ENGINEERING AND DESIGN
OF
PLATA DISPOSAL FACILITY
SECTION 16, TOWNSHIP 20 SOUTH, RANGE 32 EAST
LEA COUNTY, NEW MEXICO

PETRO-THERMO CORPORATION

P.O. BOX 2069 PHONES (505) 393-2417 — 397-3557

HOBBS, NEW MEXICO 88241-2069

PREPARED FOR:

NEW MEXICO OIL CONSERVATION DIVISION
CASE NO. 8781

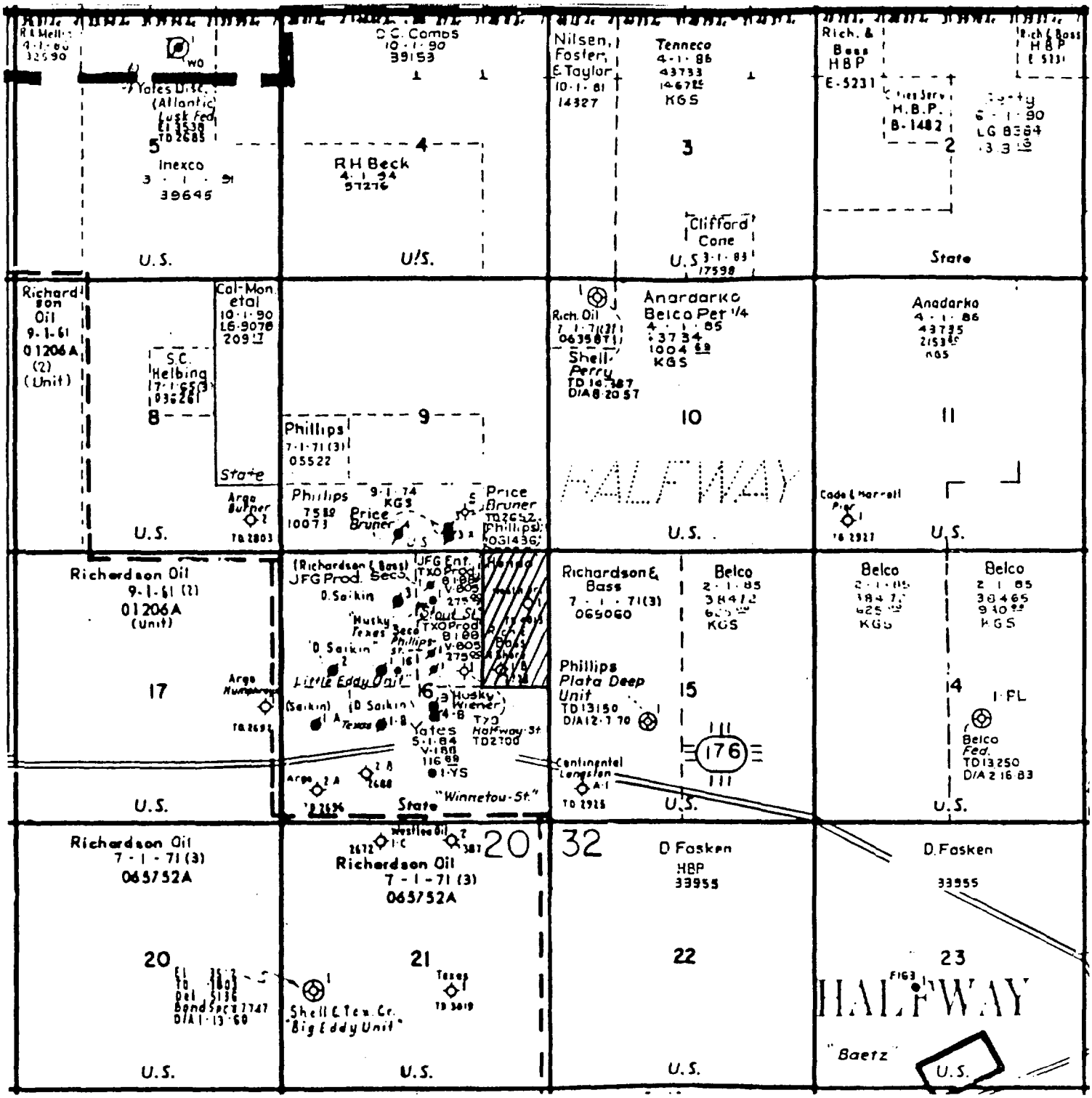
APRIL 9, 1986

SEPTEMBER 18, 1986

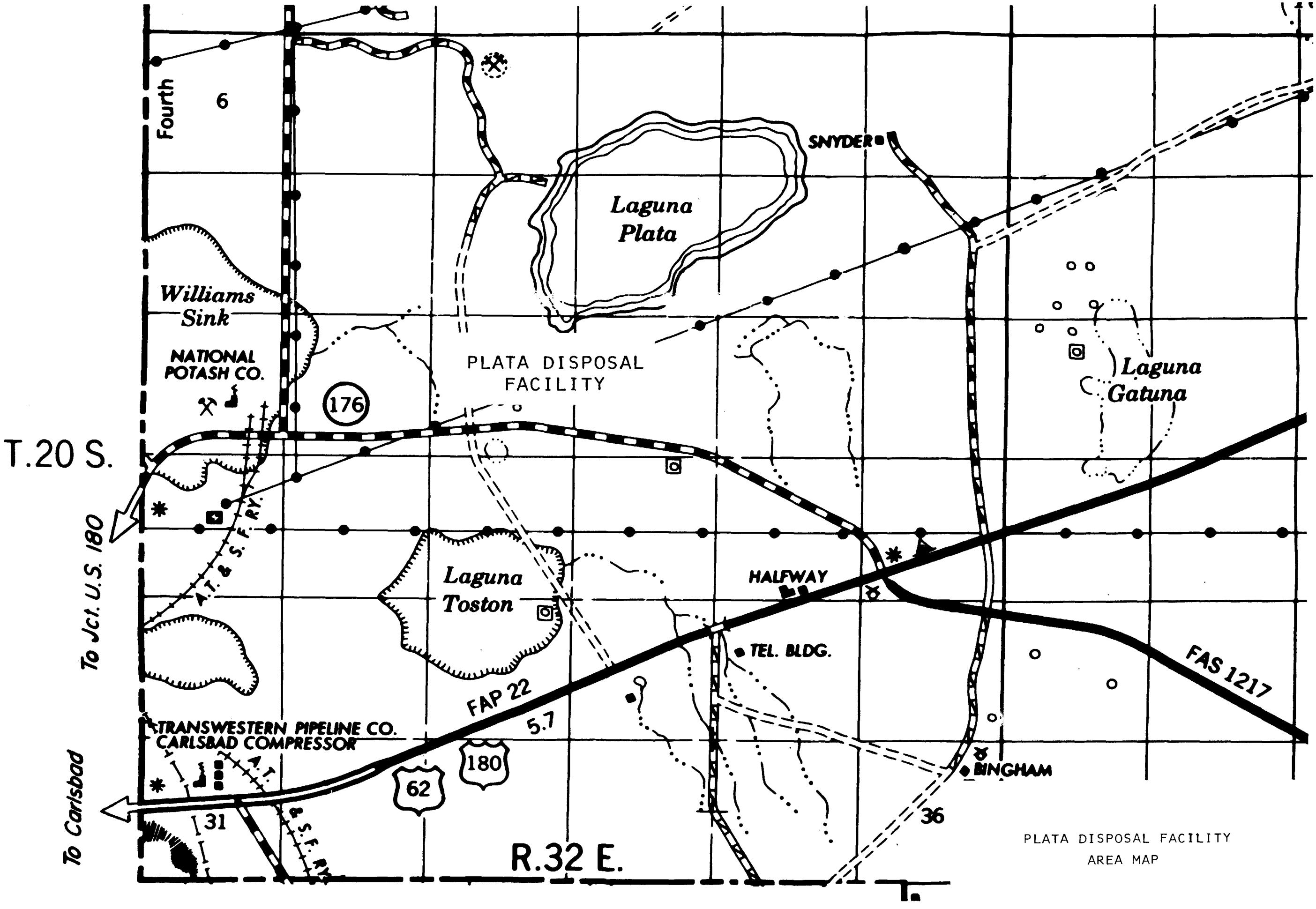
8781 5

PLATA DISPOSAL FACILITY

OWNERSHIP MAP



MIDLAND MAP COMPANY
SOUTHWEST LEA COUNTY,
NEW MEXICO
POSTED TO 1/25/85



PLATA DISPOSAL FACILITY
AREA MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WILLIAMS SINK QUADRANGLE
NEW MEXICO
7.5 MINUTE SERIES (TOPOGRAPHIC)

PLATA DISPOSAL FACILITY

PLATA DISPOSAL FACILITY
U.S.G.S. TOPOGRAPHIC MAP

SCALE 1:24 000

MILES 1 0 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000
FEET 1 0 1 2
1000 0 METERS 1000 2000

CONTOUR INTERVAL 10 FEET

PROVISIONAL MAP
Produced from original manuscript drawings ... information shown as of date of field check. 3

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

QUADRANGLE LOCATION

ADJOINING 7.5' QUADRANGLE NAMES
1 Hackberry Lake
2 Greenwood Lake
3 Laguna Grande NW
4 Corral Hill North
5 Laguna Grande
6 Corral Hill South
7 Livingston Ridge
8 The Divide

ROAD LEGEND
Improved Road
Unimproved Road
Trail
Interstate Route U.S. Route State Route

WILLIAMS SINK, NEW MEXICO
PROVISIONAL EDITION 1985

32103-E7-TF-024

PETRO-THERMO CORPORATION
P.O. BOX 2069 PHONES (505) 393-2417 — 397-3557
HOBBS, NEW MEXICO 88241-2069

WATER ANALYSIS

SAMPLE: LAGUNA PLATA LAKE WATER

LOCATION: APPROXIMATELY 2500' FNL, 1800' FEL
SECTION 10, TOWNSHIP 20 SOUTH, RANGE 32 EAST
LEA COUNTY, NEW MEXICO

DATE: DECEMBER 11, 1985

SPECIFIC GRAVITY AT 60°F	1.2205
pH	7.34
CALCIUM	940 MG/L
MAGNESIUM	3,317 MG/L
SODIUM	124,644 MG/L
BICARBONATE	71 MG/L
CARBONATE AS C_ACO_3	16,000 MG/L
HYDROXIDE	NOT RUN
SULFATE	10,124 MG/L
CHLORIDES	196,012 MG/L
IRON	.25 MG/L
BARIUM	NOT RUN
MANGANESE	NOT RUN
TOTAL DISSOLVED SOLIDS	335,108 MG/L

PETRO-THERMO CORPORATION
P.O. BOX 2069 PHONES (505) 393-2417 — 397-3557
HOBBS, NEW MEXICO 88241-2069

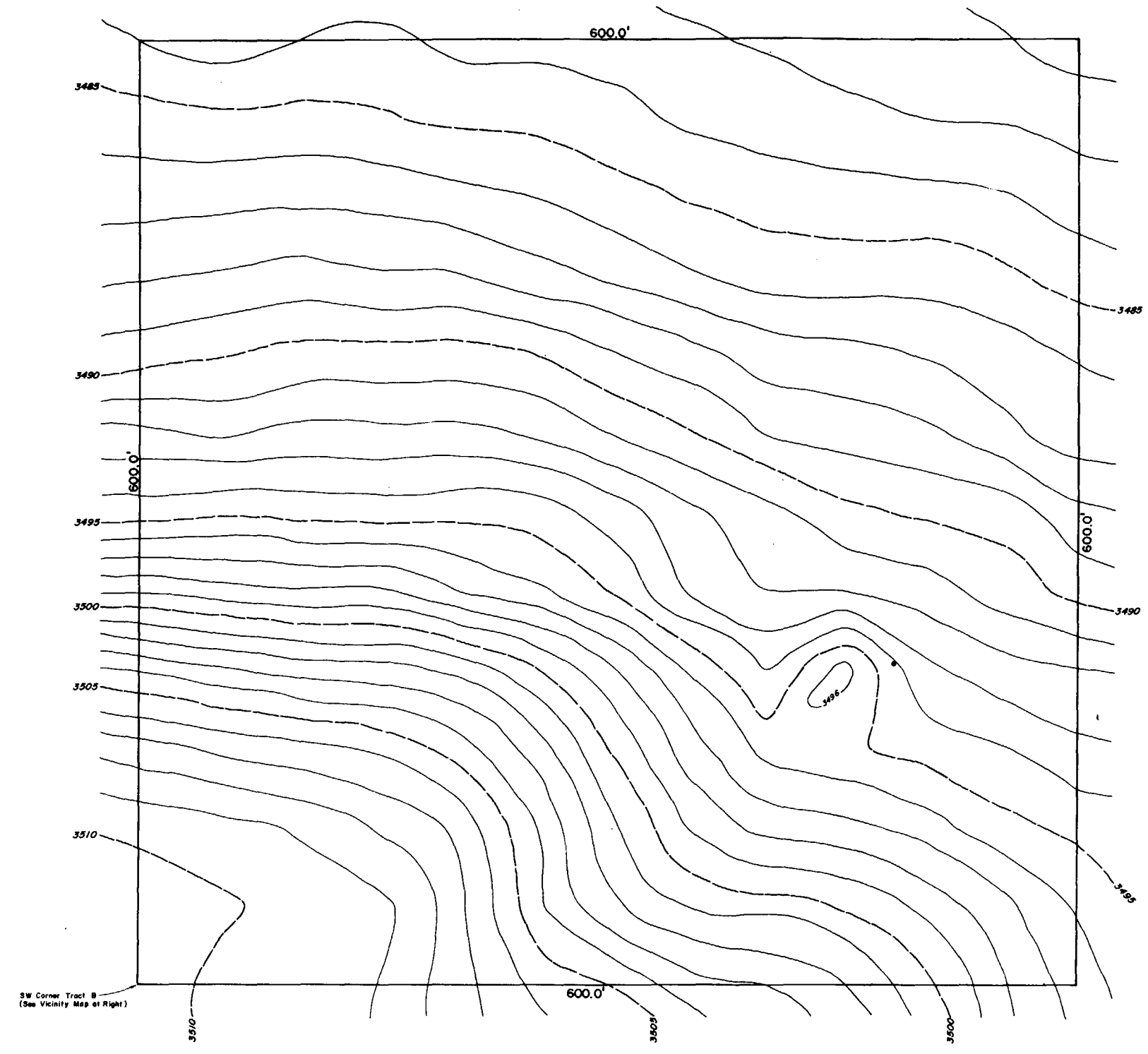
WATER ANALYSIS

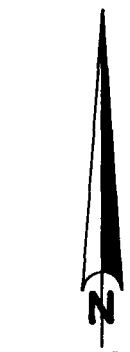
SAMPLE: SPRING DISCHARGE

LOCATION: APPROXIMATELY 1220' FNL, 1320' FEL
SECTION 16, TOWNSHIP 20 SOUTH, RANGE 32 EAST
LEA COUNTY, NEW MEXICO

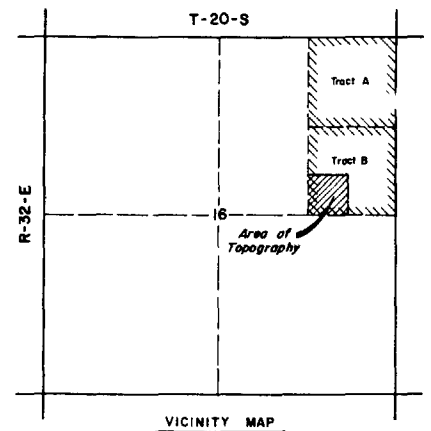
DATE: MARCH 27, 1986

SPECIFIC GRAVITY AT 60^0F	1.035
$_pH$	8.21
CALCIUM	801 MG/L
MAGNESIUM	1,633 MG/L
SODIUM	15,594 MG/L
BICARBONATE	170 MG/L
CARBONATE	30 MG/L
HYDROXIDE	0 MG/L
SULFATE	16,375 MG/L
CHLORIDES	18,000 MG/L
IRON	.3 MG/L
BARIUM	0 MG/L
MANGANESE	NOT RUN
TOTAL DISSOLVED SOLIDS	52,605 MG/L





Scale: 1" = 40'
Contour Interval: 1 foot



VICINITY MAP
4" = 1 Mile

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOHN W. WEST, N.M. P.E. & L.S. No. 676
TEXAS R.P.S. No. 1138

AGUA, INC.

TOPOGRAPHY OF A 600' x 600' AREA OUT OF TRACT B, BEING THE SE 1/4 NE 1/4 OF SECTION 16, T 20 S, R 32 E, N.M.P.M., LEA COUNTY, NEW MEXICO.

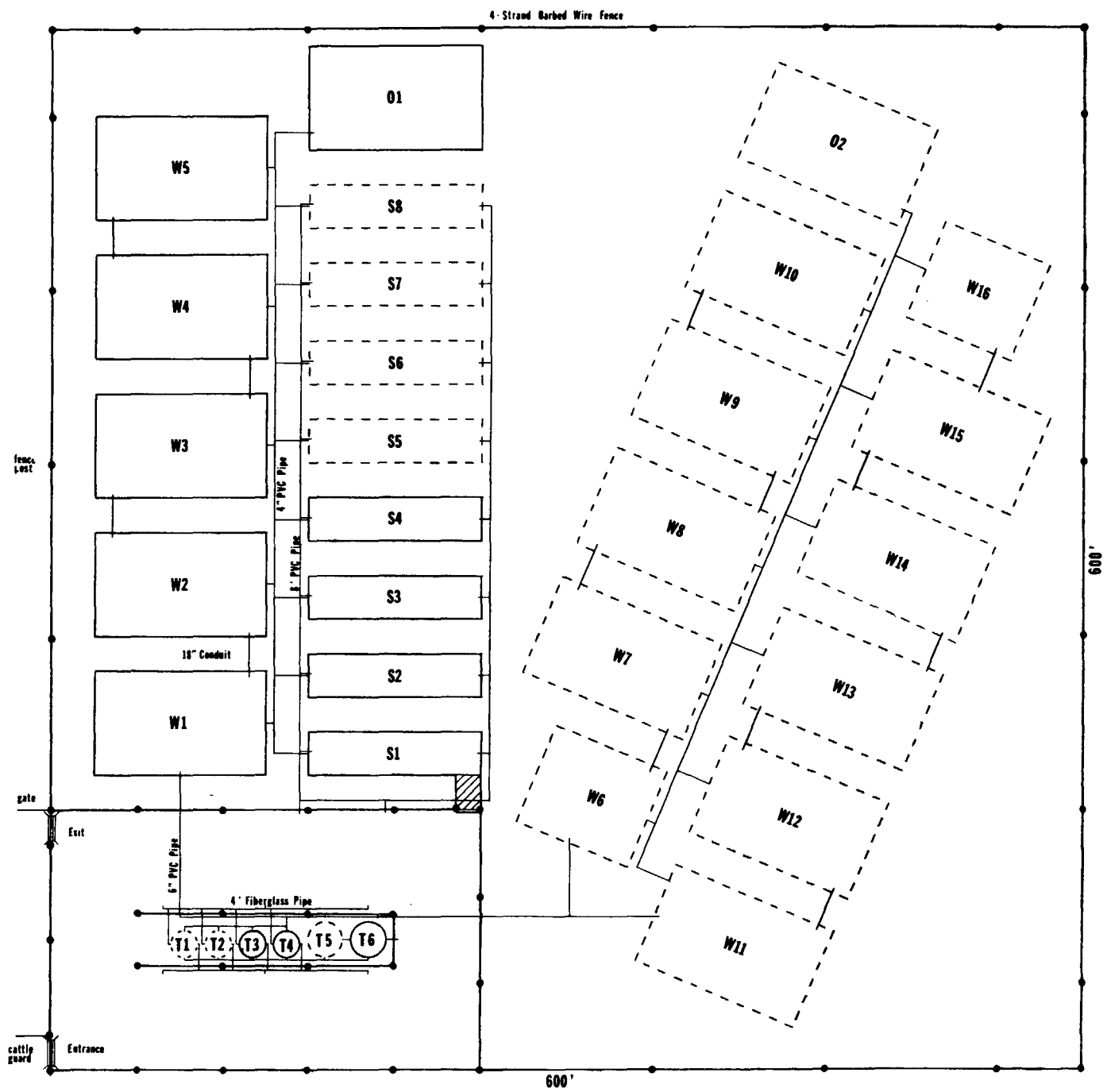
JOHN WEST ENGINEERING CO.
CONSULTANTS
HOBBS NEW MEXICO

Surveyed By D. Hicks	Drawn By M. Mitchell	Last Rev. Date	Drawing Number
Date Begin 10-11-85	Date 10/30/85	File No.	
Date End 10-18-85	Checked By G. T.	Sheet 1 Of 1	

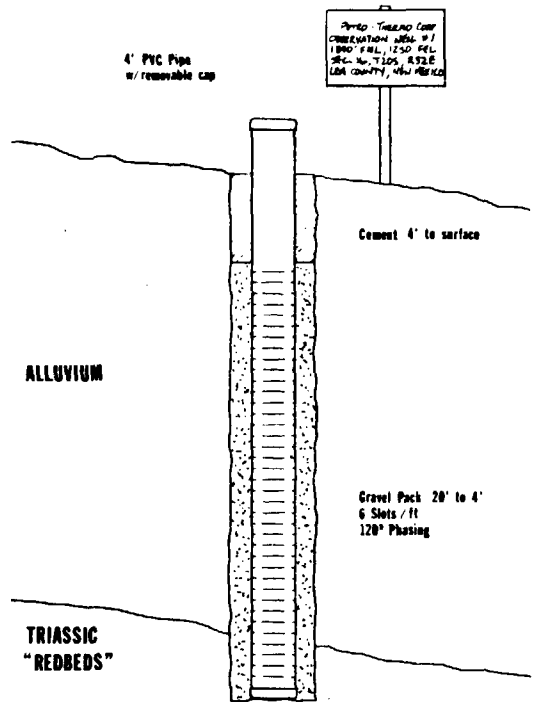
WELL NO. 1 ● WELL NO. 2 ●

(See OBSERVATION WELL DIAGRAM)

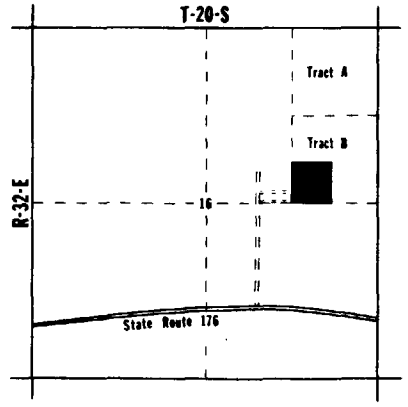
W - WATER PIT
S - SOLIDS PIT
O - OVERFLOW PIT
T - TANK BATTERY



PHASE 1 - solid lines
PHASE 2 - dashed lines



OBSERVATION WELL DIAGRAM



VICINITY MAP

PLATA DISPOSAL DESIGN			
SCALE: 1" : 40'	APPROVED BY:	DRAWN BY: JDT	
DATE: 4-9-86		REVISED	
Section 16, Township 20 South, Range 32 East			
Lea County, New Mexico		DRAWING NUMBER	

PETRO-THERMO CORPORATION
P.O. BOX 2069 PHONES (505) 393-2417 — 397-3557
HOBBS, NEW MEXICO 88241-2069

APRIL 9, 1986

PLATA DISPOSAL

PIT AND TANK CHART

PIT OR TANK NUMBER	CAPACITY (BBLS)	LENGTH (FT)	WIDTH (FT)	DEPTH (FT)	BOTTOM ELEVATION (FT)
W1	7480	100	60	10	3496
W2	6411	100	60	9	3490
W3	4274	100	60	7	3487
W4	4274	100	60	7	3484
W5	4274	100	60	7	3481
W6	5236	70	60	10	3492
W7	5343	100	60	8	3488
W8	4274	100	60	7	3486
W9	4274	100	60	7	3483
W10	4274	100	60	7	3481
W11	5343	100	60	8	3492
W12	5343	100	60	8	3488
W13	5343	100	60	8	3487
W14	4274	100	60	7	3483
W15	4274	100	60	7	3481
W16	2778	65	60	7	3479
	77469				
S1	3117	100	25	10	3495
S2	3117	100	25	10	3491
S3	2671	100	25	9	3489
S4	2226	100	25	8	3487
S5	2226	100	25	8	3485
S6	2226	100	25	8	3483
S7	2226	100	25	8	3481
S8	2226	100	25	8	3480
	20035				
O1	4274	100	60	7	3478
O2	4274	100	60	7	3477
	8548				
T1	750				3509
T2	750				3509
T3	750				3509
T4	750				3509
T5	1000				3509
T6	1000				3509
	5000				

50 YEARS

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

1935 - 1985

TONEY ANAYA
GOVERNOR

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

February 18, 1986

Mr. John Weber
Maddox, Renfrow & Saunders
Attorneys at Law
P.O. Box 5370
Hobbs, NM 88241

Dear Mr. Weber:

In accordance with Paragraph 2 of Division Order R-8161, a plan for the installation and sampling of monitor wells at the proposed Laguna Plata Petro-Therm site has been discussed by Environmental Bureau Chief David Boyer, Petro-Therm Engineer James Thornton, and consultant hydrologist Dr. Daniel Stephens. Agreement has been reached that three shallow monitor wells will be installed prior to operation, inspected monthly for fluids, and sampled every six months if fluids are detected. The particulars of well location, completion and type of sampling are provided below:

1) Two monitoring wells shall be located at a distance no greater than 200 feet north of the north boundary of the 8.264 acre area within Tract B as shown on the attached plat map. These two wells shall be located at distances of approximately 70 and 200 feet east of the west boundary line of Tract B. The third well shall be installed within Tract B to the north of the first two wells at a location to be agreed to after further surface inspection of topographic and geologic features.

2) Monitoring wells shall be drilled through the alluvium with the base completed in the first clay, claystone or shale in the redbeds. The wells shall be constructed of 4-inch diameter PVC pipe which is slotted or perforated from a distance of 4 feet beneath the surface to total depth, and shall be adequately gravel packed or otherwise completed to allow fluids to enter the well for sampling, but to prevent silting. The wells shall have the upper four feet cemented to prevent surface fluid entry.

3) The wells shall be checked monthly for fluids and the results reported monthly to the Division's office in Santa Fe.

4) Upon detection of fluids in any of the monitoring wells, sampling of these fluids shall take place and be repeated at six-month intervals. Samples shall be analyzed for heavy metals and purgeable aromatic hydrocarbons as listed on the attached sheet. A copy of the results shall be submitted to the Division office in Santa Fe for review as to the nature and threat to human health, if any, of allowing such seepage movement to continue towards Laguna Plata. This review will take into consideration the fact that Laguna Plata is not, and does not have the potential to be, a drinking water source.

The plan described above will satisfy the requirements of Paragraph 2 of the above order. As provided for in the order, the Director of the Division may by administrative order rescind the authorization and/or require additional conditions be met if it is determined that such rescission or additional conditions would serve to protect fresh water supplies from contamination, assure the protection of human health or livestock, and the prevention of waste.

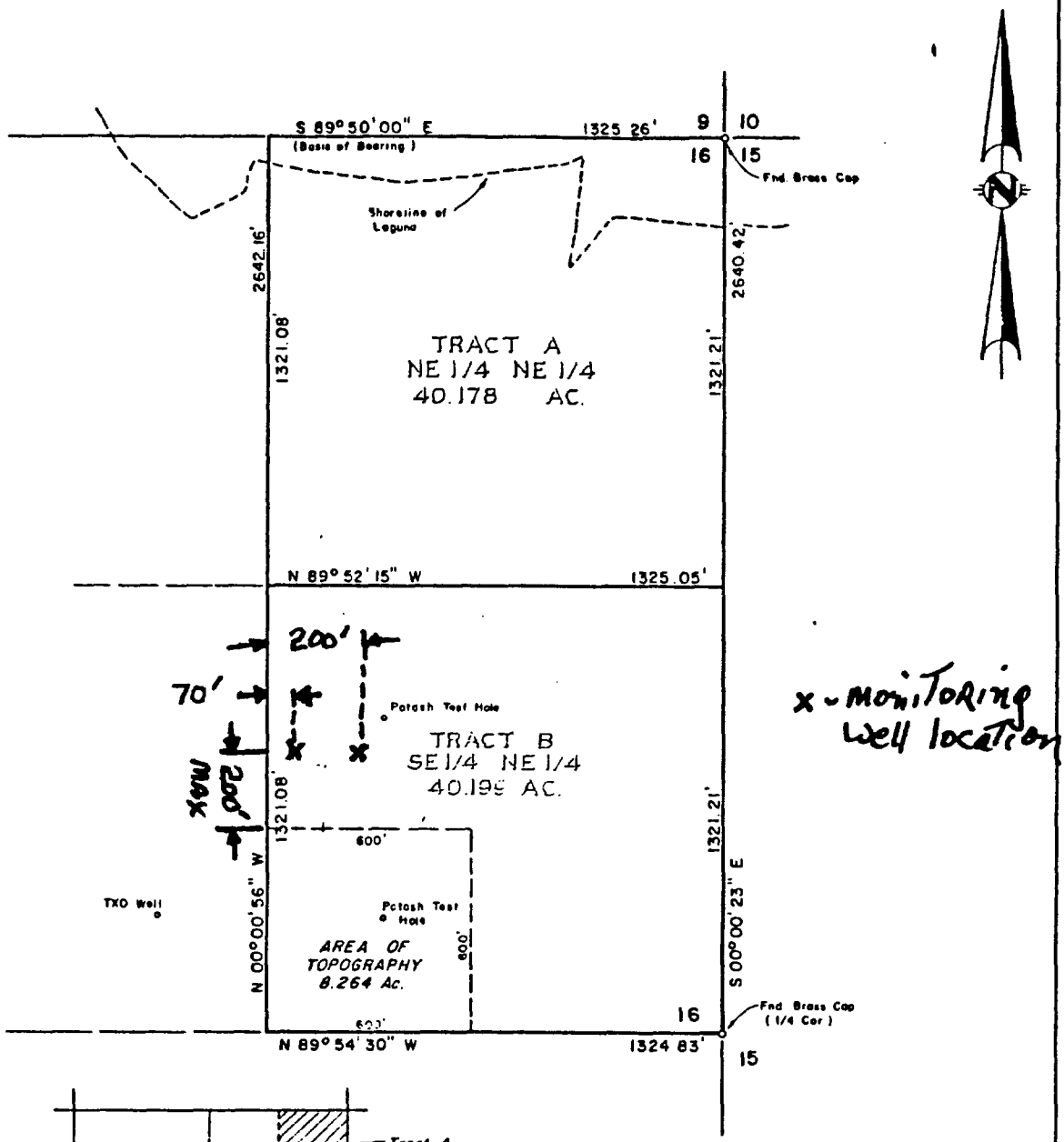
If you have any questions on the monitoring and sampling aspects of this order, please contact Mr. David Boyer at the above address or at 827-5812.

Sincerely,

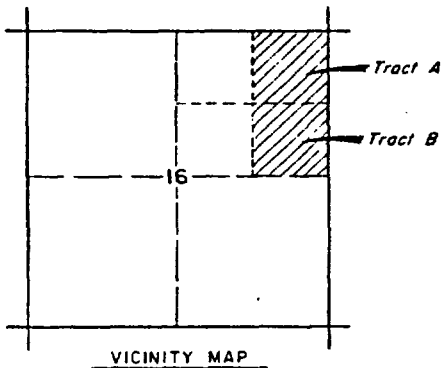
R. L. STAMETS
Director

RLS/DB/dp

cc: David Boyer, OCD Santa Fe
Jerry Sexton, OCD Hobbs
Fran Cherry, BLM Carlsbad
Daniel Stephens, Socorro



x - Monitoring Well location



VICINITY MAP
2" = 1 mile

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN IN THE FIELD IN A BONA FIDE SURVEY MADE UNDER MY SUPERVISION, AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF

JOHN W WEST, NM PE & LS No 676
TEXAS RPS No 1138
RONALD J EIDSON, NM LS No 3239
TEXAS RPS No 1883

AGPA, INC.

Two tracts of land being the SE¼ SE¼ and the SE¼ NE¼ of Section 16, T 20 S, R 32 E, N.M.P.M., Lea County, New Mexico.

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS HOBBS, NEW MEXICO

Scale 1" = 400'		Drawn By [illegible]
Date [illegible]	Ck GJ	Sheet of Sheets

PETRO - THERM ANALYSIS
OF WATER SAMPLES

Water samples from the monitoring wells shall be analyzed for the following dissolved hydrocarbons (BTX):

Benzene	o-xylene
Ethylbenzene	m-xylene
Toluene	p-xylene

The suggested method is EPA Method 602 which is a purgeable aromatic scan and costs less than the use of a gas chromatograph/mass sprectrometer. Minimum detection limit should be 10 ppb (or 0.01 mg/l). The standard sample is 40 ml collected in a glass vial with a teflon septum seal. No air should be trapped between the water and the seal.

Water samples should be analyzed using an inductively coupled argon plasma scan (ICAP) with a minimum detection limit of 100 ppb (0.1 mg/l). One scan provides concentrations for the following elements:

Aluminum	Lead
Barium	Magnesium
Beryluim	Manganese
Boron	Molybdenum
Cadmuim	Nickel
Calcium	Silicon
Chronimum	Silver
Cobalt	Strontium
Copper	Tin
Iron	Vanadium
	Zinc

In addition samples shall be analyzed for arsenic, and mercury using atomic adsorption methods. Minimum detection levels should be 10 ppb (0.01 mg/l) for arsenic and 1 ppb (0.001 mg/l) for mercury. A single one quart plastic container should be sufficient for all of the heavy metal analyses. Samples should be preserved with 5 ml of concentrated nitric acid.

The use of scans will provide much information on contaminants but is very much less time consuming and expensive than individual analyses. Your consultant can provide you with the names of several laboratories that will provide these services at a reasonable cost. The laboratory selected should also provide further information on sampling and preservation procedures. Contact the OCD or your consultant for the desired method of sampling to prevent false results from being obtained.