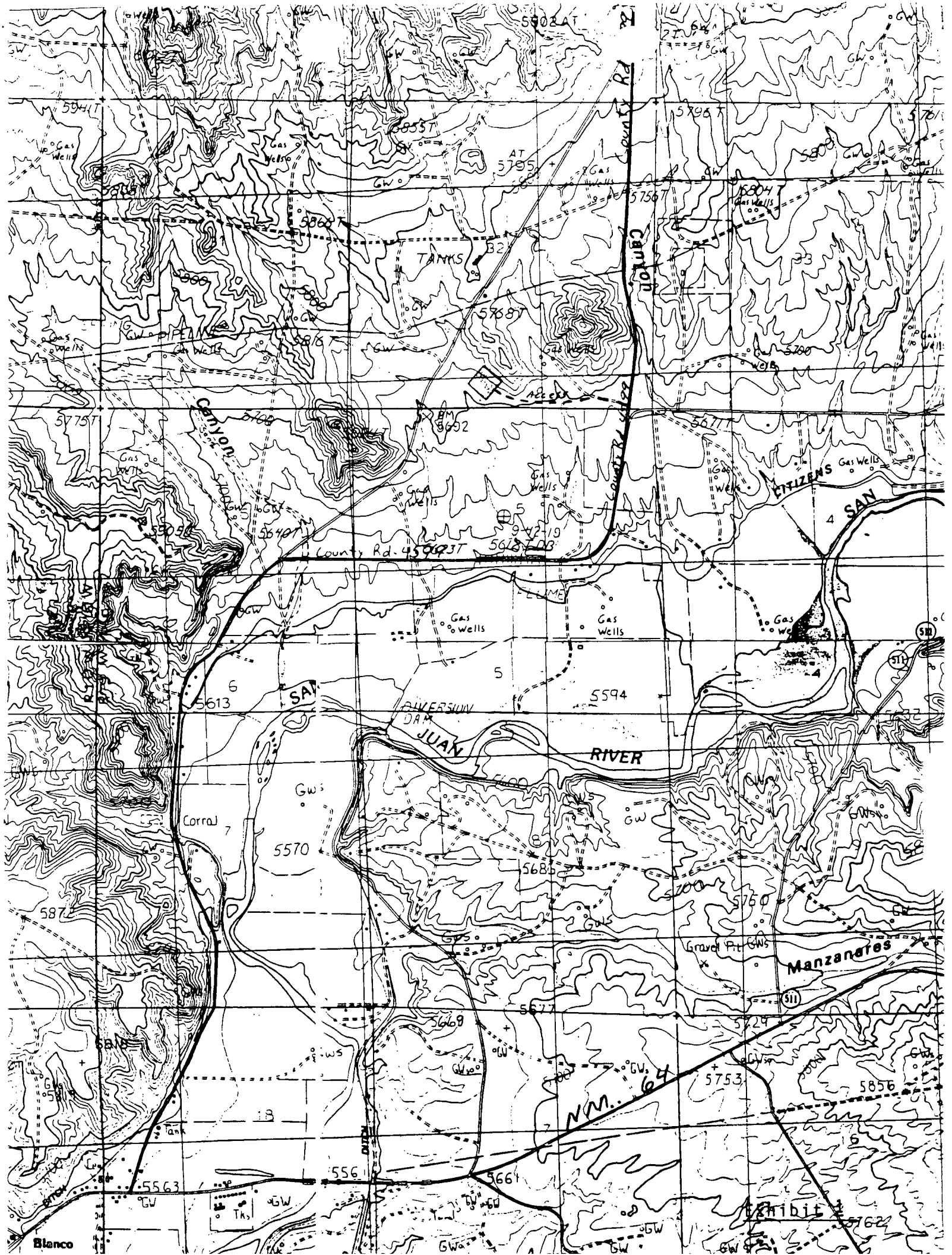
IV. Additional Information

Operation of this facility will be consistent with those required by Order R-7940A.

If this application meets with your approval, please advise as construction start-up is waiting for authorization. As "as-built" diagram will be submitted upon completion of construction.

Very truly yours,

David B. Swezey
General Manager


County Rd.
Canyon
TANKS
PELAM
Gas Wells
CITIZENS
SAN JUAN RIVER
DAM
Corral
Gravel Pit
Manzanares
NM. 64
Exhibit
Blanco

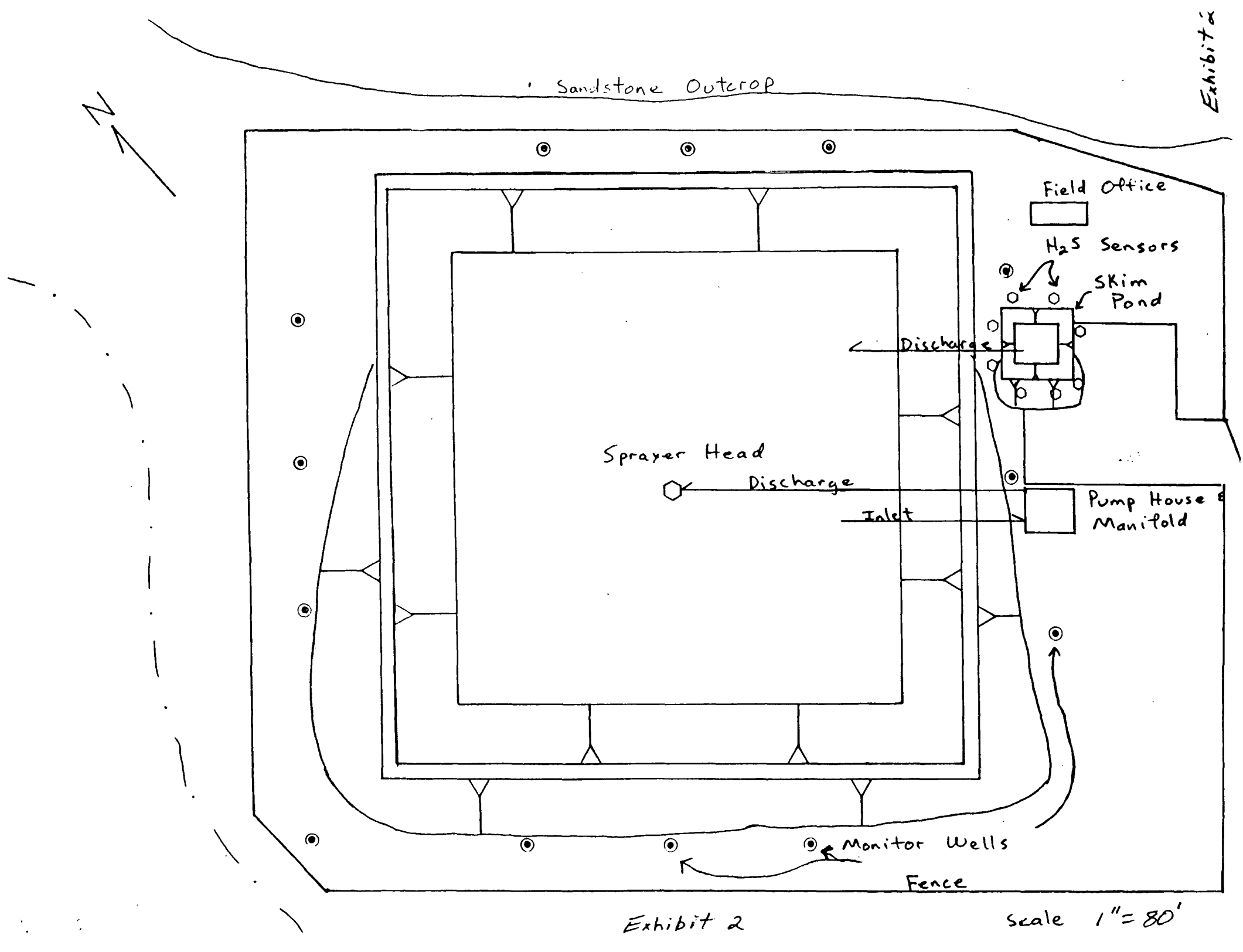


Exhibit 2

Scale 1" = 80'

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

PHYSICAL PROPERTIES OF AGGREGATES

Client: Southwest Water Disposal 30020
Post Office Box 10734
Farmington, New Mexico 87499
Attn: Mr. Bob Franks

Job No. _____
Lab/Invoice No. 31470624
Date of Report 07/02/87
Reviewed By L Woosley

Project: Evaporation Pond

Location: Blanco, New Mexico — Sampled By: B. Franks/Client — Date: 06/23/87

Type of Aggregate: Grayish Silty Clay — Submitted By: B. Franks/Client — Date: 06/23/87

Source of Aggregate: Native — Authorized By: B. Franks/Client — Date: 06/23/87

Sieve Analysis, ASTM C136-

Sieve Size	% Passing Accumulative	Specification
4"		
3"		
2"		
1½"		
1⅛"		
1"		
¾"		
½"		
⅜"		
¼"		
No. 4		
8		
10		
16		
30		
40		
50		
100		
Finer than 200 ASTM C117-		

Test Standards are ASTM unless otherwise noted.

Test		Result	Specification	Test STD
Fineness Modulus				C125-
Dry Rodded Unit Weight, pcf				C29-
Lightweight Pieces, %				C123-
Clay Lumps and Friable Particles				C142-
Organic Impurities				C40-
Sand Equivalent Value				C2419-
Resistance to Abrasion	% Wear, rev.			C131- Grading
	% Wear, 500 rev.			
	% Wear, rev.			C535- Grading
	% Wear, 1000 rev.			
Scratch Hardness, % by: Weight | Count		|	|	C235-
Fractured Faces, % by: Weight | Count		|	|	
Liquid Limit | Plasticity Index		|	|	D4318-
Cleanness Value				Calif. 227-
*Constant Head Permeability, CM/Sec.		1.9×10^{-7}	--	
Moisture Density Relations	Max. Dry Density, pcf	113.5	☒ D698- A ☐ D1557- ☐ AASHTO T99- ☐ AASHTO T180-	
	Optimum Moisture, %	16.8		
	Method	A		
Specific Gravity	Absorption, %		☐ C127- ☐ C128-	
	Bulk (Dry)			
	Bulk (SSD)			
	Apparent			

Copies to: Client (3)
/lv

*Molded to 90% compaction at optimum moisture content.

Exhibit 3

SW WD

Drillers Log

Subject: Test Well

Location: Northwest corner of proposed evaporation pond.
SE/4, SW/4 Section 32-T30N-R9W
San Juan County, New Mexico

Depth	Thickness	Description
0- 8"	8'	Brown Grey clay,80% clay, 20% silt
8-10"	2'	Brown Grey clay,90% clay, 10% silt
10-18"	8'	Grey Brown clay,95% clay, 5% silt
18-22"	4'	Tan sandstone, fine grain to medium grain, friable, poorly sorted, subangular
22-32"	10'	Tan sandstone, fine grain, moderately friable, fair sorting, subround 25% clay.

Exhibit 4

SOUTHWEST WATER DISPOSAL
P.O. Box 10734
Farmington, NM 87499
505-325-8729

July 14, 1987

Mr. Roger Anderson
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501-2088

Re: Unlined Commercial Evaporation Pit
SE/4, SW/4, Section 32-T30N-R9W
San Juan County, New Mexico

Dear Mr. Anderson:

Southwest Water Disposal (SWWD) requests administrative approval to build and operate an unlined commercial evaporation pit. In the absence of any specific guidelines for unlined pits, the "Guidelines for Application for Lined Evaporation Pit Permits" format will be utilized. Those portions that are not applicable to the design, construction or operation of an unlined will be left unanswered.

I. General Information

A. Southwest Water Disposal Owner/Operator
P.O. Box 10734
Farmington, NM 87499

B. Southwest Water Disposal Owner/Operator
P.O. Box 10734
Farmington, NM 87499

C. The facility will be located in the SE/4, SW/4 of Section 32-T30N-R9W (refer to Exhibit 1).

D. The purpose of the facility is to provide an economic and environmentally sound disposal site for produced water associated with the production operations of oil and gas wells. The primary purpose will be that of produced water disposal.

E. The original and two copies are enclosed for your review.

F. I hereby certify that I am familiar with the information contained and submitted with this application and that such information is true, accurate and complete to the best of my knowledge and belief.

David B. Swezey — 7/15/87
(signature) (date)
David B. Swezey, General Manager

II. General Description

A. Proposed Operations

1. The facility will be located on privately owned land and will be used to contain and evaporate produced water associated with oil and gas production operations (refer to Exhibits 1 and 2). The produced water will be hauled in. Access will be gained from County Road 4599. The entire facility will be fenced so as to inhibit vandalism and unathorized dumping. The anticipated hours of operation are from 8:00 a.m. to 5:30 p.m. daily and 8:00 a.m. to 1:00 p.m. Saturday, closed Sunday. An attendant will be on the premises during all hours of operation. The facility will be locked closed during all hours of non-operation. A sign will be located at the entrance of the location indicating the owner, location, phone number, hours of operation and that only produced water will be accepted. Waste oil collected from the skimming pond will be periodically transported to General Crude Processing, Flora Vista, New Mexico for further processing. A run ticket for each load will be kept for a period of at least two years indicating the date, time of delivery, trucking company, source of the load, volume, operator of the well, pH, resistivity and temperature. The loads will be tested twice, once at the beginning and the second time half way through. An H_2S monitor with sensors will be installed around the skimmer pond. The sensors will be set to sound an alarm if the concentration exceeds 5 P.P.M. The monitor and sensors will be calibrated and tested per the manufacturer's specifications. As a back-up to the monitor, if H_2S is detected by sense of smell the load will be tested with a hand held tester at the point where the fluid enters the pond. The purpose of the hand held tester is to eliminate the possiblity that the strong unidirectional winds may carry the gas away from the sensors. SWWD will not accept produced water containing over 5 P.P.M. H_2S.

2a. Construction will commence after the facility is approved. Construction will take approximately three weeks. Start-up of operations, pending permit approval, are anticipated to begin August 15, 1987.

Skimmer Pit:

Dimensions: 50' x 50' x 10'
Inside Slope: 1:1
Outside Slope: 3:1
Holding Capacity: 3,000 Barrels
Evaporative Capacity: 1.5 B.W.P.D. (if clean)
Subgrade Description: Native Clay

Skimmer Pit: (continued)

Liner: Natural clay compacted to 90% of proctor (refer to Exhibit 3)
Liner Thickness: Minimum 2'
Installation Method: Native clay to be ripped up, replaced and compacted
Leak Detection: Monitor wells drilled around perimeter of location
Freeboard: 1.5'
Runoff-Runon Protection: The pit is located on the side of a broad, gentle ridge. A diversion ditch will be cut on the North side to catch any runoff.

Evaporation Pit:

The evaporative capacity is based on a net evaporation rate of 48 inches per year. The pan evaporation rate this area averages 60 inches per year. The average annual rainfall for this area is 12 inches per year.

Dimensions: 400' x 400' x 15' (approx. 2,280,000 ft^3)
Inside Slope: 3:1
Outside Slope: 3:1
Holding Capacity: 365,461 barrels (2,052,000 ft^3)
Evaporative Capacity: 312 B.W.P.D. (yearly average)
Subgrade Description: Native Clay
Liner: Natural clay compacted to 90% (refer to Exhibit 3)
Liner Thickness: Variable, 2' minimum
Installation Method: Native clay to be ripped up, replaced and compacted.
Leak Detection: 13 monitoring wells will be drilled andcased. Each well be drilled 5' into the first sandstone layer. The total depth will vary from 20' to 35' deep depending on the location of the well. The casing will be perforated in the sandstone layer. gravel packed over the perforations, backfilled to with 5' of surface and then cemented to surface. Liner to be of sufficient size so samples may be easily obtained.
Freeboard: 1.5'
Runoff/Runon Protection: The pit is located on a gentle sloping ridge. A diversion ditch will be cut on the North side of the pit to catch any runoff.

2b. No drying beds are anticipared. Salt generation calculations[1] indicate that at a designed evaporation rate of 312 B.W.P.D., only 13,022 ft^3 of salt will be formed on a yearly basis. Two assumptions were made to generate these figures. The first is that NaCl is the main precipitate. The second is that the average concentration (T.D.S.) is 15,000 ppm.
The freeboard capacity of the evaporation pit is approximately 2,052,000 ft^3. The salt generated by total evaporation of the initial fill-up will be approximately 42,053 ft^3. When the pit reaches freeboard capacity, the yearly salt generation, based on 312 B.P.D. will be 13,022 ft^3. At this evaporation rate the pit, when compensated for initial fill-up, will not fill up to freeboard capacity with precipitated salts for 154 years. The effect of loess material will be minimal as the area is 65% covered with natural vegetation and the project life of the facility is 50 years.
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1. If a leak should be detected, the pond and monitoring wells will be the containment vessels. No further deliveries will be accepted. Artificial means will be employed to expedite the evaporation process. Due to the geologic nature of the site, downward percolation is less probable than horizontal migration. This being the case, the monitor wells will serve as the conduit to remove the contaminating water. The NMOCD will be promptly notified of any leaks.

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3. The flow direction is unknown; however, a Southerly flow is indicated by topography.

B. One well was drilled outside the perimeter of the proposed site. The driller's log for each is attached. The depth to a permeable medium is 18' (see Exhibit 4). Upon drilling into the sandstone layer no water was encountered. The test well was drilled with air so any water encountered would have been easily determined. The stratigraphy of the area is characterized by stacked, massive layers of tan sandstone and blue-grey and grey clay. The top of the sandstone layer (18-22', Exhibit 4),immediately beneath the clay layer in which the pit is to be constructed, is characterized by fine grain to medium grain friable, poorly sorted, subangular sandstone containing less than 10% clay. The next facies (22-32', Exhibit 4) is characterized by fine grain, moderately friable, fair sorting, subround sandstone containing 20-30% clay. If water reaches this sandstone layer it is most likely to travel through the more permeable upper layer. Each monitor well will be drilled 5' into the sandstone cased through that point and perforated in this sandstone layer. The completion of each well will be as outlined previously. The permeability of the undisturbed clay will be low; however, it will not be as low as the compacted clay (1.9×10^{-7} cm/sec). The name of the shallowest aquifier if unknown; however, the depth is estimated to be ±150'. The depth was obtained from a cathodic protection groundbed drilled at the Amoco, Heath Gas Com K, No 1E location (Unit O, Sec. 32-T30N-R9W).

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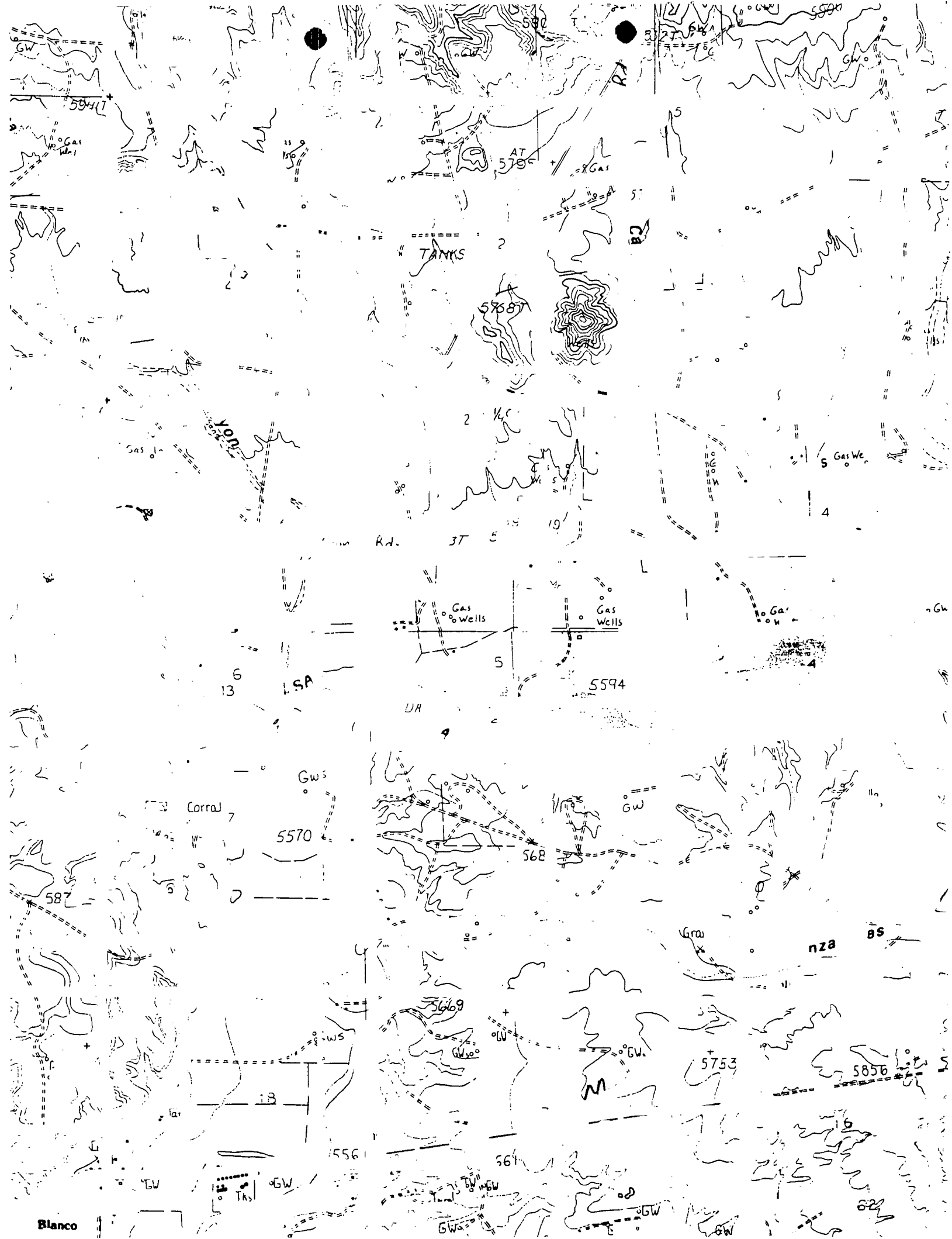
General Manager


Gas Wells
Gas Wells
5594
5570
5669
5753
5856
Blanco

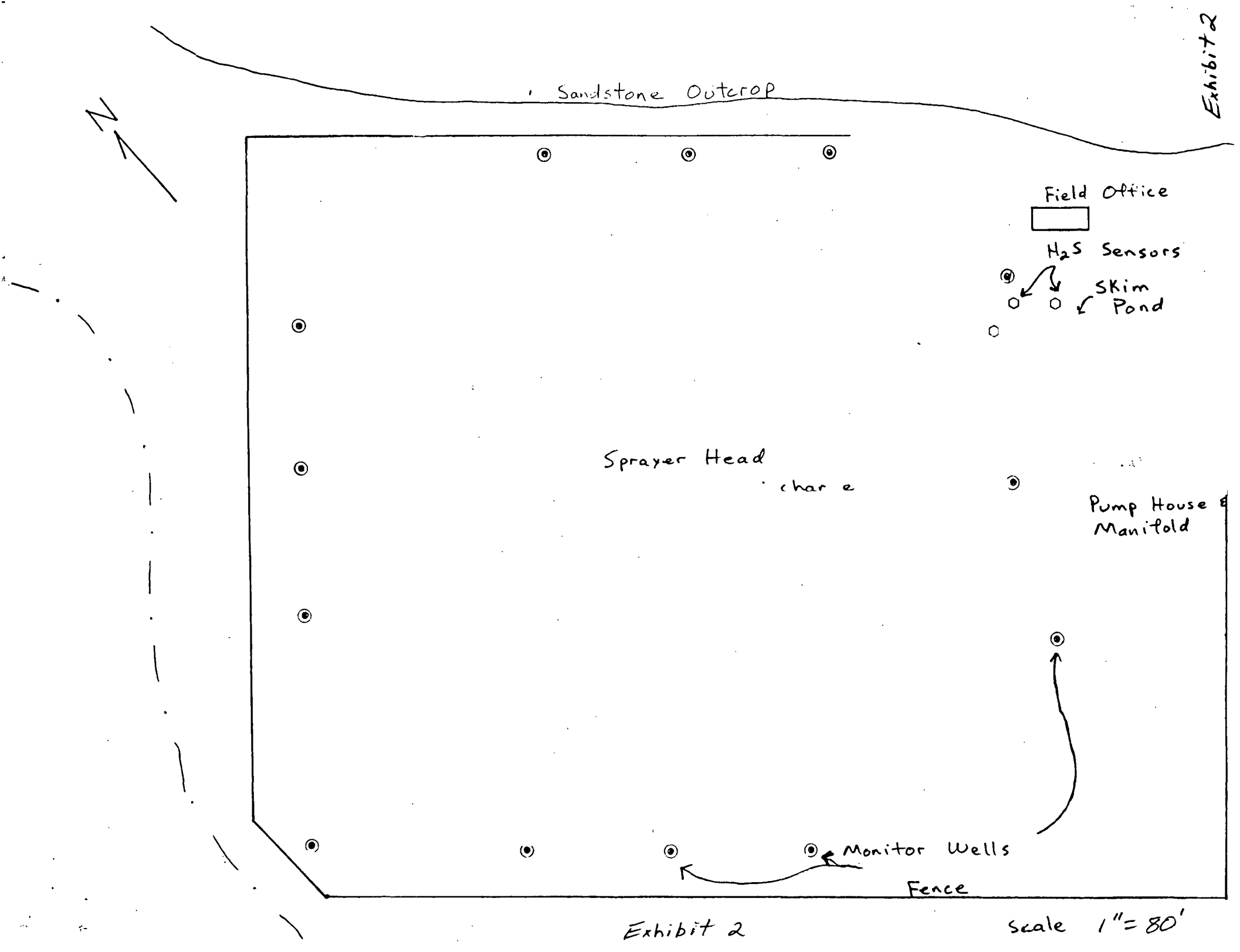


Exhibit 2
Sandstone Outcrop
N
Field Office
H_2S Sensors
Skim Pond
Sprayer Head
Pump House & Manifold
Monitor Wells
Fence
Exhibit 2
scale 1" = 80'

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

LABORATORY REPORT

PHYSICAL PROPERTIES OF AGGREGATES

Client: Southwest Water Disposal 30020
Post Office Box 10734
Farmington, New Mexico 87499
Attn: Mr. Bob Franks

Job No. _____
Lab/Invoice No. 31470624
Date of Report 07/02/87
Reviewed By L Woodard

Project: Evaporation Pond

Location: Blanco, New Mexico — Sampled By: B. Franks/Client — Date: 06/23/87

Type of Aggregate: Grayish Silty Clay — Submitted By: B. Franks/Client — Date: 06/23/87

Source of Aggregate: Native — Authorized By: B. Franks/Client — Date: 06/23/87

Sieve Analysis, ASTM C136-

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3"		
2"		
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1⅛"		
1"		
¾"		
½"		
⅜"		
¼"		
No. 4		
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16		
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40		
50		
100		
Finer than 200 ASTM C117-		

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Test		Result	Specification	Test STD
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Organic Impurities				C40-
Sand Equivalent Value				C2419-
Resistance to Abrasion	% Wear, rev.			C131- Grading
	% Wear, 500 rev.			
	% Wear, rev.			C535- Grading
	% Wear, 1000 rev.			
Scratch Hardness, % by: Weight | Count		|	|	C235-
Fractured Faces, % by: Weight | Count		|	|	
Liquid Limit | Plasticity Index		|	|	D4318-
Cleanness Value				Calif. 227-
*Constant Head Permeability, CM/Sec.		1.9×10^{-7}	--	
Moisture Density Relations	Max. Dry Density, pcf	113.5	☒ D698- A ☐ D1557- ☐ AASHTO T99- ☐ AASHTO T180-	
	Optimum Moisture, %	16.8		
	Method	A		
Specific Gravity	Absorption, %		☐ C127- ☐ C128-	
	Bulk (Dry)			
	Bulk (SSD)			
	Apparent			

Copies to: Client (3)
/lv

*Molded to 90% compaction at optimum moisture content.

Exhibit 3

SW WD

Drillers Log

Subject: Test Well

Location: Northwest corner of proposed evaporation pond.
SE/4, SW/4 Section 32-T30N-R9W
San Juan County, New Mexico

Depth	Thickness	Description
0- 8"	8'	Brown Grey clay,80% clay, 20% silt
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