

2R - 26

# REPORTS

DATE:

Sept. 19, 1996

TELEPHONE  
(505) 748-3311

EASYLINK  
62905278



## REFINING COMPANY

501 EAST MAIN STREET • P. O. BOX 159  
ARTESIA, NEW MEXICO 88211-0159

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(505) 746-6410 ACCTG  
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(505) 746-4438 P / L

September 19, 1996

Mr. William C. Olson  
Hydrogeologist - Environmental Bureau  
New Mexico Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505

CERTIFIED MAIL/RETURN RECEIPT  
P 355 936 200

**RE: Report on Installation of Remediation Wells  
N. 13th and HWY 285  
Artesia, New Mexico**

Dear Mr. Olson:

Navajo Refining Co. has completed installation of the two soil vapor extraction wells called for in our approved "Remediation Plan - Navajo Truck Accident Site, N. 13th and Highway 285 - Artesia, May 9, 1996." Your plan approval letter of July 10, 1996 required Navajo to report certain information upon completion of the well installation. This report address those requirements.

**1. SOIL SAMPLES**

Soil Samples were collected from each borehole at five foot intervals. The samples were screened on-site by Ray Smith and Brian Arrant of the NMOCD - District Office in Artesia, using their OVA meter. Sets of samples were also collected for analyses by Trace Analysis, Inc. of Lubbock, Texas. The samples were placed in clean soil sample containers supplied by Trace and then iced down for overnight shipment to the Laboratory. The samples were analyzed for BTEX and TPH per your specifications.

The results of these sample analyses are attached. The samples were identified by the well they came from (either TW1 or TW2) and by the depth from which they were collected (5, 10, 15 ft. etc.). You will notice there is no sample for TW1-25. At the 25 foot depth in Well number 1, a zone of dry hard gravel was encountered and the split spoon core sampler could not retrieve a sample. A sample from the same depth and same gravel zone in Well number 2 did yield just enough sample to send to the lab.

As you can see from the results, Navajo drilled through the bottom of the contamination thus determining the verticle extent of the spilled material.

**2. DESCRIPTION OF ACTIVITIES**

Navajo has included a section of the USGS Quadrangle map showing the location of the site. Also enclosed are photos of the wells before and after the turbine ventilators were installed.

In addition to the map and photos, you will find copies of the well lithologic logs. Shown on the lithologic log sheets are the well completion diagrams.

Atkins Engineering Associates, Inc. of Roswell was the drilling contractor who installed the wells for Navajo. After postponement for a week due to heavy rain, both wells were drilled and completed on Tuesday, September 10, 1996. The samples were shipped to the lab on the same day.

Observing the installation and assisting by screening the samples for the presence of hydrocarbons were Mr. Ray Smith and Mr. Bryan Arrant of NMOCD. Mr. Victor Santillan of the New Mexico Highway Department also paid an inspection visit during the well installation.

The actual drilling and well installation went fairly smoothly. Well number one was drilled five feet deeper than expected due to the finding of contamination deeper than expected.

In well number one water saturation was encountered at 44 ft. as seen in the 2 ft. core from 43-45ft. The core sample from 43 to 44 ft. had no odor of hydrocarbon indicating the contamination stopped short of impacting any groundwater. Sample TW1-45 was collected from the saturated zone thus confirming no impact to groundwater.

Some gravel collapsed into the bottom of well number one from zones above before the screen could be inserted, thus there is 37 ft. of screen and pipe in well one with native gravel pack from 37 ft. to a total depth of 45 ft. The most interesting zone encountered was the hard dry gravel from 24 ft. to 27 ft. The rock brought up by the auger was so clean and well sorted, it looked like screened and washed gravel ready for a construction project.

The drilling of well number two also went smoothly. As in well one, number two had traces of contamination deeper than expected. The unusual gravel layer was also seen in well two and it appeared to be a little thicker. Number two was drilled to 38 ft. TD with 4 inch screen set to 35 ft.

The installation went very well and Navajo will be monitoring and reporting per your schedule in the July 10, 1996 approval letter. If you have any questions, please call me at (505) 748-3311.

Sincerely,



David G. Griffin  
Manager of Environmental  
Affairs for Water & Waste

DGG/sb

cc: Mr. Ray Smith - NMOCD - Artesia  
Mr. Eloy M. Ramirez - NM Highway Dept. - Roswell

# TRACE ANALYSIS, INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1293

September 13, 1996

Receiving Date: 09/12/96

Sample Type: Soil

Project No: NA

Project Location: Artesia, NM

## ANALYTICAL RESULTS FOR

NAVAJO REFINING

Attention: Darrell Moore

501 E. Main

Artesia, NM 88210

Prep Date: 09/12/96

Analysis Date: 09/12/96

Sampling Date: 09/10/96

Sample Condition: Intact & Cool

Sample Received by: ML

Project Name: NA

TA#	Field Code	TRPHC (mg/kg)	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL- BENZENE (mg/kg)	M,P,O XYLENE (mg/kg)	TOTAL BTEX (mg/kg)
T58755	TW1 - 5	4,410	<5.000	10.800	88.000	8.430	136.000	243.230
T58756	TW1 - 10	2,650	<5.000	5.850	34.500	<5.000	75.500	115.850
T58757	TW1 - 15	2,540	<5.000	5.200	29.100	<5.000	65.100	99.400
T58758	TW1 - 20	4,950	7.130	11.400	95.200	11.400	205.000	323.000
T58759	TW1 - 30	2,420	<5.000	8.440	46.900	5.190	91.900	152.430
T58760	TW1 - 35	29	0.081	0.308	0.951	0.074	1.340	2.673
T58761	TW1 - 40	575	<1.000	<1.000	5.840	<1.000	17.200	23.040
T58762	TW1 - 45	<10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
T58763	TW2 - 5	1,730	<5.000	<5.000	41.400	<5.000	73.300	114.400
T58764	TW2 - 10	1,050	0.904	3.210	23.700	3.040	51.500	81.450
T58765	TW2 - 15	2,730	<5.000	5.580	31.000	<5.000	70.100	106.680
T58766	TW2 - 20	2,070	<5.000	5.350	29.600	<5.000	64.300	99.250
T58767	TW2 - 25	832	<2.000	<2.000	10.200	<2.000	27.500	37.700
T58768	TW2 - 30	110	0.187	0.433	3.200	0.372	6.990	10.995
T58769	TW2 - 35	<10	<0.050	0.075	<0.050	<0.050	<0.050	0.075
QC	Quality Control	100	0.095	0.098	0.099	0.103	0.297	
Reporting Limit		10	0.050	0.050	0.050	0.050	0.050	
RPD		8	6	1	2	2	2	
% Extraction Accuracy		120	85	84	83	83	82	
% Instrument Accuracy		100	95	98	99	100	99	

METHODS: EPA SW 846-8020, 5030, 3550 High Level; EPA 418.1.

CHEMIST: TRPHC: RC

MTBE/BTEX: RW

MTBE/BTEX SPIKE: 5.000 mg/kg MTBE/BTEX.

MTBE/BTEX QC: 0.100 mg/L MTBE/BTEX.

TRPHC SPIKE: 250 mg/kg TRPHC.

TRPHC QC: 100 mg/L TRPHC.

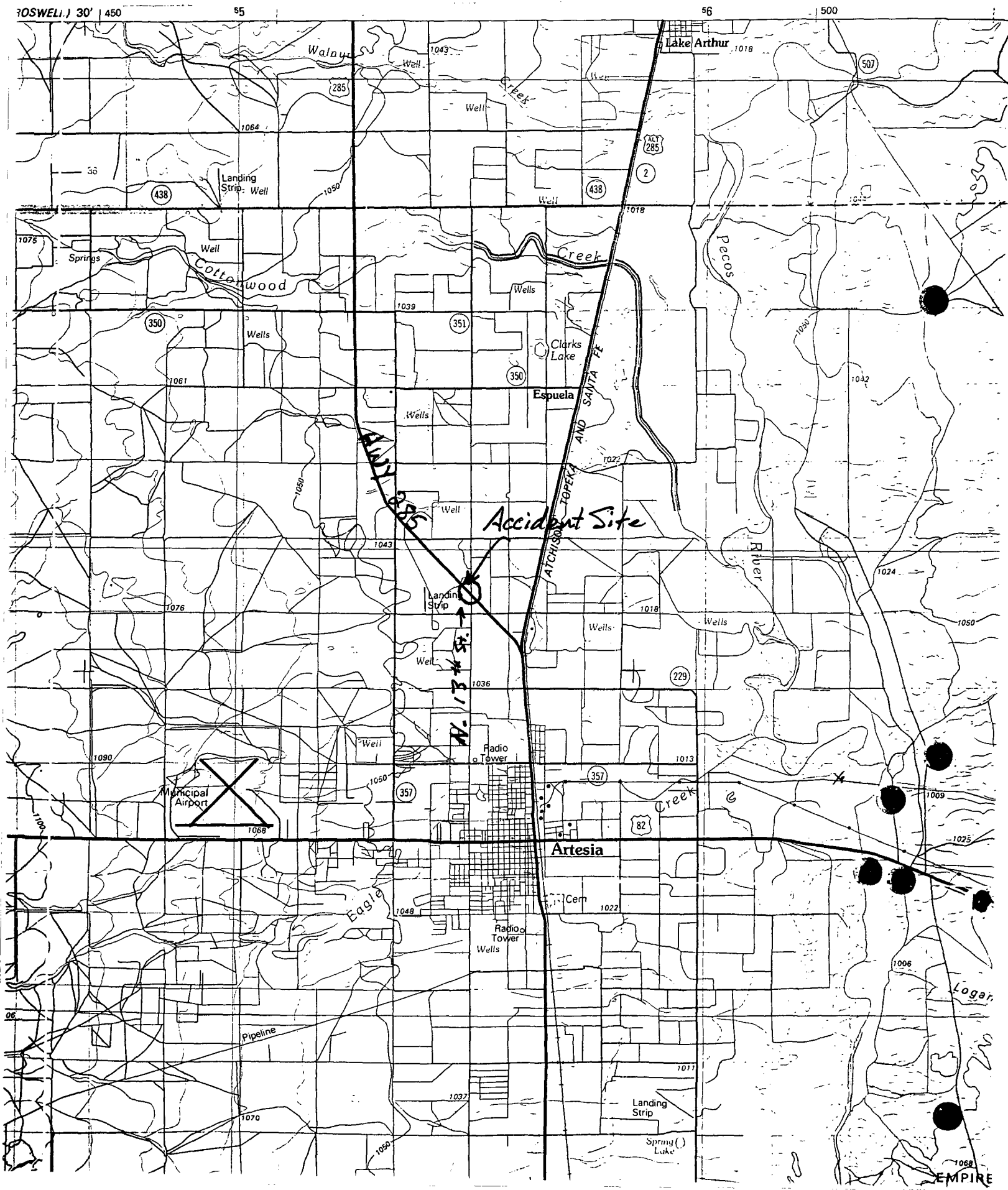
Director, Dr. Blair Leftwich

Director, Dr. Bruce McDonell

Date

9-13-96

## ROSWELL, 30' | 450





TW2

TW1

Soil Vapor Extraction  
Wells TW1 & TW2  
as Completed by Driller  
9/10/96



TW2

TW1

Soil Vapor Extraction  
Wells TW1 & TW2  
Complete with  
Wind Turbines  
9/19/96

<b>BORING LOG</b> <span style="float: right; font-family: cursive; font-size: 1.5em;">TW1</span>					PAGE 1 OF 1	DATE: 9/10/96	DRILL START: 7:10 AM DRILL STOP: 12:00 PM			
ATKINS ENGINEERING ASSOCIATES, INC 2904 West Second Street, Roswell, New Mexico 86202-3156 PROJECT NAME: Navajo Refining Co.- VE Wells					SITE LOCATION: 285 & 13TH ST., ARTESIA, NM BORING LOCATION: Intersection of 285 & 13th (15' West of 13th & 30' North of 285)					
TH NUMBER: 1		AUGER TYPE: HOLLOW STEM		CASING ELEVATION: 3 ft. above L/S						
Depth (Feet)	Samples	Symbol	DRILLED BY:  ATKINS ENGINEERING		LOGGED BY:  MORT BATES		Well Construction Details	PID Reading	Lab Analysis	Lab Analysis
			STRATUM DESCRIPTION							
0			Clay & Gravel fill, Brown, Damp, Loose, Fuel Odor							
5			Silty Clay, Tan, Damp, Loose, Fuel Odor							
10			Silty Clay, Tan, Moist, Firm, Fuel Odor							
15			Silty Clay w/gypsum, Tan, Moist, Firm, Fuel Odor							
20			Clay w/Gravel, Tan, Moist. Firm, Fuel Odor							
25			50 Blows/ft., No Recovery, gravel Gravel; Gray, Dry, Hard							
30			Clay w/Trace of Caliche, Tan, Moist, Firm							

BORING LOG					PAGE 2 OF		DATE: 9/10/96		DRILL START: 7:10 AM		
ATKINS ENGINEERING ASSOCIATES, INC									DRILL STOP: 12:00 PM		
2904 West Second Street, Roswell, New Mexico 88202-3156									SITE LOCATION: 285 & 13TH ST., ARTESIA, NM		
PROJECT NAME: Navajo Refining Co.-VE Wells									BORING LOCATION: Intersection of 285 & 13th (15' West of 13th & 30' North of 285)		
TH NUMBER: 1		AUGER TYPE: HOLLOW STEM		CASING ELEVATION: 3 ft. above L/S							
Depth (Feet)	Samples	Symbol	DRILLED BY: ATKINS ENGINEERING		LOGGED BY: MORT BATES		Well Construction Details	PID Reading	Lab Analysis	Lab Analysis	
			STRATUM DESCRIPTION								
			Clay, Tan, Firm, Fuel Odor								
35			Clay w/Sand & Gravel, Light Tan, Moist, Firm, Fuel Odor								
40											
45			Clay, Redish Tan, Saturated, Firm								
50			Total Depth at 45ft. Placed 30 ft. of 4 inch, .020 slot Sand packed 2 ft. above screen. Placed 7 ft. of Schedule 40, 4 inch PVC casing to top of land surface, 3 ft. of casing stubbed out above top of land surface, 2 ft. of Bentonite plug. 3 ft. of grout to land surface.								
55											
60											



# BORING LOG

TW 2

ATKINS ENGINEERING ASSOCIATES, INC

2904 West Second Street, Roswell, New Mexico 88202-3158

PROJECT NAME: Navajo Refining Co.-VE Wells

PAGE 1 OF

SOIL BORING #1

DATE:

9/10/96

DRILL START:

1:20 PM

DRILL STOP:

5:00 PM

SITE LOCATION: 285 & 13TH STREET, ARTESIA, NM

BORING LOCATION: 25' NORTH OF T/H #1  
15 FT. WEST OF 13TH STREET

TH NUMBER:

2

AUGER TYPE:

HOLLOW STEM

CASING ELEVATION:

3 FT. ABOVE L/S

Depth  
(Feet)

Samples

Symbol

DRILLED BY:

ATKINS ENGINEERING

LOGGED BY:

MORT BATES

Well

Construction

Details

PID Reading

Lab Analysis

Lab Analysis

STRATUM DESCRIPTION

Clay w/gravel fill, Tan, Dry, Firm

Silty Clay, Tan, Damp, Firm, Fuel Odor

Silty Clay w/Gypsum, Tan, Moist, Firm, Fuel Odor

Silty Clay w/gravel, Tan, Moist, Firm, Fuel Odor

Gravel, Gray, Dry, Hard, Fuel Odor

50 blows 2 inches

Clay w/trace of Caliche, Tan, Firm, Fuel Odor

# BORING LOG

ATKINS ENGINEERING ASSOCIATES, INC

2904 West Second Street, Roswell, New Mexico 88202-3156

PROJECT NAME: Navajo Refining Co.-VE Wells

PAGE 2 OF

SOIL BORING #1

DATE:

9/10/96

DRILL START:

1:20 PM

DRILL STOP:

5:00 PM

SITE LOCATION: 285 & 13TH STREET, ARTESIA, NM

BORING LOCATION: 25' NORTH OF T/H #1  
15 FT. WEST OF 13TH STREET

TH NUMBER: 2		AUGER TYPE: HOLLOW STEM		CASING ELEVATION: 3 FT. ABOVE L/S		Well Construction Details	PID Reading	Lab Analysis	Lab Analysis	
Depth (Feet)	Samples	Symbol	DRILLED BY:	LOGGED BY:						
			ATKINS ENGINEERING	MORT BATES						
			STRATUM	DESCRIPTION						
				Clay w/trace of caliche, Tan, Moist, Firm, Fuel Odor						
35										
40										
45										
50										
55										
60										

Total depth 38 ft. with 30 ft of 4 inch, .020 slot screen sand pack 2 ft. above screen, 5 ft. of Sched. 40, 4 inch PVC casing, 3 ft. bentonite plug. 2 ft. grout plug at land surface.