1R - 419

GENERAL CORRESPONDENCE

YEAR(S):
2004 - 2003

Chavez, Carl J, EMNRD

From: Vernon Black [vk.black@hungryhorseenvironmentalservices.com]
Sent: Monday, February 09, 2009 11:22 AM
To: Chavez, Carl J, EMNRD
Cc: Johnson, Larry, EMNRD
Subject: RE: Case RP-419-0

Mr. Chavez, upon conferring with Paige McNeill, owner McNeill Ranch, he stated that remediation or cleanup of the ground water contamination was not addressed as a part of this legal action. The action was for the point source of contamination only. He also said that he was not sure who installed the monitor wells at this site or who, if anyone, was monitoring them. A water sample from the livestock water well was obtained a few days ago and field test indicated a chloride level of approximately 1100ppm chlorides. This field rest was conducted after the resident livestock quit drinking from this source.

Thanks,
Vernon K. Black
H.S.E.
Hungry Horse Environmental Services
Hobbs, NM
575 393 3386 office
575 631 2253 cell

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Monday, February 09, 2009 9:54 AM
To: Vernon Black
Cc: Johnson, Larry, EMNRD
Subject: RE: Case RP-419-0

Mr. Black

Good morning. Hungry Horse Environmental Services has been retained by ConocoPhillips to address chloride contamination and other residual organic contamination in the Ogallala Fm. (SWL~ 43 ft. bgl). The pit (suspected source of contamination) was apparently closed in place and has been for the last 10 yrs.

OCD Santa Fe agrees with Larry Johnson (OCD District 1) handing the cleanup at the source with a process that includes OCD Forms C-141..... You indicated that the source removal could be as deep as 40 ft. bgl. You indicated that a court case has recently ended on the facility. The McNeil water wells that provide water for cattle and agricultural purposes were impacted and that 3 MWs were installed and are being monitored.

Per Wayne Price's letter dated October 12, 2004, the OCD had requested closure information by December 1, 2004. This information was apparently not received by the OCD. Therefore, the OCD requests closure information within 90 days of receipt of this e-mail as part of corrective action being proposed at the source. The OCD requests the monitoring information from the wells and any new information collected at the facility, since November 30, 2004 to update the case file on the Internet.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491

Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

From: Vernon Black [mailto:vk.black@hungryhorseenvironmentalservices.com]
Sent: Monday, February 09, 2009 6:58 AM
To: Chavez, Carl J, EMNRD
Subject: Case RP-419-0

Mr. Chavez,
I've been trying to contact you the past few days concerning the above case number. I visited with Larry Johnson here in the Hobbs OCD office and he said that I would have to contact you for disposition. To make a long story short, the above issue has been in litigation for approximately 10 years and has finally been settled. It's a case of antiquated evaporation pond that caused contamination of the ground and ground water. Our primary concern is remediation of the source and our company, Hungry Horse Environmental Services, will be conducting the remediation of the area. Larry Johnson said that since this has already had a case number assigned it would fall under Santa Fe's jurisdiction. He said, with your approval, he would handle the cleanup of the source, which is where I'm at now. Can you please contact me at your earliest convenience to discuss this matter.

Thanks in advance for you help,
Vernon K. Black
H.S.E.
Hungry Horse Environmental Services
Hobbs, NM
575 393 3386 office
575 631 2253 cell

This inbound email has been scanned by the MessageLabs Email Security System.

BURLINGTON
RESOURCES

November 30, 2004

Mr. Wayne Price
Petroleum Engineering Specialist
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Sante Fe, New Mexico 87505

RE: Dauron No.3
NENE of Section 10-21S-37E
Lea County, New Mexico
OCD Case # 1 R 0 419

Mr. Price:

Pursuant to your letter to Dan Tisdale, please accept this letter as the response of Burlington Resources Oil and Gas Company ("Burlington") to your letter of October 12, 2004.

Burlington and its predecessors did operate the Dauron No. 3 well on the captioned property from 1951 until the well ceased producing in 1986. The property was sold to PenRoc Oil and Gas on or about April 11, 1997, at which time the well files were transferred to the purchaser.

Burlington has retrieved copies of such documents as are available from the purchaser and from Burlington's accounting records. We enclose per your request, the documents located concerning the pit. A review of such documents indicate that the pit was closed by a contractor named Eclipse Services, Inc. in 1992 prior to the implementation of Pit Closure Guidelines in New Mexico.

Burlington appreciates the opportunity to respond and provide the enclosed materials. Please do not hesitate to contact me at 432-688-6943 if additional information is required.

Sincerely,

Donna Williams
Regulatory Analyst

Xc: OCD Hobbs Office

10-0137156

300474

Per Virgle Landreth:
2-2-93

Eclipse Services, Inc.

A Complete Environmental Company

111 E. Travis St.
Suite 131
La Grange, Tx
78945

SEND REMITTANCE TO:
Eclipse Services, Inc.
~~c/o P.E.A.C./Crescent Gas~~
~~1075 Kingwood Drive~~
~~Suite 205~~
~~Kingwood, Texas 77339~~

Sold To:
Meridian Oil
3300 North A Street
Midland, Texas 79705
Attn: Bret Adams

Invoice No. ESI-0209-1016

Date: September 15, 1992

Your P.O. No.
Bid dated August 4, 1992
Gutman and Dauren Pits
Eunice, New Mexico

Salesman	Terms	F.O.B.	Date Shipped	Shipped Via
#105	Net 30 days			

Quantity	Description	Amount
	TO INVOICE YOU PER BID OF AUGUST 4, 1992 CLEANUP AND CLOSURE OF GUTMAN AND DAUREN PITS EUNICE, NEW MEXICO	
	Work performed 08/28/92 thru 09/09/92 as per bid:	$ 17,500.00
	Additional Contamination of Gutman Pit	
	(per bid: 47' x 47' x 4.5')	
	Actual Contamination: 47' x 47' x 6.5' 163.69 cubic yards @ $41.50/cubic yard	6,793.14
	TOTAL INVOICE	$ 24,293.14

"set bill aside until soil tests"
by Virgle 9/21/92 bla 3:45pm

APPROVED 6 Gutman Bttry

JAN 29 1993

24404 R496

Eclipse Services, Inc.

A Complete Environmental Company

P.O. Box 830
La Grange, Texas 78945
(409) 968-8405

August 4, 1992

Meridian Oil
3300 North A Street
Midland, Texas 79705

Attn: B. Adams

RE: Gutman and Dauren Pits

Dear Mr. Adams:

Eclipse Services, Inc. is pleased to submit the following bid regarding the closure of the above referenced pits, located near Eunice, New Mexico, to Eclipse's standard operating procedure, which conforms with Meridian Oil's request that the soil test less than 1000 ppm upon completion of the work. Eclipse would supply all labor, equipment, and material to complete this project for a price of $17,500.00. This bid is based on the information provided to Eclipse Services, Inc. by Meridian Oil that the Gutman pit is 47'x47'x4.5'and the Dauren is an estimated 54'x18'x1'. Any additional yardage of soil requiring treatment will be done at a price of $41.50 per cubic yard.

If you are agreeable to the foregoing proposal, please so indicate by signing on the line provided below and returning one copy to the undersigned.

Again, we at Eclipse Services, Inc. would like to take this time to thank you for the opportunity to submit this quote regarding the closure of the Gutman and Dauren pits near Eunice, New Mexico.

Yours very truly,

Virgle Landreth

Virgle Landreth
General Manager

AGREED TO AND ACCEPTED this _____ day of August, 1992.

MERIDIAN OIL

BY: Eddie Carpenter

TITLE: D. Engineer

Eclipse Services, Inc.

A Complete Environmental Company

P.O. Box 830 • La Grange, Texas 78945
409/968-8405

TICKET NO. 101

EQUIPMENT	HRS.	RATE	AMOUNT
		EQUIPMENT TOTAL	

LABOR

		LABOR TOTAL	

QUAN.	MATERIAL	PRICE	AMOUNT
	MATERIAL TOTAL		

DATE | CONTRACT #

COMPANY | CONTRACTOR'S REP.

ADDRESS

LEASE NAME | WELL NAME

WORKED PERFORMED

APPROVED BY

TERMS: NET 30 DAYS

A FINANCE CHARGE OF 1-1/2% PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ADDED TO ALL UNPAID BALANCES 30 DAYS AFTER INVOICING.
ALL INVOICES DUE AND PAYABLE IN LA GRANGE, FAYETTE COUNTY, TEXAS.

THANK YOU

EQUIPMENT	
LABOR	
MATERIAL	
SALES TAX	
TOTAL	

MERIDIAN OIL

801 CHERRY STREET FORT WORTH, TX 76102
817-347-2000

CHECK NO.
2056 909797

COPY COPY COPY COPY

CITIBANK /DELAWARE/, NEWCASTLE, DE

VENDOR NO.
300474

DATE	AMOUNT
02/02/93	$*****37,048.14

VOID IF NOT PRESENTED FOR PAYMENT WITHIN 60 DAYS

PAY TO
THE ORDER OF ECLIPSE SERVICES INC
111 E TRAVIS ST
SUITE 131
LA GRANGE, TX 78945

COPY COPY COPY

MERIDIAN OIL
FORT WORTH, TX 76102

VENDOR NO. 300474 CHECK NO. 2056 909797

CONTROL NO.	REFERENCE		DESCRIPTION OF PAYMENT	DUE VENDOR
	INVOICE	DATE		
40-0137156	ESI02091016	09/15/92		24,293.14
40-0137158	ESI92121019	12/14/92		12,755.00
			TOTAL ---->	$*****37,048.14

40-8137158

Per Virgie Landreth
2-2-93 dh

300474

Eclipse Services, Inc.

A Complete Environmental Company

SEND REMITTANCE TO:
Eclipse Services, Inc.
~~c/o P.F.A.C.~~
~~1075 Kingwood Drive~~
~~Suite 205~~
~~Kingwood, Texas 77339~~
111 E. Travis St.
Suite 131
La Grange, Tx. 78945

Sold To: * Meridian Oil
* 3300 North A Street
Midland, Texas 79705
* Attention: Bret Adams

Invoice No. ESI-92-12-1019

Date: December 14, 1992

Your P.O. No. Bid dated 11-2-92
Dauren Pit
Eunice, New Mexico

Salesman	Terms	F.O.B.	Date Shipped	Shipped Via
#105	Net 30 days			

Quantity	Description	Amount
	TO INVOICE YOU PER BID OF NOVEMBER 2, 1992 CLEANUP AND CLOSURE OF DAUREN PIT EUNICE, NEW MEXICO	
	Work performed as per bid:	$10,175.00
	Track Hole - 24 hours @ $70.00	1,680.00
	TPH Testing - 12 hours	900.00
	TOTAL INVOICE	$12,755.00

APPROVED

JAN 29 1993

24404 R496

Eclipse Services, Inc.

A Complete Environmental Company

P.O. Box 830 • La Grange, Texas 78945
409/968-8405

TICKET NO. 1010

EQUIPMENT	HRS.	RATE	AMOUNT
Track Hole →	24	70.00	1680.00
TPH Testing	12	~~90.00~~	~~1080.00~~ 900.00
EQUIPMENT TOTAL			$ 2,580.00

LABOR			
LABOR TOTAL			

QUAN.	MATERIAL	PRICE	AMOUNT
MATERIAL TOTAL			

DATE: 11-20-92

CONTRACT #: Bid

COMPANY: Meridian oil

CONTRACTOR'S REP.:

ADDRESS: Midland, Tex

LEASE NAME: Dawson Pit

WELL NAME:

WORKED PERFORMED: Close pit on Rev Bid $10175.00 11/2/92

APPROVED BY: Bill Adams

TERMS: NET 30 DAYS

A FINANCE CHARGE OF 1-1/2% PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ADDED TO ALL UNPAID BALANCES 30 DAYS AFTER INVOICING.
ALL INVOICES DUE AND PAYABLE IN LA GRANGE, FAYETTE COUNTY, TEXAS.

THANK YOU

1	10175.00
EQUIPMENT	2580.00
LABOR	
MATERIAL	
SALES TAX	
TOTAL	$12,755.00

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

October 12, 2004

Mr. Dan Tisdale
Burlington Resource Oil and Gas Company
P.O. 51810
Midland, Texas 79710

Re: Dauron #3 Well
NE/4 NE/4 Section 10, Ts 21S, R 37E
Lea County, New Mexico
OCD Case # 1R0419

Dear Mr. Tisdale:

Please find enclosed a copy of a complaint received by New Mexico Oil Conservation Division (OCD) indicating that Burlington Resource Oil and Gas Company may have contaminated a fresh water well owned by McNeill Ranches. Included in the letter is a report showing groundwater contamination below the site referenced above.

Please provide to OCD all closure information pertaining to this site by December 01, 2004. If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: OCD Hobbs Office

attachments-(1)

Law Offices of *James P. Lyle, P.C.*

Nationally Certified
Civil Trial Specialist

James P. Lyle, Esquire
Judith M. Seff, Paralegal

IR0419

RECEIVED

SEP 2 0 2004

OIL CONSERVATION
DIVISION

September 17, 2004

Roger Anderson, Bureau Chief
Environmental Bureau
Oil Conservation Division
1220 St. Francis Drive
Santa Fe, NM 87505

RE: Dauron #3 Well, Lea County, Hobbs, New Mexico

Dear Mr. Anderson:

Please accept this letter as a landowner notification on behalf of the McNeill Ranch of groundwater impact on the subject property, which is a pit associated with the Dauron #3 Well located on the NE1/4 NE1/4, Section 10, Township 21S, Range 37E, Lea County, New Mexico. For your information I am enclosing a copy of the September 17, 2004 monitor well results report of Tierra Technical Consultants, as well as Tierra's November 28, 2003 report. It is our understanding that Burlington Resource Oil and Gas Company is the current owner of this location and is the successor-in-interest to those companies which conducted all prior operations regarding the Dauron #3 Well.

Please contact me if you require any additional information.

Very truly yours,

LAW OFFICES OF JAMES P. LYLE, P.C.

James P. Lyle

JPL/jms
Enclosures
cc: Burlington Resource Oil and Gas Company (c/o Harper Estes, Esquire)
Turner W. Branch, Esquire
William F. McNeill
Paige McNeill

1116 2nd NW • Albuquerque, New Mexico 87102
(505) 843-8000 • (505) 843-8043 Facsimile • pennname@prodigy.net

TIERRA
Technical Consultants

November 28, 2003

Mr. James P. Lyle, Attorney at Law
Law Offices of James P. Lyle, P.C.
1116 Second St. NW
Albuquerque, New Mexico 87102

RE: MCNEILL RANCH – BURLINGTON SITE

Dear Mr. Lyle:

In October 2003, your office requested the involvement of TIERRA Technical Consultants (TIERRA) regarding brine contamination of groundwater on the McNeill Ranch property located in Section 10, Township (T) 21 South (S), Range (R) 37 East (E) in Lea County, New Mexico. The scope of involvement included collection, review, and analysis of existing site-specific data (e.g. environmental report, groundwater laboratory analyses, and deposition information); review of New Mexico Oil Conservation Division (OCD) Regulations; collection and review of regional geologic and hydrogeologic information; and review of the New Mexico Water Quality Control Commission (WQCC) Regulations standards for groundwater contaminants. The following text describes the information gleaned from the various sources, the assessments formulated, and the interpretations derived relative to chloride (brine) contamination of the McNeill Ranch Barney water well, and predicated upon the data acquired prior to the date of this correspondence.

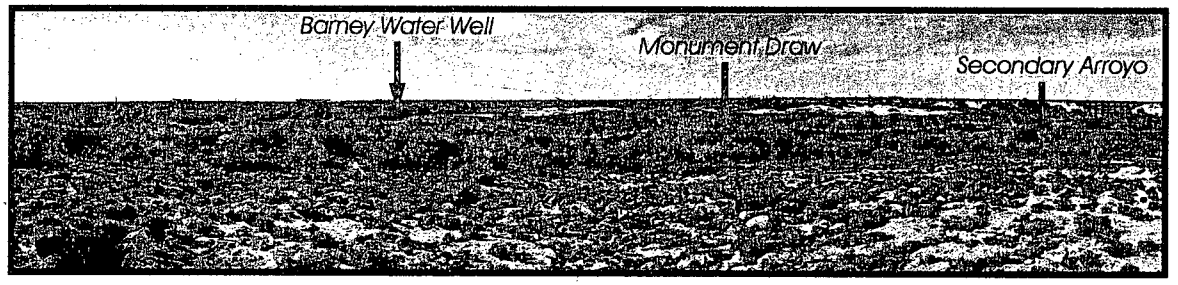
SITE BACKGROUND: The operators of the McNeill Ranch drilled and completed the Barney water well located in the northeast quarter of Section 10, T21S, R37E (Attachment A), sometime prior to September 1976. The well was completed in the upper portion of the Ogallala aquifer, and a stock tank constructed in Monument Draw at the wellhead for livestock watering. According to Mr. Paige McNeill, the pump in the Barney water well is set at a depth of approximately 30 feet (personal communication, November 3, 2003), therefore, the depth to the top of groundwater is less than 30 feet. There is about 30 feet of elevation difference between the well head and the former waste disposal pit, which implies that groundwater in the area of the waste disposal pit, would likely lie at a depth of less than 50 feet below surface grade. Groundwater from the well was sampled in 1976, and submitted for assessment of water quality to Plains Laboratory in Lubbock, TX. The laboratory results from this sample determined a chloride concentration of 209 parts per million (ppm). Groundwater at this point in time was potable (safe for human consumption).

1694 Tierra Del Rio NW • Albuquerque • NM • 87107 • Phone: 505-345-6866 • FAX: 505-345-6966

In this portion of Lea County, the Ogallala aquifer is underlain by large reserves of oil. Large quantities of brine (saltwater) are often produced along with the oil. Until 1969, the OCD allowed the unlimited disposing of the waste brine solutions into un-lined pits. The purpose was to dispose of the brine primarily through infiltration back into the subsurface, and secondarily through evaporation. As a result of this practice, the shallow, fresh water Ogallala aquifer was being contaminated by the large volume of brine being disposed (chloride concentrations in groundwater were rising), making some areas of the aquifer unfit for livestock watering, irrigation of crops, and human consumption.

In April 2003, the McNeill Ranch operators collected another groundwater sample from the Barney water well, and submitted it to Anachem Inc., for quantitative water quality analysis. In April 2003, laboratory results determined a chloride concentration of 956 milligrams/liter (mg/l) (mg/l is equivalent to ppm). The maximum allowable chloride concentration in drinking water is 250 mg/l, based upon the current WQCC standards. This analytical result indicated that the groundwater was no longer potable. Attachment B of this report includes copies of the 1976 and 2003 laboratory analyses.

During this period, an unlined oil field waste disposal pit existed, which was used for the disposal of brine and other hydrocarbon wastes produced in conjunction with the pumping of crude oil. The Barney water well is located approximately ¼ mile southwest of the waste disposal pit. Photograph 1 shows the general terrain in the vicinity of the



Photograph 1 – Southerly panorama of the landscape in the vicinity of the Barney water well and the former Burlington waste disposal pit.

Barney water well and the Burlington waste disposal pit. It also identifies the trace of Monument Draw as well as a secondary arroyo, which lies adjacent to the Burlington waste disposal pit, and flows into Monument Draw near the Barney water well. Attachment A consists of a topographic base map delineating the waste pit location and the affected Barney water well. Global Positioning Satellite (GPS) coordinates were recorded for the center of the waste pit footprint and the Barney water well to assure accurate depiction of each on the base map.

The current lease holder/operator of the former waste pit is Burlington Resource Oil and Gas Company (Burlington). According to Mr. James Lyle, attorney for the McNeill Ranch, Mr. Harper Estes, attorney for Burlington, stated that the waste pit was closed by Burlington in 1993 (James Lyle personal communication November 7, 2003). The

statement was made during a deposition in Hobbs, New Mexico, on October 10, 2003. Presently, a barren, surface grade footprint of the former waste disposal pit is all that remains.

LAND STATUS: The property containing the Barney water well and the site of the waste disposal pit are owned by the Mc Neill Ranch. Over the years, the McNeill Ranch has leased portions of their property to various oil and gas development companies, which in turn have operated or controlled the waste disposal pit. The current lease-holder, Burlington, purportedly closed the pit in 1993.

No documentation regarding the closing date, method, or correspondence with the OCD has been received from Burlington at this date. Neither has any documentation relative to pit operations and maintenance (e.g. annual or total volume of brine disposed, chloride concentrations, releases (overflows), repairs, etc.) been received as of the date of this correspondence.

GEOLOGY/HYDROGEOLOGY: The High Plains occupies the southern part of the Great Plains physiographic province between the Rocky Mountains on the west and the Central Lowland on the east. This region extends from southern South Dakota to southeastern New Mexico and northwestern Texas. The southern portion of the High Plains province is further known as the Southern High Plains. The area is characterized by flat to gently rolling terrain, which is a remnant of a vast plain formed by sediments that were deposited by streams flowing eastward out of the Rocky Mountains. The High Plains aquifer in New Mexico and Texas consists mainly of near-surface deposits of late Tertiary or Quaternary. The principal water-bearing geologic unit in this area is the Tertiary Ogallala Formation. The Ogallala was formed when braided streams flowing eastward from the mountains transported eroded material, which was subsequently deposited as a heterogeneous sequence of clay, silt, sand, and gravel. The Quaternary deposits consist of alluvial, dune-sand, and valley-fill deposits. Where they overlie the Ogallala Formation, the Quaternary deposits are hydraulically connected to the Ogallala Formation to form one aquifer.

Within the Ogallala, zones cemented with calcium carbonate are resistant to erosion and weathering, and often form ledges in outcrops. The most distinctive of these layers is referred to as the Ogallala cap rock (commonly called caliche), and lies near the top of the Ogallala Formation. In Texas and New Mexico, this layer may be as thick as 60 feet. In northern Lea County, it is reported to be approximately 20 feet thick. The Ogallala aquifer is the sole source of shallow potable groundwater in most of southeastern New Mexico. It is composed mostly of unconsolidated sand and gravel, and well yields are generally high.

The average groundwater flow velocity for the Ogallala aquifer in Lea County is on the order of a few hundred feet per year. In Lea County, groundwater in the Ogallala generally flows southeasterly, but the water table gradient (flow direction) is influenced

locally by the withdrawal of water from well pumping, and the influx, at discrete points, of surface water, such as unlined pits/ponds, arroyos (during precipitation events), leaking injection wells, etc. However, in the vicinity of the Barney water well and the former waste disposal pit, groundwater apparently has a southwesterly gradient. Attachment C illustrates the groundwater gradient for a portion of southern Lea County, including Section 10 (location of Barney water well and the former waste disposal pit), which is highlighted in blue. In this vicinity, the flow direction is distinctly southwest; from the former waste disposal pit towards the Barney well.

The map also denotes the depth to water as measured in the various area water wells, which are denoted on the map as open circles. The number adjacent to the open circle is the depth to water based upon well information provided by the New Mexico State Engineer Office (SEO). The wells nearest the former waste disposal pit in the northeast corner of Section 10 indicate a depth to groundwater of 25 and 27 feet. The map was produced by Chevron Corp. (Chevron), and a copy provided to Mr. Allen Hodge of Phoenix Environmental LLC (Phoenix). Mr. Hodge provided a copy of the map to this author for inclusion with this correspondence.

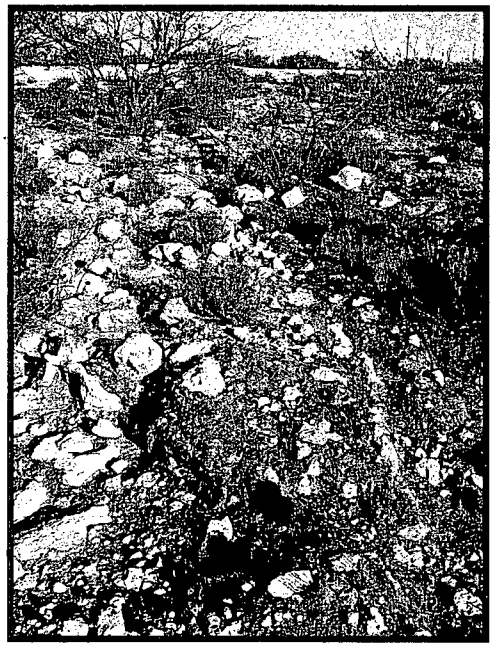
SOIL CHARACTERISTICS: The Soil Survey for Lea County, New Mexico, prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service (1974) was reviewed to assess the soil type and characteristics present in the area of the former Burlington waste disposal pit. The Soil Survey indicated that the former Burlington waste disposal pit was situated in Mobeetie Series soils, and in particular Mobeetie-Potter association soil. The following soil descriptions are taken from the Soil Survey for Lea County, New Mexico (1974).

In general, the Mobeetie Series consists of well-drained soils that have a light fine sandy loam subsoil. These soils formed in calcareous sandy loam sediments derived from outcrops of the Ogallala Formation. The average annual precipitation is 10 to 13 inches. Mobeetie-Potter association soil is comprised of 70% Mobeetie fine sandy loam and about 25% Potter gravelly fine sandy loam. The permeability of the Mobeetie soil is described as moderately rapid. Water intake is rapid, and available holding capacity is 6 to 8 inches. Permeability of the Potter soil is described as moderate. Water intake is moderate, and the holding capacity is 0.5 to 1.5 inches.

The most important aspect of the soil relative to this matter is the ability to infiltrate waste water pumped into the pit. This soil characteristic is generally referred to as permeability. A low permeability would suggest that more water is lost to evaporation than a soil with a high permeability, which would allow more water to be lost through infiltration into the subsurface. The permeability of the Mobeetie-Potter association could be classified as moderate to high. This in turn implies that waste water pumped into the pit would readily infiltrate into the subsurface, and eventually through downward migration impact the groundwater.

SOIL AND GROUNDWATER QUALITY: At the request of the McNeill Ranch, an environmental assessment of the former waste disposal pit area was performed by Phoenix, in October 1999. The Phoenix assessment report is included with this correspondence as Attachment D. As part of the assessment, five soil borings were drilled throughout the footprint of the former waste disposal pit; at the four corners and the center. Soil samples were collected at 5-foot intervals, and submitted for laboratory analysis of total petroleum hydrocarbon (TPH) content. According to the analytical results, samples from all five soil borings had TPH concentrations in excess of 100 ppm, and samples from four of the five soil borings had TPH concentrations in excess of 1,000 ppm (Attachment D, *Soil Analysis Report*). The *Soil Analysis Report* summarizes the vertical extent of soil contamination beneath the former waste disposal pit.

In addition to the subsurface TPH contamination assessed in 1999 by Phoenix, the waste disposal pit surface outflow area was visually inspected on November 4, 2003. The outflow begins at the west end of the pit, and formed a small gully as waste fluids were released from the pit. The gully fed into a secondary arroyo, which then flows into Monument Draw proper (Photograph 1). Photograph 2 shows a view eastward up the gully back toward the waste disposal pit. A layer of hydrocarbon contaminated soil was observed on the surface, and is visible in the foreground. This hydrocarbon contaminated layer was traced along the entire length of the gully down to the secondary arroyo, and also along a downstream reach of the secondary arroyo (Photograph 3). A search upstream in the secondary arroyo revealed no such hydrocarbon contaminated layer.



Photograph 2 – Gully formed at outflow area of waste disposal pit. Hydrocarbon contaminated soil evident as black deposit in foreground.

Photograph 3 – Hydrocarbon contaminated soil in secondary arroyo downstream from outflow area gully.

In 1976, groundwater from the Barney water well was of a suitable quality to meet the WQCC standards for drinking water relative to the chloride concentration (209 ppm; Attachment B). Since then, the water quality has degraded (956 mg/l; Attachment B) as evidenced by the April 2003 analytical results, and no longer meets the WQCC drinking water standard for chloride, which is 250 mg/l.

OCD REGULATIONS: As an augmentation to this correspondence, Mr. Eddie Seay of Eddie Seay Consulting was asked to summarize the OCD regulations regarding disposal pits. Mr. Seay is a former OCD employee, and as such has worked with the OCD regulations extensively. According to Mr. Seay, the unlimited disposal of oil field wastes including brine solutions through the use of unlined pits was prohibited by rule R-3221, which went into effect in 1969. However, disposal of waste products was still allowed on a limited basis. The rule stated that one barrel per day per well could be disposed of in pits with a not to exceed limit of 16 barrels per day (e.g. no more than 16 wells to a pit).

Mr. Seay goes on to say that in 1993, the OCD developed unlined pit closure guidelines, which documented procedures for closure of unlined surface impoundments (pits) in a manner that assured protection of fresh waters, public health, and the environment. Prior to any closure activities, the OCD required submittal and approval of a closure plan. In this case, mandatory soil clean-up levels are determined based upon the depth to groundwater. If the depth to groundwater is less than 50 feet, as appears to be the case in the vicinity to the former waste disposal pit, TPH concentrations in the soil must be below 100 ppm. Mr. Seay added that there is also a 250 ppm chloride clean-up level. All soil clean-up must be verified through analytical data, and submitted to the OCD. Mr. Seay's regulatory summary has been included with this correspondence as Attachment E.

DISCUSSION: Water quality relative to chloride contamination in the McNeill Ranch's Barney water well has degraded from 1976 to 2003 (209 ppm vs. 956 mg/l). The WQCC drinking water standards allow no more than 250 mg/l. The water pumped from this well is no longer potable.

During this period, an unlined waste disposal pit was utilized for disposal of an unknown volume of oil field-produced brine/saltwater and other aqueous hydrocarbon wastes. Periodic releases of hydrocarbon wastes from the waste disposal pit were evidenced by a layer of black to dark brown hydrocarbon stained soil leading from the outfall area of the pit, down a small gully, and into a secondary arroyo (Photographs 2 and 3). The secondary arroyo flows into Monument Draw where the Barney water well is located. It is likely that brine-contaminated water was also released with the hydrocarbon wastes. The waste disposal pit was purportedly "closed" by the current leaseholder, Burlington, in 1993. The Barney water well is located approximately ¼ mile southwest of the former waste disposal pit.

Groundwater in the vicinity of the Barney water well and the former Burlington waste disposal pit is drawn from the Ogallala aquifer. Depth to groundwater at the site of the

former waste disposal pit appears to be approximately 25 to 30 feet as indicated on a depth to groundwater map (Attachment C) produced by Chevron, which was based upon the interpretation of data supplied by the SEO. The groundwater flow gradient (based on the Chevron map) and estimated flow velocity is southwesterly toward the Barney water well at approximately 1 foot per day.

Though the greatest volume of brine in the waste disposal pit was lost through infiltration into the subsurface, a significant volume would have been lost through evaporation. Due to the high concentrations of chloride (salt) in the water disposed of in the pit, and the periodic high evaporation rates in this part of New Mexico, salt deposits (evaporites) likely formed in the soil of the pit walls and floor during periods when the brine was allowed to fully infiltrate and evaporate (e.g. the pit was allowed to dry out). These salt deposits result primarily from the evaporation of water, which contains soluble salts. Evaporation concentrates whatever salts were initially present in the water, and once the concentration reaches saturation, excess salts will precipitate out of solution (aqueous phase), and be deposited as a salt deposit (solid phase). These salt deposits would likely accumulate over time as more brine waste was added to the pit, and the mechanisms of infiltration and evaporation remained active.

It is postulated, that residual salt deposits remaining in the soil at and around the former Burlington waste disposal pit are responsible for the chronic chloride contamination found in the Barney water well ten years after the waste disposal pit was no longer utilized. Fresh water infiltrating the soil as precipitation would encounter these salt-laden soils. The salt would be leached and dissolved by the fresh water, and go back into solution, which would contaminate the water with chloride. The contaminated water would slowly percolate downward until reaching groundwater. Migrating southwesterly, the chloride contaminants would eventually be impact the Barney water well.

Pursuant to the 1993 OCD Unlined Surface Impoundment Closure guidelines, any party intent on closing an unlined waste disposal pit had to submit a closure plan to the OCD. It was required that the closure plan be approved by OCD prior to any closure activities in the field. Furthermore, the effectiveness of the closure operation had to be documented through analytical laboratory results of site soil and/or groundwater samples. As of the date of this report, no record of a closure plan or analytical data has been forthcoming from Burlington, and the OCD has no record of a closure plan being submitted for the site. With the depth to groundwater at the site less than 50 feet, OCD mandated clean-up standards of less than 100 ppm TPH and 250 ppm chloride were in effect. Soil samples collected from the site and analyzed indicated TPH concentrations in excess of 1,000 ppm throughout the former waste disposal pit with the exception of the northwest corner.

I hope this information is helpful. Please feel free to contact me should you have questions regarding the data or interpretations thereof.

Respectfully,

Richard M. Renn

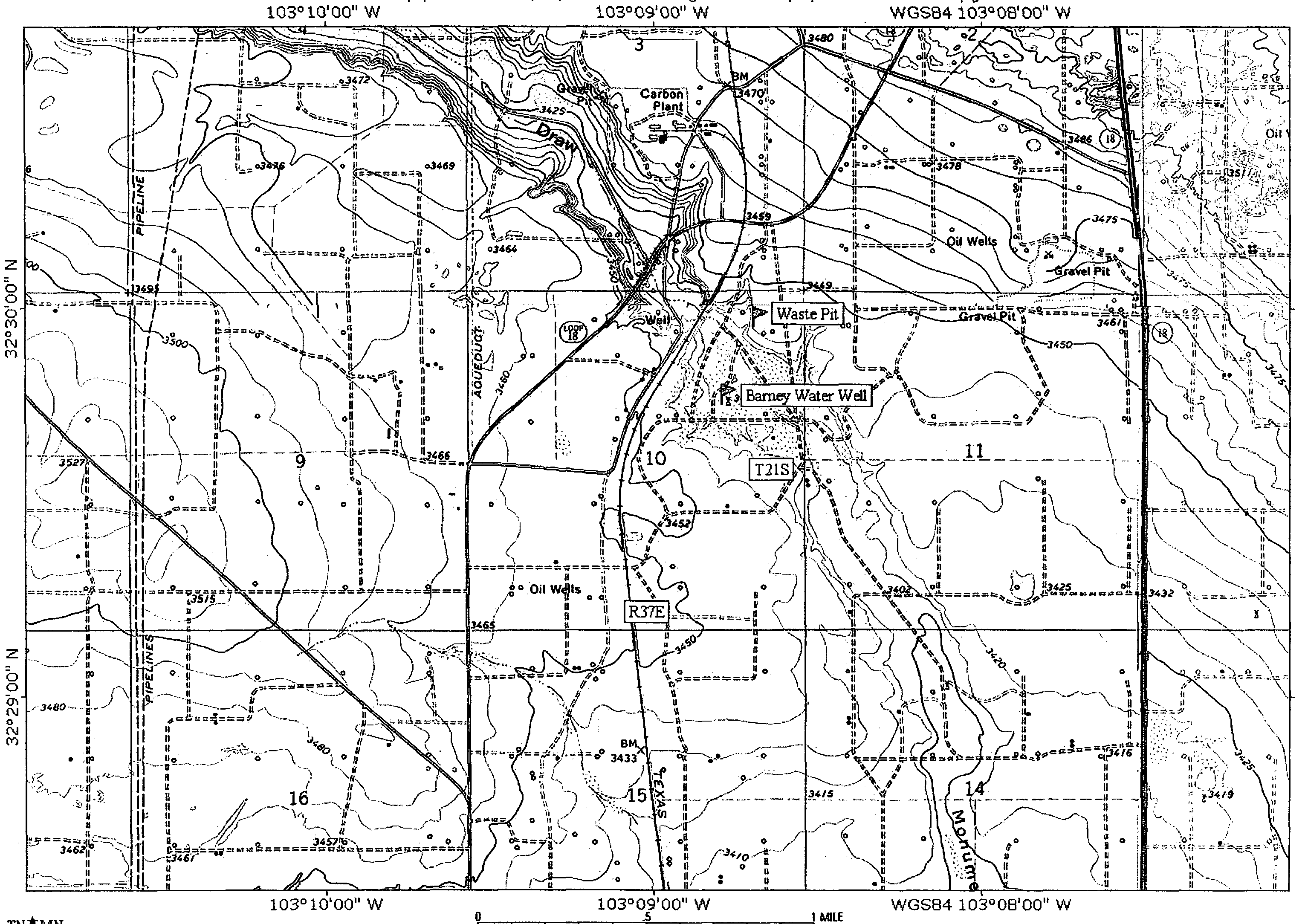
Richard M. Renn, R.G., C.P.G
TIERRA Technical Consultants

Cc w/attachments: File

Attachment A

Site Topographic Base Map

TOPO! map printed on 11/13/03 from "Burlington Site Map.tpo" and "Untitled.tpg"



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

Attachment B

Barney Water Well Analyses

W. A. FIX
J. H. SIKES

PLAINS LABORATORY
707 AVE. H BOX 1590 TEL. 763-4061 LUBBOCK, TEXAS 79408

ESTABLISHED 1945

COTTONSEED PRODUCTS
LICENSED COTTONSEED CHEMIST

SOIL AND WATER ANALYSIS
OFFICIAL CHEMIST LUBBOCK GRAIN EXCHANGE
COMPLETE FEED, WATER AND FERTILIZER ANALYSIS

CERTIFICATE OF ANALYSIS -- WATER

DATE 9-1-76

Submitted by McNeill Ranch
Hobbs, N.M.

Identification	#23 Harden mill	#24 Caltex Mill	#25 Burney Mill	
Sample No.	9544	9545	9546	
Calcium PPM	140	224	98	
Magnesium PPM	38	36	52	
Sodium PPM	170	580	410	
Potassium PPM	6	9	8	
Bicarbonate PPM	214	171	220	
Carbonates, PPM	48	30	60	
Chloride PPM	301	643	209	
Sulfate PPM	200	800	750	
Conductivity†	830	1550	1050	
Total Salts PPM	1119	2497	1807	
P H Value	7.9	6.7	6.9	

† In Micromhos/CM²

Signed

Remarks:

#23 is slightly salty and also #25.

#24 is very salty.

ANACHEM INC.
8 Prestige Circle, Suite 104 Allen, Texas 75002
972/727-9003 • FAX # 972/727-9686 • 1-800-988-1188

April 14, 2003

Allen Hodge
Phoenix Env. LLC
P.O. Box 1856

Hobbs, NM 88241
TEL: 505-391-9685 505-391-9687

Work Order: 0304202
Project: Barney Well

Dear Client:

Anachem, Inc. received 1 sample on 04/11/2003 for the analyses presented in the following report.

The samples were analyzed for the following tests:

BTEX by EPA 8021 - Aqueous
Ion Chromatograph Liquid (EPA 300.0)
- Bromide
- Chloride
- Sulfate

Respectfully Submitted,
Anachem, Inc.

Howard H. Hayden, B.S.
Chemist

NOTE: Submitted material will be retained for 30 days unless notified or consumed in analysis. Material determined to be hazardous will be returned. The use of our name and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply to the sample tested and/or inspected, and are not necessarily indicative of the qualities of apparently identical or similar materials.

Anachem, Inc.

Date: *14-Apr-03*

CLIENT: Phoenix Env. LLC
Work Order: 0304202
Project: Barney Well

Analyses	Result	Limit	Units	Date Analyzed
Lab ID:	0304202-01A			
Client Sample ID:	Barney Well	Collection Date:	4/10/2003	
Location:	McNeill Ranch, Lea Co., NM	Matrix:	WATER	
0304202-01A	BTEX BY EPA 8021 - AQUEOUS		Prep Date:	Analyst: AT
BatchID: R23222				
Benzene	ND	5	µg/L	4/12/2003
Toluene	ND	5	µg/L	4/12/2003
Ethylbenzene	ND	5	µg/L	4/12/2003
Xylenes, Total	ND	5	µg/L	4/12/2003
0304202-01A	ION CHROMATOGRAPH LIQUID (EPA 300.0)		Prep Date:	Analyst: KAH
BatchID: R23220				
Bromide	4.8	0.1	mg/L	4/14/2003
Chloride	958	100	mg/L	4/14/2003
Sulfate	142	5	mg/L	4/14/2003

Qualifiers: ND - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

Anachem, Inc. Date: 14-Apr-03

CLIENT: Phoenix Env. LLC
Work Order: 0304202
Project: Barney Well

QC SUMMARY REPORT

Sample Matrix Spike

Ion Chromatograph Liquid (EPA 300.0)

BatchID: R23220 Units: mg/L Analysis Date: 4/14/2003

Analyte	SPK value	REC 1	REC 2	LowLimit	HighLimit	%RPD	RPDLimit
Bromide	10	98.0%	102.0%	80%	120%	3.8%	15
Chloride	50	80.0%	112.0%	80%	120%	33.3%	15
Sulfate	50	118.0%	118.0%	80%	120%	1.7%	15

BTEX by EPA 8021 - Aqueous

BatchID: R23222 Units: µg/L Analysis Date: 4/12/2003

Analyte	SPK value	REC 1	REC 2	LowLimit	HighLimit	%RPD	RPDLimit
Benzene	100	96.0%	98.7%	70%	130%	1.8%	30
Toluene	100	97.5%	98.3%	70%	130%	1.8%	30
Ethylbenzene	100	100.0%	102.0%	70%	130%	2.0%	30
Xylenes, Tota	300	101.0%	102.0%	70%	130%	1.0%	30

Anachem, Inc.

Date: *14-Apr-03*

CLIENT: Phoenix Env. LLC

Work Order: 0304202

Project: Barney Well

QC SUMMARY REPORT

Laboratory Control Spike

Ion Chromatograph Liquid (EPA 300.0)

BatchID: R23220 **Units:** mg/L **Analysis Date:** 4/14/2003

Analyte	SPK value	REC 1	REC 2	LowLimit	HighLimit	%RPD	RPDLimit
Bromide	1	100.0%	100.0%	80%	120%	0.0%	15
Chloride	5	96.0%	102.0%	80%	120%	6.1%	15
Sulfate	5	98.0%	98.0%	80%	120%	0.0%	15

BTEX by EPA 8021 - Aqueous

BatchID: R23222 **Units:** µg/L **Analysis Date:** 4/12/2003

Analyte	SPK value	REC 1	REC 2	LowLimit	HighLimit	%RPD	RPDLimit
Benzene	100	85.2%	88.3%	70%	130%	1.1%	30
Toluene	100	96.2%	98.8%	70%	130%	3.7%	30
Ethylbenzene	100	93.9%	97.1%	70%	130%	3.4%	30
Xylenes, Total	300	94.0%	97.0%	70%	130%	3.1%	30

PAGE 12

Purchase Order/Chain Of Custody

Page ___ of ___

Anachem, Inc. 8 Prestige Circle, Suite 104, Allen, TX 75002 Phone: 972-727-9300 Fax: 972-727-9586

Report To: ALLEN Hodge	Bill To: (Buyer) Phoenix
Company: Phoenix Environmental LLC	Purchase Order #:
Address: P.O. Box 1856	Address: SAME
City, State, Zip: Hobbs, NM 88240	City, State, Zip:
Phone: 505 391-9685 Fax: 391-9687	Phone: Fax:

Project Name: BARNEY WELL Quote #:

Project Location: McNeill Ranch City, State: LEA, CO. NM

Date Due: Rush: 0% 25% 50% 100% Sampled By: ALLEN Hodge

Lab #	Client Sample ID	Matrix	Date/Time	Sample Notes	BTEX	CL Chlorides	Bromide	Sulfate				
030202-01	1. BARNEY WELL	WATER	4/10/03 1300	2X40ML	X							
↓	2. " "	"	"	1X2LT		X	X	X				
	3.											
	4.											
	5.											
	6.											
	7.											
	8.											
	9.											
	10.											

Relinquished By	Date	Time	Received By	Date	Time
[signature]	4003	1700			
			[signature]	4/11/03	10:00AM

In the event that Anachem determines that a sample is hazardous; the client agrees to:
Pay For Sample Disposal ___
Accept Returned Sample ___

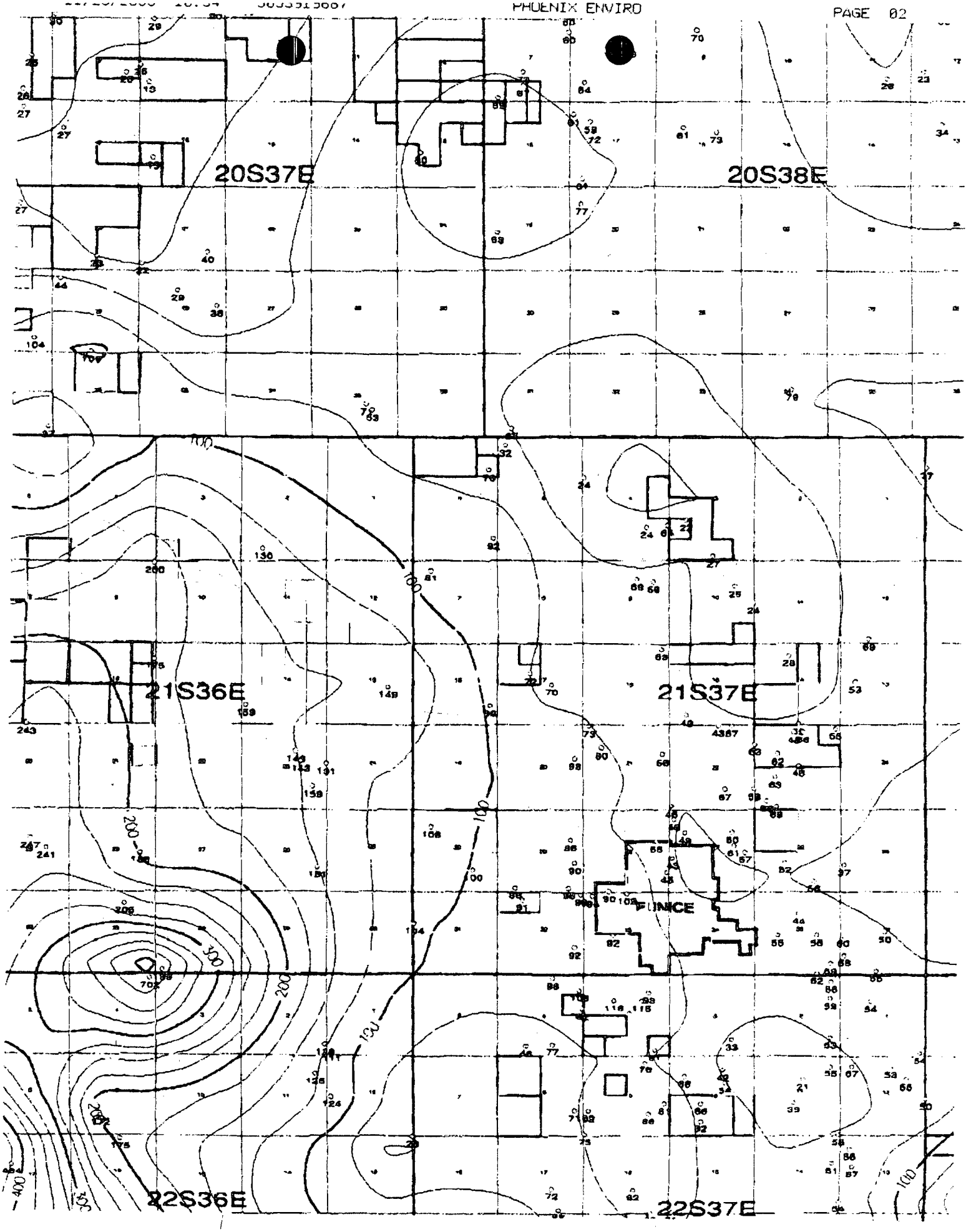
4°C
FED EX !

Work Order #: 030202

010 REV 1/00 Sample information is vital for proper login and reporting. This is a contract subject to the terms and conditions on the reverse side.

Attachment C

Chevron Depth To Groundwater Map


20S37E
20S38E
21S36E
21S37E
22S36E
22S37E
JUNICE

Attachment D

Phoenix Environmental Assessment Report

1.0 INTRODUCTION

This report presents the results of an on-site investigation of the Burlington Resources Oil & Gas Company, Battery site. The site is located on the McNeill Ranch in Unit A of Sec.10, T21S, R37E of Lea Co., New Mexico. The Battery site was owned and operated by Burlington Resources and at present has been abandoned. The McNeill Ranch owns the land at and around the site. Phoenix Environmental LLC (Phoenix) performed the site investigation during November 1999 to substantiate suspected vadose zone and the possibility of ground-water contamination at the site. The field investigation was performed in general accordance with the New Mexico Oil Conservation Division (NMOCD) regulations. The following sections present the findings resulting from our investigation.

1.10 Location

The eastern New Mexico farmland and prairie soils are composed of alluvial sediments. Near surface sediments consist primarily of Pliocene alluvial and Lacustrine deposits in the form of sands, gravel, and caliche beds. (Sources: Roadside Geology of New Mexico, Mountain Press Publishing Co., Halka Chrinic, 1987; Geologic Highway Map, Southern Rocky Mountain Region, & American Association of Petroleum Geologists).

1.20 Background

The McNeill Ranch, prior to the oil and gas industry, consisted of good grass prairie or range land. The depth to groundwater in this area is estimated to be in the 25' range below ground surface (BGS), based on water well information reviewed at the New Mexico State Engineer's Office in Roswell. Currently the site has been abandoned and all surface equipment removed. The site has visible surface staining and impacted soil from hydrocarbons. There is a suspected old overflow pit that is located to the west of the old tank battery area. The old pit area has been out of service for a number of unknown years and appears to have been covered up with caliche. There is a pipeline that comes into the southern end of the battery area that is owned by Eott Energy Corp and has been taken out of service.

2.0 PROCEDURES

Phoenix performed field investigation during November 1999. The objectives of this investigation were to define the vertical and horizontal extent of petroleum-based soil contamination and to determine if the groundwater has been impacted. To meet these objectives, Phoenix drilled and sampled five soil borings (SB) in the old pit area and five borings in and around the site to define the outer boundaries of the contamination. Samples from the borings were

tested for Total Petroleum Hydrocarbons (TPH). The ten soil borings were plugged with bentonite to prevent vertical pathways for contamination to follow.

2.10 Summary of Field Investigation

The first phase of the field investigation was to interview Mr. McNeill, he gave no clues to the history, use or age of the suspected pit. Mrs. Lennah Frost, with Eott Energy Corp., was interviewed concerning the pipeline that crosses the south end of the pit area about the history of any leaks at the site. None were noted or found in her records. New Mexico One Call was contacted before any drilling at the site was started (confirmation # 99101510010239).

Five soil borings were drilled to define the vertical depth of impact in the pit area. SB-1 was drilled to a depth of 10' before the TPH level dropped below 100 ppm. SB-2 was drilled to a depth of 20' before the TPH level dropped below 100 ppm. SB-3, SB-4 and SB-5 were below 100 ppm at 15' in depth. SB-6 through 10 were drilled in the suspected spill areas to define the outer boundaries. These borings had an average depth of 5' to have TPH levels below 100 ppm. The other impacted areas had an average depth of 5' with TPH levels below 100 ppm.

SB-1 had a vertical depth of 20' when the TPH dropped below 100 ppm. This was the deepest that impact was found at the site. The ground water at the site has not yet been impacted as of this investigation. Pursuant to the NMOCD guidelines for clean up of unlined surface impoundments, the cleanup level for this site would be at <100 ppm of TPH, <50 ppm of total BTEX and CL at <250 ppm.

2.20 Site Borings and Sample Locations

The boring locations are shown on the site map. A description of the location and purpose of each boring are listed as follows.

- SB-1 was drilled at the northeast corner of the pit area. This boring was drilled to a depth of 10' with samples taken every 5' until the TPH had dropped below 100 ppm.
- SB-2 was drilled in the center of the pit area. This boring was drilled down to a depth of 20' before the TPH dropped below 100 ppm. This boring was drilled to further define the maximum vertical impact at the site.
- SB-3 was drilled in the northwest corner of the pit area. This boring was drilled down to a depth of 10' before the TPH dropped below 100 ppm. This boring was drilled to further define the vertical impact at the site.

- SB-4 was drilled in the southeast corner of the pit area. This boring was drilled down to a depth of 15' before the TPH dropped below 100 ppm. This boring was drilled to further define the maximum vertical impact at the site.

- SB-5 was drilled in the southwest corner of the pit area. This boring was drilled down to a depth of 15' before the TPH dropped below 100 ppm. This boring was drilled to further define the maximum vertical impact at the site.

- SB-6 to 10 were drilled in and around suspected spill areas to define the outer boundaries of surface impact. These borings were drilled down to an average depth of 5' to have TPH below 100 ppm (See site map for locations).

2.30 Boring and Sampling Procedures

Prior to drilling and sampling activities, the drill crew and other site personnel attended a tailgate safety meeting to cover site hazards and scope of work. Following the safety meeting the TPH analyzer, a Mega TPH analyzer from GAC SN # 1156, was calibrated using blanks for the zero.

Phoenix started drilling the soil borings in areas of known or suspected petroleum contamination. Soil borings were drilled using a small air rotary drill rig, with sampling on five-foot centers. The samples were taken using a 2" split spoon sampler for undisturbed samples.

The outer boundaries were defined by utilizing the same method as above to check the outer depths of the areas of known contamination, to quantify petroleum contamination.

3.0 RESULTS AND DISCUSSION

The following sections present the results of the field investigation. These results include physical data and qualitative data obtained from field observations and analysis. These results are shown in the site map, with respect to the impacted areas located at the site. Backup information, such as on site analysis, and site photos are included in this report.

3.10 Sampling

The objectives of the sampling were as follows:

- Discover source zones of petroleum-based hydrocarbon contamination.
- Define the vertical and horizontal extent of petroleum-based hydrocarbon contamination in the vadose zone.
- Determine if the groundwater at the site has been impacted with respect to the vertical depth of contamination.

In brief, results from sampling indicated that the groundwater at the site has not yet been impacted, although there is significant petroleum contamination originating from the pit area and the other areas at the site. For the most part there is no horizontal migration of the contamination in the vadose zone. Although there is a spill run off area that came from the pit and runs off the site to the west and into the bottom of the Monument Draw where the top of ground water is at 18' BGS.

As a result of the investigation, the old pit area has been defined to be 100'x100'x20' in size and will yield an estimated 7,408cyds of contaminated soils. The old impacted area 100'x60'x5' plus 30'x45'x5' in size will yield an estimated 1,361cyds of contaminated soils. The overflow area 370'x8'x3' in size will yield an estimated 329cyds of contaminated soils. The total volume of contaminated soils at the site is estimated to be +/- 9,098cyds.

3.20 Field and on Site Screening

Field screening and on site analysis methodology provided favorable results insofar as identification of petroleum-based hydrocarbon contamination from the source zones.

The majority of the vadose-zone contamination is located within the old pit area reaching a vertical depth of 20'. The other area with significant impact was the area in and around the treaters with a vertical depth in the 5' range. The rest of the impacted areas are limited to the near surface soils in the 3' depth range.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the data generated and observations made during the site investigation of the source zones, Phoenix has developed the following conclusions.

- The near surface and vadose-zone soils at the site are contaminated with significant levels of petroleum-based hydrocarbons that are above the NMOCD guidelines for site closure.

- There is an estimated +/- 9,098cyds of contaminated soils that need to be addressed pursuant to the NMOCD guidelines for clean up of unlined surface impoundments.

- The groundwater at the site, as of this investigation, has not yet been impacted.

- The contamination at the site is associated with the production of oil and gas operation and old abandoned tank battery located at the site and has no other outside sources.

As a result of our investigation and analysis of the field data, Phoenix would recommend that the following steps be undertaken at the site.

- Removal of the source zones of contamination to prevent the future threat of possible groundwater impact or contamination.

5.0 LIMITATIONS

Phoenix Environmental LLC has prepared this ESA report to the best of its ability. No other warranty, expressed or implied, is made or intended.

This report has been prepared for the McNeill Ranch or client. The information contained in this report including all exhibits and attachments; may not be used by any other party without the express consent of Phoenix Environmental LLC and/or the or client.

PHOENIX ENVIRONMENTAL LLC

P.O. Box 1856 2113 French Dr. Hobbs, NM 88241-1856 Office 505-391-9685 Fax 505-391-9687

SOIL ANALYSIS REPORT

Date: 10-15-99
Client: McNeill Ranch
Supervisor: Allen Hodge
Sample Matrix: Soil

Facility: Burlington Pit & Battery Site
Test Method: EPA 418.1
Order No. Bill McNeill
Sample Received: Intact on site

	TPH		Depth	Location
SAMPLE NO. 1:	1,680	PPM	5'	SB-1 Pit Area
SAMPLE NO. 2:	67	PPM	10'	SB-1 Pit Area
SAMPLE NO. 3:	9,980	PPM	5'	SB-2 Pit Area
SAMPLE NO. 4:	1,190	PPM	10'	SB-2 Pit Area
SAMPLE NO. 5:	225	PPM	15'	SB-2 Pit Area
SAMPLE NO. 6:	55	PPM	20'	SB-2 Pit Area
SAMPLE NO. 7:	143	PPM	5'	SB-3 Pit Area
SAMPLE NO. 8:	75	PPM	10'	SB-3 Pit Area
SAMPLE NO. 9:	4,420	PPM	5'	SB-4 Pit Area
SAMPLE NO. 10:	1,454	PPM	10'	SB-4 Pit Area
SAMPLE NO. 11:	84	PPM	15'	SB-4 Pit Area

COMMENTS: These samples were taken with a split-spoon on 5' centers. The samples were to confirm vertical depth of the impacted soils at the site and to determine if groundwater had been impacted.

PHOENIX ENVIRONMENTAL LLC

P.O. Box 1856 2113 French Dr. Hobbs, NM 88241-1856 Office 505-391-9685 Fax 505-391-9687

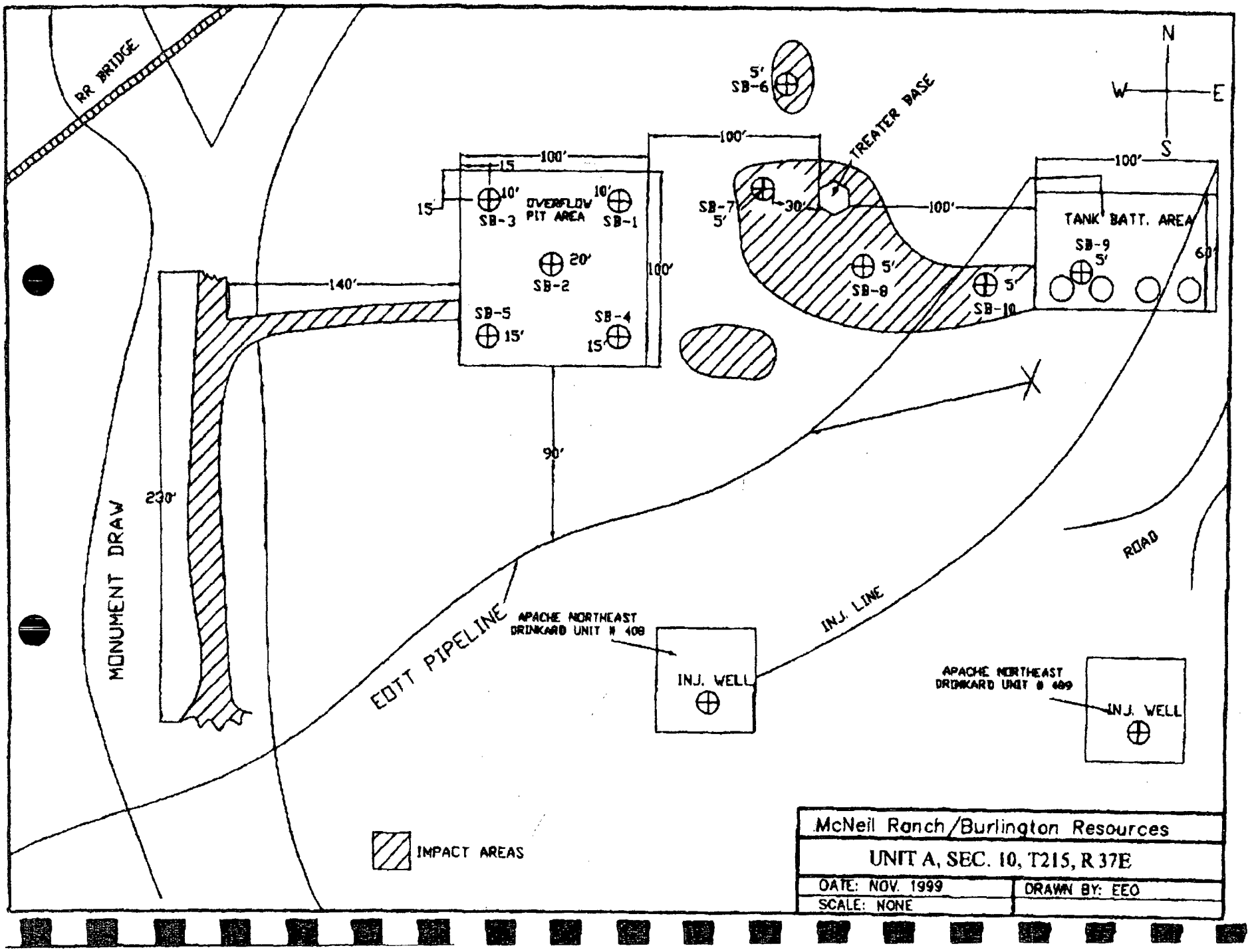
SOIL ANALYSIS REPORT

Date: 10-15-99
Client: McNeill Ranch
Supervisor: Allen Hodge
Sample Matrix: Soil

Facility: Burlington Pit & Battery Site
Test Method: EPA 418.1
Order No. Bill McNeill
Sample Received: Intact on site

	TPH		Depth	Location
SAMPLE NO. 1:	1,112	PPM	5'	SB-5 Pit Area
SAMPLE NO. 2:	101	PPM	10'	SB-5 Pit Area
SAMPLE NO. 3:	32	PPM	15'	SB-5 Pit Area
SAMPLE NO. 4:	120	PPM	5'	SB-6 Spill Area North
SAMPLE NO. 5:	114	PPM	5'	SB-7 West of Treater Base
SAMPLE NO. 6:	112	PPM	5'	SB-8 Center of Spill Area
SAMPLE NO. 7:	132	PPM	5'	SB-9 West End of Battery Area
SAMPLE NO. 8:	783	PPM	5'	SB-10 East End of Spill Area
SAMPLE NO. 9:	27	PPM	0-6"	Background 250' North of Site
SAMPLE NO. 10:		PPM		

COMMENTS: These samples were taken with a split-spoon on 5' centers. The samples were to confirm vertical depth of the impacted soils at the site and to determine if groundwater had been impacted.


RR BRIDGE
N
W
E
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5'
SB-6
TREATER BASE
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100'
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10'
SB-3
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SB-1
100'
SB-7
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100'
TANK BATT. AREA
SB-9
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60'
20'
SB-2
100'
5'
SB-8
5'
SB-10
140'
SB-5
15'
SB-4
15'
90'
230'
MONUMENT DRAW
EOTT PIPELINE
APACHE NORTHEAST DRINKARD UNIT # 408
INJ. WELL
INJ. LINE
APACHE NORTHEAST DRINKARD UNIT # 409
INJ. WELL
ROAD
IMPACT AREAS
McNeil Ranch/Burlington Resources
UNIT A, SEC. 10, T21S, R 37E
DATE: NOV. 1999
DRAWN BY: EEO
SCALE: NONE

Attachment E

Seay OCD Regulations Summary

November 18, 2003

Richard Renn
Tierra Technical Consultants
1694 Tierra Del Rio, NW
Albuquerque, NM 87107

RE: Pit Information

Mr. Renn:

In response to your inquiry concerning pits associated with oil and gas production in New Mexico.

First of all, the New Mexico Oil Conservation Division regulates the construction and closure of all pits. In 1967 the OCD passed rule R-3221 which prohibited disposal of produced waters in unlined pits, ponds, lakes, depressions, draws, stream beds or arroyos. It was deemed that this disposal threatened and was a hazard to fresh water supplies. Although in 1969, when the rule went into effect, they did allow some disposal, the rule said that one barrel per day per well could be put into pits, not to exceed 16 bls. per day. Their reasoning was that evaporation would take care of this amount of disposal.

In 1986, the OCD included Rule 8, which said no pit would be constructed without OCD approval.

In 1993, the OCD developed guidelines for "Surface Impoundment" closures. In this regulation it set forth the procedure for testing and properly closing a pit. The basic guide for closing is depth to groundwater, wellhead protection, and surface water. All of these criteria are considered in determining the level of cleanup. When groundwater is less that fifty feet from surface, you have a 100ppm TPH cleanup level, when groundwater is more that fifty feet but less that 100 feet, you have a 1000 ppm TPH cleanup level, and when groundwater is over 100 feet from surface, you have a 5000 ppm TPH cleanup level. You also have a 250 ppm chloride cleanup level which has to be met along with TPH. All closure activities have to be approved by OCD with laboratory analytical.

In 1997, the OCD sent out notices to all operators that they were aware some pits were still being used and were not properly closed. The notice required all operators to compile a pit inventory of all surface impoundment and then file a closure plan. Many pits were closed during this period.

Now in 2003, the OCD is in the process of writing and adopting a new rule on pits. All pits will need an OCD permit and all pits will be lined. This rule is still in the hearing stages.

This is all the information I could find on pits. Find enclosed a copy of the rules and regulations. If you have any questions or need anything else, please call.

Sincerely,

Eddie W. Seay

Eddie W. Seay
Eddie Seay Consulting
601 W. Illinois
Hobbs, NM 88242
(505)392-2236
seay04@leaco.net

TIERRA
Technical Consultants

September 17, 2004

Mr. James P. Lyle
Law Offices of James P. Lyle, P.C.
1116 2nd St. NW
Albuquerque, NM 87102

RE: MONITOR WELL SAMPLING RESULTS, BURLINGTON SITE, McNEILL RANCH, NEW MEXIOC

Dear Mr. Lyle:

I am in receipt of the Assaigai Analytical Laboratories, Inc., soil and groundwater sampling laboratory results from the three monitor wells (B-MW-1, B-MW-2, and B-MW-3) recently installed on the McNeill Ranch property in the vicinity of the former oil field waste disposal pit, NE/4 Section 10, Township 21 South, Range 37 East, and the Barney Well. The monitor wells were drilled and completed by Phoenix Environmental, LLC on September 1 through September 3, 2004, and groundwater sampled on September 3, 2004. A copy of the laboratory results dated September 10, 2004, is attached with this correspondence.

The first monitor well drilled, B-MW-1, was drilled through the assumed surface footprint of the former waste disposal pit. Soil samples from depths of 15, 30, and 45 feet were also collected from B-MW-1, and submitted for laboratory analysis. The depth to groundwater as measured in B-MW-1 was 53.4 feet below surface grade. Due to logistics issues (oil field equipment, and arroyo), monitor well B-MW-2 was drilled approximately 100 feet southwest of B-MW-1. This placed the well between B-MW-1 and the Barney Well location. We do not have information as yet to discern if the B-MW-2 location lies directly down-gradient of B-MW-1. The third monitor well, B-MW-3, was drilled approximately 150 feet to the northeast of B-MW-1.

The three soil samples from B-MW-1 were analyzed for chlorides, and the groundwater samples were analyzed for both chlorides and bromides. The laboratory data for soils indicates an elevated concentration of chlorides at the 45-foot interval (3,040 milligrams/kilogram); about 8 feet above the water table. The laboratory results for the groundwater sample from B-MW-1 indicated a chloride concentration of 1,380 milligrams/liter (mg/l). Laboratory results for B-MW-2 and B-MW-3 yielded results of 406 mg/l and 467 mg/l, respectively. The analytical result for chlorides in groundwater from the Barney Well were 1,280 mg/l. The New Mexico Water Quality Control Commission (WQCC) has set a maximum allowable contaminant concentration of 250 mg/l for groundwater.

Groundwater samples were also analyzed for bromides, though the WQCC does not list a specific value for bromides, the concentration of bromides in conjunction with other salts (e.g. chlorides) is used to calculate the Total Dissolved Solids (TDS) concentration. The WQCC has a maximum allowable contaminant concentration of 1,000 mg/l for TDS. This value is exceeded by the chloride concentration alone in B-MW-1.

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Technical Consultants

Monitor well, B-MW-1, was drilled through the former waste disposal pit, based upon surface observations of the suspected pit footprint. The 45-foot depth soil sample collected from B-MW-1 indicates an elevated chloride concentration directly above the water table (53.4 feet). Groundwater analytical data indicates that groundwater beneath the former waste disposal pit is contaminated with chlorides (1,380 mg/l) or roughly 5 ½ times the WQCC maximum allowable contaminant concentration.

As always, should you have any questions or require further clarification, please do not hesitate to contact me.

Respectfully,

Richard M. Renn

Richard M. Renn, R.G., C.P.G.
Tierra Technical Consultants

cc: File

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ASSAIGAI ANALYTICAL LABORATORIES, INC.
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Explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

TIERRA TECHNICAL CONS.
attn: **RICHARD M. RENN**
1694 TIERRA DEL RIO NW
ALBUQUERQUE NM 87107

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: **TIERRA TECHNICAL CONS.**
Project: **MCNEILL RANCH**
Order: **0409152 COD** Receipt: **09-04-04**

For William P. Biava, President of Assaigai Analytical Laboratories, Inc.

Sample: ***30'*** Collected: *09-01-04 14:40:00* By:
Matrix: ***SOIL***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-01A		**EPA 300.0 Anions by IC**						By: DAW		
W04650	WC.2004.2580.7	16887-00-6	Chloride	14.3	mg / Kg	100	0.05		09-08-04	09-08-04

Sample: ***15'*** Collected: *09-01-04 15:18:00* By:
Matrix: ***SOIL***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-02A		**EPA 300.0 Anions by IC**						By: DAW		
W04650	WC.2004.2580.8	16887-00-6	Chloride	82.6	mg / Kg	100	0.05		09-08-04	09-08-04

Sample: ***45'*** Collected: *09-01-04 16:40:00* By:
Matrix: ***SOIL***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-03A		**EPA 300.0 Anions by IC**						By: DAW		
W04654	WC.2004.2585.9	16887-00-6	Chloride	3040	mg / Kg	1000	0.05		09-10-04	09-10-04

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: **TIERRA TECHNICAL CONS.**
Project: **MCNEILL RANCH**
Order: **0409152 COD** Receipt: **09-04-04**

Sample: ***BARNEY WELL*** Collected: *08-31-04 0:00:00* By:
Matrix: ***WATER***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-04A		**EPA 300.0 Anions by IC**						By: DAW		
W04649	WC.2004.2576.10		Bromide	5.69	mg / L	10	0.05		09-08-04	09-08-04
W04649	WC.2004.2576.28	16887-00-6	Chloride	1280	mg / L	100	0.05		09-08-04	09-08-04

Sample: ***B-MW-1*** Collected: *09-03-04 12:24:00* By:
Matrix: ***WATER***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-05A		**EPA 300.0 Anions by IC**						By: DAW		
W04649	WC.2004.2576.11		Bromide	7.45	mg / L	10	0.05		09-08-04	09-08-04
W04649	WC.2004.2576.29	16887-00-6	Chloride	1380	mg / L	100	0.05		09-08-04	09-08-04

Sample: ***B-MW-2*** Collected: *09-03-04 12:49:00* By:
Matrix: ***WATER***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-06A		**EPA 300.0 Anions by IC**						By: DAW		
W04649	WC.2004.2576.13		Bromide	2.41	mg / L	10	0.05		09-08-04	09-08-04
W04649	WC.2004.2576.30	16887-00-6	Chloride	406	mg / L	100	0.05		09-08-04	09-08-04

Sample: ***B-MW-3*** Collected: *09-03-04 11:50:00* By:
Matrix: ***WATER***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0409152-07A		**EPA 300.0 Anions by IC**						By: DAW		
W04649	WC.2004.2576.14		Bromide	4.30	mg / L	10	0.05		09-08-04	09-08-04
W04649	WC.2004.2576.31	16887-00-6	Chloride	467	mg / L	100	0.05		09-08-04	09-08-04

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.