NAV-046

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

September 1, 1995

U. S. Environmental Protection Agency
75 Hawthorne St.
San Francisco, CA 94105-3901

Re: Bond & Bond Station
Nav 046,210

Gentlemen:

We have your request to self-certify the UST system at the Bond & Bond Service Station in Shiprock, N. M..

This to advise that we have no tanks at this location.

A copy of our closure report of 8-30-91 shows when we removed the tanks from the ground and since that time we have had no interest in this location as we lost our lease in 1990 and had not delivered any product since September 1990.

We trust that with this information you will be able to close your files with us on this lcoation.

Sincerely,

Permco (a partnership)

Marlo L. Webb

Marlo L. Webb
Partner

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

September 5,1991

Mr. Robert W. Hillger, Coordinator
Native American UST Program
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

RE: UST Closure Report
Permco Inc.
Bond and Bond Station
U.S. Highway 666
Shiprock, San Juan County, New Mexico
Navajo Nation

Project No: 91346

Dear Mr. Hillger:

This report summarized the results of field observations, soil sampling, and field and laboratory analysis for the assessment of the tank closure at the Bond and Bond Service Station on U.S. Highway 666 in Shiprock, New Mexico. Permco Inc. was represented on site by Mr. Marlo Webb. The Federal Agency US EPA was represented by Mr. Robert W. Hillger, Mr. Matthew C. Small and Mr. J. E. Dunn.

Permco Inc. retained Envirotech Inc. to preform permanent closure for three (3) Underground Storage Tanks (UST's) located at the closed Bond and Bond Service Station just north and west of the San Juan River bridge on U.S. Highway 666, Shiprock, New Mexico.

Enclosed please find the Tank Closure Work Sheet and Notification for Underground Storage Tank 7530 Forms for the three (3) tanks removed from the site. The tanks were removed on August 30. 1991, as per our August 1, 1991 notice to your office. Mr. J. E. Dunn, Mr. Robert W. Hillger and Mr. Matthew C. Small of the USEPA Region IX observed the UST Closure.

The tank excavation was examined for any evidence of hydrocarbon contamination. Soil samples were analyzed for volatile hydrocarbons via the Closed Container Headspace Method (Underground Storage Tank Regulations, State of New Mexico, Environmental Improvement Board, Part XII, Appendix C, July 26, 1990) with a Thermo Environmental Instruments Model 580A Organic Vapor Meter

TANK CLOSURE WORKSHEET
(COMPLETE AFTER CLOSURE)

Tank Owner PERMCO Phone (505) 325-1911
Mailing Address P.O. Box 127, FARMINGTON, N.M. 87401
Tank Address BOND & BOND STATION SHIPROCK N.M. 87420
Contractor Name ENVIROTECH INC. Phone 505-632-0615
Address 5796 U.S. 64-3014 FARMINGTON NEW MEXICO 87401
Contractor Name _____ Phone _____
Address _____

Tank Closure Date AUGUST 30, 1991 # of Tanks Closed 3

****

I. Tank Closure Initial Procedures (check measures complied with):

- ✓ Obtain recommended safety equipment for all personnel
- ✓ Contact Fire Marshall or other fire officials
- ✓ Bond or ground equipment
- ✓ Drain product from piping and tank
- ___ Disconnect, then cap or remove piping — will be done Sept 3, 1991 MAY
- ✓ Remove all residual product from tank
- ✓ Excavate to tank top
- ✓ Remove all tank fixtures
- ✓ Properly purge or inert tank of all flammable vapors using approved method
- ✓ Continually monitor for explosive vapors while tank is being removed

II. Tank Removal

- ✓ Create vent hole
- ✓ Excavate tank using all safety precautions
- ✓ Clean and inspect tank
- ✓ Check excavation for evidence of leaks and notify ~~EID~~ USEPA and other proper authorities if leak is found
- ✓ Check vapor levels in tank before transporting
- ✓ Dispose of tank in approved manner, with manifest to EPA

Tank disposal location 5796 US 64-3014, FARMINGTON N.M. 87401
City State

How did you assess site for leakage? 8020/8015 modified & photoionization meter
Closure report kept at Box 127, FARMINGTON, N.M. 87401
NOTE: Immediately report any evidence of leakage to EID at 827-0188

PHYSICAL holes in ~~[illegible]~~ one 4,000 gallon TANK

I hereby state that the above information is correct

Morris D. Young President Envirotech Inc.
Signature of owner or contractor performing work

****

FOR EID USE ONLY
Notification Received _____ Approved By _____
Inspection Date 8/30/91 Inspector [signature]
USEPA Indian Lands

UST Bureau/EID
1190 St. Francis Drive
Santa Fe, New Mexico 87053

ID Number | STATE USE ONLY
Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA) as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonable available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for non-commercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State law;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or wastewater collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (but not including those substances regulated as hazardous waste under Subtitle C of RCRA), including petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, on May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "Signature" in Section V. This form must by completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: [ ]

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): DERMCO

Street Address: P.O. Box 127

County: SAN Juan

City: FARMINGTON | State: N.M. | ZIP Code: 87401

Area Code | Phone Number

Type of Owner (Mark all that apply ☑):
- [x] Current
- [ ] Former
- [ ] State or Local Gov't
- [ ] Federal Gov't (GSA facility I.D. no. _____)
- [x] Private or Corporate
- [ ] Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here [ ])

Facility Name or Company Site Identifier, as applicable: BOND & Bond SERVICE STATION

Street Address or State Road, as applicable: US 666

County: SAN Juan

City (nearest): SHIPROCK | State: N.M. | ZIP Code: 87401

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands: [ ]

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here [ ]): TANKS REMOVED | Job Title | Area Code | Phone Number

IV. TYPE OF NOTIFICATION

[x] Mark box here only if this is an amended or subsequent notification for this location

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative: MARLO L. WEBB PARTNER | Signature: Marlo L Webb | Date Signed: 8-30-91

CONTINUE ON REVERSE SIDE →

PARTNER

Owner Name (from Section I) PERMCO Location (from Section II) BOND & BOND Station Page No 2

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No.	Tank No.
1. Status of Tank (Mark all that apply ☒)					
Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	X	X	X	☐	☐
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	12	12	12		
3. Estimated Total Capacity (Gallons)	4000	4000	3000		
4. Material of Construction (Mark one ☒)					
Steel	X	X	X	☐	☐
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	X	X	X	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
6. External Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	X	X	X	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
7. Piping (Mark all that apply ☒)					
Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	X	X	X	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	X	X	X	☐	☐
b. Petroleum					
Diesel	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	X	X	X	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	6/91	6/91	6/91		
b. Estimated quantity of substance remaining (gal.)	-0-	-0-	-0-		
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

New Mexico Environment Department

The Underground Storage Tank Bureau

hereby awards this

Certificate of Registration of Underground Storage Tanks to:

OWNER NAME and ADDRESS:

PERMCO
PO BOX 127
FARMINGTON NM 87499

OWNER ID NO.:

5797

FACILITY NAME and ADDRESS:

BON AND BOND STATION
SHIPROCK NM 87420

FACILITY ID NO.:

5797001

NUMBER of TANKS: 3

The above tank(s) is/are registered with the New Mexico Environmental Improvement Division Underground Storage Tank Bureau. Fees due for the above tank(s) for FY ____ (July 1, 1991 - June 30, 1992), under said regulatory program have been paid in full. This certifies compliance under Sections 200-202 and 300 of the Underground Storage Tank Regulations and Section 9 of the Groundwater Protection Act **ONLY**. The participation of the tank owner(s) in this program of environmental protection is appreciatively acknowledged.

Given this 05 day of November, 19 91

Bureau Chief, UST Bureau

...cation for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

...KS IN NM

RETURN COMPLETED FORM TO

New Mexico Environmental Improvement Division
Ground Water/Hazardous Waste Bureau
P.O. Box 968 (505) 827-2933
Santa Fe, NM 87504 (505) 827-2918

STATE USE ONLY

I.D. Number

Date Received

GENERAL INFORMATION

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(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

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2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

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Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must by completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached ☐

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Pennco

Street Address: Box 127

County:

City: Farmington State: N.M. ZIP Code:

Area Code: Phone Number:

Type of Owner (*Mark all that apply* ☒)

☒ Current ☐ State or Local Gov't ☒ Private or Corporate

☐ Former ☐ Federal Gov't (GSA facility I.D. no. _____) ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable: BOND & BOND STATION

Street Address or State Road, as applicable:

County: SAN JUAN

City (nearest): SHIPROCK State: NM ZIP Code: 874--

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): Charles Davis

Job Title: owner

Area Code: 505 Phone Number: 368 9691

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
	[signature]	5-5-86

CONTINUE ON REVERSE SIDE

Owner Name (from Section I) Bonneo Location (from Section II) Shipyard Tom Page No. 1 of 1 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No. 2	Tank No.
1. Status of Tank (Mark all that apply ☒)					
Currently in Use	☒	☒	☒	☐	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	☐	☐	☐	☐	☐
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	7	7	7		
3. Estimated Total Capacity (Gallons)	4000	4000	3000		
4. Material of Construction (Mark one ☒)					
Steel	☒	☒	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☒	☒	☒	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
6. External Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☒	☒	☒	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
7. Piping (Mark all that apply ☒)					
Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	☒	☒	☒	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☒	☒	☒	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance					
OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	/	/	/	/	/
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

8/8/95 Bond and Bond File Review MCK
Shiprock, N.M.
Organized Chronologically

Charles Foutz > Manager for
Jessee Russel Foutz
Marlo Webb > Owner

1991 >

~~[illegible] Ed Dunn~~

5/5/86 5/5/86 Notification Forms > Signed by
Sent to N.M. Health
Charles Foutz > owner
7 yrs old
3 Tanks / Private or Corporate Owner
↳ 7 yrs Old / 4,000 gallons (2) [redacted] (1) is 3,000
No info on Tank #3 of Material Construction

8/1/91 → Permco Inc. has retained Envirotech Inc. to
Letter from Envirotech, Inc. remove / perform UST closure for 3 Tanks
to Who is Permco Inc.? ↳ (8/6/91)
Pat Eklund < Marlo Webb of Permco >
Sent to 1235 Mission St. They notified N.M. of planned removal 9/17/90.
EPA was at 75 Hawthorne N.M. gave them closure date of 10/17/90.
We don't have copy of B&B letter to N.M. of 9/17/90.
Morris Young > with Envirotech, Inc. > President

8/1/91 → Fax to Robert Hillger (EPA) of same 8/1/91 letter
Fax went to Hawthorne St. from Morris Young. 8/1/91 Fax is from Morris Young.

8/5/91 → Ed Dunn faxes 8/1/91 Morris Young letter to
Lack of 30 Day Notice Robert Hillger (EPA) Refers to 7/31/91 Conversation
w/ Morris Young.
Violation #1?
↳ FAX went to EPA at Hawthorne > But still not 30 Days Notice if they planned to remove them on 8/6/91

Page 2) File Review by MCK on 8/9/95

9/4/91 → Ed Dunn Report) 3 UST's Removed on 8/30/91

Mentions a Waste Oil Tank? → Ed Dunn discovered it → Fontz did not want it removed) The Tank

Notification form of '86 does not mention a waste oil tank.

Matt Small at the removal.

Good info on the owner etc.

Leak?) 2 1/2" holes found at bottom of Tank #1

Staining / Blackish color of the tank bed of No. 1 Tank

Some blackish / staining under Tank #2.

Nothing under Tank #3.

TPH → Readings Tank #1) Highest 1401 PPM

1178 "

(G.W. at 11 feet).

→ No Pictures of Stained Soil Ed discusses. → Not Good for Case

---

NOT IN MY FILE ☆ Where is the 9/5/91 Envirotech Report Notifying EPA of leaking tanks?

10/21/91) EPA letter to Marlo Webb references the 9/5/91 letter. Discusses corrective action that must be taken after a release is confirmed. (9005 Request) Want a response in 30 Days.

To: Hillger

10/28/91 → Letter from Marlo Welb to EPA (Hillger).

(Permo Letterhead)

Says 9/5/91 Report included most of what is asked for in 10/21/91 EPA letter. Want's EPA to specify what info we still need.

Says they had no knowledge of a spill / deny any responsibility for a spill / clean-up.

Say soil was clean under the tanks.

Who is 3RD Party? Say's station in operation many years before they installed their tanks. And mentions waste oil tank, that is overfilled and pollating the area.

11/27/91 → Letter from Welb to Pat Eklund

Explains Who Owns What.

Sends the 11/27/78 agreement.

Farmington Oil > Jobber but signed the agreement of ~~leasing~~ leasing the equipment. → to Bond & Bonel

Permco did install the tanks.

Who has the lease currently?

12/91 → Note to file by Darlene McCray PRC Contractor that EPA needs to determine responsible parties. Says contamination was below the clean fill their tanks were installed on.

?? > Were there older tanks ever at this site before the ③ removed in 1991

1/16/92 → Letter from EPA to Jack Dewey, Hydrogeologist with Envirotech Inc.
"Certificates of Origin of Contaminated Soils"
N.M. forms were sent by EPA.
Gives 30 Days to provide requested info.

2/25/92 → History of site ownership / leases etc.
Good Reference

3/13/92 → EPA letter to Marlo Webb / Owner & Charles Foutz / Operator
Letter from Foutz returned due to wrong address
Another detailed letter requesting info within 30 Days. No mention of earlier letter of 10/91 requesting info. (9005)
Threaten enforcement if no response.

3/20/92 → EPA letter to Foutz / Same as the above.

3/20/92 → Envirotech letter to EPA Troy Harper regarding removal of the 500 gallon waste oil tank. Property owner is Navajo Nation.
Foust / Hired
Charles Foust, Signed as President of Bond & Bond

4/22/92 → Letter from Webb to Eklund. Say's the Contamination noted was from an old release → Check with Matt.
Say's that nobody paid attention to contamination or they would not have placed equipment in such a location.

4/28/92 → Envirotech to EPA Notifying us of tank removal and wanting a waiver from 30 Day Notice.

? What happened with the previous 30 Day Notice from Envirotech about removal of the same tank.

? How come we don't correspond with Envirotech ever? And we don't cc: them ~~on the~~ letters we send to Webb & Foust

5/5/92 EPA letter to Webb Remco
We say lab results ~~[illegible]~~ show a fresher spill & Also we have no info on previous UST's at this site before the ones Bond & Bond installed
Give 30 Days Again to submit info

5/6/92 → Faxed 5/6/92 letter from EPA to Charles Foutz to Envirotech.
Letter regards closure of waste oil UST and grants 30 Day Waiver with conditions. Requests same data from Foutz that we asked Webb to provide. Given 30 days to submit requested info.

They want to remove it 5/13/92.

5/21/92 → Handwritten note from Charles Foutz to EPA. Refers to the 3/20/92 first letter EPA sent to him not the 5/6/92! Says ~~the~~ a little gas leaking out. Says he's sure Envirotech and Webb (Pemco) are taking care of things (Abatement Summary). Says that Webb decided to take tanks out and he would handle everything.

6 months later

11/13/92 EPA letter to Foust & Webb.
"Final request for corrective action before taking an enforcement action".

11/23/92 → Letter from Palmer & Frost P.A. Attorneys. Signed by Palmer. Say that any improvements placed upon the leased premises at the time they are built or installed become the property of the Navajo Nation" → Say they haven't gotten a copy

of the lease yet.
Say's Permco is a New Mexico
Partnership Composed of
(Marlo Webb and Robert Rhien)

12/11/92 Letter from Envirotech to Matt Small.
They are hired by Permco to perform
a Site assessment for the UST Spill
reported during the UST removal on
(8/30/91)

12/11/92 Letter to Pat Eklund from Robert Cardin
(lawyer) → Lawyer representing Charles
Fontz. Reviewed the 3/20/92 letter
from EPA to Fontz. Want's extension
to Jan 6th 93 to respond to the requests
of the 3/20/92 EPA letter.

12/15/92 → Envirotech to Matt Small.
Enclosed UST Closure Report?

Don't
have
this
report

?

Check Reading File → Draft of a EPA letter to Foutz & Webb was it mailed? Check the reading file. Acknowledges Attorney for Foutz's request for ext. to submit CAP.
We say we can't give ext's via 3RD Party Requests.

1/14/93 → Letter to Pat Eklund from law firm of Cardin and Parmley. Any work over $3,000 must be cleared with the Tribe according to Foust's lease with the Tribe. Want's to know how much influence or involment EPA would have with the Navajo Tribe regarding "Breach of lease"?

1/27/93 → Webb to Matt Small > Letter designates Envirotech as a representative of Permco. Requests an ext. to ~~perform~~ complete the investigation.

1/27/93 → Envirotech to Matt Small requesting an extension. Reports that the preliminary results indicate contamination is limited to subject site. No free product encountered.

Good

14 test borings & 8 gw monitoring wells.

2/9/93 → Letter from Matt Small EPA to Envirotech. Grants a 30 day ext. at which time site assessment must be done and submitted.
Within [redacted] 45 days a CAP must be submitted.

3/3/93 → Envirotech to Marlo Webb saying the Spill investigation Report is attached. Say's nothing about <u>site assessment</u> or CAP?

Where is the Spill Investigation Report

4/16/93 → Letter from Permo > Webb to Pat Eklund. What about this clay plug in the hole of the one <u>Tank</u>? Was it really tightly plugged.

5/13/93 → EPA letter to Robert Cardin / Attorney for Fontz. Say the lease issues are a matter between Foust and the Tribe or their leasing agent. EPA's interest is to enforce the UST rules. We state the owner/operator is responsible for

This is last piece of correspondence in the file } remediation of any releases.

> No correspondence for last 2 years.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 13 1993

In Reply Refer to: Mailcode H-2-1
Site Number: NAV-046

Robert Cardin
Cardin & Parmley, P.A.
232 North Schwartz
P.O. Box 2061
Farmington, NM 87499-2061

Dear Mr. Cardin:

Your letter of January 14, 1993, requested a written opinion on the U.S. Environmental Protection Agency's (EPA) position as to our ability to control the Navajo Tribe as to any technical breach of a lease with Mr. Foutz. EPA's mission with respect to this case is to enforce underground storage tank (UST) regulations and ensure compliance with Federal environmental law (se 40 CFR part 280). We do not control Navajo Tribal lease authority. Any problems arising from conflicts associated with remediation expenditures and lease agreements must be discussed between Mr. Foutz and the Navajo Nation, or their leasing agent, directly. Regardless of lease complications the owner and/or operator of an UST system are still responsible for remediation of any releases from the UST system. If you have any questions, please contact Matthew Small at (415) 744-2078.

Sincerely,

Patricia D. Eklund, Chief
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Tom Mintz, EPA Regional Counsel
Charles Foutz

wp\tribes\navajo\ftzleas.51

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NAV-046

August 9, 1995

Memorandum

SUBJECT: Review of Bond and Bond File

TO: Pat Eklund, Chief OUST

FROM: Mary Keil, Enforcement Coordinator MK

I have reviewed the entire case file for Bond and Bond Service Station located in Shiprock, New Mexico on land of the Navajo Nation. The correspondence in the file dates back to August 1, 1991 and the last correspondence dates at May 13, 1993 over 2 years ago. I have listed out below some of my findings and action items I recommend be taken;

1) EPA needs to determine who is the responsible party at this site. We had been corresponding with Webb (Owner) and Foust (Operator). I need to check on who is involved currently.

2) I need to contact the BIA and get a copy of the current lease for this site and see who is on it.

3) I need to discuss the technical proof of a release question with Matt Small who was at the site when the tanks were pulled. The owner Webb claims no release occurred but one of the tanks in fact had a hole and according to site sampling contamination was definetly present.

4) I need to check with Walter and Matt on where reports prepared by Envirotech are. There were two reports mentioned in correspondence that were not in the file.

5) I need to check with Matt/Walter if the site still remains contaminated since the file does not contain a CAP and many other documents that EPA requested be submitted.

ISSUES FOR CASE DEVELOPMENT

0 WHO IS OUR RESPONSIBLE PARTY? IS MARLO WEBB AND CHARLES FOUST STILL AROUND? WHAT IS THE CORPORATE STATUS OF THE COMPANIES THAT THEY EACH WERE INVOLVED WITH PEMCO FOR WEBB AND BOND AND BOND FOR FOUST. THEY WERE EACH REPRESENTED BY ATTORNEYS IN THE CORRESPONDENCE. WE COULD CITE THEM ALL IN AN ACTION AND LET THEM FIGHT IT OUT.

O HOW STRONG IS OUR PROOF OF A RELEASE AT THIS SITE. I NEED TO TALK TO MATT AND HAVE A REVIEW OF THE SITE REPORTS CONDUCTED. FROM COMMENTS IN ENVIROTECH CORRESPONDENCE IS APPEARS THAT THE CONTAMINATION FROM THEIR SITE SAMPLING IS JUST AT THIS SITE SO NO OTHER SOURCES OF A RELEASE FROM ANOTHER PARTY ARE AN ISSUE.

O ANOTHER SITE VISIT MAY BE NEEDED TO SEE WHAT THE CURRENT STATE IS AT THE PROPERTY.

cc: Matt Small
Walter Guggenheimer
case file

Bond & Bond
File

Lico

Burg & Burg

NAV-046
B&B

PERMCO
P.O. BOX 127
FARMINGTON, NEW MEXICO 87499
505-325-1911

April 16, 1993

Ms. Patricia Eklund
Chief UST Office
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: Project No. 91346
Shiprock, N. M.

Dear Ms.Eklund:

It was a pleasure to meet with you a couple of weeks ago in Shiprock and we thank you for coming to the field to meet with those of us who have had the need to work with your office.

On the way back to Farmington my partner, Robert R'hien, and I during our discussion of the meeting in Shiprock concluded that Mr. Matthew Small and you, evidently from information furnished you by Mr. Small, had the impression that at the time the tanks were removed from the Bond and Bond site an active liquid spill took place because of holes in the tanks removed.

I was on the site the entire time the tanks were removed and NO spill occurred. There had been no product in the tanks for almost a year and no liquids were removed from the tanks at the time of the closure because there was none in the tanks. The last product delivered to the tanks was in September 1990 and the closure was made 8-30-91. The station and pumps had been closed for almost a year.

I have visited with most of the technical people involved in the closure and they too remember that there was no product present at the time the tanks were removed.

Mr. Small told me at the Shiprock meeting that he recalled that all three of the tanks had holes in them and that an active spill occured at that time. I would refer you to the closure report of 9-5-91, particularly that section where it states "Visual inspection of the removed tanks confirmed tank integrity for two of the tanks. Tank #1 had a hole near the bottom about the size of a pencil but was sealed with a clay ball and rust scale. No soil staining or heavy contamination was detected near the hole".

I was also presnet when the clay plug was removed from the tank by forcibly chipping it off with a hammer. It was not an open hole at the time of removal and the chipped off plug was dry.

I can understand Mr. Small's confusion as I understood that he visited several other sites during this trip and it would appear that he has confused this site with one of the others.

I am sorry that we were not able to continue our conversation about the piping removal.

At the time Mr. Foutz, the landlord and operator, would not give us permission to disturb the concrete driveway or the pump island. With the concurance of your representative, either Mr. Dunn or Mr. Hillger we cut the pipes at the edge of the concrete apron. All that we could legally do under the circumstances.

We will continue to cooperate with your office as we have in the past but would appreciate your weighing your decisions with the evidence from the closure report and the subsequent site evaluation that indicates that the contaminated plume is primarially from a heavy oil (diesel?) with which we have had no involvement.

Thank you again for giving us a chance to visit with you and your office personally.

Sincerley,

Permco

Marlo L. Webb

Marlo L. Webb
Partner

cc: Matthew Small

PERMCO
P.O. BOX 127
FARMINGTON, NEW MEXICO 87499
505-325-1911

April 16, 1993

Ms. Patricia Eklund
Chief UST Office
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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Thank you again for giving us a chance to visit with you and your office personally.

Sincerley,

Permco

Marlo L. Webb

Marlo L. Webb
Partner

cc: Matthew Small

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

Rec'd 3/8/93 ms

NAV-046

March 3, 1993

Mr. Marlo Webb
Permco
West Main and Airport Drive
Farmington, New Mexico 87401

RE: Spill Investigation

Project No: 91346

Dear Mr. Webb:

Attached please find the Spill Investigation Report for the Permco-Shiprock site located on US Highway 666 in Shiprock, New Mexico.

We appreciate this opportunity to be of service to you. Please contact us if you have any further questions or concerns regarding this site.

Respectfully submitted,
ENVIROTECH, INC.

Robert M. Young

Robert M. Young
Environmental Biologist

91346SI.LTR

Attachment: Spill Investigation Report

cc: Mr. Matt Small- US EPA Project Manager
File

ENVIROTECH INC.

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NM 87401
"ENVIROMENTAL SCIENTIST"

The "GRAPHIC DESIGNER" 325-6253 ROB WOOD

Date: 1/27/93

Total Pages Including Cover Sheet: 3

To: MATT SMALL

Fax #: 415-744-1044

From: MYKE LANE

Phone: 505-632-0615

Fax #: 505-632-1865

Comments: LTR TO VERIFY PERMCO'S AUTHORIZATION OF ENVIROTECH.

the tanks. Never-the-less, under protest, PERMCO will comply with your order and has authorized Envirotech Inc. to perform the site investigation.

We look forward to working with your office on this project and appreciate the help and consideration USEPA has always extended.

Sincerely,

Morris D. Young

Morris D. Young
President

cc: Marlo Webb, PERMCO

MDY/kls

The UST CLOSURE REPORT submitted to your office September 5, 1991 by PERMCO compiled the information requested as an "Initial Abatement Summary Report" in your March 13, 1992 correspondence over the signature of Patricia D. Eklund.

The requested site investigation to define the vertical and lateral extent of the release will be performed as required. It will take approximately 45 days to do the site drilling, sampling, analysis, and report preparation to define the hydrocarbon plume composition and boundaries. The site investigation report will be forwarded to your attention upon completion.

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United States Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Investigation Summary & Extension Request Project # 91346
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small;

This letter is a request for extension and summarizes the spill incident investigation being conducted at the referenced Permco site located on U.S. Highway 666, in Shiprock, Navajo Nation, New Mexico.

On November 13, 1992 your office requested that Permco conduct a spill investigation. The findings of this investigation were to be submitted by January 26, 1993.

Mr. Marlo Webb, of Permco, has retained Envirotech, Inc. to perform the spill investigation. Efforts have been made to attain permission to conduct exploratory subsurface drilling on properties adjacent to the site. In order to meet the January 26, 1993 deadline, the investigation was limited to the subject property. As of January 21, 1993 the field portion of the investigation has been completed; including field reconnaissance, site audit, exploratory subsurface drilling of fourteen (14) test borings, construction/development of eight (8) groundwater monitor wells, and soil and groundwater sampling and submittal for laboratory analysis. The "Site Diagram" attached shows the location of the test borings and monitor wells.

Laboratory results are anticipated by February 1, 1993. We anticipate completion of our report summarizing the findings of this investigation will follow within a few days of receipt of the results.

Based on the field screening and preliminary laboratory results, it appears that most of the soil and dissolved phase groundwater contamination is limited to the subject site. A hydrocarbon sheen was observed at some test boring locations, but no free product was observed.

We request a time extension to complete the report upon receipt of the laboratory analytical results.

Thank you for your cooperation with this project. Should you have any question regarding our field exploration or the status for completion of this investigation, please contact us at 505-632-0615.

Respectfully submitted,
ENVIROTECH Inc.

Robert M Young

Robert M. Young
Environmental Biologist

Reviewed By,

Michael K. Lane, P.E.
Geological Engineer

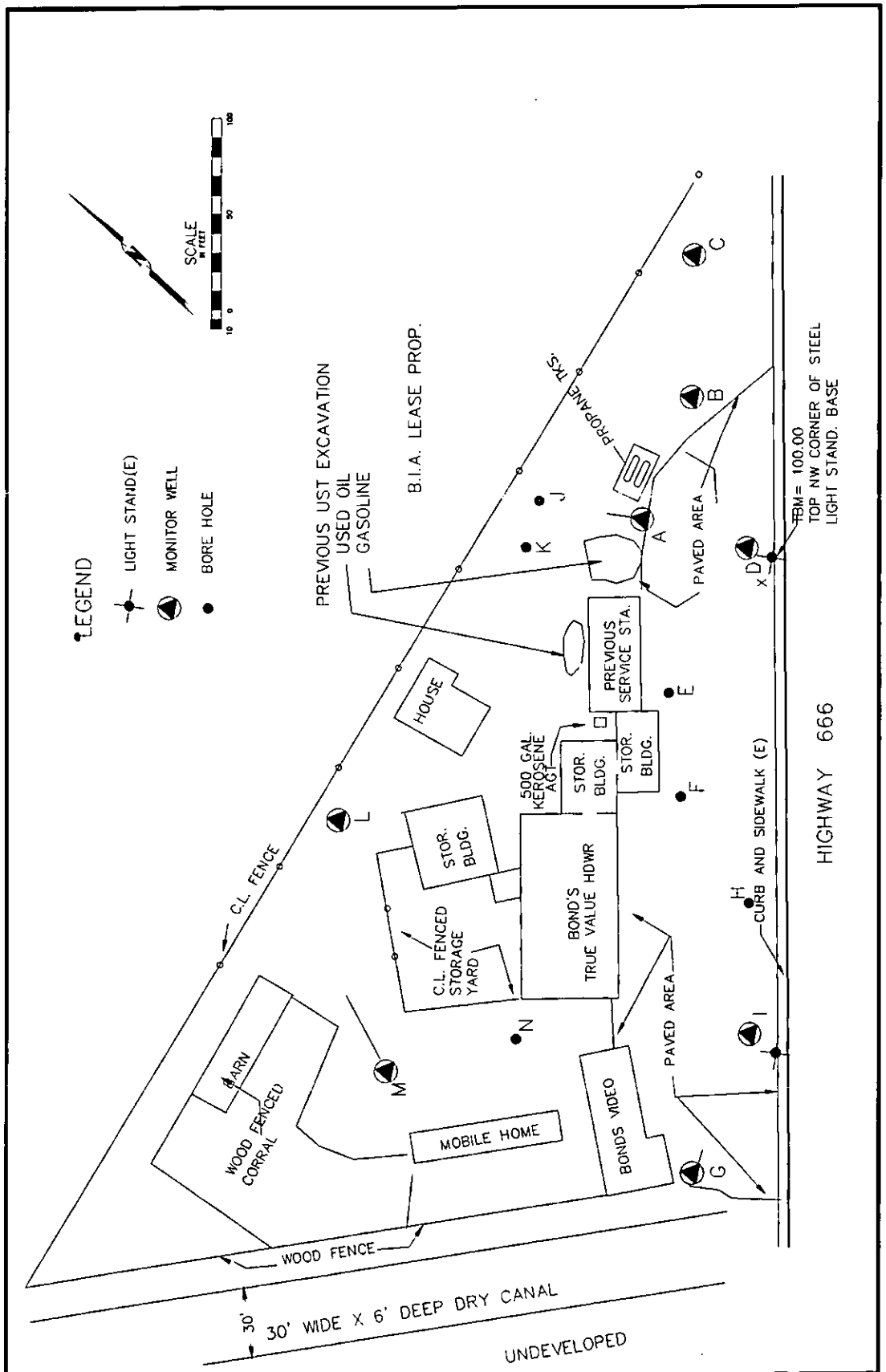
Attachment: Site Plan (1/25/93)

cc: Ms. Norma Cady
Navajo EPA

Mr. Marlo Webb
Permco, Inc.

RMY/rmy

1346EXT.LTR



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT
SITE DIAGRAM PROJECT NO. 91346		PROJ. MGR. RMY / DRW. BY DEF / 1-25-93
		REVISIONS

CARDIN & PARMLEY, P.A.
ATTORNEYS AT LAW

232 North Schwartz
Post Office Box 2061
Farmington, New Mexico 87499-2061

Robert Cardin
Richard J. Parmley, Jr.

Phone: (505) 327-0496
FAX: (505) 326-2624

January 14, 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
No. P 081 444 917

Ms. Patricia D. Eklund, Chief
Office of Underground Storage Tanks
U. S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: H-2-1
Site: NAV 046 Bond + Bond

Dear Ms. Eklund:

As Norma Cady, of the Navajo EPA, has been advised, Mr. Marlo Webb, one of the named parties in your previous correspondence related to the above captioned site has had Envirotech begin work related to determining both the size and scope of any pollutant as well as alternatives regarding clean up and that work is presently underway at the site. The volume of work raises a unique question which is of grave concern to Mr. Foutz. The work clearly will exceed $3,000.00 and Mr. Foutz' Lease with the Navajo Tribe demands that any work to the premises in excess of $3,000.00 on an individual transaction, must be pre-approved by the Tribe. Mr. Foutz is concerned that this activity and the language in the Tribal Lease places him in technical violation of that Lease and could subject him to loss of his Lease with the Tribe thereby requiring the closing of his business.

Mr. Foutz has described this concern in some detail to Ms. Cady and you may want to discuss these particular concerns and the nature of the Lease with her.

I would appreciate it if you could give me your opinion in writing on the EPA's position as to its ability to control the Navajo Tribe as to any technical breach of such a Lease since the potential penalties related to the demands made by the EPA versus the possibility of losing the Lease place Mr. Foutz in a posture that is untenable.

It is my understanding that Mr. Foutz has been in direct contact with Matthew Small of your office and has requested that I contact Mr. Small by phone to discuss this particular matter, which I will be doing within the next day or so. I felt compelled, however, to make sure that our concern was made on the record in writing since the work is presently underway.

Very truly yours,

Robert Cardin
RC:ei

cc: Charles Foutz
Norma Cady
Matthew Small

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

NOV 13 1992

In Reply Refer To: H-2-1
Site: NAV-046

Charles Foutz
Bond & Bond Service Station
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico 87420

Certified Mail: P 869 871 062

Marlo Webb
PERMCO
PO Box 127
Farmington, NM 87401

Certified Mail: P 869 871 063

Dear Messrs. Foutz and Webb:

This letter is our final request for a corrective action plan prior to pursuing enforcement action for the Bond and Bond site in Shiprock, New Mexico as requested in our letter of May 5, 1992 to Mr. Webb. You must provide the requested plan within 30 days of receipt of this letter to avoid possible enforcement action described below.

Neither the undated letter postmarked May 7, 1992 from Mr. Foutz, nor the telephone conversation between Matt Small of he U.S. Environmental Protection Agency (EPA) and Marlo Webb of PERMCO on May 11, 1992 modifies the EPA's determination that PERMCO is the owner and Mr. Charles Foutz of Bond and Bond Service Station, is the operator of a leaking tank removed from the site in August 1991.

Pursuant to Section 9005 of the Resource Conservation and Recovery Act (RCRA) [42 U.S.C. §6991(d)], as amended, EPA requires that you furnish the requested information within the specified time. **YOUR IMMEDIATE ATTENTION IS NEEDED IN THIS MATTER.** Pursuant to §9006 of RCRA [42 U.S.C.6991(e)], refusal to provide the requested information by the specified deadline may result in the

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issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact me at (415) 744-2078, or Troy Harper at (415) 744-2082.

Sincerely,

Matt Small

Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks

Attachment

cc: Norma Cady, Navajo EPA
Leonard Robbins, Bureau of Indian Affairs
Chuck Dowell, Indian Health Service
Sam Coleman, U.S. EPA Region VI
Tom Mintz, U.S. EPA Regional Counsel

ATTACHMENT

Norma Cady, UST Program
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515 (602) 871-7691

Leonard Robbins
Bureau of Indian Affairs
Navajo Area Office
Environmental Quality Services
P.O. Box 1060, Code 305
Gallup, NM 87301 (505) 863-9501

Chuck Dowell
Indian Health Services
Box G
Window Rock, AZ 86515 (602) 871-5852

Sam Coleman
U.S. EPA Region VI
1445 Ross Avenue (6H-A)
Dallas, TX 75202-2733 (214) 655-6755

Tom Mintz
Office of the Regional Counsel
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105 (415) 744-1333

P 869 871 063

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Marlo Webb	
Street & No.	
P.O., State & ZIP Code 127 Farmington, NM 87401	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, June 1990

P 869 871 062

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Charles Foutz	
Street & No. Bond & Bond Service U.S. Highway 666	
P.O., State & ZIP Code Shiprock, NM 87420	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, June 1990

C:\wp\files\navajo\bondbond.002

SYMBOL	H-2-1	H-2-1	H-2-1		
SURNAME	Harper	Smoll	[illegible]		
DATE	11-2-92	11/9/92	11-13-92		

Rev. 11-10-92

U.S. EPA CONCURRENCES

OFFICIAL FILE COPY

Rec'd 4/9/92 TH

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

March 30, 1992

Mr. Troy Harper
United States Environmental Protection Agency
Office of Underground Storage Tanks
Region IX
75 Hawthorne Street (H-2-1)
San Francisco, CA 94105-3901

RE: UST Closure Notice Project No: 92134
Bond & Bond Service Station
U.S. Highway 666, San Juan County
Shiprock, Navajo Indian Nation, New Mexico

Dear Mr. Harper:

Mr. Charles Foutz of Bond & Bond Service Station has retained Envirotech Inc. to remove and perform an Underground Storage Tank System (USTS) closure of the used oil UST at the Bond & Bond Service Station located on U.S. Highway 666, Shiprock, Navajo Indian Nation, New Mexico. This location reportedly has one (1) UST:

500 gallon Used Oil Tank

Envirotech Inc. will remove the 500 gal UST and perform the required site assessment for closure.

The removed UST will be transported to Envirotech's Farmington construction yard for proper disposal.

The property owner reportedly is the Navajo Indian Nation.

The tank reportedly existed at tje site when Mr. Foutz took over the facility lease. Mr. Foutz address is:

Bond & Bond Service Station
Attn: Charles Foutz
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico 87420

As per your request, an owner and/or operator confirmation block has been included with this letter to verify that Envirotech, Inc. has been retained to perform the subject UST removal and closure.

Your assistance in scheduling this closure is sincerely appreciated.

Respectfully submitted,
ENVIROTECH INC.

Michael K. Lane, P.E.
Geological Engineer

C: Bond & Bond Service Station
Navajo EPA

MKL/sr
2134.NTC

Tank owner and/or facility operator concurrance:

Bond & B
(Company)

(Signature/Date)

President
(Title)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, Ca. 94105

MAR 13 1992 → To Webb only

In reply refer to: H-2-1
Site: NAV 046
Certified Mail: P 887 519 158

Marlo Webb, Owner
PERMCO, Inc.
P.O.Box 127
Farmington, NM 87401

~~Mr.~~ Charles Foutz, Operator
Bond and Bond Service Station
U.S. Highway 666
San Juan County
Shiprock, NM 87499

returned due to wrong address

Dear Mr. Webb and Mr. Foutz:

This correspondence is in regard to the underground storage tank (UST) removal at Bond and Bond Service Station, located on U.S. Highway 666, Shiprock, New Mexico, on the Navajo reservation. The U.S. Environmental Protection Agency (EPA) has determined that PERMCO is the owner and Mr. Charles Foutz of Bond and Bond Service Station, is the operator.

As owners and operators of the USTs located at Bond and Bond Station, both parties are requlated under the Code of Federal Regulations, Subpart A, Program Scope and Interim Prohibition, Section 280.10. This states "The requirements of this part [Applicability] apply to all owners and operators of an UST system...". Since the USTs were leased to Bond and Bond Station on November 27, 1978 PERMCO remains owner of the USTs and Bond and Bond Service Station are the operators.

The EPA has received the UST Closure Report for the three USTs removed from the Bond and Bond Station dated September 1991. The closure report included the results of the analysis performed on the soil samples taken from beneath the USTs. The results from all seven of the samples analyzed have levels of benzene, toluene, ethylbenzene, and xylene that are higher than the New Mexico maximum allowable limits. The report states that the USTs were not intact and that holes were seen in the UST. It also indicates that further excavation was performed to remove the visibly contaminated soil.

Whether prior to or in conjunction with tank removal, a confirmed release of a regulated substance from an UST system

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must be followed by corrective action, according to the Code of Federal Regulations (CFR), 40 CFR §280.52(b)(1) and 280.61. This requires additional activities including, but not limited to:

1. Report the release to EPA and Tribal authorities within 24 hours [40 CFR §280.61].

2. Take initial abatement measures and site check [40 CFR §280.61].

   i. Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.

   ii. Prevent migration of the released substance in to surrounding soils and ground water.

   iii. Address any immediate threats to human health, safety, and the environment caused by the release (such as fire and safety hazards posed by vapors or free product).

   iv. Remedy any hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation or related UST activities.

   v. If free product is present, begin removal of the free product as soon as practicable.

3. Prepare an "Initial Abatement Summary Report" within 20 days of confirmed release or as required by EPA [40 CFR §280.63 and §280.64].

4. Investigate to define the vertical and lateral extent of the release [§280.62(b)], and submit a "Site Assessment" Report detailing these activities within 45 days of the confirmed release [§280.63(b)].

Note: in the interest of expediting corrective action, reports 3 and 4 above may be combined, or this information may be included in the Tank Removal report outlined above, contact EPA for approval.

5. Additional Reports regarding free product removal, risk assessment, corrective action activities, and site closure may also be required [40 CFR §280.65, §280.66, and §280.70 - §280.74].

Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recover Act (RCRA), as amended, EPA requires that you furnish the above information within 30 days of the receipt of this letter. If no response is provided by either responsible party, enforcement action will be taken. **Your immediate attention is needed in this matter.** Pursuant to §9006 [42 U.S.C. §6991(e)] of RCRA, refusal to provide the requested

information by the specified deadline may result in the issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact Matthew Small at (415) 744-2077.

Sincerely,

Patricia D. Eklund, Chief
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, US Department of Interior, BIA
Jim Duck, EPA Region VI
H-2-1 Reading File
Site File

Attachment: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock AZ 86515

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515

Leonard Robbins
US Department of Interior, BIA
Environmental Quality Services - Box 1060
Gallup NM 87301

Jim Duck
Office of Underground Storage Tanks
Region VI, Environmental Protection Agency
1445 Ross Avanue, 12th Floor Suite 1200
Dallas, TX 75202-2733

Attachment: List of Contacts

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Gallup NM 87301

Jim Duck
Office of Underground Storage Tanks
Region VI, Environmental Protection Agency
1445 Ross Avenue, 12th Floor Suite 1200
Dallas, TX 75202-2733

P 887 519 158

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Marlo Webb, Owner	
Street & No. P.O. Box 127	
P.O., State & ZIP Code Farmington, NM 87401	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date MAR 13 1992	

PS Form 3800, June 1990

SYMBOL			H-2-1			
SURNAME			Thomas			
DATE			3/13/92			

U.S. EPA CONCURRENCES

OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

MAR 2 0 1992

In reply refer to: H-2-1
Site: NAV 046
Certified Mail: P 878 533 541

Marlo Webb, Owner
PERMCO, Inc.
P.O.Box 127
Farmington, NM 87401

Mr. Charles Foutz, Operator
Bond and Bond Service Station
P.O.Box 640
San Juan County
Shiprock, NM 87420

Dear Mr. Webb and Mr. Foutz:

This correspondence is in regard to the underground storage tank (UST) removal at Bond and Bond Service Station, located on U.S. Highway 666, Shiprock, New Mexico, on the Navajo reservation. The U.S. Environmental Protection Agency (EPA) has determined that PERMCO is the owner and Mr. Charles Foutz of Bond and Bond Service Station, is the operator.

As owners and operators of the USTs located at Bond and Bond Station, both parties are regulated under the Code of Federal Regulations, Subpart A, Program Scope and Interim Prohibition, Section 280.10. This states "The requirements of this part [Applicability] apply to all owners and operators of an UST system...". Since the USTs were leased to Bond and Bond Station on November 27, 1978 PERMCO remains owner of the USTs and Bond and Bond Service Station are the operators.

The EPA has received the UST Closure Report for the three USTs removed from the Bond and Bond Station dated September 1991. The closure report included the results of the analysis performed on the soil samples taken from beneath the USTs. The results from all seven of the samples analyzed have levels of benzene, toluene, ethylbenzene, and xylene that are higher than the New Mexico maximum allowable limits. The report states that the USTs were not intact and that holes were seen in the UST. It also indicates that further excavation was performed to remove the visibly contaminated soil.

Whether prior to or in conjunction with tank removal, a confirmed release of a regulated substance from an UST system

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must be followed by corrective action, according to the Code of Federal Regulations (CFR), 40 CFR §280.52(b)(1) and 280.61. This requires additional activities including, but not limited to:

1. Report the release to EPA and Tribal authorities within 24 hours [40 CFR §280.61].

2. Take initial abatement measures and site check [40 CFR §280.61].

   i. Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.

   ii. Prevent migration of the released substance in to surrounding soils and ground water.

   iii. Address any immediate threats to human health, safety, and the environment caused by the release (such as fire and safety hazards posed by vapors or free product).

   iv. Remedy any hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation or related UST activities.

   v. If free product is present, begin removal of the free product as soon as practicable.

3. Prepare an "Initial Abatement Summary Report" within 20 days of confirmed release or as required by EPA [40 CFR §280.63 and §280.64].

4. Investigate to define the vertical and lateral extent of the release [§280.62(b)], and submit a "Site Assessment" Report detailing these activities within 45 days of the confirmed release [§280.63(b)].

Note: in the interest of expediting corrective action, reports 3 and 4 above may be combined, or this information may be included in the Tank Removal report outlined above, contact EPA for approval.

5. Additional Reports regarding free product removal, risk assessment, corrective action activities, and site closure may also be required [40 CFR §280.65, §280.66, and §280.70 - §280.74].

Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recover Act (RCRA), as amended, EPA requires that you furnish the above information within 30 days of the receipt of this letter. If no response is provided by either responsible party, enforcement action will be taken. **Your immediate attention is needed in this matter.** Pursuant to §9006 [42 U.S.C. §6991(e)] of RCRA, refusal to provide the requested

information by the specified deadline may result in the issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact Matthew Small at (415) 744-2077.

Sincerely,

Patricia D. Eklund, Chief
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, US Department of Interior, BIA
Jim Duck, EPA Region VI
H-2-1 Reading File
Site File

Attachment: List of Contacts

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P.O. Box 308
Window Rock AZ 86515

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US Department of Interior, BIA
Environmental Quality Services - Box 1060
Gallup NM 87301

Jim Duck
Office of Underground Storage Tanks
Region VI, Environmental Protection Agency
1445 Ross Avanue, 12th Floor Suite 1200
Dallas, TX 75202-2733

P 878 533 541

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Mr. Charles Foutz	
Street & No. P.O. Box 640	
P.O., State & ZIP Code Shiprock, NM 87420	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, June 1990

FEBROARY 25, 1992

TELEPHONE CONVERSATION WITH
TJ NAMINGHA
BIA - REALTY
505 368:4427

1/1/55 THE LAND WAS LEASED TO CARL BOND AND ASSOCIATES FOR 25 YEARS

1977 THEY BECAME BOND + BOND COMPANY

1980 THERE WAS A TEMPORARY EXTENSION OF THE LEASE

BOND AND BOND COMPANY TURNED INTO BONDS INC.

4/15/81 LAND WAS LEASED TO BONDS, INC FOR 10 YEARS.

CHARLES FOUTE - PRESENT OWNER IS PART OF BONDS INC

3/22/83 CHARLES, LINDA + B. DECKER FOUTE OPERATED AS BOND AND BOND

FOUTE REALTY HAS ALSO DONE BUSINESS AS BOND + BOND

3/22/93 LEASE EXPIRES - OPTION TO RENEW

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEB 9 1993

Use Mail Code H-2-1
and Site # Nav-046
in all Correspondence
Certified Mail P 869 871 082

Mr. Michael K. Lane, P. E.
Envirotech Inc.
5796 U. S. Highway 64- 3014
Farmington, NM 87401

Dear Mr. Lane:

This correspondence refers to your letter of January 27, 1993 requesting an extension of time to submit the site assessment of the Bond & Bond service station located on U. S. Highway 666 in Shiprock, N.M. on land of the Navajo Nation.

EPA grants an extension of time of 30 days, beginning with the receipt of this letter at which time the site assessment must be submitted in accordance with the Code of Federal Regulations (CFR) 40 CFR 280.62 (b) and 280.63 (b). The vertical and horizontal extend of the release must be clearly defined in the assessment.

A confirmed release of a regulated substance from an UST system must be followed by corrective action according to 40 CFR 280.52 (b) (1) and 280.61.

Within 45 days of receipt of this letter a corrective action plan must be submitted to EPA.

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Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recovery Act (RCRA), as amended, EPA requires that you furnish the above information within **30 days** of the receipt of this letter. **Your immediate attention is needed in this matter.** If You have any questions, please contact me at (415) 744- 2078.

Sincerely,

Matt Small

Matthew Small, Hydrogeologist
Native American Lands
Office of Underground Storage Tanks

cc: Norma Cady,Navajo EPA
Chuck Dowell, IHS
Leonard Robbins, BIA
Marlo L.Webb, Permco
Charles Foutz, Bond & Bond
Reading File
Site File

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United Stated Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Owner Designated Representative
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small:

As indicated in Envirotech's letter of December 11, 1992, PERMCO has retained Envirotech to perform the requested site assessment for the underground storage tank (UST) spill reported during the UST removal on August 30, 1991.

Per your request, this letter is to confirm PERMCO's designation of Envirotech Inc. as its repersentative with regards to this matter.

Further Permco is requesting an extension to complete the investigation pending laboratory results. The attached letter from Envirotech outlines the work to date.

Thank you for your assistance. Please contact me or Envirotech if you have any questions regarding this matter.

Sincerely,

Marlo L. Webb
Partner

Attachment

cc: Envirotech, Inc.

MKL/mkl 1346DSGN.LTR

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United Stated Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Owner Designated Representative
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small:

As indicated in Envirotech's letter of December 11, 1992, PERMCO has retained Envirotech to perform the requested site assessment for the underground storage tank (UST) spill reported during the UST removal on August 30, 1991.

Per your request, this letter is to confirm PERMCO's designation of Envirotech Inc. as its repersentative with regards to this matter.

Further Permco is requesting an extension to complete the investigation pending laboratory results. The attached letter from Envirotech outlines the work to date.

Thank you for your assistance. Please contact me or Envirotech if you have any questions regarding this matter.

Sincerely,

Marlo L. Webb

Marlo L. Webb
Partner

Attachment

cc: Envirotech, Inc.

MKL/mkl

1346DSGN.LTR

Answered 02-01-93

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United States Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Investigation Summary & Extension Request Project # 91346
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small;

This letter is a request for extension and summarizes the spill incident investigation being conducted at the referenced Permco site located on U.S. Highway 666, in Shiprock, Navajo Nation, New Mexico.

On November 13, 1992 your office requested that Permco conduct a spill investigation. The findings of this investigation were to be submitted by January 26, 1993.

Mr. Marlo Webb, of Permco, has retained Envirotech, Inc. to perform the spill investigation. Efforts have been made to attain permission to conduct exploratory subsurface drilling on properties adjacent to the site. In order to meet the January 26, 1993 deadline, the investigation was limited to the subject property. As of January 21, 1993 the field portion of the investigation has been completed; including field reconnaissance, site audit, exploratory subsurface drilling of fourteen (14) test borings, construction/development of eight (8) groundwater monitor wells, and soil and groundwater sampling and submittal for laboratory analysis. The "Site Diagram" attached shows the location of the test borings and monitor wells.

Laboratory results are anticipated by February 1, 1993. We anticipate completion of our report summarizing the findings of this investigation will follow within a few days of receipt of the results.

Based on the field screening and preliminary laboratory results, it appears that most of the soil and dissolved phase groundwater contamination is limited to the subject site. A hydrocarbon sheen was observed at some test boring locations, but no free product was observed.

We request a time extension to complete the report upon receipt of the laboratory analytical results.

Thank you for your cooperation with this project. Should you have any question regarding our field exploration or the status for completion of this investigation, please contact us at 505-632-0615.

Respectfully submitted,
ENVIROTECH Inc.

Robert M Young

Robert M. Young
Environmental Biologist

Reviewed By,

Michael K. Lane, P.E.
Geological Engineer

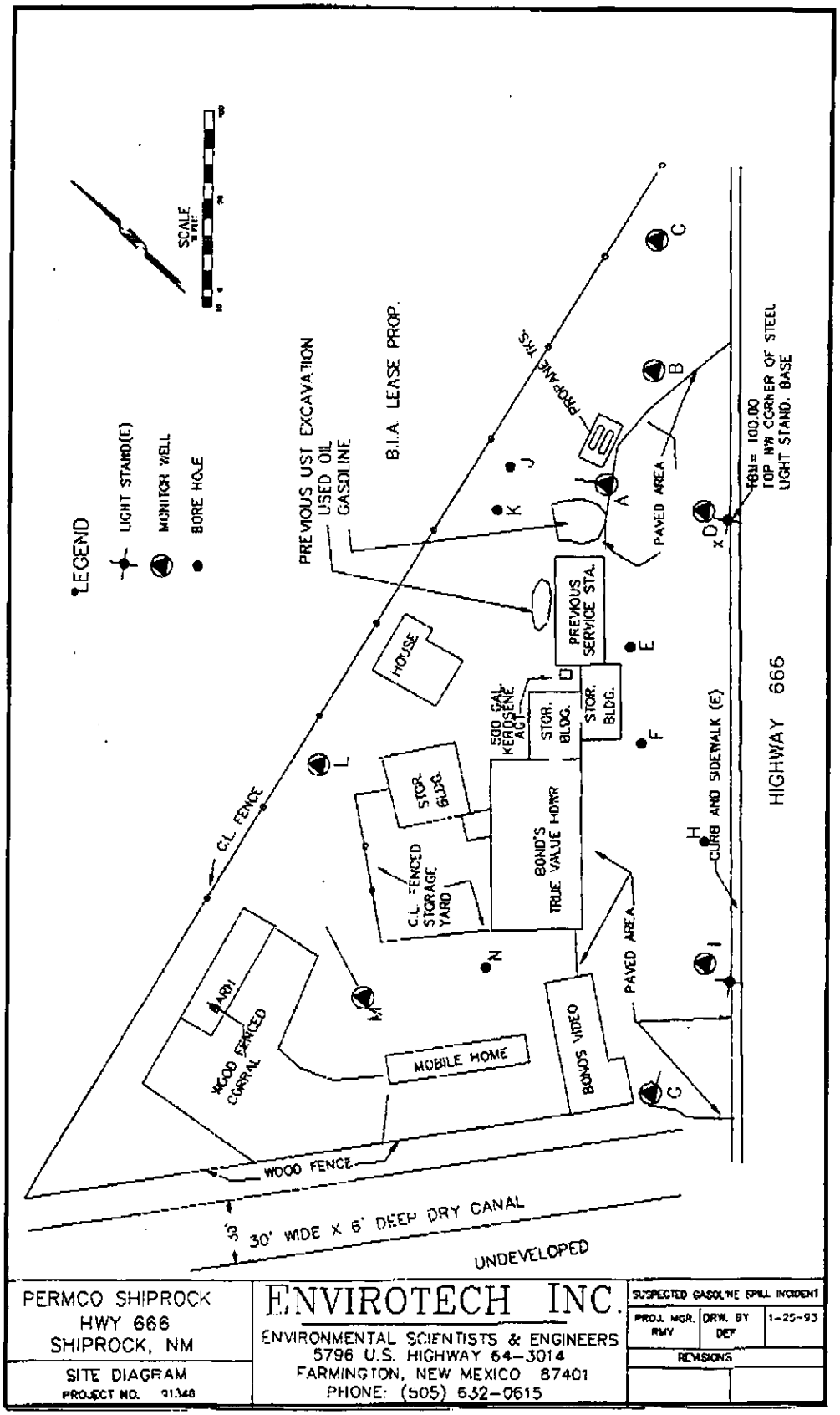
Attachment: Site Plan (1/25/93)

cc: Ms. Norma Cady
Navajo EPA

Mr. Marlo Webb
Permco, Inc.

RMY/rmy

1346EXT.LTR



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT
SITE DIAGRAM PROJECT NO. 91.346		PROJ. MGR. RWY / DRWN. BY DEF / 1-25-93
		REVISIONS

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

NAV-046

December 15, 1992

Rec'd 12/22/92
MB

Mr. Matthew C. Small, Hydrologist
Office of Underground Storage Tanks
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Project: 92134

RE: UST Closure Report
Bond and Bond Service Station
U.S. Highway 666
Shiprock, New Mexico

Dear Mr. Small:

Please find attached a copy of Envirotech's UST closure Report for Bond and Bond Service station located on U.S. Highway 666, Shiprock, New Mexico.

If you have any questions regarding the investigation on UST removal report, please contact us at (505) 632-0615.

Respectfully submitted,
ENVIROTECH, INC.

Al Chaharlang

Mr. S. Al Chaharlang
Staff Engineer
cc: Mr. Charles Foutz - Bond and Bond Service Station
Ms. Norma S. Cady - UST Program, Navajo EPA
sac
2134.LET

LAW OFFICES
OF
CARDIN & PARMLEY, P.A.

232 North Schwartz
Post Office Box 2061
Farmington, New Mexico 87499-2061

Robert Cardin
Richard J. Parmley, Jr.

Phone: (505) 327-0496
FAX: (505) 326-2624

December 11, 1992

Ms. Patricia D. Eklund, Chief
Office of Underground Storage Tanks
U. S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: H-2-1
Site: NAV 046

Dear Ms. Eklund:

Your March 20, 1992 letter to Mr. Charles Foutz, operator of the Bond & Bond Service Station in Shiprock, NM, has been turned over to this office for consideration. At this time, we have hired someone for the purpose of looking into your allegations and his report regarding alternatives for cleanup is expected by January 6. We are requesting an extension until that time to respond to your requests as set out in your correspondence. Please notify me of your decision at the address shown above.

If you have any questions or comments concerning this matter, please do not hesitate to call the undersigned.

Very truly yours,

Robert Cardin

RC/sjt

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

Rec'd 12/14/92 mg

December 11, 1992

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

RE: Permco/Bond & Bond Service Station
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico

Project No. 91346

Dear Mr. Small,

PERMCO has retained Envirotech Inc. to perform a site assessment for the underground storage tank (UST) spill reported during the UST removal on August 30, 1991.

As per your letter dated November 13, 1992 USEPA has determined that PERMCO is a responsible party for the subject spill. PERMCO has and still maintains that the spill incident occurred prior to the installation of the tanks they supplied and that upon installation of the subject USTs, title passed to the Navajo Nation as a permanent improvement to their property. PERMCO provided the tanks to the site lessee, but was never the lessee or operator of the tanks. Never-the-less, under protest, PERMCO will comply with your order and has authorized Envirotech Inc. to perform the site investigation.

The UST CLOSURE REPORT submitted to your office September 5, 1991 by PERMCO compiled the information requested as an "Initial Abatement Summary Report" in your March 13, 1992 correspondence over the signature of Patricia D. Eklund.

The requested site investigation to define the vertical and lateral extent of the release will be performed as required. It will take approximately 45 days to do the site drilling, sampling, analysis, and report preparation to define the hydrocarbon plume composition and boundaries. The site investigation report will be forwarded to your attention upon completion.

We look forward to working with your office on this project and appreciate the help and consideration USEPA has always extended.

Sincerely,

Morris D. Young

Morris D. Young
President

cc: Marlo Webb, PERMCO

MDY/kls

J. A. PALMER
REED L. FROST

PALMER & FROST, P.A.
ATTORNEYS AT LAW
200 NORTH ALLEN
FARMINGTON, NEW MEXICO 87401

J. M. PALMER (1898-1960)
TELEPHONE 325-0271
AREA CODE 505

November 23, 1992

Mr. Matthew C. Small
Hydrogeologist
Office of Underground Storage Tanks
U. S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: H-2-1
Site: NAV-046

Dear Mr. Small:

We represent PERMCO, a New Mexico partnership composed of Marlo Webb and Robert Rhien, and have a copy of your letter of November 13, 1992. This matter has just been referred to us so we are not completely familiar with the facts involved.

We note, however, that your letter indicates that the EPA has determined that PERMCO is the owner of a tank and Charles Foutz is the operator.

We understand that the site in question is located on and a part of the Navajo Indian Reservation which is apparently under lease from the Navajo Nation.

We have not yet had an opportunity to review the lease; however, it is our understanding that all leases from the Navajo Tribe provide specifically that any improvements placed upon the leased premises at the time they are built or installed become the property of the Navajo Indian Nation.

We are in the process of obtaining a copy of the lease and as soon as we have had an opportunity to review it, we will communicate further with you.

Very truly yours,

PALMER & FROST, P.A.

By J. A. Palmer

JAP/cd

cc: Marlo Webb
Robert Rhien

ATTACHMENT: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515 (602) 871-7691

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515 (602) 871-5852

Leonard Robbins
U.S. Department of the Interior, BIA
Environmental Quality Services
Box 1060
Gallup NM 87301 (505) 863-9501

Sam Coleman
U.S. EPA Region VI
1445 Ross Av. Mail Code 6H-A
Dallas, TX 75202-2733 (214) 655-6755

SYMBOL						
SURNAME						
DATE						

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

If you have any questions, please contact me at (415) 744-2078.

Sincerely,

Matthew C. Small, Hydrogeologist
Native American Lands
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Leonard Robbins, BIA
Chuck Dowell, IHS
Sam Coleman, EPA Region VI

clay ball and scale ~~could~~ would probably not seal hole against leaking

- Ed's report says staining and photos of hole
- Need positive info on previous tanks
- if spill is old, attempt to ~~date~~ using cromatographic data.
- ~~the presence of~~
- Benzene conc. relative to other compounds indicates a fresher spill

bc: Tom Mintz, ORC

SYMBOL	H-2-1	H-2-1	H-2-1		
SURNAME	Harper	Small	Thomas		
DATE	4-30-92	5/4/92	5/6/92		

U.S. EPA CONCURRENCES

OFFICIAL FILE COPY

Attachment: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock AZ 86515 (602) 871-7691

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515 (602) 871-5852

Leonard Robbins
U.S. Department of the Interior, BIA
Environmental Quality Services
Box 1060
Gallup NM 87301 (505) 863-9501

Marlo L.Webb
Permco
P.O.Box 127
Farmington N.M. 87401 (505) 325-1911

Charles Foutz
Bond & Bond Service Station
U.S.Highway 666
Shiprock N.M. 87499

SYMBOL						
SURNAME						
DATE						

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

MESSAGE CONFIRMATION

DATE:05/06/92 TIME:15:03

ID:EPA

DATE	TIME	TX-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
05/06	14:59	03'52"	505 632 1865	G3-S	006	OK

FAX TRANSMISSION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

DATE: 5 / 6 / 92	Number of pages: (include cover sheet) 6

TO	
Name:	REX FARNSWORTH
Organization:	ENVIROTECH
Mail Code:	
FAX Number:	8-505-632-1865
Verification Phone:	

FROM	
Name:	Troy Harper
Organization:	Undergound Storage Tank Program
Mail Code:	H - 2 - 1
Transmitter Phone:	(415) 744-2082 FTS 484-2082
Transmitter FAX:	(415) 744-1044 FTS 484-1044

NOTE

I thought you might not want to wait on the mail for this. It is addressed directly to Foutz as a way to verify the address for him that Mike provided in the 3/30/92 letter. Troy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

MAY 06 1992

In Reply Refer To: H-2-1
Certified Mail: P 887 519 170

Charles Foutz
Bond & Bond Service Station
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico 87420

Dear Mr. Foutz:

We received the letter dated March 30, 1992 from Michael K. Lane of Envirotech announcing your intent to permanently close one 500 gallon used oil underground storage tank (UST) system at the above address located on Navajo tribal lands. We understand that the tank will be removed. Subsequently, we received a letter dated April 28, 1992 from Rex Farnsworth of Envirotech requesting waiver of the 30-day notice for removal of the UST on May 13, 1992.

The requested waiver is granted by this office with the following provisions:

1. That the cognizant tribal authorities are able to coordinate with the accelerated schedule, and

2. Any work toward the UST closure prior to the requested date of May 13, 1992 must have prior written approval of this office, and must be acceptable to cognizant tribal authorities.

The tank owner/operator is responsible for notification and for meeting all regulatory requirements outlined in this letter. If an owner/operator wishes to be represented by a contractor, this office must be notified in writing of any such delegation of authority. Your signature on the Envirotech letter dated March 30, 1992 satisfies this requirement. However, the owner/operator is the ultimate responsible party in all cases.

The owner/operator must see to it that the crew chief in charge of tank removals has an understanding of the requirements of all applicable industry standards and government regulations,

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including those of the EPA and of OSHA. The availability at the tank site of proper equipment for implementing these requirements may avoid delays. **Activities at a tank site that appear unsafe will be halted.** Pursuant to a Memorandum of Understanding, the U.S. EPA routinely refers probable safety violations to OSHA.

Any work such as preliminary excavation or the removal of any portion of the UST system that is to be conducted before the arrival of our representative at the site must have prior written approval as required by waiver condition No. 2 above. Normally, the first order of business is a "stand-up" safety meeting at the site and involving all parties. Please plan the tank removal activities so that they proceed efficiently once our representative has arrived on site.

It is also incumbent upon you to notify the respective individuals of the appropriate Native American entities such as those listed in the attachment to this letter. If any tribal authorities wish to be represented during the tank removal operation, you will need to coordinate with them in addition to this office. A copy of contacts, their addresses, and phone numbers is included as an attachment.

In general, whether prior to or in conjunction with a tank removal, a confirmed release must be followed by corrective action according to the Code of Federal Regulations (CFR), 40 CFR §§ 280.52(b)(1) and 280.61. This requires additional activities including further investigation to define the vertical and lateral extent of the release [§280.62(a)(5)], submittal of a report **summarizing** these activities within 20 days of the confirmed release [§ 280.62(b)] and submittal of a report **detailing** these activities within 45 days of the confirmed release [§ 280.63(b)]. The 'further investigation' may simply involve additional excavation and sampling at the time of the tank removal.

The following list identifies the information that should be used as a guide for preparing closure reports, even when contamination has not been identified, pursuant to Section 9005 of Resource Conservation and Recovery Act (RCRA). When the specific Federal regulation describing the required activities is referenced, it should be used as guidance in your response.

1. Copies of your UST Notification Form, for each tank to be removed, should be sent with the 30 day notification of the removal date but not later than the due date of the tank closure report.

2. The tank removal report should include all documentation regarding the tank(s) removal and associated closure activities [§ 280.72(a)]. This report should be submitted within 30 days of the tank removal and should include but is not limited to:

   a. The name and address of the contractor who performed the tank removal and the date of removal;

   b. The manifests for disposal of any tanks or the current disposition and future plans for disposal;

   c. The manifests for any contaminated soil transported offsite;

   d. A map of the area identifying adjoining properties;

   e. A map of the site identifying location of the former tanks and exact sample locations and depths; include any and all existing and previously existing underground storage tanks at the site (please number tanks) including a list of any and all materials historically stored in the tanks;

   f. At least two soil samples must be collected for analyses from native soil at either end of each tank, immediately below the base of the excavation. The exact sample locations, rationale for the sampling locations, QA/QC for field collected samples, rationale for analyses, and a table of the analytical results referencing map locations [280.72(a)]; Note the following:

      i. If gasoline was ever stored in the tank use both EPA Methods 8015 Modified for gasoline (TPH-gasoline) and 8020 for gasoline (BTEX);

      ii. If diesel was ever stored in the tank use the EPA Method 8015 Modified for diesel (TPH-diesel);

      iii. If fresh or waste oil was ever stored in the tank use EPA Method 418.1 (oil);

      iv. If waste oil or solvents were ever stored in the tank use EPA Method 8010 (solvents) in addition to EPA Method 418.1;

   g. The name and address of the consultant who performed the tank removal and date of removal; the actual sampling and sample handling should be performed by a consultant who is Health & Safety trained and experienced in sample

collection protocol (not the tank removal contractor); consultants use of air monitoring equipment to screen samples in the field can allow the excavation to encompass contaminated areas during the initial tank removal, and thereby dramatically reduce overall costs;

h. Color photographs showing condition of the removed tanks, excavation sidewalls and excavation base can be very descriptive of contamination potential;

i. The laboratory report for the sample analyses should clearly identify the EPA Methods used for analyses and laboratory QA/QC procedures followed; and,

j. The backfill used and current disposition of excavated soil.

Pursuant to §9006 [42 U.S.C. §6991(e)] of RCRA, refusal to provide the requested information by the specified deadline may result in the issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation.

All requested information should be submitted within 30 days of the removal. We appreciate your cooperation in this matter. If you have any questions, please contact Troy Harper of this office at 415/744-2082.

Sincerely,

Matt Small

Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks

Attachment

cc: Norma Cady, Navajo EPA
Leonard Robbins, Bureau of Indian Affairs
Chuck Dowell, Indian Health Service
Jim Duck, U.S. EPA Region VI
Michael K. Lane, Envirotech Inc.

ATTACHMENT

Norma Cady, UST Program
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515

(602) 871-6536 or -6562
729-5247 or -5281

Leonard Robbins
Bureau of Indian Affairs
Navajo Area Office
Environmental Quality Services
P.O. Box 1060, Code 305
Gallup, NM 87301 (505) 863-9501

Chuck Dowell
Indian Health Services
Box G
Window Rock, AZ 86515 (602) 871-5852

Jim Duck
U.S. EPA Region VI
1445 Ross Avenue (6H-A)
Dallas, TX 75202-2733 (214) 655-6755

Michael K. Lane
Attn: Rex Farnsworth
Envirotech Inc.
5796 U.S. Highway 64 - 3014
Farmington, New Mexico 87401 (505) 632-0615

Rec 5/4/92 TH

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

April 28, 1992

Mr. Troy Harper
United States Environmental Protection Agency
Office of Underground Storage Tanks
Region IX
75 Hawthorne Street (H-2-1)
San Francisco, CA 94105-3901

RE: UST Closure Notice Project: 92134
Bond & Bond Service Station
U.S. Highway 666, San Juan County
Shiprock, Navajo Indian Nation, New Mexico

Dear Mr. Harper:

Mr. Charles Foutz of Bond & Bond Service Station has retained Envirotech Inc. to remove and perform an Underground Storage Tank System (USTS) closure of the used oil UST at the Bond & Bond Service Station located on U.S. Highway 666, Shiprock, Navajo Indian Nation, New Mexico. This location reportedly has one (1) UST.

We are requesting a waiver on the thirty (30) day notice, in that we may set the date of May 13, 1992 for the removal of the UST listed below:

500 gallon Used Oil Tank

Envirotech Inc. will remove the 500 gal UST and perform the required site assessment for closure.

The removed UST will be transported to Envirotech's Farmington construction yard for proper disposal.

The property owner reportedly is the Navajo Indian Nation.

The tank reportedly existed at the site when Mr. Fouts took over the facility lease.

Your assistance in scheduling this closure is sincerely appreciated. If you have any question please contact us at (505) 632-0615.

Sincerely,

Rex Farnsworth
General Foreman

RF/sr
167S.DOC

Rec'd 4/28/92 TH

Envirotech Inc.

5796 US Hwy 64-3014 FAX (505) 632-1865
Farmington, NM 87401
Phone: (505) 632-0615

FAX TRANSMISSION DATE 4-28-92

TO: Troy Harper

OF (COMPANY) US EPA

FAX NUMBER: 1-415-744-1044

FROM: Rex Farnsworth

REMARKS:

Number of Pages (including cover sheet): 3

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

April 28, 1992

Mr. Troy Harper
United States Environmental Protection Agency
Office of Underground Storage Tanks
Region IX
75 Hawthorne Street (H-2-1)
San Francisco, CA 94105-3901

RE: UST Closure Notice Project: 92134
Bond & Bond Service Station
U.S. Highway 666, San Juan County
Shiprock, Navajo Indian Nation, New Mexico

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Sincerely,

Rex Farnsworth
General Foreman

RF/sr
167S.DOC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

JAN 16 1992

In Reply Refer To: H-2-1
Certified Mail: P 470 095 777

Jack D. Dewey, Hydrologist
EnviroTech Inc.
5796 U.S. Highway 64-3014
Farmington, NM 87401

Dear Mr. Dewey:

Enclosed are four signed Certificate of Origin of Contaminated Soils forms for the following sites: Shiprock High School Old Bus Barn, Shiprock High School Sewer Lift Station, Permco-Bond and Bond Station, and the Thriftway #259 Station, all in Shiprock, New Mexico.

It is EPA's understanding that these forms are required by the State of New Mexico Oil Conservation Division (NM OCD) before contaminated soils can be transported off the site of origin to Envirotech's Soil Remediation Site. It is also EPA's understanding that Envirotech operates the Soil Remediation Site through a permit and under the direction of the NM OCD. Envirotech has informed the EPA that specifically for underground storage tank soils, the NM OCD requires the certificate to be executed by the regulatory agency that has jurisdiction over the site. The U.S. EPA is the implementing agency for UST removals on Native American Lands. My signature on these forms indicates that, to the best of my knowledge based on information provided by Environtech; the soil to be transported off the sites of origin was contaminated by a leaking underground storage tank system.

A brief description of the Soil Remediation Site was provided in a telephone conversation with you on December 4, 1991. The site is located in Hilltop, New Mexico. The depth to groundwater is 1,000 feet. Soils are tilled once every two weeks. There is no present ground cover. In addition, bioremediation is performed at the site. Bioremediation is seeded by the addition of manure and water. The moisture content is maintained at 40%.

EPA requests a detailed description of the soil remediation site be forwarded. Provide information including but not limited to the following: size in acres, geology and hydrogeology of the area, design and operation specifications, nearest groundwater well, and NM OCD permitting requirements.

Printed on Recycled Paper

All requested information or any additional response regarding this case should be submitted within 30 days of the receipt of this letter. Your immediate attention is required in this matter. If you have any questions, please contact me at 415-744-2081.

Sincerely,

Matt Small

Matthew Small, Hydrogeologist
Native American Lands
Office of Underground
Storage Tanks

cc: Ed Dunn, US EPA Arizona
Sadie Hoskie, Navajo EPA
Norma Cady, Navajo EPA
Rose Dewyenie, Bureau of Indian Affairs
Chuck Dowell, Indian Health Services

Attachment: List of Contacts

Ed Dunn
1243 West Carla Vista Drive
Chandler, AZ 85224 (602) 963-8291

Sadie Hoskie
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515
Navajo Nation (602) 871-4941

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515
Navajo Nation (602) 871-4941

Rose Dewyenie
Bureau of Indian Affairs
Navajo Area Office
Environmental Quality Services
P.O. Box 1060, Code 305
Gallup, NM 87301 (602) 863-9501

Chuck Dowell
Indian Health Services
Box G
Window Rock, AZ 86515 (602) 871-5851

Attachment: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock AZ 86515 (602) 871-7691

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515 (602) 871-5852

Alan Nease
IHS, PM
OEH, IHS
Box G
Window Rock, AZ 86515 (602) 871-5852

Leonard Robbins
U.S. Department of the Interior, BIA
Environmental Quality Services
Box 1060
Gallup NM 87301 (505) 863-9501

SYMBOL	H-2-1		H-2-1			
SURNAME	[illegible]		T Dlouis			
DATE	2/4/93		2-9-93			

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

NAV-046 Permco Inc./Bond and Bond Station
The history of operators & tank owners at this site needs to be developed. Need to go back to BIA archives and find out who owned the previous businesses here.
Contact person (per Ed Dunn):
T. J. Namingha
BIA - Realty
Shiprock NM
505-368-4427 ext. 335

Marlo Webb / Permco leased the tanks that were removed to the operators of Bond & Bond Station. Upon removal of these tanks, they discovered contamination below the clean fill that their tanks were installed on top of. In addition, a waste oil tank is on site that is believed to be leaking and is believed to have been overfilled (per my conversation w/ Mr. Webb).

EPA NEEDS TO ESTABLISH THE RESPONSIBLE PARTIES.

December 1991 Darlene McCray
PRC-EMI
contractor

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

November 27, 1991

United States Environmental Protection Agency
75 Hawthrone St.
San Francisco, CA 94105

Attention: Ms. Patricia Eklund

Dear Ms. Eklund:

Following up my phone conversation today with Darlene McCray, I am enclosing a copy of our loaned equipment agreement on the tanks that were removed from the Bond & Bond & Company service station at Shiprock, N. M.. The date of the agreement is the date the tanks were installed by us.

As explained to Ms. McCray we did not own or operated the service station. We installed the tanks for the privilege of doing business with Bond & Bond (a standard practice in the industry).

You will note that the loan agreement was signed by Farmington Oil Company (a corporation) which at that time was owned by the same pricipals that own the partnership of PERMCO. Farmington Oil Company had no ownership interest in the tanks but was a gasoline Jobber who supplied the station with product. We elected to have the agreement signed by Farmington Oil Company rather than PERMCO for operating reasons.

The principals of PERMCO do not now own Farmington Oil Co..

Please advise if you need additional information on this closure.

Sincerely,

PERMCO

Marlo L. Webb

Marlo L. Webb
Partner

HTS 12436.77
PUMPS 3165.80
AIRCOMP 380.00
16984.29

THIS AGREEMENT, dated the 27th day of November, 1978,

between THE FARMINGTON OIL COMPANY, a corporation, hereinafter called "Company," and

Bond's Inc DBA Bond & Bond & Co., hereinafter called "Second Party."

WITNESSETH:

1. Company hereby loans to Second Party, for installation upon Second Party's premises at SHIPROCK, (Service Station No. 3656), in the City of SHIPROCK, County of San Juan, State of New Mexico, the following equipment:

2- 4000 gallon underground tanks, 1- 3000 gallon underground tank, including valves, fill stems, vent lines, product lines, concrete and steel pump islands, piping and all conduit. 1- Coxwell, installed. 4- Southwest Gasoline pumps model 5-55. 1- air compressor. Together with installation costs.

Total value of installation as of Nov. 27, 1978 Sixteen thousand nine-hundred eighty-four and 29/100 ($ 16,984.29)

2. Second Party shall not remove said equipment from the above premises, or do or suffer anything to be done whereby said equipment or any part thereof shall be seized, taken on execution, attached, destroyed or damaged, or by which the title of Company to the same may in any way be placed in jeopardy; nor shall Second Party suffer any lien or encumbrance to be placed upon said equipment. Should said equipment be levied upon or any lien or encumbrance be placed thereon by any process or proceeding of any court, or by attachment or execution or otherwise, Second Party shall forthwith give written notice to the person or persons instituting such proceedings, disclaiming ownership of said equipment, and to Company, in order that Company may protect its property rights therein.

3. Said equipment shall be used solely for or in connection with the storage and handling of petroleum products manufactured and/or marketed by Company, except upon consent of Company, and any other use of said equipment shall constitute a breach of this agreement.

4. Upon any termination of this agreement Second Party agrees to forthwith deliver said equipment to Company.

5. Second Party shall indemnify and save Company harmless of and from any and all liability for loss, damage, or injury to property, or for injury to or death of any persons, caused by or in any way connected with any leakage, fire, or explosion of petroleum products stored in or dispensed from said equipment, or in way arising out of the use, installation, maintenance and /or operation of said equipment.

6. Company may at its option terminate this agreement and enter upon the premises and remove all of said equipment therefrom, and Second Party agrees to assist Company in effecting such removal. Second Party releases Company from any claim for damages caused by or contributed to by such removal.

7. This agreement shall be binding upon and shall inure to the benefit of the permitted assigns of Second Party, and the successors or assigns of Company; provided however, that this agreement and/or any interest of Second Party in and to said equipment, or any part thereof, shall not be assigned or transferred by Second Party, without the written consent of Company.

8. Second Party hereby acknowledges receipt of all said equipment listed on this agreement.

SECOND PARTY

Bond's Inc
DBA BOND & BOND & COMPANY
(Individual, Company or Firm)

By Walter Bond

Title President

THE FARMINGTON OIL COMPANY

By R E Rhein

Title President

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

October 28, 1991

United States Environmental Protection agency
75 Hawthorne St.
San Francisco, CA 94105

Attention: Robert Hillger, Coordinator
Native American UST Program

Re: H-2-1

Gentlemen:

In your letter of October 21, 1991 you asked for follow up information on our tank removal at Shiprock,New Mexioc by Envirotech, Inc. which also indicated a leak.

A complete report of this closeure was sent to Mr. Hillger on September 5, 1991 which included most if not all of the information you are now requesting. Please advise us which items you still lack so that we may comply with your request.

As was stated in Envirotech's report, we as owners of the tanks (leased to a 3rd party for operation) have and have never had any knowlege of any spill at this location. We further deny any responsiblility for any spill or cleanup that may be required as there is solid evidence that the spill, if any, did not occur from our tanks as the soil for some distance immediately beneath the tanks was clean.

This station was in operation for many years before we installed our tanks and today there is a waste oil tank that has been overfilled for years in the same area and is obviously polluting the area.

Unless we hear from you as to further information needed from us we will consider this matter closed.

Sincerely,

Permco

Marlo L. Webb

Marlo L. Webb

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

21 OCT 1991 NAV-046

In Reply
Refer To: H-2-1
Certified Mail: P 470 095 781

Mr. Marlo Webb
Permco, Inc.
P.O. Box 127
Farmington, N.M. 87499

Dear Mr. Webb:

This letter is in response to a tank removal report submitted by Envirotech, Inc. on September 5, 1991 notifying our offices of the discovery and confirmation of leaking underground storage tanks at the following location:

Bond and Bond Service Station
U.S. Highway 666
Shiprock, San Juan County, New Mexico 87420

According to the Code of Federal Regulation 40 CFR Part 280, a confirmed release must be followed by corrective action [§§ 280.52(b)(1) and 280.61]. This requires additional activities including further investigation to define the vertical and lateral extent of the release [§ 280.62(a)(5), submittal of a report **summarizing** these activities within 20 days of the confirmed release [§ 280.62(b)] and submittal of a report **detailing** these activities within 45 days of the confirmed release [§ 280.63(b)]. The 'further investigation' may include additional excavation and sampling at the time of the tank removal.

The following list identifies the information requested by EPA pursuant to section 9005 of Resource Conservation and Recovery Act (RCRA). When the specific Federal regulation describing the required activities is referenced, it should be used as guidance in your response.

1. Copies of your UST Notification Form, for each tank to be removed, should normally be sent with the 30 day notification for removal but at least included in the tank closure report:

2. The tank removal report should include all documentation regarding the tank(s) removal and associated closure activities [§ 280.72(a)]; this report should be submitted within 30 days of the tank removal and should include but is not limited to:

a. The name and address of the subcontractor who performed the tank removal and date of removal;

b. The manifests for disposal of any tanks or current disposition and plans for disposal;

c. The manifests for any contaminated soil transported offsite;

d. A map of the area identifying adjoining properties;

e. A map of the site identifying location of the former tanks and exact sample locations and depths; include any and all existing and previously existing underground storage tanks at the site (please number tanks) including any and all materials historically stored in the tanks;

f. The exact sample locations, rationale for sampling locations, QA/QC for field collected samples, rationale for analyses, and a table of the analytical results referencing map locations [280.72(a)]; if gasoline was ever stored in the tank use both 8015 Modified for gasoline (TPH-gasoline) and EPA Method 8020 for gasoline (BTEX); if diesel was ever stored in the tank use the 8015 Modified for diesel (TPH-diesel); if fresh or waste oil was ever stored in the tank use EPA Method 418.1 (oil); if waste oil was ever stored in the tank use EPA Method 8010 (solvents) in addition to EPA Method 418.1;

g. The laboratory report for the sample analyses should clearly identify the EPA Methods used for analyses and laboratory QA/QC procedures followed; and,

h. The backfill used and current disposition of excavated soil.

All requested information should be submitted within 30 days. We appreciate your cooperation in this matter. If you have any questions, please call me at (415) 744-2076, or Troy Harper at (415) 744-2082.

Sincerely,

Robert W. Hillger

Robert Hillger, Coordinator
Native American UST Program

Enclosures

cc: Ed Dunn, US EPA Arizona
Sadie Hoskie, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, U.S. Department of Interior BIA
William Rhea, EPA Region IV

Attachment: List of Contacts

Ed Dunn
US EPA Arizona
1243 West Carla Vista Drive
Chandler, AZ 85224 (602) 963-8291

Sadie Hoskie
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515

Chuck Dowell
OEH, IHS Box G
Window Rock, AZ 86515

Leonard Robbins
U.S. Dept. of Interior BIA
Environmental Quality Services
P.O. Box 1060
Gallup, NM 87301

William Rhea
US EPA Region IV
1445 Ross Avenue
Mailcode: 6H-A
Dallas, TX 75202-2733 (214) 655-6755

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Environmental Quality Services
P.O. Box 1060
Gallup, NM 87301

William Rhea
US EPA Region IV
1445 Ross Avenue
Mailcode: 6H-A
Dallas, TX 75202-2733 (21[illegible]-6755

SYMBOL						
SURNAME	RH	H-2	H-2-1			
DATE	10-17-91	10/18/91	10/21/91			

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

21 OCT 1991

In Reply
Refer To: H-2-1
Certified Mail: P 470 095 781

Mr. Marlo Webb
Permco, Inc.
P.O. Box 127
Farmington, N.M. 87499

Dear Mr. Webb:

This letter is in response to a tank removal report submitted by Envirotech, Inc. on September 5, 1991 notifying our offices of the discovery and confirmation of leaking underground storage tanks at the following location:

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O

OCT 16 1991

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file

a. The name and address of the subcontractor who performed the tank removal and date of removal;

b. The manifests for disposal of any tanks or current disposition and plans for disposal;

c. The manifests for any contaminated soil transported offsite;

d. A map of the area identifying adjoining properties;

e. A map of the site identifying location of the former tanks and exact sample locations and depths; include any and all existing and previously existing underground storage tanks at the site (please number tanks) including any and all materials historically stored in the tanks;

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h. The backfill used and current disposition of excavated soil.

All requested information should be submitted within 30 days. We appreciate your cooperation in this matter. If you have any questions, please call me at (415) 744-2076, or Troy Harper at (415) 744-2082.

Sincerely,

Robert W. Hillger

Robert Hillger, Coordinator
Native American UST Program

Enclosures

cc: Ed Dunn, US EPA Arizona
Sadie Hoskie, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, U.S. Department of Interior BIA
William Rhea, EPA Region IV

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US EPA Arizona
1243 West Carla Vista Drive
Chandler, AZ 85224 (602) 963-8291

Sadie Hoskie
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515

Chuck Dowell
OEH, IHS Box G
Window Rock, AZ 86515

Leonard Robbins
U.S. Dept. of Interior BIA
Environmental Quality Services
P.O. Box 1060
Gallup, NM 87301

William Rhea
US EPA Region IV
1445 Ross Avenue
Mailcode: 6H-A
Dallas, TX 75202-2733 (214) 655-6755

envirotech memo/fax

to: Ms. Rebbecca Jameson

company: USEPA Region 9

fax #: 415-744-1044

re: Bond & Bond Site Shiprock Rpt, Dated Feb. 1993

date: 9/27/01

pages: 2 (including cover page)

project: 91346

cc:

comments... Rebbecca -
Rpt is approximately 75 pages

from the desk of... Jack Collins

envirotech inc.
5796 us highway 64
farmington, n. m. 87401
505.632.0615
505.632.1865 fax

this information is intended for the individual above and is confidential. if you have received this facsimile in error, please call the number listed above. thank you

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

March 3, 1993

Mr. Marlo Webb
Permco
West Main and Airport Drive
Farmington, New Mexico 87401

RE: Spill Investigation Project No: 91346

Dear Mr. Webb:

Attached please find the Spill Investigation Report for the Permco-Shiprock site located on US Highway 666 in Shiprock, New Mexico.

We appreciate this opportunity to be of service to you. Please contact us if you have any further questions or concerns regarding this site.

Respectfully submitted,
ENVIROTECH, INC.

Robert M. Young

Robert M. Young
Environmental Biologist

91346SI.LTR

Attachment: Spill Investigation Report

cc: Mr. Matt Small- US EPA Project Manager
File

To: Robert Hilger, UST Coordinator, USEPA Reg 9 Indian Lands.

From: J. Ed Dunn Jr, UST Circuit Rider, USEPA Indian Lands Reg 9

Date: Sept 4, 1991

Subject: UST (3) Removal at Bond & Bond Co. Inc. Shiprock, N.M. Aug 30, 1991

Information about the owner/operators:

1. Russell Foutz, Foutz Realty Co, Farmington, N.C. is the present lessee.
2. Charles Foutz, is the Bond & Bond, local manager.
3. Merle Webb, or R.G. Rien of Henow defunct Farmington Oil Co., were the owners of the 3 USTs, see agreement of 11/27/78 enclosed.
4. Wallace Bond, president of Bond & Bond in 1978 may have been the owner of the underground storage waste oil tank.

Various persons from Envirotech Inc. were on site, Morris Young, Rex Farnsworth, Jim Dones and other workers. From EPA there was Robert Hillger, Matt Small and Ed Dunn. No BIA or IHS people were there.

The 3 USTs, all pumped empty, were designated by #1, #2, and #3 the 3,000 gallon, smallest tank. They are shown on a site sketch enclosed.

All USTs had been sand bedded when installed.
The piping which was removed, was very rusted, being bare steel, but no piping holes were seen.
Two ½" holes were found at the bottom end of Tank #1. They were somewhat plugged with rust.
Inerting the petroleum vapors was capably done by use of tanks of compressed CO_2, safety grounding to eliminate static electricity was done.
A backhoe was used to remove and move soil, with a Drott 35 tracked crane used to remove all 3 USTs. All were removed without incident.
There were no "No Smoking" signs put up to discourage smoking. All removal contractors had safety hats.
There was staining, blackish color, of the tank bed of No. 1 tank. Very slight soil staining under the middle No. 2 Tank and no holes in this tank. The tank bed of #3 UST was essentially stain free, and no holes were seen in this tank.
OVM field Tests of soil samples taken 2 feet under the tank bed showed T.P.H. readings of

Tank 1 -	1401 ppm	1178 ppm
Tank 2 -	378 ppm	183 ppm
Tank 3 -	no data.	

Contaminated soil was separated by the Drott operator from the clean overburden. Groundwater was encountered at about 11 feet.
The tanks were not protective coated or cathodic protected.
Domestic water wells are not used at Shiprock, as surface canal water is processed through the water treatment plant for all drinking water. Conversation with Richard Anderson, IHS Engineer SFCB on Sept 3, 1991.

We were promised by Envirotech photos taken of the removal of the rest of the piping and the dispensing pump island. This is necessary to complete the UST closure report.

If you have any questions, contact me.

cc: subject file
" outgoing file
" extra copy

ABAndonded, out of service for about 3 years.

BUSINESS NAME Bond & Bond Co. INSPECTOR J.E. Dunn Jr.
Foutz Realty, Russell Foutz, owner.
MAILING ADDRESS P.O. Box 640 CITY Shiprock N.Mex TIME 9AM DATE 8/30/91

Removal of Underground Tanks Piping Only (partially removal)

Size of Tanks	4,000	4,000	3,000		
Previously Product Stored	gasoline	gasoline	gasoline		
Serial Number(s)	0926980	G926983	H-294379		

Destination of tank(s) after removal to Envirotech Inc. yard. 5796, U.S. Hwy 64 Farmington, N.M.

Requirements for closure of underground storage tanks containing gasoline, diesel, waste oil, or fuel oil.

yes Minimum of 2 fire extinguishers with a minimum class rating of 20 BC within 50 feet of removal operation.

no Are there any welding or other ignition sources in area. If so, remove ignition sources.

yes Has all product/combustible liquid been removed from tank.

____ Has all product been removed from lines (yes), has any product been spilled into excavation. (no).

yes Has the fill, gauge, product, vent or vapor recovery lines been disconnected or capped.

✓ Vapors purged on site, by one of the following:
____ Dry ice or (inert gas) CO_2
____ Mechanical Ventilation
____ Normal Ventilation

yes (Vapor (HNu) test reading) prior to removal ____ explosimeter reading.

yes All openings plugged or capped with the exception of 1/8" vent.

____ Site assessment. To be done By Envirotech Inc.
Soil that appears to be contaminated, as detected by odor, discoloration or instrumentation, will be separated and stockpiled at the site. Contact the EPA Regional Office with lab results of soil and water. Barricade excavation. yes was done.

The 4000 gallon tank 0926980, had 2 holes, about 1 inch in diam, at the bottom of the tank, on one end.

Certificate of destruction or disposal We were told that the certificate of destruction would be sent by Envirotech Inc. with the site assessment to the owner & to USEPA

Inspector Comments The piping was not all removed on 8/30/91. Piping to disp 1st tank and under concrete 1st tank was not removed, and was scheduled to be removed on 9/2/91 by Envirotech Inc.

Name and Address of Company removing tanks/piping. Envirotech Inc. 5796, U.S. Hwy 64-3014, Farmington, N.Mex 87401.

CONTRACTORS SIGNATURE

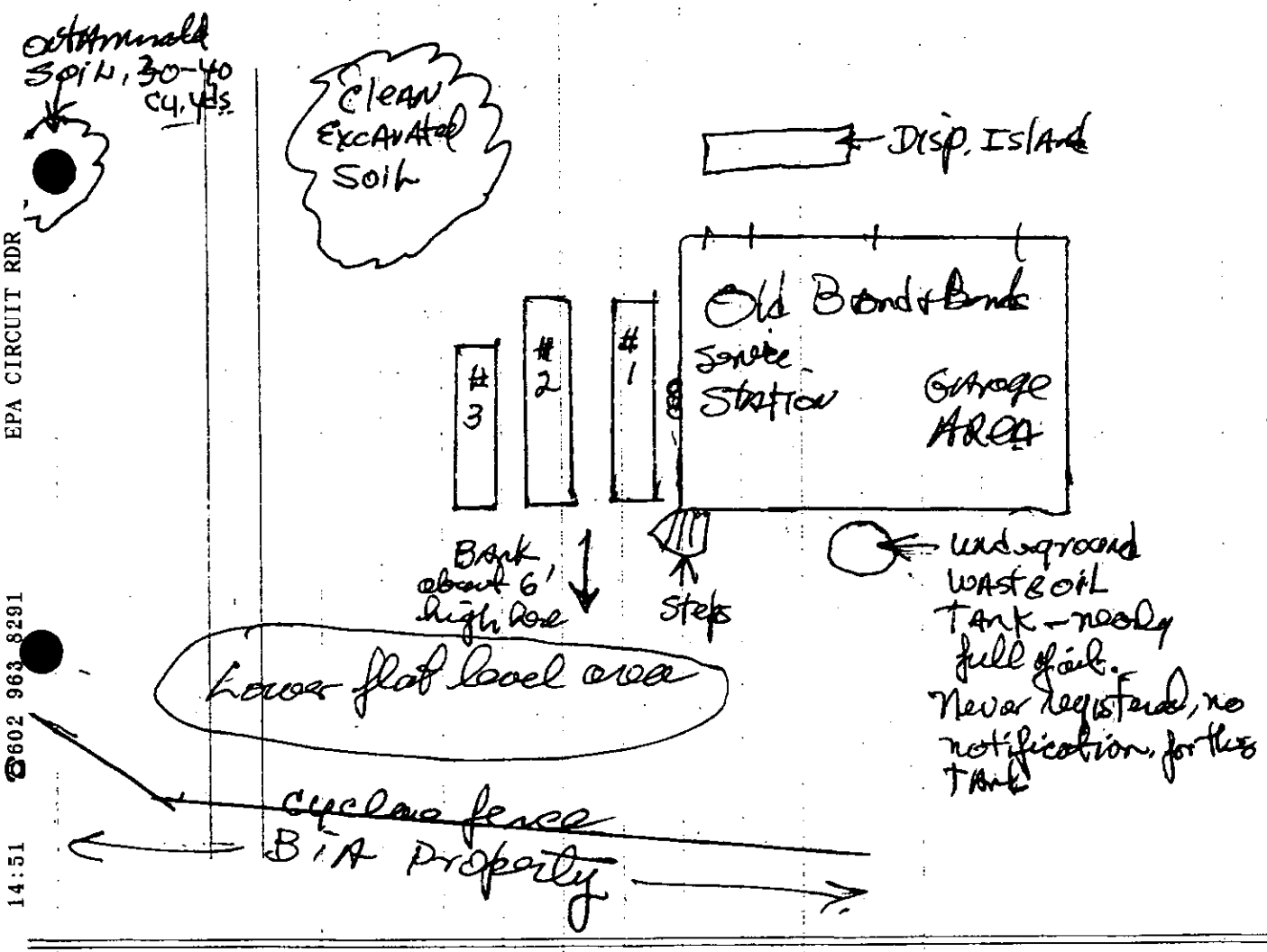
J. Ed Dunn Jr
INSPECTORS SIGNATURE

NOTE:
Tanks were originally owned by Farmington Oil Co, and leased to Bond and Bond the USTs on 11/27/1978. See copy of lease agreement enclosed. Mr. Marlo Webb, Chairman Smoak Chevrolet Co, Airport Rd + Main St. Farmington, N.M. 505-325-1911 is the responsible party for F. Oil Co is now out of business.

Organic vapor meter readings were taken 2' under each tank, along with laboratory samples. T.P.H. readings exceeded allowable limits.

Also a waste oil tank was found by the inspector, behind the station bldg, although USEPA recommend removal, Charles Foutz, the business on site manager would not do this

Sketch of the UST layout at the Closed Bond & Bond Service Station, Hw 666, Shiprock, N.M. (not to scale) 8/30/91.



001 EPA CIRCUIT RDR ☎602 963 8291 14:51 09/03/91
PREPARED BY DATE PAGE NO.
executive

TTS 12458.77
MPS 3165.80
AIRCOMP 380.00
16984.29

THIS AGREEMENT, dated the 27th day of November, 1978,

between THE FARMINGTON OIL COMPANY, a corporation, hereinafter called "Company," and

Bond's Inc DBA Bond & Bond & Co., hereinafter called "Second Party."

WITNESSETH:

1. Company hereby loans to Second Party, for installation upon Second Party's premises at SHIPROCK, (Service Station No. 3656), in the City of SHIPROCK, County of San Juan, State of New Mexico, the following equipment:

2- 4000 gallon underground tanks, 1- 3000 gallon underground tank, including valves, fill stems, vent lines, product lines, concrete and steel pump islands, piping and all conduit. 1- Coxwell, installed. 4- Southwest Gasoline pumps model 5-55. 1- air compressor. Together with installation costs.

Total value of installation as of Nov. 27, 1978 Sixteen thousand nine-hundred eighty-four and 29/100 ($ 16,984.29)

2. Second Party shall not remove said equipment from the above premises, or do or suffer anything to be done whereby said equipment or any part thereof shall be seized, taken on execution, attached, destroyed or damaged, or by which the title of Company to the same may in any way be placed in jeopardy; nor shall Second Party suffer any lien or encumbrance to be placed upon said equipment. Should said equipment be levied upon or any lien or encumbrance be placed thereon by any process or proceeding of any court, or by attachment or execution or otherwise, Second Party shall forthwith give written notice to the person or persons instituting such proceedings, disclaiming ownership of said equipment, and to Company, in order that Company may protect its property rights therein.

3. Said equipment shall be used solely for or in connection with the storage and handling of petroleum products manufactured and/or marketed by Company, except upon consent of Company, and any other use of said equipment shall constitute a breach of this agreement.

4. Upon any termination of this agreement Second Party agrees to forthwith deliver said equipment to Company.

5. Second Party shall indemnify and save Company harmless of and from any and all liability for loss, damage, or injury to property, or for injury to or death of any persons, caused by or in any way connected with any leakage, fire, or explosion of petroleum products stored in or dispensed from said equipment, or in way arising out of the use, installation, maintenance and /or operation of said equipment.

6. Company may at its option terminate this agreement and enter upon the premises and remove all of said equipment therefrom, and Second Party agrees to assist Company in effecting such removal. Second Party releases Company from any claim for damages caused by or contributed to by such removal.

7. This agreement shall be binding upon and shall inure to the benefit of the permitted assigns of Second Party, and the successors or assigns of Company; provided however, that this agreement and/or any interest of Second Party in and to said equipment, or any part thereof, shall not be assigned or transferred by Second Party, without the written consent of Company.

8. Second Party hereby acknowledges receipt of all said equipment listed on this agreement.

SECOND PARTY

Bond's Inc
DBA BOND & BOND & COMPANY
(Individual, Company or Firm)

By Walter Bond

Title President

THE FARMINGTON OIL COMPANY

By R E Rhein

Title President

To: Robert Hilger, UST Coordinator, USEPA Reg 9 Indian Lands

From: J. Ed Dunn Jr, UST Circuit Rider, USEPA Indian Lands Reg 9

Date: Sept 4, 1991

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Various persons from Enviroteck Inc. were on site Morris Young, Rex Farnsworth, Jim Davis and other workers. From EPA there was Robert Hillger, Matt Small and Ed Dunn. No BIA or IHS people were there.

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cc: subject file
" outgoing file
" extra copy

Abandoned, out of service for about 3 years.

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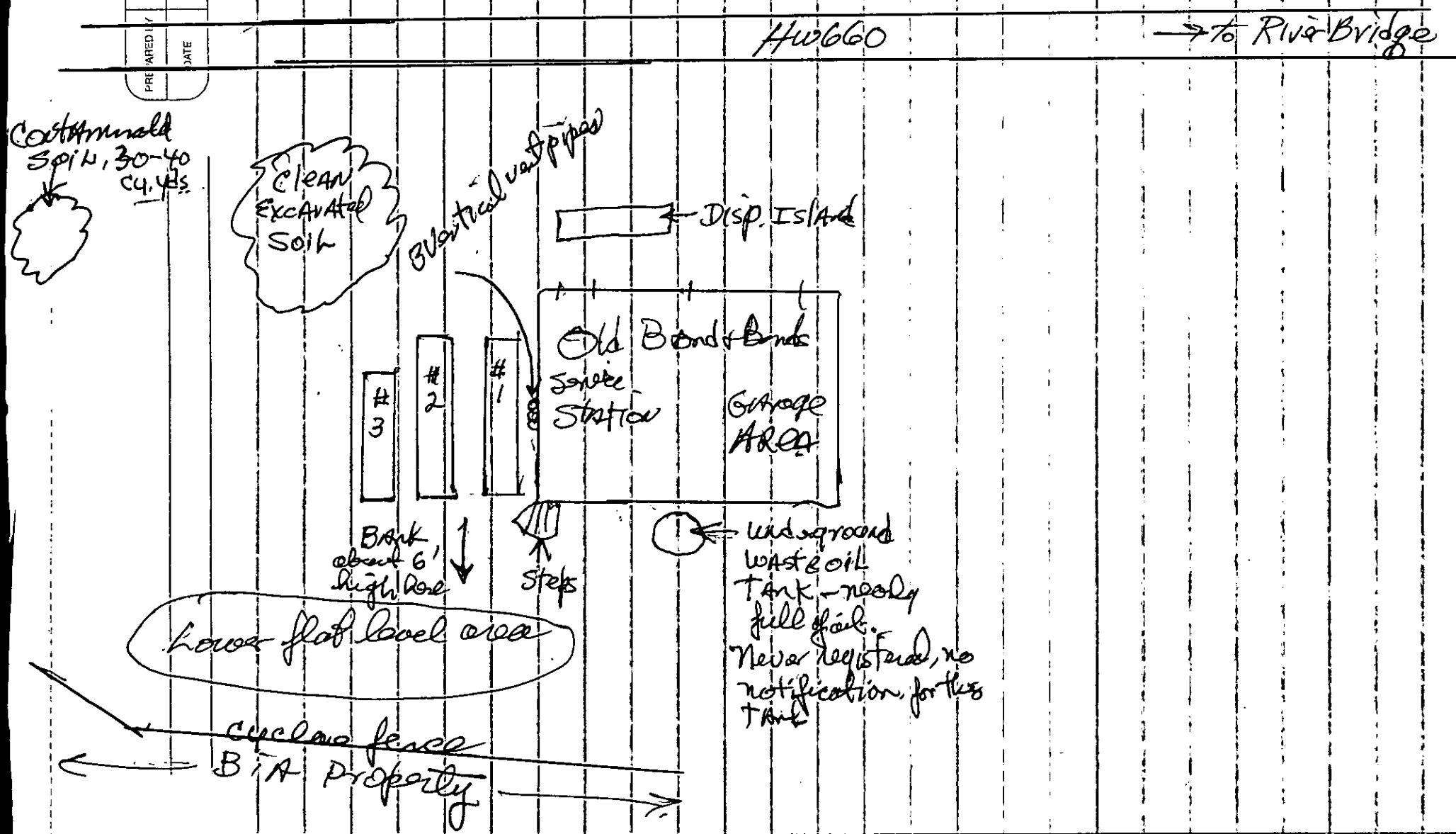

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TTS 12456.77
PUMPS 3165.80
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SECOND PARTY
Bond's Inc
DBA BOND & BOND & COMPANY
(Individual, Company or Firm)

By Willard Bond

Title President

THE FARMINGTON OIL COMPANY

By R H Rhen

Title President

To: Robt. Hillger
From: Ed Dean
Date: 9/6/91
Subject: Transmittal of the Bonds Board Co. UST. Closure photos of 8/30/91 at Shiprock, N. Mexico

These came out pretty good, except the WASTE OIL TANK rear of bldg, in the shade, was too dark. Hopefully you and Matt get better pictures of the Waste Tank.

I mailed you the Pinon Unified School Dist #4 info - today. I'm still getting "dribbles" of info on that site. Am working with Herman CHAVEZ, Ariz, STATE Fire MARSHAL on this location.

That's it for now.

cc: subject file
" outgoing file

P.S. I'm enclosing a state (ADEQ) letter sent out to people who remove UST's (like Pinon U.S. Dist #4). Thought you might find this letter handy to adapt to the Pinon P.S. situation.

Ed

CERTIFIED MAIL
Return Receipt Requested
Date: _____
UST REF:

_____
_____
_____

UST File #4715._____, Underground Storage Tank Closure at:

_____
_____
_____

Dear _____:

The Arizona Department of Environmental Quality (ADEQ) has received information that on _____ (date), _____ (number of tanks) underground storage tanks (USTs) were (was) removed at the above-referenced facility. This closure occurred without the required coordination with ADEQ.

Please be aware that pursuant to the Arizona Revised Statutes, (A.R.S.) §49-1008 and Title 40 of the Code of Federal Regulations (CFR) Part 280, Subpart G, owners and operators must notify ADEQ in writing 30 days prior to tank closure and must measure for the presence of a release where contamination is most likely to be present at the UST site. During tank closure, evidence of a release or suspected release must be reported to ADEQ by the owner or operator within 24 hours of discovery. Please submit the indicated information to ADEQ no later than _____ (date).

_____ 1. Complete the attached notification form, indicating the number of UST's at the facility prior to and after the tank removal of _____.

_____ 2. Submit a closure inspection report from the _____ (appropriate fire authority) indicating whether or not the owner or his representative measured for product contamination and the condition of the UST system and the site at the time of tank closure.

_____ 3. Submit a site assessment report that measures for the presence of a release where contamination is most likely to be present at the site. This assessment should address both the tank and the pit area, and also include the associated piping and ancillary equipment. Sampling types, methods, locations, as well as measurement methods, should take into account the type of closure, the regulated substance stored, the type of backfill, local hydrogeological conditions and other factors appropriate for identifying a release.

A "LUST Site Characterization Report Checklist" is attached for your guidance. For more information, please contact me at (602) 257- _____. Your cooperation is greatly appreciated in this matter.

Sincerely,

_____, Compliance Officer
UST Compliance Unit

Attachment

cc: Lisa C. Lund, Manager, UST Compliance Unit
Barbara Herron, R&SA, UST Compliance Unit
Mat White, US EPA, Region IX
~~Herman Chavez, State Fire Marshal Office, 1540 West Van Buren, Phoenix, Arizona 85007~~

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

MAY 05 1992

In Reply Refer To: H-2-1
Site: NAV 046
Certified Mail: P 878 533 561

Mr. Marlo Webb
PERMCO
P.O.Box 127
Farmington, NM 87401

Dear Mr. Webb:

The Environmental Protection Agency (EPA) has received your correspondence dated April 22, 1992. This correspondence concerns the previous removal of the three steel underground storage tanks (USTs) from the Bond and Bond Station in Shiprock, New Mexico, on the Navajo Nation.

Mr. Robert Hillger, Mr. Ed Dunn and I were present during the removal of the three USTs. The EPA field documentation, tank closure worksheet (located in the UST Closure Report submitted by Envirotech, 1991), and EPA photographs indicate that there were holes in UST numbered 1. A "clay ball and rust scale" (Envirotech, 1991) will not seal a hole the size of a pencil against the force head of the petroleum product stored in a 4,000 gallon UST.

The EPA documentation of the removal does not support the statement in your letter (paragraph 2, sentence 2) that the contamination is from an old release. The EPA representatives do not concur that the contamination "was obviously an old release not at all related to PERMCO's tanks." (Letter form PERMCO to EPA, April 22, 1992).

In the letter dated April 22, 1992, you state that the spill and contamination associated with the USTs is a result of a leak from a former UST that had been located in the same excavation. There is no documentation that USTs had existed in the same location prior to the installation of the PERMCO USTs leased Bond and Bond, Inc, in 1978. The claim that the contamination is a result of a former UST must be documented.

The laboratory results submitted in the Envirotech Closure Report, 1991, show benzene concentrations, relative to the other compound concentrations, which is typical of a fresher spill than that indicated in a PERMCO correspondence. The presence of benzene, in levels above the maximum allowable limits, indicates that action must be taken to clean up the contamination at the site.

Printed on Recycled Paper

EPA is requesting that you submit a plan for the corrective action at the Bond and Bond Station. EPA cannot remove the responsibility that PERMCO has with this site without positive documentation that the contamination problem at this site is not related to the USTs leased to Bond and Bond, Inc..

Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recovery Act (RCRA), as amended, EPA requires that you furnish the above information within 30 days of the receipt of this letter. **Your immediate attention is needed in this matter.** Pursuant to §9006 [42 U.S.C. §6991(e)] of RCRA, refusal to provide the requested information by the specified deadline may result in the issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact me at (415) 744-2077.

Sincerely,

Matt Small

Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, US Department of Interior, BIA
Tom Mintz, EPA Region IX
H-2-1 Reading File
Site File

Attachment: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock AZ 86515

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515

Leonard Robbins
US Department of Interior, BIA
Environmental Quality Services - Box 1060
Gallup NM 87301

Tom Mintz, Attorney
U.S. EPA Region IX
75 Hawthorne Street
Mail Code: RC-3-3
San Francisco, CA 94105

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U.S. EPA Region IX
75 Hawthorne Street
Mail Code: RC-3-3
San Francisco, CA 94105

SYMBOL	H-2-1	H.2.1				
SURNAME	Small	Ellwood				
DATE	4/30/92	4/30/92				

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

April 22, 1992

Patricia D. Eklund, Chief
Office of Underground Storage Tanks
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

RE: H-2-1, Site NAV 046

Dear Ms. Eklund.

PERMCO is in receipt of your March 13, 1992 letter requesting an investigation of suspected release at the Bond and Bond Service Station in Shiprock, New Mexico.

As stated in our previous correspondence, PERMCO's only involvement with this station was to loan the dispensing and storage equipment to Bond and Bond. As observed by Mr. Robert Hillger and Mr. Mathew Small, of your ofice, the contamination noted during the tank removal was obviously an old release not at all related to PERMCO's tanks. The soil directly under the tanks was clean tank bedding sand. The sand was not discolored or stained in any way. At approximately two (2) feet under each tank, the bedding sand interfaced with the native formation. This native soil was black stained and had a strong odor.

PERMCO's tank installation stopped with the bottom of the bedding sand. The native soil under our bedding sand was contaminated long before we installed the tanks. Several years ago when we installed these tanks, nobody paid attention to contamination or we never would have placed our equipment in such a location.

Again, we deny any responsibility for this old site and do not feel we should have to do any more work or spend any more money on a situation that is not of our doing.

Specifically, we request you remove PERMCO from your files of this incident in-as-much as we are not responsible for this situation.

Sincerely,
PERMCO

Marlo L. Webb

Marlo L. Webb
Partner
172.doc

[illegible] 20, 1992

[illegible]
[illegible] of Background [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Re: [illegible]

Dear [illegible]

[illegible] copy of your [illegible] letter regarding [illegible]
[illegible]
[illegible] in [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

Sincerely,
[illegible]

[illegible]
[illegible]
[illegible]

Dear Sir.

In responce to your letter of March 20, 1992 I'm not sure that I understand what you need from me. It would have been hard to report the release to the E.P.A. + Tribal Authorities within 24 hours 6 months after the Tanks were Taken out. I believe Mr Webb and Environtec did a Safe Complete Job of Taking out the tanks. They found a little gas leaking out and came back to remove a lot of soil then replaced it with new soil. I don't understand what an Initial Abatement Summary Report is but I'm sure Mr. Webb + Pemco is Taking Care of it.

He told me when he decided to take out the Tanks that he would handle everything.

I'm sure everything is taken care of since I haven't seen any one since that removed all that Dirt and replaced it.

They seemed to know what they were doing and I'm happy with the way they fixed thing back after make such a mess.

If you need any further information I suggest you get hold of Mr. Webb at Pemco. he said that he done this before and knows what to do. But if I can help you with something else be sure and let me know.

Clark Fouts

H-2-1
NAV046
P 878-533541

In Photo 1 the UST has been uncovered and chains from the Drott tracked back hoe are being placed around the UST in preparation for removal

Photo 1

Hi Fred
Barb Bond Co
12/08/8

9

Bendo Bend Co., Shiprock, N.M. 8/30/91
The large backhoe in removing the UST from the ground. The man in the striped blouse is Charles Foutz, Bendo Bend Co., manager for the lessee, Russell Foutz

Photo 2

3

Bond & Bond Co, Shiprock, NM 8/30/91
Photo 3 is a view of a large, 4,000 gallon
UST being removed from the ground

Photo 3

4

Bond & Bond Co, Shiprock, N.M. 8/30/91

Photo 4 shows the blue fountain pen which has been inserted into a hole in the U.S.T. A second hole was found in the same area near the edge of this tank. This is the bottom of the tank

Photo 4

To: Robt. Hillger
From: Ed Dean
Date: 9/6/91
Subject: Transmittal of the Bondt Bond Co. UST. Closure photos of 8/30/91 at Shiprock, N. Mexico

These came out pretty good, except the WASTE OIL TANK rear of bldg, in the shade, was too dark. Hopefully you and Matt got better pictures.

I mailed you the Pinon Unified School Dist #4 info - to-day. I'm still getting "dribbles" of info on that site. Am working with Herman CHAVEZ, Ariz, STATE Fire MARSHAL on this location.

That's it for now.

cc: subject file
" outgoing file

P.S. I'm enclosing a state (ADEQ) letter sent out to people who remove UST's (Like Pinon U.S. Dist #4). Thought you might find this letter handy to adapt to the Pinon situation.

P.S.

CERTIFIED MAIL
Return Receipt Requested
Date: _____
UST REF:

_____
_____
_____

UST File #4715._____, Underground Storage Tank Closure at:
_____
_____
_____

Dear _____:

The Arizona Department of Environmental Quality (ADEQ) has received information that on _____ (date), _____ (number of tanks) underground storage tanks (USTs) were (was) removed at the above-referenced facility. This closure occurred without the required coordination with ADEQ.

Please be aware that pursuant to the Arizona Revised Statutes, (A.R.S.) §49-1008 and Title 40 of the Code of Federal Regulations (CFR) Part 280, Subpart G, owners and operators must notify ADEQ in writing 30 days prior to tank closure and must measure for the presence of a release where contamination is most likely to be present at the UST site. During tank closure, evidence of a release or suspected release must be reported to ADEQ by the owner or operator within 24 hours of discovery. Please submit the indicated information to ADEQ no later than _____ (date).

_____ 1. Complete the attached notification form, indicating the number of UST's at the facility prior to and after the tank removal of _____.

_____ 2. Submit a closure inspection report from the _____ (appropriate fire authority) indicating whether or not the owner or his representative measured for product contamination and the condition of the UST system and the site at the time of tank closure.

_____ 3. Submit a site assessment report that measures for the presence of a release where contamination is most likely to be present at the site. This assessment should address both the tank and the pit area, and also include the associated piping and ancillary equipment. Sampling types, methods, locations, as well as measurement methods, should take into account the type of closure, the regulated substance stored, the type of backfill, local hydrogeological conditions and other factors appropriate for identifying a release.

A "LUST Site Characterization Report Checklist" is attached for your guidance. For more information, please contact me at (602) 257- _____. Your cooperation is greatly appreciated in this matter.

Sincerely,

_____, Compliance Officer
UST Compliance Unit

Attachment

cc: Lisa C. Lund, Manager, UST Compliance Unit
Barbara Herron, R&SA, UST Compliance Unit
Mat White, US EPA, Region IX
~~Herman Chavez, State Fire Marshal Office, 1540 West Van Buren, Phoenix, Arizona 85007~~

5

Bowl & Bind Co, Shiprock, N.M. 8/30/96

Photo 5 shows a rusty UST, it was never tarred. Shovel was used to scrape more dirt and rust as we looked for holes. No holes found in this the 3 [illegible] UST

Photo 5

6

Fill Hole

Bond & Bond, Shiprock, N.M. 8/30/91.
PHOTO 6 is a very dark VIEW of a concrete ring over a waste oil tank found at the rear of the Bond garage bldg. Product was in the tank. The edge of the bldg is in the background, [redacted] staining was heavy. The owner/manager [redacted] to have this tank removed.

Photo 6

Removal of 3 UST's ~~and~~ Bond and Bond Co, Shiprock, N.M.
8/30/91. Envirotech Inc., Farmington N.M. - contractor.

In photo 1 the UST has been uncovered and the DROTT tracked backhoe is having chains wrapped around the UST. in preparation for removal.

In photo 2 the large backhoe is removing the UST from the ground. The man in the striped blue shirt is CHARles Foutz, Bond+Bond Co. manager for the lessee Russell Foutz.

[illegible]

[illegible]

[illegible]

[illegible]

Removal of 3 USTs at Bond & Bond Co., Shiprock, N.M.
8/30/91 - NAVAJO RESERVATION. Envirotech Inc. Farmington, N.M. Contractor

a view of a large, 4,000 gal. UST being lifted out of the ground.

Note the blue fountain pen has been inserted into a hole in the UST. A second hole was found in the same area near the edge of the tank. This is the bottom of the tank.

[illegible]

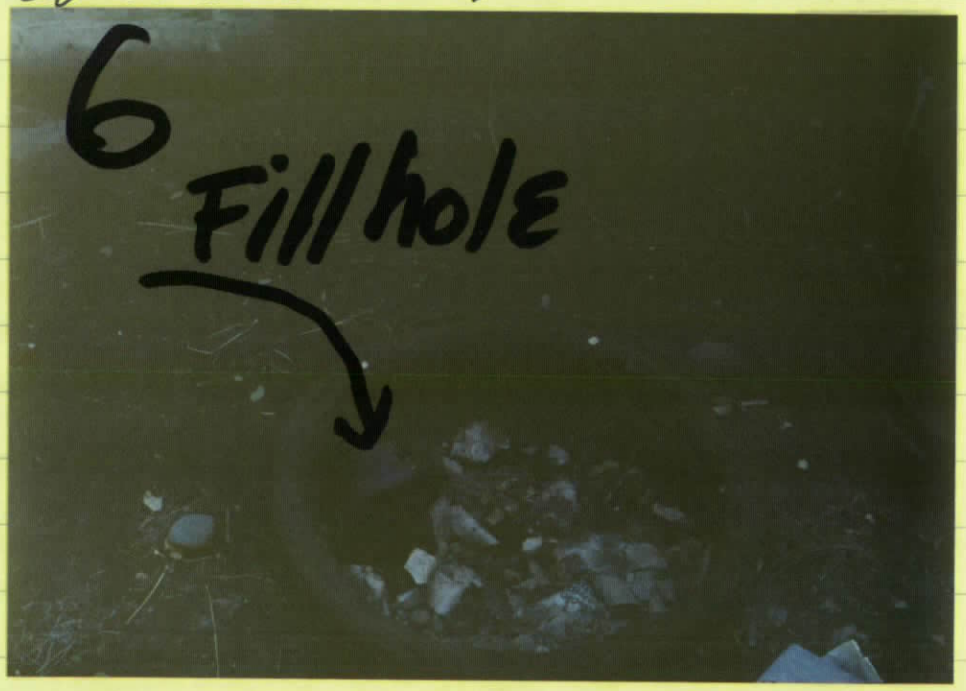
[illegible]

[illegible]

[illegible]

Removal of 3 USTs at Bond & Bond Co, Shiprock, N.M. 8/30/91.
Navajo Reservation. Envirotech Inc. Farmington, N.M. contractor.

#5 photo shows a rusty tank, it was never tested. Shovel was used to scrape dirt and rust as we looked for holes. No holes in this smallest tank.



#6 is a very dark view of a concrete ring enclosing a waste oil tank opening, found at the rear of the Bond garage building. We took the cover off of the fill hole and product was in the tank. The edge of the bldg is in the background. The owner/mgr. refused to have this tank removed on 8/30/91.

[illegible]

Removal of 2 UST's at Bond & Bond Co, Shiprock N.M. 8/30/91. Envirotech Inc. Farmington, N.Mex contractor.

In photo 1 the UST has been uncovered and the Drott tracked Backhoe is having chains wrapped around the U.S.T.

In photo 2 the large backhoe is removing the UST from the ground the man in the striped blue shirt is Charles Foutz, Bond & Bond Co manager for the lessee Russell Foutz.

[illegible]

[illegible]

[illegible]

[illegible]

Removal of 3 USTs at Bond + Bond Co, Shiprock, N.M.
8/30/91. NAVAJO Reservation. Envirotech Inc. Farmington N.M. is contractor.

A View of a larger UST. being lifted out of the ground.

Note blue pen has been inserted into a hole in the UST. A second hole was found in the same area near the edge of the tank. This is the bottom of the tank.

[illegible]

[illegible]

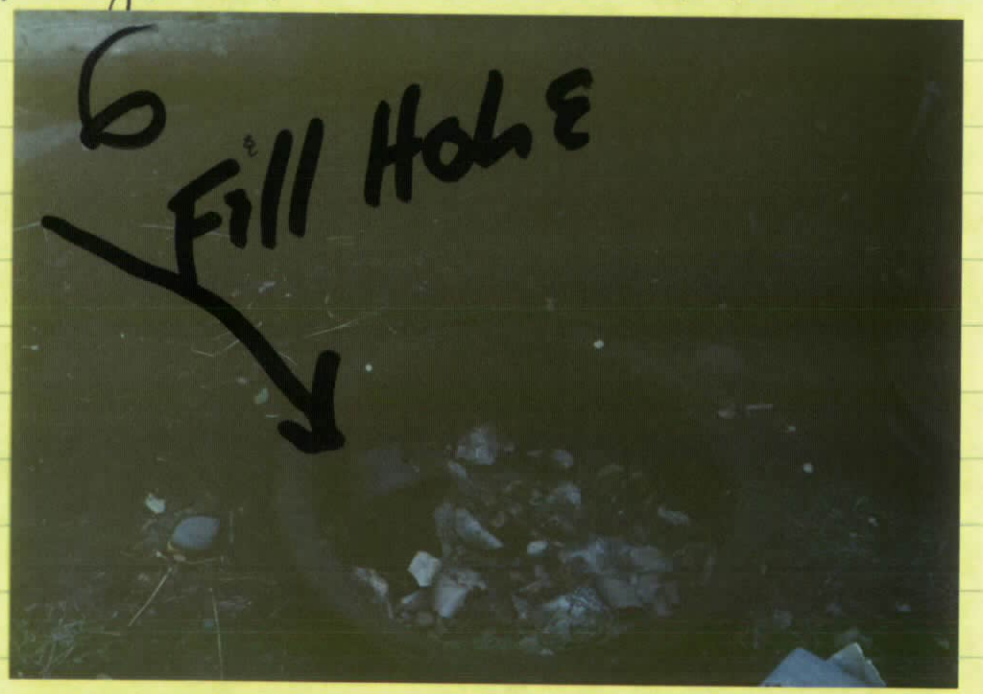
[illegible]

[illegible]

[illegible]

Removal of 3 UST's at Bond and Bond Co, Shiprock, N.M. 8/30/91, NAVAJO RESERVATION. Envirotech Inc, Farmington, contractor.

This photo shows a rusted tank, it was never asphalted or tarred. Shovel was used to scrape more ~~pa~~ dirt and rust as we looked for holes. No holes in this smallest UST



This is a very dark view of a concrete ring over a waste oil tank found at the rear of the Bond bldg. We took the cover off of the fill hole and product was in the tank. The edge of the bldg is in the background. The owner/mgr. refused to have this tank removed on 8/30/91

[illegible]

[illegible]

[illegible]

Fax Transmission Cover Sheet

Date 8/5/91 Number of Pages to Follow 6

To:
Name Robt Hillger
Department OUST
Company USEP, Region 9
Address 75 Hawthorne St
San Francisco, Calif.
Fax Phone#

From:
Name Ed DUNN
Company
Address
Fax Phone#
Voice Phone# 602-963-8291

Lynn Murray - Inspector. 505 325-2458
Tito Madrid.

Message URGENT!

Am enclosing the file, rec'd 7/31/91 on Bond and Bond Co, including my notes of 7/31/91 conversation with Morris Young. His letter of 8/1/91 was sent to wrong address. No 30 day notice to EPA as I see it.

New Mexico, Edwin LAVATO, should not be involved on Indian Reservations.

We need to stop Morris Young on this. I called Louise Linkin, but she is on travel for 2 days - 8/5 & 8/6/91 - left the detailed message with her secty.

That's it - Ed.

Owner of UST's is
MARLO WEBB - Home phone
325-2307. Business 505-325-1911
on
P.S. 9 Am: 8/5/91 I talked to M. Young. Lynn Murray
(Health & Emer Dept. will be on site on 8/6/91 he told me.
Home

Date Sent 8/5/91
Sent by Ed Dunn

W.I. Rogers Company Fax Pad #1

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

871-7040

August 1, 1991

Ms. Patricia Eklund 4-2-1
Chief UST Office
United States Environmental Protection Agency
Region IX
1235 Mission Street 75 Hawthorne St
San Francisco, CA 94103-H-2-1

Re: Intent to Remove USTs
Bond and Bond Station
Shiprock, New Mexico
Navajo Nation

Dear Ms. Eklund:

Permco Inc. of Farmington, New Mexico, has retained Envirotech Inc. to remove and preform Underground Storage Tank Closures for three (3) gasoline storage tanks located at the Bond and Bond Service Station, Shiprock, New Mexico.

As per the attached Notification for Underground Storage Tanks, these tanks have been registered under the New Mexico State UST Program. Mr. Marlo Webb, of Permco, requested authorization to remove these tanks from the New Mexico Environmental Improvement Division. That authorization was granted 10-17-90, as per the attached executed form.

It is Envirotech's understanding that the USEPA Region IX is the Implementing Agency, not the State of New Mexico, for Indian Lands.

In any event, Permco desires to have these tanks removed August 6, 1991. Envirotech will remove the two (2) 4000 gallon and the one (1) 3000 gallon gasoline tanks, and preform the required Site Assessment. Soil samples will be collected from the tank excavation, utilizing SW-846 sampling protocol, and analyzed for TPH via method 8015 Modified and for BTEX via method 8020.

The removed tanks will be moved to Envirotech's construction yard at 5796 US Highway 64, Farmington, New Mexico for proper disposal.

AUG 0 2 1991

Please send the closure packet to:

Morris D. Young
Envirotech Inc.
5796 US Hwy 64-3014
Farmington New, Mexico 87401
Phone: 505-632-0615

Your assistance in this matter is greatly appreciated.

Sincerely,

Morris D. Young

Morris D. Young
President

c: Marlo Webb, Permco Inc.
Ed Dunn, USEPA

105permco

Bad Bad Grocery, Shiprock, N. Mexico
CHEVRON

On (WED) 7/31/91 I talked to Morris Young Enviro-tech Inc. Farmington, N.M. regarding a request to remove three (3) USTs at the Bad + Bad location, on the NW side of the River bridge. These USTs are notified under 000156. Mr. Young has a copy of the notification as do we. He will send an intent to remove letter to EPA from Enviro-tech, acting as agent for the owner. I did tell Morris that Dennith Moore had strong suspicions of leaking from this location 2-3 years ago. The owner, Marlowe Webb, Permco, Airport Main, Farmington N.M., 87401 is the owner.

Two 4,000 gallon USTs are for gasoline, and a 3,000 gallon is for gasoline also. The tanks are 12 years old.

Charles Foutz was the contact person (manager) at the site site.

New Mexico Health and Environment Department

GARREY CARRUTHERS
Governor

DENNIS BOYD
Secretary

MICHAEL J. BURKHART
Deputy Secretary

RICHARD MITZELFELT
Director

Date: 10-17-90

TO: Marla Webb
P.O. Box 127
Farmington, NM 87401

RE: Underground storage tank removal at the following address:
Bond & Bond Station
Shiprock, NMex
Rimrock Service Station
2520 E. Bloomfield Hwy

Dear _____:

Thank you for your closure notification received on 9-17-90.

X Your closure notification was complete.

___ Your notification was incomplete. You must call or write us and give us the following information _____

Allowing 30 days after notification as required in Section 801.B of the New Mexico UST regulations, you may proceed with closure on or after 10-17-90. Please inform this office of an exact date for the tank pull when you have made final arrangements. A member of the inspection/prevention staff may be in touch may be in touch with you regarding an inspection at the time of closure. When carrying out a tank closure, you must:

-NOTIFY US AT (505)827-0188 WITHIN 24 HOURS IF THERE IS ANY INDICATION THAT THE TANKS HAVE LEAKED.
-Notify the local fire marshall ahead of time.
-Comply with the enclosed regulations Part VIII Out-of-Service UST Systems and Closure.
-Comply with the enclosed API Publication 1604.
-Fill out and return the Tank ~~Closure Checklist~~ when the tanks are pulled and disposed of properly.
-Complete and send in the enclosed Tank Registration form within 30 days of removing the tanks, indicating the tanks are permanently out of use. Otherwise you will continued to be assessed fees for the tanks.

Thank you for complying with our regulations. Please contact me at 827-~~2910~~ 2913 if you have any questions.

Sincerely,
Edwin Lewis Lovato
~~Thomas J. Crespin~~
~~Program Manager, Inspection/Prevention Section~~
Underground Storage Tank Bureau
Enclosures: closure packet
cc: Grants Field Office
Farmington Field Office

Envirotech Inc.

5796 US Hwy 64-3014 FAX (505) 632-1865
Farmington, NM 87401
Phone: (505) 632-0615

A-2-1

FAX TRANSMISSION DATE 8/1/91

TO: Robert Hillerer (PAT ECKLAND)

OF (COMPANY) USEPA

FAX NUMBER: 415-744-1070

FROM: Morris Young

REMARKS:

Number of Pages (including cover sheet): 6

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

August 1, 1991

Ms. Patricia Eklund
Chief UST Office
United States Environmental Protection Agency
Region IX
1235 Mission Street
San Francisco, CA 94103-H-2-1

Re: Intent to Remove USTs
Bond and Bond Station
Shiprock, New Mexico
Navajo Nation

Dear Ms. Eklund:

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In any event, Permco desires to have these tanks removed August 6, 1991. Envirotech will remove the two (2) 4000 gallon and the one (1) 3000 gallon gasoline tanks, and preform the required Site Assessment. Soil samples will be collected from the tank excavation, utilizing SW-846 sampling protocol, and analyzed for TPH via method 8015 Modified and for BTEX via method 8020.

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Envirotech Inc.
5796 US Hwy 64-3014
Farmington New, Mexico 87401
Phone: 505-632-0615

Your assistance in this matter is greatly appreciated.

Sincerely,

Morris D. Young

Morris D. Young
President

c: Marlo Webb, Permco Inc.
Ed Dunn, USEPA

105permco

New Mexico Health and Environment Department

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Secretary

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Deputy Secretary

RICHARD MITZELFELT
Director

Date: 10-17-90

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Farmington, NM 87401

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Sincerely,
Edwin Lewis Lawton
~~Thomas J. Crespin~~
~~Program Manager, Inspection/Prevention Section~~ WRS
Underground Storage Tank Bureau
Enclosures: closure packet
cc: Grants Field Office
Farmington Field Office

— ENVIRONMENTAL IMPROVEMENT DIVISION —
Harold Runnels Building
1190 St. Francis Dr.

08/01/1991 09:41 FROM ENVIROTECH INC. TO 9-14157441070 P.04

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0048
APPROVAL EXPIRES 8-30-88

FOR TANKS IN **NM**

RETURN COMPLETED FORM TO
New Mexico Environmental Improvement Division
Ground Water/Hazardous Waste Bureau
P.O. Box 968 (505) 827-2933
Santa Fe, NM 87504 (505) 827-2918

STATE USE ONLY
I.D. Number
Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means:

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must by completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached ☐

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Terrico

Street Address: 520 127

County:

City: [illegible] State: N.M. ZIP Code:

Area Code: Phone Number:

Type of Owner (*Mark all that apply* ☒)

☐ Current ☐ State or Local Gov't ☒ Private or Corporate
☐ Former ☐ Federal Gov't (GSA facility I.D. no. _____) ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable: BOND & BOND STATION

Street Address or State Road, as applicable:

County: SAN JUAN

City (nearest): SHIPROCK State: NM ZIP Code: 874

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): Charles Dowtz Job Title: owner Area Code: 505 368 Phone Number: 4691

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative | Signature: [signature] | Date Signed: 5-5-86

CONTINUE ON REVERSE SIDE

Owner Name (from Section I) [illegible] Location (from Section II) [illegible] Page No. 1 of 1 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

	Tank No. 1	Tank No. 2	Tank No. 3	Tank No.	Tank No.
Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)					
1. Status of Tank (Mark all that apply ☒) — Currently in Use	X	X	X		
Temporarily Out of Use					
Permanently Out of Use					
Brought into Use after 5/8/86					
2. Estimated Age (Years)	7	7	7		
3. Estimated Total Capacity (Gallons)	4000	4000	3000		
4. Material of Construction (Mark one ☒) — Steel	X	X			
Concrete					
Fiberglass Reinforced Plastic					
Unknown					
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒) — Cathodic Protection					
Interior Lining (e.g., epoxy resins)					
None	X	X	X		
Unknown					
Other, Please Specify					
6. External Protection (Mark all that apply ☒) — Cathodic Protection					
Painted (e.g., asphaltic)	X	X	X		
Fiberglass Reinforced Plastic Coated					
None					
Unknown					
Other, Please Specify					
7. Piping (Mark all that apply ☒) — Bare Steel					
Galvanized Steel	X	X	X		
Fiberglass Reinforced Plastic					
Cathodically Protected					
Unknown					
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒) — a. Empty					
b. Petroleum — Diesel					
Kerosene					
Gasoline (including alcohol blends)	X	X	X		
Used Oil					
Other, Please Specify					
c. Hazardous Substance					
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown					
9. Additional Information (for tanks permanently taken out of service) — a. Estimated date last used (mo/yr)	/	/	/	/	
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)					

EPA Form 7530-1 (11-85) Reverse

08/01/1991 09:43 FROM ENVIROTECH INC. TO 9-14157441070 P.06

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

RECEIVED
AUG 6 1991

August 1, 1991

Ms. Patricia Eklund
Chief UST Office
United States Environmental Protection Agency
Region IX
1235 Mission Street
San Francisco, CA 94103-H-2-1

Re: Intent to Remove USTs
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Navajo Nation

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In any event, Permco desires to have these tanks removed August 6, 1991. Envirotech will remove the two (2) 4000 gallon and the one (1) 3000 gallon gasoline tanks, and preform the required Site Assessment. Soil samples will be collected from the tank excavation, utilizing SW-846 sampling protocol, and analyzed for TPH via method 8015 Modified and for BTEX via method 8020.

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Envirotech Inc.
5796 US Hwy 64-3014
Farmington New, Mexico 87401
Phone: 505-632-0615

Your assistance in this matter is greatly appreciated.

Sincerely,

Morris D. Young

Morris D. Young
President

c: Marlo Webb, Permco Inc.
Ed Dunn, USEPA

105permco

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

FOR TANKS IN NM

RETURN COMPLETED FORM TO

New Mexico Environmental Improvement Division
Ground Water/Hazardous Waste Bureau
P.O. Box 968 (505) 827-2933
Santa Fe, NM 87504 (505) 827-2918

STATE USE ONLY

I.D. Number

Date Received N 046

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means —

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must by completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached ☐

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Perrico

Street Address: Box 127

County:

City: Farmington State: N.M. ZIP Code:

Area Code: Phone Number:

Type of Owner (*Mark all that apply* ☒)

☒ Current ☐ State or Local Gov't ☒ Private or Corporate

☐ Former ☐ Federal Gov't (GSA facility I.D. no. _____) ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable: BOND & BOND STATION

Street Address or State Road, as applicable:

County: SAN JUAN

City (nearest): SHIPROCK State: NM ZIP Code: 87420

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): Charles Dodge

Job Title: owner

Area Code: 505 Phone Number: 368 9691

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
	[signature]	5-5-86

CONTINUE ON REVERSE SIDE

New Mexico Health and Environment Department

GARREY CARRUTHERS
Governor

DENNIS BOYD
Secretary

MICHAEL J. BURKHART
Deputy Secretary

RICHARD MITZELFELT
Director

Date: 10-17-90

TO: Marlo Webb
P.O. Box 127
Farmington, NM 87401

RE: Underground storage tank removal at the following address:
Bond & Bond Station
Shiprock, NMex

Rimrock Service Station
2520 E. Bloomfield Hwy

Dear _____:
Thank you for your closure notification received on 9-17-90.
X Your closure notification was complete.
___ Your notification was incomplete. You must call or write us and give us the following information _____.

Allowing 30 days after notification as required in Section 801.B of the New Mexico UST regulations, you may proceed with closure on or after 10-17-90. Please inform this office of an exact date for the tank pull when you have made final arrangements. A member of the inspection/prevention staff may be in touch may be in touch with you regarding an inspection at the time of closure. When carrying out a tank closure, you must:

-NOTIFY US AT (505)827-0188 WITHIN 24 HOURS IF THERE IS ANY INDICATION THAT THE TANKS HAVE LEAKED.
-Notify the local fire marshall ahead of time.
-Comply with the enclosed regulations Part VIII Out-of-Service UST Systems and Closure.
-Comply with the enclosed API Publication 1604.
-Fill out and return the Tank Closure Checklist when the tanks are pulled and disposed of properly.
-Complete and send in the enclosed Tank Registration form within 30 days of removing the tanks, indicating the tanks are permanently out of use. Otherwise you will continued to be assessed fees for the tanks.

Thank you for complying with our regulations. Please contact me at 827-~~2910~~ 2913 if you have any questions.

Sincerely,
Edwin Lewis Lewis
~~Thomas J. Crespin~~
~~Program Manager, Inspection/Prevention Section~~ WRS
Underground Storage Tank Bureau
Enclosures: closure packet
cc: Grants Field Office
Farmington Field Office

— ENVIRONMENTAL IMPROVEMENT DIVISION —
Harold Runnels Building
1190 St. Francis Dr.
Santa Fe, New Mexico 87503

Owner Name (from Section I) Bassett Location (from Section II) Imperial Mtn Page No. 1 of 1 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS *(Complete for each tank at this location.)*

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1.2.3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No.	Tank No.
1. Status of Tank *(Mark all that apply ☒)* — Currently in Use	X	X	X		
Temporarily Out of Use					
Permanently Out of Use					
Brought into Use after 5/8/86					
2. Estimated Age (Years)	7	7	7		
3. Estimated Total Capacity (Gallons)	4000	4000	3000		
4. Material of Construction *(Mark one ☒)* — Steel	X	X			
Concrete					
Fiberglass Reinforced Plastic					
Unknown					
Other, Please Specify					
5. Internal Protection *(Mark all that apply ☒)* — Cathodic Protection					
Interior Lining (e.g., epoxy resins)					
None	X	X	X		
Unknown					
Other, Please Specify					
6. External Protection *(Mark all that apply ☒)* — Cathodic Protection					
Painted (e.g., asphaltic)	X	X	X		
Fiberglass Reinforced Plastic Coated					
None					
Unknown					
Other, Please Specify					
7. Piping *(Mark all that apply ☒)* — Bare Steel					
Galvanized Steel	X	X	X		
Fiberglass Reinforced Plastic					
Cathodically Protected					
Unknown					
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume *(Mark all that apply ☒)* — **a. Empty**					
b. Petroleum — Diesel					
Kerosene					
Gasoline (including alcohol blends)	X	X	X		
Used Oil					
Other, Please Specify					
c. Hazardous Substance					
Please Indicate Name of Principal CERCLA Substance					
OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown					
9. Additional Information (for tanks permanently taken out of service) — a. Estimated date last used (mo/yr)	/	/	/	/	
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)					

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3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
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INSTRUCTIONS

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Indicate number of continuation sheets attached ☐

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Vernico

Street Address: 020 127

County:

City: [illegible] State: N.M. ZIP Code:

Area Code: Phone Number:

Type of Owner (*Mark all that apply* ☒)

☐ Current ☐ State or Local Gov't ☒ Private or Corporate

☐ Former ☐ Federal Gov't (GSA facility I.D. no. _____) ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable: BOND & BOND STATION

Street Address or State Road, as applicable:

County: SAN JUAN

City (nearest): SHIPROCK State: NM ZIP Code: 874.

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐): Charles Davis Job Title: owner Area Code: 505 368 Phone Number: 9691

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
	[signature]	5-5-86

CONTINUE ON REVERSE SIDE

Owner Name (from Section I) Cosmco Location (from Section II) Shiprock NM Page No. 1 of 1 Pages

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS *(Complete for each tank at this location.)*

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No.	Tank No.
1. Status of Tank *(Mark all that apply ☒)* Currently in Use	X	X	X		
Temporarily Out of Use					
Permanently Out of Use					
Brought into Use after 5/8/86					
2. Estimated Age (Years)	7	7	7		
3. Estimated Total Capacity (Gallons)	4000	4000	3000		
4. Material of Construction *(Mark one ☒)* Steel	X	X			
Concrete					
Fiberglass Reinforced Plastic					
Unknown					
Other, Please Specify					
5. Internal Protection *(Mark all that apply ☒)* Cathodic Protection					
Interior Lining (e.g., epoxy resins)					
None	X	X	X		
Unknown					
Other, Please Specify					
6. External Protection *(Mark all that apply ☒)* Cathodic Protection					
Painted (e.g., asphaltic)	X	X	X		
Fiberglass Reinforced Plastic Coated					
None					
Unknown					
Other, Please Specify					
7. Piping *(Mark all that apply ☒)* Bare Steel					
Galvanized Steel	X	X	X		
Fiberglass Reinforced Plastic					
Cathodically Protected					
Unknown					
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume *(Mark all that apply ☒)* **a. Empty**					
b. Petroleum					
Diesel					
Kerosene					
Gasoline (including alcohol blends)	X	X	X		
Used Oil					
Other, Please Specify					
c. Hazardous Substance					
Please Indicate Name of Principal CERCLA Substance					
OR					
Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances					
d. Unknown					
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	/	/	/	/	
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)					

NAV-040

ENVIROTECH INC.

UST Closure Report
Permco Inc.
Bond and Bond Station
US Highway 666
Shiprock, New Mexico

Project 91346

September 1991

5796 U.S. HIGHWAY 64 - 3014 • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 632-0615

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

September 5, 1991

Mr. Robert W. Hillger, Coordinator
Native American UST Program
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

505-325-2307

RE: UST Closure Report
Permco Inc.
Bond and Bond Station
U.S. Highway 666
Shiprock, San Juan County, New Mexico
Navajo Nation

Project No: 91346

Marlo WEBB
P.O. BOX 127
Farmington, N.M.
87499

87420

Dear Mr. Hillger:

This report summarized the results of field observations, soil sampling, and field and laboratory analysis for the assessment of the tank closure at the Bond and Bond Service Station on U.S. Highway 666 in Shiprock, New Mexico. Permco Inc. was represented on site by Mr. Marlo Webb. The Federal Agency US EPA was represented by Mr. Robert W. Hillger, Mr. Matthew C. Small and Mr. J. E. Dunn.

Permco Inc. retained Envirotech Inc. to preform permanent closure for three (3) Underground Storage Tanks (UST's) located at the closed Bond and Bond Service Station just north and west of the San Juan River bridge on U.S. Highway 666, Shiprock, New Mexico.

Enclosed please find the Tank Closure Work Sheet and Notification for Underground Storage Tank 7530 Forms for the three (3) tanks removed from the site. The tanks were removed on August 30. 1991, as per our August 1, 1991 notice to your office. Mr. J. E. Dunn, Mr. Robert W. Hillger and Mr. Matthew C. Small of the USEPA Region IX observed the UST Closure.

The tank excavation was examined for any evidence of hydrocarbon contamination. Soil samples were analyzed for volatile hydrocarbons via the Closed Container Headspace Method (Underground Storage Tank Regulations, State of New Mexico, Environmental Improvement Board, Part XII, Appendix C, July 26, 1990) with a Thermo Environmental Instruments Model 580A Organic Vapor Meter

(PID). Soil samples were placed in clean 16oz wide mouth jars. The jars were filled approximately 1/2 full and sealed with aluminum foil. The jars were allowed to stabilize for five (5) minutes before the seal was pierced with the OVM probe.

Samples taken and field analyzed with this method are listed below. Sample number 1 was taken from the back fill material near the end of tank #2. The remaining samples were taken from the excavation as indicated.

NO	SAMPLE LOCATION	OVM READING IN PPM
1	4' E. of S.E. bottom end of tank #2	181 ppm — From backfill, pretty high
2	2' below N.W. end tank #1	1,401 ppm
3	2' below S.E. end tank #1	1,178 ppm
4	2' below N.W. end tank #2	370 ppm
5	2' below S.E. end tank #2	183 ppm
6	2' below N.W. end tank #3	314 ppm
7	2' below S.E. end tank #3	5.4 ppm

Soil samples were taken at two (2) feet below the end of each tank to be analyzed at the Envirotech Inc. laboratory for TPH via method 8015 (modified) and for BTEX via method 8020. Samples were placed in laboratory supplied 200 ml. clean glass sample jars with teflon seal closures and transported on ice to the laboratory as per the attached Chain of Custody.

Visual inspection of the removed tanks confirmed tank integrity for two of the tanks. Tank #1 had a hole near the bottom about the size of a pencil but was sealed with a clay ball and rust scale. No soil staining or heavy contamination was detected near the hole. What appears to be an old spill incident was discovered during the removal of a UST system from the site. The contaminated soil found was about 2'- 6" below the tanks and below the tank bedding sand. Permco's records indicated the tanks were installed in 1978 by a previous owner. Mr. Marlo Webb of Permco Inc. stated that to his knowledge no leak or spill had ever occurred with the present UST system.

The bedding sand around the tanks was not discolored or stained in any manor as is common with leaking UST sites. The concentration of both TPH and BTEX as per the following summary of laboratory results table are indicative of overfill incidents where as the very black stained soils, low BTEX and high TPH concentration of sample No 7 in the soils underlaying the current UST bedding sand indicate that the present tanks were installed in a previously contaminated site.

SUMMARY OF LABORATORY RESULTS
PERMCO UST CLOSURE
SHIPROCK, NEW MEXICO
EPA METHOD 8020
PURGEABLE AROMATICS
(ug/kg)

Sample	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	TPH
1	4490	451	176	1120	226	1.8
1dup						0.4
2	3346	356	3405	14758	3777	0.3
3	3025	545	169	619	238	ND
3dup	2844	496	192	634	231	
4	1049	271	108	230	125	ND
5	7667	417	112	305	143	ND
6	830	159	ND	127	265	ND
7	ND	6150	150000	120000	5.0	
3*	ND	258	167	239	181	
7*	ND	797	41200	44000	49200	
	0.13	200	68	44		

Surprised TPH is so low

* Second analysis as a quality check (ran 10 days later).

As was observed by US EPA personal present at the site, the UST's were bedded in clean imported granular fill (sand) which extended 2 to 3 feet from the tanks in all directions. As Envirotech continued to excavate in the area under the tanks, we encountered the native soils which were typical river alluvium comprised primarily of cobble, sand and sandy-clay layers. The soil exhibited both a strong hydrocarbon odor and black organic staining typical of highly oxidized hydrocarbon. We suspect the used oil tank that is still at this site may have contributed substantially to the spill evidenced in the highly stained soils. Observation of this used oil tank area indicate numerous overfill incidents.

In-as-much as the excavation was open, Permco authorized Envirotech to continue the excavation of the highly stained soils to the depth of groundwater which was approximately 14 feet below ground surface.

Approximately 60 cubic yards of contaminated soils were removed and, stock piled at the site. As requested by Permco, the contaminated

soils will be transported to Envirotech's Soil Remediation Site for treatment immediately upon our receipt from your office of the signed Certification of Origin of Contaminated Soil.

Envirotech operates the Soil Remediation Site through a permit and under the direction of the State of New Mexico Oil Conservation Division (NM OCD). They, the NM OCD requires a Transporter Manifest and a Certificate of Origin on all soils prior to authorizing receipt of those soils. Specifically for UST site soils, they require the certificate to be executed by the regulatory agency that has jurisdiction of the site. This system prevents unauthorized soils from being transported to the remediation site.

Mr. J. E. Dunn of your office observed a portion of the contaminated soils being excavated but refused to execute the required certificate, stating that only Robert Hillger had authority to do so. As was discussed between Mr. Morris Young of Envirotech and Mr. Robert Hillger of US EPA, it was Envirotech's job plan to remove the contaminated soil from the site immediately upon its excavation.

We request your immediate attention to returning this certification to Envirotech in as much as the stockpiled soils could constitute a danger to the health and safety of children of Shiprock who could gain access to this soil at this location.

Permco has directed Envirotech to over excavate the UST site to remove all accessible contaminated soil regardless of its origin, back fill with clean imported fill dirt, remove the UST's including piping from the site to Envirotech's construction yard for final disposal, and prepare this closure report. The three (3) removed tanks were transported to Envirotech's construction yard at 5796 US 64, Farmington, New Mexico for final disposal as per the attached manifest.

From Permco's and Envirotech's observations at the site, they have concluded that the old spill incident is not Permco's responsibility and that they have preformed a good faith effort to clean up as much of that spill as was reasonable and prudent. Permco therefore has not authorized any additional site investigation and/or remediation work at this site other than that enumerated in this report and denies any further responsibility.

Records of the New Mexico State Engineer's Office indicate a private water well about 800 feet, and public water supply about 900 feet from the site. The private well is down gradient of the site and 30 feet deep. The public supply for the City of Shiprock, NM is located in the San Juan River and cross gradient from the site.

A site plan and a location map are enclosed.

I personally conducted this UST Site Assessment and am personally familiar with the information presented herein.

Sincerely,

Jack D. Dewey

Jack D. Dewey
Hydrogeologist

Reviewed by:

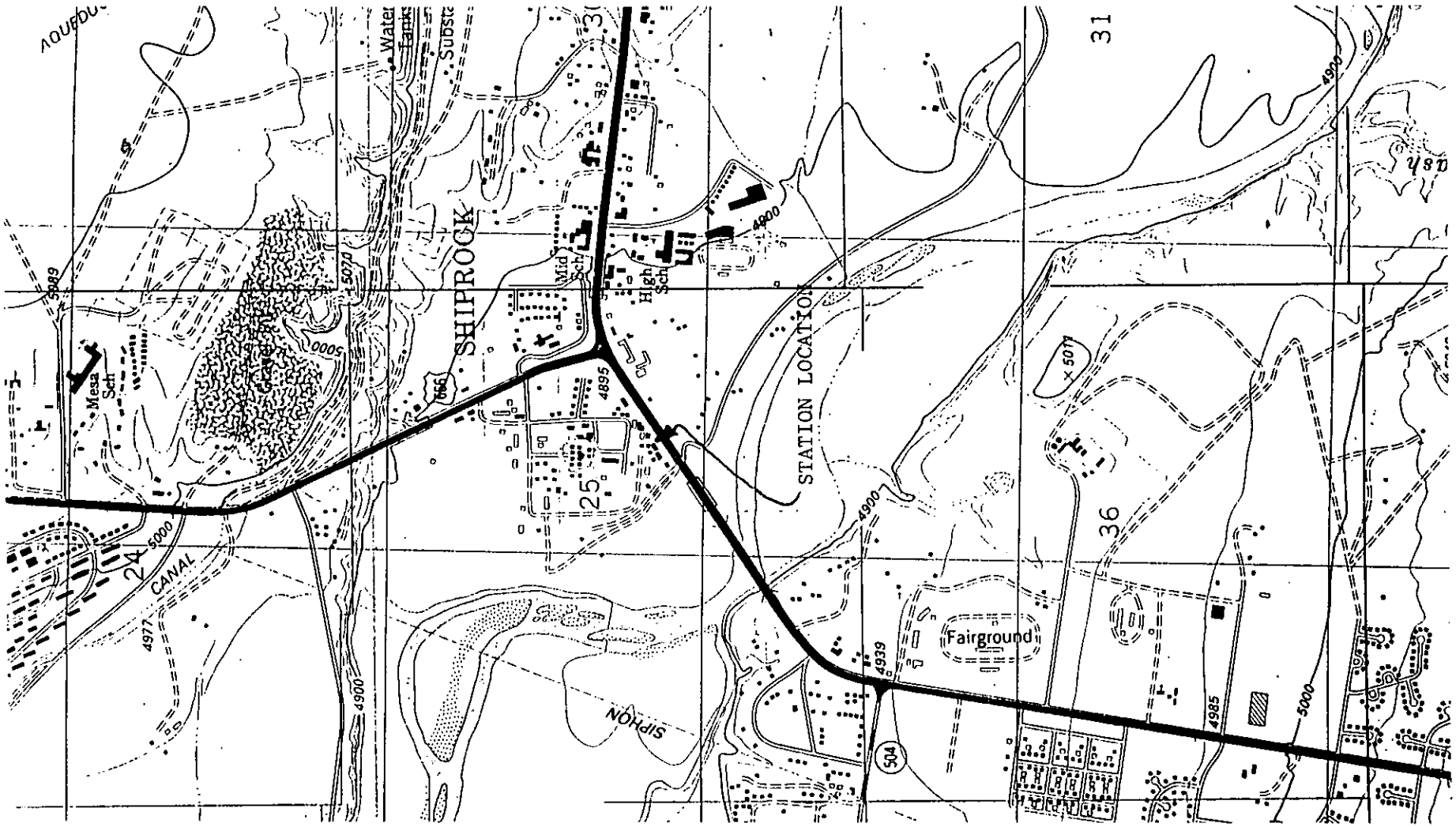
Morris D. Young

Morris D. Young
President

JDD

Attachments:
- Location Map
- Site Plan
- Photographs of UST's
- Tank Closure Work sheets
- Notification for UST (form 7530)
- Tank Manifest
- Certificate of Origin of Contaminated soils
- Laboratory Analysis
- Chain of Custody

c: Mr. Marlo L. Webb, PERMCO
y



BOND AND BOND
SERVICE STATION
U. S. HIGHWAY 666
SHIPROCK, NEW MEXICO

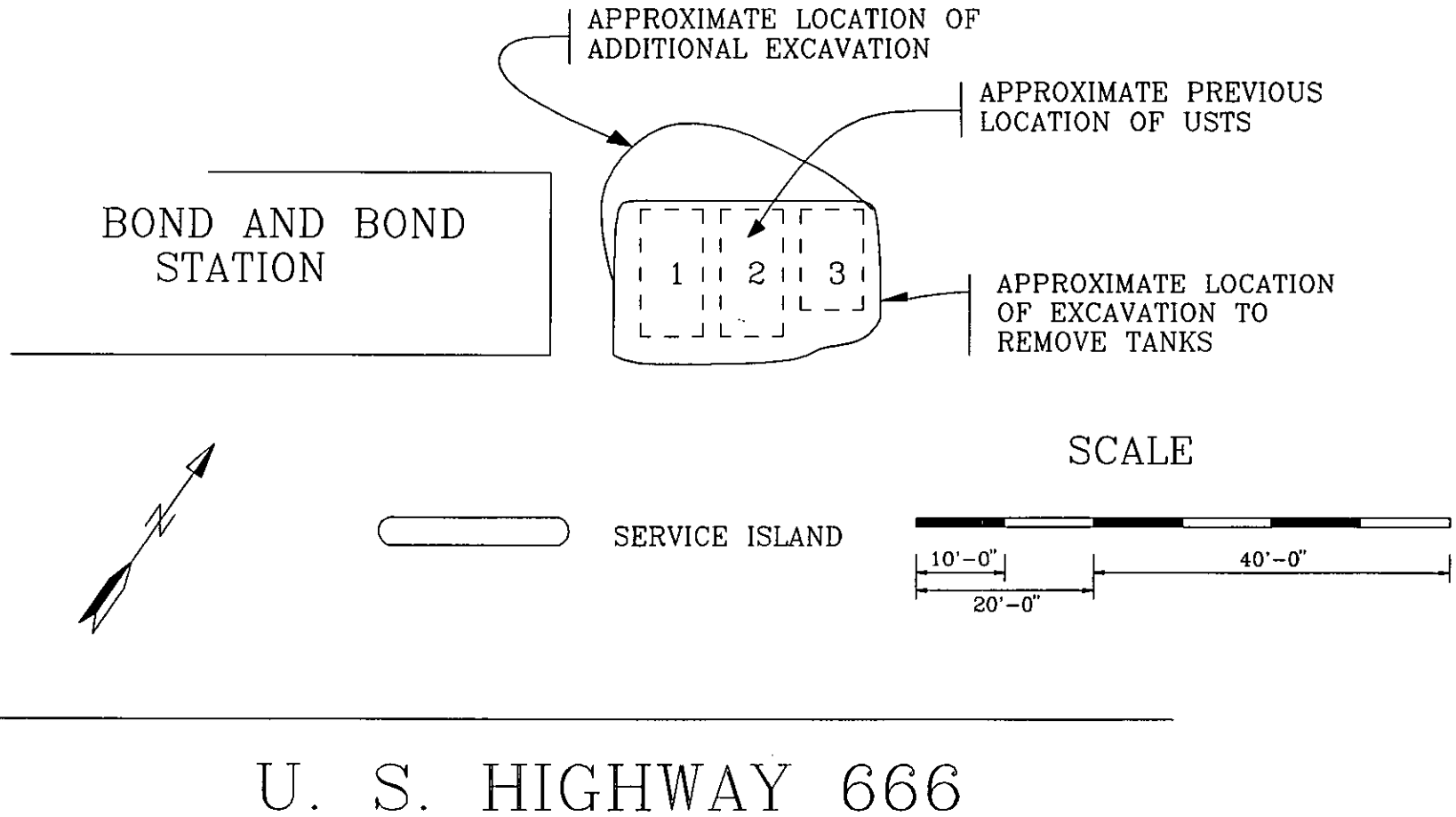
ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

FROM USGS 7.5'
QUADRANGLE

LOCATION MAP

SEPT. 5, 1991



BOND AND BOND
SERVICE STATION
U. S. HIGHWAY 666
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEER: J. DEWEY
DRAFTER: J. DEWEY

SITE PLAN

SEPT. 5, 1991

TANK CLOSURE WORKSHEET
(COMPLETE AFTER CLOSURE)

Tank Owner PERMCO Phone (505) 325-1911
Mailing Address P.O. Box 127, FARMINGTON, N.M. 87401
Tank Address BOND & BOND STATION SHIPROCK N.M. 87420
Contractor Name ENVIROTECH INC. Phone 505-632-0615
Address 5796 U.S. 64-3014 FARMINGTON NEW MEXICO 87401
Contractor Name _____ Phone _____
Address _____

Tank Closure Date August 30, 1991 # of Tanks Closed 3

****

I. Tank Closure Initial Procedures (check measures complied with):

- ✓ Obtain recommended safety equipment for all personnel
- ✓ Contact Fire Marshall or other fire officials
- ✓ Bond or ground equipment
- ✓ Drain product from piping and tank
- ___ Disconnect, then cap or remove piping (will be done Sept 3, 1991 MOY)
- ✓ Remove all residual product from tank
- ✓ Excavate to tank top
- ✓ Remove all tank fixtures
- ✓ Properly purge or inert tank of all flammable vapors using approved method
- ✓ Continually monitor for explosive vapors while tank is being removed

II. Tank Removal

- ✓ Create vent hole
- ✓ Excavate tank using all safety precautions
- ✓ Clean and inspect tank
- ✓ Check excavation for evidence of leaks and notify ~~EID~~ USEPA and other proper authorities if leak is found
- ✓ Check vapor levels in tank before transporting
- ✓ Dispose of tank in approved manner, with manifest to EPA

Tank disposal location 5796 US 64-3014, FARMINGTON N.M. 87401
City State

How did you assess site for leakage? 8020/8015 mudgeil & photoionization meter
Closure report kept at Box 127, FARMINGTON, N.M. 87401
NOTE: Immediately report any evidence of leakage to EID at 827-0188

Physical holes in ~~tank~~ one 4000 gallon TANK

I hereby state that the above information is correct

Morris D. Young President Envirotech Inc.
Signature of owner or contractor performing work

****

FOR EID USE ONLY
Notification Received _____ Approved By _____
Inspection Date 8/30/91 Inspector [illegible] USEPA Indian Lands

UST Bureau/EID
1190 St. Francis Drive
Santa Fe, New Mexico 87053

I.D. Number

STATE USE ONLY

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means —

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes,
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks,
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws,
5. surface impoundments, pits, ponds, or lagoons,
6. storm water or wastewater collection systems,
7. flow-through process tanks,
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations,
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (but not including those substances regulated as hazardous waste under Subtitle C of RCRA), and includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "Signature" in Section V. This form must by completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: [ ]

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity): PERMCO

Street Address: P.O. Box 127

County: SAN Juan

City: FARMINGTON State: N.M. ZIP Code: 87401

Area Code: Phone Number:

Type of Owner (Mark all that apply ☑):
- [x] Current
- [ ] Former
- [ ] State or Local Gov't
- [ ] Federal Gov't (GSA facility I.D. no. _____)
- [x] Private or Corporate
- [ ] Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here [ ])

Facility Name or Company Site Identifier, as applicable: BOND & Bond SERVICE STATION

Street Address or State Road, as applicable: U.S. 666

County: SAN Juan

City (nearest): SHIPROCK State: N.M. ZIP Code: 87401

Indicate number of tanks at this location: 3

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands: [x]

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here [ ]): TANKS REMOVED

Job Title: Area Code: Phone Number:

IV. TYPE OF NOTIFICATION

[x] Mark box here only if this is an amended or subsequent notification for this location

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative: MARLO L. WEBB PARTNER

Signature: Marlo L Webb

Date Signed: 8-30-91

CONTINUE ON REVERSE SIDE

PARTNER

EPA Form 7530-1 (11-85)

Owner Name (from Section I) PERMCO Location (from Section II) BOND & BOND STATION Page No 2

VII. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No.	Tank
1. Status of Tank (Mark all that apply ☒)					
Currently in Use	☐	☐	☐	☐	
Temporarily Out of Use	☐	☐	☐	☐	
Permanently Out of Use	X	X	X	☐	
Brought into Use after 5/8/86	☐	☐	☐	☐	
2. Estimated Age (Years)	12	12	12		
3. Estimated Total Capacity (Gallons)	4000	4000	4000		
4. Material of Construction (Mark one ☒)					
Steel	X	X	X	☐	
Concrete	☐	☐	☐	☐	
Fiberglass Reinforced Plastic	☐	☐	☐	☐	
Unknown	☐	☐	☐	☐	
Other, Please Specify					
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	
None	X	X	X	☐	
Unknown	☐	☐	☐	☐	
Other, Please Specify					
6. External Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	
Painted (e.g., asphaltic)	X	X	X	☐	
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	
None	X	X	X	☐	
Unknown	☐	☐	☐	☐	
Other, Please Specify					
7. Piping (Mark all that apply ☒)					
Bare Steel	☐	☐	☐	☐	
Galvanized Steel	X	X	X	☐	
Fiberglass Reinforced Plastic	☐	☐	☐	☐	
Cathodically Protected	☐	☐	☐	☐	
Unknown	☐	☐	☐	☐	
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	X	X	X	☐	
b. Petroleum					
Diesel	☐	☐	☐	☐	
Kerosene	☐	☐	☐	☐	
Gasoline (including alcohol blends)	X	X	X	☐	
Used Oil	☐	☐	☐	☐	
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	
Please Indicate Name of Principal CERCLA Substance					
OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	
d. Unknown	☐	☐	☐	☐	
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	6/91	6/91	6/91		
b. Estimated quantity of substance remaining (gal.)	-0-	-0-	-0-		
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	

12767

motor carrier's b/l **carbonless**

TRIP

UNIFORM STRAIGHT BILL OF LADING **Original—Not Negotiable—Domestic**

Shipper's No. 12767

Carrier

Agent's No.

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading,

at August 31 19 91 from PERMCO - Bond & Bond Station Shipping

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as shown below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under this contract) agrees to carry to its usual place of delivery at said destination, if on its own railroad, water line, highway route or routes, or within the territory of its highway operations, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns

(Mail or street address of consignee—For purposes of notification only.)

Consigned to ENVIROTECH INC 5796 US 64-3014 FARMINGTON, N.M.

Destination ENVIROTECH 5796 US 64 Street FARMINGTON City SAN JUAN County N.M. State

Routing U.S. 64

Delivering Carrier ENVIROTECH. Vehicle or Car Initial _____ No. _____

Collect On Delivery

$ _____ and remit to: _____

_____ Street _____ City _____ State

C. O. D. charge to be paid by { Shipper ☐ Consignee ☐

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statements:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor.)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

No. Packages	Description of Articles, Special Marks, and Exceptions	* Weight (Sub. to Cor.)	Class or Rate	Check Column
2	4000 ~~5000~~ gallon underground	~ 6000 lbs		
	Storage TANKS To be			
	Scraped out.			
1	3 000 gallon Underground Storag	4000 lbs		
	TANK To be Scraped out			
	Received 8/31/91			
	Morris D. Young			
	Envirotech			

Received $ _____ to apply to prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____

(The signature here acknowledges only the amount Prepaid.)

Charges Advanced:

$ _____

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

_____ Shipper, Per _____ _____ Agent, Per _____

Permanent post-office address of shipper,

1

REDIFORM.
6S 683
Poly Pak (50 sets) 6P683

(This Bill of Lading is to be signed by the shipper and agent of the carrier issuing same.)

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

This is the sample #

Client: Permco
Project Name: UST Closure
Sample ID: East End of Tank
Laboratory Number: 083091346-1
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	1.8	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Michael L. Eaton
Analyst

Morris D. Young
Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: West End of Tank #1
Laboratory Number: 083091346-2
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-5-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	0.3	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Michael T. Eaton
Analyst

Morris D. Young
Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: East End of Tank #2
Laboratory Number: 083091346-3
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	ND	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: West End of Tank #2
Laboratory Number: 083091346-4
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	ND	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: East End of Tank #3
Laboratory Number: 083091346-5
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	ND	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: West End of Tank #3
Laboratory Number: 083091346-6
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	ND	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: 30' Under Tank #2
Laboratory Number: 083091346-7
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	5.0	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client: Permco
Project Name: UST Closure
Sample ID: East End of Tank
Laboratory Number: 083091346-1 Duplicate
Sample Matrix: Soil
Temperature: Received on ice
Analysis Method: 8015

Report Date: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	0.4	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Michael L. Lion
Analyst

Morris D. Young
Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

** QUALITY ASSURANCE REPORT
MATRIX SPIKE - TOTAL PETROLEUM HYDROCARBONS

Client: Permco
Project Name:
Sample ID:
Laboratory Number: Matrix Spike
Sample Matrix: Soil
Temperature:
Analysis Method:

Date Reported: 9-10-91
Date Sampled:
Date Received:
Date Extracted: 9/3/91
Date Analyzed: 9-4-91

Analyte	Spike Result mg/kg	Sample Recovery mg/kg	Spike Recovery mg/kg	Spike Amount mg/kg	Percent Recovery
Total Petroleum Hydrocarbon	4.6	0.0	4.6	5.0	92%

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Michael J. Ean
Analyst

Morris D. Young
Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client:
Project Name:
Sample ID:
Laboratory Number: Method Blank
Sample Matrix: Soil
Temperature:
Analysis Method: 8015

Report Date:
Date Sampled:
Date Received:
Date Extracted: 9-3-91
Date Analyzed: 9-4-91

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Recoverable Petroleum Hydrocarbons	ND	0.1

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA, 1978.Extraction by Method 3550, SW-846, USEPA, 1986.

Modified Method 8015, Petroleum Hydrocarbons, Total Recoverable, Gas Chromatography. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846,USEPA, 1990. Extraction by Method 3550, SW-846, USEPA, 1990.

ND - Analyte not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-1
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	4490	250	ug/kg
Toluene	451	250	ug/kg
Ethylbenzene	176	250	ug/kg
m,p-Xylene	1120	250	ug/kg
o-Xylene	226	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Michael L. Ewan
Analyst

Morris D. Young
Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-2
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	3346	250	ug/kg
Toluene	356	250	ug/kg
Ethylbenzene	3405	250	ug/kg
m,p-Xylene	14758	250	ug/kg
o-Xylene	3777	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-3
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	3025	250	ug/kg
Toluene	545	250	ug/kg
Ethylbenzene	169	250	ug/kg
m,p-Xylene	619	250	ug/kg
o-Xylene	238	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Michael L. Rios
Analyst

Morris D. Young
Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-4
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	1049	250	ug/kg
Toluene	271	250	ug/kg
Ethylbenzene	108	250	ug/kg
m,p-Xylene	230	250	ug/kg
o-Xylene	125	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-5
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	7667	250	ug/kg
Toluene	417	250	ug/kg
Ethylbenzene	112	250	ug/kg
m,p-Xylene	305	250	ug/kg
o-Xylene	143	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-6
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	830	250	ug/kg
Toluene	159	250	ug/kg
Ethylbenzene	ND	250	ug/kg
m,p-Xylene	127	250	ug/kg
o-Xylene	265	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-7
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	ND	250	ug/kg
Toluene	6150	250	ug/kg
Ethylbenzene	146576	250	ug/kg
m,p-Xylene	119995	250	ug/kg
o-Xylene	119690	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-3 Duplicate
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-3-91
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	2844	250	ug/kg
Toluene	496	250	ug/kg
Ethylbenzene	192	250	ug/kg
m,p-Xylene	634	250	ug/kg
o-Xylene	231	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID:
Lab ID#: Matrix spike
Matrix: Soil
Preservative:
Sample Condition:

Date Reported: 9/10/91
Date Sampled:
Date Received:
Date Extracted: 9-3-91
Date Analyzed: 9/4/91
Injection Vol: 20 uL

Analyte	Spike Result	Sample Recovery	Spike Recovery	Spike Amount	Percent Recovery
Benzene	14.71	5.88	8.83	10.0	88%
Toluene	9.51	1.52	7.99	10.0	80%
Ethylbenzene	6.41	0.61	6.2	10.0	62%
m,p-Xylene	8.07	1.29	6.78	10.0	68%
O-Xylene	9.53	0.7	8.83	10.0	88%

All values presented are total mass units of nanograms

ND - Analyte not detected at method limit.

Comments: Sample #083091346-4 used for a spike.

Reference:
Method 8020, Aromatic Volatile Organics, Test Metods for Evaluation Solid Waste, SW-846, United States Environmenttal Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-3 Duplicate (2)
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-16-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-13-91
Date Analyzed: 9-14-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	ND	250	ug/kg
Toluene	258	250	ug/kg
Ethylbenzene	167	250	ug/kg
m,p-Xylene	239	250	ug/kg
o-Xylene	181	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client: Permco
Sample ID: UST Closure
Lab ID#: 083091346-7 Duplicate
Matrix: Soil
Preservative:
Sample Condition: Received on ice

Date Reported: 9-10-91
Date Sampled: 8-30-91
Date Received: 8-30-91
Date Extracted: 9-13-91
Date Analyzed: 9-14-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	ND	250	ug/kg
Toluene	797	250	ug/kg
Ethylbenzene	41168	250	ug/kg
m,p-Xylene	44038	250	ug/kg
o-Xylene	49245	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:
Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Analyst

Reviewed

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS

5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

EPA METHOD 8020
PURGEABLE AROMATICS

Client:
Sample ID:
Lab ID#: Method Blank
Matrix: Soil
Preservative:
Condition:

Date Reported: 9-10-91
Date Sampled:
Date Received:
Date Analyzed: 9-4-91
Injection Vol: 20 uL

Analyte	Analytical Result	Detection Limit	Units
Benzene	ND	250	ug/kg
Toluene	ND	250	ug/kg
Ethylbenzene	ND	250	ug/kg
m,p-Xylene	ND	250	ug/kg
o-Xylene	ND	250	ug/kg

ND - Analyte not detected at given detection level.

Comments:

Reference:

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluation Solid Waste, SW-846, United States Environmental Protection Agency, SW-846, Vol. IB, September 1990.

Michael L. Cron
Analyst

David D. Young
Reviewed

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANAYLSIS/PARAMETERS							
PERMCO			SHIP ROCK									
Sampler: (Signature)			Chain of Custody ~~Tape~~ No.									Remarks
Jack D. Dewey			nd 8-30-91									
Sample No/ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	8015 Mod.	BTEX						
E. END TANK #1	8-30-91	—	083091346-1	SOIL	✓	✓						
W. END TANK #1	8-30-91	—	083091346-2	SOIL	✓	✓						
E. END TANK #2	8-30-91	—	083091346-3	SOIL	✓	✓						
W. END TANK #2	8-30-91	—	083091346-4	SOIL	✓	✓						
E. END TANK #3	8-30-91	—	083091346-5	SOIL	✓	✓						
W END TANK #3	8-30-91	—	083091346-6	SOIL	✓	✓						
CENTER OF TANK #												
2 - 30" BELOW EXCAVATION	8-30-91	—	083091346-7	SOIL	✓	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Jack D. Dewey	8/30/91	1700	Michael J. Gibson	8-30-91	1700
~~Relinquished by: (Signature)~~ nd 8		8-30-91	Received by: (Signature)		
Relinquished by: (Signature)			~~Received by: (Signature)~~		

ENVIROTECH Inc.
5796 US HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
(505) 632-0615

Removed Tank #1 (Unleaded Gasoline Service)

Dirt & Scale plugging small hole in end of tank #1

UST Closure
Permco-Bond & Bond Station
US 666, Shiprock, N.M.
August 30, 1991
Project #91346

Removal of Tank #2 (Regular Gasoline Service)

Inspection of Tank #2 (Mr. Ed Dunn US EPA)

UST Closure
Permco-Bond & Bond Station
US 666, Shiprock, N.M.
August 30, 1991
Project #91346

Inerting Tank #3 (Regular gasoline) prior to removal

Inspection of Tank #3

UST Closure
Permco-Bond & Bond Station
US 666, Shiprock, N.M.
August 30, 1991
Project #91346

Bedding sand under Tank #1

Bedding sand under Tank #2 and Tank #3

UST Closure
Permco-Bond & Bond Station
US 666, Shiprock, N.M.
August 30, 1991
Project #91346

ENVIROTECH INC.

B&B
NAV-046
Rec'd 3/8/93
NB

SPILL INVESTIGATION
PERMCO-SHIPROCK/BOND SERVICE STATION
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

PREPARED FOR
MR. MARLO WEBB
PERMCO

FEBRUARY 1993

PROJECT NO: 91346

5796 U.S. HIGHWAY 64 - 3014 • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 632-0615

SPILL INVESTIGATION
PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

PREPARED FOR
MR. MARLO WEBB
PERMCO

PROJECT No: 91346

FEBRUARY 1993

ENVIROTECH Inc.
Environmental Scientists & Engineers
5796 U.S. Highway 64-3014
Farmington, New Mexico
(505) 632-0615

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US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO
PROJECT No: 91346

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Correspondence

-Ms. Rosie Wilkinson to Mr. Robert Young	2/19/93
-Mr. Matthew Small to Mr. Mike Lane	2/09/93
-Mr. Marlo Webb to Mr. Matt Small	1/27/93
-Mr. Young to Mr. Small	1/27/93
-Mr. Randy Cornett to Mr. Young	1/19/93
-Certification of Waste Status	1/18/93
-Mr. Young to Ms. Alyce Rouwalk	1/18/93
-Mr. Young to Ms. Rouwalk	1/15/93
-Mr. Young to Ms. Rouwalk	1/13/93
-Mr. Morris Young to Mr. Small	12/11/92
-Mr. Small to Mr. Webb	11/13/92
-Mr. Webb to Ms. Patricia D. Eklund	4/22/92
-Ms. Eklund to Mr. Webb	3/13/92
-Mr. Webb to Ms. Eklund	11/27/91
-Mr. Webb to Mr. Robert Hillger	10/28/91
-Mr. Hillger to Mr. Webb	10/21/91

SPILL INVESTIGATION
Permco-Shiprock/Bond & Bond Service Station
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

Mr. Marlo Webb, of Permco, has retained Envirotech Inc. to conduct a Spill Investigation to delineate the full extent of petroleum hydrocarbon contamination in the soil and groundwater at the Bond & Bond Service Station, Shiprock, Navajo Nation, New Mexico. A release was discovered during the removal for permanent closure of three underground storage tanks (USTs) in August, 1991.

This investigation was conducted to satisfy the release response and corrective action requirements for the owner and operator of USTs containing petroleum. These requirements are outlined in 40 CFR 280.65. The main investigator and Project Manager for this investigation was Mr. Robert M. Young of Envirotech Inc.

PURPOSE AND SCOPE OF SERVICES

The purpose of our investigation was to examine the subject site for the presence of a hydrocarbon spill and sample for soil and groundwater contamination, utilizing the State of New Mexico Environmental Department UST regulations protocol.

The scope of services includes the following:

A. Site reconnaissance with an audit of adjacent properties.

B. Review of water resource information.

C. Exploratory drilling with soil classification and testing of encountered subsurface soils.

D. Installation and development of groundwater monitoring wells.

E. Collection and laboratory analysis of soil and groundwater samples.

F. Preparation of this spill investigation report to document the findings of the field and laboratory results.

DISCUSSION AND CONCLUSIONS

This spill investigation was initiated as a result of suspected gasoline/hydrocarbon contamination at the subject property. The spill incident was identified during the removal for permanent closure of three USTs in August 1991. At that time, Mr. Marlo Webb indicated that the three USTs were emplaced 11 years prior. Mr. Webb also indicated that the USTs were emplaced into an existing excavation that was created by prior USTs being removed. No effort was made to assess if a release had occurred or if hydrocarbon contamination was present in the excavation at the time of the new UST's installation for Permco.

In addition to the possible prior contamination at the site, there are several other possible sources of hydrocarbon contamination. These are: a 500 gallon kerosine above ground storage tank (AGT), a used oil UST that was removed in 1992 by Envirotech for Bond & Bond, and possible surface spills associated with US Highway 666. Holes were reported in the used oil UST at the time of it's removal. Laboratory analysis indicated that the used-oil UST contained trace levels of chlorinated volatile organics (ie: solvents).

Additionally, reports indicate two alternate sources for hydrocarbon contamination at the site. These two alternate sources are reportedly: 1) the subject property was used as a bus fuelling stop in the 1930's and 1940's by Cannonball Bus Lines. Fuel is reported as being stored in USTs. The busses are assumed to have run on diesel, and 2) the west corner of the subject property was the location of the former Bond's Trading Post, which also allegedly contained USTs for retail sales of fuel.

According to Mr. Marlo Webb's distribution records, and to the best knowledge of Mr. Charles Foutz, current lease holder, gasoline was the only product to have ever been stored in the three UST's that were removed for Permco.

Although the primary focus of this investigation was to determine hydrocarbon contamination associated with gasoline, several laboratory analytical methods were used to characterize contamination encountered at the site. These methods include: BTEX (EPA 8020), TPH (EPA 8015), and Chlorinated Volatile Organics (EPA 8010).

Based on the field observations and laboratory results, the following conclusions can be made:

1. Groundwater flow is parallel to US Highway 666, in a south-southwest direction.

2. Soil and groundwater contamination appears to be primarily

limited to the site boundaries. Vertical extent is limited by groundwater, and horizontal extent appears to not exceed the property boundaries. Refer to the Hydrocarbon Contamination Maps in Appendix C

3. Laboratory analyses indicate the hydrocarbon contamination levels are at or below regulatory limits for soil and water as outlined in the New Mexico Underground Storage Tank Regulations (USTR). The exceptions are: 1)groundwater samples obtained immediately after drilling, which have levels above regulatory limits due to possible contamination factors, and 2)there is some soil contamination above current action levels located immediately surrounding the USTs and possibly underneath the former service station. Table 2 through Table 7 summarize the laboratory results.

4. The majority of the contamination appears to be from an old spill. This conclusion is due to the laboratory results showing high TPH with a low BTEX component. This combination indicates that the spill has been in place for long enough that natural degradation processes have allowed "light ends" of the spill to be removed, while leaving the more difficult to degrade "heavy ends" to remain in place.

5. The hydrocarbon contamination located on site appears to be from a diesel or heavier origin. Tables 4, 5, and 7 clearly indicate that the major component of this spill is from a heavier than gasoline origin.

Could be old gas spill (per #4)

6. Based on field findings and observations, there appears to be no vapor/explosion hazards expected in buildings and utilities. Contamination has only minor quantities of volatile components. Therefore, minimal problems associated with vapors are anticipated.

7. Currently, the contamination located on the subject property does not appear to threaten any surface water or any drinking water sources.

8. Contaminated soils are classified as non-hazardous waste, per RCRA Standards (40 CFR 261)

SITE DESCRIPTION

The subject property is owned by the Navajo Tribe and is currently leased to Mr. Charles Foutz, who operates the Bond's True Value Hardware. Also located on this property are: Bond's Video, several storage sheds and buildings, a house, a mobile home, a former restaurant, and a former service station. Immediately behind the former service station is the former location of a used oil UST, that was removed in May 1992 by Envirotech. This UST reportedly contained used oil and trace levels of chlorinated volatile organics. This UST was reported as leaking upon its removal.

The subject property is roughly planar with a step-like 3'-4' rise located immediately north of the retail buildings. The southern (and higher) part of this rise appears to be fill material which was used to bring the retail buildings to approximate grade with US Highway 666. The raised area between the buildings and US Highway 666 is paved with 3"-6" of asphalt. Surface drainage appears to travel to the west, towards the San Juan River.

Surface conditions at the site include: asphalt on the southern 1/3 of the property, and native low plasticity silty sand to sandy silt with minor clays covering the northern 2/3 of the property. These native soils are yellowish brown to medium brown, wet, loose to slightly firm, and slightly cohesive. Where native soils were exposed, there was moderate vegetative growth and several trees.

The only access to the subject property is from two different locations joining the subject property to US Highway 666. These are: on the far east end of the property, and from the center of the property, immediately in front of the hardware store.

Utilities associated with the site were located by the Navajo Tribal Utilities Authority and are as follows: buried electrical and telephone lines adjacent to US Highway 666, a buried and abandoned 2" natural gas transmission line that also borders US Highway 666, and a buried 2" natural gas transmission line that borders the northern fenceline on the subject property (several 1" laterals connecting the 2" main line to the buildings and mobile home on the subject property). Additionally, a 6" buried water main runs roughly north-south on the northwest 1/3 of the property, and several buried sewer lines are located on the northern 1/2 of the property. Refer to the Site Utilities Diagram in Appendix A for more complete details concerning approximate locations of the apparent utilities.

Neighboring properties include: Bureau of Indian Affairs (BIA) offices to the north (asphalt paved with offices), the State of New Mexico Port of Entry to the southeast and across US Highway 666 (asphalt roadways and parking slots with an associated office), and

an undeveloped tract of land that lies between the subject property and the San Juan River that apparently is not leased. All properties are owned by the Navajo Tribe.

Currently the subject property and the BIA lease property are controlled by Real Property, of the Shiprock Agency of the Bureau of Indian Affairs. Permission was granted to Envirotech, Inc. to perform this Spill Investigation on the subject property by Mr. Theodore Namingha, Realty Officer and/or Mr. Randy D. Cornett, Acting Superintendent of the Shiprock Agency. Mr. Cornett is currently Acting Superintendent in place of Ms. Alyce Rouwalk, Superintendent. The means by which permission was granted was under a "Scientific Research Exclusion", which apparently does not jeopardize a tenants lease in any way. Although permission was granted to access the BIA lease property, no effort was made to drill off of the subject property, based on preliminary field findings. A permit is required by the Navajo Tribe to investigate the unimproved area between the subject property and the San Juan River. At this time, the permit has been applied for, and no reply has been received from the Navajo Tribe.

GEOLOGY AND HYDROGEOLOGY

The site is situated in the Four Corners Platform west of the San Juan Basin in the Colorado Plateau physiographic province. The platform is a structural uplift containing Tertiary sedimentary fill and igneous rock formations covering rocks of the Late Cretaceous Era. The geomorphology of the site may be generally classified as alluvial fan and flood plains in the narrow drainage of the San Juan River and associated ephemeral stream systems.

Water Resource Information:

The San Juan River is located approximately 1/4 mile to the southwest of the subject property, and maintains a perennial flow in a northerly direction. Located adjacent to the southwest subject property border is a water channel that is approximately 30' wide and 6' deep. This channel was dry at the time of this investigation.

Based on the available records from the water wells in San Juan County, prior to 1978, the following water wells are within a one mile radius of the subject property:

Latitude Longitude	Number/Name	Depth to Water (ft)	Aquifer
364720/1084050	12X-300A	NA	Kd,Jm
364720/1084117	Hotel Shiprock	Spring	Km
364712/1084127	12K-300	NA	Kd,Jm
364659/1084124	USI8#17	NA	Qal

364649/1084140	12K-300B	6.2	Qal
364636/1084146	12T-520	NA	Jm
364649/1084153	NA	NA	Km

Where: Qal -Quaternary Alluvium
Kd -Dakota Sandstone
Jm -Morrison Formation
Km -NA
NA -Not Available

Records from two other sources on water wells for San Juan County did not have any listings on any water wells in the vicinity of the subject property. All information regarding water supplies are limited and not current.

The San Juan River and water wells USI8#17 and 12K-300 are located down gradient from the site. Water well 12K-300B is located to the southwest of the site, across the river. The other wells appear to be situated up gradient from the site. Refer to the Site Location Map in Appendix A for the approximate locations of the water wells relative to the subject property.

FIELD INVESTIGATION

This spill investigation was performed by Envirotech Inc. in January of 1993 as a follow up to the August 31, 1991 gasoline UST's removal, which identified a spill incident. It included the drilling of shallow test holes, the installation of shallow groundwater monitor wells, the measurement of relative groundwater levels, locations of all test borings and monitor wells at the site, and the collection and submittal of soil and groundwater samples for laboratory chemical analyses. At this time, per request of Mr. Charles Foutz, current lease holder and operator of the subject property, no effort has been made to investigate the spill incident that is associated with the May 13, 1992 removal of a used oil UST that was located on the subject property.

Field Exploration:

The field exploration, conducted from January 11 to January 19, 1993, consisted of 14 test borings advanced to depths ranging from 10' to 15-1/2' below existing ground surface (bgs). The borings were drilled with a truck mounted CME-55 drilling rig using an eight inch (8") diameter hollow stem auger. Locations of the test holes are presented in the Site Diagram, presented in Appendix A.

All auger, drill rod, and bits were steam cleaned prior to drilling and washed with a high-pressure washer between test holes to minimize the probability of cross-contamination.

Completion of Test Holes:

Eight of the 14 test holes were completed as groundwater monitor wells. The monitor wells were constructed using two inch (2") diameter threaded-coupling schedule 40 PVC casing. A screened section (0.02" slot size) was set approximately 2' above and approximately 5' below the groundwater level encountered during drilling. The screened interval was sand packed to a minimum of one foot (1') above the slotted interval with 8-12 mesh gradation silica sand and sealed with 3/8" bentonite pellets. Blank PVC was used to complete the wells to approximate site grade. Each monitor well was secured either with a seven inch (7") diameter bolt-down steel monitor well cover or with an above ground well protector, cement grouted, and locking cap installed. Refer to Appendix B for construction details each monitor well.

Borings not completed as monitor wells were plugged and abandoned by grouting to surface with Type II Portland Cement with 5% bentonite.

Following drilling and construction of the wells, all test hole locations were surveyed and well head elevations measured. The

well survey data is presented the Survey Data Table in Appendix B.

Water Level Measurements:

The groundwater levels reported on the boring logs in Appendix A were obtained during drilling, prior to monitor well completion of select test holes. After monitor well completion, all monitor wells were permitted to equilibrate. Equilibrated water levels were measured by Mr. Don Fallon, of Envirotech, on January 19, 1993 with an interface probe to the nearest 0.01 foot from the surveyed well head elevation point. The measured water levels are tabulated in the Survey Data Table in Appendix A.

Monitor wells were developed on January 18 and January 19, and sampled on January 19, 1993. The wells were developed by removing in excess of three well bore volumes or until the well bore was pumped off. For monitor wells L and M, an in line well developer was utilized, and for the remaining wells, a cleaned teflon bailer with a capacity of one liter (0.26 gal) was used.

Soil and Groundwater Sampling:

Split-tube soil samples were taken a minimum of every five feet from the surface to groundwater during drilling of the borings. The split-tube sampler was decontaminated with Alconox detergent in water and triple rinsed with water and deionized water prior to each sampling event.

Recovered soil samples were split; 1) a portion was placed in 475 mL glass sample containers and sealed with aluminum foil for hydrocarbon vapor testing, and when applicable, 2) a portion was placed in laboratory supplied clean 250 ml clear glass sample containers with teflon closures, placed on ice, and delivered to Envirotech's laboratory for analysis.

In some instances, cobbles interfered with the split-tube sampler, making sample retrieval impossible. In these few cases, samples that best represented the depth desired were taken from the cuttings, or from the auger as it was removed from the boring. Recovered cuttings were stockpiled on plastic sheets on site, and are awaiting approval for disposal.

Water samples were also collected from the borings and field tested for volatile hydrocarbons. The concentration of volatile hydrocarbons in both soil and water samples was determined by the Headspace Field Method (Underground Storage Tank Regulations, State of New Mexico, Environmental Improvement Board, Part XII, Appendix C, July 26, 1990) using a photoionization detector (PID), Model 580-B Organic Vapor Meter (OVM) manufactured by Thermo Environmental Instruments. The results of these screening measurements are presented on the boring logs in Appendix A. Logs

of the borings are included in Appendix A, and while the noted stratification lines represent approximate boundaries between soil types, the transitions may be gradual.

From select borings, groundwater samples were collected using a cleaned teflon bailer. Duplicate samples were taken through the center of the hollow stem auger and placed in new 40 ml VOA vials supplied by the laboratory. The samples were preserved with mercuric chloride and placed on ice prior to delivery to the laboratory. A trip blank was included with the sample set as a quality control screening procedure. The laboratory results and associated Chain-of-Custodies are presented in Appendix C.

After development, monitor wells were sampled using the same protocol as described above, and analyzed for BTEX (8020) and TPH (Modified 8015). In addition to the analytical samples obtained, each monitor well was tested for conductivity, pH, temperature, and the amount of water removed to insure proper development was recorded (see Monitor Well Completion Details-Appendix B). At this time, monitor well C remains undeveloped and unsampled due to excessive silt in the sand filter pack, and poor water recovery.

Analysis of OVM results and of laboratory results indicate that there is not a significant correlation between the two methods of analysis (see Appendix A). The lack of correlation is possibly due to the age of the hydrocarbon contamination, the possible multiple sources of contamination, limitations of BTEX/8020 analysis for detection of only gasoline components, and the ability of the OVM to detect compounds that are not of concern to this spill investigation.

SOIL AND GROUNDWATER CONDITIONS

This spill investigation was to primarily identify gasoline contamination on the site that was associated with the three USTs. However, due to possible multiple sources of contamination (ie: Permco's gasoline USTs, previous USTs on site, kerosine above ground storage tank, and the used oil UST), several laboratory analytical methods were utilized to determine the composition of the contamination. These methods are: BTEX from 8020 (Volatile Organics), TPH from 8015 (Modified: Non-Halogenated Volatile Organics), and 8010 (Halogenated Volatile Organics).

Evaluation of the subsurface site characteristics to the depths explored indicates the soil at the investigation site to be generalized as follows: low plasticity fine sandy silt to silty sand filled with fine gravel to cobble, slightly cohesive, loose to slightly firm. Soils at the groundwater interface and below appear to have a higher sand content, which would lead to increased permeability.

In the areas underneath the hardware store, video outlet, former service station, and parking lot there is approximately 3' of fill material to bring the area to the approximate grade of US Highway 666. This fill area is covered by asphaltic pavement from 3" to 6" in thickness. Immediately below the asphalt, the fill material is generalized as follows (to approximately 3' below the asphalt): coarse gravel and cobbles in fine, low plasticity silty sand to sandy silt, non-cohesive to slightly cohesive, loose to firm.

Except in those areas covered by asphaltic paving, the shallow top six inches (6") of soil were observed to be wet from seasonal precipitation and melting snow. Deeper soils became moist at just below the surface to saturated in the vadose zone above the free water level. Overall the soils were yellowish brown to medium brown, becoming variable in the vadose zone. The colors in the vadose zone ranged from light browns to grays and blacks. The gray and black discoloration may be due to organic matter and/or hydrocarbon contamination.

Based upon the initial measurements, the groundwater ranges from six feet (6') to nine feet (9') below the natural ground surface. The observed potentiometric surface is presented in Appendix A-Survey Data Table. The groundwater gradient and subsequent flow direction is to the southwest, perpendicular to the flow of the San Juan River (located approx 1/4 mile to the southwest) . The shallow alluvial groundwater appears to represent an unconfined aquifer.

Based on information from Groundwater [R. Allan Freeze and John A. Cherry (Englewood Cliffs, NJ: Prentice-Hall, Inc.)pgs 26-30.], a typical hydraulic conductivity for soils encountered at this site

range from 10e-1cm/sec to 10e-5cm/sec. By extrapolating a groundwater slope of approximately 0.0033ft/ft from the survey and monitor well data, and assuming a typical porosity of 30%, the groundwater velocity can be calculated to range from 1.1 ft/day to 1.1e-5ft/day towards the approximate heading S50°W.

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Laboratory results of the soil and groundwater analyses are provided in Appendix C. Currently there are no regulatory limits for the 8010 compounds in a soil matrix, therefore the results of the 8010 soil analyses have been compared to Resource Conservation and Recovery Act (RCRA) standards for defining hazardous wastes. Table 1 shows locations and concentrations of compounds that were identified by the 8010 analyses. Although a full 8010 analysis was performed on each sample, only measurable quantities are reported in this table; all other concentrations not listed in Table 1 were below laboratory detection limits.

The 8010 analysis is to identify any chlorinated volatile organics (solvents) that may be contributing to the identified spill. The used oil UST is suspected as a source for these compounds.

TABLE 1
LABORATORY RESULTS
US EPA METHOD 8010
CHLORINATED VOLATILE ORGANICS
(SOLVENTS)

B	M	1,2-Dichloroethane	trans-1,2-Dichloroethene	Chloroform
A	S	212ppb	ND	ND
A	G	18.2ppb	1.4ppb	3.7ppb
B	G	6.1ppb	2.7ppb	5.2ppb
C	S	46.9ppb	ND	127ppb
C	G	1.0ppb	ND	3.1ppb
D	S	103ppb	ND	91ppb
M	W	0.5ppb	ND	ND

B -Boring Identification
M -Matrix
S -Soil
G -Groundwater from Boring
W -Groundwater from Monitor Well

Tables 2 through 5 summarize the 8020/BTEX and 8015/TPH laboratory analytical results of samples that were obtained during the field investigation.

The 8020 analysis will identify compounds that are typically associated with gasoline.

TABLE 2
LABORATORY BTEX RESULTS
US EPA METHOD 8020
SOILS COLLECTED FROM BORINGS

130 200,000 68,000 44,000

Boring	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/13/93	4432	15'	2,130	980	451	14,900
B	No Sample Taken						
C	1/12/93	4452	5'	ND	218	102	526
D	1/12/93	4454	5'	ND	224	105	554
E	1/14/93	4486	Cutting	244	1,160	1,790	4,570
F	No Sample Taken						
G	1/14/93	4476	5'-10'	ND	257	117	611
H	No Sample Taken						
I	1/14/93	4478	5'-10'	ND	172	73	354
J	No Sample Taken						
K	1/15/93	4487	10'	168	286	1,370	2,110
L	1/15/93	4489	10'	ND	228	260	2,510
M	1/18/93	4507	4'-5.5'	62	195	87	604
N	1/19/93	4513	5.5'-7'	423	478	109	554

Grab samples ??

TABLE 3
LABORATORY BTEX RESULTS
US EPA METHOD 8020
WATER COLLECTED FROM OPEN BORINGS

5 1,000 700 10,000

Boring	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/11/93	4433	10'5"	18.3	5.7	ND	234
B	1/11/93	4434	5'6"	0.5	1.3	ND	4.5
C	1/12/93	4453	4'8"	ND	1.0	ND	1.4
D	1/12/93	4455	6'8"	ND	ND	0.6	1.3
E	No Sample Taken						
F	No Sample Taken						
G	1/14/93	4477	10'8"	0.9	3.0	6.4	12.3
H	No Sample Taken						
I	No Sample Taken						
J	No Sample Taken						
K	1/15/93	4488	6'7"	287	135	3,060	2,240
L	No Sample Taken						
M	No Sample Taken						
N	1/19/93	4512	6'2"	5.2	16.6	18.2	154

All concentrations in Table 2 and Table 3 are measured in parts-per-billion (ppb).

The 8015 analysis, modified to use a hexane extraction, will identify the quantity of compounds found in the gasoline range, diesel range, and heavier than diesel range.

TABLE 4
LABORATORY TPH RESULTS
US EPA METHOD 8015
SOILS COLLECTED FROM BORINGS

Boring	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/11/93	4432	15'	76	1,400	1480
B	No Sample Taken					
C	1/12/93	4452	5'	1.9	7.7	9.6
D	1/12/93	4454	5'	1.6	7.9	9.5
E	1/14/93	4486	Cuttings	5.0	27.7	32.7
F	No Sample Taken					
G	1/14/93	4476	5'-10'	2.1	10.1	12.2
H	No Sample Taken					
I	1/14/93	4478	5'-10'	2.8	7.5	10.2
J	No Sample Taken					
K	1/15/93	4487	10'	8.5	38.9	47.4
L	1/15/93	4489	10'	2.3	8.8	11.1
M	1/18/93	4507	4'-5.5'	3.9	8.5	1 .4
N	1/19/93	4513	5.5'-7'	1.8	33.2	3 .0

TABLE 5
LABORATORY TPH RESULTS
US EPA METHOD 8015
WATER COLLECTED FROM OPEN BORINGS

Boring	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/11/93	4433	10'5"	27,300	77,600	104,900
B	1/11/93	4434	5'6"	414	6,600	7,000
C	1/12/93	4453	4'8"	145	203	348
D	1/12/93	4455	6'8"	274	6,300	6,600
E	No Sample Taken					
F	No Sample Taken					
G	1/14/93	4477	10'8"	1,040	1,080	2,120
H	No Sample Taken					
I	No Sample Taken					
J	No Sample Taken					
K	1/15/93	4488	6'7"	910	690	1,600
L	No Sample Taken					
M	No Sample Taken					
N	1/19/93	4512	6'2"	0.8	1.5	2.3

All concentrations in Table 4 and Table 5 are in parts-per-million (ppm).

TABLE 6
LABORATORY BTEX RESULTS
US EPA METHOD 8020
MONITOR WELLS-POST DEVELOPMENT

MW	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/20/93	4533	9.82'	ND	ND	33.5	25.4
B	1/20/93	4534	9.82'	ND	ND	ND	2.2
C	Sample Not Retrievable						
D	1/20/93	4531	9.54'	ND	ND	0.7	1.7
G	1/20/93	4535	9.38'	ND	ND	ND	2.0
I	1/20/93	4532	9.43'	ND	ND	0.6	1.7
L	1/20/93	4530	6.16'	1.4	ND	ND	ND
M	1/20/93	4529	4.91'	ND	ND	ND	ND

Concentrations in Table 6 are measured in ppb.

TABLE 7
LABORATORY TPH RESULTS
US EPA METHOD 8015
MONITOR WELLS-POST DEVELOPMENT

MW	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/20/93	4533	9.82'	1.4	24.3	25.7
B	1/20/93	4534	9.82'	0.7	1.3	2.0
C	Sample Not Retrievable					
D	1/20/93	4531	9.54'	0.5	1.7	2.2
G	1/20/93	4535	9.38'	0.9	1.4	2.3
I	1/20/93	4532	9.43'	0.7	1.4	2.1
L	1/20/93	4530	6.16'	0.6	1.5	2.1
M	1/20/93	4539	4.91'	0.9	1.3	2.2

Concentrations in Table 7 are in ppm.

The results that are displayed in Table 3 and in Table 5 show groundwater samples obtained during the drilling process. The data presented in Table 6 and in Table 7 show the results of samples obtained after the monitor wells were developed, which is most likely the more accurate of the two sampling methods. Currently there are two theories as to why the concentration of contaminants was higher in the samples obtained during drilling relative to samples obtained from the developed monitor wells. These two theories are: contamination was being reintroduced into the groundwater from the overlying soils while drilling, and/or cross contamination from boring to boring was more pronounced than anticipated. As a result of this discrepancy, groundwater data from the developed monitor wells was used as the only source of

information from which to interpret groundwater contamination at the site.

The laboratory analytical results and Quality Assurance/Quality Control (QA/QC) for associated analyses are contained in Appendix C.

Regulatory Levels:

The current maximum allowable concentrations for groundwater contamination as outlined by the State of New Mexico Water Quality Control Commission (August 18, 1991) are summarized reported in Table 1. The maximum allowable concentrations for soil as outlined by the New Mexico Environmental Department, "Underground Storage Tank Regulations" and also by 40 CFR 261 are summarized in Table 8.

TABLE 8
HYDROCARBON SOIL & GROUNDWATER CONTAMINATION STANDARDS
STATE OF NEW MEXICO

Parameter	Maximum Allowable Limits soil (mg/kg)		Maximum Allowable Limits groundwater (µg/l)	
Benzene	10	0.13	10	5
Toluene	-	200	750	1,000
Ethylbenzene	-	68	750	700
Total Xylene	-	44	620	10,000
Total Aromatics	50		-	
1,2-Dichloroethane	0.5		0.01	
trans 1,2-Dichloroethene	-		-	
Chloroform	6		100	
Total Petroleum Hydrocarbons	100		-	

Notes:
1) µg/kg or µg/l - equivalent to parts per billion.
2) mg/kg - equivalent to parts per million.
3) BTEX and TPH limits per NMED.
4) Chlorinated Volatile Organics for soil per RCRA.
5) Chlorinated Volatile Organics for water per WQCC.

LIMITATIONS AND CLOSURE

The conclusions expressed in this report are based on visual observations of the site, subsurface soil conditions encountered at the test hole locations, and testing of soil and water samples collected during exploration and monitor well installation. This report does not reflect subsurface variations which may exist between sampling points.

The scope of our services was limited to the assessment of soil and groundwater contamination with respect to hydrocarbon contamination associated with gasoline and diesel at typical underground storage tank locations.

This report has been prepared for the exclusive use of Mr. Marlo Webb, as it pertains to the property at Bond's True Value Hardware, US Highway 666, Shiprock, New Mexico. All work has been performed in accordance with generally accepted professional practices in geotechnical/environmental engineering and hydrogeology.

I certify that I am personally familiar with the investigation work at the site and the site conditions as presented in this report.

Respectfully Submitted,
ENVIROTECH INC.

Robert M Young

Robert M. Young
Environmental Biologist

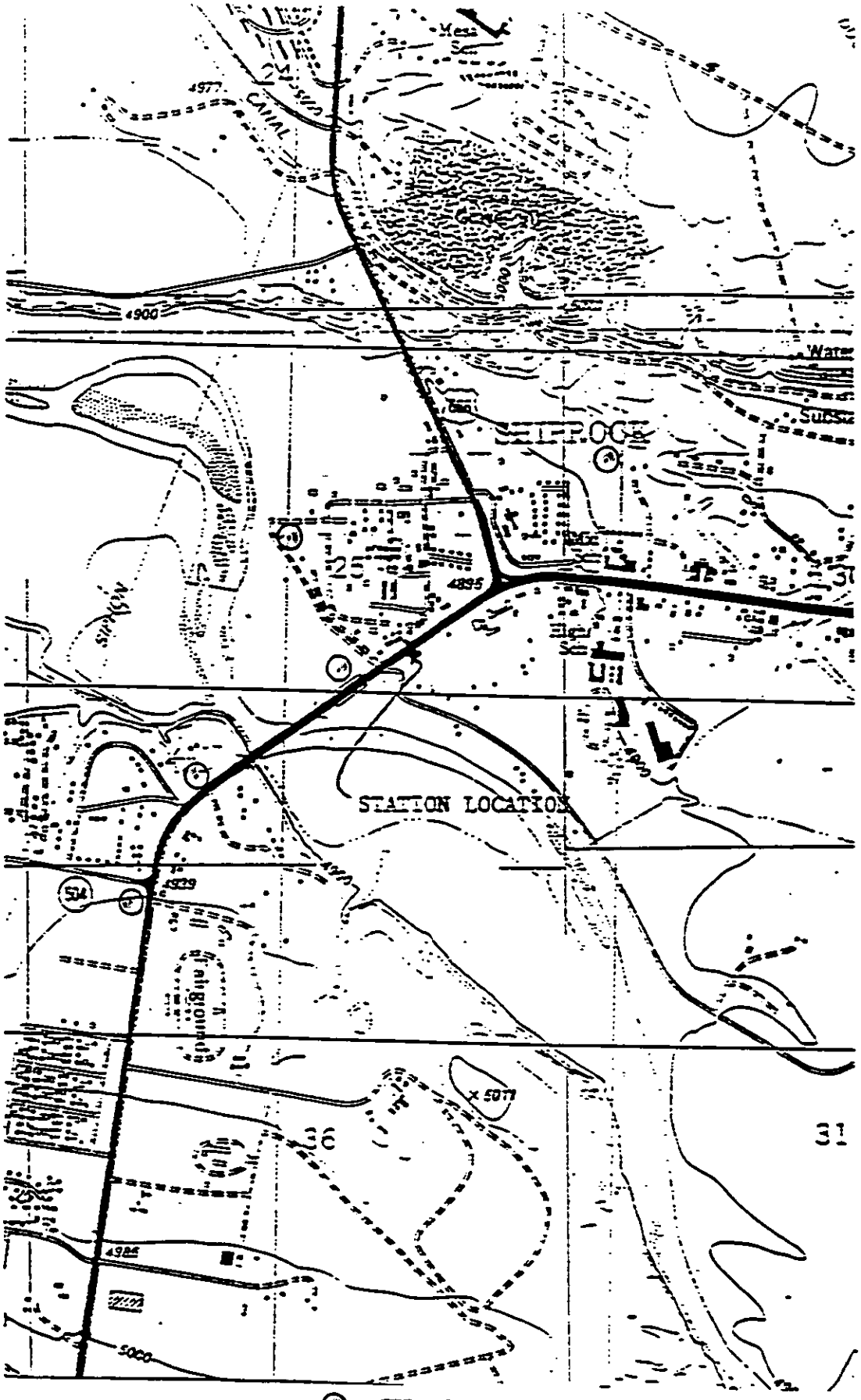
Reviewed By:

Michael K. Lane, P.E.
Geological Engineer

APPENDICES

RMY/rmy

91346.rpt



PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

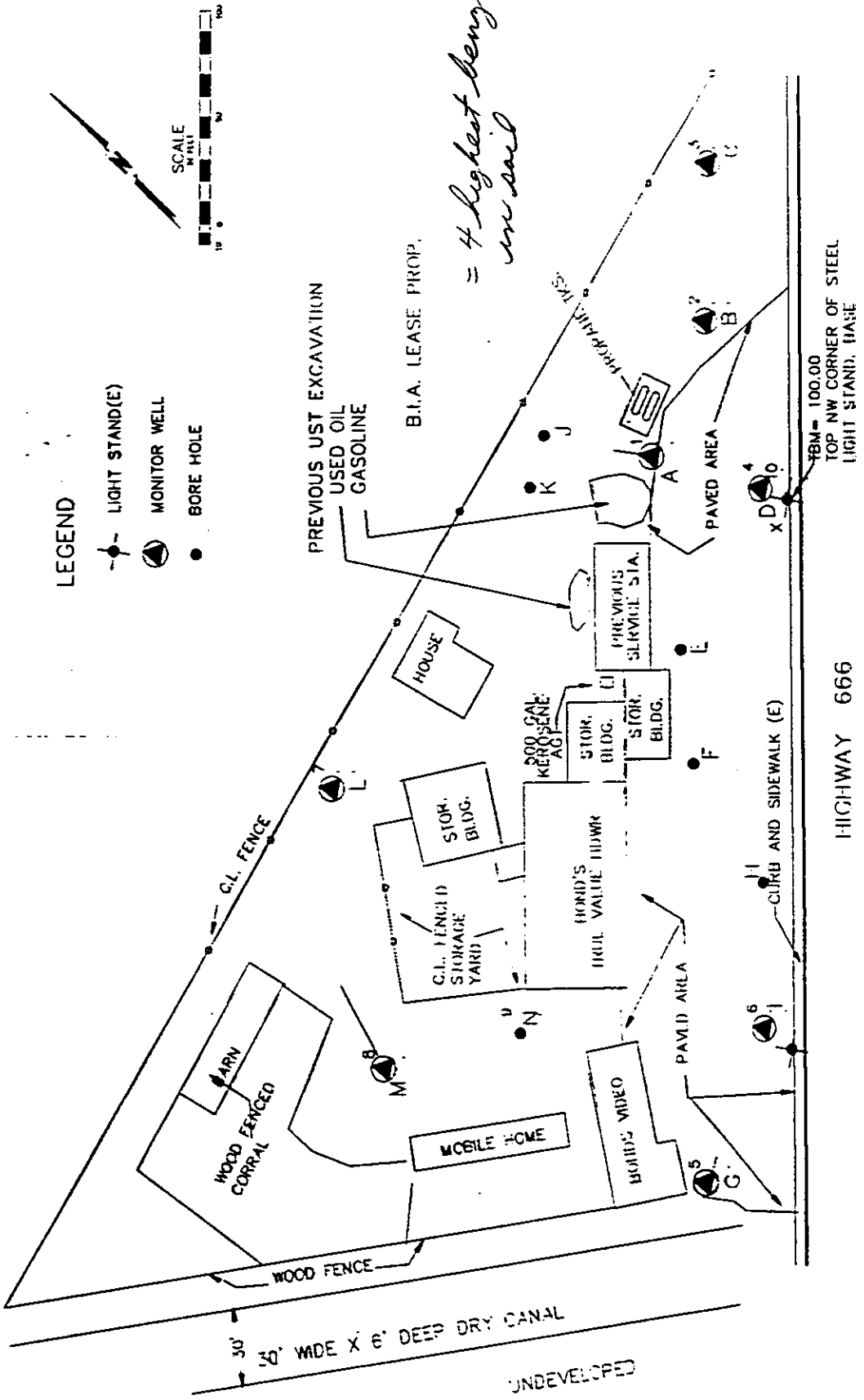
SITE DIAGRAM
PROJECT NO. 9146

ENVIROTECH INC.

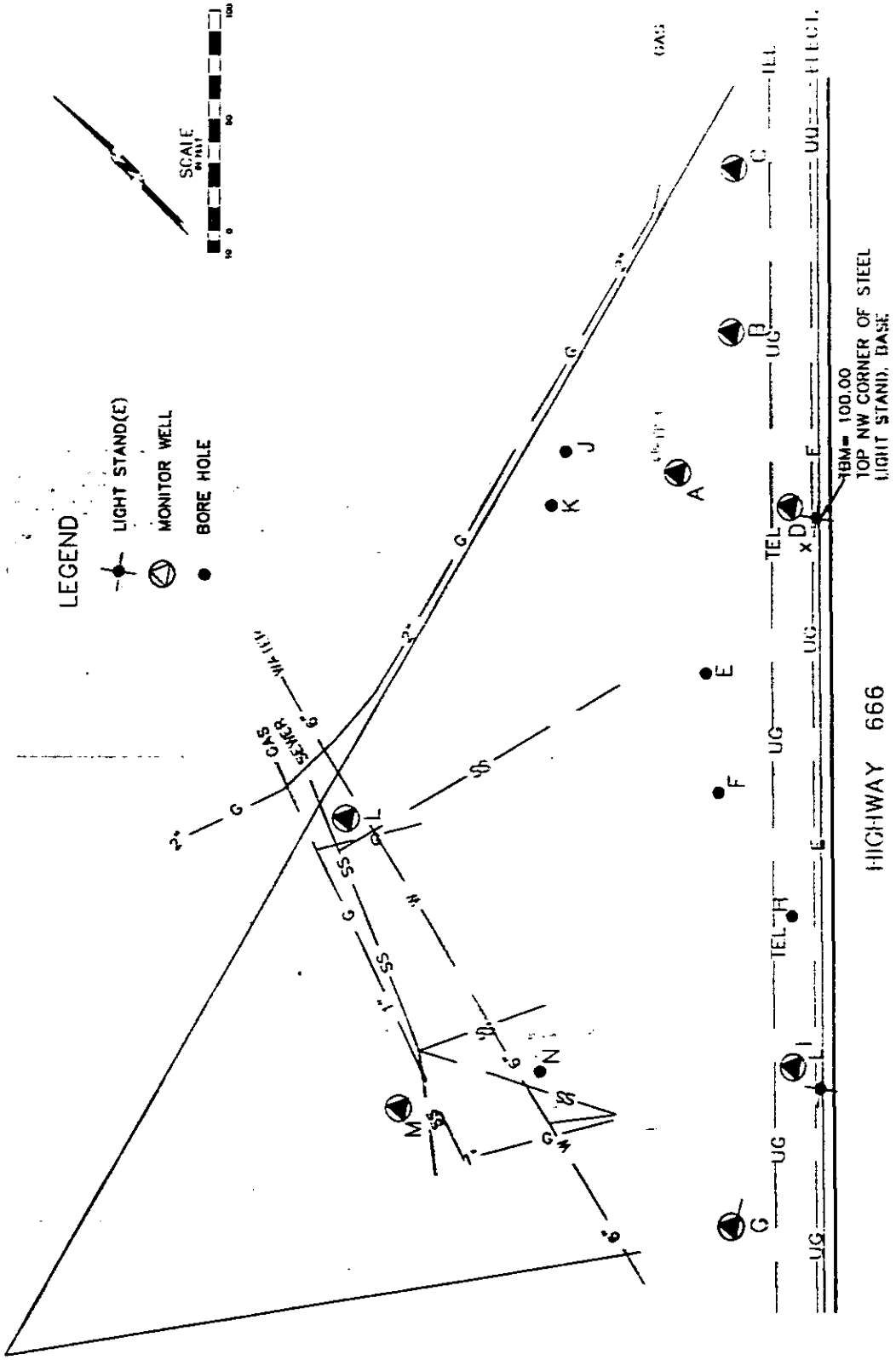
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: 505/632-0615

SUSPECTED GASOLINE SPILL INCIDENT
SITE LOCATION MAP

PROJ. MGR. RMY
DRW. BY DEF 1-25-93



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT SITE DIAGRAM PROJ. MGR. RMY DRWN BY DEF 1-25-93
SITE DIAGRAM PROJECT NO. 91346		



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT UTILITIES MAP
SITE DIAGRAM PROJECT NO. 91346		PROJ. MGR. RMY DRW. BY DEF 1-25-93

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: A
JOB No: 91346
PAGE No: 1 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/11/93
DATE FINISH: 1/11/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	SM/ML				SANDY SILT TO SILTY SAND, OLIVE-GRAY, MOIST, FIRM, LOW PLASTICITY, SLIGHTLY COHESIVE, COBBLES TO 3'.
5		1765	SPT		SANDY SILT TO SILTY SAND, BLACK AND GRAY, MOIST TO WET, FIRM, LOW PLASTICITY, SLIGHTLY COHESIVE, HIGHLY CONTAMINATED, STRONG PETROLEUM ODOR, GROSS ORGANIC STAINING, COARSE GRAVELS PRESENT.
10		724	SPT		SAA. GRAY, SATURATED.
		598	BAIL		GROUNDWATER. OLIVE-GRAY, TRACE FREE PRODUCT (<1mm)
15		[illegible]	CUT'G		SAA SATURATED
20					TOTAL DEPTH: 15'-0" GROUNDWATER DEPTH: 13'-5" COMPLETION: MONITOR WELL "A"
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346A
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: B
JOB No: 91346
PAGE No: 2 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/11/93
DATE FINISH: 1/11/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	SM/ML				YELLOWISH-BROWN SILTY SAND. WET, LOOSE, NON-COHESIVE.
	ML				GOLDEN BROWN TO ORANGE-BROWN LOW PLASTICITY SILT. MOIST, NON-COHESIVE, NO VISIBLE CONTAMINATION.
5		[illegible]	SPT		SAA. SATURATED.
		[illegible]	BAIL		GROUNDWATER. LIGHT TO MEDIUM BROWN, NO VISIBLE CONTAMINATION.
10		[illegible]	SPT		GRAY SILTY SAND. SATURATED, NON-COHESIVE, LOW PLASTICITY.
	ML				SAA.
15					
20					
25					
30					

TOTAL DEPTH: 13'-0"
GROUNDWATER DEPTH: 6'-6"

COMPLETION: MONITOR WELL "B"

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX 1' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346B
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: C
JOB No: 91346
PAGE No: 3 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/12/93
DATE FINISH: 1/12/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	SM				LIGHT BROWN TO TAN LOW PLASTICITY SILTY SAND. MOIST, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION.
5	▼	0.6	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
	ML	5.2	SPT		SAA. SATURATED.
10		1.9	CUT'G		SAA.
		2.8	CUT'G		SAA
15					
20					TOTAL DEPTH: 13'-6" GROUNDWATER DEPTH: 4'-8" COMPLETION: MONITOR WELL "C" NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.
25					
30					

DRAWING: 1346C
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: D
JOB No: 91346
PAGE No: 4 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/12/93
DATE FINISH: 1/12/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW/ML				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5		22.7	SPT		SAA. NO GRAVEL. SAA. BLACK, WET.
		4.5	SPT		SAA. SATURATED.
	SW/ML	0.6	BAIL		GROUNDWATER. GRAY AND BLACK LOW PLASTICITY FINE SILTY SAND. SATURATED, LOOSE, NON-COHESIVE.
10	SW/ML	2.2	SPT		SAA.
					SAA. COBBLES AT 12'-6".
	SW/ML	1.6	CUT'G		SAA
15					
20					TOTAL DEPTH: 14'-0" GROUNDWATER DEPTH: 6'-8"
					COMPLETION: MONITOR WELL "D"
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 13460
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: E
JOB No: 91346
PAGE No: 5 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/13/93
DATE FINISH: 1/13/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW/L				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL. COBBLES TO 4'.
5	SM	785	SPT		GRAY AND BLACK FINE SANDY SILT TO SILTY SAND. MOIST TO WET, LOOSE, NON-COHESIVE.
					SAA. BLACK ONLY, NO GRAY.
	ML/CL				GRADED CONTACT. BLACK SILTY CLAY TO CLAYEY SILT. WET, SLIGHTLY COHESIVE, LOW PLASTICITY.
10	ML/CL	284	SPT		SAA.
15					
20					TOTAL DEPTH: 11'-0" GROUNDWATER DEPTH: NR COMPLETION: BACKFILLED WITH CUTTINGS AND CAPPED WITH 6" OF CONCRETE.
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346E
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: F
JOB No: 91346
PAGE No: 6 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/13/93
DATE FINISH: 1/13/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW/GL				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL. COBBLES TO 3'-6".
5		15	SPT		LIGHT BROWN LOW PLASTICITY SILT WITH MINOR FINE SANDS. MOIST, LOOSE.
10	SW/ML	504	SPT		BLACK SILTY SAND TO SANDY SILT. WET, LOOSE, NON-COHESIVE.
		742	BAIL		GROUNDWATER. TRACE OF FREE PRODUCT ON SURFACE (<1mm).
	SW/ML	855	CUT'G		SAA. SATURATED.
15					
20					TOTAL DEPTH: 14'-0" GROUNDWATER DEPTH: 10'-10" COMPLETION: BACKFILLED WITH CUTTINGS AND CAPPED WITH 6" OF CONCRETE.
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.
30					

DRAWING: 1346F
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: G
JOB No: 91346
PAGE No: 7 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GM/ML				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5		3.7	SPT		DARK BROWN SILT WITH SOME MINOR FINE SAND. WET, LOOSE, SLIGHTLY COHESIVE, NON-PLASTIC, NO VISIBLE CONTAMINATION.
10		1.8	SPT		SAA. SATURATED.
		6.4	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
					SAA. COBBLES AT 12'-6".
15		0.9	CUT'G		SAA.
20					TOTAL DEPTH: 15'-6" GROUNDWATER DEPTH: 10'-8" COMPLETION: MONITOR WELL 'G'
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346G
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: H
JOB No: 91346
PAGE No: 8 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GM				COARSE GRAVEL AND COBBLES IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5		132	CUT'G		YELLOWISH-BROWN LOW PLASTICITY SILT. MOIST, LOOSE, NON-COHESIVE, NON-PLASTIC, MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION. HIGH COBBLE CONTENT.
					SWITCH TO CONSTANT FLIGHT, SOLID STEM AUGER AT 5'. ALL SOIL PROFILES ESTIMATED BELOW THIS POINT.
					SAA. GRAY TO BLACK, WET.
10		423	BAIL		GROUNDWATER. TRACE OF FLOATING OIL PLUS TRACES OF EITHER GAS OR DIESEL FLOATING ON SURFACE.
		[illegible]	CUT'G		SAA. SOIL IS SATURATED.
		[illegible]	CUT'G		SAA
15					
20					
25					
30					

TOTAL DEPTH: 13'-0"
GROUNDWATER DEPTH: 9'-3"

COMPLETION: BACKFILLED WITH CUTTINGS.

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346H
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
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BORE/TEST HOLE REPORT

BORING No: I
JOB No: 91346
PAGE No: 9 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	ML				YELLOWISH BROWN SILT WITH MINOR FINE SANDS. MOIST, LOOSE, SLIGHTLY COHESIVE.
5	ML				SAA. PLUS MINOR COARSE GRAVELS-NO FINE SANDS.
	ML	3.6	SPT		SAA. GRAY, PLUS MINOR FINE SANDS.
10		6.3	SPT		SAA.
		5.1	BAIL		GROUNDWATER. TRACES OF UNDISCERNABLE PRODUCT ON SURFACE, POSSIBLY OF BIOLOGICAL ORIGIN.
	MH/CH	0.9	CUT'G		BLACK CLAYEY HIGH-PLASTICITY SILT. SATURATED, SEWER ODOR.
15	ML/CL	0.9	CUT'G		SAA. GRAY PLUS COBBLES.
20					TOTAL DEPTH: 15'-0" GROUNDWATER DEPTH: 10'-0" COMPLETION: MONITOR WELL "I" NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-3 ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.
25					
30					

DRAWING: 13461
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: J
JOB No: 91346
PAGE No: 10 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	ML				MEDIUM TO DARK BROWN SILT TO SANDY SILT. -MOIST, LOOSE, MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION.
5	ML	[illegible]	SPT		MEDIUM BROWN FINE SANDS. WET, LOOSE, NON-COHESIVE. NO VISIBLE CONTAMINATION. SOME COBBLES PRESENT.
	▼	0.7	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
10		0.7	CUT'G		SAA.
15					
20					TOTAL DEPTH: 10'-0" GROUNDWATER DEPTH: 6'-11"
25					COMPLETION: FILLED TO GRADE WITH ZIA TYPE II PORTLAND CEMENT GROUT WITH 5% BENTONITE. NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346J
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
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BORE/TEST HOLE REPORT

BORING No: K
JOB No: 91346
PAGE No: 11 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	ML				MEDIUM TO DARK BROWN SILT TO SANDY SILT. MOIST, LOOSE, SLIGHTLY COHESIVE. MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION.
5	CL	[illegible]	CUT'G		BLACK AND GRAY HIGH PLASTICITY CLAY. WET, FIRM, COHESIVE. MINOR QUANTITY OF SILT.
		652	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
10		956	SPT		SAA.
15					
20					TOTAL DEPTH: 10'-0" GROUNDWATER DEPTH: 6'-7"
25					
30					

COMPLETION: FILLED TO GRADE WITH ZIA TYPE II PORTLAND CEMENT GROUT WITH 5% BENTONITE.

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX. EQUAL TO NATURAL GROUND [illegible]

DRAWING: 1346K
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
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BORE/TEST HOLE REPORT

BORING No: 1
JOB No: 91346
PAGE No: 12 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

	DVM		FIELD CLASSIFICATION AND REMARKS
			MEDIUM TO DARK BROWN FINE SILTY SAND TO COARSE SANDY SILT. WET, LOOSE, SLIGHTLY COHESIVE. NO VISIBLE CONTAMINATION.
5	20.2	SPT	SAA. SOME RUST STAINING PRESENT.
	17.9	BAIL	GROUNDWATER. NO VISIBLE CONTAMINATION.
10	15.8	SPT	GRAY POORLY GRADED FINE SAND. SATURATED, LOOSE, NON-COHESIVE. NO VISIBLE CONTAMINATION.
15			
20			TOTAL DEPTH: 10'-8" GROUNDWATER DEPTH: 8'-6" COMPLETION: MONITOR WELL "L" NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. DVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.
25			
30			

DRAWING: 1346L
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64. FARMINGTON. NM 87401
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BORE/TEST HOLE REPORT

BORING No: M
JOB No: 91346
PAGE No: 13 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/18/93
DATE FINISH: 1/18/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	ML				BROWN SILTY SAND TO SANDY SILT WITH SOME CLAYS. NO ODORS. NO VISIBLECONTAMINATION.
5	SM/ML	ND	SPT		BROWN SILTY SAND WITH SOME CLAYS. FINE GRAVELS PRESENT. NO ODORS, NO VISIBLE CONTAMINATION.
10	SM/ML	ND	SPT		GROUNDWATER. NO VISIBLE CONTAMINATION.
15					
20					TOTAL DEPTH= 10'-5' GROUNDWATER DEPTH= 5'-5' COMPLETION: MONITOR WELL "M"
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.
30					

DRAWING: 1346M
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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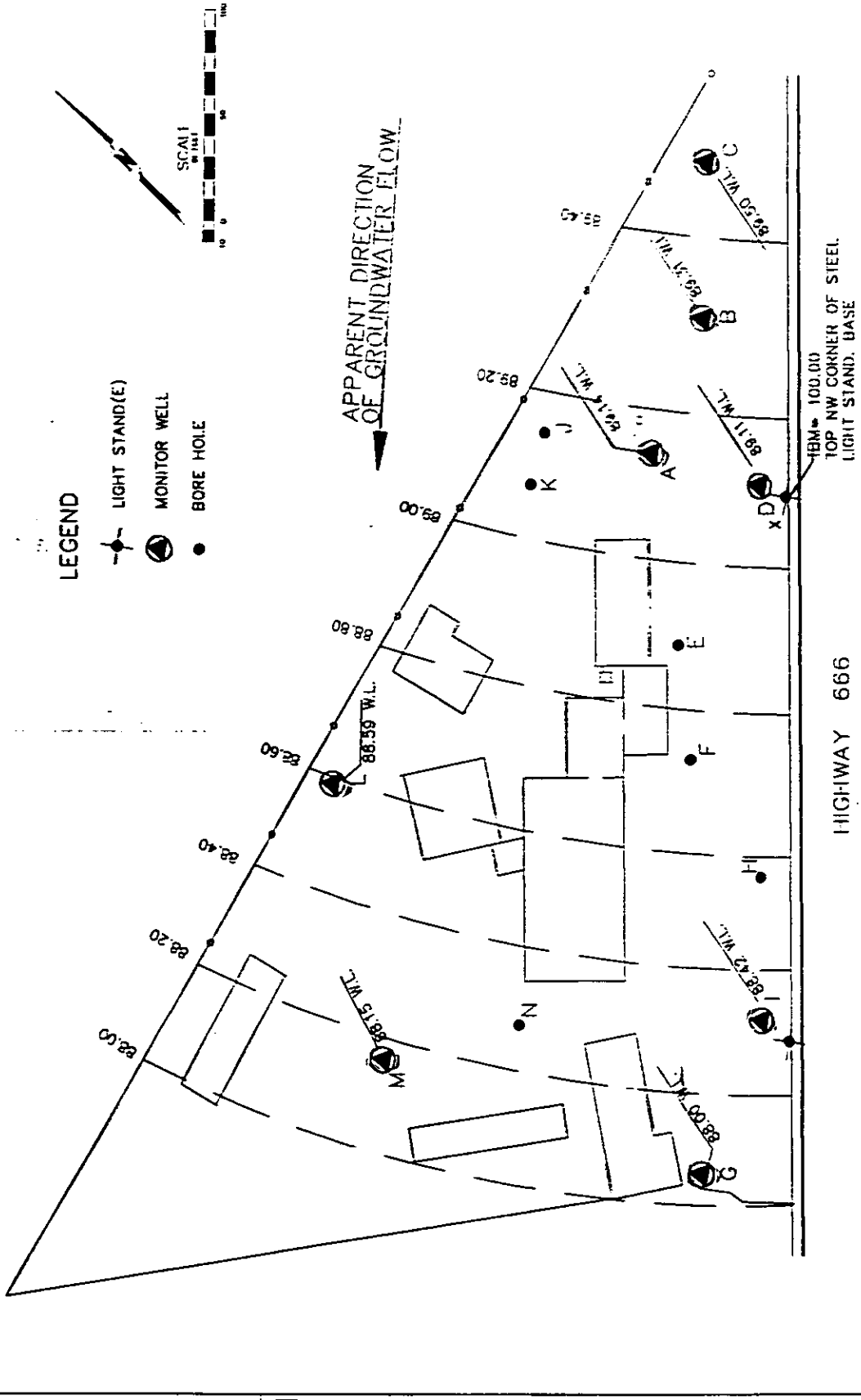
BORE/TEST HOLE REPORT

BORING No: N
JOB No: 91346
PAGE No: 14 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/19/93
DATE FINISH: 1/19/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: BOND'S TRUE VALUE HARDWARE--SHIPROCK, NM
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	SM/ML	ND	SPT		BROWN SILTY SAND WITH SOME CLAYS. MOIST. NO ODORS. NO VISIBLE CONTAMINATION.
5	SM/ML	ND	SPT		
	SM/ML	ND	SPT		BROWN SILTY SAND WITH GRAVELS. SLIGHT GRAY DISCOLORATON. WET. NO ODORS, NO VISIBLE CONTAMINATION. GROUNDWATER. NO VISIBLE CONTAMINATION.
10					
15					
20					TOTAL DEPTH: 9'-5' GROUNDWATER DEPTH: 6'-2' COMPLETION: FILLED TO SURFACE WITH PORTLAND TYPE II CEMENT GROUT WITH BENTONITE. NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
25					
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346N
DATE: 1-28-93
DWN BY: RMY



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC.	SUSPECTED GASOLINE SPILL INCIDENT
SITE DIAGRAM PROJECT NO. 91346	ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	GROUNDWATER SURFACE CONTOUR MAP PROJ. MGR. RWY DRW. BY DEF 1-25-93

CO-ORDINATE TABLE

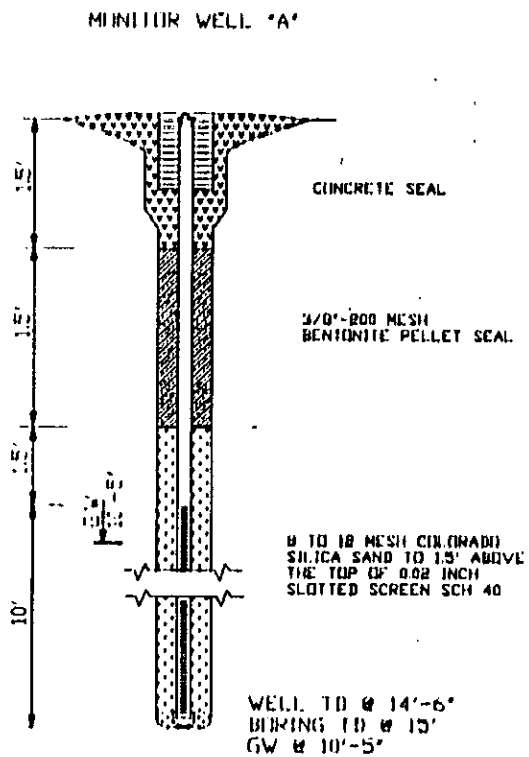
BASED UPON THE Y AXIS BEING PARALLEL
TO HIGHWAY 666

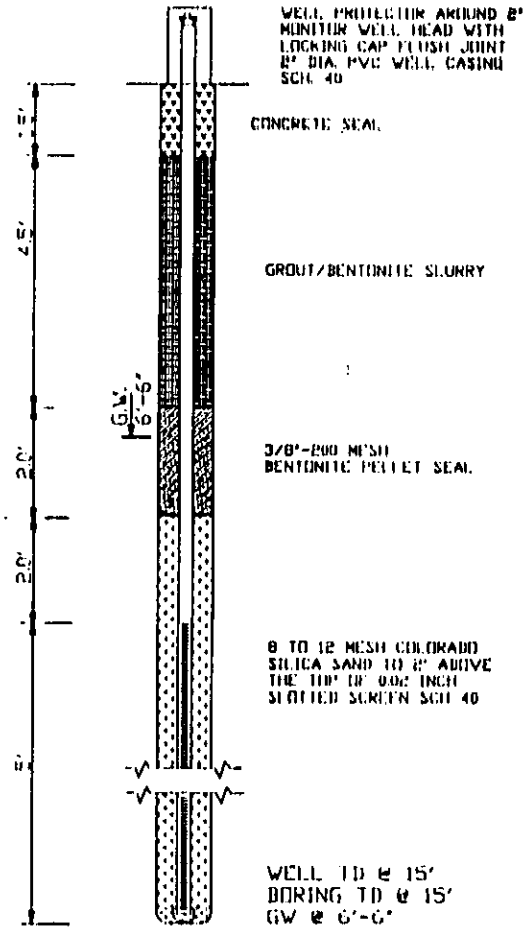
	X COORD.	Y COORD.	*TOP OF WELL ELEVATION
M.W. A	419.64	176.54	98.96
M.W. B	473.40	155.56	99.16
M.W. C	533.88	154.65	95.52
M.W. D	407.69	132.77	98.65
M.W. G	135.89	154.65	97.38
M.W. I	196.37	130.94	97.85
M.W. L	289.71	306.01	94.75
M.W. M	181.44	285.95	93.06
** BASE	401.71	122.74	100.00 T.B.M.

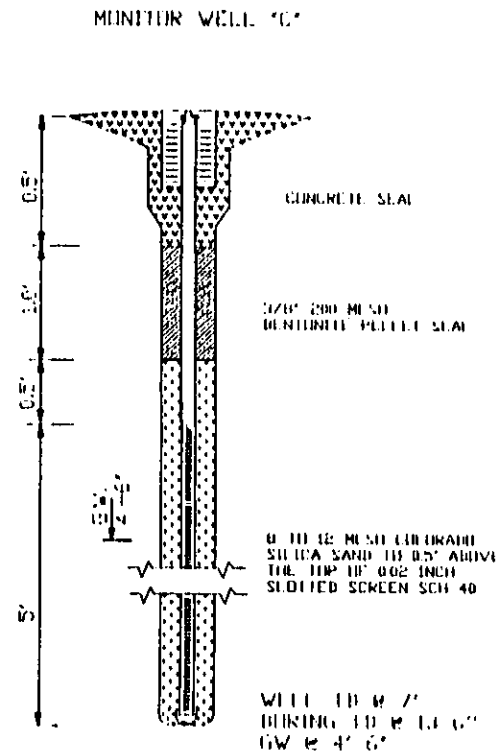
* TOP OF PVC WELL CASING

** N.W. COR OF STEEL BASE ON LIGHT STANDARD ADJACENT TO M.W. D

PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT SURVEY DATA TABLE
SURVEY DATA TABLE PROJECT NO. 91346		PROJ. MGR. BMY DRWN. BY JCF 1-25-93







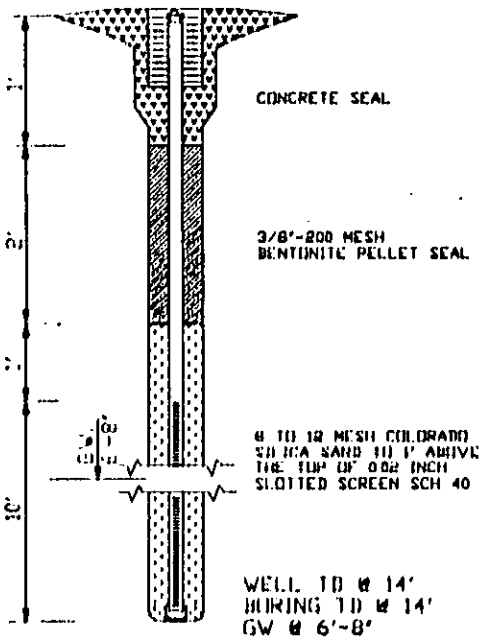
MONITOR WELL DETAILS
PERMCO SHIPROCK
BOND'S TRUE VALUE
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

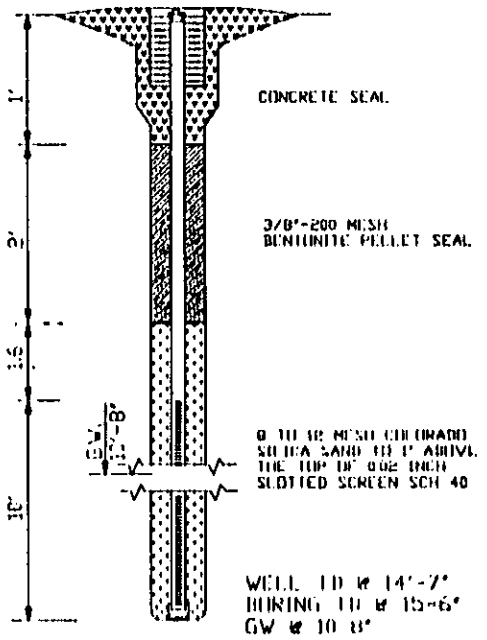
ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEER: R. YOUNG
DRAFTER: B. LAFFON
DATE: 1-26-93
MONITOR WELLS: A,B,C
SHEET: # 1

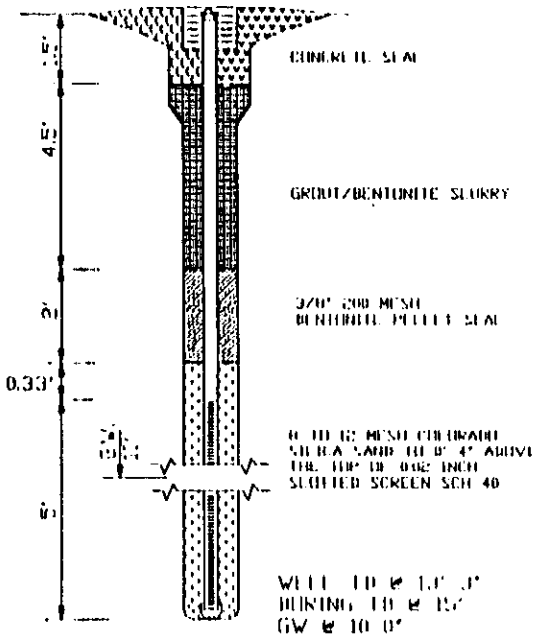
MONITOR WELL 'D'



MONITOR WELL 'G'



MONITOR WELL 'I'



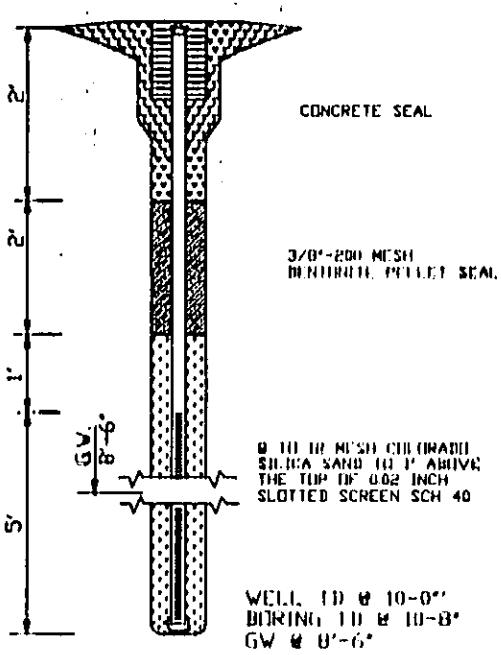
MONITOR WELL DETAILS
PERMIT SHIPROCK
BOND'S TRUE VALUE
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

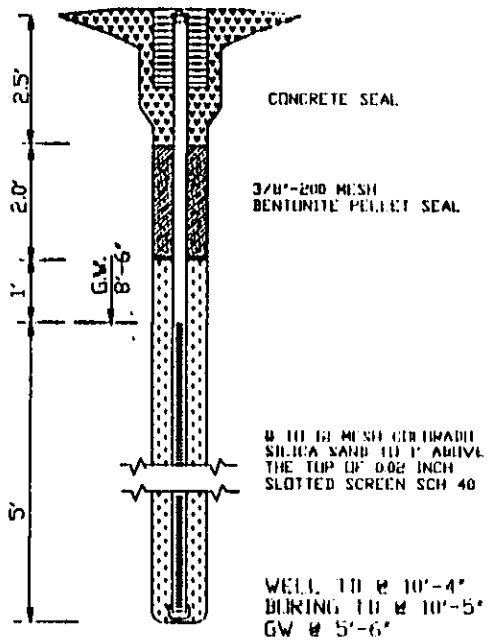
ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEER: R. YOUNG
DRAFTER: D. FALLON
DATE: [illegible]
MONITOR WELLS: D,G,I
SHEET: # 2

MONITOR WELL 'L'



MONITOR WELL 'M'



MONITOR WELL DETAILS
PERMIT SUBMITTAL
BENDER'S TRUE VALUE
SHIPRICK, NEW MEXICO

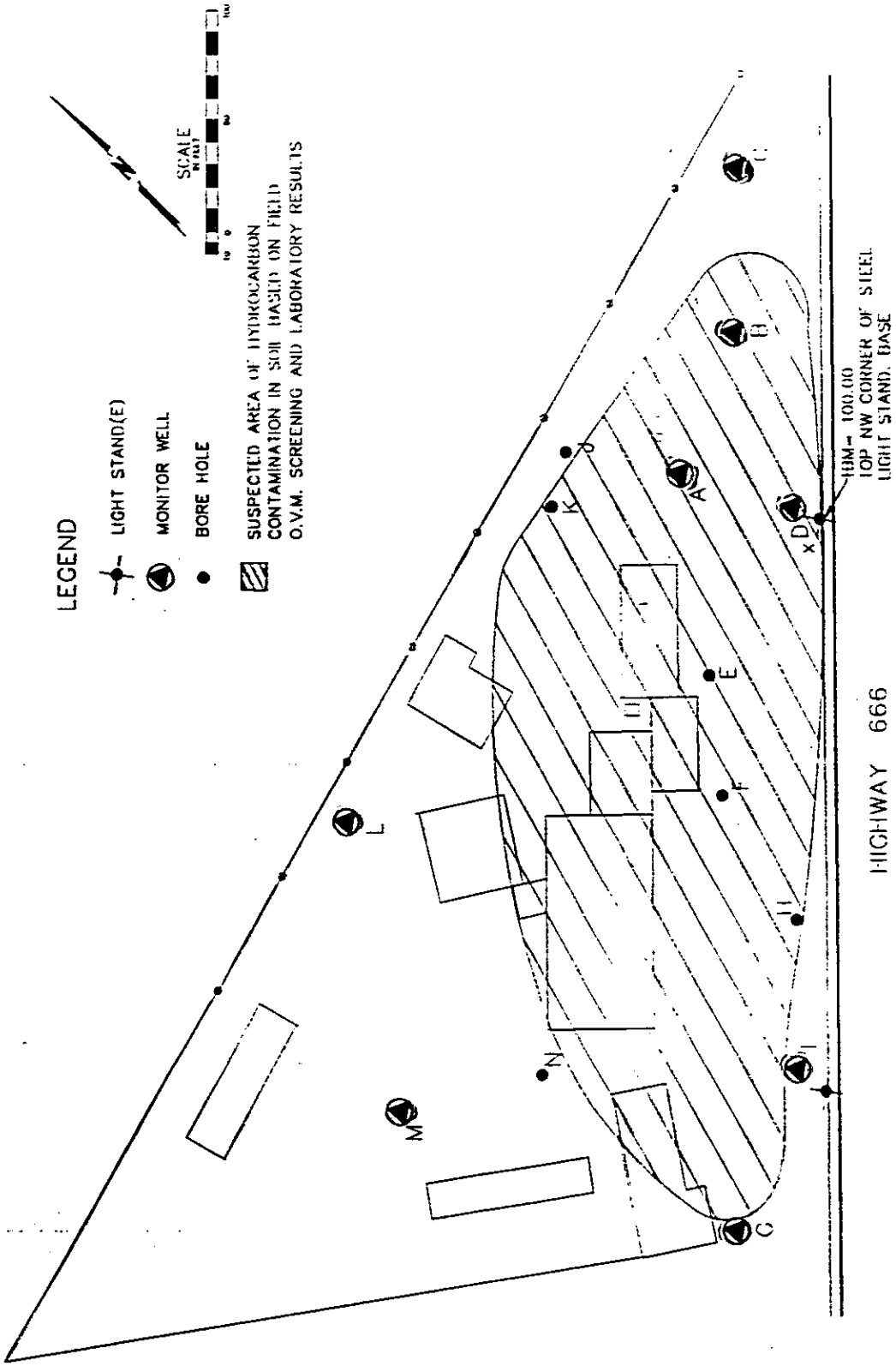
ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEER: R. YOUNG
DRAFTER: D. FALCHIN
DATE: [illegible]
MONITOR WELL SET M
SHEET: #3

Permco–Shiprock/Bond & Bond Service Station
Monitor Well Development Record (1/20/93)

MW	CONDUCTIVITY	pH	TEMPERATURE	VOLUME REMOVED	DEPTH TO GW
A	3100	7.19	17.9 C	10 GALLONS	9.82'
B	3700	7.04	16.4 C	10 GALLONS	9.82'
C	NA	NA	NA	NA	NA
D	3600	7.05	17.6 C	10 GALLONS	9.54'
G	5200	7.02	16.9 C	7.5 GALLONS	9.38'
I	3200	7.29	17.7 C	10 GALLONS	9.43'
L	3700	6.69	14.6 C	NA	6.16'
M	4800	7.13	13.9 C	2.5 GALLONS	4.91'



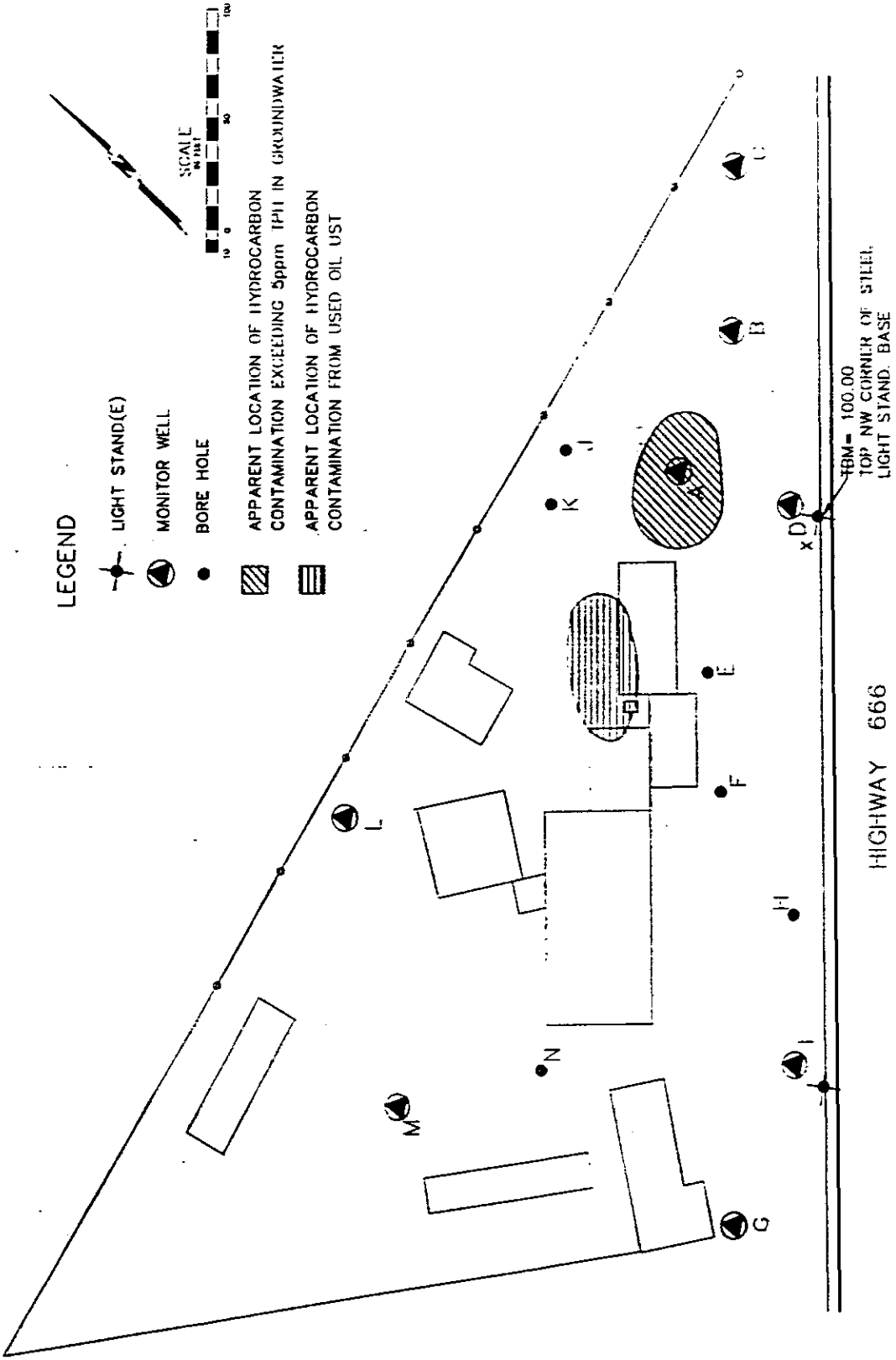
PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. 91346

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

SUSPECTED GASOLINE SPILL INCIDENT
SOIL HYDROCARBON CONTAMINATION MAP

PROJ. MGR. RMY
DRW. BY DEF 1-25-93

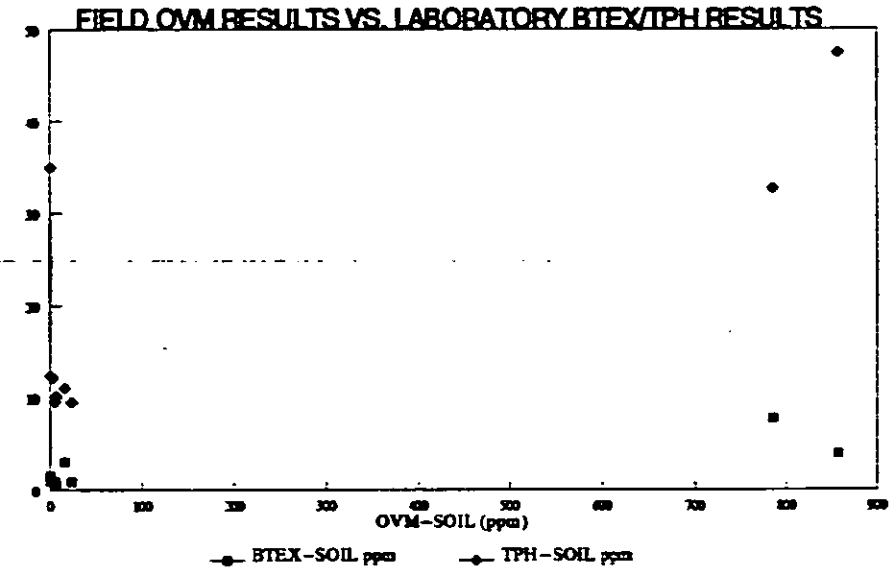


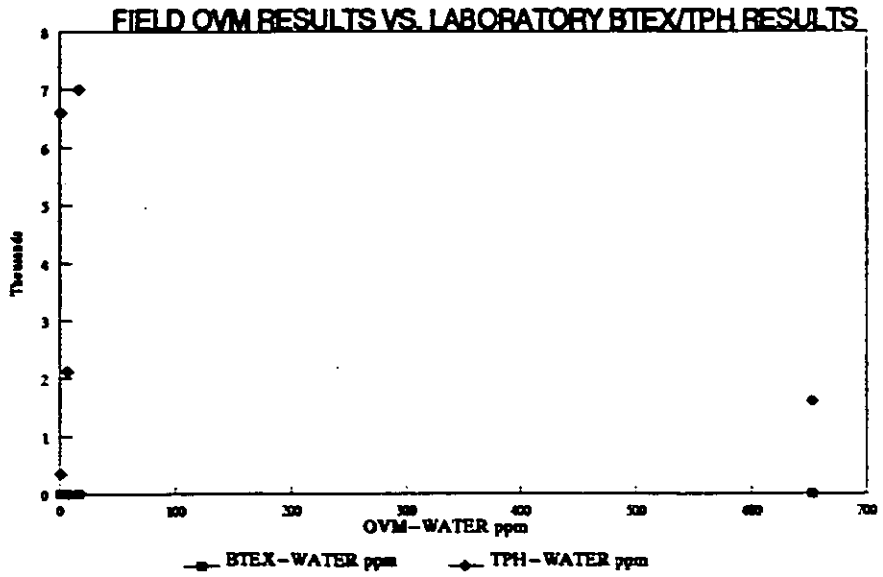
PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT WATER HYDROCARBON CONTAMINATION MAP
SITE DIAGRAM PROJECT NO. 91346		PROJ. MGR. RMY DRW. BY DEF 1-25-93

Permco - Shiprock, Bond & Bond Service Station
OVM and Laboratory Results Correlation

BORING	OVM - SOIL ppm	OVM - WATER ppm	BTEX - SOIL ppm	BTEX - WATER ppm	TPH - SOIL ppm	TPH - WATER ppm
A	304	747	18.461	0.258	1480	104900
B	15.4	15.9	NA	0.0063	NA	7000
C	5.4	0.6	0.846	0.0024	9.6	348
D	22.7	0.6	0.883	0.0019	9.5	6000
E	785	NA	7.764	NA	32.7	NA
F	904	742	NA	NA	NA	NA
G	2.7	6.4	0.985	0.0228	12.2	2120
H	736	423	NA	NA	NA	NA
I	6.3	5.4	0.509	NA	10.2	NA
J	1.4	0.7	NA	NA	NA	NA
K	856	652	3.934	5.722	47.4	1800
L	15.8	17.9	2.999	NA	11.1	NA
M	0	NA	0.849	NA	12.4	NA
N	0	NA	1.884	0.194	36	2.3

Correlations are between samples taken at approximately equivalent depths.
Samples from Boring A not used due to scaling difficulties.





ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	"A" @ 15'	Date Reported:	01-13-93
Laboratory Number:	4432	Date Sampled:	01-11-93
Sample Matrix:	Soil	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-12-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	76	0.2
Diesel Range (C10 - C28)	1,400	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	1,480	0.3

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	"A" @ 15'	Date Reported:	01-14-93
Laboratory Number:	4432	Date Sampled:	01-11-93
Sample Matrix:	Soil	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	48
Vinyl Chloride	ND	48
Bromomethane	ND	119
Chloroethane	ND	119
1,1-Dichloroethene	ND	23.9
trans-1,2-Dichloroethene	ND	23.9
1,1-Dichloroethane	ND	16.7
Chloroform	ND	11.9
1,1,1-Trichloroethane	ND	11.9
Carbon tetrachloride	ND	23.9
1,2-Dichloroethane	212	21.3
Tricholoroethene	ND	23.9
1,2-Dichloropropane	ND	9.6
Bromodichloromethane	ND	23.9
trans-1,3-Dichloropropene	ND	72
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	ND	7.2
Dibromochloromethane	ND	21.5
Bromoform	ND	48
1,1,2,2-Tetrachloroethane	ND	7.2

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: "A" @ 15'
Laboratory Number: 4432

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	86 %
Bromofluorobenzene	81 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	"A" @ 15'	Date Reported:	01-13-93
Laboratory Number:	4432	Date Sampled:	01-11-93
Sample Matrix:	Soil	Date Received:	01-11-93
Preservative:	Cool	Date Extracted:	01-12-93
Condition:	Cool & Intact	Date Analyzed:	01-13-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	2,130	47.8
Toluene	980	287
Ethylbenzene	451	47.8
p,m-Xylene	8,900	191
o-Xylene	6,000	143

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	119 %
Bromfluorobenzene	119 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	"A" @ 10' 5"	Date Reported:	01-14-93
Laboratory Number:	4433	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-14-93
Condition:	Cool & Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	27,300	0.4
Diesel Range C10 - C28	77,600	2.4
Total Petroleum Hydrocarbons	104,900	2.4

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	"A" @ 10.5'	Date Reported:	01-14-93
Laboratory Number:	4433	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	1.4	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	3.7	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	18.2	0.9
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: "A" @ 10.5'
Laboratory Number: 4433

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	96 %
Bromofluorobenzene	98 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	"A" @ 10'5"	Date Reported:	01-13-93
Laboratory Number:	4433	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	HgCl & Cool	Date Analyzed:	01-12-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	18.3	0.2
Toluene	5.7	1.2
Ethylbenzene	ND	0.2
p,m-Xylene	151	0.8
o-Xylene	83	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	107 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	B @ 5' 6"	Date Reported:	01-14-93
Laboratory Number:	4434	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-14-93
Condition:	Cool & Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	414	0.4
Diesel Range C10 - C28	6,600	2.4
Total Petroleum Hydrocarbons	7,000	2.4

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	"B" @ 5.6'	Date Reported:	01-14-93
Laboratory Number:	4434	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	2.7	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	5.2	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	6.1	0.9
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: "B" @ 5.6'
Laboratory Number: 4434

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	96 %
Bromofluorobenzene	101 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	B @ 5'6"'	Date Reported:	01-13-93
Laboratory Number:	4434	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-11-93
Preservative:	HgCl & Cool	Date Analyzed:	01-12-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	0.5	0.2
Toluene	1.3	1.2
Ethylbenzene	ND	0.2
p,m-Xylene	1.7	0.8
o-Xylene	2.8	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	104 %
Bromfluorobenzene	121 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

2353

Job# 91346

CHAIN OF CUSTODY RECORD

Client/Project Name: PERMCO

Project Location: PERMCO Shiprock

Sampler: (Signature): Phillip Velasquez

Chain of Custody Tape No.:

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	~~BTEX~~ TPH 8015	5010	BTEX (8020)				Remarks
"A" @ 15'	1/11/93	1255	4452	Soil	1	✓	✓	✓				
"A" @ 10.5"	1/11/93	1245	4453	Water	2	✓	✓	✓				
B @ 5' 6"	1/11/93	1410	4434	Water	2	✓	✓	✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Phillip Velasquez	1/11/93	1800	[illegible]	1-11-93	1800
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

San Juan repro Form 878-61

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	C @ 5'	Date Reported:	01-13-93
Laboratory Number:	4452	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.9	0.3
Diesel Range (C10 - C28)	7.7	0.5
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	9.6	0.5

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, N.M.

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	C @ 5'	Date Reported:	01-14-93
Laboratory Number:	4452	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	38.5
Vinyl Chloride	ND	38.5
Bromomethane	ND	96
Chloroethane	ND	96
1,1-Dichloroethene	ND	19.2
trans-1,2-Dichloroethene	ND	19.2
1,1-Dichloroethane	ND	13.5
Chloroform	127	9.6
1,1,1-Trichloroethane	ND	9.6
Carbon tetrachloride	ND	19.2
1,2-Dichloroethane	46.9	17.1
Tricholoroethene	ND	19.2
1,2-Dichloropropane	ND	7.7
Bromodichloromethane	ND	19.2
trans-1,3-Dichloropropene	ND	58
1,1,2-Trichloroethane	ND	3.8
Tetrachloroethene	ND	5.8
Dibromochloromethane	ND	17.3
Bromoform	ND	38.5
1,1,2,2-Tetrachloroethane	ND	5.8

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: C @ 5'
Laboratory Number: 4452

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	91 %
Bromofluorobenzene	78 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Denis L. Ajeewen
Analyst

Morris D. Young
Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	C @ 5'	Date Reported:	01-18-93
Laboratory Number:	4452	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Extracted:	01-13-93
Condition:	Cool & Intact	Date Analyzed:	01-18-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	77
Toluene	218	90
Ethylbenzene	102	51
p,m-Xylene	393	154
o-Xylene	133	77

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	111 %
Bromfluorobenzene	104 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	C @ 4' 8"	Date Reported:	01-14-93
Laboratory Number:	4453	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-14-93
Condition:	Cool & Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	145	0.4
Diesel Range C10 - C28	203	2.4
Total Petroleum Hydrocarbons	348	2.4

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco - Shiprock

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	C @ 4' 8"	Date Reported:	01-14-93
Laboratory Number:	4453	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	3.1	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	1.0	0.9
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: C @ 4' 8"
Laboratory Number: 4453

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	91 %
Bromofluorobenzene	90 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	C @ 4'8"	Date Reported:	01-18-93
Laboratory Number:	4453	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	HgCl and Cool	Date Analyzed:	01-18-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.6
Toluene	1.0	0.7
Ethylbenzene	ND	0.4
p,m-Xylene	1.4	1.2
o-Xylene	ND	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	84 %
Bromfluorobenzene	86 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	D @ 5'	Date Reported:	01-13-93
Laboratory Number:	4454	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.6	0.3
Diesel Range (C10 - C28)	7.9	0.5
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	9.5	0.5

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, N.M.

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	D @ 5'	Date Reported:	01-14-93
Laboratory Number:	4454	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	40.4
Vinyl Chloride	ND	40.4
Bromomethane	ND	101
Chloroethane	ND	101
1,1-Dichloroethene	ND	20.2
trans-1,2-Dichloroethene	ND	20.2
1,1-Dichloroethane	ND	14.1
Chloroform	91	10.1
1,1,1-Trichloroethane	ND	10.1
Carbon tetrachloride	ND	20.2
1,2-Dichloroethane	103	18.0
Tricholoroethene	ND	20.2
1,2-Dichloropropane	ND	8.1
Bromodichloromethane	ND	20.2
trans-1,3-Dichloropropene	ND	61
1,1,2-Trichloroethane	ND	4.0
Tetrachloroethene	ND	6.1
Dibromochloromethane	ND	18.2
Bromoform	ND	40.4
1,1,2,2-Tetrachloroethane	ND	6.1

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: D @ 5'
Laboratory Number: 4454

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	93 %
Bromofluorobenzene	86 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

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Analyst

Morris D. Young
Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	D @ 5'	Date Reported:	01-18-93
Laboratory Number:	4454	Date Sampled:	01-12-93
Sample Matrix:	Soil	Date Received:	01-12-93
Preservative:	Cool	Date Extracted:	01-13-93
Condition:	Cool & Intact	Date Analyzed:	01-18-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	81
Toluene	224	94
Ethylbenzene	105	54
p,m-Xylene	424	162
o-Xylene	130	81

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	100 %
Bromfluorobenzene	96 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	D @ 6' 8"	Date Reported:	01-14-93
Laboratory Number:	4455	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-14-93
Condition:	Cool & Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	274	0.4
Diesel Range C10 - C28	6,300	2.4
Total Petroleum Hydrocarbons	6,600	2.4

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco - Shiprock

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	D @ 6' 8"	Date Reported:	01-14-93
Laboratory Number:	4455	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	Cool	Date Analyzed:	01-13-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.9
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: D @ 6' 8"
Laboratory Number: 4455

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	90 %
Bromofluorobenzene	90 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	D @ 6'8"	Date Reported:	01-18-93
Laboratory Number:	4455	Date Sampled:	01-12-93
Sample Matrix:	Water	Date Received:	01-12-93
Preservative:	HgCl and Cool	Date Analyzed:	01-18-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.6
Toluene	ND	0.7
Ethylbenzene	0.6	0.4
p,m-Xylene	1.3	1.2
o-Xylene	ND	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	88 %
Bromfluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

2360

Job # 91346

CHAIN OF CUSTODY RECORD

Client/Project Name: Perinco

Project Location: Shiprock N.M.

Sampler: (Signature): Phillip Velasquez

Chain of Custody Tape No.:

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	~~BTEX~~ TPH	~~BTEX~~ 8015	~~BTEX~~ 8010	BTEX (8020)				Remarks
C @ 5'	1-12-93	1100	4452	Soil	1	✓	✓		✓				
C @ 4'8"	1-12-93	1115	4453	Water	2	✓	✓		✓				
D @ 5'	1-12-93	1500	4454	Soil	1	✓	✓		✓				
D @ 6'8"	1-12-93	1540	4455	Water	2	✓	✓		✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Phillip Velasquez	1-12-93	1845	[signature]	1-12-93	1845
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	G @ 5' 10" Cuttings	Date Reported:	01-18-93
Laboratory Number:	4476	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-15-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.1	0.4
Diesel Range (C10 - C28)	26.2	0.8
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	28.2	0.8

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	G @ 5'-10" Cuttings	Date Reported:	01-20-93
Laboratory Number:	4476	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-19-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.1	0.3
Diesel Range (C10 - C28)	10.1	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	12.2	0.3

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock
Re-Check of analysis done 01-15-93

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	G @ 5' 10" Cuttings	Date Reported:	01-20-93
Laboratory Number:	4476	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	39.4
Vinyl Chloride	ND	39.4
Bromomethane	ND	99
Chloroethane	ND	99
1,1-Dichloroethene	ND	19.7
trans-1,2-Dichloroethene	ND	19.7
1,1-Dichloroethane	ND	13.8
Chloroform	ND	9.9
1,1,1-Trichloroethane	ND	9.9
Carbon tetrachloride	ND	19.7
1,2-Dichloroethane	ND	12.3
Tricholoroethene	ND	19.7
1,2-Dichloropropane	ND	7.9
Bromodichloromethane	ND	19.7
trans-1,3-Dichloropropene	ND	59
1,1,2-Trichloroethane	ND	3.9
Tetrachloroethene	ND	5.9
Dibromochloromethane	ND	17.8
Bromoform	ND	39.4
1,1,2,2-Tetrachloroethane	ND	5.9

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: G @ 5' 10" Cuttings
Laboratory Number: 4476

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	90 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	G @ 5' - 10' Cuttings	Date Reported:	01-18-93
Laboratory Number:	4476	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Extracted:	01-15-93
Condition:	Cool & Intact	Date Analyzed:	01-18-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	79
Toluene	257	92
Ethylbenzene	117	53
p,m-Xylene	469	158
o-Xylene	142	79

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	113 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

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EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Cuttings G @ 5'-10'	Date Reported:	01-18-93
Laboratory Number:	4476	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-18-93
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	10

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments:

Sheila Leftwich
Analyst

Morris D. Young
Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	G @ 10' 8"	Date Reported:	01-15-93
Laboratory Number:	4477	Date Sampled:	01-14-93
Sample Matrix:	Water	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-15-93
Condition:	Cool & Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	1,040	0.9
Diesel Range C10 - C28	1,080	0.9
Total Petroleum Hydrocarbons	2,120	0.9

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	G @ 10' 8"	Date Reported:	01-20-93
Laboratory Number:	4477	Date Sampled:	01-14-93
Sample Matrix:	Water	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-19-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.6
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: G @ 10' 8"
Laboratory Number: 4477

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	G @ 10'8"	Date Reported:	01-18-93
Laboratory Number:	4477	Date Sampled:	01-14-93
Sample Matrix:	Water	Date Received:	01-14-93
Preservative:	HgCl & Cool	Date Analyzed:	01-17-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	0.9	0.6
Toluene	3.0	0.3
Ethylbenzene	6.4	0.5
p,m-Xylene	7.9	1.0
o-Xylene	4.4	0.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	106 %
Bromfluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	I @ 5'-10' Cuttings	Date Reported:	01-18-93
Laboratory Number:	4478	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-15-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.8	0.4
Diesel Range (C10 - C28)	7.5	0.8
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	10.2	0.8

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	I @ 5' 10" Cuttings	Date Reported:	01-20-93
Laboratory Number:	4478	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	39.1
Vinyl Chloride	ND	39.1
Bromomethane	ND	98
Chloroethane	ND	98
1,1-Dichloroethene	ND	19.5
trans-1,2-Dichloroethene	ND	19.5
1,1-Dichloroethane	ND	13.7
Chloroform	ND	9.8
1,1,1-Trichloroethane	ND	9.8
Carbon tetrachloride	ND	19.5
1,2-Dichloroethane	ND	12.1
Tricholoroethene	ND	19.5
1,2-Dichloropropane	ND	7.8
Bromodichloromethane	ND	19.5
trans-1,3-Dichloropropene	ND	59
1,1,2-Trichloroethane	ND	3.9
Tetrachloroethene	ND	5.9
Dibromochloromethane	ND	17.6
Bromoform	ND	39.1
1,1,2,2-Tetrachloroethane	ND	5.9

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: I @ 5' 10" Cuttings
Laboratory Number: 4478

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	87 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	I @ 5' - 10' Cuttings	Date Reported:	01-18-93
Laboratory Number:	4478	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Extracted:	01-15-93
Condition:	Cool & Intact	Date Analyzed:	01-18-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	78
Toluene	172	91
Ethylbenzene	73	52
p,m-Xylene	272	156
o-Xylene	82	78

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	106 %
Bromfluorobenzene	98 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	E Cuttings	Date Reported:	01-18-93
Laboratory Number:	4486	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-18-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	5.0	0.1
Diesel Range (C10 - C28)	27.7	0.6
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	32.7	0.6

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	E Cuttings	Date Reported:	01-20-93
Laboratory Number:	4486	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	100
Vinyl Chloride	ND	100
Bromomethane	ND	249
Chloroethane	ND	249
1,1-Dichloroethene	ND	49.8
trans-1,2-Dichloroethene	ND	49.8
1,1-Dichloroethane	ND	34.8
Chloroform	ND	24.9
1,1,1-Trichloroethane	ND	24.9
Carbon tetrachloride	ND	49.8
1,2-Dichloroethane	ND	30.9
Tricholoroethene	ND	49.8
1,2-Dichloropropane	ND	19.9
Bromodichloromethane	ND	49.8
trans-1,3-Dichloropropene	ND	149
1,1,2-Trichloroethane	ND	10.0
Tetrachloroethene	ND	14.9
Dibromochloromethane	ND	44.8
Bromoform	ND	100
1,1,2,2-Tetrachloroethane	ND	14.9

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: E Cuttings
Laboratory Number: 4486

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	110 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	E Cuttings	Date Reported:	01-20-93
Laboratory Number:	4486	Date Sampled:	01-14-93
Sample Matrix:	Soil	Date Received:	01-14-93
Preservative:	Cool	Date Extracted:	01-15-93
Condition:	Cool & Intact	Date Analyzed:	01-19-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	244	100
Toluene	1,160	232
Ethylbenzene	1,790	133
p,m-Xylene	3,820	365
o-Xylene	750	166

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromfluorobenzene	122 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

Review

Job# 2372 9134

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Perinco	Perinco Shiprock

Sampler: (Signature) Phillip Velazquez

Chain of Custody Tape No.

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH	8010	8020/BTEX	418.1 TPH				Remarks
Cuttings G @ 5'-10"	1-14-93	1040	4476	Soil	1	✓	✓	✓	✓				
G @ 10'-8"	1-14-93	1045	4477	Water	2	✓	✓	✓					
Cuttings I @ 5'-10"	1-14-93	1530	4478	Soil	1	✓	✓	✓					
E cuttings	1/14-93	1200	4486	Soil	1	✓	✓	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Phillip Velazquez	1-14-93	1830	Linda Pender	1-14-93	1830
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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Farmington, New Mexico 87401
(505) 632-0615

San Juan repro Form 5/8

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	K @ 10'	Date Reported:	01-18-93
Laboratory Number:	4487	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-18-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	8.5	0.1
Diesel Range (C10 - C28)	38.9	0.6
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	47.4	0.6

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	K @ 10'	Date Reported:	01-20-93
Laboratory Number:	4487	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	39.3
Vinyl Chloride	ND	39.3
Bromomethane	ND	98
Chloroethane	ND	98
1,1-Dichloroethene	ND	19.6
trans-1,2-Dichloroethene	ND	19.6
1,1-Dichloroethane	ND	13.8
Chloroform	ND	9.8
1,1,1-Trichloroethane	ND	9.8
Carbon tetrachloride	ND	19.6
1,2-Dichloroethane	ND	12.2
Tricholoroethene	ND	19.6
1,2-Dichloropropane	ND	7.9
Bromodichloromethane	ND	19.6
trans-1,3-Dichloropropene	ND	59
1,1,2-Trichloroethane	ND	3.9
Tetrachloroethene	ND	5.9
Dibromochloromethane	ND	17.7
Bromoform	ND	39.3
1,1,2,2-Tetrachloroethane	ND	5.9

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: K @ 10'
Laboratory Number: 4487

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	K @ 10'	Date Reported:	01-20-93
Laboratory Number:	4487	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Extracted:	01-18-93
Condition:	Cool & Intact	Date Analyzed:	01-19-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	168	39.3
Toluene	286	92
Ethylbenzene	1,370	52
p,m-Xylene	1,200	144
o-Xylene	910	65

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	158 %
Bromfluorobenzene	142 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock. High surrogate recoveries due to coelution with hydrocarbon.

Analyst

Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco	Project #:	91346
Sample ID:	K @ 6' 7"	Date Reported:	01-22-93
Laboratory Number:	4488	Date Sampled:	01-15-93
Sample Matrix:	Water	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	910	0.3
Diesel Range (C10 - C28)	690	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	1,600	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Shiprock, N.M.

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	K @ 6' 7"	Date Reported:	01-20-93
Laboratory Number:	4488	Date Sampled:	01-15-93
Sample Matrix:	Water	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-19-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.6
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: K @ 6' 7"
Laboratory Number: 4488

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	86 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	K @ 6'7"	Date Reported:	01-19-93
Laboratory Number:	4488	Date Sampled:	01-15-93
Sample Matrix:	Water	Date Received:	01-15-93
Preservative:	HgCl and Cool	Date Analyzed:	01-19-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	287	1.5
Toluene	135	3.0
Ethylbenzene	3,060	2.0
p,m-Xylene	1,380	5.0
o-Xylene	860	2.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	117 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock.

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	L @ 10'	Date Reported:	01-18-93
Laboratory Number:	4489	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-18-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	2.3	0.1
Diesel Range (C10 - C28)	8.8	0.6
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	11.1	0.6

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco - Shiprock	Project #:	91346
Sample ID:	L @ 10'	Date Reported:	01-20-93
Laboratory Number:	4489	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	39.4
Vinyl Chloride	ND	39.4
Bromomethane	ND	99
Chloroethane	ND	99
1,1-Dichloroethene	ND	19.7
trans-1,2-Dichloroethene	ND	19.7
1,1-Dichloroethane	ND	13.8
Chloroform	ND	9.9
1,1,1-Trichloroethane	ND	9.9
Carbon tetrachloride	ND	19.7
1,2-Dichloroethane	ND	12.3
Tricholoroethene	ND	19.7
1,2-Dichloropropane	ND	7.9
Bromodichloromethane	ND	19.7
trans-1,3-Dichloropropene	ND	59
1,1,2-Trichloroethane	ND	3.9
Tetrachloroethene	ND	5.9
Dibromochloromethane	ND	17.8
Bromoform	ND	39.4
1,1,2,2-Tetrachloroethane	ND	5.9

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: L @ 10'
Laboratory Number: 4489

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	94 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	L @ 10'	Date Reported:	01-20-93
Laboratory Number:	4489	Date Sampled:	01-15-93
Sample Matrix:	Soil	Date Received:	01-15-93
Preservative:	Cool	Date Extracted:	01-18-93
Condition:	Cool & Intact	Date Analyzed:	01-19-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	39.4
Toluene	228	92
Ethylbenzene	260	53
p,m-Xylene	1,680	145
o-Xylene	830	66

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	144 %
Bromfluorobenzene	138 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock. High surrogate recoveries due to coelution with hydrocarbon.

Analyst

Review

2377

Job # 91346

CHAIN OF CUSTODY RECORD

nt/Project Name	Project Location	ANALYSIS/PARAMETERS
PERMCO	Skiprock N.M.	
pler: (Signature) Phillip Velasquez	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH 8015	8010	BTEX 8020				Remarks
@ 10'	1-15-93	1350	4487	Soil	1	✓	✓	✓				
@ 6'-7"	1-15-93	1345	4488	Water	2	✓	✓	✓				
@ 10'	1-15-93	1530	4489	Soil	1	✓	✓	✓				
@ 8'-6"	1-15-93	1545	4490	Water	2	✓	✓	✓				Do Not Analyze (Hold) Perry

quished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Phillip Velasquez	1-15-93	1820	Linda Pinder	1-15-93	1820
quished by: (Signature)			Received by: (Signature)		
quished by: (Signature)			Received by: (Signature)		

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Bond & Bond	Project #:	91346
Sample ID:	MW-M @ 4.0' - 5.5'	Date Reported:	01-20-93
Laboratory Number:	4507	Date Sampled:	01-18-93
Sample Matrix:	Soil	Date Received:	01-18-93
Preservative:	Cool	Date Analyzed:	01-19-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	3.9	0.3
Diesel Range (C10 - C28)	8.5	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	12.4	0.3

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Bond & Bond, Shiprock

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW-M @ 4'-5.5'	Date Reported:	01-20-93
Laboratory Number:	4507	Date Sampled:	01-18-93
Sample Matrix:	Soil	Date Received:	01-18-93
Preservative:	Cool	Date Extracted:	01-19-93
Condition:	Cool & Intact	Date Analyzed:	01-19-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	62	40.4
Toluene	195	94
Ethylbenzene	87	54
p,m-Xylene	482	148
o-Xylene	122	67

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
Bromfluorobenzene	98 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock.

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	Permco, Bond & Bond	Project #:	91346
Sample ID:	MW - M @ 4.0'-5.5'	Date Reported:	01-21-93
Laboratory Number:	4507	Date Sampled:	01-18-93
Sample Matrix:	Soil	Date Received:	01-18-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	26.9
Vinyl Chloride	ND	26.9
Bromomethane	ND	67
Chloroethane	ND	67
1,1-Dichloroethene	ND	13.5
trans-1,2-Dichloroethene	ND	13.5
1,1-Dichloroethane	ND	9.4
Chloroform	ND	6.7
1,1,1-Trichloroethane	ND	6.7
Carbon tetrachloride	ND	13.5
1,2-Dichloroethane	ND	4.0
Tricholoroethene	ND	13.5
1,2-Dichloropropane	ND	5.4
Bromodichloromethane	ND	13.5
trans-1,3-Dichloropropene	ND	40.4
1,1,2-Trichloroethane	ND	3.2
Tetrachloroethene	ND	4.0
Dibromochloromethane	ND	12.1
Bromoform	ND	26.9
1,1,2,2-Tetrachloroethane	ND	4.0

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: MW - M @ 4.0'-5.5'
Laboratory Number: 4507

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	99 %
Bromofluorobenzene	87 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Bond & Bond, Shiprock

Dennis L. Ajeman
Analyst

Morris D. Young
Review

CHAIN OF CUSTODY RECORD

nt/Project Name: Perinco 1516 Bond + Bond	Project Location: Shipreck
pler: (Signature) [signature]	Chain of Custody Tape No.

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 TPH	8020 BTEX	8010				Remarks
W-M 40'-55'	1/18/93	1300	4507	Soil	1	✓	✓	✓				

	Date	Time		Date	Time
quished by: (Signature) [signature]	1/18/93	1718	Received by: (Signature) Linda Pender	1-18-93	1718
quished by: (Signature)			Received by: (Signature)		
quished by: (Signature)			Received by: (Signature)		

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Boring-N	Date Reported:	01-25-93
Laboratory Number:	4512	Date Sampled:	01-19-93
Sample Matrix:	Water	Date Received:	01-19-93
Preservative:	HgCl & Cool	Date Analyzed:	01-23-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	5.2	1.4
Toluene	16.6	2.6
Ethylbenzene	18.0	0.9
p,m-Xylene	97	2.0
o-Xylene	57	1.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	129 %
Bromfluorobenzene	147 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Shiprock, New Mexico. High surrogate recoveries due to coelution with hydrocarbon.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Boring N	Date Reported:	01-25-93
Laboratory Number:	4512	Date Sampled:	01-19-93
Sample Matrix:	Water	Date Received:	01-19-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.8	0.3
Diesel Range (C10 - C28)	1.5	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.3	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco, Bond & Bond	Project #:	91346
Sample ID:	Boring-N	Date Reported:	01-21-93
Laboratory Number:	4512	Date Sampled:	01-19-93
Sample Matrix:	Water	Date Received:	01-19-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.4
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	2.0
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Boring-N
Laboratory Number: 4512

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	101 %
Bromofluorobenzene	96 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Bond & Bond, Shiprock, N.M.

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Boring-N @ 5.5-7'	Date Reported:	01-25-93
Laboratory Number:	4513	Date Sampled:	01-19-93
Sample Matrix:	Soil	Date Received:	01-19-93
Preservative:	Cool	Date Extracted:	01-19-93
Condition:	Cool & Intact	Date Analyzed:	01-22-93
		Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	423	38.3
Toluene	478	38.3
Ethylbenzene	109	38.3
p,m-Xylene	401	38.3
o-Xylene	153	38.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	98 %
Bromfluorobenzene	94 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

ND - Parameter not detected at the stated detection limit.

Comments: Shiprock, New Mexico.

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco - Bond & Bond	Project #:	91346
Sample ID:	Boring N @ 5.5' - 7.0'	Date Reported:	01-21-93
Laboratory Number:	4513	Date Sampled:	01-19-93
Sample Matrix:	Soil	Date Received:	01-19-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1.8	0.6
Diesel Range (C10 - C28)	33.2	0.8
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	35.0	0.8

Method: Method 8015, Nonhalogenated Volatile Organics
Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Bond & Bond, Shiprock, N.M.

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	Permco, Bond & Bond	Project #:	91346
Sample ID:	Boring-n @ 5.5'- 7.0'	Date Reported:	01-21-93
Laboratory Number:	4513	Date Sampled:	01-19-93
Sample Matrix:	Soil	Date Received:	01-19-93
Preservative:	Cool	Date Analyzed:	01-20-93
Condition:	Cool and Intact	Analysis Requested:	8010

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Chloromethane	ND	25.5
Vinyl Chloride	ND	25.5
Bromomethane	ND	64
Chloroethane	ND	64
1,1-Dichloroethene	ND	12.8
trans-1,2-Dichloroethene	ND	12.8
1,1-Dichloroethane	ND	8.9
Chloroform	ND	6.4
1,1,1-Trichloroethane	ND	6.4
Carbon tetrachloride	ND	12.8
1,2-Dichloroethane	ND	4.8
Tricholoroethene	ND	12.8
1,2-Dichloropropane	ND	26.1
Bromodichloromethane	ND	12.8
trans-1,3-Dichloropropene	ND	38.3
1,1,2-Trichloroethane	ND	2.6
Tetrachloroethene	ND	3.8
Dibromochloromethane	ND	11.5
Bromoform	ND	25.5
1,1,2,2-Tetrachloroethane	ND	3.8

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Boring-n @ 5.5'- 7.0'
Laboratory Number: 4513

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	100 %
Bromofluorobenzene	94 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Bond & Bond, Shiprock

Analyst

Review

CHAIN OF CUSTODY RECORD

/Project Name Permco 91846
nd-t-Bond

Project Location
Shiprock, NM

er: (Signature)

Chain of Custody Tape No.

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX	8015 TPH	8010				Remarks
mg-N	1/19/93	11:15	4512	Water	2	✓	✓	✓				
@55-7.0 mg-N	1/19/93	1150	4513	Soil	1	✓	✓	✓				
AVEL BLANK	Rmy											

ished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	1/19/93	1653	Linda Pender	1-19-93	1653
shed by: (Signature)			Received by: (Signature)		
shed by: (Signature)			Received by: (Signature)		

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # M	Date Reported:	01-22-93
Laboratory Number:	4529	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-21-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	0.5	0.3
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: MW # M
Laboratory Number: 4529

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	92 %
Bromofluorobenzene	90 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock, Monitor Wells

Analyst

Review

ENVIROTECH LABS
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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # M	Date Reported:	01-25-93
Laboratory Number:	4529	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.9	0.3
Diesel Range (C10 - C28)	1.3	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.2	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # M	Date Reported:	01-25-93
Laboratory Number:	4529	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl & Cool	Date Analyzed:	01-23-93
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.4
Toluene	ND	2.6
Ethylbenzene	ND	0.9
p,m-Xylene	ND	2.0
o-Xylene	ND	1.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
Bromfluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # L	Date Reported:	01-22-93
Laboratory Number:	4530	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-21-93
Condition:	Cool & Intact	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.3
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: MW # L
Laboratory Number: 4530

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	93 %
Bromofluorobenzene	89 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco Shiprock, Monitor Wells

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # L	Date Reported:	01-25-93
Laboratory Number:	4530	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.6	0.3
Diesel Range (C10 - C28)	1.5	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.1	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # L	Date Reported:	01-26-93
Laboratory Number:	4530	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	1.4	1.2
Toluene	ND	2.1
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # D	Date Reported:	01-25-93
Laboratory Number:	4531	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.5	0.3
Diesel Range (C10 - C28)	1.7	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.2	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # D	Date Reported:	01-26-93
Laboratory Number:	4531	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	0.7	0.5
p,m-Xylene	1.7	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	111 %
Bromfluorobenzene	104 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # I	Date Reported:	01-25-93
Laboratory Number:	4532	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.7	0.3
Diesel Range (C10 - C28)	1.4	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.1	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # I	Date Reported:	01-26-93
Laboratory Number:	4532	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	0.6	0.5
p,m-Xylene	1.7	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromfluorobenzene	99 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # A	Date Reported:	01-25-93
Laboratory Number:	4533	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	1.4	0.3
Diesel Range (C10 - C28)	24.3	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	25.7	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Denise L. Spencer
Analyst

Morris D. Young
Review

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # A	Date Reported:	01-26-93
Laboratory Number:	4533	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	2.4
Toluene	ND	4.2
Ethylbenzene	33.5	1.0
p,m-Xylene	23.1	3.2
o-Xylene	2.3	1.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	105 %
Bromfluorobenzene	101 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # B	Date Reported:	01-25-93
Laboratory Number:	4534	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.7	0.3
Diesel Range (C10 - C28)	1.3	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.0	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # B	Date Reported:	01-26-93
Laboratory Number:	4534	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	ND	0.5
p,m-Xylene	2.2	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	103 %
Bromfluorobenzene	104 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # G	Date Reported:	01-25-93
Laboratory Number:	4535	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	Cool	Date Analyzed:	01-22-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	0.9	0.3
Diesel Range (C10 - C28)	1.4	0.3
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	2.3	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Monitor Wells

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	MW # G	Date Reported:	01-26-93
Laboratory Number:	4535	Date Sampled:	01-20-93
Sample Matrix:	Water	Date Received:	01-20-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	ND	0.5
p,m-Xylene	2.0	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	86 %
Bromfluorobenzene	92 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Monitor Wells.

Analyst

Review

91346

CHAIN OF CUSTODY RECORD

Client/Project Name: PEMCO Ship Rock

Project Location: ~~MONITOR WELL~~ monitor wells

Sampler: (Signature) Tommy Coddington

Chain of Custody Tape No.

ANALYSIS/PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8010	8015 TPH	BTEX 8020				Remarks
MW # M	1/20/93	10:45	4529	WATER	2	✓	✓	✓				
MW # L	1/20/93	11:15	4530	WATER	2	✓	✓	✓				
MW # O	1/20/93	14:30	4531	WATER	2		✓	✓				
MW # I	1/20/93	14:20	4532	WATER	2		✓	✓				
MW # A	1/20/93	15:00	4533	WATER	2		✓	✓				
MW # B	1/20/93	15:10	4534	WATER	2		✓	✓				
MW # G	1/20/93	14:05	4535	WATER	2		✓	✓				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Tommy Coddington	1/20/93	17:00	Linda Pender	1-20-93	1700
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Travel Blank	Date Reported:	01-26-93
Laboratory Number:	4547	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-25-93
Preservative:	HgCl and Cool	Date Analyzed:	01-25-93
Condition:	Cool and Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
Bromfluorobenzene	92 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Bond's true value hardware.

Analyst

Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS

Client:	Permco Shiprock	Project #:	91346
Sample ID:	Travel Blank	Date Reported:	01-26-93
Laboratory Number:	4547	Date Sampled:	01-11-93
Sample Matrix:	Water	Date Received:	01-25-93
Preservative:	Cool	Date Analyzed:	01-26-93
Condition:	Cool and Intact	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range (C5 - C10)	ND	0.5
Diesel Range (C10 - C28)	ND	0.7
C28 - C44 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.7

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Permco, Shiprock, Bond's True Value Hardware

Analyst

Review

CHAIN OF CUSTODY RECORD

...t/Project Name	Project Location	ANALYSIS/PARAMETERS
PERMCO- SHIPROCK	BOND'S TRUE VALUE HARDWARE	
...pler: (Signature) Robert M Young	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX	8015-TPH					Remarks
...avel Blank	1-11-93	0805	4547	WATER	2	✓	✓					

...quished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert M Young	1-25-93	1300	Linda Pender	1-25-93	1300
...quished by: (Signature)			Received by: (Signature)		
...quished by: (Signature)			Received by: (Signature)		

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-13-93
Laboratory Number:	0112TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-12-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-13-93
Laboratory Number:	0112PM2.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-12-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	1.2
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.8
o-Xylene	ND	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	106 %
Bromfluorobenzene	102 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-14-93
Laboratory Number:	0113VOL.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-13-93
Condition:	NA	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.9
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Laboratory Blank
Laboratory Number: 0113VOL.BLK

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	97 %
Bromofluorobenzene	106 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Denise L. Clemmer
Analyst

Morris D. Young
Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-13-93
Laboratory Number:	0113TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-13-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.3
Diesel Range C10 - C28	ND	0.5
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.5

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
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PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-14-93
Laboratory Number:	0114TP.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-14-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.4
Diesel Range C10 - C28	ND	2.4
Total Petroleum Hydrocarbons	ND	2.4

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-18-93
Laboratory Number:	0115TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-15-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.4
Diesel Range C10 - C28	ND	0.8
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.8

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-15-93
Laboratory Number:	0115TP.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-15-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.9
Diesel Range C10 - C28	ND	0.9
Total Petroleum Hydrocarbons	ND	0.9

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-18-93
Laboratory Number:	0117PM2.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-17-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.6
Toluene	ND	0.3
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.0
o-Xylene	ND	0.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	107 %
Bromfluorobenzene	106 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-18-93
Laboratory Number:	SLBA0118	Date Sampled:	NA
Sample Matrix:	Soil	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-18-93
Condition:	NA	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	10

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments:

Sheila Leftwich
Analyst

Marvin D. Young
Review

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** QUALITY ASSURANCE REPORT
MATRIX SPIKE - TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Spike	Date Reported:	01-18-93
Laboratory Number:	SLSA0118	Date Sampled:	NA
Sample Matrix:	Soil Spike	Date Received:	NA
Analysis Requested:	TPH	Date Analyzed:	01-18-93
Condition:	NA		

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spiked sample Result (mg/kg)	Percent Recovery
Total Petroleum Hydrocarbons	99.1	ND	103.5	104.4

QA ACCEPTANCE CRITERIA:

Parameter	Acceptance Range %
TPH	50 - 150

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

ND - Parameter not detected at the stated detection limit.

Comments:

Stella Leltman
Analyst

Morris D. Young
Review

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-18-93
Laboratory Number:	0118TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-18-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.1
Diesel Range C10 - C28	ND	0.6
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.6

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-18-93
Laboratory Number:	0118AM.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-18-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.6
Toluene	ND	0.7
Ethylbenzene	ND	0.4
p,m-Xylene	ND	1.2
o-Xylene	ND	0.6

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	99 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-19-93
Laboratory Number:	0118PM2.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-18-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.3
Toluene	ND	0.6
Ethylbenzene	ND	0.4
p,m-Xylene	ND	1.0
o-Xylene	ND	0.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	124 %
Bromfluorobenzene	106 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-20-93
Laboratory Number:	0119vol.blk	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-19-93
Condition:	NA	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.6
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Laboratory Blank
Laboratory Number: 0119vol.blk

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	85 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-20-93
Laboratory Number:	0119TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-19-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.3
Diesel Range C10 - C28	ND	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS

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EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-20-93
Laboratory Number:	0119AM2.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-19-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.3
Toluene	ND	0.7
Ethylbenzene	ND	0.4
p,m-Xylene	ND	1.1
o-Xylene	ND	0.5

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	84 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-21-93
Laboratory Number:	0120VOL.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-20-93
Condition:	NA	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.3
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Laboratory Blank
Laboratory Number: 0120VOL.BLK

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	90 %
Bromofluorobenzene	88 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-21-93
Laboratory Number:	0120BVOL.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-20-93
Condition:	NA	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.4
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	2.0
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

ENVIROTECH LABS
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EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Laboratory Blank
Laboratory Number: 0120BVOL.BLK

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	88 %
Bromofluorobenzene	96 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-21-93
Laboratory Number:	0120TPH.BLK	Date Sampled:	NA
Sample Matrix:	Methanol	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-20-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.6
Diesel Range C10 - C28	ND	0.8
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.8

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 1/2

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-22-93
Laboratory Number:	0121VOL.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-21-93
Condition:	NA	Analysis Requested:	8010

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Chloromethane	ND	2.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	5.0
Chloroethane	ND	5.0
1,1-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	0.7
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	1.0
1,2-Dichloroethane	ND	0.3
Tricholoroethene	ND	1.0
1,2-Dichloropropane	ND	0.4
Bromodichloromethane	ND	1.0
trans-1,3-Dichloropropene	ND	3.0
1,1,2-Trichloroethane	ND	0.2
Tetrachloroethene	ND	0.3
Dibromochloromethane	ND	0.9
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	0.3

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS
Pg 2/2

Sample ID: Laboratory Blank
Laboratory Number: 0121VOL.BLK

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Bromochloromethane	81 %
Bromofluorobenzene	88 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8010, Halogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS

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PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-22-93
Laboratory Number:	0122TPH.BLK	Date Sampled:	NA
Sample Matrix:	Hexane	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-22-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.3
Diesel Range C10 - C28	ND	0.3
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.3

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-25-93
Laboratory Number:	0122AM.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-22-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.2
o-Xylene	ND	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromfluorobenzene	104 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory blank	Date Reported:	01-25-93
Laboratory Number:	0122PM.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-22-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.4
Toluene	ND	2.6
Ethylbenzene	ND	0.9
p,m-Xylene	ND	2.0
o-Xylene	ND	1.0

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-26-93
Laboratory Number:	0125AM.BLK	Date Sampled:	NA
Sample Matrix:	Water	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-25-93
Condition:	NA	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	1.2
Toluene	ND	2.1
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.6
o-Xylene	ND	0.8

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	110 %
Bromfluorobenzene	100 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

ENVIROTECH LABS
5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

MODIFIED EPA METHOD 8015
NONHALOGENATED VOLATILE ORGANICS
TOTAL PETROLEUM HYDROCARBONS

Client:	NA	Project #:	NA
Sample ID:	Laboratory Blank	Date Reported:	01-26-93
Laboratory Number:	0126TPH.BLK	Date Sampled:	NA
Sample Matrix:	Hexane	Date Received:	NA
Preservative:	NA	Date Analyzed:	01-26-93
Condition:	NA	Analysis Requested:	TPH

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Gasoline Range C5 - C10	ND	0.5
Diesel Range C10 - C28	ND	0.7
C28 - C36 Range	ND	0.1
Total Petroleum Hydrocarbons	ND	0.7

Method: Method 8015, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments:

Analyst

Review

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Shiprock Agency
P.O. Box 966
Shiprock, New Mexico 87420-0966

IN REPLY REFER TO:

ENTERED FEB 2 2 1993

FEB 1 9 1993

Mr. Robert M. Young
Envirotech, Inc.
5797 U.S. Highway 64-3014
Farmington, New Mexico 87401

Dear Mr. Young:

Per letter dated January 18, 1993, all available information requested concerning Bond's True Value Hardware, Project #91346, is as follows:

1. Mr. Dale Bond was the original lessee, who subsequently sold to the current lease holders. The only known underground gasoline storage tanks are those presently being mitigated.

2. The area to the west, between the subject property and San Juan River has never been developed, nor does it have any known existing groundwater wells. There are inlet water pipes in the area but they draw water directly from the river at a pump house situated southwesterly from the site. Sewer lines traverse the area.

3. No extensive records exist to accurately document all of the activities that may have been conducted on or near the port of entry location. The area immediately to the east was the site of the Nataani Nez Motel and Restaurant. No other information is available.

4. All existing utilities to the site are known to have remained the same.

5. There are no known spill incidents having occurred in the immediate area of the subject site, except for the leakage from the tanks at the site.

6. No other information regarding wells is available for the immediate area.

7. Land fills are located approximately five (5) miles north of the site.

If there are any questions, please contact Mr. T. J. Namingha, Agency Realty Officer, at (505) 368-4427, extension 329.

Sincerely,

Lorie Wilkinson

ACTING Superintendent

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Rec'd 2-15-93 c-mhw

FEB 9 1993

Use Mail Code H-2-1
and Site # Nav-046
in all Correspondence
Certified Mail P 869 871 082

Mr. Michael K. Lane, P. E.
Envirotech Inc.
5796 U. S. Highway 64- 3014
Farmington, NM 87401

Dear Mr. Lane:

This correspondence refers to your letter of January 27, 1993 requesting an extension of time to submit the site assessment of the Bond & Bond service station located on U. S. Highway 666 in Shiprock, N.M. on land of the Navajo Nation.

EPA grants an extension of time of 30 days, beginning with the receipt of this letter at which time the site assessment must be submitted in accordance with the Code of Federal Regulations (CFR) 40 CFR 280.62 (b) and 280.63 (b). The vertical and horizontal extend of the release must be clearly defined in the assessment.

A confirmed release of a regulated substance from an UST system must be followed by corrective action according to 40 CFR 280.52 (b) (1) and 280.61.

Within 45 days of receipt of this letter a corrective action plan must be submitted to EPA.

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Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recovery Act (RCRA), as amended, EPA requires that you furnish the above information within **30 days** of the receipt of this letter. **Your immediate attention is needed in this matter.** If You have any questions, please contact me at (415) 744- 2078.

Sincerely,

Matt Small

Matthew Small, Hydrogeologist
Native American Lands
Office of Underground Storage Tanks

cc: Norma Cady,Navajo EPA
Chuck Dowell, IHS
Leonard Robbins, BIA
Marlo L.Webb, Permco
Charles Foutz, Bond & Bond
Reading File
Site File

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United Stated Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Owner Designated Representative
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small:

As indicated in Envirotech's letter of December 11, 1992, PERMCO has retained Envirotech to perform the requested site assessment for the underground storage tank (UST) spill reported during the UST removal on August 30, 1991.

Per your request, this letter is to confirm PERMCO's designation of Envirotech Inc. as its repersentative with regards to this matter.

Further Permco is requesting an extension to complete the investigation pending laboratory results. The attached letter from Envirotech outlines the work to date.

Thank you for your assistance. Please contact me or Envirotech if you have any questions regarding this matter.

Sincerely,

Mario L. Webb
Partner

Attachment

cc: Envirotech, Inc.

MKL/mkl 1346DSGN.LTR

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

January 27, 1993

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United States Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Investigation Summary & Extension Request Project # 91346
Permco-Shiprock/ Bond & Bond Service Station
On-site Spill Investigation
Shiprock, Navajo Nation, New Mexico.

Dear Mr. Small;

This letter is a request for extension and summarizes the spill incident investigation being conducted at the referenced Permco site located on U.S. Highway 666, in Shiprock, Navajo Nation, New Mexico.

On November 13, 1992 your office requested that Permco conduct a spill investigation. The findings of this investigation were to be submitted by January 26, 1993.

Mr. Marlo Webb, of Permco, has retained Envirotech, Inc. to perform the spill investigation. Efforts have been made to attain permission to conduct exploratory subsurface drilling on properties adjacent to the site. In order to meet the January 26, 1993 deadline, the investigation was limited to the subject property. As of January 21, 1993 the field portion of the investigation has been completed; including field reconnaissance, site audit, exploratory subsurface drilling of fourteen (14) test borings, construction/development of eight (8) groundwater monitor wells, and soil and groundwater sampling and submittal for laboratory analysis. The "Site Diagram" attached shows the location of the test borings and monitor wells.

Laboratory results are anticipated by February 1, 1993. We anticipate completion of our report summarizing the findings of this investigation will follow within a few days of receipt of the results.

Based on the field screening and preliminary laboratory results, it appears that most of the soil and dissolved phase groundwater contamination is limited to the subject site. A hydrocarbon sheen was observed at some test boring locations, but no free product was observed.

We request a time extension to complete the report upon receipt of the laboratory analytical results.

Thank you for your cooperation with this project. Should you have any question regarding our field exploration or the status for completion of this investigation, please contact us at 505-632-0615.

Respectfully submitted,
ENVIROTECH Inc.

Robert M Young

Robert M. Young
Environmental Biologist

Reviewed By,

Michael K. Lane, P.E.
Geological Engineer

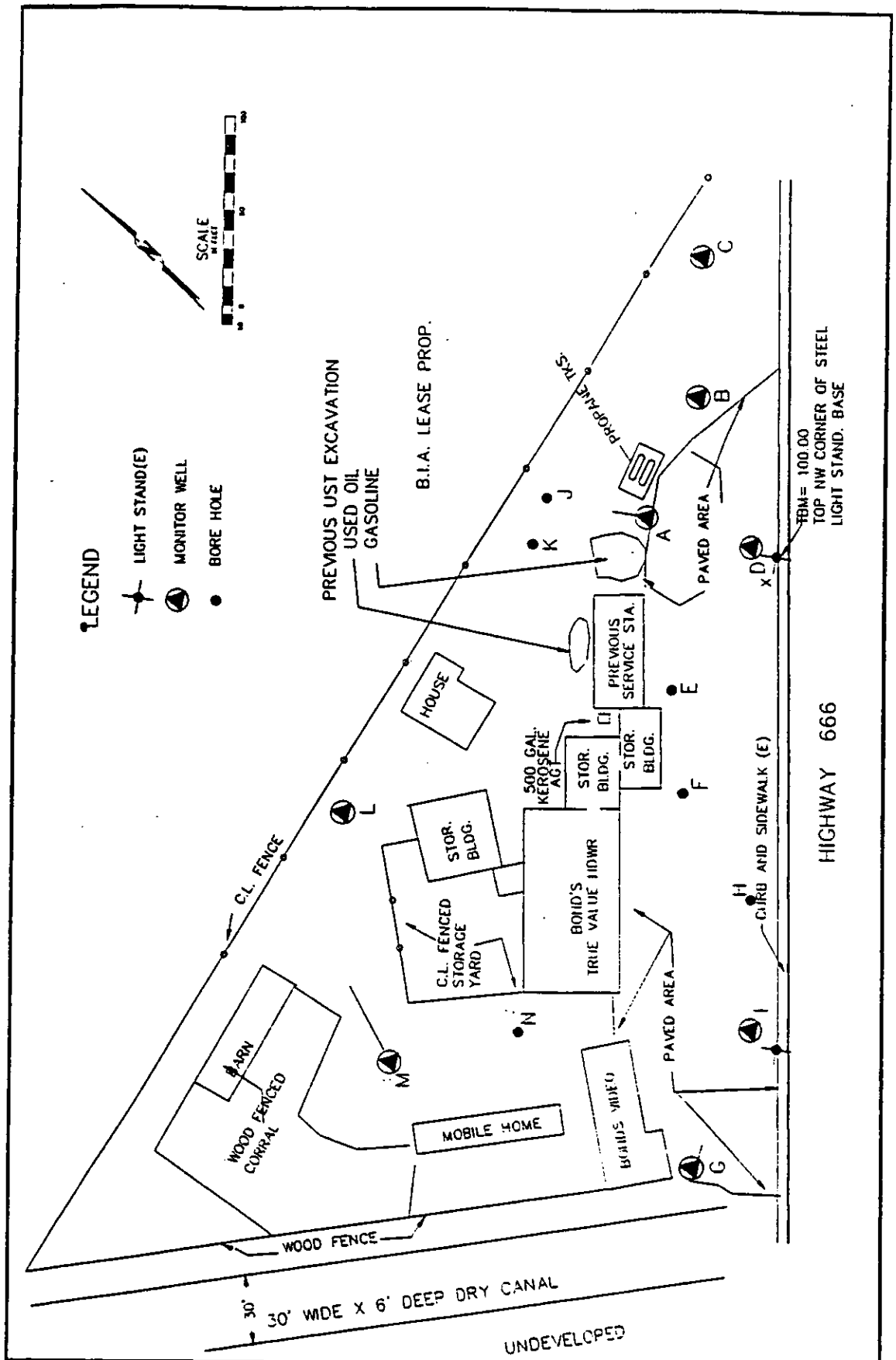
Attachment: Site Plan (1/25/93)

cc: Ms. Norma Cady
Navajo EPA

Mr. Marlo Webb
Permco, Inc.

RMY/rmy

1346EXT.LTR



PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT
SITE DIAGRAM PROJECT NO. 91346		PROJ. MGR. RMY / DRW. BY DEF / 1-25-93
		REVISIONS

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Shiprock Agency
P.O. Box 966
Shiprock, New Mexico 87420-0966

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

JAN 19 1993

Mr. Robert M. Young
Environmental Biologist
Envirotech Inc.
5796 U.S. Highway 64-3014
Farmington, New Mexico 8701

Dear Mr. Young:

Your request to conduct drilling on the bureau compound is hereby granted. Please provide us with a finalized evaluation of the drilling and subsequent findings.

If you have any further questions on this matter, please contact Mr. Theodore Namingha, Realty Officer, at (505) 368-4427, Ext. 329.

Sincerely yours,

Randy D. Cornett

ACTING Superintendent

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

91346

Certification of Waste Status

Originating location Bond & Bond Service Station
U. S. HIghway 666
Shiprock, Navajo Nation, New Mexico

Disposal Location: Envirotech Soil Remediation Site, Hilltop, NM

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by EPA's July 1988 Regulatory Determination and that non-exempt waste that is a "hazardous waste" pursuant to the provisions of 40 CFR, Part 261, Subparts C and D, has not been added or mixed with the exempt waste in such a manner so as to make the resultant mixture a "hazardous waste" pursuant to the provisions of 40 CFR, Section 261.3(b)."

Signature Marlo L. Webb

Name, Date Marlo L. Webb, 1-18-93

Company PERMCO

Address P. O. Box 127
Farmington, N. M. 87499

Please complete, sign and return a copy to Envirotech Inc.
Fax # 505-632-1865

731.doc

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

FILE COPY

January 18, 1993

Alyce Rouwalk
Superintendant
Shiprock Agency — OF WHAT BIA?
P.O. Box 966
Shiprock, NM 87420

Re: Bond's True Value Hardware
EPA Hydrogeological Spill Investigation
Shiprock, New Mexico.

Project # 91346

Dear Mrs. Rouwalk,

This letter is to formally request a lease records search of the property that Bond's True Value Hardware is located upon, and the properties immediately adjacent to this property. The adjacent properties include: BIA Offices, located adjacent to the north of the subject property, the unimproved tract of land located to the west of the subject property (between Bond's and the San Juan River), and the property that the Port of Entry is currently located on, located to the south of the subject property. In addition to these four properties, we would like to request some information concerning US Highway 666, immediately adjacent to the Bond's location. All of the properties concerned are located in Shiprock, New Mexico.

The specific information that we request concerning these properties include, but is not limited to: Former businesses and type of business conducted, name of primary lesee and phone number (current, if possible), and the location of any above ground or any underground storage tanks and the size and contents, if possible. Additional historical information that would be crucial to our investigation include: Reported spill incidences within Shiprock City Limits (either hazardous or non-hazardous), location of prior utilities adjacent to the subject property, locations of petroleum product transmition lines (ie. natural gas or crude oil) adjacent to the subject property, location of nearest recorded landfill, location of the nearest pertoleum wells or explorational activities, location of nearest water wells, and the nearest use of groundwater (not including wells).

We greatly appreciate your efforts in performing this request, as as the EPA requires such pertinent information vital to a Site Investigation. Should any further information be needed from us, please contact us at 505-632-0615.

Thank You for your time and support involving this matter.

Respectfully submitted,
ENVIROTECH Inc.

Robert M. Young

Robert M. Young
Environmental Biologist

1346lrs.ltr

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

January 15, 1993

Alyce Rouwalk
Superintendant
Shiprock Agency
P.O. Box 966
Shiprock, NM 87420

Re: Bond's True Value Hardware — Project # 91346
EPA Hydrogeological Spill Investigation
Shiprock, New Mexico.

Dear Mrs. Rouwalk,

This letter is to formally request a permit that grants permission to advance test borings and install monitor wells on the vacant property that is located immediatey west of and adjacent to the property leased by Bond's True Value Hardware, Shiprock, NM. This vacant property is roughly bounded on the south by US Highway 666, on the east by Bond's, and on the west by the San Juan River.

Envirotech, Inc. has been retained by Mr. Marlo Webb, of Permco, to perform a due diligence spill investigation associated with possible hydrocarbon contamination from previously removed underground storage tanks, which were located on the subject property. To meet EPA Guidelines for this type of investigation, the possibility of contamination to adjacent properties must be addressed.

The anticipated scope of work that would involve the vacant property at this time includes advancing several 8" test borings, utilizing a truck mounted CME-55 drill rig. Where applicable, monitor wells will be installed in appropriate borings. Borings that are advanced will either be backfilled and sealed with grout, or 2" monitor wells will be emplaced. All anticipated wells will be protected either by flush-mount well protectors, or by clearly marked 24" risers. All cuttings will be removed from the property for proper disposal.

Future involvement for this property will most likely consist of a technician from Envirotech, Inc. entering the property to develop the wells, and reentering the property on a quarterly basis to obtain samples from the wells. This quarterly sampling procedure will be discrete and unobtrusive, and will continue for the next few years.

We request that you grant a timely decision on this matter. A deadline of January 26, 1993 has been imposed by the EPA for conclusions reguarding our investigation, and the most beneficial conclusions for all parties involved will include investigation of all possible properties involved.

Thank You for your consideration involving this matter.

Respectfully submitted,
ENVIROTECH Inc.

Robert M Young

Robert M. Young
Environmental Biologist

1346pert.ltr

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

January 13, 1993

ALYCE ROUWALK
SUPERINTENDENT
SHIPROCK AGENCY
P.O. BOX 966
SHIPROCK, NM 87420

Re: Bond's True Value Hardware
EPA Hydrogeological Spill Investigation
Shiprock, New Mexico.

Project # ~~92183~~ 91346

Dear Mrs. Rouwalk

This letter is to formally request permission to advance test borings and install monitor wells on the property that is currently leased by the Bureau of Indian Affairs (BIA), located adjacent to the property leased by Bond's True Value Hardware, Shiprock, NM.

Envirotech, Inc. has been retained by Mr. Marlo Webb, of Permco, to perform a due diligence spill investigation associated with possible hydrocarbon contamination from previously removed underground storage tanks, which were located on the subject property. To meet EPA Guidelines for this type of investigation, the possibility of contamination to adjacent properties must be addressed.

The anticipated scope of work that would involve the BIA lease at this time includes advancing several 4" test borings, utilizing a CME-55 drill rig. Where applicable, monitor wells will be installed in appropriate borings. Borings that are advanced will either be filled with grout and sealed shut, or 2" monitor wells will be emplaced using flush-mount well protectors, to alleviate any possible inconvenience to people that use the BIA property. All cuttings will be removed from the property.

Thank You for your consideration involving this matter.

Respectfully submitted,
ENVIROTECH Inc.

Robert M. Young

Robert M. Young
Environmental Biologist

1346perm.ltr

ENVIROTECH INC.

UNDERGROUND TANK TESTING • SITE ASSESSMENT • SITE REMEDIATION

5796 U.S. HIGHWAY 64 - 3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

December 11, 1992

Mr. Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

RE: Permco/Bond & Bond Service Station
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico

Project No. 91346

Dear Mr. Small,

PERMCO has retained Envirotech Inc. to perform a site assessment for the underground storage tank (UST) spill reported during the UST removal on August 30, 1991.

As per your letter dated November 13, 1992 USEPA has determined that PERMCO is a responsible party for the subject spill. PERMCO has and still maintains that the spill incident occurred prior to the installation of the tanks they supplied and that upon installation of the subject USTs, title passed to the Navajo Nation as a permanent improvement to their property. PERMCO provided the tanks to the site lessee, but was never the lessee or operator of the tanks. Never-the-less, under protest, PERMCO will comply with your order and has authorized Envirotech Inc. to perform the site investigation.

The UST CLOSURE REPORT submitted to your office September 5, 1991 by PERMCO compiled the information requested as an "Initial Abatement Summary Report" in your March 13, 1992 correspondence over the signature of Patricia D. Eklund.

The requested site investigation to define the vertical and lateral extent of the release will be performed as required. It will take approximately 45 days to do the site drilling, sampling, analysis, and report preparation to define the hydrocarbon plume composition and boundaries. The site investigation report will be forwarded to your attention upon completion.

We look forward to working with your office on this project and appreciate the help and consideration USEPA has always extended.

Sincerely,

Morris D. Young

Morris D. Young
President

cc: Marlo Webb, PERMCO

MDY/kls

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

Rec'd 11-20-92

NOV 13 1992

In Reply Refer To: H-2-1
Site: NAV-046

Charles Foutz
Bond & Bond Service Station
U.S. Highway 666
Shiprock, Navajo Nation, New Mexico 87420

Certified Mail: P 869 871 062

Marlo Webb
PERMCO
PO Box 127
Farmington, NM 87401

Certified Mail: P 869 871 063

Dear Messrs. Foutz and Webb:

This letter is our final request for a corrective action plan prior to pursuing enforcement action for the Bond and Bond site in Shiprock, New Mexico as requested in our letter of May 5, 1992 to Mr. Webb. You must provide the requested plan within 30 days of receipt of this letter to avoid possible enforcement action described below.

Neither the undated letter postmarked May 7, 1992 from Mr. Foutz, nor the telephone conversation between Matt Small of he U.S. Environmental Protection Agency (EPA) and Marlo Webb of PERMCO on May 11, 1992 modifies the EPA's determination that PERMCO is the owner and Mr. Charles Foutz of Bond and Bond Service Station, is the operator of a leaking tank removed from the site in August 1991.

Pursuant to Section 9005 of the Resource Conservation and Recovery Act (RCRA) [42 U.S.C. §6991(d)], as amended, EPA requires that you furnish the requested information within the specified time. **YOUR IMMEDIATE ATTENTION IS NEEDED IN THIS MATTER.** Pursuant to §9006 of RCRA [42 U.S.C.6991(e)], refusal to provide the requested information by the specified deadline may result in the

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issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact me at (415) 744-2078, or Troy Harper at (415) 744-2082.

Sincerely,

Matt Small

Matthew C. Small, Hydrogeologist
Office of Underground Storage Tanks

Attachment

cc: Norma Cady, Navajo EPA
Leonard Robbins, Bureau of Indian Affairs
Chuck Dowell, Indian Health Service
Sam Coleman, U.S. EPA Region VI
Tom Mintz, U.S. EPA Regional Counsel

ATTACHMENT

Norma Cady, UST Program
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515 (602) 871-7691

Leonard Robbins
Bureau of Indian Affairs
Navajo Area Office
Environmental Quality Services
P.O. Box 1060, Code 305
Gallup, NM 87301 (505) 863-9501

Chuck Dowell
Indian Health Services
Box G
Window Rock, AZ 86515 (602) 871-5852

Sam Coleman
U.S. EPA Region VI
1445 Ross Avenue (6H-A)
Dallas, TX 75202-2733 (214) 655-6755

Tom Mintz
Office of the Regional Counsel
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105 (415) 744-1333

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

April 22, 1992

Patricia D. Eklund, Chief
Office of Underground Storage Tanks
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

RE: H-2-1, Site NAV 046

Dear Ms. Eklund.

PERMCO is in receipt of your March 13, 1992 letter requesting an investigation of suspected release at the Bond and Bond Service Station in Shiprock, New Mexico.

As stated in our previous correspondence, PERMCO's only involvement with this station was to loan the dispensing and storage equipment to Bond and Bond. As observed by Mr. Robert Hillger and Mr. Mathew Small, of your ofice, the contamination noted during the tank removal was obviously an old release not at all related to PERMCO's tanks. The soil directly under the tanks was clean tank bedding sand. The sand was not discolored or stained in any way. At approximately two (2) feet under each tank, the bedding sand interfaced with the native formation. This native soil was black stained and had a strong odor.

PERMCO's tank installation stopped with the bottom of the bedding sand. The native soil under our bedding sand was contaminated long before we installed the tanks. Several years ago when we installed these tanks, nobody paid attention to contamination or we never would have placed our equipment in such a location.

Again, we deny any responsibility for this old site and do not feel we should have to do any more work or spend any more money on a situation that is not of our doing.

Specifically, we request you remove PERMCO from your files of this incident in-as-much as we are not responsible for this situation.

Sincerely,
PERMCO

Marlo L. Webb
Partner
172.doc

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

MAR 13 1992

In reply refer to: H-2-1
Site: NAV 046
Certified Mail: P 887 519 158

Marlo Webb, Owner
PERMCO, Inc.
P.O.Box 127
Farmington, NM 87401

Mr. Charles Foutz, Operator
Bond and Bond Service Station
U.S. Highway 666
San Juan County
Shiprock, NM 87499

Dear Mr. Webb and Mr. Foutz:

This correspondence is in regard to the underground storage tank (UST) removal at Bond and Bond Service Station, located on U.S. Highway 666, Shiprock, New Mexico, on the Navajo reservation. The U.S. Environmental Protection Agency (EPA) has determined that PERMCO is the owner and Mr. Charles Foutz of Bond and Bond Service Station, is the operator.

As owners and operators of the USTs located at Bond and Bond Station, both parties are requlated under the Code of Federal Regulations, Subpart A, Program Scope and Interim Prohibition, Section 280.10. This states "The requirements of this part [Applicability] apply to all owners and operators of an UST system...". Since the USTs were leased to Bond and Bond Station on November 27, 1978 PERMCO remains owner of the USTs and Bond and Bond Service Station are the operators.

The EPA has received the UST Closure Report for the three USTs removed from the Bond and Bond Station dated September 1991. The closure report included the results of the analysis performed on the soil samples taken from beneath the USTs. The results from all seven of the samples analyzed have levels of benzene, toluene, ethylbenzene, and xylene that are higher than the New Mexico maximum allowable limits. The report states that the USTs were not intact and that holes were seen in the UST. It also indicates that further excavation was performed to remove the visibly contaminated soil.

Whether prior to or in conjunction with tank removal, a confirmed release of a regulated substance from an UST system

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must be followed by corrective action, according to the Code of Federal Regulations (CFR), 40 CFR §280.52(b)(1) and 280.61. This requires additional activities including, but not limited to:

1. Report the release to EPA and Tribal authorities within 24 hours [40 CFR §280.61].

2. Take initial abatement measures and site check [40 CFR §280.61].

   i. Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.

   ii. Prevent migration of the released substance in to surrounding soils and ground water.

   iii. Address any immediate threats to human health, safety, and the environment caused by the release (such as fire and safety hazards posed by vapors or free product).

   iv. Remedy any hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation or related UST activities.

   v. If free product is present, begin removal of the free product as soon as practicable.

3. Prepare an "Initial Abatement Summary Report" within 20 days of confirmed release or as required by EPA [40 CFR §280.63 and §280.64].

4. Investigate to define the vertical and lateral extent of the release [§280.62(b)], and submit a "Site Assessment" Report detailing these activities within 45 days of the confirmed release [§280.63(b)].

Note: in the interest of expediting corrective action, reports 3 and 4 above may be combined, or this information may be included in the Tank Removal report outlined above, contact EPA for approval.

5. Additional Reports regarding free product removal, risk assessment, corrective action activities, and site closure may also be required [40 CFR §280.65, §280.66, and §280.70 - §280.74].

Pursuant to §9005 [42 U.S.C. §6991(d)] of the Resource Conservation and Recover Act (RCRA), as amended, EPA requires that you furnish the above information within 30 days of the receipt of this letter. If no response is provided by either responsible party, enforcement action will be taken. **Your immediate attention is needed in this matter.** Pursuant to §9006 [42 U.S.C. §6991(e)] of RCRA, refusal to provide the requested

information by the specified deadline may result in the issuance of an administrative compliance order or the initiation of civil action, which may include an assessment of civil penalties of up to $10,000 per tank for each day of violation. If you have any questions, please contact Matthew Small at (415) 744-2077.

Sincerely,

Patricia D. Eklund, Chief
Office of Underground Storage Tanks

cc: Norma Cady, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, US Department of Interior, BIA
Jim Duck, EPA Region VI
H-2-1 Reading File
Site File

Attachment: List of Contacts

Norma Cady
Navajo EPA
P.O. Box 308
Window Rock AZ 86515

Chuck Dowell
OEH, IHS
Box G
Window Rock AZ 86515

Leonard Robbins
US Department of Interior, BIA
Environmental Quality Services - Box 1060
Gallup NM 87301

Jim Duck
Office of Underground Storage Tanks
Region VI, Environmental Protection Agency
1445 Ross Avanue, 12th Floor Suite 1200
Dallas, TX 75202-2733

PERMCO
P. O. BOX 127
FARMINGTON, NEW MEXICO 87401

November 27, 1991

United States Environmental Protection Agency
75 Hawthrone St.
San Francisco, CA 94105

Attention: Ms. Patricia Eklund

Dear Ms. Eklund:

Following up my phone conversation today with Darlene McCray, I am enclosing a copy of our loaned equipment agreement on the tanks that were removed from the Bond & Bond & Company service station at Shiprock, N. M.. The date of the agreement is the date the tanks were installed by us.

As explained to Ms. McCray we did not own or operated the service station. We installed the tanks for the privilege of doing business with Bond & Bond (a standard practice in the industry).

You will note that the loan agreement was signed by Farmington Oil Company (a corporation) which at that time was owned by the same pricipals that own the partnership of PERMCO. Farmington Oil Company had no ownership interest in the tanks but was a gasoline Jobber who supplied the station with product. We elected to have the agreement signed by Farmington Oil Company rather than PERMCO for operating reasons.

The principals of PERMCO do not now own Farmington Oil Co..

Please advise if you need additional information on this closure.

Sincerely,

PERMCO

Marlo L. Webb
Partner

PERMCO
P. O. BOX 187
FARMINGTON, NEW MEXICO 87401

October 28, 1991

United States Environmental Protection agency
75 Hawthorne St.
San Francisco, CA 94105

Attention: Robert Hillger, Coordinator
Native American UST Program

Gentlemen:

In your letter of October 21, 1991 you asked for follow up information on our tank removal at Shiprock, New Mexioc by Envirotech, Inc. which also indicated a leak.

A complete report of this closeu re was sent to Mr. Hillger on September 5, 1991 which included most if not all of the information you are now requesting. Please advise us which items you still lack so that we may comply with your request.

As was stated in Envirotech's report, we as owners of the tanks (leased to a 3rd party for operation) have and have never had any knowlege of any spill at this location. We further deny any responsibility for any spill or cleanup that may be required as there is solid evidence that the spill, if any, did not occur from our tanks as the soil for some distance immediately beneath the tanks was clean.

This station was in operation for many years before we installed our tanks and today there is a waste oil tank that has been overfilled for years in the same area and is obviously polluting the area.

Unless we hear from you as to further information needed from us we will consider this matter closed.

Sincerely,

Permco

Marlo L. Webb

Marlo L. Webb

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

21 OCT 1991

In Reply
Refer To: H-2-1
Certified Mail: P 470 095 781

Mr. Marlo Webb
Permco, Inc.
P.O. Box 127
Farmington, N.M. 87499

Dear Mr. Webb:

This letter is in response to a tank removal report submitted by Envirotech, Inc. on September 5, 1991 notifying our offices of the discovery and confirmation of leaking underground storage tanks at the following location:

Bond and Bond Service Station
U.S. Highway 666
Shiprock, San Juan County, New Mexico 87420

According to the Code of Federal Regulation 40 CFR Part 280, a confirmed release must be followed by corrective action [§§ 280.52(b)(1) and 280.61]. This requires additional activities including further investigation to define the vertical and lateral extent of the release [§ 280.62(a)(5), submittal of a report **summarizing** these activities within 20 days of the confirmed release [§ 280.62(b)] and submittal of a report **detailing** these activities within 45 days of the confirmed release [§ 280.63(b)]. The 'further investigation' may include additional excavation and sampling at the time of the tank removal.

The following list identifies the information requested by EPA pursuant to section 9005 of Resource Conservation and Recovery Act (RCRA). When the specific Federal regulation describing the required activities is referenced, it should be used as guidance in your response.

1. Copies of your UST Notification Form, for each tank to be removed, should normally be sent with the 30 day notification for removal but at least included in the tank closure report:

2. The tank removal report should include all documentation regarding the tank(s) removal and associated closure activities [§ 280.72(a)]; this report should be submitted within 30 days of the tank removal and should include but is not limited to:

a. The name and address of the subcontractor who performed the tank removal and date of removal;

b. The manifests for disposal of any tanks or current disposition and plans for disposal;

c. The manifests for any contaminated soil transported offsite;

d. A map of the area identifying adjoining properties;

e. A map of the site identifying location of the former tanks and exact sample locations and depths; include any and all existing and previously existing underground storage tanks at the site (please number tanks) including any and all materials historically stored in the tanks;

f. The exact sample locations, rationale for sampling locations, QA/QC for field collected samples, rationale for analyses, and a table of the analytical results referencing map locations [280.72(a)]; if gasoline was ever stored in the tank use both 8015 Modified for gasoline (TPH-gasoline) and EPA Method 8020 for gasoline (BTEX); if diesel was ever stored in the tank use the 8015 Modified for diesel (TPH-diesel); if fresh or waste oil was ever stored in the tank use EPA Method 418.1 (oil); if waste oil was ever stored in the tank use EPA Method 8010 (solvents) in addition to EPA Method 418.1;

g. The laboratory report for the sample analyses should clearly identify the EPA Methods used for analyses and laboratory QA/QC procedures followed; and,

h. The backfill used and current disposition of excavated soil.

All requested information should be submitted within 30 days. We appreciate your cooperation in this matter. If you have any questions, please call me at (415) 744-2076, or Troy Harper at (415) 744-2082.

Sincerely,

Robert W. Hillger

Robert Hillger, Coordinator
Native American UST Program

Enclosures

cc: Ed Dunn, US EPA Arizona
Sadie Hoskie, Navajo EPA
Chuck Dowell, OEH, IHS
Leonard Robbins, U.S. Department of Interior BIA
William Rhea, EPA Region IV

Attachment: List of Contacts

Ed Dunn
US EPA Arizona
1243 West Carla Vista Drive
Chandler, AZ 85224 (602) 963-8291

Sadie Hoskie
Navajo EPA
P.O. Box 308
Window Rock, AZ 86515

Chuck Dowell
OEH, IHS Box G
Window Rock, AZ 86515

Leonard Robbins
U.S. Dept. of Interior BIA
Environmental Quality Services
P.O. Box 1060
Gallup, NM 87301

William Rhea
US EPA Region IV
1445 Ross Avenue
Mailcode: 6H-A
Dallas, TX 75202-2733 (214) 655-6755

RECOMMENDED PRACTICES FOR THE PERMANENT CLOSURE OF UNDERGROUND STORAGE TANKS

General

This document provides general information on the permanent closure of underground storage tanks (USTs) that have contained regulated materials. Extreme care should be taken to reduce risks to life and the environment during UST in-place closure, removal, and disposal. This document does not substitute for appropriate knowledge, experience, and training in proper tank closure practices. Most owners or operators will hire a qualified contractor to close their tank systems.

Reference Documents

The following document is a recommended guideline for compliance with the federal tank closure regulations:

> API 1604, Removal and Disposal of Used Underground Petroleum Storage Tanks, December 1987. Published by the American Petroleum Institute, 1220 L Street, N.W., Washington, D.C., 20005. Telephone: (202) 682-8000.

Safety Precautions

Permanent closure by removing the tank is the recommended practice for tanks that are no longer needed and are out of use. However, it is extremely important that proper removal procedures be followed.

All persons performing tank closure work should know about:

- All applicable environmental, fire, health and safety rules, regulations, and practices.
- The proper operation of equipment and methods for freeing tanks of vapors and testing for combustible vapors.
- The proper handling and disposal of substances likely to be encountered.

Care should be exercised to minimize exposure to petroleum products and soil contaminated with petroleum products. Avoid contact with any part of the body or inhaling gasoline vapors.

Environmental Precautions

Care should be exercised to prevent spilling of petroleum or chemical products onto the surface of, or into the ground during tank closure. Spills of 25

gallons or more into the ground or ground water must be reported to EPA within 24 hours. Spills of less than 25 gallons that have not been contained and cleaned up must also be reported.

Any contaminated soil and/or ground water discovered during the closure must be removed, treated, and disposed of in the manner approved by EPA.

Out-of-Service USTs

An UST system that has been out-of-service for 12 months must be permanently closed by removing the tank from the ground or filling the tank with an inert solid material as outlined below. A tank that meets the new or upgraded tank system requirements except for spill and overfill protection may remain out-of-service indefinitely without permanent closure.

Permanent Closure by Removal

(1) Notify the EPA in writing 30 days before beginning closure procedures on an UST system.

(2) Drain and flush all piping into the tank, being careful to avoid spilling any materials.

(3) Remove all liquid from the tank, using a hand pump if necessary. Remove all solids and/or sludge. Determine whether the materials removed from a tank exhibit toxicity characteristics and must, therefore, be disposed of as hazardous waste.

(4) Carefully dig down to the top of the tank.

(5) Remove any product lines; i.e., the gauge pipe, fill pipe, submersible pumps, and other tank fixtures.

(6) Cap or remove any non-product lines, leaving the vent line open until the tank is inerted (purged of vapors).

(7) Temporarily close off all other openings in the tank so that all vapors can be vented through the vent line during the inerting process.

(8) Inerting should be performed using one of the following methods:

- Inert the tank with dry ice, 1.5 pounds per 100 gallons of capacity. The dry ice should be evenly distributed over the bottom of the tank. During the process, precautions must be taken to prevent ignitions throughout the area that might be affected by the vapors.

- Ventilate the tank with air using an eductor-type air mover. Such a device usually uses compressed air to cause the vapors to be drawn out of the tank. For this method, leave the drop tube in place to

ventilate the bottom of the tank. Discharge the vapors a minimum of 12 feet above the ground using an eductor extension.

- Ventilate the tank with air, using a diffused air blower. The air pressure must not exceed 5 pounds per square inch.

- Inert the tank with a non-reactive gas, such as carbon dioxide or nitrogen. The internal tank pressure should not exceed 5 pounds per square inch.

- Fill the tank with water. Partially fill the tank and remove any floating product, being careful not to spill any water or product. Pump out the water and dispose of it in an approved manner.

(9) Monitor the vapor concentration levels in the tank and in the excavation area using a combustible gas indicator that has been maintained and calibrated according to the manufacturer's instructions. Once the indicator shows levels below 20 percent of the Lower Explosive Level (LEL), the tank is considered inerted and safe for removal. Some regions have chosen to use lower, more stringent LELs as deemed appropriate (e.g., Region VIII uses 10 percent).

(10) Plug or cap all holes leaving an 1/8 inch vent hole to prevent differential pressures from building up due to temperature differences.

(11) Complete the excavation and remove the tank. As a safety precaution the tank should be blocked with wood blocks to prevent it from moving after it is removed.

Disposal of the UST System

Contact your local steel scrap dealer for information on recycling of steel UST systems. Disposal at a landfill site is an alternative method of disposal; contact the local landfill for requirements.

Note: Owners and operators should determine if the tank exhibits toxicity characteristics and must, therefore, be disposed of as hazardous waste.

Transportation

Remove the tank from the site as soon as possible after the tank has been inerted and removed from the ground. Prior to transporting, check the atmosphere of the tank using a combustible gas indicator to ensure that it is below the lower explosive limit. Secure the tank on the truck with the 1/8-inch vent hole at the highest point. Transport the tank in accordance with all applicable local, state, and federal regulations (check with building, zoning, fire, and highway departments).

Permanent Closure In-Place

(1) Notify the EPA in writing 30 days before beginning to close a tank in place.

(2) Drain and flush all piping into the tank, being careful to avoid spilling.

(3) Remove all liquid from the tank, using a hand pump if necessary. Remove all solids and/or sludge. Determine whether the materials removed from a tank exhibit toxicity characteristics and must, therefore, be disposed of as hazardous waste.

(4) Carefully dig down to the top of the tank.

(5) Remove any product lines; i.e., the gauge pipe, fill pipe, submersible pumps, and other tank fixtures.

(6) Cap or remove any non-product lines, leaving the vent line open until the tank is inerted (purged of vapors).

(7) Temporarily close off all other openings in the tank so that all vapors can be vented through the vent line during the inerting process.

(8) Inert the tank using one of the methods described in Step 9 of "Permanent Closure by Removal" above.

(9) Fill the tank with a non-reactive solid material, such as:

- Concrete slurry mix. The preferred method. Fill the tank with concrete slurry mix. Add a wetting agent to the mixed concrete to reduce separation of the water from the sand and gravel.

- Sand. Sand that is free from rocks is suitable for filling. Fill the tank to nearly full and wash sand into the tank with a small amount of water, making sure that it flows to the ends of the tank. Avoid using large amounts of water.

- Sand and earth. Fill the tank with sand to nearly 80 percent of its capacity and fill the remaining capacity using a mixture of soil and water in a free-flowing mud.

Fill the tank completely to prevent future collapse of the tank and of any structure above the tank. It may be necessary to open the top of the tank to ensure that the sand, concrete, or sand and earth completely fills all areas.

(10) Plug or cap all openings in the tank, including the vent line unless the tank was opened during the process of filling with a non-reactive solid.

OMB NO. 2050-0042 Approval Expires 9/30/91
EPA form 7530-1 (Revised 9/89)

Notification for Underground Storage Tanks

State Agency Name and Address

STATE USE ONLY
ID NUMBER
DATE RECEIVED
A. Date Entered Into Computer _____
B. Data Entry Clerk Initials _____
C. Owner Was Contacted to Clarify Responses. Comments

TYPE OF NOTIFICATION

☐ A. NEW FACILITY ☐ B. AMENDED ☐ C. CLOSURE

____ No. of tanks at facility ____ No. of continuation sheets attached

INSTRUCTIONS

Please type or print in ink all items except "signature" in section V. This form must be completed for each location containing underground storage tanks. If more than five (5) tanks are owned at this location, photocopy the following sheets, and staple continuation sheets to the form.

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

a) In the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

b) in the case of any underground storage tank in use before November 8, 1984, but no longer is use on that date, any person who owned such tank immediately before the discontinuation of its use.

c) If the State agency so requires, any facility that has undergone any changes to facility information or tank system status (only amended tank information needs to be included).

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. Gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situate upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to under ground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Send completed forms to:

U.S. EPA, Region IX
Underground Storage Tank Section
1235 Mission Street
San Francisco, CA 94103

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use. 3. If the State requires notification of any amendments to facility send information to State agency immediately.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

Street Address

City State ZIP Code

County

Phone Number (Include Area Code)

II. LOCATION OF TANK(S)

If required by State, give the geographic location of tanks by degrees, minutes, and seconds. Examples Lat. 42, 36, 12 N Long. 85, 24, 17W

Latitude _____ Longitude _____

(If same as Section I, mark box here ☐)

Facility Name or Company Site Identifier, as applicable

Street Address (P.O. Box not acceptable)

City State Zip code

County Municipality

III. TYPE OF OWNER	IV. AN LANDS	
☐ Federal Government ☐ Commercial ☐ State Government ☐ Private ☐ Local Government	Tanks are located on land within an Indian Reservation or on other trust lands. ☐ Tanks are owned by native American nation, tribe, or individual. ☐	Tribe or Nation: _____

V. TYPE OF FACILITY

Select the Appropriate Facility Description

____ Gas Station	____ Railroad	____ Trucking/Transport
____ Petroleum Distributor	____ Federal - Non-Military	____ Utilities
____ Air Taxi (Airline)	____ Federal - Military	____ Residential
____ Aircraft Owner	____ Industrial	____ Farm
____ Auto Dealership	____ Contractor	____ Other (Explain) _____

VI. CONTACT PERSON IN CHARGE OF TANKS

Name	Job Title	Address	Phone Number (Include Area Code)

VII. FINANCIAL RESPONSIBILITY

I have met the financial responsibility requirements in accordance with 40 CFR Subpart H ☐

Check All that Apply

☐ Self Insurance	☐ Guarantee	☐ State Funds
☐ Commercial Insurance	☐ Surety Bond	☐ Trust Fund
☐ Risk Retention Group	☐ Letter of Credit	☐ Other Method Allowed Specify _____

VIII. CERTIFICATION (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true,accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)	Signature	Date Signed

EPA estimates public reporting burden for this form to average 30 minutes per response including time for reviewing instructions, gathering and maintaining the data needed and completing and reviewing the form. Send comments regarding this burden estimate to Chief, Information Policy Branch PM-223, U.S. Environmental Protection Agency, 401 M Street, Washington D.C. 20460, marked Attention Desk Officer for EPA." This form amends the previous notification form as printed in 40 CFR Part 280, Appendix I. Previous editions of this notification form may be used while supplies last.

IX. DESCRIPTION OF UN RGROUND STORAGE TANKS (Complete for ch tank at this location.)

.K Identification Number	Tank No.____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
1. Status of Tank (mark only one) Currently in Use					
Temporarily Out of Use (Remember to fill out section X.)					
Permanently Out of Use (Remember to fill out section X.)					
Amendment of Information					
2. Date of Installation (mo./year)					
3. Estimated Total Capacity (gallons)					
4. Material of Construction (Mark all that apply)					
Asphalt Coated or Bare Steel					
Cathodically Protected Steel					
Epoxy Coated Steel					
Composite (Steel with Fiberglass)					
Fiberglass Reinforced Plastic					
Lined Interior					
Double Walled					
Polyethylene Tank Jacket					
Concrete					
Excavation Liner					
Unknown					
Other, Please specify					
Has tank been repaired?					
5. Piping (Material) (Mark all that apply) Bare Steel					
Galvanized Steel					
Fiberglass Reinforced Plastic					
Copper					
Cathodically Protected					
Double Walled					
Secondary Containment					
Unknown					
Other, Please specify					
6. Piping (Type) (Mark all that apply)					
Suction: no valve at tank					
Suction: valve at tank					
Pressure					
Gravity Feed					
Has piping been repaired?					

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Identification Number	Tank No.____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
1. Status of Tank (Mark only one) — Currently in Use					
Temporarily Out of Use (Remember to fill out section X.)					
Permanently Out of Use (Remember to fill out section X.)					
Amendment of Information					
2. Date of Installation (mo./year)					
3. Estimated Total Capacity (gallons)					
4. Material of Construction (Mark all that apply)					
Asphalt Coated or Bare Steel					
Cathodically Protected Steel					
Epoxy Coated Steel					
Composite (Steel with Fiberglass)					
Fiberglass Reinforced Plastic					
Lined Interior					
Double Walled					
Polyethylene Tank Jacket					
Concrete					
Excavation Liner					
Unknown					
Other, Please specify					
Has tank been repaired?					
5. Piping (Material) (Mark all that apply) — Bare Steel					
Galvanized Steel					
Fiberglass Reinforced Plastic					
Copper					
Cathodically Protected					
Double Walled					
Secondary Containment					
Unknown					
Other, Please specify					
6. Piping (Type) (Mark all that apply)					
Suction: no valve at tank					
Suction: valve at tank					
Pressure					
Gravity Feed					
Has piping been repaired?					

...ication Numb... , of	Tank No.____	Tank No.____	Tank No. ____	Tank No. ____	Tank No. ____
...bstance Currently Last Stored In Greatest Quantity by Volume					
Gasoline					
Diesel					
Gasohol					
Kerosene					
Heating Oil					
Used Oil					
Other, Please specify					
Hazardous Substance CERCLA name and/or, CAS number					
Mixture of Substances Please specify					
X. TANKS OUT OF USE, OR CHANGE IN SERVICE					
1. Closing of Tank					
A. Estimated date last used (mo./day/year)					
B. Estimate date tank closed (mo./day/year)					
C. Tank was removed from ground					
D. Tank was closed in ground					
E. Tank filled with inert material Describe					
F. Change in service					
2. Site Assessment Completed					
Evidence of a leak detected					

XI. CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW AND UPGRADED TANKS AT THIS LOCATION)

Tank Identification Number	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
1. Installation					
A. Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
B. Installer certified or licensed by the implementing agency	☐	☐	☐	☐	☐
C. Installation inspected by a registered engineer	☐	☐	☐	☐	☐
D. Installation inspected and approved by implementing agency	☐	☐	☐	☐	☐
E. Manufacturer's installation check-lists have been completed	☐	☐	☐	☐	☐
F. Another method allowed by State agency. Please specify.	☐	☐	☐	☐	☐

2. Release Detection (Mark all that apply)	TANK	PIPING	TANK	PIPING	TANK	PIPING	TANK	PIPING	TANK	PIPING
A. Manual tank gauging	☐		☐		☐		☐		☐	
B. Tank tightness testing	☐		☐		☐		☐		☐	
C. Inventory controls	☐		☐		☐		☐		☐	
D. Automatic tank gauging	☐		☐		☐		☐		☐	
E. Vapor monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
F. Groundwater monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G. Interstitial monitoring double walled tank/piping	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
H. Interstitial monitoring/secondary containment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I. Automatic line leak detectors	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
J. Line tightness testing		☐		☐		☐		☐		☐
K. Other method allowed by Implementing Agency. Please specify.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	_____		_____		_____		_____		_____	

3. Spill and Overfill Protection					
A. Overfill device installed	☐	☐	☐	☐	☐
B. Spill device installed	☐	☐	☐	☐	☐

OATH: I certify the information concerning installation that is provided in section XI is true to the best of my belief and knowledge.

Installer: _____ Name _____ Signature _____ Date

_____ Position _____ Company

DUPLICATE
DO NOT SCAN

SPILL INVESTIGATION
PERMCO-SHIPROCK/BOND SERVICE STATION
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

PREPARED FOR
MR. MARLO WEBB
PERMCO

FEBRUARY 1993 **PROJECT NO: 91346**

SPILL INVESTIGATION
PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

PREPARED FOR
MR. MARLO WEBB
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PROJECT No: 91346

FEBRUARY 1993

ENVIROTECH Inc.
Environmental Scientists & Engineers
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FEBRUARY 1993 PROJECT No: 91346

SPILL INVESTIGATION
Permco-Shiprock/Bond & Bond Service Station
US HIGHWAY 666
SHIPROCK, NAVAJO NATION, NEW MEXICO

Mr. Marlo Webb, of Permco, has retained Envirotech Inc. to conduct a Spill Investigation to delineate the full extent of petroleum hydrocarbon contamination in the soil and groundwater at the Bond & Bond Service Station, Shiprock, Navajo Nation, New Mexico. A release was discovered during the removal for permanent closure of three underground storage tanks (USTs) in August, 1991.

This investigation was conducted to satisfy the release response and corrective action requirements for the owner and operator of USTs containing petroleum. These requirements are outlined in 40 CFR 280.65. The main investigator and Project Manager for this investigation was Mr. Robert M. Young of Envirotech Inc.

PURPOSE AND SCOPE OF SERVICES

The purpose of our investigation was to examine the subject site for the presence of a hydrocarbon spill and sample for soil and groundwater contamination, utilizing the State of New Mexico Environmental Department UST regulations protocol.

The scope of services includes the following:

A. Site reconnaissance with an audit of adjacent properties.

B. Review of water resource information.

C. Exploratory drilling with soil classification and testing of encountered subsurface soils.

D. Installation and development of groundwater monitoring wells.

E. Collection and laboratory analysis of soil and groundwater samples.

F. Preparation of this spill investigation report to document the findings of the field and laboratory results.

DISCUSSION AND CONCLUSIONS

This spill investigation was initiated as a result of suspected gasoline/hydrocarbon contamination at the subject property. The spill incident was identified during the removal for permanent closure of three USTs in August 1991. At that time, Mr. Marlo Webb indicated that the three USTs were emplaced 11 years prior. Mr. Webb also indicated that the USTs were emplaced into an existing excavation that was created by prior USTs being removed. No effort was made to assess if a release had occurred or if hydrocarbon contamination was present in the excavation at the time of the new UST's installation for Permco.

In addition to the possible prior contamination at the site, there are several other possible sources of hydrocarbon contamination. These are: a 500 gallon kerosine above ground storage tank (AGT), a used oil UST that was removed in 1992 by Envirotech for Bond & Bond, and possible surface spills associated with US Highway 666. Holes were reported in the used oil UST at the time of it's removal. Laboratory analysis indicated that the used-oil UST contained trace levels of chlorinated volatile organics (ie: solvents).

Additionally, reports indicate two alternate sources for hydrocarbon contamination at the site. These two alternate sources are reportedly: 1) the subject property was used as a bus fuelling stop in the 1930's and 1940's by Cannonball Bus Lines. Fuel is reported as being stored in USTs. The busses are assumed to have run on diesel, and 2) the west corner of the subject property was the location of the former Bond's Trading Post, which also allegedly contained USTs for retail sales of fuel.

According to Mr. Marlo Webb's distribution records, and to the best knowledge of Mr. Charles Foutz, current lease holder, gasoline was the only product to have ever been stored in the three UST's that were removed for Permco.

Although the primary focus of this investigation was to determine hydrocarbon contamination associated with gasoline, several laboratory analytical methods were used to characterize contamination encountered at the site. These methods include: BTEX (EPA 8020), TPH (EPA 8015), and Chlorinated Volatile Organics (EPA 8010).

Based on the field observations and laboratory results, the following conclusions can be made:

1. Groundwater flow is parallel to US Highway 666, in a south-southwest direction.

2. Soil and groundwater contamination appears to be primarily

limited to the site boundaries. Vertical extent is limited by groundwater, and horizontal extent appears to not exceed the property boundaries. Refer to the Hydrocarbon Contamination Maps in Appendix C

3. Laboratory analyses indicate the hydrocarbon contamination levels are at or below regulatory limits for soil and water as outlined in the New Mexico Underground Storage Tank Regulations (USTR). The exceptions are: 1)groundwater samples obtained immediately after drilling, which have levels above regulatory limits due to possible contamination factors, and 2)there is some soil contamination above current action levels located immediately surrounding the USTs and possibly underneath the former service station. Table 2 through Table 7 summarize the laboratory results.

4. The majority of the contamination appears to be from an old spill. This conclusion is due to the laboratory results showing high TPH with a low BTEX component. This combination indicates that the spill has been in place for long enough that natural degradation processes have allowed "light ends" of the spill to be removed, while leaving the more difficult to degrade "heavy ends" to remain in place.

5. The hydrocarbon contamination located on site appears to be from a diesel or heavier origin. Tables 4, 5, and 7 clearly indicate that the major component of this spill is from a heavier than gasoline origin.

6. Based on field findings and observations, there appears to be no vapor/explosion hazards expected in buildings and utilities. Contamination has only minor quantities of volatile components. Therefore, minimal problems associated with vapors are anticipated.

7. Currently, the contamination located on the subject property does not appear to threaten any surface water or any drinking water sources.

8. Contaminated soils are classified as non-hazardous waste, per RCRA Standards (40 CFR 261)

SITE DESCRIPTION

The subject property is owned by the Navajo Tribe and is currently leased to Mr. Charles Foutz, who operates the Bond's True Value Hardware. Also located on this property are: Bond's Video, several storage sheds and buildings, a house, a mobile home, a former restaurant, and a former service station. Immediately behind the former service station is the former location of a used oil UST, that was removed in May 1992 by Envirotech. This UST reportedly contained used oil and trace levels of chlorinated volatile organics. This UST was reported as leaking upon its removal.

The subject property is roughly planar with a step-like 3'-4' rise located immediately north of the retail buildings. The southern (and higher) part of this rise appears to be fill material which was used to bring the retail buildings to approximate grade with US Highway 666. The raised area between the buildings and US Highway 666 is paved with 3"-6" of asphalt. Surface drainage appears to travel to the west, towards the San Juan River.

Surface conditions at the site include: asphalt on the southern 1/3 of the property, and native low plasticity silty sand to sandy silt with minor clays covering the northern 2/3 of the property. These native soils are yellowish brown to medium brown, wet, loose to slightly firm, and slightly cohesive. Where native soils were exposed, there was moderate vegetative growth and several trees.

The only access to the subject property is from two different locations joining the subject property to US Highway 666. These are: on the far east end of the property, and from the center of the property, immediately in front of the hardware store.

Utilities associated with the site were located by the Navajo Tribal Utilities Authority and are as follows: buried electrical and telephone lines adjacent to US Highway 666, a buried and abandoned 2" natural gas transmission line that also borders US Highway 666, and a buried 2" natural gas transmission line that borders the northern fenceline on the subject property (several 1" laterals connecting the 2" main line to the buildings and mobile home on the subject property). Additionally, a 6" buried water main runs roughly north-south on the northwest 1/3 of the property, and several buried sewer lines are located on the northern 1/2 of the property. Refer to the Site Utilities Diagram in Appendix A for more complete details concerning approximate locations of the apparent utilities.

Neighboring properties include: Bureau of Indian Affairs (BIA) offices to the north (asphalt paved with offices), the State of New Mexico Port of Entry to the southeast and across US Highway 666 (asphalt roadways and parking slots with an associated office), and

an undeveloped tract of land that lies between the subject property and the San Juan River that apparently is not leased. All properties are owned by the Navajo Tribe.

Currently the subject property and the BIA lease property are controlled by Real Property, of the Shiprock Agency of the Bureau of Indian Affairs. Permission was granted to Envirotech, Inc. to perform this Spill Investigation on the subject property by Mr. Theodore Namingha, Realty Officer and/or Mr. Randy D. Cornett, Acting Superintendent of the Shiprock Agency. Mr. Cornett is currently Acting Superintendent in place of Ms. Alyce Rouwalk, Superintendent. The means by which permission was granted was under a "Scientific Research Exclusion", which apparently does not jeopardize a tenants lease in any way. Although permission was granted to access the BIA lease property, no effort was made to drill off of the subject property, based on preliminary field findings. A permit is required by the Navajo Tribe to investigate the unimproved area between the subject property and the San Juan River. At this time, the permit has been applied for, and no reply has been received from the Navajo Tribe.

GEOLOGY AND HYDROGEOLOGY

The site is situated in the Four Corners Platform west of the San Juan Basin in the Colorado Plateau physiographic province. The platform is a structural uplift containing Tertiary sedimentary fill and igneous rock formations covering rocks of the Late Cretaceous Era. The geomorphology of the site may be generally classified as alluvial fan and flood plains in the narrow drainage of the San Juan River and associated ephemeral stream systems.

Water Resource Information:

The San Juan River is located approximately 1/4 mile to the southwest of the subject property, and maintains a perennial flow in a northerly direction. Located adjacent to the southwest subject property border is a water channel that is approximately 30' wide and 6' deep. This channel was dry at the time of this investigation.

Based on the available records from the water wells in San Juan County, prior to 1978, the following water wells are within a one mile radius of the subject property:

Latitude Longitude	Number/Name	Depth to Water (ft)	Aquifer
364720/1084050	12X-300A	NA	Kd,Jm
364720/1084117	Hotel Shiprock	Spring	Km
364712/1084127	12K-300	NA	Kd,Jm
364659/1084124	USI8#17	NA	Qal

364649/1084140	12K-300B	6.2	Qal
364636/1084146	12T-520	NA	Jm
364649/1084153	NA	NA	Km

Where: Qal -Quaternary Alluvium
Kd -Dakota Sandstone
Jm -Morrison Formation
Km -NA
NA -Not Available

Records from two other sources on water wells for San Juan County did not have any listings on any water wells in the vicinity of the subject property. All information regarding water supplies are limited and not current.

The San Juan River and water wells USI8#17 and 12K-300 are located down gradient from the site. Water well 12K-300B is located to the southwest of the site, across the river. The other wells appear to be situated up gradient from the site. Refer to the Site Location Map in Appendix A for the approximate locations of the water wells relative to the subject property.

FIELD INVESTIGATION

This spill investigation was performed by Envirotech Inc. in January of 1993 as a follow up to the August 31, 1991 gasoline UST's removal, which identified a spill incident. It included the drilling of shallow test holes, the installation of shallow groundwater monitor wells, the measurement of relative groundwater levels, locations of all test borings and monitor wells at the site, and the collection and submittal of soil and groundwater samples for laboratory chemical analyses. At this time, per request of Mr. Charles Foutz, current lease holder and operator of the subject property, no effort has been made to investigate the spill incident that is associated with the May 13, 1992 removal of a used oil UST that was located on the subject property.

Field Exploration:

The field exploration, conducted from January 11 to January 19, 1993, consisted of 14 test borings advanced to depths ranging from 10' to 15-1/2' below existing ground surface (bgs). The borings were drilled with a truck mounted CME-55 drilling rig using an eight inch (8") diameter hollow stem auger. Locations of the test holes are presented in the Site Diagram, presented in Appendix A.

All auger, drill rod, and bits were steam cleaned prior to drilling and washed with a high-pressure washer between test holes to minimize the probability of cross-contamination.

Completion of Test Holes:

Eight of the 14 test holes were completed as groundwater monitor wells. The monitor wells were constructed using two inch (2") diameter threaded-coupling schedule 40 PVC casing. A screened section (0.02" slot size) was set approximately 2' above and approximately 5' below the groundwater level encountered during drilling. The screened interval was sand packed to a minimum of one foot (1') above the slotted interval with 8-12 mesh gradation silica sand and sealed with 3/8" bentonite pellets. Blank PVC was used to complete the wells to approximate site grade. Each monitor well was secured either with a seven inch (7") diameter bolt-down steel monitor well cover or with an above ground well protector, cement grouted, and locking cap installed. Refer to Appendix B for construction details each monitor well.

Borings not completed as monitor wells were plugged and abandoned by grouting to surface with Type II Portland Cement with 5% bentonite.

Following drilling and construction of the wells, all test hole locations were surveyed and well head elevations measured. The

well survey data is presented the Survey Data Table in Appendix B.

Water Level Measurements:

The groundwater levels reported on the boring logs in Appendix A were obtained during drilling, prior to monitor well completion of select test holes. After monitor well completion, all monitor wells were permitted to equilibrate. Equilibrated water levels were measured by Mr. Don Fallon, of Envirotech, on January 19, 1993 with an interface probe to the nearest 0.01 foot from the surveyed well head elevation point. The measured water levels are tabulated in the Survey Data Table in Appendix A.

Monitor wells were developed on January 18 and January 19, and sampled on January 19, 1993. The wells were developed by removing in excess of three well bore volumes or until the well bore was pumped off. For monitor wells L and M, an in line well developer was utilized, and for the remaining wells, a cleaned teflon bailer with a capacity of one liter (0.26 gal) was used.

Soil and Groundwater Sampling:

Split-tube soil samples were taken a minimum of every five feet from the surface to groundwater during drilling of the borings. The split-tube sampler was decontaminated with Alconox detergent in water and triple rinsed with water and deionized water prior to each sampling event.

Recovered soil samples were split; 1) a portion was placed in 475 mL glass sample containers and sealed with aluminum foil for hydrocarbon vapor testing, and when applicable, 2) a portion was placed in laboratory supplied clean 250 ml clear glass sample containers with teflon closures, placed on ice, and delivered to Envirotech's laboratory for analysis.

In some instances, cobbles interfered with the split-tube sampler, making sample retrieval impossible. In these few cases, samples that best represented the depth desired were taken from the cuttings, or from the auger as it was removed from the boring. Recovered cuttings were stockpiled on plastic sheets on site, and are awaiting approval for disposal.

Water samples were also collected from the borings and field tested for volatile hydrocarbons. The concentration of volatile hydrocarbons in both soil and water samples was determined by the Headspace Field Method (Underground Storage Tank Regulations, State of New Mexico, Environmental Improvement Board, Part XII, Appendix C, July 26, 1990) using a photoionization detector (PID), Model 580-B Organic Vapor Meter (OVM) manufactured by Thermo Environmental Instruments. The results of these screening measurements are presented on the boring logs in Appendix A. Logs

of the borings are included in Appendix A, and while the noted stratification lines represent approximate boundaries between soil types, the transitions may be gradual.

From select borings, groundwater samples were collected using a cleaned teflon bailer. Duplicate samples were taken through the center of the hollow stem auger and placed in new 40 ml VOA vials supplied by the laboratory. The samples were preserved with mercuric chloride and placed on ice prior to delivery to the laboratory. A trip blank was included with the sample set as a quality control screening procedure. The laboratory results and associated Chain-of-Custodies are presented in Appendix C.

After development, monitor wells were sampled using the same protocol as described above, and analyzed for BTEX (8020) and TPH (Modified 8015). In addition to the analytical samples obtained, each monitor well was tested for conductivity, pH, temperature, and the amount of water removed to insure proper development was recorded (see Monitor Well Completion Details-Appendix B). At this time, monitor well C remains undeveloped and unsampled due to excessive silt in the sand filter pack, and poor water recovery.

Analysis of OVM results and of laboratory results indicate that there is not a significant correlation between the two methods of analysis (see Appendix A). The lack of correlation is possibly due to the age of the hydrocarbon contamination, the possible multiple sources of contamination, limitations of BTEX/8020 analysis for detection of only gasoline components, and the ability of the OVM to detect compounds that are not of concern to this spill investigation.

SOIL AND GROUNDWATER CONDITIONS

This spill investigation was to primarily identify gasoline contamination on the site that was associated with the three USTs. However, due to possible multiple sources of contamination (ie: Permco's gasoline USTs, previous USTs on site, kerosine above ground storage tank, and the used oil UST), several laboratory analytical methods were utilized to determine the composition of the contamination. These methods are: BTEX from 8020 (Volatile Organics), TPH from 8015 (Modified: Non-Halogenated Volatile Organics), and 8010 (Halogenated Volatile Organics).

Evaluation of the subsurface site characteristics to the depths explored indicates the soil at the investigation site to be generalized as follows: low plasticity fine sandy silt to silty sand filled with fine gravel to cobble, slightly cohesive, loose to slightly firm. Soils at the groundwater interface and below appear to have a higher sand content, which would lead to increased permeability.

In the areas underneath the hardware store, video outlet, former service station, and parking lot there is approximately 3' of fill material to bring the area to the approximate grade of US Highway 666. This fill area is covered by asphaltic pavement from 3" to 6" in thickness. Immediately below the asphalt, the fill material is generalized as follows (to approximately 3' below the asphalt): coarse gravel and cobbles in fine, low plasticity silty sand to sandy silt, non-cohesive to slightly cohesive, loose to firm.

Except in those areas covered by asphaltic paving, the shallow top six inches (6") of soil were observed to be wet from seasonal precipitation and melting snow. Deeper soils became moist at just below the surface to saturated in the vadose zone above the free water level. Overall the soils were yellowish brown to medium brown, becoming variable in the vadose zone. The colors in the vadose zone ranged from light browns to grays and blacks. The gray and black discoloration may be due to organic matter and/or hydrocarbon contamination.

Based upon the initial measurements, the groundwater ranges from six feet (6') to nine feet (9') below the natural ground surface. The observed potentiometric surface is presented in Appendix A-Survey Data Table. The groundwater gradient and subsequent flow direction is to the southwest, perpendicular to the flow of the San Juan River (located approx 1/4 mile to the southwest) . The shallow alluvial groundwater appears to represent an unconfined aquifer.

Based on information from Groundwater [R. Allan Freeze and John A. Cherry (Englewood Cliffs, NJ: Prentice-Hall, Inc.)pgs 26-30.], a typical hydraulic conductivity for soils encountered at this site

range from 10e-1cm/sec to 10e-5cm/sec. By extrapolating a groundwater slope of approximately 0.0033ft/ft from the survey and monitor well data, and assuming a typical porosity of 30%, the groundwater velocity can be calculated to range from 1.1 ft/day to 1.1e-5ft/day towards the approximate heading S50°W.

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Laboratory results of the soil and groundwater analyses are provided in Appendix C. Currently there are no regulatory limits for the 8010 compounds in a soil matrix, therefore the results of the 8010 soil analyses have been compared to Resource Conservation and Recovery Act (RCRA) standards for defining hazardous wastes. Table 1 shows locations and concentrations of compounds that were identified by the 8010 analyses. Although a full 8010 analysis was performed on each sample, only measurable quantities are reported in this table; all other concentrations not listed in Table 1 were below laboratory detection limits.

The 8010 analysis is to identify any chlorinated volatile organics (solvents) that may be contributing to the identified spill. The used oil UST is suspected as a source for these compounds.

TABLE 1
LABORATORY RESULTS
US EPA METHOD 8010
CHLORINATED VOLATILE ORGANICS
(SOLVENTS)

B	M	1,2-Dichloroethane	trans-1,2-Dichloroethene	Chloroform
A	S	212ppb	ND	ND
A	G	18.2ppb	1.4ppb	3.7ppb
B	G	6.1ppb	2.7ppb	5.2ppb
C	S	46.9ppb	ND	127ppb
C	G	1.0ppb	ND	3.1ppb
D	S	103ppb	ND	91ppb
M	W	0.5ppb	ND	ND

B -Boring Identification
M -Matrix
S -Soil
G -Groundwater from Boring
W -Groundwater from Monitor Well

Tables 2 through 5 summarize the 8020/BTEX and 8015/TPH laboratory analytical results of samples that were obtained during the field investigation.

The 8020 analysis will identify compounds that are typically associated with gasoline.

TABLE 2
LABORATORY BTEX RESULTS
US EPA METHOD 8020
SOILS COLLECTED FROM BORINGS

Boring	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/13/93	4432	15'	2,130	980	451	14,900
B	No Sample Taken						
C	1/12/93	4452	5'	ND	218	102	526
D	1/12/93	4454	5'	ND	224	105	554
E	1/14/93	4486	Cutting	244	1,160	1,790	4,570
F	No Sample Taken						
G	1/14/93	4476	5'-10'	ND	257	117	611
H	No Sample Taken						
I	1/14/93	4478	5'-10'	ND	172	73	354
J	No Sample Taken						
K	1/15/93	4487	10'	168	286	1,370	2,110
L	1/15/93	4489	10'	ND	228	260	2,510
M	1/18/93	4507	4'-5.5'	62	195	87	604
N	1/19/93	4513	5.5'-7'	423	478	109	554

TABLE 3
LABORATORY BTEX RESULTS
US EPA METHOD 8020
WATER COLLECTED FROM OPEN BORINGS

Boring	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/11/93	4433	10'5"	18.3	5.7	ND	234
B	1/11/93	4434	5'6"	0.5	1.3	ND	4.5
C	1/12/93	4453	4'8"	ND	1.0	ND	1.4
D	1/12/93	4455	6'8"	ND	ND	0.6	1.3
E	No Sample Taken						
F	No Sample Taken						
G	1/14/93	4477	10'8"	0.9	3.0	6.4	12.3
H	No Sample Taken						
I	No Sample Taken						
J	No Sample Taken						
K	1/15/93	4488	6'7"	287	135	3,060	2,240
L	No Sample Taken						
M	No Sample Taken						
N	1/19/93	4512	6'2"	5.2	16.6	18.2	154

All concentrations in Table 2 and Table 3 are measured in parts-per-billion (ppb).

The 8015 analysis, modified to use a hexane extraction, will identify the quantity of compounds found in the gasoline range, diesel range, and heavier than diesel range.

TABLE 4
LABORATORY TPH RESULTS
US EPA METHOD 8015
SOILS COLLECTED FROM BORINGS

Boring	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/11/93	4432	15'	76	1,400	1480
B	No Sample Taken					
C	1/12/93	4452	5'	1.9	7.7	9.6
D	1/12/93	4454	5'	1.6	7.9	9.5
E	1/14/93	4486	Cuttings	5.0	27.7	32.7
F	No Sample Taken					
G	1/14/93	4476	5'-10'	2.1	10.1	12.2
H	No Sample Taken					
I	1/14/93	4478	5'-10'	2.8	7.5	10.2
J	No Sample Taken					
K	1/15/93	4487	10'	8.5	38.9	47.4
L	1/15/93	4489	10'	2.3	8.8	11.1
M	1/18/93	4507	4'-5.5'	3.9	8.5	1 .4
N	1/19/93	4513	5.5'-7'	1.8	33.2	3 .0

TABLE 5
LABORATORY TPH RESULTS
US EPA METHOD 8015
WATER COLLECTED FROM OPEN BORINGS

Boring	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/11/93	4433	10'5"	27,300	77,600	104,900
B	1/11/93	4434	5'6"	414	6,600	7,000
C	1/12/93	4453	4'8"	145	203	348
D	1/12/93	4455	6'8"	274	6,300	6,600
E	No Sample Taken					
F	No Sample Taken					
G	1/14/93	4477	10'8"	1,040	1,080	2,120
H	No Sample Taken					
I	No Sample Taken					
J	No Sample Taken					
K	1/15/93	4488	6'7"	910	690	1,600
L	No Sample Taken					
M	No Sample Taken					
N	1/19/93	4512	6'2"	0.8	1.5	2.3

All concentrations in Table 4 and Table 5 are in parts-per-million (ppm).

TABLE 6
LABORATORY BTEX RESULTS
US EPA METHOD 8020
MONITOR WELLS-POST DEVELOPMENT

MW	Date	Lab #	Depth	Benzene	Toluene	E-Benzene	Xylenes
A	1/20/93	4533	9.82'	ND	ND	33.5	25.4
B	1/20/93	4534	9.82'	ND	ND	ND	2.2
C	Sample Not Retrievable						
D	1/20/93	4531	9.54'	ND	ND	0.7	1.7
G	1/20/93	4535	9.38'	ND	ND	ND	2.0
I	1/20/93	4532	9.43'	ND	ND	0.6	1.7
L	1/20/93	4530	6.16'	1.4	ND	ND	ND
M	1/20/93	4529	4.91'	ND	ND	ND	ND

Concentrations in Table 6 are measured in ppb.

TABLE 7
LABORATORY TPH RESULTS
US EPA METHOD 8015
MONITOR WELLS-POST DEVELOPMENT

MW	Date	Lab #	Depth	Gasoline TPH	Diesel TPH	Total(ppm)
A	1/20/93	4533	9.82'	1.4	24.3	25.7
B	1/20/93	4534	9.82'	0.7	1.3	2.0
C	Sample Not Retrievable					
D	1/20/93	4531	9.54'	0.5	1.7	2.2
G	1/20/93	4535	9.38'	0.9	1.4	2.3
I	1/20/93	4532	9.43'	0.7	1.4	2.1
L	1/20/93	4530	6.16'	0.6	1.5	2.1
M	1/20/93	4539	4.91'	0.9	1.3	2.2

Concentrations in Table 7 are in ppm.

The results that are displayed in Table 3 and in Table 5 show groundwater samples obtained during the drilling process. The data presented in Table 6 and in Table 7 show the results of samples obtained after the monitor wells were developed, which is most likely the more accurate of the two sampling methods. Currently there are two theories as to why the concentration of contaminants was higher in the samples obtained during drilling relative to samples obtained from the developed monitor wells. These two theories are: contamination was being reintroduced into the groundwater from the overlying soils while drilling, and/or cross contamination from boring to boring was more pronounced than anticipated. As a result of this discrepancy, groundwater data from the developed monitor wells was used as the only source of

information from which to interpret groundwater contamination at the site.

The laboratory analytical results and Quality Assurance/Quality Control (QA/QC) for associated analyses are contained in Appendix C.

Regulatory Levels:

The current maximum allowable concentrations for groundwater contamination as outlined by the State of New Mexico Water Quality Control Commission (August 18, 1991) are summarized reported in Table 1. The maximum allowable concentrations for soil as outlined by the New Mexico Environmental Department, "Underground Storage Tank Regulations" and also by 40 CFR 261 are summarized in Table 8.

TABLE 8
HYDROCARBON SOIL & GROUNDWATER CONTAMINATION STANDARDS
STATE OF NEW MEXICO

Parameter	Maximum Allowable Limits soil (mg/kg)	groundwater (µg/l)
Benzene	10	10
Toluene	-	750
Ethylbenzene	-	750
Total Xylene	-	620
Total Aromatics	50	-
1,2-Dichloroethane	0.5	0.01
trans 1,2-Dichloroethene	-	-
Chloroform	6	100
Total Petroleum Hydrocarbons	100	-

Notes:
1) µg/kg or µg/l - equivalent to parts per billion.
2) mg/kg - equivalent to parts per million.
3) BTEX and TPH limits per NMED.
4) Chlorinated Volatile Organics for soil per RCRA.
5) Chlorinated Volatile Organics for water per WQCC.

LIMITATIONS AND CLOSURE

The conclusions expressed in this report are based on visual observations of the site, subsurface soil conditions encountered at the test hole locations, and testing of soil and water samples collected during exploration and monitor well installation. This report does not reflect subsurface variations which may exist between sampling points.

The scope of our services was limited to the assessment of soil and groundwater contamination with respect to hydrocarbon contamination associated with gasoline and diesel at typical underground storage tank locations.

This report has been prepared for the exclusive use of Mr. Marlo Webb, as it pertains to the property at Bond's True Value Hardware, US Highway 666, Shiprock, New Mexico. All work has been performed in accordance with generally accepted professional practices in geotechnical/environmental engineering and hydrogeology.

I certify that I am personally familiar with the investigation work at the site and the site conditions as presented in this report.

Respectfully Submitted,
ENVIROTECH INC.

Robert M. Young
Environmental Biologist

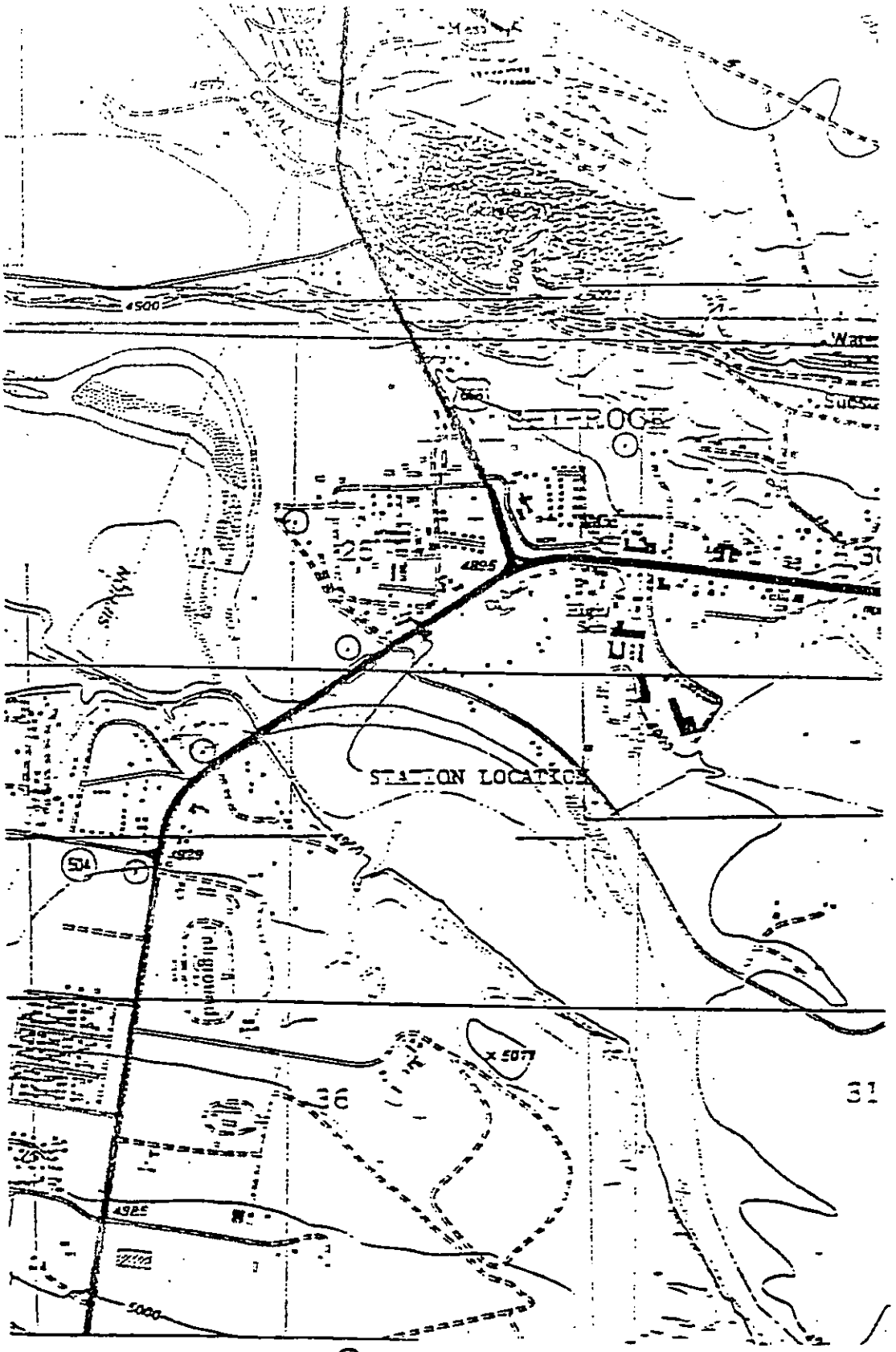
Reviewed By:

Michael K. Lane, P.E.
Geological Engineer

APPENDICES

RMY/rmy

91346.rpt



⊙ WATER WELL LOCATIONS

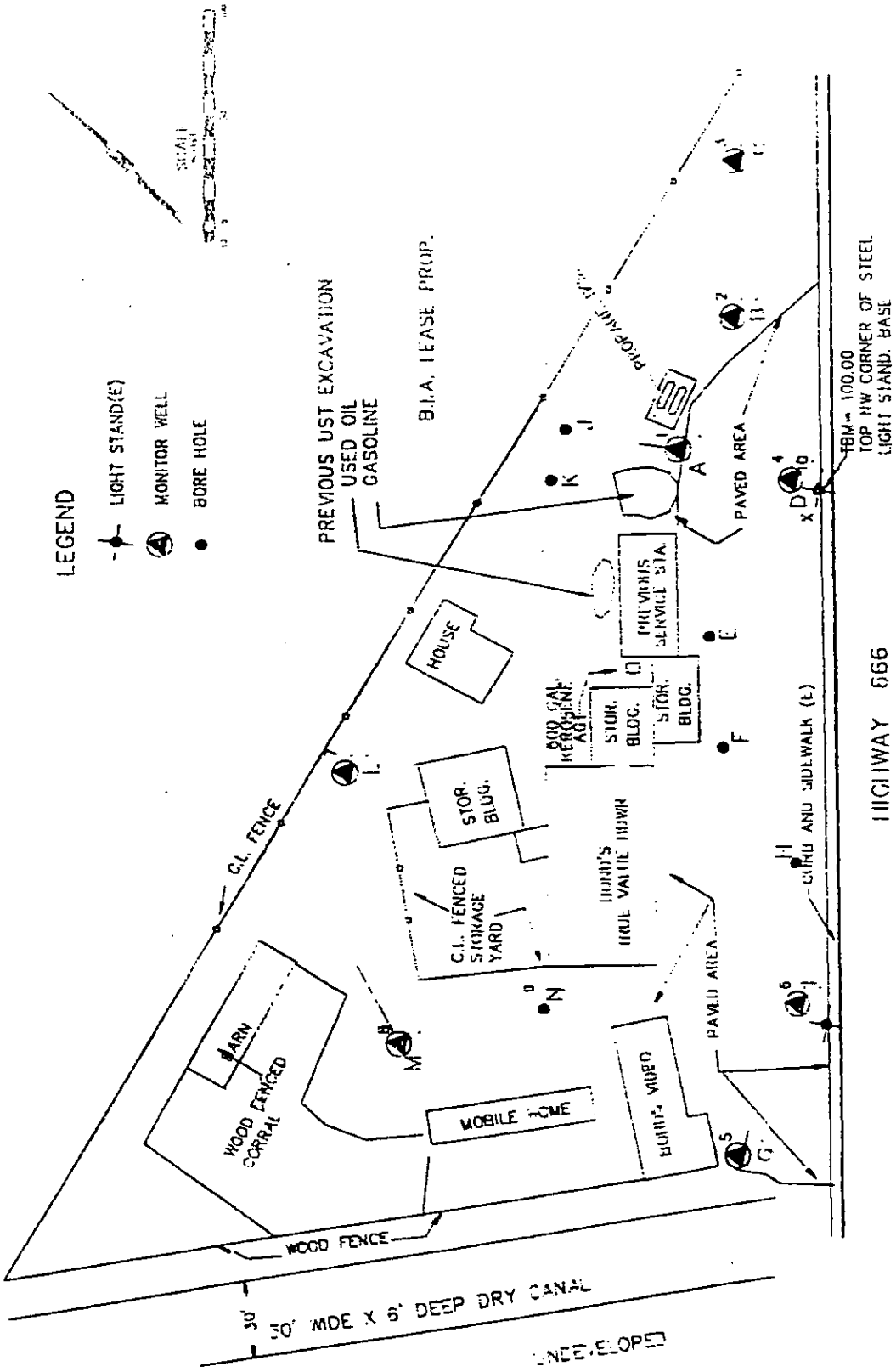
PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. [illegible]

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-[illegible]
FARMINGTON, NEW MEXICO 87401
[illegible]

SUSPECTED GASOLINE SPILL INCIDENT
SITE LOCATION MAP

PROJ. MGR. RMY
DRW. BY DEF 1-25-93



PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. 91345

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

SUSPECTED GASOLINE SPILL INCIDENT
SITE DIAGRAM

PROJ. MGR. RMY	
DRW. BY DEF	1-25-93

PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT UTILITIES MAP
SITE DIAGRAM PROJECT NO. 91346		PROJ. MGR. RMT DRWN BY JCF 1-25-93

ENVIROTECH Inc.

[redacted]

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: A
JOB No: 91346
PAGE No: 1 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/11/93
DATE FINISH: 1/11/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	BLOWS	OVM PPM	SAMPLE TYPE	BLOWS/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
		OVM			SANDY SILT TO SILTY SAND, OLIVE-GRAY, MOIST, FIRM, LOW PLASTICITY, SLIGHTLY COHESIVE. COBBLES TO 3'.
5		1765	SPT		SANDY SILT TO SILTY SAND, BLACK AND GRAY, MOIST TO WET, FIRM, LOW PLASTICITY, SLIGHTLY COHESIVE, HIGHLY CONTAMINATED. STRONG PETROLEUM ODOR, GROSS ORGANIC STAINING, COARSE GRAVELS PRESENT.
10		724	SPT		SAA. GRAY, SATURATED.
		658	BAIL		GROUNDWATER. OLIVE-GRAY, TRACE FREE PRODUCT (<1mm)
15		[illegible]	CUT'G		SAA SATURATED.
20					
25					
30					

TOTAL DEPTH: 15'-0"
GROUNDWATER DEPTH: 13'-5"

COMPLETION: MONITOR WELL "A"

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346A
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

[redacted]

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BORE/TEST HOLE REPORT

BORING No: 3
JOB No: 91346
PAGE No: 2 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/11/93
DATE FINISH: 1/11/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG.

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	SW/ML				YELLOWISH-BROWN SILTY SAND. WET, LOOSE, NON-COHESIVE.
	ML				GOLDEN BROWN TO ORANGE-BROWN LOW PLASTICITY SILT. MOIST, NON-COHESIVE, NO VISIBLE CONTAMINATION.
5	ML	15.4	SPT		SAA. SATURATED.
	▼	15.9	BAIL		GROUNDWATER. LIGHT TO MEDIUM BROWN, NO VISIBLE CONTAMINATION.
10	ML	22	SPT		GRAY SILTY SAND. SATURATED, NON-COHESIVE, LOW PLASTICITY.
	ML				SAA.
15					
20					
25					
30					

TOTAL DEPTH: 13'-0"
GROUNDWATER DEPTH: 6'-6"

COMPLETION: MONITOR WELL "B"

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL - GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUTG - SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX 1' ABOVE NATURAL GROUND LEVEL.

DRAWING: 13468
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

[redacted]

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(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: 3
JOB No: 01346
PAGE No: 4 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/12/93
DATE FINISH: 1/12/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH (FEET)	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW/GL				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5	W	227	SPT		SAA. NO GRAVEL. SAA. BLACK, WET.
	▼	3.5	SPT		SAA. SATURATED.
	▼	2.5	BAIL		GROUNDWATER.
	SM/ML				GRAY AND BLACK LOW PLASTICITY FINE SILTY SAND. SATURATED, LOOSE, NON-COHESIVE.
10	SM/ML	3.5	SPT		SAA.
					SAA. COBBLES AT 12'-6".
	SM/ML	.6	CUT'G		SAA
15					
20					TOTAL DEPTH: 14'-0" GROUNDWATER DEPTH: 6'-8"
					COMPLETION: MONITOR WELL "3"
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346D
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: C
JOB No: 91346
PAGE No: 3 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/12/93
DATE FINISH: 1/12/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	SM				LIGHT BROWN TO TAN LOW PLASTICITY SILTY SAND. MOIST, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION.
5		[illegible]	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
		[illegible]	SPT		SAA. SATURATED.
10		[illegible]	CUT'G		SAA.
		[illegible]	CUT'G		SAA
15					
20					
25					
30					

TOTAL DEPTH: 13'-6"
GROUNDWATER DEPTH: 4'-8"

COMPLETION: MONITOR WELL "C"

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-3 ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP
GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346C
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: 1
JOB No: 91346
PAGE No: 3 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/13/93
DATE FINISH: 1/13/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOWS/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL. COBBLES TO 4'.
5	OL	795	SPT		GRAY AND BLACK FINE SANDY SILT TO SILTY SAND. MOIST TO WET, LOOSE, NON-COHESIVE.
					SAA. BLACK ONLY, NO GRAY.
	CL/OL				GRADED CONTACT. BLACK SILTY CLAY TO CLAYEY SILT. WET, SLIGHTLY COHESIVE, LOW PLASTICITY.
10	CL/OL	384	SPT		SAA.
15					
20					TOTAL DEPTH: 11'-0" GROUNDWATER DEPTH: NR COMPLETION: BACKFILLED WITH CUTTINGS AND CAPPED WITH 6" OF CONCRETE. NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.
25					
30					

DRAWING: 1346E
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: F
JOB No: 91346
PAGE No: 6 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/13/93
DATE FINISH: 1/13/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	OVML				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL. COBBLES TO 3'-6".
5		1.5	SPT		LIGHT BROWN LOW PLASTICITY SILT WITH MINOR FINE SANDS. MOIST, LOOSE.
10	SVML	904	SPT		BLACK SILTY SAND TO SANDY SILT. WET, LOOSE, NON-COHESIVE.
		742	BAIL		GROUNDWATER. TRACE OF FREE PRODUCT ON SURFACE (<1mm).
	SVML	855	CUT'G		SAA SATURATED
15					
20					
25					
30					

TOTAL DEPTH: 14'-0"
GROUNDWATER DEPTH: 10'-10"

COMPLETION: BACKFILLED WITH CUTTINGS AND CAPPED WITH 6" OF CONCRETE.

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346F
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.
[redacted]
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BORE/TEST HOLE REPORT

BORING No: G
JOB No: 91346
PAGE No: 7 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	OVML				COARSE GRAVEL IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5	ML	[illegible]	SPT		DARK BROWN SILT WITH SOME MINOR FINE SAND. WET, LOOSE, SLIGHTLY COHESIVE, NON-PLASTIC, NO VISIBLE CONTAMINATION.
10	ML	1.8	SPT		SAA. SATURATED.
	▽	6.4	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
					SAA. COBBLES AT 12'-6".
15	ML	[illegible]	CUT'G		SAA
20					TOTAL DEPTH: 15'-6" GROUNDWATER DEPTH: 10'-8"
					COMPLETION: MONITOR WELL "G"
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILERS CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346G
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc

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BORE/TEST HOLE REPORT

BORING No: H
JOB No: 91346
PAGE No: 8 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	GW/GL				COARSE GRAVEL AND COBBLES IN LOW PLASTICITY FINE SILT MATRIX. LIGHT TAN TO YELLOWISH BROWN, MOIST, FIRM, SLIGHTLY COHESIVE, NO VISIBLE CONTAMINATION. POSSIBLE FILL MATERIAL.
5	ML	26.2	CUT'G		YELLOWISH-BROWN LOW PLASTICITY SILT. MOIST, LOOSE, NON-COHESIVE, NON-PLASTIC, MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION. HIGH COBBLE CONTENT.
					SWITCH TO CONSTANT FLIGHT, SOLID STEM AUGER AT 5'. ALL SOIL PROFILES ESTIMATED BELOW THIS POINT.
					SAA. GRAY TO BLACK, WET.
10		423	BAIL		GROUNDWATER. TRACE OF FLOATING OIL PLUS TRACES OF EITHER GAS OR DIESEL FLOATING ON SURFACE.
	ML	45.3	CUT'G		SAA. SOIL IS SATURATED.
	ML	736	CUT'G		SAA
15					
20					TOTAL DEPTH: 13'-0" GROUNDWATER DEPTH: 9'-3"
					COMPLETION: BACKFILLED WITH CUTTINGS.
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.

DRAWING: 1346H
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.
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(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: 1
JOB No: 91346
PAGE No: 9 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/14/93
DATE FINISH: 1/14/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					ASPHALT
	ML				YELLOWISH BROWN SILT WITH MINOR FINE SANDS. MOIST, LOOSE, SLIGHTLY COHESIVE.
5	ML				SAA. PLUS MINOR COARSE GRAVELS-NO FINE SANDS.
	ML	3.8	SPT		SAA. GRAY, PLUS MINOR FINE SANDS.
10		6.3	SPT		SAA.
		5.4	BAIL		GROUNDWATER. TRACES OF UNDISCERNABLE PRODUCT ON SURFACE. POSSIBLY OF BIOLOGICAL ORIGIN.
	MH/OH	0.9	CUT'G		BLACK CLAYEY HIGH-PLASTICITY SILT. SATURATED, SEWER ODOR.
15	MH/OH	0.9	CUT'G		SAA. GRAY PLUS COBBLES.
20					TOTAL DEPTH: 15'-0" GROUNDWATER DEPTH: 10'-0" COMPLETION: MONITOR WELL "I" NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
25					LOCATION: SEE ATTACHED LOCATION MAP. GROUND LEVEL AT THIS BORING IS APPROX 3' ABOVE NATURAL GROUND LEVEL.
30					

DRAWING: 13461
DATE: 1-22-93
DWN BY: RMY

2 3 02, 4:07PM ENVIROTECH 5056321035

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: J
JOB No: 91346
PAGE No: 10 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
					MEDIUM TO DARK BROWN SILT TO SANDY SILT. MOIST, LOOSE, MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION.
5		0.4	SPT		MEDIUM BROWN FINE SANDS. WET, LOOSE. NON-COHESIVE. NO VISIBLE CONTAMINATION. SOME COBBLES PRESENT.
		0.7	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION
10		0.7	CUT'G		SAA
15					
20					
25					
30					

TOTAL DEPTH: 10'-0"
GROUNDWATER DEPTH: 6'-11"

COMPLETION: FILLED TO GRADE WITH ZIA TYPE II PORTLAND CEMENT GROUT WITH 5% BENTONITE.

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346J
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.
[redacted]
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(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: K
JOB No: 91346
PAGE No: 11 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/FOOT	FIELD CLASSIFICATION AND REMARKS
	ML				MEDIUM TO DARK BROWN SILT TO SANDY SILT. MOIST, LOOSE. SLIGHTLY COHESIVE. MINOR COARSE GRAVEL. NO VISIBLE CONTAMINATION.
5	CL	[illegible]	CUT'G		BLACK AND GRAY HIGH PLASTICITY CLAY. WET, FIRM, COHESIVE. MINOR QUANTITY OF SILT.
		[illegible]	BAIL		GROUNDWATER. NO VISIBLE CONTAMINATION.
10	CL	[illegible]	SPT		SAA
15					
20					TOTAL DEPTH: 20'-0" GROUNDWATER DEPTH: 6'-7" COMPLETION: FILLED TO GRADE WITH ZIA TYPE II PORTLAND CEMENT GROUT WITH 5% BENTONITE.
25					NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID). LOCATION: SEE ATTACHED LOCATION MAP GROUND LEVEL AT THIS BORING IS APPROX. EQUAL TO MAP ELEV. TEP NO. [illegible]
30					

DRAWING: 1346K
DATE: 1-22-93
DRAWN BY: RMY

ENVIROTECH Inc.

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BORE/TEST HOLE REPORT

BORING No: L
JOB No: 91346
PAGE No: 12 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/15/93
DATE FINISH: 1/15/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK/BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH, INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

FIELD CLASSIFICATION AND REMARKS

Depth	Sample	Type	Field Classification and Remarks
			MEDIUM TO DARK BROWN FINE SILTY SAND TO COARSE SANDY SILT. WET, LOOSE, SLIGHTLY COHESIVE. NO VISIBLE CONTAMINATION.
5	30.2	SPT	SAA. SOME RUST STAINING PRESENT.
	17.9	BAIL	GROUNDWATER. NO VISIBLE CONTAMINATION.
10	15.8	SPT	GRAY POORLY GRADED FINE SAND. SATURATED, LOOSE, NON-COHESIVE. NO VISIBLE CONTAMINATION.
15			
20			TOTAL DEPTH: 10'-8" GROUNDWATER DEPTH: 8'-5"
			COMPLETION: MONITOR WELL "L"
25			NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL - GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUT'G - SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
30			LOCATION: SEE ATTACHED LOCATION MAP GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346L
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.
5796 US HWY. 64 FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: M
JCE No: 91346
PAGE No: 13 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/18/93
DATE FINISH: 1/18/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: PERMCO-SHIPROCK BOND & BOND SERVICE STATION
CLIENT: PERMCO/MARIO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: TRUCK MOUNTED CME-55 DRILL RIG

DEPTH FEET	BLOWS	OVM PPM	SAMPLE TYPE	BLOWS/FOOT	FIELD CLASSIFICATION AND REMARKS
		ND			BROWN SILTY SAND TO SANDY SILT WITH SOME CLAYS. NO ODORS. NO VISIBLE CONTAMINATION.
5		OVM ND	SPT		BROWN SILTY SAND WITH SOME CLAYS. FINE GRAVELS PRESENT. NO ODORS. NO VISIBLE CONTAMINATION.
10		OVM 15.8	SPT		GROUNDWATER. NO VISIBLE CONTAMINATION.
15					
20					TOTAL DEPTH: 10'-6' GROUNDWATER DEPTH: 5'-6' COMPLETION: MONITOR WELL "M" NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED. BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER. CUTG-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS. SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER. ND - NONE DETECTED. OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).
25					
30					LOCATION: SEE ATTACHED LOCATION MAP GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL.

DRAWING: 1346M
DATE: 1-22-93
DWN BY: RMY

ENVIROTECH Inc.

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

BORE/TEST HOLE REPORT

BORING No: N
JOB No: 91346
PAGE No: 14 OF 14
LOCATION: SEE NOTES BELOW
DATE START: 1/19/93
DATE FINISH: 1/19/93
OPERATOR: MD
PREPARED BY: RMY

PROJECT: BOND'S TRUE VALUE HARDWARE--SHIPROCK, NM
CLIENT: PERMCO/MARLO WEBB
CONTRACTOR: ENVIROTECH INC.
EQUIPMENT USED: CME-55 DRILL RIG

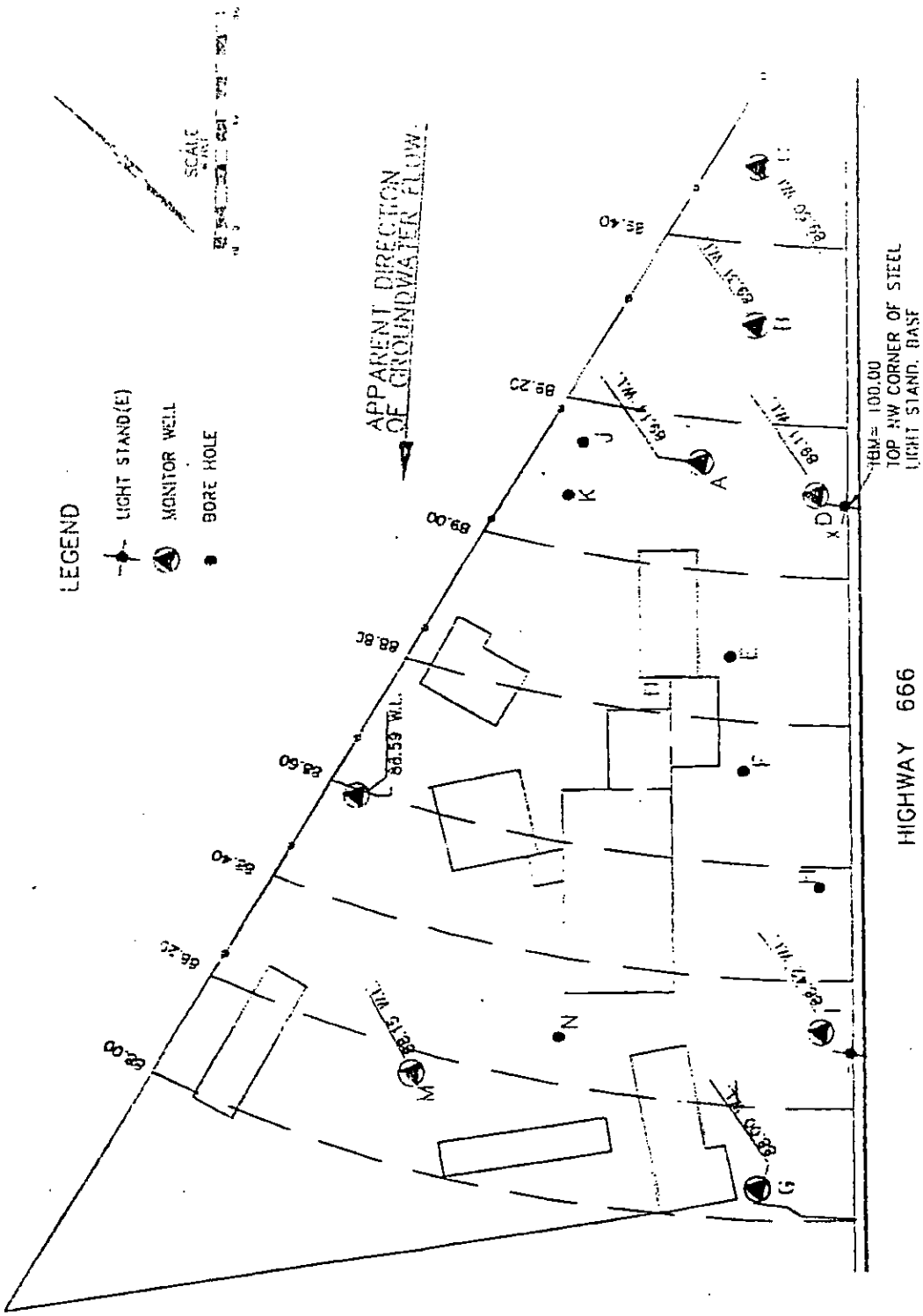
DEPTH FEET	USCS	OVM PPM	SAMPLE TYPE	BLOW/ FOOT	FIELD CLASSIFICATION AND REMARKS
	SW/M	ND	SPT		BROWN SILTY SAND WITH SOME CLAYS. MOIST. NO ODORS. NO VISIBLE CONTAMINATION.
5	SW/M	ND	SPT		
	▼ SW/M	ND	SPT		BROWN SILTY SAND WITH GRAVELS. SLIGHT GRAY DISCOLORATON. WET. NO ODORS, NO VISIBLE CONTAMINATION. GROUNDWATER. NO VISIBLE CONTAMINATION.
10					
15					
20					TOTAL DEPTH: 9'-5" GROUNDWATER DEPTH: 6'-2"
25					
30					

COMPLETION: FILLED TO SURFACE WITH PORTLAND TYPE II CEMENT GROUT WITH BENTONITE.

NOTES: SAA - SAME SOIL TYPE AS DESCRIBED ABOVE, EXCEPT AS NOTED.
BAIL- GROUNDWATER SAMPLES COLLECTED WITH CLEAN TEFLON BAILER.
CUT'G-SOIL SAMPLE COLLECTED FROM AUGER CUTTINGS.
SPT - SOIL SAMPLE COLLECTED WITH A STANDARD SPLIT-TUBE PENETROMETER.
ND - NONE DETECTED.
OVM - SOIL SAMPLE COLLECTED DURING EXPLORATION, ANALYZED FOR HYDROCARBON VAPORS PER NMED HEADSPACE FIELD METHOD USING THERMO ENVIRONMENTAL INSTRUMENTS MODEL 580-B ORGANIC VAPOR METER (PID).

LOCATION: SEE ATTACHED LOCATION MAP.
GROUND LEVEL AT THIS BORING IS APPROX EQUAL TO NATURAL GROUND LEVEL

DRAWING: 1346N
DATE: 1-28-93
DWN BY: RMY



PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. 91346

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

SUSPECTED GASOLINE SPILL INCIDENT
GROUNDWATER SURFACE CONTOUR MAP

PROJ. MGR. RMY	
DRW. BY DEF	1-25-93

CO-ORDINATE TABLE

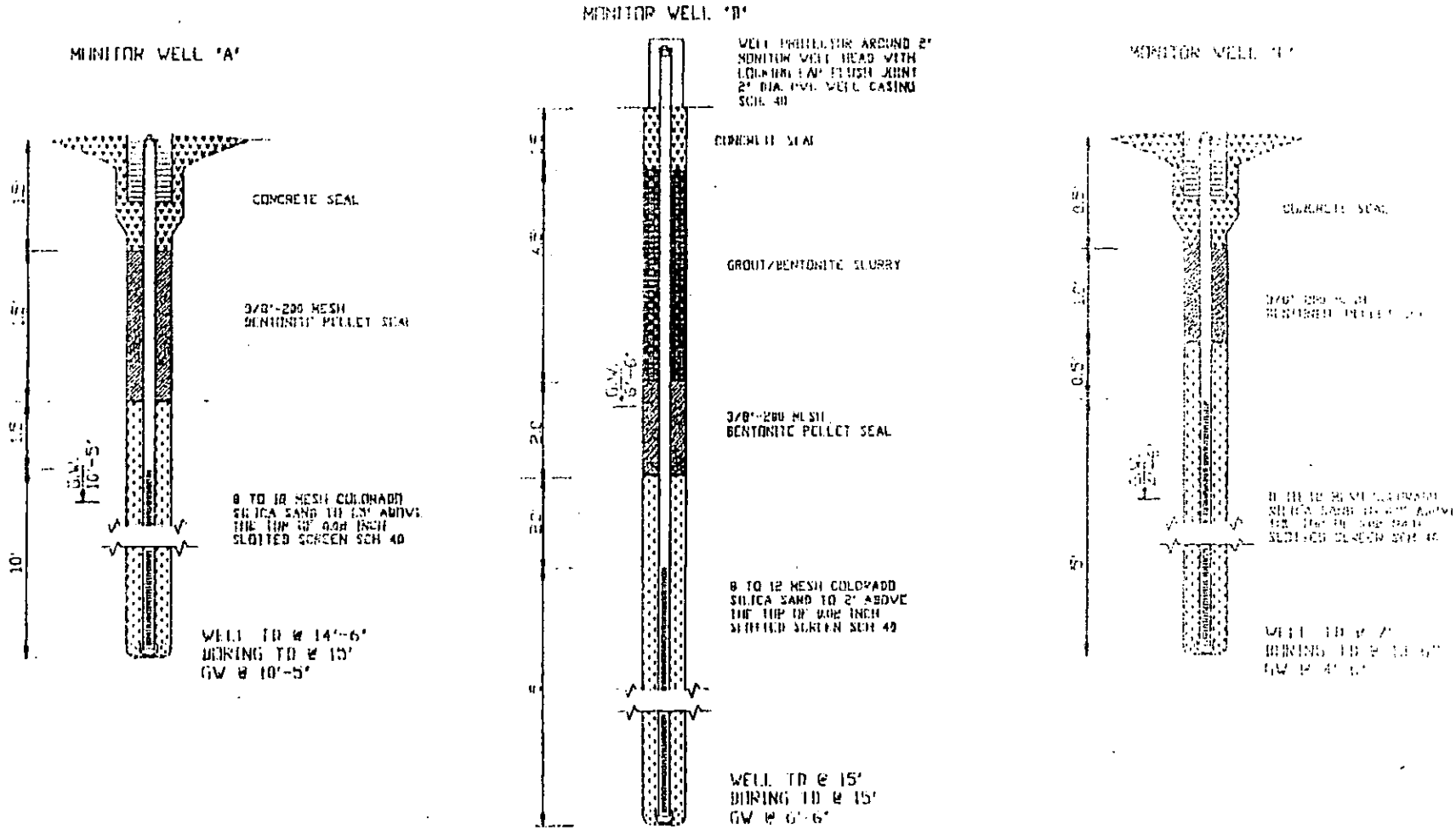
* BASED UPON THE Y AXIS BEING PARALLEL TO HIGHWAY 666

	X COORD.	Y COORD.	* TOP OF WELL ELEVATION
M.W. A	419.64	176.54	98.96
M.W. B	473.40	155.58	99.16
M.W. C	533.88	154.65	95.52
M.W. D	407.69	132.77	98.65
M.W. G	135.89	154.65	97.38
M.W. I	196.37	130.94	97.85
M.W. L	289.71	306.01	94.75
M.W. M	181.44	285.95	93.06
** BASE	401.71	122.74	100.00 T.B.M.

* TOP OF PVC WELL CASING

** N.W. COR OF STEEL BASE ON LIGHT STANDARD ADJACENT TO M.W. D

PERMCO SHIPROCK HWY 666 SHIPROCK, NM	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615	SUSPECTED GASOLINE SPILL INCIDENT SURVEY DATA TABLE
SURVEY DATA TABLE PROJECT NO. 91346		PROJ. MGR. RMY DRW. BY DEF 1-25-93



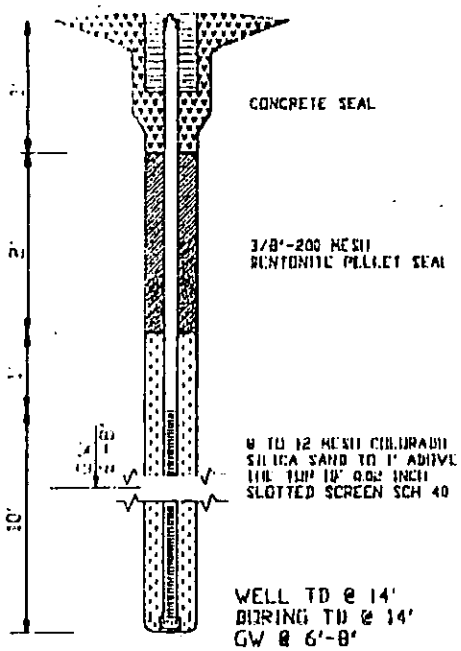
MONITOR WELL DETAILS
PERMIT SHIPROCK
BONDS, TRUE VALUE
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

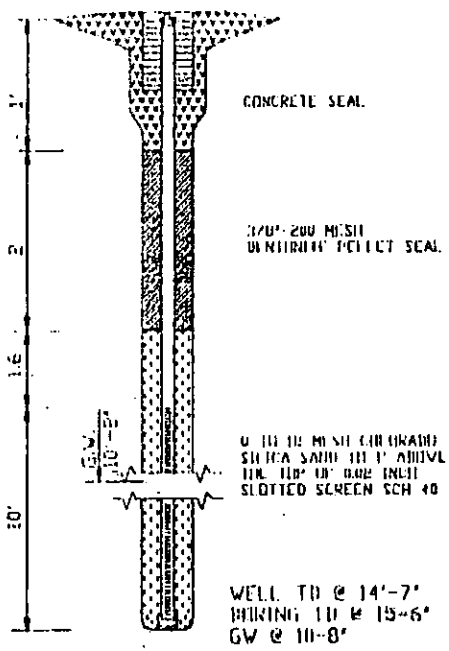
ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEER: R. [illegible]
DRAFTER: D. [illegible]
DATE: [illegible]
MONITOR WELLS A,B,C
SHEET # 1

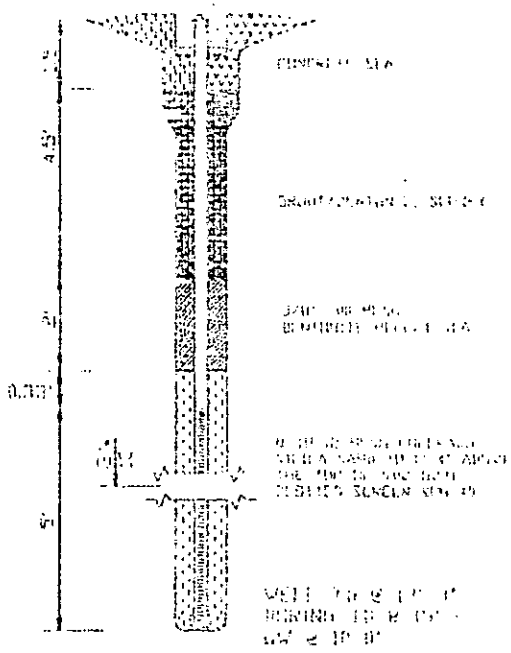
MONITOR WELL 'D'



MONITOR WELL 'G'



MONITOR WELL 'H'



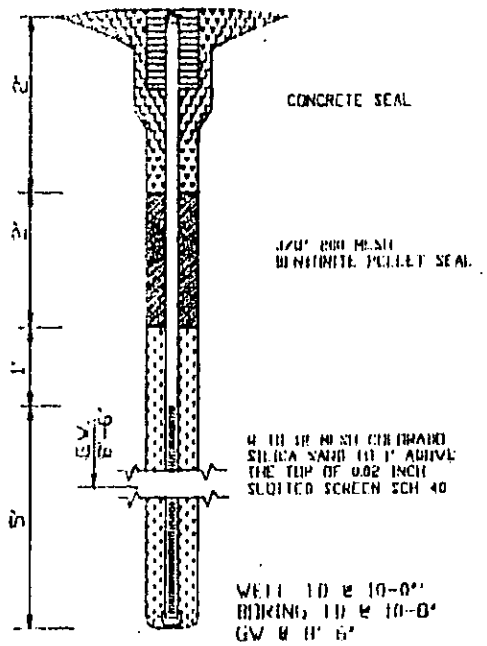
MONITOR WELL DETAILS
PERMIT SHIPPER
BONDS TRUE VALUE
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

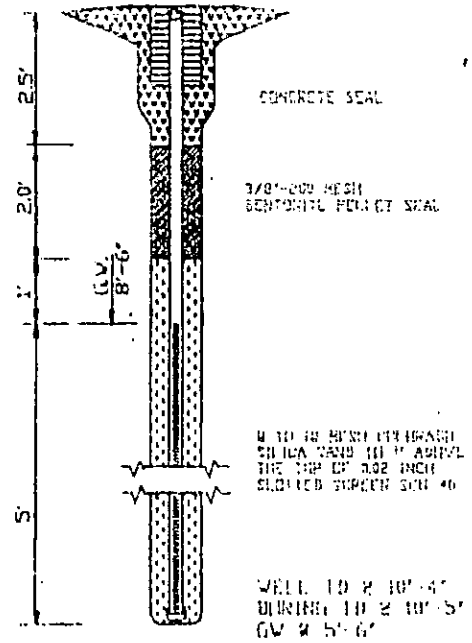
ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEERING
DRAFTED BY
DATE
MONITOR WELL
SHEET # 2

MONITOR WELL 'L'



MONITOR WELL 'M'



MONITOR WELL DETAILS
PERMIT SHIPROCK
BOND'S TRUE VALUE
SHIPROCK, NEW MEXICO

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

ENGINEERING DRAWING
DEALER'S DETAILS
DATE [illegible]
MONITOR WELLS [illegible]
SHEET #3

Permco--Shiprock/Bond & Bond Service Station
Monitor Well Development Record (1/20/93)

MW	CONDUCTIVITY	pH	TEMPERATURE	VOLUME REMOVED	DEPTH TO GW
A	3100	7.13	17.9 C	10 GALLONS	9.82'
B	3700	7.01	16.4 C	10 GALLONS	9.82'
C	NA	NA	NA	NA	NA
D	3600	7.05	17.6 C	10 GALLONS	9.54'
G	5200	7.02	16.9 C	7.5 GALLONS	9.38'
I	3200	7.29	17.7 C	10 GALLONS	9.43'
L	3700	6.69	14.6 C	NA	6.16'
M	4800	7.13	13.9 C	2.5 GALLONS	4.91'

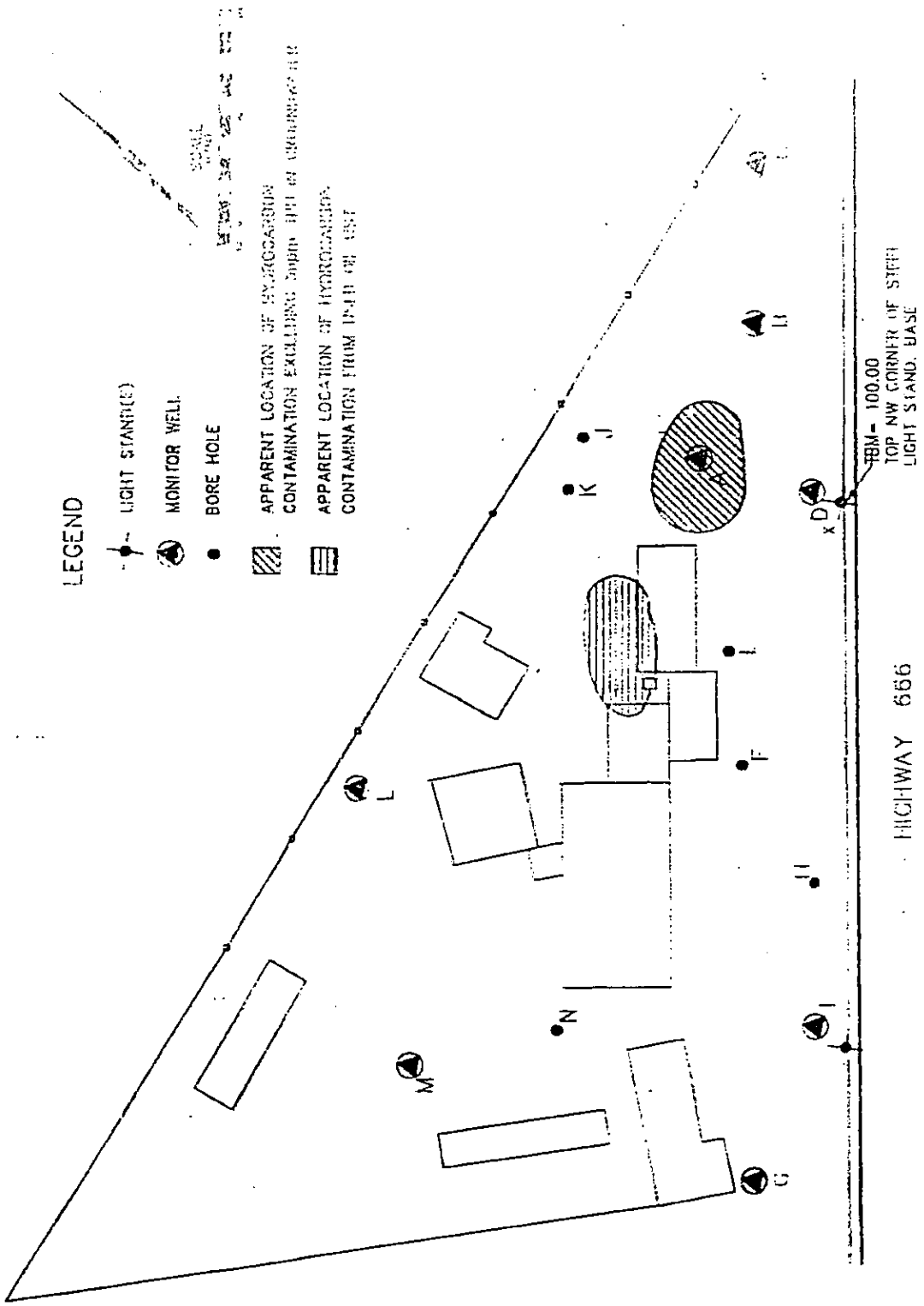
PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. 91346

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

SUSPECTED GASOLINE SPILL INCIDENT
SOIL HYDROCARBON
CONTAMINATION MAP

PROJ. MGR. RMT
DRW. BY: SEF 1-25-93



PERMCO SHIPROCK
HWY 666
SHIPROCK, NM

SITE DIAGRAM
PROJECT NO. 91346

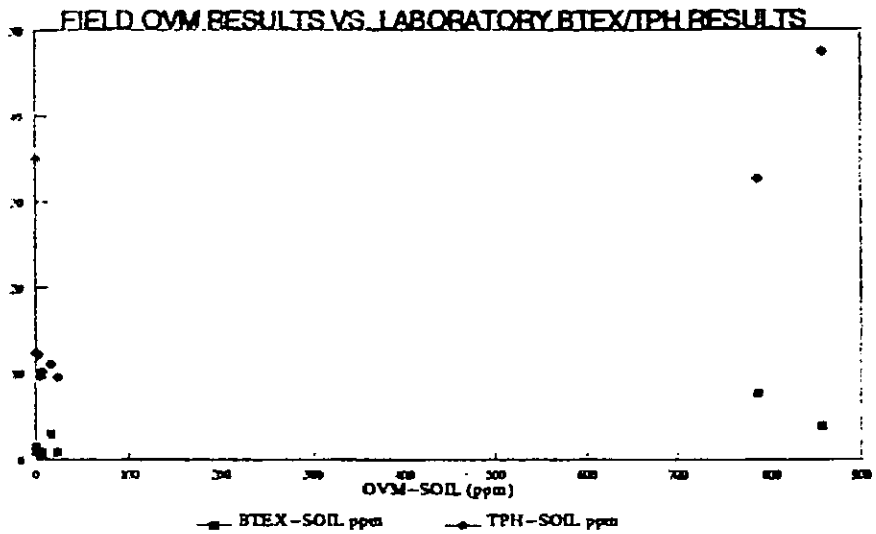
ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

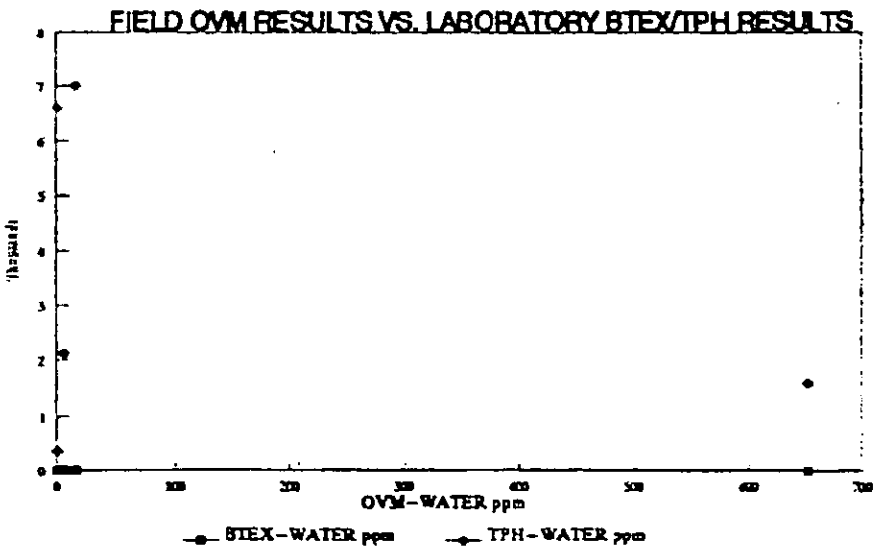
SUSPECTED GASOLINE SPILL INCIDENT
WATER HYDROCARBON CONTAMINATION MAP
PROJ. MGR. RMY
DRW BY JDF 1-25-93

[illegible]
OVM and Laboratory Results Correlation

BORING	OVM-SOIL (ppm)	OVM-WATER (ppm)	BTEX-SOIL (ppm)	BTEX-WATER (ppm)	TPH-SOIL (ppm)	TPH-WATER (ppm)
A	[illegible]	747	[illegible]	[illegible]	[illegible]	[illegible]
B	15.1	[illegible]	NA	[illegible]	NA	[illegible]
C	5.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D	22.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
E	[illegible]	NA	[illegible]	NA	37.7	NA
F	[illegible]	742	NA	NA	NA	NA
G	2.7	[illegible]	0.965	0.0229	12.2	2120
H	[illegible]	[illegible]	NA	NA	NA	NA
I	6.3	5.4	0.599	NA	10.2	NA
J	1.4	6.7	NA	NA	NA	NA
K	858	952	3.934	5.722	47.4	1600
L	15.9	17.9	2.994	NA	11.1	NA
M	0	NA	0.948	NA	12.4	NA
N	0	NA	1.564	0.194	35	2.3

Correlations are between samples taken at approximately equivalent depths.
Samples from Boring A not used due to scaling difficulties.





Copy
[of first 50 pages only]

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501
907-563-0013 Phone
907-563-6713 Fax

TECHNICAL MEMORANDUM

DATE: August 12, 2009

TO: Mr. Carl Warren, WAM, EPA Region 9

FROM: Scott Ruth, Project Manager, Bristol Environmental Remediation Services, LLC

RE: EPA Contract No. EP-W-07-104
Work Assignment 1006, LUST Site Assessments in Indian Country
Bond & Bond/NAV 046

Bristol Environmental Remediation Services, LLC (Bristol) has prepared this Technical Memorandum (Tech Memo) at the request of the U.S. Environmental Protection Agency (EPA). The Tech Memo provides the following information for the subject site, Bond & Bond (EPA ID NAV 046), located in Shiprock, New Mexico:

- Results of the May 2008 groundwater sampling event, including water levels and analytical results;
- Results of the August/September 2008 site characterization activities, including soil and groundwater analytical results; and
- Results of the November/December 2008 site characterization activities, including soil and groundwater analytical results.

EXECUTIVE SUMMARY

The Bond & Bond site is located on the north side of U.S. Highway 64 in Shiprock, New Mexico, approximately one-quarter mile southwest of the intersection of U.S Highways 64 and 491. Bond & Bond is no longer operating at the site, and the former Bond & Bond building is occupied by a hardware store and a video rental store.

Three underground storage tanks (USTs) were removed from the site in 1993. Evidence of a petroleum release was noted at the time of UST removal. Nine monitoring wells were installed between 1993 and 2005. Four of the original nine monitoring wells can no longer be located.

The EPA assigned this site to Bristol under Work Assignment 1006, Contract Number EP-W-07-104. In 2008, Bristol installed 11 additional monitoring wells at the site and characterized the extent of soil and groundwater contamination.

Exceedances of cleanup levels in soil include gasoline-range organics (GRO), diesel-range organics (DRO), and benzene. Exceedances of cleanup levels in groundwater include GRO and DRO. Sixteen monitoring wells are located on the site. Product has been measured in one well at thicknesses up to 0.03 feet. The direction of groundwater flow is to the west.

The remedial technology that will be used at the Bond & Bond site is air sparging (AS) with soil vapor extraction (SVE). Bristol will design the system based on the results of the AS pilot study that was conducted in 2008 at a nearby site (White Eagle, EPA ID NAV120) with similar geology and contamination. The results of that pilot study were included in a Tech Memo to the EPA, dated February 20, 2009.

SITE BACKGROUND

The Bond & Bond site is located in Shiprock, New Mexico, approximately one-quarter mile west of the junction of U.S. Highway 491, along U.S. Highway 64 (Attachment 1, Figure 1). The highway is an area of heavy traffic use. With a population of approximately 8,000, Shiprock is one of the more populated towns on the Navajo Nation. The area around the site is used for commercial and residential purposes. An operating hardware store and video rental store are located on the site (Attachment 1, Figure 2). A trailer home is located west of the site. A Bureau of Indian Affairs (BIA) facility is located north of the site. Potential receptors include on-site or nearby commercial or residential buildings and the San Juan River. Activities that have been conducted at the site include the following:

- 1993 – Three USTs were removed and a petroleum release confirmed. Eight monitoring wells were installed. Soil contamination was identified, but none of the monitoring wells were found to contain groundwater contamination.
- June 2003 – A full round of groundwater sampling was conducted. Only seven of the original eight wells were located, and only four were found to contain groundwater. None of the four monitoring wells sampled were found to contain groundwater contamination above EPA maximum contaminant levels (MCLs).

- 2005 – One additional monitoring well (MW-7) was installed and a full round of groundwater sampling was conducted. One monitoring well (MW-1) was found to contain free product and another (MW-5) was found to be dry. Newly installed MW-7 was found to contain ethylbenzene above the EPA MCL.
- May 2008 – A full round of groundwater sampling was conducted. Analytical results and water level measurements are presented in attached tables (Attachment 2).
- August 2008 – Seventeen soil borings were installed, nine of which were completed as monitoring wells MW-8 through MW-16. Analytical results are presented in attached figures (Attachment 1) and tables (Attachment 2).
- September 2008 – All nine newly installed monitoring wells (MW-8 through MW-16) were sampled. Analytical results and water level measurements are presented in attached tables (Attachment 2).
- November 2008 – Six soil borings were installed, two of which were completed as monitoring wells MW-17 and MW-18. Analytical results are presented in attached figures (Attachment 1) and tables (Attachment 2).
- December 2008 – A full round of groundwater sampling was conducted. Analytical results and water level measurements are presented in attached figures (Attachment 1) and tables (Attachment 2).

GENERAL SITE CONDITIONS

The site has been characterized and found to have petroleum contamination at concentrations exceeding cleanup levels for both soil and groundwater. Free product has been detected in MW-1. Contaminants detected at the site include volatile organic compounds (VOCs), GRO, and DRO.

COMPLETED TASKS

In May 2008, a full round of groundwater sampling was conducted at the Bond & Bond site in preparation for anticipated site characterization activities. Two monitoring wells were not sampled: MW-1 was found to contain free product and MW-5 was found to be dry. Due to a malfunctioning interface probe, product thickness was not measured in MW-1. The three remaining monitoring wells were sampled. Water levels were measured in each of the wells. Groundwater samples were submitted for laboratory analysis to Columbia Analytical Services, Inc. (CAS), in Phoenix, Arizona. Samples were analyzed for GRO using EPA Solid Waste Method (SW) 8015MOD, DRO and oil-range organics (ORO) using SW8015B, VOCs using SW8260B, ethylene dibromide (EDB) using SW8011, and lead using SW6010B. Groundwater

samples were found to exceed cleanup levels for GRO and DRO. Groundwater analytical results are presented in attached tables (Attachment 2, Table 2).

In August 2008, site characterization activities were conducted at the Bond & Bond site. Seventeen soil borings (B-1 through B-17) were drilled, nine of which were completed as monitoring wells (MW-8 through MW-16) (Attachment 1, Figure 2). Analytical results provided by a mobile laboratory operated by CAS aided Bristol in guiding drilling activities. Groundwater samples were collected from open borings and submitted to the mobile laboratory for field screening. Groundwater samples were screened for DRO and ORO by SW8015MOD and for methyl tertiary-butyl ether (MTBE), benzene, toluene, ethylbenzene, and xylenes (BTEX) by SW8021B. Soil samples were submitted for analysis to the mobile laboratory and to the CAS fixed laboratory in Phoenix. The mobile laboratory analyzed soil samples for DRO and ORO by 8015AZ and GRO, BTEX, and MTBE by SW8021B. The fixed laboratory analyzed soil samples for Resource Conservation and Recovery Act metals by SW6010B, polychlorinated biphenyls by SW8082, and semivolatile organic compounds (SVOCs) by SW8270C. GRO, DRO, and benzene soil contamination exceeding cleanup levels was identified and delineated. Groundwater screening results are presented in an attached table (Attachment 2, Table 3). Soil analytical results are presented in attached figures (Attachment 1, Figures 3 through 6) and tables (Attachment 2, Table 4). Soil boring logs are presented in Attachment 3.

In September 2008, the nine newly installed monitoring wells (MW-8 through MW-16) were sampled for laboratory analysis. Water levels were measured in each of the wells. Groundwater samples were submitted for laboratory analysis to CAS in Phoenix, Arizona. Samples were analyzed for GRO, DRO, and ORO by SW8015MOD, VOCs by SW8260B, SVOCs by SW8270C, EDB by SW8011, and lead by SW6010B. Groundwater samples were found to exceed cleanup levels for GRO and DRO. The extent of groundwater contamination was defined in all directions, except for north and west of MW-15 and MW-16, and south and east of MW-9 and MW-10.

In November 2008, additional site characterization activities were conducted at the Bond & Bond site. Six soil borings (B-18 through B-23) were drilled, two of which were completed as monitoring wells (MW-17 and MW-18) (Attachment 1, Figure 2). Analytical results provided

by a mobile laboratory operated by CAS aided Bristol in guiding drilling activities. Groundwater samples were collected from open borings and submitted to the mobile laboratory for field screening. Groundwater samples were screened for DRO and ORO by SW8015MOD and for GRO, BTEX, and MTBE by SW8021B. Groundwater samples were also collected from three borings (B-18 through B-20) and submitted to the fixed CAS laboratory for rush DRO analysis. This sampling was conducted because the mobile laboratory detection limit for DRO in water was higher than the cleanup level. Soil samples were submitted to the mobile laboratory for laboratory analysis for DRO and ORO by 8015AZ and GRO, BTEX, and MTBE by SW8021B. None of the soil samples were found to contain analytes above reporting limits. Groundwater analytical and screening results are presented in attached tables (Attachment 2, Tables 2 and 3). Soil analytical results are presented in attached figures (Attachment 1, Figures 3 through 6) and tables (Attachment 2, Table 4). Soil boring logs are presented in Attachment 3.

In December 2008, a full round of groundwater sampling was conducted. Water levels were measured in each of the wells. MW-1 was found to contain 0.03 inches of free product and was not sampled. All 14 of the other monitoring wells at the site were sampled. Groundwater samples were submitted for laboratory analysis to CAS in Phoenix, Arizona. Samples were analyzed for GRO, DRO, and ORO by SW8015D, VOCs by SW8260B, and EDB by SW8011. Groundwater samples were found to exceed cleanup levels for GRO and DRO. The extent of groundwater contamination has been defined in all directions (Attachment 1, Figures 9 and 10).

Attachment 1 to this Tech Memo includes Figures 1 through 12, depicting the site layout, groundwater contours, selected analytical results, and distribution of selected, individual contaminants. Attachment 2 includes tables presenting water levels, groundwater screening results, and selected soil and groundwater analytical results. Attachment 3 includes all soil boring logs. Attachment 4 includes all laboratory analytical reports.

PLANNED OR PROPOSED ACTIVITIES

Design Remediation System

The remedial technology that will be used at the Bond & Bond site is AS with SVE. Air sparging is the injection of air below the groundwater table. The air then travels upward through

channels that contact the areas of contaminated soil and groundwater. The volatile components of the petroleum hydrocarbons are removed by the air to the subsurface, and then typically gathered by SVE wells and removed from the ground. The extracted air is treated to remove the volatiles.

Bristol will design the system based on the results of the AS pilot study that was conducted in 2008 at a nearby site (White Eagle, EPA ID NAV120) with similar geology and contamination. The results of that pilot study were included in a Tech Memo to the EPA, dated February 20, 2009.

Bristol is currently designing the AS/SVE remedial system for the Bond & Bond site. A Corrective Action Plan detailing the system design will be submitted to EPA in late 2009. Aspects of the proposed design will include:

- Number of AS and SVE wells that will be required,
- Placement of AS and SVE wells,
- Appropriate size of blowers and off-gas treatment units, and
- Other parts of the remedial system as required.

Install Remedial System

Pending EPA approval of the Corrective Action Plan, Bristol proposes to install the AS/SVE remedial system concurrently with the installation of the remedial system at the nearby White Eagle/NAV 120 and Chief Conoco/NAV 211 sites in late 2009 or early 2010.

2009 Groundwater Sampling

Groundwater sampling occurred in June 2009 and will occur again in December 2009. The monitoring wells will be sampled without first being purged. Groundwater samples collected from the wells will be submitted to the TestAmerica, Inc., laboratory in Phoenix, Arizona, and analyzed for VOCs, GRO, and DRO. A Tech Memo detailing the results of the 2009 groundwater sampling events will be submitted to the EPA following receipt of analytical results.

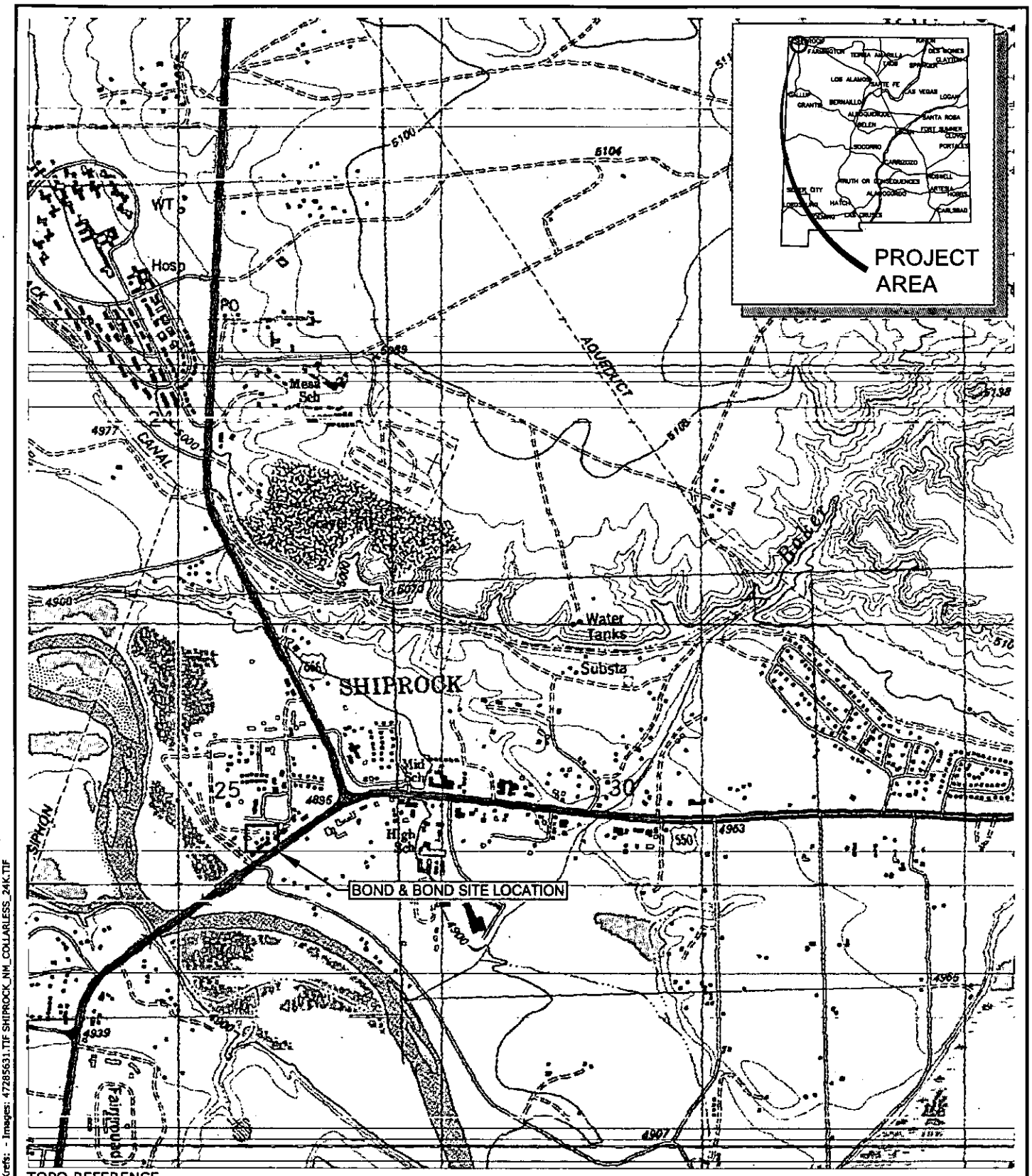
Schedule Summary

Activity	Month/Year	Tentative Start Date
Remedial System Design	Ongoing	Ongoing
Spring 2009 Groundwater Sampling	June 2009	Completed
Remedial System Installation	Late 2009/early 2010	To be determined
Fall 2009 Groundwater Sampling	December 2009	To be determined
Technical Memorandum (system installation)	Early 2010	To be determined

ATTACHMENT 1

Figures

Figure 1	Site Location
Figure 2	Site Map
Figure 3	Soil Analytical Results
Figure 4	Extent of DRO in Soil Exceeding Cleanup Level
Figure 5	Extent of GRO in Soil Exceeding Cleanup Level
Figure 6	Extent of Benzene in Soil Exceeding Cleanup Level
Figure 7	December 2008 Groundwater Elevations and Contours
Figure 8	December 2008 Groundwater Analytical Results
Figure 9	Extent of GRO in Groundwater Exceeding Cleanup Level
Figure 10	Extent of DRO in Groundwater Exceeding Cleanup Level
Figure 11	Cross Section A-A'
Figure 12	Cross Section B-B'



TOPO REFERENCE
Coolidge Dam (AZ) Topo Quad
Orig Date: 1991
Quad series: 7.5'
Paper source: Topographic 1:24,000

N

0 250 500
SCALE IN FEET

FIGURE 1
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
SITE LOCATION

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 49022

DATUM:	DATE	02/23/09
NA	DWN.	MTG
PROJECTION:	SCALE	NTS
NA	APPRVD.	JSR

Drawing: O:\JOBS\49022 EPA 1006 R9 LS\ACAD-ENVIRO\BOND-BOND_FEB09\DWG\49022_FIG1_FEB09.DWG - Layout: 49022_FIG1_FEB09
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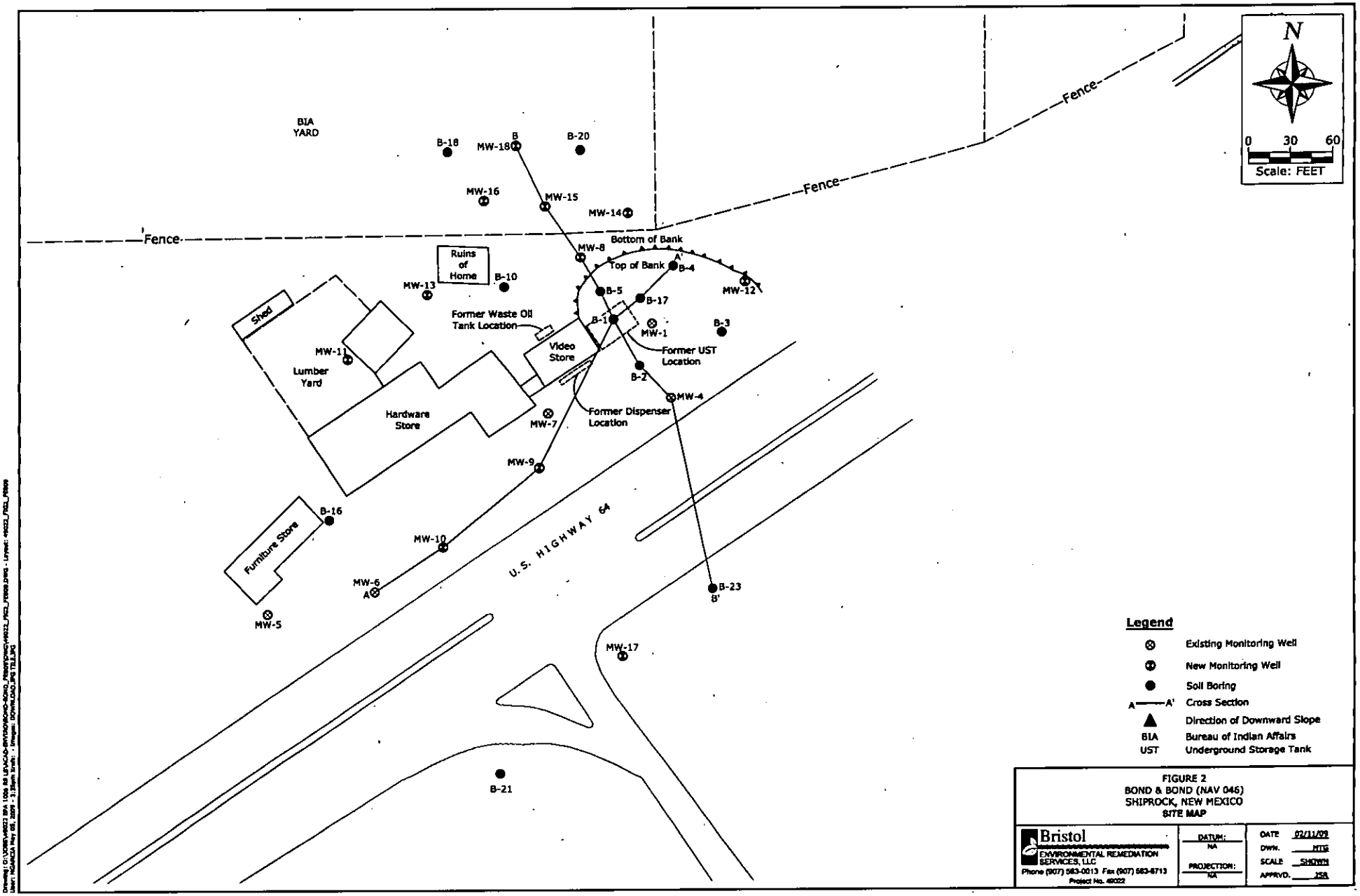


FIGURE 2
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
SITE MAP

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 46022

DATUM: NA
PROJECTION: NA

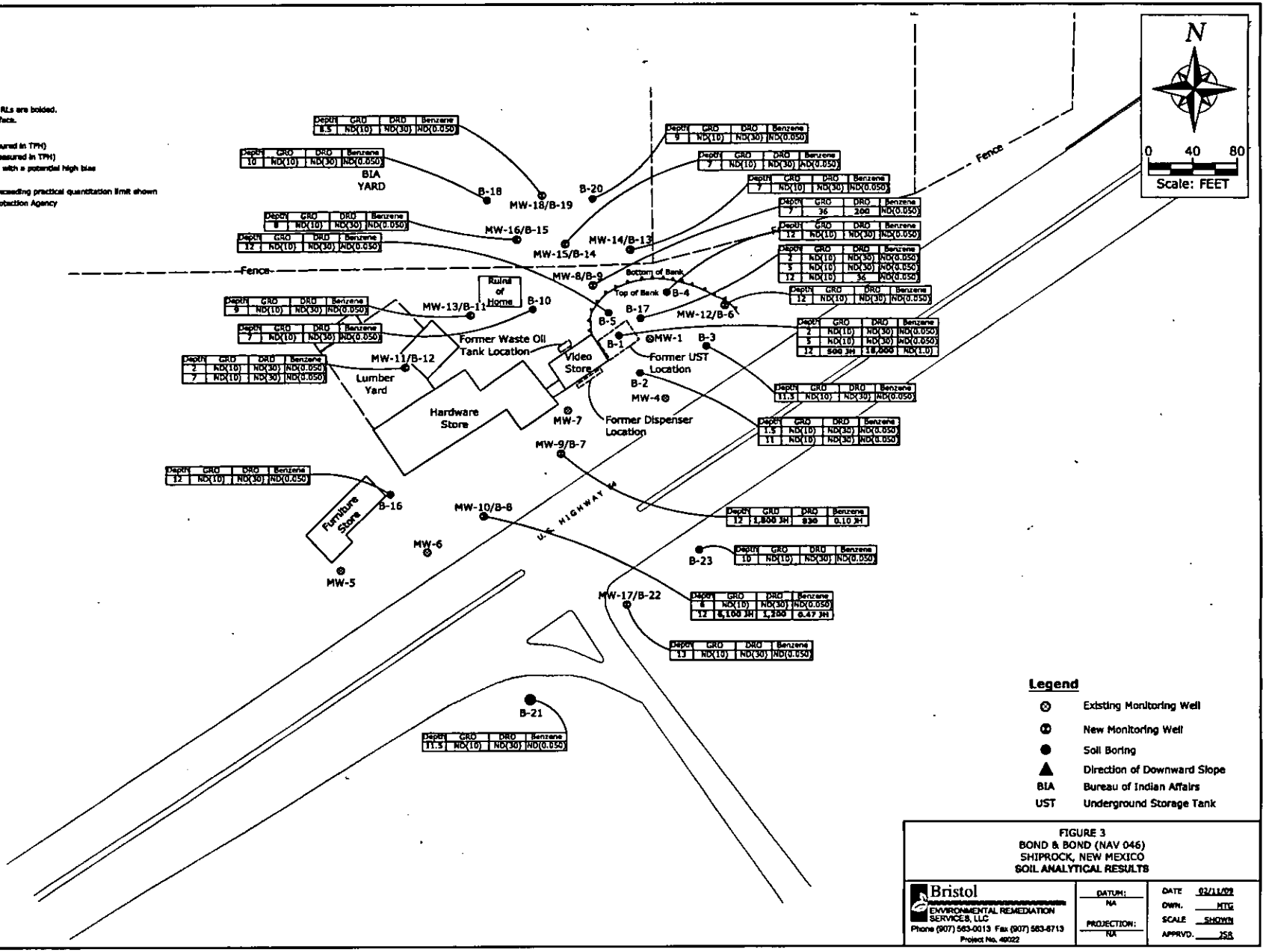
DATE 02/11/09
DWN. HTG
SCALE SHOWN
APPRVD. JSR

Soil Cleanup Levels

	NNEPA RLs (mg/kg)
Benzene	0.13
DRO	100
GRO	100

Notes: Concentrations exceeding NNEPA RLs are bolded.
Depth is in feet below ground surface.
All results shown in mg/kg.

DRO Diesel-Range Organics (as measured in TPH)
GRO Gasoline-Range Organics (as measured in TPH)
JH Results in an estimated quantity with a potential high bias
mg/kg Milligrams per kilogram
ND Not Detected at concentration exceeding practical quantitation limit shown
NNEPA Navajo Nation Environmental Protection Agency
RL Regulatory Limit
TPH Total Petroleum Hydrocarbons



Depth	GRO	DRO	Benzene
8.5	ND(10)	ND(30)	ND(0.050)
10	ND(10)	ND(30)	ND(0.050)
8	ND(10)	ND(30)	ND(0.050)
12	ND(10)	ND(30)	ND(0.050)
9	ND(10)	ND(30)	ND(0.050)
7	ND(10)	ND(30)	ND(0.050)
2	ND(10)	ND(30)	ND(0.050)
7	ND(10)	ND(30)	ND(0.050)
9	ND(10)	ND(30)	ND(0.050)
7	ND(10)	ND(30)	ND(0.050)
9	ND(10)	ND(30)	ND(0.050)
7	ND(10)	ND(30)	ND(0.050)
2	ND(10)	ND(30)	ND(0.050)
7	ND(10)	ND(30)	ND(0.050)
12	ND(10)	ND(30)	ND(0.050)
7	36	200	ND(0.050)
12	ND(10)	ND(30)	ND(0.050)
2	ND(10)	ND(30)	ND(0.050)
5	ND(10)	ND(30)	ND(0.050)
12	ND(10)	36	ND(0.050)
12	ND(10)	ND(30)	ND(0.050)
2	ND(10)	ND(30)	ND(0.050)
5	ND(10)	ND(30)	ND(0.050)
12	500 JH	18,000	ND(1.0)
11.5	ND(10)	ND(30)	ND(0.050)
1.5	ND(10)	ND(30)	ND(0.050)
11	ND(10)	ND(30)	ND(0.050)
12	1,800 JH	830	0.10 JH
10	ND(10)	ND(30)	ND(0.050)
6	ND(10)	ND(30)	ND(0.050)
12	6,100 JH	1,200	6.47 JH
13	ND(10)	ND(30)	ND(0.050)

Legend

- Existing Monitoring Well
- New Monitoring Well
- Soil Boring
- Direction of Downward Slope
- BIA Bureau of Indian Affairs
- UST Underground Storage Tank

FIGURE 3
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
SOIL ANALYTICAL RESULTS

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 40022

DATUM: NA
PROJECTION: NA

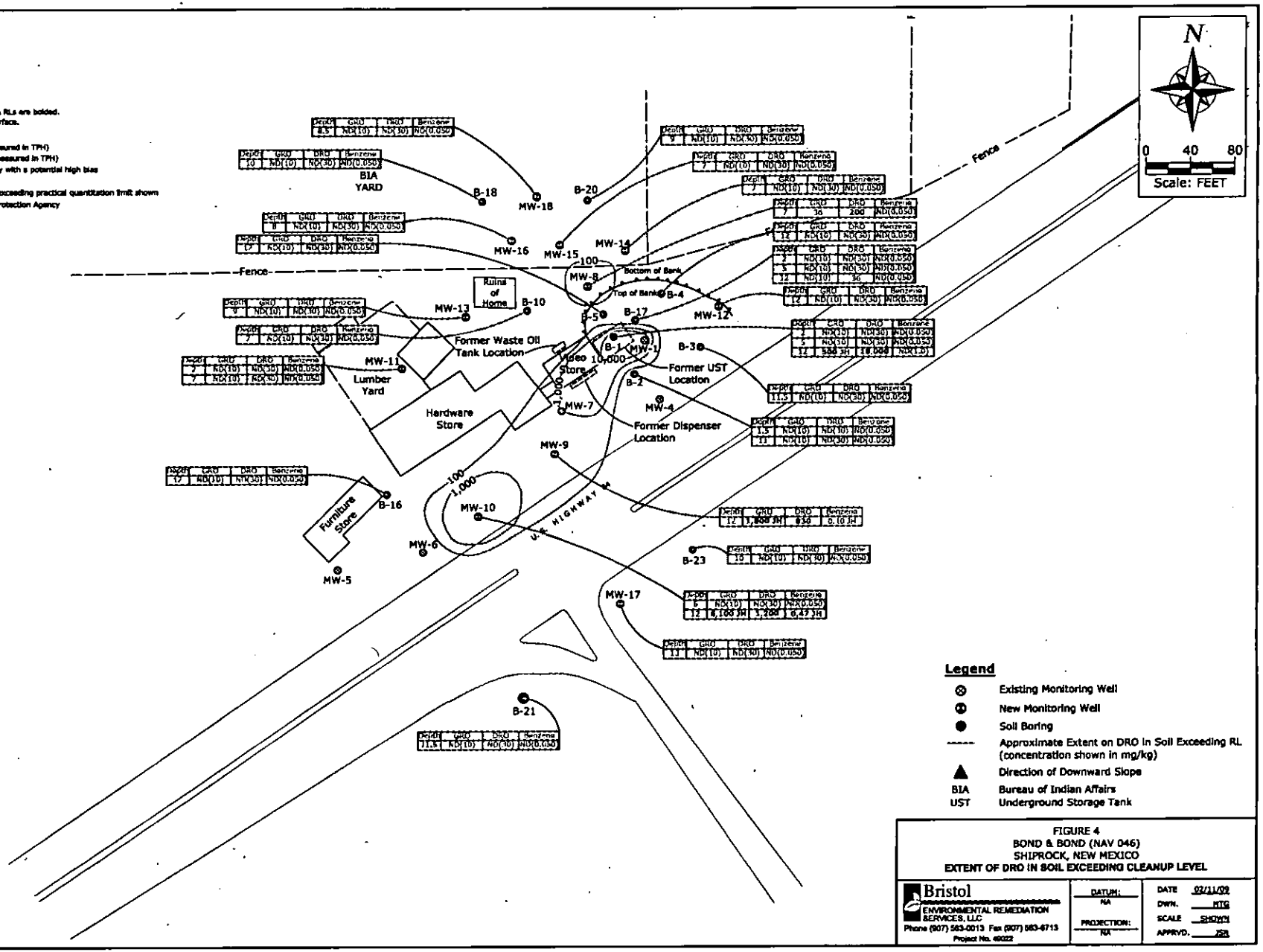
DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSB

Soil Cleanup Levels

	NNEPA RLs (mg/kg)
Benzene	0.13
DRO	100
GRO	100

Notes: Concentrations exceeding NNEPA RLs are bolded.
Depth is in feet below ground surface.
All results shown in mg/kg.

DRO Diesel-Range Organics (as measured in TPH)
GRO Gasoline-Range Organics (as measured in TPH)
JH Results in an estimated quantity with a potential high bias
mg/kg Milligrams per kilogram
ND Not Detected at concentration exceeding practical quantitation limit shown
NNEPA Navajo Nation Environmental Protection Agency
RL Regulatory Limit
TPH Total Petroleum Hydrocarbons



Legend

- Existing Monitoring Well
- New Monitoring Well
- Soil Boring
- Approximate Extent on DRO in Soil Exceeding RL (concentration shown in mg/kg)
- Direction of Downward Slope
- BIA Bureau of Indian Affairs
- UST Underground Storage Tank

FIGURE 4
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
EXTENT OF DRO IN SOIL EXCEEDING CLEANUP LEVEL

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 40022

DATUM: NA
PROJECTION: NA

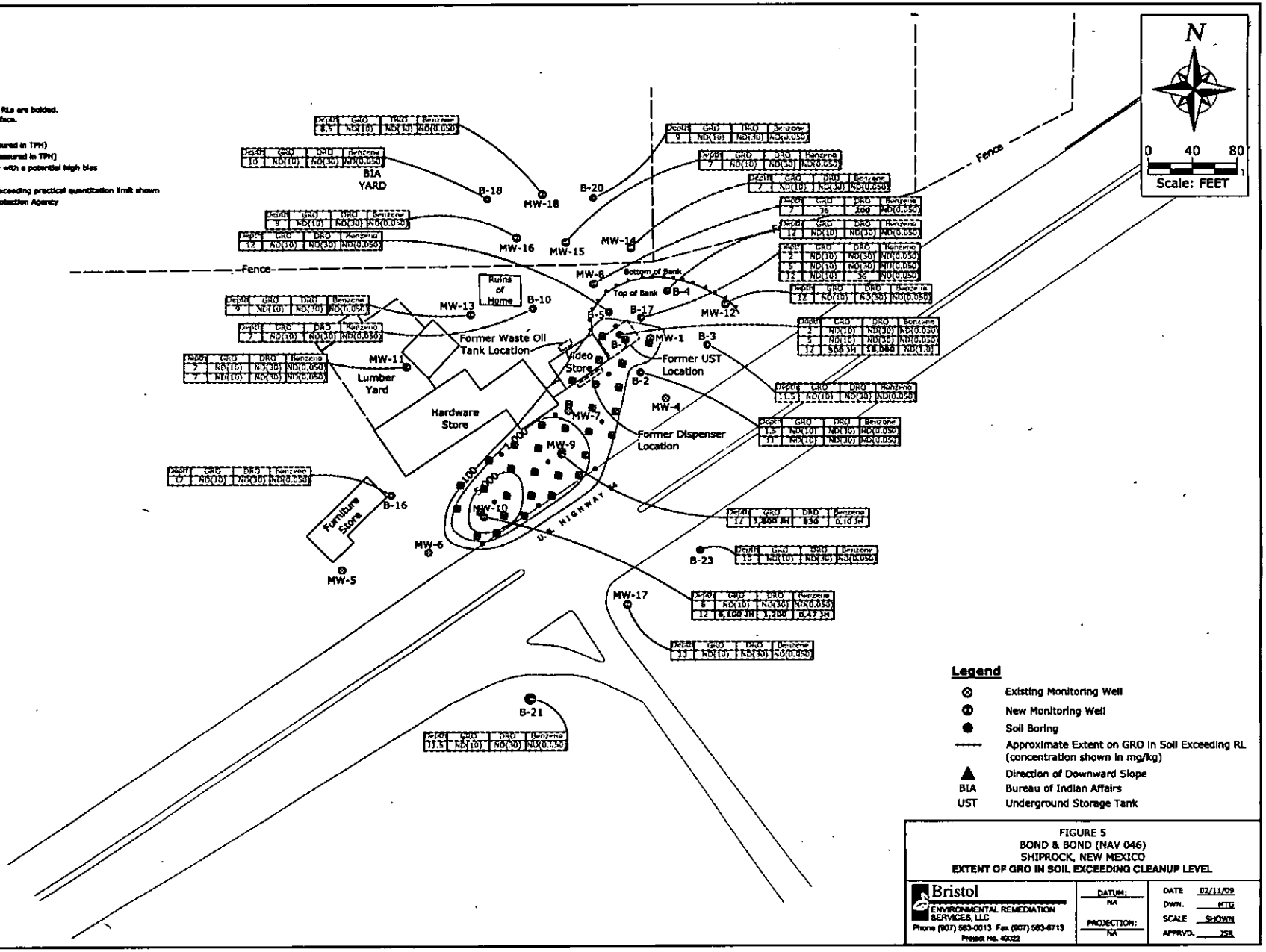
DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSB

Soil Cleanup Levels

	NNEPA RLs (mg/kg)
Benzene	0.13
DRO	100
GRO	100

Notes: Concentrations exceeding NNEPA RLs are bolded.
Depth is in feet below ground surface.
All results shown in mg/kg.

DRO Diesel-Range Organics (as measured in TPH)
GRO Gasoline-Range Organics (as measured in TPH)
JH Results in an estimated quantity with a potential high bias
mg/kg Milligrams per kilogram
ND Not Detected at concentration exceeding practical quantitation limit shown
NNEPA Navajo Nation Environmental Protection Agency
RL Regulatory Limit
TPH Total Petroleum Hydrocarbons



Legend

- Existing Monitoring Well
- New Monitoring Well
- Soil Boring
- Approximate Extent on GRO in Soil Exceeding RL (concentration shown in mg/kg)
- Direction of Downward Slope
- BIA Bureau of Indian Affairs
- UST Underground Storage Tank

FIGURE 5
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
EXTENT OF GRO IN SOIL EXCEEDING CLEANUP LEVEL

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 40022

DATUM: NA
PROJECTION: NA

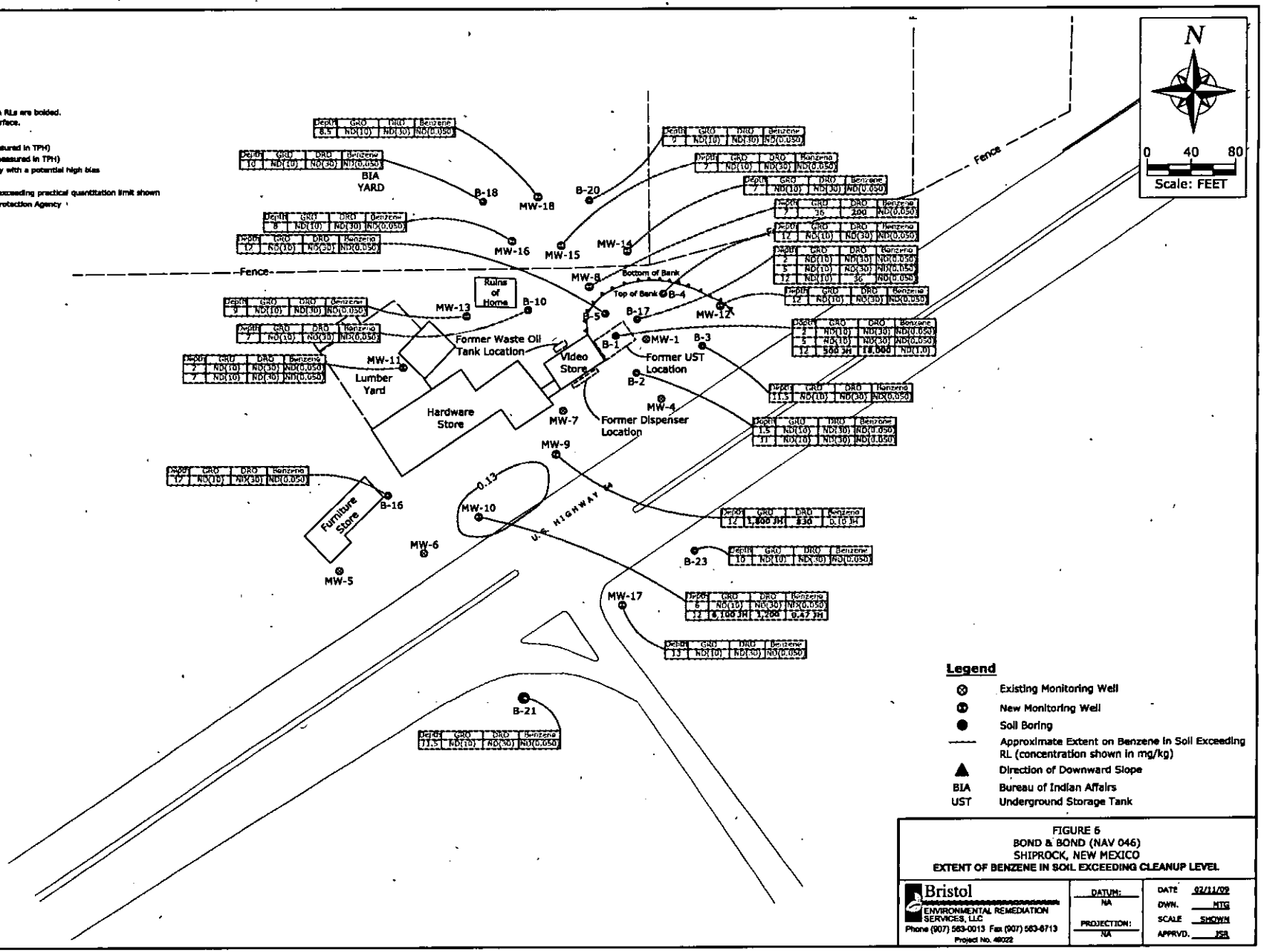
DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSR

Soil Cleanup Levels

	NNEPA RLs (mg/kg)
Benzene	0.13
DRO	100
GRO	100

Notes: Concentrations exceeding NNEPA RLs are bolded.
Depth is in feet below ground surface.
All results shown in mg/kg.

DRO Diesel-Range Organics (as measured in TPH)
GRO Gasoline-Range Organics (as measured in TPH)
JH Results in an estimated quantity with a potential high bias
mg/kg Milligrams per kilogram
ND Not Detected at concentration exceeding practical quantitation limit shown
NNEPA Navajo Nation Environmental Protection Agency
RL Regulatory Limit
TPH Total Petroleum Hydrocarbons



Legend

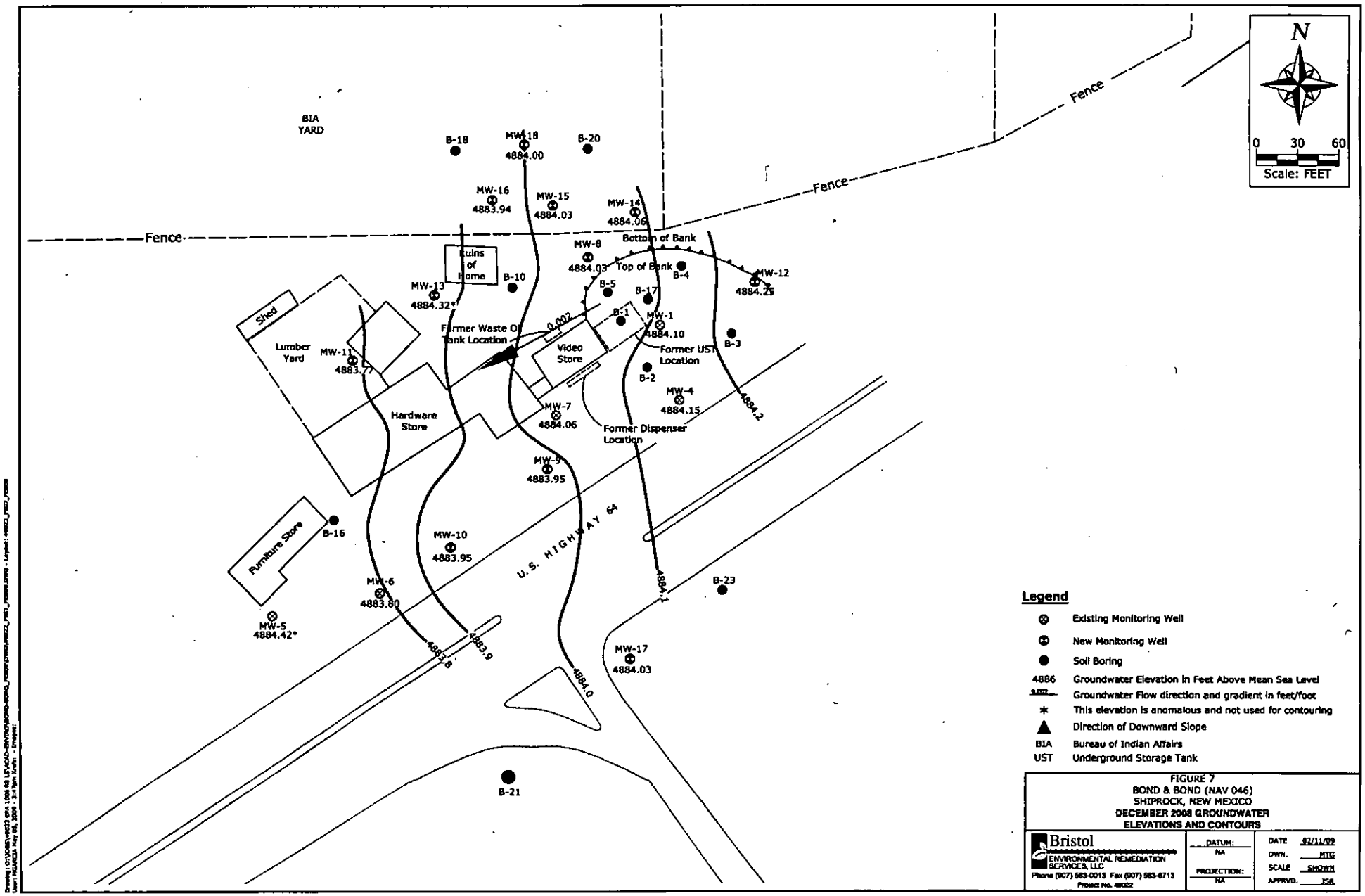
- Existing Monitoring Well
- New Monitoring Well
- Soil Boring
- Approximate Extent on Benzene in Soil Exceeding RL (concentration shown in mg/kg)
- Direction of Downward Slope
- BIA Bureau of Indian Affairs
- UST Underground Storage Tank

FIGURE 5
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
EXTENT OF BENZENE IN SOIL EXCEEDING CLEANUP LEVEL

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 46022

DATUM: NA
PROJECTION: NA

DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSB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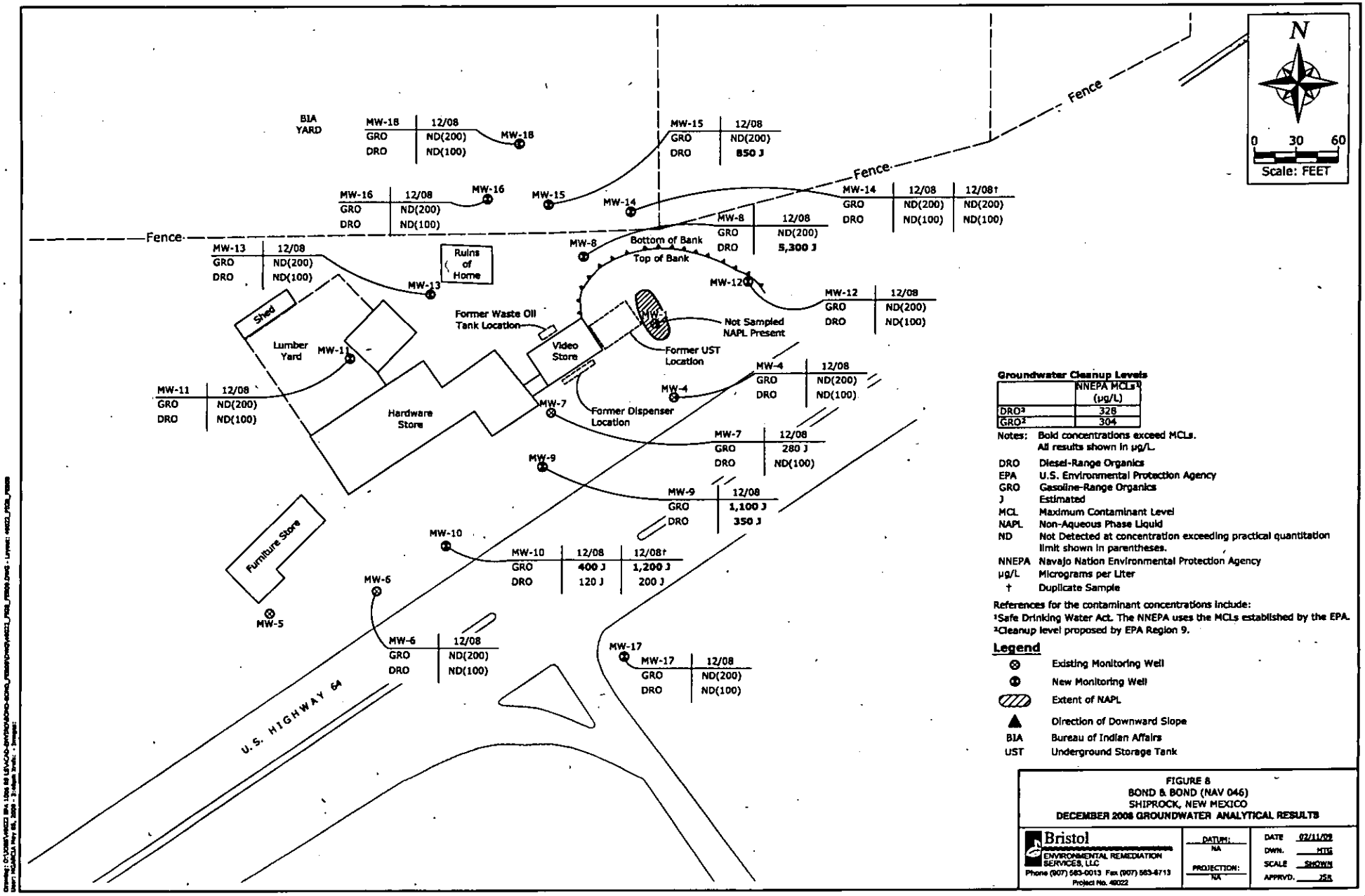
0 30 60
Scale: FEET
Fence
Fence
Fence
BIA YARD
B-18
MW-18
4884.00
B-20
MW-16
4883.94
MW-15
4884.03
MW-14
4884.06
MW-8
4884.03
Bottom of Bank
Top of Bank
B-4
MW-12
4884.25
Ruins of Home
B-10
MW-13
4884.32*
B-5
B-17
B-1
MW-1
4884.10
Former Waste Oil Tank Location
0.002
Video Store
Former UST Location
B-3
B-2
MW-4
4884.15
Shed
Lumber Yard
MW-11
4883.77
Hardware Store
MW-7
4884.06
Former Dispenser Location
4884.2
MW-9
4883.95
Furniture Store
B-16
MW-10
4883.95
U.S. HIGHWAY 64
MW-6
4883.80
4884.1
B-23
MW-5
4884.42*
4883.8
4883.9
4884.0
MW-17
4884.03
B-21
Legend
Existing Monitoring Well
New Monitoring Well
Soil Boring
4886 Groundwater Elevation in Feet Above Mean Sea Level
Groundwater Flow direction and gradient in feet/foot
* This elevation is anomalous and not used for contouring
Direction of Downward Slope
BIA Bureau of Indian Affairs
UST Underground Storage Tank
FIGURE 7
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
DECEMBER 2008 GROUNDWATER
ELEVATIONS AND CONTOURS
Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 46022
DATUM: NA
PROJECTION: NA
DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSR



Groundwater Cleanup Levels

	NNEPA MCLs[1] (µg/L)
DRO[2]	328
GRO[2]	304

Notes: Bold concentrations exceed MCLs.
All results shown in µg/L.

DRO	Diesel-Range Organics
EPA	U.S. Environmental Protection Agency
GRO	Gasoline-Range Organics
J	Estimated
MCL	Maximum Contaminant Level
NAPL	Non-Aqueous Phase Liquid
ND	Not Detected at concentration exceeding practical quantitation limit shown in parentheses.
NNEPA	Navajo Nation Environmental Protection Agency
µg/L	Micrograms per Liter
†	Duplicate Sample

References for the contaminant concentrations include:
[1]Safe Drinking Water Act. The NNEPA uses the MCLs established by the EPA.
[2]Cleanup level proposed by EPA Region 9.

Legend

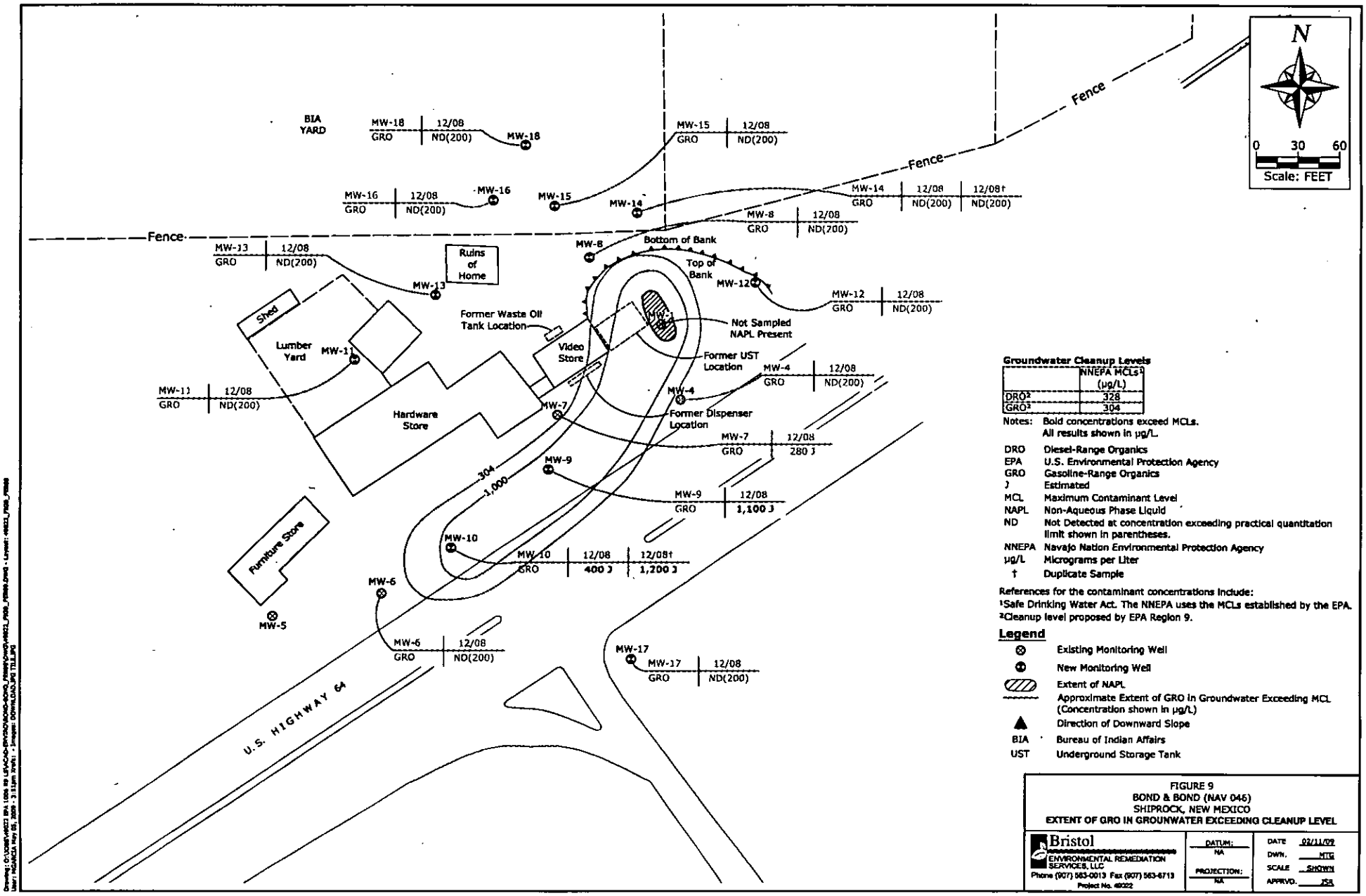
- ⊗ Existing Monitoring Well
- ⊗ New Monitoring Well
- Extent of NAPL
- ▲ Direction of Downward Slope
- BIA Bureau of Indian Affairs
- UST Underground Storage Tank

FIGURE 8
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
DECEMBER 2008 GROUNDWATER ANALYTICAL RESULTS

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 46022

DATUM: NA
PROJECTION: NA

DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSR



Groundwater Cleanup Levels

	NNEPA MCLs[1] (µg/L)
DRO[2]	328
GRO[2]	304

Notes: Bold concentrations exceed MCLs.
All results shown in µg/L.

DRO	Diesel-Range Organics
EPA	U.S. Environmental Protection Agency
GRO	Gasoline-Range Organics
J	Estimated
MCL	Maximum Contaminant Level
NAPL	Non-Aqueous Phase Liquid
ND	Not Detected at concentration exceeding practical quantitation limit shown in parentheses.
NNEPA	Navajo Nation Environmental Protection Agency
µg/L	Micrograms per Liter
†	Duplicate Sample

References for the contaminant concentrations include:
[1]Safe Drinking Water Act. The NNEPA uses the MCLs established by the EPA.
[2]Cleanup level proposed by EPA Region 9.

Legend

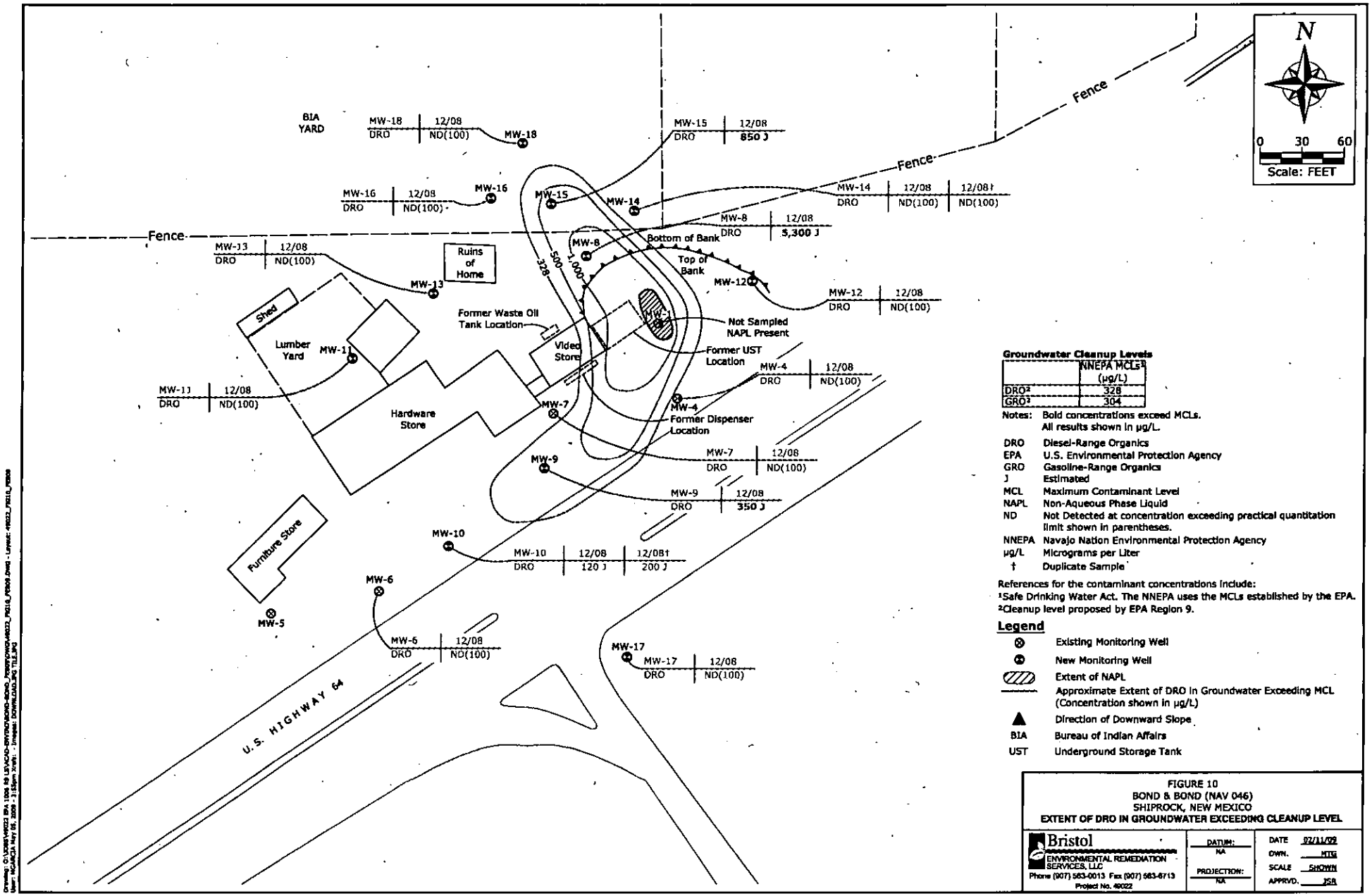
- Existing Monitoring Well
- New Monitoring Well
- Extent of NAPL
- Approximate Extent of GRO in Groundwater Exceeding MCL (Concentration shown in µg/L)
- Direction of Downward Slope
- BIA — Bureau of Indian Affairs
- UST — Underground Storage Tank

FIGURE 9
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
EXTENT OF GRO IN GROUNWATER EXCEEDING CLEANUP LEVEL

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 49022

DATUM: NA
PROJECTION: NA

DATE 02/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSR



Groundwater Cleanup Levels

	NNEPA MCLs[1] (µg/L)
DRO[2]	328
GRO[2]	304

Notes: Bold concentrations exceed MCLs.
All results shown in µg/L.

DRO	Diesel-Range Organics
EPA	U.S. Environmental Protection Agency
GRO	Gasoline-Range Organics
J	Estimated
MCL	Maximum Contaminant Level
NAPL	Non-Aqueous Phase Liquid
ND	Not Detected at concentration exceeding practical quantitation limit shown in parentheses.
NNEPA	Navajo Nation Environmental Protection Agency
µg/L	Micrograms per Liter
†	Duplicate Sample

References for the contaminant concentrations include:
[1]Safe Drinking Water Act. The NNEPA uses the MCLs established by the EPA.
[2]Cleanup level proposed by EPA Region 9.

Legend

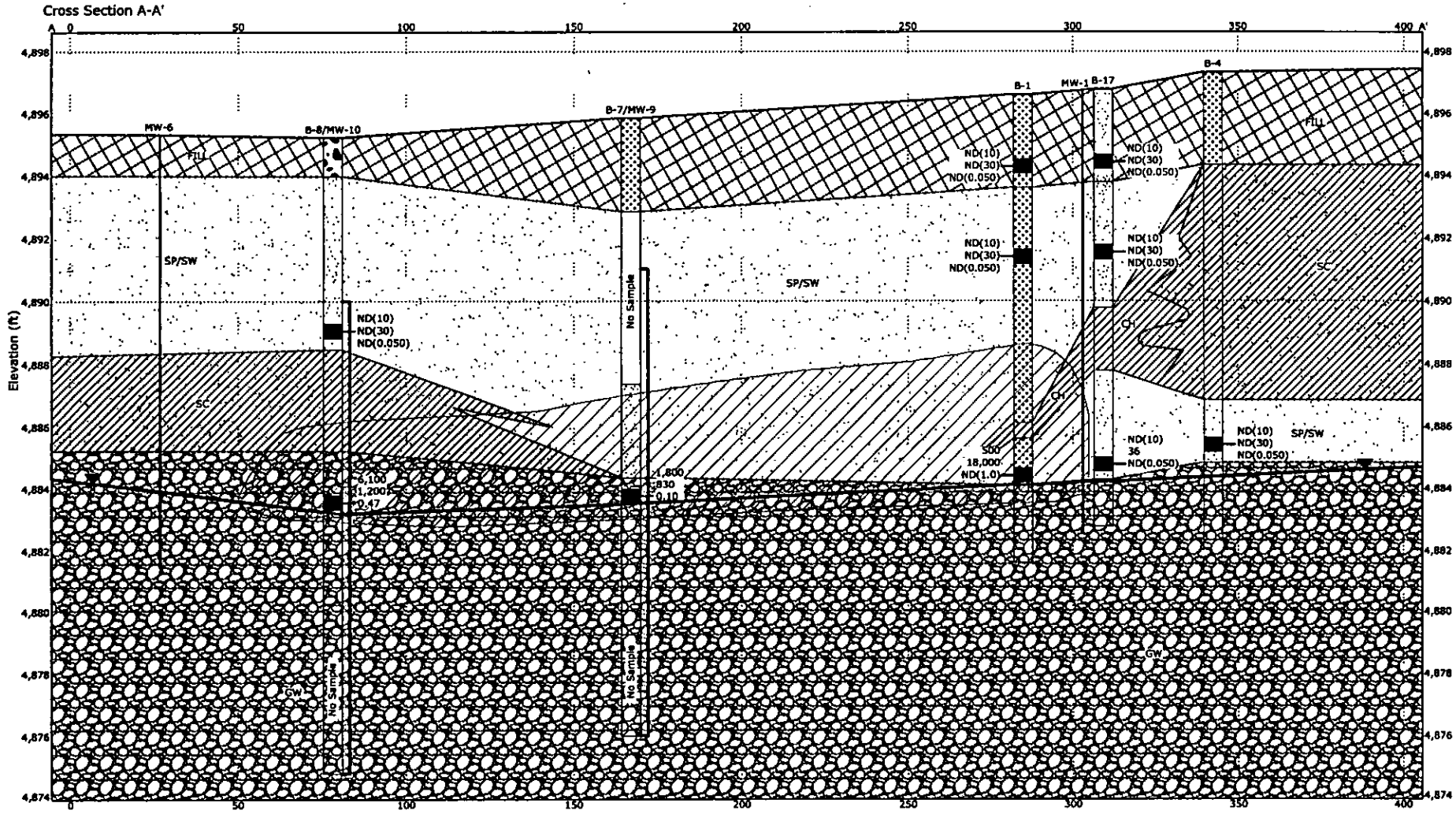
- Existing Monitoring Well
- New Monitoring Well
- Extent of NAPL
- Approximate Extent of DRO in Groundwater Exceeding MCL (Concentration shown in µg/L)
- Direction of Downward Slope
- BIA — Bureau of Indian Affairs
- UST — Underground Storage Tank

FIGURE 10
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
EXTENT OF DRO IN GROUNDWATER EXCEEDING CLEANUP LEVEL

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 49022

DATUM: NA
PROJECTION: NA

DATE 07/11/09
DWN. MTG
SCALE SHOWN
APPRVD. JSR



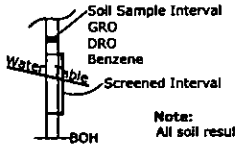
SUBSURFACE DIAGRAM

- SW Well-graded Sand
- SP Poorly-graded Sand
- CH High Plasticity Clay
- SC Clayey Sand
- GW Well-graded Gravel
- Fill

LEGEND

- Approximate Extent of Soil Exceeding Cleanup Levels
- BOH Bottom of Hole
- DRO Diesel-Range Organics
- GRO Gasoline-Range Organics
- mg/kg milligram/kilogram
- ND Not Detected
- ft feet

Boring or Well Diagram

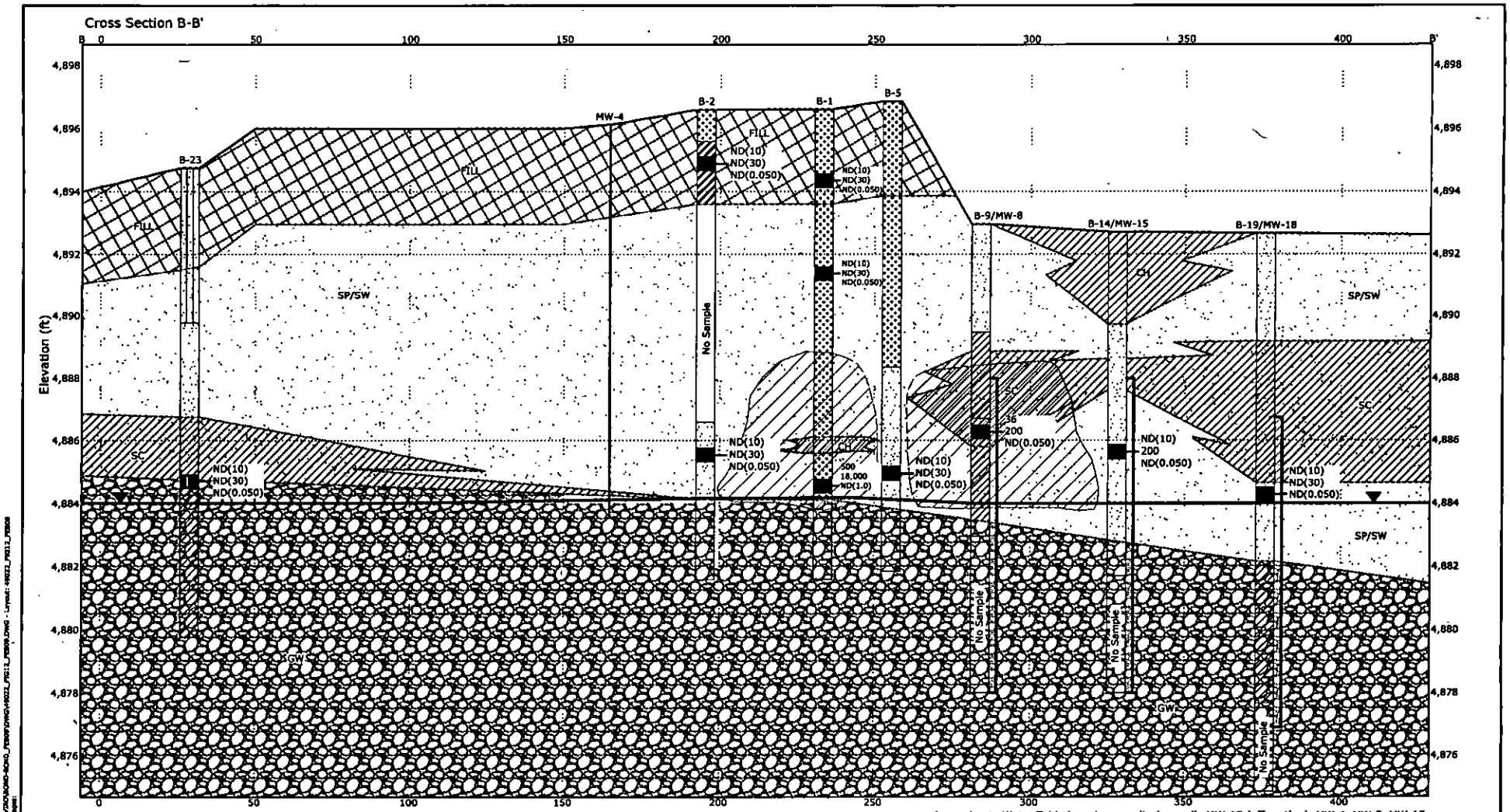


Note:
All soil results shown in mg/kg.

FIGURE 11
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
CROSS SECTION A-A'

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 48022

DATUM:	NA'
PROJECTION:	NA
DATE	02/11/09
DWN.	MTG
SCALE	SHOWN
APPRVD.	JSR



SUBSURFACE DIAGRAM

- SW Well-graded Sand
- SP Poorly-graded Sand
- CH High Plasticity Clay
- SC Clayey Sand
- GW Well-graded Gravel
- GC Clayey Gravel
- Fill

LEGEND

- Approximate Extent of Soil Exceeding Cleanup Levels
- BOH Bottom of Hole
- DRO Diesel-Range Organics
- GRO Gasoline-Range Organics
- mg/kg milligram/kilogram
- ND Not Detected
- ft feet

Boring or Well Diagram

Soil Sample Interval
GRO
DRO
Benzene
Water Table
Screened Interval
BOH

Note:
All soil results shown in mg/kg.

FIGURE 12
BOND & BOND (NAV 046)
SHIPROCK, NEW MEXICO
CROSS SECTION B-B'

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC
Phone (907) 563-0013 Fax (907) 563-6713
Project No. 49022

DATUM:	NA
PROJECTION:	NA
DATE	02/11/09
DWN.	HTG
SCALE	SHOWN
APPRVD.	JSR

ATTACHMENT 2

Tables

Table 1	Static Water Levels
Table 2	Current and Historical Groundwater Analytical Results
Table 3	November 2008 Groundwater Screening Results
Table 4	Soil Analytical Results

Table 1 Static Water Level Measurements
Bond & Bond (NAV 046)

Well Name	TOC Elevation (feet above MSL)	Measurement Date	Depth to NAPL (feet)	Depth to Water (feet)	NAPL Thickness (feet)	SWL Elevation (feet above MSL)
MW-1	4896.26	6/16/2003	--	11.35	--	4884.91
		5/21/2008	NR	10.78	NR	4885.48
		9/2/2008	--	10.39	--	4885.87
		12/5/2008	12.15	12.18	0.03	4884.10*
MW-4	4895.95	6/16/2003	--	10.96	--	4884.99
		5/21/2008	--	10.39	--	4885.56
		9/2/2008	--	11.81	--	4884.14
		12/5/2008	--	11.80	--	4884.15
MW-5	4894.46	6/16/2003	--	11.90	--	4882.56
		9/2/2008	--	10.35	--	4884.11
		12/5/2008	--	10.04	--	4884.42
MW-6	4895.15	6/16/2008	--	10.63	--	4884.52
		5/21/2008	--	9.93	--	4885.22
		9/2/2008	--	11.32	--	4883.83
		12/5/2008	--	11.35	--	4883.80
MW-7	4896.21	5/21/2008	--	10.81	--	4885.40
		9/2/2008	--	13.22	--	4882.99
		12/5/2008	--	12.15	--	4884.06
MW-8	4895.26	9/2/2008	--	11.27	--	4883.99
		12/5/2008	--	11.23	--	4884.03
MW-9	4895.85	9/2/2008	--	11.98	--	4883.87
		12/5/2008	--	11.90	--	4883.95
MW-10	4895.22	9/2/2008	--	11.24	--	4883.98
		12/5/2008	--	11.27	--	4883.95
MW-11	4891.59	9/2/2008	--	7.85	--	4883.74
		12/5/2008	--	7.82	--	4883.77
MW-12	4896.17	9/2/2008	--	11.96	--	4884.21
		12/5/2008	--	11.92	--	4884.25
MW-13	4895.65	9/2/2008	--	11.28	--	4884.37
		12/5/2008	--	11.33	--	4884.32
MW-14	4892.09	9/2/2008	--	8.02	--	4884.07
		12/5/2008	--	8.03	--	4884.06
MW-15	4892.76	9/2/2008	--	8.73	--	4884.03
		12/5/2008	--	8.73	--	4884.03
MW-16	4892.71	9/2/2008	--	8.75	--	4883.96
		12/5/2008	--	8.77	--	4883.94
MW-17	4895.15	12/5/2008	--	11.12	--	4884.03
MW-18	4892.66	12/5/2008	--	8.66	--	4884.00

Notes:
-- = not applicable (NAPL not present in well)
* = SWL elevation corrected for NAPL using factor of 0.8
MSL = mean sea level
NAPL = non-aqueous phase liquid
NR = not recorded
SWL = static water level
TOC = top of casing

Table 2 Current and Historical Groundwater Analytical Results
Bond & Bond (NAV 046)

Location	Sample Identification	Sample Date	GRO (µg/L) Result	GRO (µg/L) PQL	DRO (µg/L) Result	DRO (µg/L) PQL	Benzene (µg/L) Result	Benzene (µg/L) PQL	Toluene (µg/L) Result	Toluene (µg/L) PQL	Ethylbenzene (µg/L) Result	Ethylbenzene (µg/L) PQL	Total Xylenes (µg/L) Result	Total Xylenes (µg/L) PQL	EDB (µg/L) Result	EDB (µg/L) PQL	MTBE (µg/L) Result	MTBE (µg/L) PQL	Lead (mg/L) Result	Lead (mg/L) PQL
NNEPA MCL[1]			304*		328*		5		1,000		700		10,000		0.05		12**		0.015	
MW-1	MW-1	8/16/2003	–		–		ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	–	
		8/12/2005	Not Sampled, NAPL Present																	
		5/21/2008																		
		12/5/2008																		
MW-4	MW-4	8/16/2003	–		–		ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	–	
		8/15/2005	–		–		ND	0.5	ND	0.5	ND	0.5	ND	1.0	–		ND	1.0	ND	0.010
		5/21/2008	ND	200	ND UJL	110	ND	0.50	ND	0.50	ND	0.50	32.1	1.5	ND	0.0199	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-5	MW-5	8/16/2003	–		–		ND	1.0	ND	1.0	1.74	1.0	1.9	1.0	ND	1.0	ND	1.0	–	
		8/15/2005	Not Sampled, Well Dry																	
		5/21/2008																		
		12/5/2008																		
MW-6	MW-6	8/16/2003	–		–		1.38	1.0	ND	1.0	1.86	1.0	ND	1.0	ND	1.0	ND	1.0	–	
		8/15/2005	–		–		ND	0.5	ND	0.5	ND	0.5	ND	1.0	–		ND	1.0	ND	0.010
		5/21/2008	ND	200	220 JL	100	ND	0.50	ND	0.50	ND	0.50	ND	1.5	ND	0.0199	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0095	ND	2.0	–	
MW-7	MW-7	8/15/2005	–		–		3.3	0.5	3.5	0.5	1,120	0.5	675.6	1.0	–		2.8	1.0	ND	0.010
		5/21/2008	1,900	200	1,100 JL	570	1.2	0.50	3.2	0.50	130	0.50	6.5	1.5	ND	0.0201	ND	2.0	ND	0.010
	MW-7 DUP[1]	5/21/2008	2,100	800	840 JL	530	1.1	0.50	3.3	0.50	110	0.50	5.8	1.5	ND	0.0199	ND	2.0	ND	0.010
	MW-7	12/5/2008	280 J	200	ND	100	ND	0.50	ND	2.0	21	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-8	MW-8	9/2/2008	1,000 JH	200	19,000 JL	1,200	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0209	ND	2.0	ND	0.010
		12/5/2008	ND	200	5,300 J	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-9	MW-9	9/2/2008	2,800 JH	1,000	850 JL	120	ND	5.0	ND	20	250	20	85	30	ND	0.0200	ND	20	ND	0.010
		12/5/2008	1,100 J	1,000	350 J	100	ND	0.50	ND	2.0	92	10	8.4	3.0	ND	0.0096	ND	2.0	–	
MW-10	MW-10	9/2/2008	4,900 JH	1,000	400 JL	110	ND	0.50	ND	2.0	5.3	2.0	ND	3.0	ND	0.0205	ND	2.0	ND	0.010
		12/5/2008	400 J	400	120 J	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0095	ND	2.0	–	
	MW-21[1]	12/5/2008	1,200 J	200	200 J	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0100	ND	2.0	–	

Table 2 Current and Historical Groundwater Analytical Results
Bond & Bond (NAV 046)

Location	Sample Identification	Sample Date	GRO (µg/L) Result	GRO (µg/L) PQL	DRO (µg/L) Result	DRO (µg/L) PQL	Benzene (µg/L) Result	Benzene (µg/L) PQL	Toluene (µg/L) Result	Toluene (µg/L) PQL	Ethylbenzene (µg/L) Result	Ethylbenzene (µg/L) PQL	Total Xylenes (µg/L) Result	Total Xylenes (µg/L) PQL	EDB (µg/L) Result	EDB (µg/L) PQL	MTBE (µg/L) Result	MTBE (µg/L) PQL	Lead (mg/L) Result	Lead (mg/L) PQL
	NNEPA MCL[1]		304*		328*		5		1,000		700		10,000		0.05		12**		0.015	
MW-11	MW-11	9/2/2008	ND	200	150 JL	110	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0203	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-12	MW-12	9/2/2008	ND	200	ND UJL	110	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0201	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-13	MW-13	9/2/2008	ND	200	ND UJL	120	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0200	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0097	ND	2.0	–	
MW-14	MW-14	9/2/2008	ND	200	180 JL	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0203	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0095	ND	2.0	–	
	MW-22[†]	12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-15	MW-15	9/2/2008	ND	200	**5,700 JL**	**110**	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0206	ND	2.0	ND	0.010
		12/5/2008	ND	200	**850 J**	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-16	MW-16	9/2/2008	ND	200	**340 JL**	**100**	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0208	ND	2.0	ND	0.010
		12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-17	MW-17	12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0096	ND	2.0	–	
MW-18	B-19-W	11/17/2008	–		150	110	–		–		–		–		–		–		–	
	MW-18	12/5/2008	ND	200	ND	100	ND	0.50	ND	2.0	ND	2.0	ND	3.0	ND	0.0095	ND	2.0	–	
B-18	B-18-W	11/17/2008	–		180	100	–		–		–		–		–		–		–	
B-20	B-20-W	11/17/2008	–		190	110	–		–		–		–		–		–		–	

Notes:
Analytical laboratory was Columbia Analytical Services, Inc.
Bold values exceed NNEPA MCLs.
[1]Safe Drinking Water Act. The NNEPA uses the MCLs established by the EPA.
* = NNEPA has no established MCL for diesel or gasoline-range organics. The associated values are cleanup levels proposed by EPA Region 9.
** = NNEPA has no established MCL for methyl tertiary-butyl ether. The associated value is an EPA Region 9 preliminary remediation goal.
– = not analyzed
µg/L = micrograms per liter
[†] = indicates duplicate sample
DRO = diesel-range organics
EDB = 1,2-dibromoethane
EPA = U.S. Environmental Protection Agency
GRO = gasoline-range organics
J = the associated value is an estimated quantity
JH = the associated result is an estimated quantity with a potential high bias
JL = the associated result is an estimated quantity with a potential low bias
MCL = maximum contaminant level
mg/L = milligrams per liter
MTBE = methyl tertiary-butyl ether
NAPL = non-aqueous phase liquid
ND = not detected (practical quantitation limit provided in parenthesis)
NNEPA = Navajo Nation EPA
PQL = practical quantitation limit
UJL = the associated result is an estimated non-detect with a potential low bias

Table 3 November 2008 Groundwater Screening Results
Bond & Bond (NAV 046)

			Boring/Monitoring Well:	B-1	B-2	B-3	B-4	B-5	B-6 (MW-12)	B-7 (MW-9)	B-8 (MW-10)	B-9 (MW-8)	B-10	B-11 (MW-13)	B-12 (MW-11)
			Field Sample ID:	B-1-GW	B-2-GW	B-3-GW	B-4-GW	B-5-GW	B-6-GW	B-7-GW	B-8-GW	B-9-GW	B-10-GW	B-11-GW	B-12-GW
Parameter	Method	Units	NNEPA MCL[1]												
Petroleum Hydrocarbons															
Gasoline-range Organics	SW8021B	µg/L	304*	**16,000**	**23,000**	**16,000**	ND (200)	**36,000**	ND (200)	**31,000**	**11,000**	**19,000**	**5,100**	ND (200)	ND (200)
Diesel-range Organics	SW8015	µg/L	328*	**28,000**	**5,200**	ND (3,000)	ND (3,000)	**6,300**	ND (3,000)	ND (3,000)	ND (3,000)	ND (3,000)	**5,500**	ND (3,000)	ND (3,000)
Volatile Organic Compounds															
Benzene	SW8260B	µg/L	5	ND (1.0)	ND (20)	ND (50)	ND (1.0)	ND (50)	ND (1.0)	ND (50)	ND (20)	ND (20)	ND (5.0)	ND (1.0)	ND (1.0)
Ethylbenzene	SW8260B	µg/L	700	ND (2.0)	ND (40)	ND (100)	ND (2.0)	ND (100)	ND (2.0)	480	51	ND (40)	ND (10)	ND (2.0)	ND (2.0)
MTBE	SW8260B	µg/L	12**	ND (4.0)	ND (80)	ND (200)	ND (4.0)	ND (200)	ND (4.0)	ND (200)	ND (80)	ND (80)	ND (20)	ND (4.0)	ND (4.0)
Toluene	SW8260B	µg/L	1,000	ND (2.0)	ND (40)	ND (100)	ND (2.0)	ND (100)	ND (2.0)	ND (100)	ND (40)	ND (40)	ND (10)	ND (2.0)	ND (2.0)
Xylenes, Total	SW8260B	µg/L	10,000	3.3	ND (60)	ND (150)	ND (3.0)	ND (150)	ND (3.0)	ND (150)	ND (60)	ND (60)	ND (15)	ND (3.0)	ND (3.0)

			Boring/Monitoring Well:	B-13 (MW-14)	B-14 (MW-15)	B-15 (MW-16)	B-16	B-17	B-18	B-19 (MW-18)	B-20	B-21	B-22 (MW-17)	B-23
			Field Sample ID:	B-13-GW	B-14-GW	B-15-GW	B-16-GW	B-17-GW	B-18-W	B-19-W	B-20-W	B-21-W	B-22-W	B-23-W
Parameter	Method	Units	NNEPA MCL[1]											
Petroleum Hydrocarbons														
Gasoline-range Organics	SW8021B	µg/L	304*	ND (200)	ND (200)	ND (200)	ND (200)	**20,000**	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)	ND (200)
Diesel-range Organics	SW8015	µg/L	328*	ND (3,000)	ND (3,000)	ND (3,000)	ND (3,000)	**13,000**	ND (3,000)	ND (3,000)	ND (3,000)	ND (3,000)	ND (3,000)	ND (3,000)
Volatile Organic Compounds														
Benzene	SW8260B	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (50)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Ethylbenzene	SW8260B	µg/L	700	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (100)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
MTBE	SW8260B	µg/L	11**	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (200)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)	ND (4.0)
Toluene	SW8260B	µg/L	1,000	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (100)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Xylenes, Total	SW8260B	µg/L	10,000	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (150)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)

Notes:
Screening performed by mobile laboratory operated by Columbia Analytical Services, Inc.
Results are field-screening values only and have not been verified.
Bold values exceed NNEPA MCLs.
[1]Safe Drinking Water Act. The NNEPA uses the MCLs established by the EPA.

* = NNEPA has no established MCL for diesel or gasoline-range organics. The associated values are cleanup levels proposed by EPA Region 9.
** = NNEPA has no established MCL for methyl tertiary-butyl ether. The associated value is an EPA Region 9 preliminary remediation goal.
µg/L = micrograms per liter
EPA = U.S. Environmental Protection Agency
ID = identification number
MCL = maximum contaminant level
MTBE = methyl tertiary-butyl ether
ND = not detected (practical quantitation limit provided in parenthesis)
NNEPA = Navajo Nation EPA
SW = Solid Waste Method (EPA)

Table 4 - Soil Analytical Results
Bond & Bond (NAV 046)

			Boring:	B-1			B-2			B-3	B-4	B-5	B-6 (MW-12)	B-7 (MW-9)	B-8 (MW-10)	
			Depth (ft bgs):	2	5	12	1.5	11		11.5	12	12	12	12	6	12
			Field Sample ID:	B-1-2	B-1-5	B-1-12	B-2-1-5	B-2-5	B-2-11†	B-3-11-5	B-4-12	B-5-12	B-6-12	B-7-12	B-8-6	B-8-12
Parameter	Method	Units	NNEPA RL													
Petroleum Hydrocarbons																
Gasoline-range Organics	SW8021B	mg/kg	100	ND (10)	ND (10)	500 JH	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	1,800 JH	ND (10)	6,100 JH
Diesel-range Organics	8015AZ	mg/kg	100	ND (30)	ND (30)	18,000	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	830	ND (30)	1,200
Volatile Organic Compounds																
Benzene	SW8021B	mg/kg	0.13	ND (0.050)	ND (0.050)	ND (1.0)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	0.10 JH	ND (0.050)	0.47 JH
Ethylbenzene	SW8021B	mg/kg	200	ND (0.10)	ND (0.10)	ND (2.0)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	4.8 JH	ND (0.10)	1.8 JH
MTBE	SW8021B	mg/kg	32*	ND (0.20)	ND (0.20)	ND (4.0)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	0.39 JH	ND (0.20)	ND (0.20)
Toluene	SW8021B	mg/kg	68	ND (0.10)	ND (0.10)	ND (2.0)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.73 JH	ND (0.10)	0.37 JH
Xylenes, total	SW8021B	mg/kg	44	ND (0.15)	ND (0.15)	ND (3.0)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	5.1 JH	ND (0.15)	2.5 JH
Other Analytes																
Lead	SW6010B	mg/kg	150*	5.0	7.5	5.0	6.3	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	5.7	ND (5.0)	22	ND (5.0)	6.1
SVOCs	SW8270C	mg/kg	**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**
PCBs	SW8082	mg/kg	**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**

			Boring:	B-9 (MW-8)	B-10	B-11 (MW-13)	B-12 (MW-11)		B-13 (MW-14)	B-14 (MW-15)		B-15 (MW-16)	B-16	B-17		
			Depth (ft bgs):	7	7	9	2	7	7	7		8	12	2	5	12
			Field Sample ID:	B-9-7	B-10-7	B-11-9	B-12-2	B-12-7	B-13-7	B-14-7	B-15-2†	B-15-8	B-16-12	B-17-2	B-17-5	B-17-12
Parameter	Method	Units	NNEPA RL													
Petroleum Hydrocarbons																
Gasoline-range Organics	SW8021B	mg/kg	100	36	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Diesel-range Organics	8015AZ	mg/kg	100	200	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	36
Volatile Organic Compounds																
Benzene	SW8021B	mg/kg	0.13	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Ethylbenzene	SW8021B	mg/kg	200	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
MTBE	SW8021B	mg/kg	32*	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Toluene	SW8021B	mg/kg	68	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Xylenes, total	SW8021B	mg/kg	44	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)
Other Analytes																
Lead	SW6010B	mg/kg	150*	ND (5.0)	ND (5.0)	91	10	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	110	63	ND (5.0)
SVOCs	SW8270C	mg/kg	**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**
PCBs	SW8082	mg/kg	**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**	ND**

Table 4 - Soil Analytical Results
Bond & Bond (NAV 046)

			Boring:	B-18		B-19 (MW-18)	B-20	B-21	B-22 (MW-17)	B-23
			Depth (ft bgs):	10		8.5	9	11.5	13	10
			Field Sample ID:	B-18-10	B-18-5†	B-19-8-5	B-20-9	B-21-11-5	B-22-13	B-23-10
Parameter	Method	Units	NNEPA RL							
Petroleum Hydrocarbons										
Gasoline-range Organics	SW8021B	mg/kg	100	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)
Diesel-range Organics	8015AZ	mg/kg	100	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)
Volatile Organic Compounds										
Benzene	SW8021B	mg/kg	0.13	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)
Ethylbenzene	SW8021B	mg/kg	200	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
MTBE	SW8021B	mg/kg	32*	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Toluene	SW8021B	mg/kg	68	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Xylenes, total	SW8021B	mg/kg	44	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)	ND (0.15)
Other Analytes										
Lead	SW6010B	mg/kg	150*	--	--	--	--	--	--	--
SVOCs	SW8270C	mg/kg	**	--	--	--	--	--	--	--
PCBs	SW8082	mg/kg	**	--	--	--	--	--	--	--

Notes:
Bolded results exceed NNEPA RLs.

* = NNEPA has no established RL for MTBE or lead. The EPA Region 9 residential PRGs are listed instead.
** = Various cleanup levels and PQLs depending on specific analyte. See laboratory analytical report for details.
-- = not analyzed
† = indicates duplicate sample
bgs = below ground surface
EPA = U.S. Environmental Protection Agency
ft = feet
ID = identification
mg/kg = milligrams per kilogram
MTBE = methyl tertiary-butyl ether
ND = not detected (PQL provided in parenthesis)
NNEPA = Navajo Nation Environmental Protection Agency
PCB = polychlorinated biphenyl
PQL = practical quantitation limit
RCRA = Resource Conservation and Recovery Act
RL = regulatory limit
SVOC = semivolatile organic compound
SW = EPA Solid Waste Method

Data flags:
JH=the associated vaue is an estimated quantity with a potential high bias

ATTACHMENT 3

Soil Boring Logs

Bristol
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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

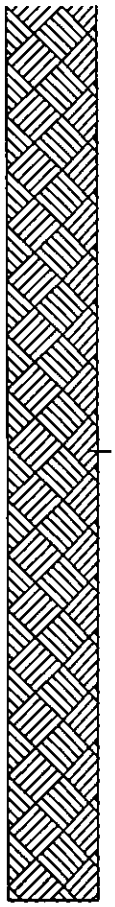
B-1

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105463.075 E 2472538.621
Elevation:	4896.61 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/11/2008
Date Completed	8/11/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0		6 13 18 22	B-1-2	10			SW	SAND with GRAVEL, well graded, dry, medium dense, light yellowish brown (10YR 6/4), fill material
		2 2 2 2 3 2 1 2	B-1-5	100 100	1		SW	SAND, well graded, moist, loose, fine to coarse, subrounded, light brown (7.5YR 6/4)
10		2 3 2 3		100			CH	SANDY CLAY, moist, soft, 65% plastic clay, 35% medium sand, very dark grayish brown (10YR 3/2)
		4 8 8 5	B-1-12	100	103		SW	SAND, well graded, moist, medium dense, fine to coarse, subrounded, light brown (7.5YR 6/4)
							GP	GRAVEL with SAND, poorly graded, saturated, loose, 75% fine to coarse gravel, 25% coarse subangular sand, black (2.5Y 2/5/1), strong petroleum odor
20								

B-1



Notes:
" = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

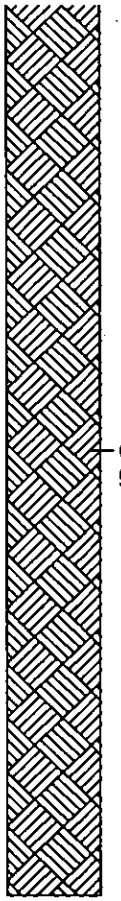
B-2

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105429.953 E 2472557.316
Elevation:	4896.60 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/11/2008
Date Completed	8/11/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	4 7 6 6	B-2-1.5	75	360		SW	SAND with GRAVEL, well graded, dry, medium dense, light yellowish brown (10YR 6/4), fill material
							CH	CLAY with SAND, stiff, 80% plastic clay, 20% fine sand, grayish brown (10YR 5/2), fill material
								All slough, no recovery
	X	4 7 8 8		5				
10	X	2 2 3 2	B-2-11	100	907		SP	SAND, poorly graded, moist, loose, medium, subrounded, very dark bluish gray (Gley 5B 3/1), petroleum odor
							GP	GRAVEL (estimated), hard drilling
20								

B-2



Notes:
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Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

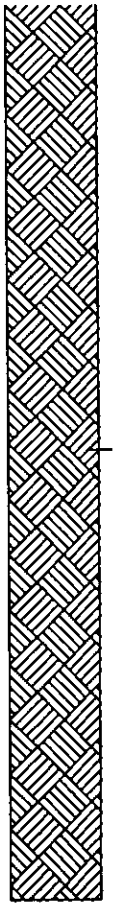
B-3

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105453.919 E 2472616.745
Elevation:	4896.15 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/11/2008
Date Completed	8/11/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	4 6 8 5		20	4.7		SW	SAND and SILT, well graded, dry, medium dense, light yellowish brown (10YR 6/4), fill material
								All slough, no recovery
	X	16 8 5 9		10				
10	X	7 6 3 3	B-3-11.5	25	1.7		SP	SAND, poorly graded, moist, loose, medium, subrounded, very dark bluish gray (5B 3/1), no odor
							GP	GRAVEL (estimated), hard drilling
20								

B-3



Notes:
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% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

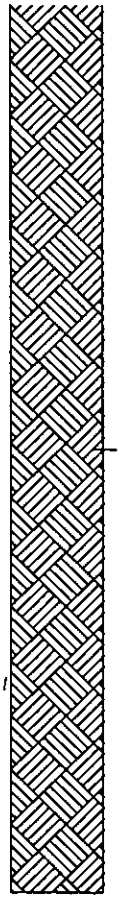
B-4

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105501.321 E 2472581.459
Elevation:	4897.33 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/11/2008
Date Completed	8/11/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	4 4 3 2		50	2.2		SW	SAND and SILT, well graded, light yellowish brown (10YR 6/4), fill material
	X	4 6 4 2		100			SC	CLAYEY SAND, well graded, moist, loose, 70% fine to medium, subrounded sand, 30% clay, dark yellowish brown (10YR 4/4), no odor
10	X	2 3 4 7	B-4-12	100	1.9		SP	SAND, poorly graded, medium dense, medium, subrounded, yellowish brown (10YR 5/4), hard drilling at 12.5 feet bgs
							GP	GRAVEL (estimated), hard drilling
20								

B-4



Notes:
" = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

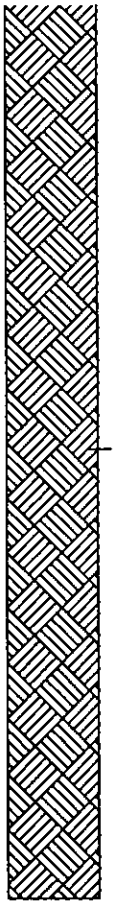
B-5

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105482.999
	E 2472529.211
Elevation:	4896.86 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/11/2008
Date Completed	8/11/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	4 7 8 12		50	2.5		SW	SAND with GRAVEL, well graded, dry, medium dense, light yellowish brown (10YR 6/4), fill material
	X	11 10 7 5		75	0.9		SW	SAND, well graded, medium dense, fine to coarse, subrounded, light yellowish brown (10YR 6/4)
10	X	2 3 2 8	B-5-12	100	1.3		SP	SAND, poorly graded, loose, fine, subrounded, light yellowish brown (10YR 6/4)
							GP	GRAVEL (estimated), hard drilling
20								

B-5



Notes:
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% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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WA 1006 Region 9 LUST Sites

Job No. 49022

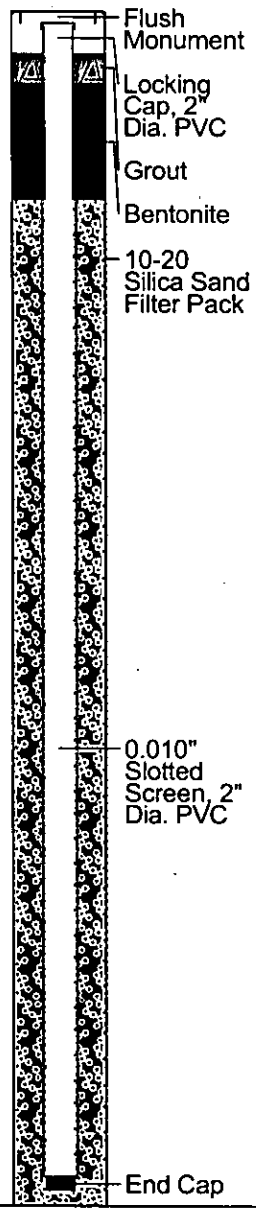
B-6/MW-12

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105489.872 E 2472633.159
Elevation:	4896.17 feet above MSL
Total Depth:	20 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/12/2008
Date Completed	8/13/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	2 2 2 2		50	2.7		SW	SAND with GRAVEL, well graded, dry, medium dense, light yellowish brown (10YR 6/4), fill material
	X	3 5 4 4		100	3.8		SC	CLAYEY SAND, poorly graded, dry, loose, 85% fine subrounded sand, 15% nonplastic clay, light yellowish brown (10YR 6/4), hard drilling at 10 feet bgs
10	X	2 2 4 9	B-6-12	75				Hard drilling at 10 feet bgs
							SP	SAND, poorly graded, saturated, loose, medium, subrounded, reddish yellow (7.5YR 6/6), no odor
							GP	GRAVEL (estimated), hard drilling
20								

MW-12



Notes:
" = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

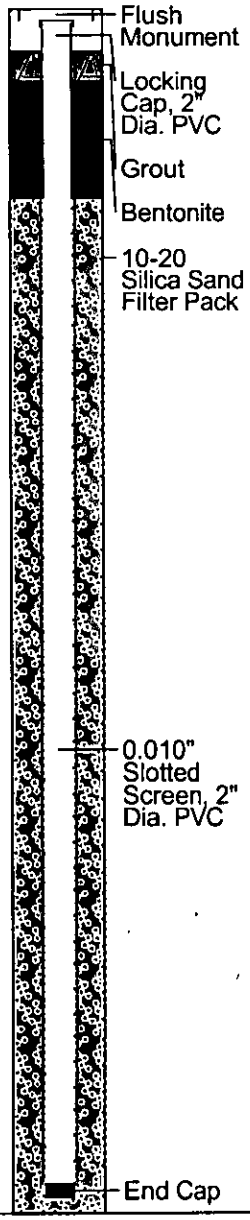
B-7/MW-9

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105357.602 E 2472485.953
Elevation:	4895.85 feet above MSL
Total Depth:	20 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/12/2008
Date Completed	8/12/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	3 4 5 7		50	3.8		SW	SAND with GRAVEL, medium dense, 75% sand, 25% gravel, fill material, some asphalt
	X	5 7 3 2		0				No recovery
10	X	3 9 44 19	B-7-12	75	129		SP	SAND, poorly graded, saturated, loose, medium, subrounded, dark bluish gray (5B 3/1)
							GP	GRAVEL with SAND, poorly graded
20								

MW-9



Notes:
" = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

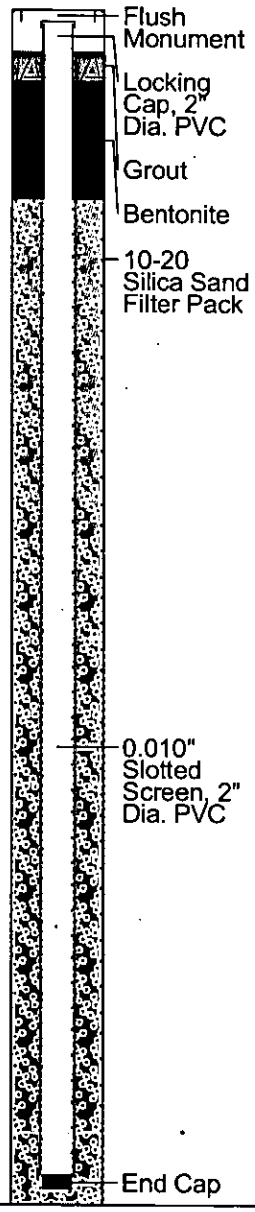
B-8/MW-10

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105301.967 E 2472417.011
Elevation:	4895.22 feet above MSL
Total Depth:	20 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/12/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0								
	X	5 10 11 7		75	5.7		GW	GRAVEL with SAND, medium dense, 75% gravel, 25% sand, fill material, some asphalt
							SP	SAND, poorly graded, moist, medium dense, fine, subrounded, dark gray (N3), no odor
	X	4 4 3 4	B-8-6	75	5.2			
							SC	CLAYEY SAND
10	X	2 15 19 21	B-8-12	10	2022		GP	GRAVEL with SAND, poorly graded, black (N2.5), strong petroleum odor
20								

MW-10



Notes:
" = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

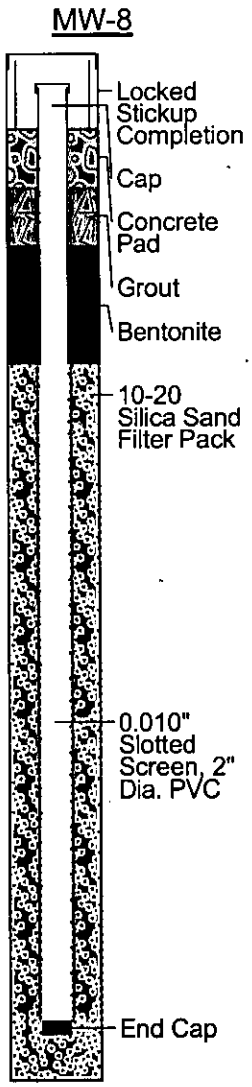
Job No. 49022

B-9/MW-8

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105507.676 E 2472515.03
Elevation:	4892.96 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/12/2008
Date Completed	8/12/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	2 2 3 2		75	3		SP	SAND, poorly graded, moist, loose, fine, rounded, light yellowish brown (10YR 6/4)
							SC	CLAYEY SAND, poorly graded, loose, 65% fine subrounded sand, 35% clay, yellowish brown (10YR 5/4)
	X	2 2 6 18	B-9-7	100	27.3		SC	CLAYEY SAND, poorly graded, loose, 65% fine subrounded sand, 35% clay, very dark gray (N3), strong petroleum odor
10							GP	GRAVEL (estimated), hard drilling
20								



Notes:
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% = percent
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Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
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No. = number
PID = photoionization detector
ppm = parts per million
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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

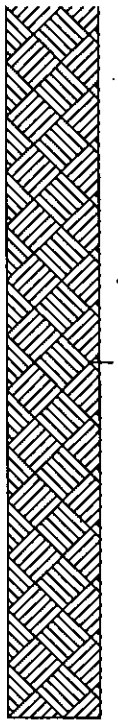
B-10

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105486.407 E 2472460.802
Elevation:	4892.39 feet above MSL
Total Depth:	12 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/12/2008
Date Completed	8/13/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0								
	X	3 5 4 4		50	3.6		SC	CLAYEY SAND, poorly graded, dry, loose, 85% fine subrounded sand, 15% clay, pale brown (10YR 6/3)
	X	2 4 27 17	B-10-7	100	3.4		SP	SAND, poorly graded, moist, medium dense, fine, subrounded, dark yellowish brown (10YR 3/4), no odor
10	X	4 3 23 17		50			SC	CLAYEY SAND
							GP	GRAVEL, poorly graded, coarse
20								

B-10



Notes:
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LUST = leaking underground storage tank
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N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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WA 1006 Region 9 LUST Sites

Job No. 49022

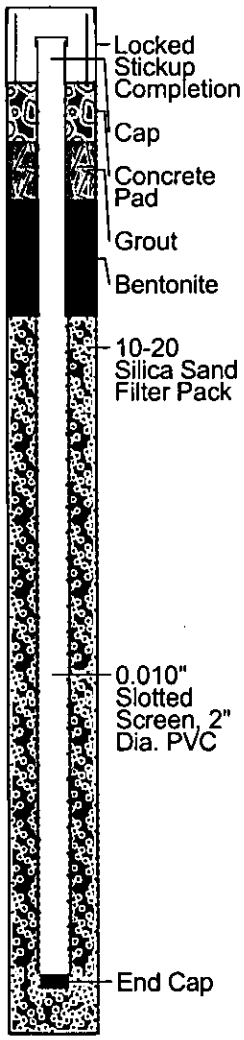
B-11/MW-13

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105480.974 E 2472405.487
Elevation:	4893.36 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/13/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	1 3 4 5	B-11-9	75	2.3		SP	SAND, poorly graded, dry, loose, fine, subrounded, light yellowish brown (10YR 6/4), no odor
	X	2 2 2 3		10	7.3		SC	CLAYEY SAND, poorly graded, moist, loose, 75% fine subrounded sand, 25% plastic clay, dark brown (10YR 3/3), no odor, some roots and organic debris
	X	3 3 4 5		10				
10	X	4 7 24 27		50			SP	SAND, poorly graded, saturated, medium dense, medium, subangular, dark gray (10YR 4/1)
							GP	GRAVEL, poorly graded, coarse
20								

MW-13



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ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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WA 1006 Region 9 LUST Sites

Job No. 49022

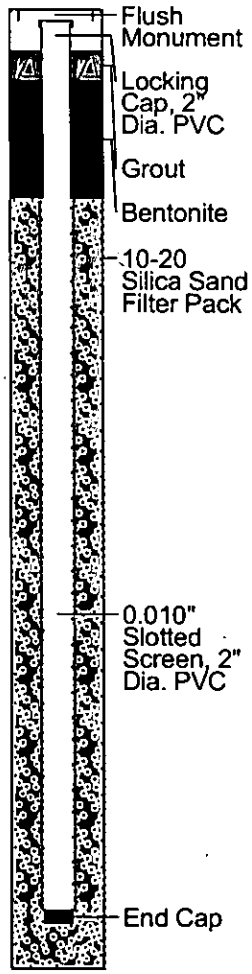
B-12/MW-11

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105435.136 E 2472348.086
Elevation:	4891.59 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/13/2008
Date Completed	8/13/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0		2 3 4 4	B-12-2	50	301		SP	SAND, poorly graded, dry, loose, fine, subrounded, light yellowish brown (10YR 6/4), no odor
		2 2 3 4 4 3 3 2	B-12-7	100 50			SC	CLAYEY SAND, poorly graded, moist, loose, 75% fine subrounded sand, 25% plastic clay, brown (10YR 4/3), some roots
							SP	SAND, poorly graded, moist, loose, medium, subangular, brown (10YR 5/3), some roots
10							GP	GRAVEL (estimated), hard drilling
20								

MW-11



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Dia. = diameter
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ft = foot or feet
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LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

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WA 1006 Region 9 LUST Sites

Job No. 49022

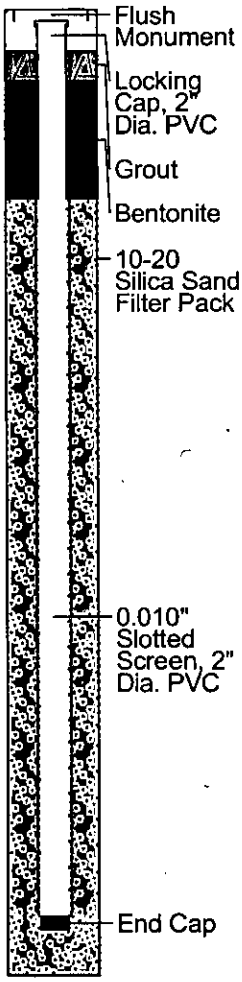
B-13/MW-14

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105539.16
	E 2472548.748
Elevation:	4892.09 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/13/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	2 3 3 3		50			SW	SAND and GRAVEL, well graded, fill material
	X	6 9 27 31	B-13-7	40			SP	SAND, poorly graded, moist, medium dense, fine, subrounded
	X	17 14 9 10		25				
10								
20								

MW-14



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LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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WA 1006 Region 9 LUST Sites

Job No. 49022

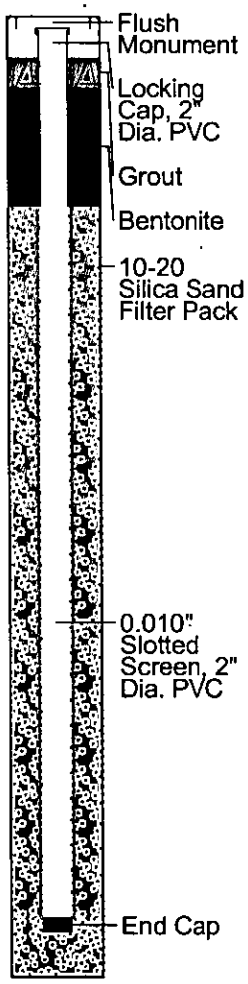
B-14/MW-15

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105544.144 E 2472489.951
Elevation:	4892.71 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/14/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0								
	X	6 1 6 3		40	0.3		CH	SANDY CLAY, moist, firm, 60% plastic clay, 40% fine subrounded sand, mottled gray and orange, no odor, fill material
	X	6 3 9 44	B-14-7	100	0.8		SP	SAND, poorly graded, moist, medium dense, fine, subrounded, yellowish brown (10YR 5/4)
	X	4 9 6 3		0				
10							GP	GRAVEL (estimated), hard drilling
20								

MW-15



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E = easting
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ID = identification
LUST = leaking underground storage tank
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N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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WA = work assignment

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WA 1006 Region 9 LUST Sites

Job No. 49022

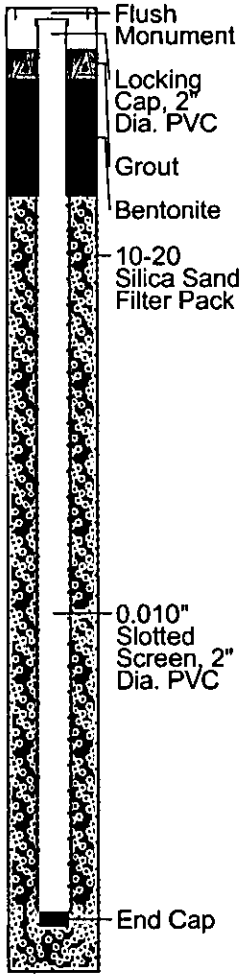
B-15/MW-16

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105548.132
	E 2472446.523
Elevation:	4892.71 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/14/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	9 23 6 7		15	0		SP	SAND, poorly graded, moist, medium dense, fine, subrounded, yellowish brown (10YR 5/4), fill material
							GC	CLAYEY GRAVEL, fill material
	X	1 2 3 4		90			SC	CLAYEY SAND, poorly graded, moist, loose, 65% fine subrounded sand, 35% plastic clay, reddish gray (2.5YR 5/1) with oxide staining around organic material
	X	4 4 2 3	B-15-8	100	0		SP	SAND, poorly graded, moist to saturated, medium, subrounded, dark grayish brown (10YR 4/2), no odor
10								
20								

MW-16



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LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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WA 1006 Region 9 LUST Sites

Job No. 49022

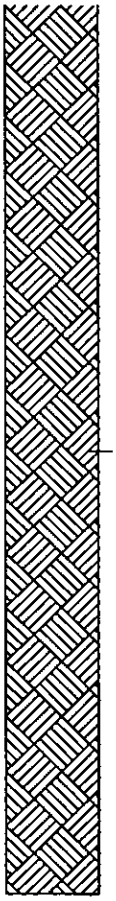
B-16

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105321.391 E 2472334.712
Elevation:	4896.37 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/14/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	10 9 5 6		80			CH	SANDY CLAY, dry, hard, 60% plastic clay, 40% fine subrounded sand, grayish brown (10YR 5/2), fill material
	X	4 6 4 4		100			SP	SAND, poorly graded, moist, loose, fine, subrounded, dark yellowish brown (10YR 4/4)
10	X	1 0 0 1	B-16-12	100			CH	SANDY CLAY, saturated, soft, 70% plastic clay, 30% fine subrounded sand, dark brown (10YR 3/3), no odor
20								

B-16



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ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

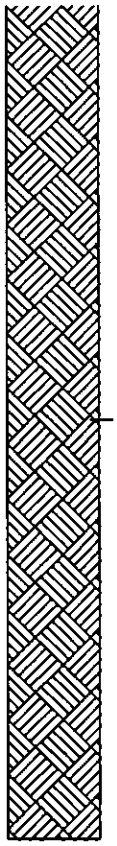
B-17

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105478 E 2472557.806
Elevation:	4896.79 feet above MSL
Total Depth:	14 feet

Logged By:	Walter Gage
Drilled By:	Shad Betts
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	8/14/2008
Date Completed	8/14/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0		5 5 5 3 10 20 19 9	B-17-2	50			SP	SAND with GRAVEL, poorly graded, dry, loose, 95% fine subrounded sand, 5% fine to coarse gravel, light yellowish brown (10YR 6/4), fill material
		4 3 6 6 1 4 4 4 4 4	B-17-5	0 75 65			SP	SAND, poorly graded, slightly moist, medium dense, fine, subrounded, light yellowish brown (10YR 6/4)
							CH	SANDY CLAY, moist, firm, 75% plastic clay, 25% fine subrounded sand, dark yellowish brown (10YR 4/2), iron oxide staining
10		5 5 6 6 10 34 44 50/5	B-17-12	100 50 100			SP	SAND, poorly graded, moist, medium dense, fine, subrounded, brown (10YR 4/3)
							GP	GRAVEL with SAND, poorly graded, saturated, slight petroleum odor
20								

B-17



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WA 1006 Region 9 LUST Sites

Job No. 49022

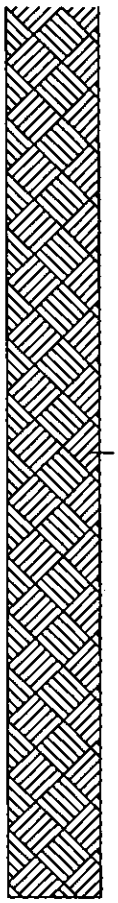
B-18

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105582.698 E 2472420.325
Elevation:	4892.47 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/20/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	7 22 14 7		20	0.5		SC	CLAYEY SAND, poorly graded, moist, medium dense, 65% fine subrounded sand, 35% plastic clay, brown (10YR 4/3)
	X	3 5 8 47		30	0			
	X	4 3 2 4		25			SP	SAND, poorly graded, moist, loose, fine, subangular, brown (10YR 5/3)
10	X	6 13 23 33	B-18-10	25			SP	SAND, poorly graded, saturated, medium dense, coarse, subrounded, light brownish gray (10YR 6/2)
							GC	COBBLES with SAND and CLAY, 65% cobbles, 35% sand and clay
20								

B-18



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LUST = leaking underground storage tank
MSL = mean sea level
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No. = number
PID = photoionization detector
ppm = parts per million
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WA 1006 Region 9 LUST Sites

Job No. 49022

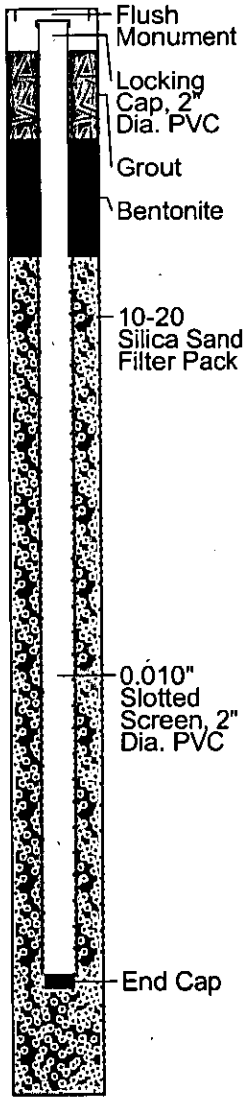
B-19/MW-18

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105586.806 E 2472469.249
Elevation:	4892.66 feet above MSL
Total Depth:	18 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/20/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	10 14 6 4		25	0.5		SP	SAND, poorly graded, moist, medium dense, fine, subrounded, yellowish brown (10YR 5/4), fill material
	X	2 1 2 2		25	0.2		SC	CLAYEY SAND, poorly graded, moist, loose, 65% fine subrounded sand, 35% plastic clay, yellowish brown (10YR 5/4)
10	X	1 1 2 11	B-19-8.5	50	0.3		SP	SAND, poorly graded, saturated, medium dense, coarse, subrounded, brown (10YR 5/3)
	X	12 19 40 36		50			GC	COBBLES with,SAND and CLAY, 65% cobbles, 35% sand and clay
20								

MW-18



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PID = photoionization detector
ppm = parts per million
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WA 1006 Region 9 LUST Sites

Job No. 49022

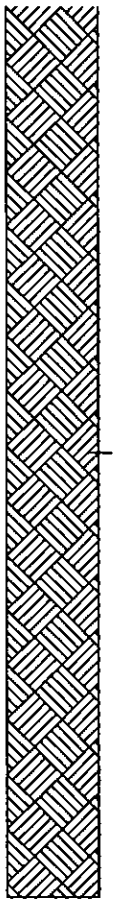
B-20

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105583.779 E 2472514.855
Elevation:	4892.87 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/20/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	19 17 14 5		35	0.3		SP	SAND, poorly graded, moist, medium dense, fine, subrounded, yellowish brown (10YR 5/4), fill material
							SC	CLAYEY SAND, poorly graded, moist, medium dense, 65% fine subrounded sand, 35% plastic clay, brown (10YR 4/3)
	X	2 1 1 2		5	0.4		SC	CLAYEY SAND, poorly graded, moist, loose, 85% fine subrounded sand, 15% plastic clay, dark yellowish brown (10YR 4/4)
10	X	9 4 2 2	B-20-9	15			SP	SAND, poorly graded, saturated, loose, coarse, subrounded, brown (10YR 5/3)
	X	2 2 5 21		10			GC	COBBLES with SAND and CLAY, 65% cobbles, 35% sand and clay
20								

B-20



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ENVIRONMENTAL REMEDIATION SERVICES, LLC

U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

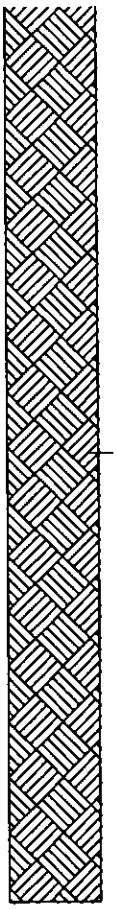
B-21

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105140.81 E 2472457.977
Elevation:	4894.00 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/18/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0		23 11 14 12		25	0.3		SC	CLAYEY SAND, poorly graded, moist, medium dense, 65% fine subrounded sand, 35% plastic clay, dark yellowish brown (10YR 4/4)
		2 1 1 2		50	0.4		SC	CLAYEY SAND, poorly graded, moist, loose, 65% fine subrounded sand, 35% plastic clay, brown (10YR 4/3)
		1 1 2 3		50	0.3		SC	CLAYEY SAND, poorly graded, moist, brown (10YR 5/3)
10		7 3 13 19	B-21-11.5	50			SP	SAND, poorly graded, moist, medium dense, coarse, subrounded, grayish brown (10YR 5/2)
		23 27 38 50		40			SP	SAND with GRAVEL and COBBLES, poorly graded, dense, increasing percentage of gravel and cobbles with depth, gray (10YR 5/1)
20								

B-21



Notes:
* = inch or inches
% = percent
bgs = below ground surface
Dia. = diameter
E = easting
ft = foot or feet
ID = identification
LUST = leaking underground storage tank
MSL = mean sea level
N = northing
No. = number
PID = photoionization detector
ppm = parts per million
PVC = polyvinyl chloride
USCS = United Soil Classification System
WA = work assignment

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

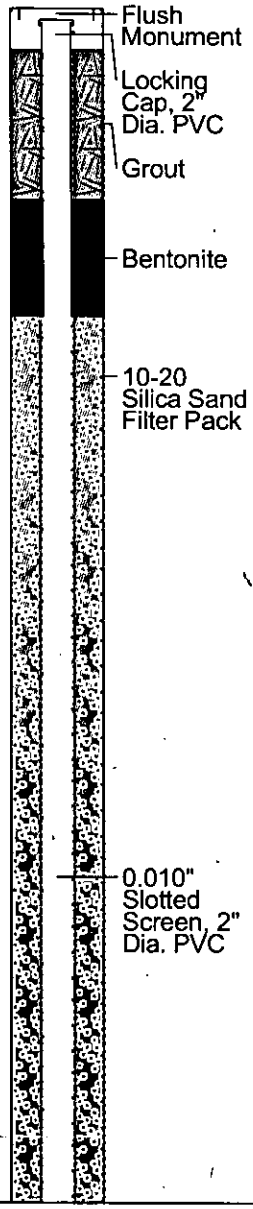
B-22/MW-17

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105223.947 E 2472545.131
Elevation:	4895.15 feet above MSL
Total Depth:	23 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/18/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0	X	5 8 17 11		50	0		SC	CLAYEY SAND, poorly graded, moist, loose, 80% very fine subrounded sand, 20% plastic clay, light yellowish brown (10YR 6/4), cobbles present at 1.5 feet bgs
	X	5 7 7 5		60	0			
	X	2 4 5 5		5	0			
10	X	2 4 5 6		30	0		CH	CLAY, plastic, brown
	X	10 33 19 13	B-22-13	25			SP	SAND, poorly graded, moist, loose, medium, subrounded, light yellowish brown (10YR 6/4)
							CH	CLAY, plastic, brown
							SP	SAND with GRAVEL, poorly graded, medium dense, 65% coarse subrounded sand, 35% fine to coarse gravel, grayish brown (10YR 5/2)
20							GC	COBBLES (estimated), hard drilling

MW-17



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U.S. Environmental Protection Agency
WA 1006 Region 9 LUST Sites

Job No. 49022

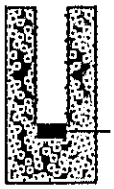
B-22/MW-17

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105223.947 E 2472545.131
Elevation:	4895.15 feet above MSL
Total Depth:	23 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/17/2008
Date Completed	11/18/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
20								
							GC	COBBLES (estimated), hard drilling
30								
40								

MW-17



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WA 1006 Region 9 LUST Sites

Job No. 49022

B-23

Site ID:	Bond & Bond
Site Location:	Shiprock, New Mexico
Boring Location:	N 2105271.874 E 2472610.163
Elevation:	4894.76 feet above MSL
Total Depth:	15 feet

Logged By:	Walter Gage
Drilled By:	Brad Dennison
Drilling Company:	Envirodrill, Inc.
Drill Rig:	CME 75
Drilling Method:	Hollow Stem Auger
Borehole Diameter:	8 inches
Date Started:	11/18/2008
Date Completed	11/18/2008

Depth (ft)	Sample Interval	Blow Count	Lab No.	Recovery (%)	PID (ppm)	Graphic Log	USCS	Lithology Description
0		4 5 11 9		10			SM	SILTY SAND, poorly graded, dry, medium dense, 65% fine subrounded sand, 35% silt, light yellowish brown (10YR 6/4)
		3 2 1 1		60	0.1		SP	SAND, poorly graded, moist, loose, fine, subrounded, yellowish brown (10YR 5/4)
		15 17 50/5		10	0.3		SC	CLAYEY SAND, poorly graded, moist, dense, 65% fine subrounded sand, 35% plastic clay, pale brown (10YR 6/3)
10		50/1	B-23-10	100				COBBLES (estimated) hard drilling, poor recovery
		47 17 32 12		10			GC	
20								

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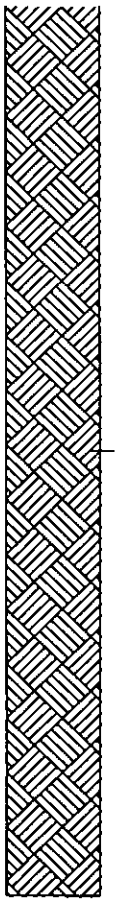

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