1R - 493

GENERAL CORRESPONDENCE

2008

1R493

PRIDE ENERGY COMPANY

(918) 524-9200 ♦ Fax (918) 524-9292

Physical Address: Kensington Tower
2250 East 73rd Street, Suite 550
Tulsa, OK 74136

Mailing Address: P.O. Box 701950
Tulsa, OK 74170-1950

Email Address: mattp@pride-energy.com

RECEIVED
2008 JUL 23 PM 1 43

July 21, 2008

Via Certified Mail
Return Receipt #
91 3408 2133 3931 4295 0725

NMOCD Environmental Bureau
1220 South St, Francis Drive
Santa Fe, NM 87505

ATTN: Wayne Price
Bureau Chief

RE: Inbe #13-1 Well
NMOCD Case #1R493
Section 13-11S-33E: (1980' from the North Line and 1680' from the East Line of Section)
Lea County, New Mexico

Dear Wayne,

In reference to the above please find enclosed a copy of the June 11, 2008 letter from Pride Energy Company to the surface owner, Noble Energy, Inc. and a copy of the June 11, 2008 letter form Pride Energy Company to the grazing lessee, Pearce Trust.

Thank you Wayne, and if there are any questions, please feel free to contact me at 918-524-9200.

Sincerely,

Matthew L. Pride

Matthew L. Pride
Pride Energy Company

mp10693.ca

PRIDE ENERGY COMPANY

(918) 524-9200 ♦ Fax (918) 524-9292

Physical Address: Kensington Tower
2250 East 73rd Street, Suite 550
Tulsa, OK 74136

Mailing Address: P.O. Box 701950
Tulsa, OK 74170-1950
Email Address: mattp@pride-energy.com

July 11, 2008

Via Certified Mail
Return Receipt # 91 3408 2133 3931 4295 0671
(O) (281) 872-3100

Noble Energy, Inc.
100 Glenborough, Suite 100
Houston, TX 77067-3610

ATTN: Charles Prichard
Land Dept.

RE: Inbe #13-1 Well
Section 13-11S-33E: (1980' from the North Line and 1680' from the East Line of Section)
Lea County, New Mexico

Dear Charles,

Hope everything is going well in Houston. In reference to the above well, please find enclosed a copy of the June 26, 2008 letter from our environmental consultant, R.T. Hicks Consultants, Ltd, to the New Mexico Oil Conservation Division's Environmental Bureau in Santa Fe, New Mexico.

Thank you Charles, and if there are any questions, please feel free to contact me at 918-524-9200.

Sincerely,

Matthew L. Pride

Matthew L. Pride
Pride Energy Company

PRIDE ENERGY COMPANY

(918) 524-9200 ♦ Fax (918) 524-9292

Physical Address: Kensington Tower
2250 East 73rd Street, Suite 550
Tulsa, OK 74136

Mailing Address: P.O. Box 701950
Tulsa, OK 74170-1950

Email Address: mattp@pride-energy.com

July 11, 2008

Via Certified Mail
Return Receipt # 91 3408 2133 3931 4295 0688
(M) (432) 940-7069
(O) (432) 447-2260
(H) (432) 445-6084

Pearce Trust
1717 Jackson
Pecos, TX 79772

ATTN: Roy F. Pearce, Jr.

RE: Inbe #13-1 Well
Section 13-11S-33E: (1980' from the North Line and 1680' from the East Line of Section)
Lea County, New Mexico

Dear Fred,

Hope everything is going well in Pecos. In reference to the above well, please find enclosed a copy of the June 26, 2008 letter from our environmental consultant, R.T. Hicks Consultants, Ltd, to the New Mexico Oil Conservation Division's Environmental Bureau in Santa Fe, New Mexico.

Thank you Fred, and if there are any questions, please feel free to contact me at 918-524-9200.

Sincerely,

Matthew L. Pride
Pride Energy Company

JAMES BRUCE
ATTORNEY AT LAW

POST OFFICE BOX 1056
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)
(505) 660-6612 (Cell)
(505) 982-2151 (Fax)

jamesbruc@aol.com

August 28, 2008

Hand delivered

Mark E. Fesmire, P.E.
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Inbe 13 Well No. 1
SW¼NE¼ §13-11S-33E
Lea County, New Mexico

OCD Case No. 1R493

Dear Mr. Fesmire:

By this letter, Pride Energy Co. ("Pride") requests a reconsideration of the Division's requirements involving remediation of the waste burial trench for the above well.

The basic facts are as follows: Elke Environmental ("Elke"), on behalf of Pride, obtained approval from the Division to solidify and bury drilling waste on the wellsite. Elke mixed the drilling waste with proprietary solidification product and placed the modified waste in a 100' x 30' burial trench lined with impermeable material. By letter dated May 1, 2008 (**Exhibit A**), the Division informed Pride that the Division "has determined that Pride Energy must submit a remediation plan to remove and dispose of the drilling pit contents that it disposed onsite in a burial trench." The Division "requires Pride Energy to submit a remediation plan pursuant to OCD Rule 116D: the work plan ... must specify how [Pride] will remove and dispose of the burial trench's contents and backfill and cover the burial trench."

By letter dated June 26, 2008 (**Exhibit B**), R.T. Hicks Consultants, Ltd. ("Hicks"), on behalf of Pride, submitted an alternative plan that would not require removal of the buried waste. However, Exhibit B also included a contingency to remove the waste to a disposal site, if

necessary, in conformance with the mandate outlined in Exhibit A.[1] Pride asserts that Exhibit B satisfies the requirements of Division Rule 116 and Exhibit A.

By letter dated August 15, 2008 (**Exhibit C**), the Division informed Pride that Exhibit B did not comply with the Division's requirements, without addressing the merits of the Hicks submittal. The Division further required Pride "to comply with OCD's requirements of May 1, 2008, *exactly as stipulated*, by August 29, 2008. If Pride Energy fails to submit the required remediation plan by that date, the OCD will take appropriate enforcement actions."

Pride believes that complete removal of the buried waste is not necessary, and that the plan submitted by Hicks will satisfy all Division requirements and protect the environment. However, due to the deadline in Exhibit C, Pride is submitting this letter. Pride would like to discuss the Hicks proposal at an informal meeting to understand the Division's reasons for (i) requiring removal of the buried waste, and (ii) refusing to consider the Hicks proposal. In the meantime, Pride requests relief from tomorrow's deadline until these matters have been considered. In that regard, attached as **Exhibit D** is an e-mail to Pride from the environmental coordinator of Noble Energy, Inc. (the surface owner of the wellsite), agreeing that additional data should be acquired before a decision is made as to whether excavation and removal of the drilling waste should be required.

Please let me know of acceptable meeting dates for the Division. If a hearing is required, please let me know, and I will submit the appropriate documents to the Division.

Very truly yours,

James Bruce

Attorney for Pride Energy Co.

cc (w/encls.): Wayne Price (hand delivered)
Gail MacQuesten (hand delivered)
OCD-Hobbs
Noble Energy Inc.
Pearce Trust
Pride Energy Co.
R.T. Hicks Consultants, Ltd.

[1] A copy of the complete report submitted with the Hicks letter is not attached hereto due to its length, and because the Division's Environmental Bureau has a complete copy. A copy will be provided to you if you so request.

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

May 1, 2008

Mr. Matthew L. Pride
Pride Energy Company
P.O. Box 701950
Tulsa, OK 74170-1950

EXHIBIT A

RE: REQUIREMENT TO SUBMIT REMEDIATION PLAN
PRIDE ENERGY - INBE 13 NO. 1 BURIAL TRENCH
UNIT LETTER G, SECTION 13, TOWNSHIP 11 SOUTH, RANGE 33 EAST
LEA COUNTY, NEW MEXICO
OCD CASE NO. 1R493

Dear Mr. Pride:

The Oil Conservation Division (OCD) has determined that Pride Energy must submit a remediation plan to remove and dispose of the drilling pit contents that it disposed of onsite in a burial trench at its Inbe 13 No. 1 well site located in Unit Letter G, Section 13, Township 11 South, Range 33 East, Lea County, New Mexico. OCD is requiring this action because Pride improperly disposed of its drilling pit's contents onsite. The vertical separation between the bottom of the burial trench and the ground water is less than 50 feet which violates OCD's Policy Memorandum 2005-2.

OCD hereby requires Pride Energy to submit a remediation plan pursuant to OCD Rule 116D; the work plan is due is due sixty (60) days from the receipt by Pride Energy of this written notice. Pride's remediation plan must specify how it will remove and dispose of the burial trench's contents and backfill and cover the burial trench. The work plan must also include a complete description of the site, including a site map, and a summary of the site history. The work plan shall specify the following:

1. All burial trench contents shall be removed and appropriately disposed of at either an OCD permitted landfill (or landfarm if chlorides contents meets Part 36 standards).

2. The burial trench shall be over excavated on all sides and beneath the bottom.

3. All excavated material shall be properly solidified for transport to the final disposal site.

4. Pride shall take, at a minimum, four confirmation samples to demonstrate that the burial trench contents did not contaminate the soil or bedrock adjacent to or beneath the burial trench. If a release has occurred, Pride shall inform OCD of this with 24 hours.

5. Pride shall backfill the burial trench with clean fill to grade and cover to match adjacent areas.

6. Pride shall submit a report to OCD that documents all actions taken in accordance with its remediation plan within 10 days of completion of tasks.

7. Pride shall install a monitor well to determine whether ground water has been impacted by a release from the burial trench.

After it has completed its removal of the burial trench contents, OCD will determine whether to require additional action from Pride Energy. Pride Energy should submit one paper copy and one electronic copy of all work plans and/or reports. Please refer to ***OCD Case No. 1R493*** on all future correspondence. If you have any questions, please contact Glenn von Gonten of my staff at (505) 476-3488.

Sincerely,

Glenn von Gonten

for Wayne Price
Environmental Bureau Chief

WP/gvg

cc: Chris Williams
Larry Johnson

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 26, 2008

Wayne Price
Bureau Chief
NMOCD Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: INBE 13 #1
NMOCD Case # 1R493

Dear Wayne:

On behalf of Pride Energy, Hicks Consultants submits the attached Preliminary Characterization and Proposed Path Forward in response to the NMOCD Letter of May 1, 2008 that requires Pride submit a remediation plan pursuant to Rule 116. Our analysis using site-specific data strongly suggests that Pride can comply with Rule 116 without removal of the buried waste and that the proposed investigation and remedy may prove to be more acceptable to the surface landowner and leaseholder than excavation and off-site disposal.

The first task is communication of this plan to the surface landowner and leaseholder. The schedule provides for Pride to "submit modifications to this plan to mitigate any reasonable and appropriate concerns of the landowner and surface leaseholder". Therefore, we ask that NMOCD delay review of this plan until August, which is when we anticipate that the communications with the stakeholders will be complete.

Because we believe that Rule 116.A (2) is most applicable to the issues at the site, the submission presents and evaluates site-specific data to determine if the site meets the criteria of a:

> "release from any facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or cause an exceedance of the standards in Section 19, Subsection B, Paragraphs (1) and (2) or (3) of 19.15.1 NMAC."

The submission also includes an evaluation of the impact of the burial of waste at the site on the other criteria identified in Rule 116. As outlined in Section 116 B.1(b), is this a release that:

(i) results in a fire;
(ii) will reach a water course;
(iii) may with reasonable probability endanger public health; or
(iv) results in substantial damage to property or the environment;

The submission includes a remediation plan, which is required under Rule 116.D. The contingency plan includes all of the work elements listed in the May 1, 2008 letter from NMOCD.

EXHIBIT B

For all activities, the goal of Pride Energy is to choose a path forward that:

1. provides the greatest net environmental benefit,
2. complies with NMOCD Rules, and
3. is supported by good science.

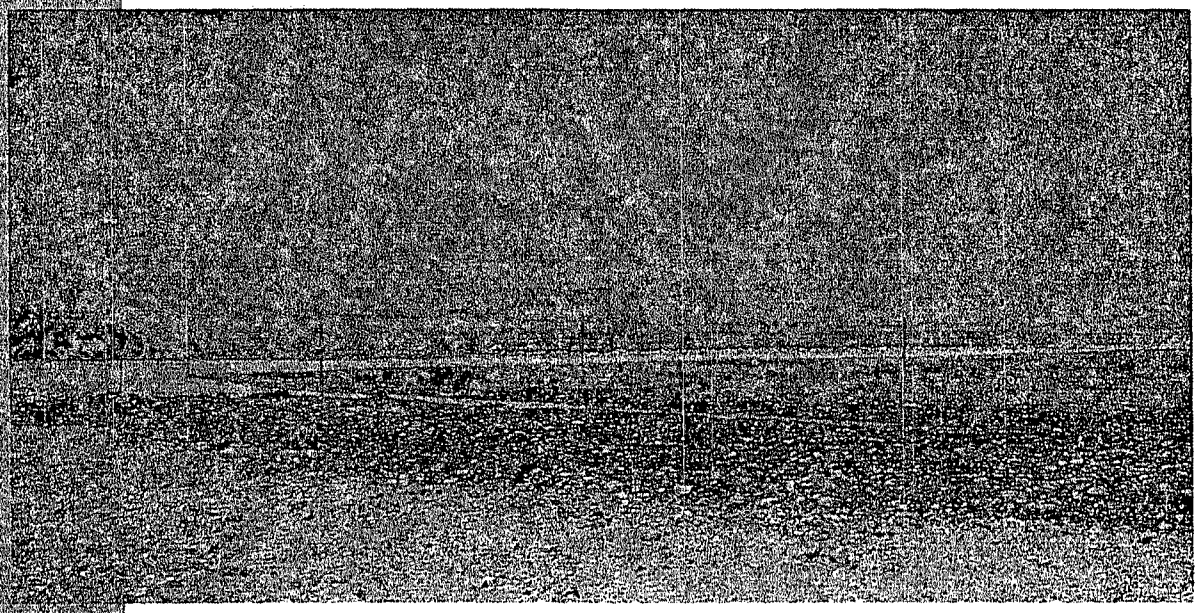
The last criteria employed when evaluating any proposed action is confirming that there is a reasonable relationship between the benefits created by the proposed action and the economic and social costs. We believe the proposal provided in the attached report supports these goals.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

Copy: Matt Pride, Pride Energy
Pearce Trust – through Pride Energy
Noble Energy – through Pride Energy

June 26, 2008



Pride Energy
INBE 13 #1
Preliminary Characterization & Proposed Path Forward

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

EXHIBIT C

AUGUST 15, 2008

CERTIFIED MAIL
RETURN RECEIPT NO: 3929 4036

Mr. Matthew L. Pride
Pride Energy Company
P.O. Box 701950
Tulsa, OK 74170-1950

AUG 20 2008

RE: LETTER OF VIOLATION - FAILURE TO SUBMIT REMEDIATION PLAN
PRIDE ENERGY - INBE 13 NO. 1 BURIAL TRENCH
UNIT LETTER G, SECTION 13, TOWNSHIP 11 SOUTH, RANGE 33 EAST
LEA COUNTY, NEW MEXICO
OCD CASE NO. 1R493

Dear Mr. Pride:

On May 1, 2008, the Oil Conservation Division (OCD) informed you that Pride Energy was required to submit a remediation plan to remove and dispose of the drilling pit contents that were disposed of onsite in a burial trench at the Pride Energy Inbe 13 No. 1 well site located in Unit Letter G, Section 13, Township 11 South, Range 33 East, Lea County, New Mexico. OCD required this action because Pride improperly disposed of its drilling pit's contents onsite above shallow ground water.

Rather than contacting OCD to discuss its proposal, Pride Energy submitted a document entitled "*Preliminary Characterization & Proposed Path Forward*" on June 26, 2008. This document does not include a remediation plan to "*...remove and dispose of the burial trench's contents and backfill and cover the burial trench*" as specified in OCD's letter of May 1, 2008; OCD hereby rejects Pride's proposal of June 26, 2008.

Pride Energy had 60 days from the date that it received OCD's letter to submit the required remediation plan; Pride Energy has been in violation of Rule 116D since approximately July 7, 2008. OCD hereby requires Pride Energy to comply with OCD's requirements of May 1, 2008, exactly as stipulated, by August 29, 2008. If Pride Energy fails to submit the required remediation plan by that date, then OCD will take appropriate enforcement actions to

bring it into compliance. Such actions may include a hearing before a division examiner to set a compliance schedule and to impose sanctions, including penalties.

Sincerely,

Wayne Price
Environmental Bureau Chief

WP/gvg

cc: Daniel Sanchez, OCD Enforcement and Compliance Manager
Gail MacQuesten, Assistant General Counsel
Chris Williams, OCD District 1
Larry Johnson, OCD District 1

Subj: **FW: Inbe 13-1, Lea County, New Mexico**
Date: 8/28/2008 7:43:03 A.M. Mountain Daylight Time
From: mattp@pride-energy.com
To: jamesbruc@aol.com

From: CDelHierro@nobleenergyinc.com [mailto:CDelHierro@nobleenergyinc.com]
Sent: Wednesday, August 27, 2008 10:06 PM
To: Matthew Pride
Cc: Randall Hicks; trothermich@nobleenergyinc.com; BHilgers@nobleenergyinc.com
Subject: Inbe 13-1, Lea County, New Mexico

Dear Mr. Pride:

Noble Energy, Inc. has reviewed the June 26, 2008 submission to the NMOCD entitled, "Preliminary Characterization and Proposed Path Forward" for the site known as INBE 13 #1 located in Lea County, New Mexico, section 13- 11S- 33E: 1,980' FNL & 1,680' FEL (API #: 30- 025- 37840). This site lies on private property owned by our company. We have discussed the site with your consultant, Mr. Randall Hicks, and have reviewed additional data and information supplied by Mr. Hicks.

First, we share your concern that the excavation, removal and off-site disposal of the buried drilling waste could cause more environmental harm than it allegedly cures. We are also concerned that unnecessary truck transport through our property could harm our grossing lessee by endangering his livestock. If data do not demonstrate that the buried waste material must be removed, then we favor leaving the waste where it is.

Second, we believe it is premature to remove the waste to a landfill in the absence of a thorough review of the data currently in hand, and a review of the data that would be generated by the additional characterization proposed in your June submission. Therefore, we will support any action by Pride that would forestall the excavation and exportation of buried waste until the site data are available to demonstrate that the buried waste is or is not a threat to ground water. To that end, we urge Pride to install the proposed monitoring/supply well as soon as possible and before improving the infiltration barriers at the site.

Third, after all parties obtain complete ground water quality data from the proposed well (and potentially the contingency monitoring well located between the burial trench and the former reserve pit as outlined on Page 11 of the June submittal) we should evaluate the data and determine the best course of action for this site based upon the site-specific data. We note that the contingency plan calls for the excavation and exportation of waste in full compliance with the NMOCD letter of May 1, 2008. This contingency seems very appropriate.

Finally, the June 26 submission was not provided to me until August 22. Unfortunately, the report was filed in our Houston office and we did not recognize the importance of our response until Mr. Hicks notified us of the August 15 letter from the NMOCD. While we are in general agreement with the path forward outlined by Pride and the data and contingency plans appear to support the conclusions and recommendations, we would like more time to review the site history and discuss this issue more completely with our surface lessee. If the mechanism to gain more time and to allow for the collection of more data is Pride requesting a hearing to contest NMOCD's rejection of your proposal, then we support a request for a hearing. However, a simple extension of time to permit collection of the ground water data appears to be a more straight-forward approach.

We look forward to working with Pride Energy to resolve this issue in a manner that protects our property, protects our lessee, and minimizes any effect on the environment. If you have any questions concerning this letter or require additional input from Noble Energy, please contact me at 303-228-4160.

Sincerely,

EXHIBIT D

Chris Del Hierro
Environmental Coordinator - Rockies
(office) 303.228.4160
(cell) 303.990.0757

1R493

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

December 11, 2008

Wayne Price
Bureau Chief
NMOCD Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: INBE 13 #1 NMOCD Case # 1R493

Dear Wayne:

The INBE 13 #1 site represents no imminent threat to fresh water, public health or the environment. Therefore, immediate action on the part of NMOCD is not warranted. Pride is prepared to implement an NMOCD-approved remediation plan under Rule 116 after:

1. NMOCD approves the September 3, 2008 submittal and
2. The landowner approves the proposed action

I attach a recent e-mail transmission to NMOCD for the benefit of those copied on this request.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

Copy: Matt Pride, Pride Energy
Noble Energy

Randy Hicks

From: Randy Hicks [r@rthicksconsult.com]
Sent: Wednesday, October 01, 2008 4:18 PM
To: 'Price, Wayne, EMNRD'
Cc: 'JamesBruc@aol.com'; 'Matthew Pride'; 'Katie Lee'
Subject: Pride - INBE 13 #1 - 1R- 1493
Attachments: 2ndremediation plan.pdf

Wayne

Pride has selected a contractor to implement the remediation plan for the above-referenced site (attached).

Because NMOCD's May 1 letter stated that this is a Rule 116 site, we cannot move forward with the corrective action until NMOCD approves.

Upon NMOCD approval of the plan, we will ask the landowner for their permission to proceed and then move forward.

If NMOCD requires additional information to approve the plan or has comments that we need to address, please let us know.

Randall Hicks
505-266-5004
505-238-9515 - cell

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

AUGUST 15, 2008

CERTIFIED MAIL
RETURN RECEIPT NO: 3929 4036

Mr. Matthew L. Pride
Pride Energy Company
P.O. Box 701950
Tulsa, OK 74170-1950

RE: LETTER OF VIOLATION - FAILURE TO SUBMIT REMEDIATION PLAN
PRIDE ENERGY - INBE 13 NO. 1 BURIAL TRENCH
UNIT LETTER G, SECTION 13, TOWNSHIP 11 SOUTH, RANGE 33 EAST
LEA COUNTY, NEW MEXICO
OCD CASE NO. 1R493

Dear Mr. Pride:

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Rather than contacting OCD to discuss its proposal, Pride Energy submitted a document entitled "*Preliminary Characterization & Proposed Path Forward*" on June 26, 2008. This document does not include a remediation plan to "*...remove and dispose of the burial trench's contents and backfill and cover the burial trench*" as specified in OCD's letter of May 1, 2008; OCD hereby rejects Pride's proposal of June 26, 2008.

Pride Energy had 60 days from the date that it received OCD's letter to submit the required remediation plan; Pride Energy has been in violation of Rule 116D since approximately July 7, 2008. OCD hereby requires Pride Energy to comply with OCD's requirements of May 1, 2008, exactly as stipulated, by August 29, 2008. If Pride Energy fails to submit the required remediation plan by that date, then OCD will take appropriate enforcement actions to

bring it into compliance. Such actions may include a hearing before a division examiner to set a compliance schedule and to impose sanctions, including penalties.

Sincerely,

Wayne Price
Environmental Bureau Chief

WP/gvg

cc: Daniel Sanchez, OCD Enforcement and Compliance Manager
Gail MacQuesten, Assistant General Counsel
Chris Williams, OCD District 1
Larry Johnson, OCD District 1

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 26, 2008

Wayne Price
Bureau Chief
NMOCD Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: INBE 13 #1
NMOCD Case # 1R493

Dear Wayne:

On behalf of Pride Energy, Hicks Consultants submits the attached Preliminary Characterization and Proposed Path Forward in response to the NMOCD Letter of May 1, 2008 that requires Pride submit a remediation plan pursuant to Rule 116. Our analysis using site-specific data strongly suggests that Pride can comply with Rule 116 without removal of the buried waste and that the proposed investigation and remedy may prove to be more acceptable to the surface landowner and leaseholder than excavation and off-site disposal.

The first task is communication of this plan to the surface landowner and leaseholder. The schedule provides for Pride to "submit modifications to this plan to mitigate any reasonable and appropriate concerns of the landowner and surface leaseholder". Therefore, we ask that NMOCD delay review of this plan until August, which is when we anticipate that the communications with the stakeholders will be complete.

Because we believe that Rule 116.A (2) is most applicable to the issues at the site, the submission presents and evaluates site-specific data to determine if the site meets the criteria of a:

> "release from any facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or cause an exceedance of the standards in Section 19, Subsection B, Paragraphs (1) and (2) or (3) of 19.15.1 NMAC."

The submission also includes an evaluation of the impact of the burial of waste at the site on the other criteria identified in Rule 116. As outlined in Section 116 B.1(b), is this a release that:

(i) results in a fire;
(ii) will reach a water course;
(iii) may with reasonable probability endanger public health; or
(iv) results in substantial damage to property or the environment;

The submission includes a remediation plan, which is required under Rule 116.D. The contingency plan includes all of the work elements listed in the May 1, 2008 letter from NMOCD.

For all activities, the goal of Pride Energy is to choose a path forward that:

1. provides the greatest net environmental benefit,
2. complies with NMOCD Rules, and
3. is supported by good science.

The last criteria employed when evaluating any proposed action is confirming that there is a reasonable relationship between the benefits created by the proposed action and the economic and social costs. We believe the proposal provided in the attached report supports these goals.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

Copy: Matt Pride, Pride Energy
Pearce Trust – through Pride Energy
Noble Energy – through Pride Energy

June 26, 2008

Pride Energy
INBE 13 #1 Site
Preliminary Characterization & Proposed Path Forward

prepared for:

Pride Energy
2250 E. 73rd Street
Suite 550
Tulsa, OK 74136

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Site Data

Location

Unit Letter G, 1980 FNL 1980 FEL
Section 13 T11S R 33E
Latitude N 33° 22' 3.2" Longitude W 103° 33' 50.37" NAD 83

At the INBE 13 #1 site, Elke Environmental obtained approval from NMOCD to solidify and then bury drilling waste. Elke Environmental mixed the drilling waste in the reserve pit used to drill the well with their proprietary solidification product and placed the waste into a 110-foot by 30-foot burial trench that was lined with 20-mil reinforced impermeable material. Appendix A is the NMOCD-approved drilling pit closure plan submitted by Elke Environmental.

Plate 1 shows the location relative to Tatum, New Mexico. Plate 2 is a 2005 aerial photograph of the site relative to Highway 380 and 457. Plate 3 is a USGS topographic map of the site area showing the location of nearby water wells listed in the New Mexico Office of the State Engineer (OSE) database.

Surface Water Hydrology

Plate 4 is a topographic map showing a stock pond approximately 500 feet west of the INBE 13 #1 site. Plate 5 is an aerial photograph at the same scale as Plate 4 showing this stock pond and the production pad associated with the INBE 13 #1 site. The windmill associated with the stock pond is visible as a small black dot approximately 100 feet west of the stock pond. The OSE database shows the well east of the stock pond. Mis-locations of this magnitude in the OSE database are common.

The topography of the area is flat and it is difficult to tell from topographic maps if precipitation runoff from the INBE 13 #1 site would flow southeast, coincident with the regional slope, or flow west toward the stock pond which is located within a depression (see Plate 4). A foot survey conducted on June 19, 2008 showed that runoff from the area would flow to small depressions to the east and west of the site identified by blue circles on Figure 1, below. Runoff from the western depression could flow into the larger depression shown on the topographic map as a stock pond.

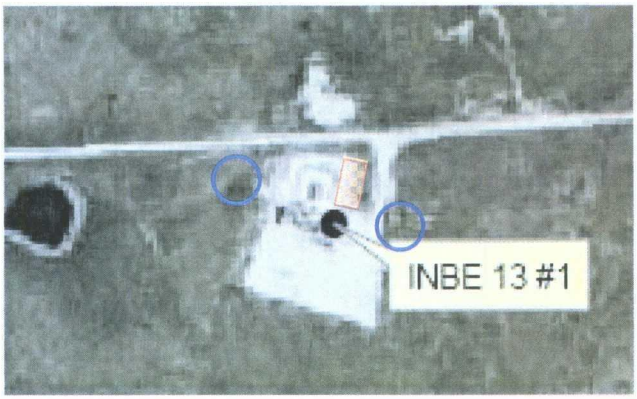


Figure 1: Image showing local topographical depressions identified by blue circles. Surface water flow from INBE 13 #1 has potential to flow toward these depressions. The approximate location of the drilling waste burial trench is shown as the red rectangle.

Surface Soils

Plate 6 is a soils map (http://soildatamart.nrcs.usda.gov/). The site lies on the Kimbrough-Lea Complex soil unit, which is described in Appendix B. As described in Appendix B, the Kimbrough unit is generally 6-inches thick and composed of gravelly loam which is underlain by cemented caliche. The Lea unit is composed of about 2-feet of loam, underlain by cemented caliche. A foot survey of the area of INBE 13 #1 suggests that the soil is more similar to the Lea unit. Figure 2 is a photograph of an excavation at INBE 13 #2, which is about 2000 feet southwest of INBE 13 #1. In Figure 2, the loamy soil is about 2 feet thick. The windmill in the distance is the well located due west of the stock pond discussed above.

Figure 2: Soil profile at INBE 13 #2

At the INBE 13 #1 site, a thin layer of caliche gravel covers much of the area overlying the burial trench, except the eastern portion of the pad where dark soil overlies caliche (Figures 3 and 4).

Figure 3: View from the INBE 13 #1wellhead to northeast

Figure 4: Soil profile in eastern site area.

Fine-grained soil underlies the surface caliche in some areas of the site (Figure 5).

Figure 5: Trenching activities near the east central area of the site.

Characteristics of the Unsaturated Zone

Elke Environmental contracted with White Drilling Company to install a temporary monitoring well at the southeast corner of the former reserve pit. The well log for this boring, which is in Appendix C, shows caliche to a depth of 24 feet with reddish-brown sandy clay underlying the caliche. Lithologic logs from Hicks Consultants borings at nearby sites (e.g. South Four Lakes #15, etc.) are similar to the log presented in Appendix C; however, we observed that a silty-sand was below the caliche layer. The driller reports the depth to water in this 50-foot deep well as 26 feet below ground surface. Elke Environmental reports the depth to water in the 52.2-foot well as 29.7 feet below top of casing (suggesting a 2.2-foot casing height). From these observations, the thickness of the vadose zone is between 26 and 27.5 feet with caliche and soil comprising the upper 24 feet. We believe a sitly-sand comprises the capillary fringe from 24 feet to the water table.

Ground Water Hydrology

Plate 7 is a potentiometric surface map of the area based upon USGS 1996 measurements. At the INBE 13 #1 site, ground water flows from west to east-northeast at a gradient of 0.003.

According to the Office of the State Engineer Technical Report 99-1 (Musharrafieh and Chudnoff), the saturated thickness of the Ogallala Aquifer in the area of INBE 13 #1 ranges between 35 to 140 feet. The total depth of nearby wells are generally 70 to 95 feet and these wells probably penetrate several feet of the underlying redbeds (Dockum Group). Because the water table is approximately 30-feet below ground surface, we can conclude that the saturated thickness of the Ogallala in this area is about 65 feet.

OSE Technical Report 99-1 states that the hydraulic conductivity of the Ogallala in the area of the INBE 13 #1 site ranges from 40-60 feet/day (Plate 8). In general, the lower portion of the Ogallala is coarser-grained than the upper section of the unit. The driller's log of the monitoring well at the INBE 13 #1 site (Appendix C) shows that the uppermost 20-feet of the Ogallala is fine-grained sand and clay is consistent with the observations of others that the Ogallala is a fining-upward sedimentary sequence. Therefore, the hydraulic conductivity of the uppermost 20-feet of the Ogallala will be lower than the values suggested by Musharrafieh and Chudnoff for the entire thickness of the unit. For the purpose of an evaluation of the threat to ground water posed by the burial trench that holds the drilling waste, a hydraulic conductivity value of 30 feet/day is appropriate for the uppermost portion of the aquifer and a value of 50 feet/day is appropriate for the entire the aquifer.

The chloride concentration in a windmill located about 600 feet west of the site is 46.3 mg/L (see Appendix D). The total dissolved solids concentration of this sample is 384 mg/L.

Reports authored by Hicks Consultants that describe several drilling waste release sites in the area show that chloride becomes distributed throughout the upper 30-60 feet of a water table aquifer after a release of brine (e.g. Samson BD-04, Pride South Four Lakes sites).

Land Status

The surface owner is:

Noble Energy, Inc.
100 Glenbourough Drive
Suite 100
Houston, Texas 77067

Noble Energy, Inc. leases the use of the land surface to:

Pearce Trust
1717 Jackson
Pecos, Texas 79772

As Plates 2, 5 and 6 show, the land in the general area of INBE 13 #1 is used for grazing. Figures 2 also show that the surrounding land is suitable for grazing.

Characteristics of the Buried Drilling Waste

Plate 9 shows the location of the burial trench relative to the production pad and the location of the four trenches sampled by Hicks Consultants. Reserve pit material was encountered 4-6 feet below ground surface and overlain by a synthetic liner in the trenches sampled. Figure 6 shows that the reserve pit material about 4 feet below land surface.

Figure 6: Sampling trench showing liner in blue circle

Table 1 presents the analytical results obtained from the five samples of buried reserve pit material. Appendix D presents the laboratory data sheets for these samples and some additional samples of the soil form the backhoe pile (a composite of waste and overlying soil). For the purpose of evaluating the threat to ground water posed by the material in the burial trench, we used an average chloride concentration of 16,200 mg/kg and assumed that all of the chloride was mobile.

Table 1: Laboratory Analyses of Trench Samples

Sample	Moisture % by Weight	Total Chloride mg/kg	TCLP Chloride mg/L	SPLP Chloride mg/L
H1 - 5 ft	19	15000		
H2 - 7 ft	16	10000		
H2- solid	16	16000		
H3- solid	28	20000		
H4- solid	24	20000	1200	1200

Evaluation of Threat to Ground Water Quality

We elected to evaluate the threat to ground water quality by using a model to simulate realistic "worst case" conditions (Conservative Scenario) and realistic "favorable" conditions (Conservative and Favorable Scenario) in order to provide NMOCD with a range of expected results. In both scenarios, the model presents a conservative prediction of ground water quality because:

1. The model assumes that the lower liner of the burial trench loses integrity at year zero.
2. The assumed liner degradation rate is much faster than the estimated 80-100 years reported by liner manufacturers and some researchers.

3. The rate of moisture flow in the vadose zone (the infiltration rate or deep percolation rate) calculated by the model is higher than suggested by measurements of soil moisture at similarly constructed infiltration barriers (Samson BD-04, Samson Livestock, Rice Operating Abo-1G).

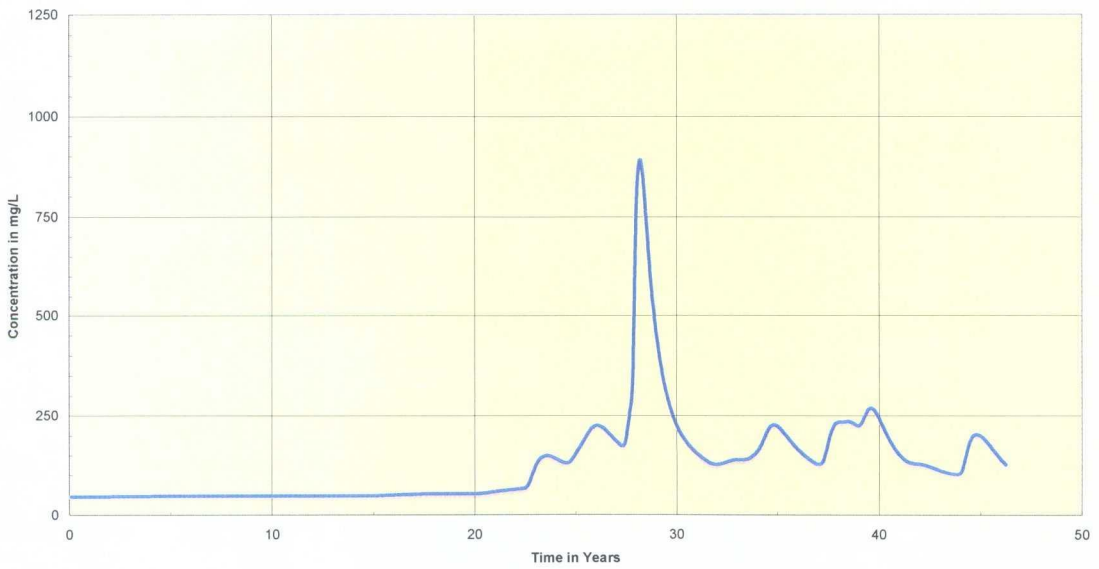
We also assumed that any regulated hydrocarbons that may be present in the buried drilling waste would degrade over time. Therefore, we simulated the migration of chloride as a conservative tracer.

Appendix E provides a detailed description of the modeling protocols and input data.

Figure 7 shows the simulation, which assumes:

- Complete upper liner degradation occurs over 20 years, beginning at year zero
- Loss of lower liner integrity at year zero
- A monitoring well is placed at the down gradient edge of the burial trench to measure the impact of chloride migration from the burial trench to ground water
- Vertical distribution of chloride is restricted to the uppermost 40-feet of the aquifer, which is also the screen length of the well
- The hydraulic conductivity of the upper 40-feet of the aquifer is 30 feet/day
- 100% of the chloride in the drilling waste is mobile

Figure 7: Predicted Chloride Concentration in a Proposed Monitoring/Supply Well, "Conservative Scenario", INBE 13 #1 Site

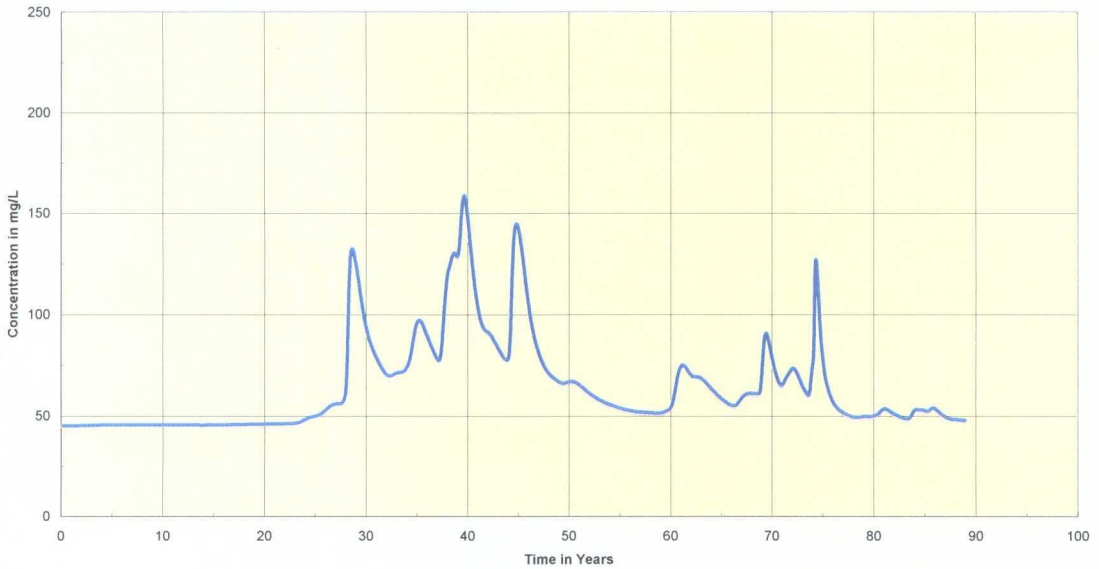


The model predicts that the center of chloride mass begins to enter the underlying aquifer after year 20. Chloride in ground water exceeds 500 mg/L from year 27 to year 29 and is above 250 mg/L in year 39.

Figure 8 shows a realistic "Conservative and Favorable Condition" simulation which assumes:

- Complete upper liner degradation occurs over 40 years, beginning at year zero
- Loss of lower liner integrity occurs at year zero
- A monitoring and supply well penetrates the full saturated thickness of the aquifer (65 feet), and is placed at the down gradient edge of the burial trench
- The hydraulic conductivity of the 65-foot thick aquifer is 50 feet/day
- Water quality in this hypothetical fully-penetrating well represent the water quality of the entire aquifer with higher quality water entering the well from the base of the aquifer

Figure 8: Chloride Concentration in a Proposed Monitoring/Supply Well, "Conservative and Favorable Scenario", INBE 13 #1 Site



The model predicts that the center of chloride mass begins to enter the underlying aquifer after year 20. Chloride in ground water exceeds 100 mg/L several times between years 28 and 45 and in year 74.

Under the worst-case Conservative Scenario the impact to the aquifer is relatively minor with respect to real extent and predicted uses in the future (the next 100 years). Simplistic modeling of the site as a release (under the worst case scenario) predicts that ground water will always meet the WQCC standard of 250 mg/L for chloride less than five-hundred feet down gradient of the burial trench.

Finally, a liner manufacturer that we contacted stated that a 20-mil liner that is not exposed to UV radiation may maintain integrity for more than 100 years and will require longer than 40 years to degrade (see Appendix F). This suggested lifespan of the

liner at the INBE 13 #1 site would cause both of the simulated conditions to overestimate the potential threat to ground water quality.

Evaluation of Threat to Surface Water

The simulation modeling and an understanding of fluid dynamics allows us to conclude that any residual constituents of concern in the buried drilling waste will not with reasonable probability migrate to the land surface. Therefore, precipitation runoff from the site will not be impacted by the buried material and nearby surface water is not threatened by the buried waste from this pathway.

Surface water bodies in the area are above the water table. Because constituents of concern in the buried drilling waste will slowly migrate downward, surface water bodies cannot be impacted by the buried drilling waste from this pathway.

Evaluation of Threat to the Environment/Habitat

The simulation modeling and an understanding of fluid dynamics allows us to conclude that any residual constituents of concern in the buried drilling waste will not with reasonable probability migrate to the land surface or root zone. Therefore, vegetation and habitat will not be impacted by the buried material.

Evaluation of Hazard to Public Health

The NMOCD Rulebook defines a hazard to public health as

> **(1)** Hazard to public health exists when water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher, or if any toxic pollutant as defined at Subsection VV of 20.6.2.7 NMAC affecting human health is present in the water. In determining whether a release would cause a hazard to public health to exist, the director shall investigate and consider the purification and dilution reasonably expected to occur from the time and place of release to the time and place of withdrawal for use as human drinking water.

Water on, beneath, or down gradient from the site is not currently used as a human drinking water supply. Simulation modeling demonstrates that impairment of ground water is not likely to occur in a fully-penetrating water supply well. We conclude that a human water supply well will not be impacted by the buried waste.

Evaluation of Threat to Property

As stated earlier, the reserve pit material is 4-6 feet below the land surface and overlain by a synthetic liner. As discussed in the earlier section regarding the vertical migration of constituents of concern from the burial trench, the depth of burial and the presence of the liner prevent constituents of concern, such as chloride or hydrocarbons, from

migrating upward to the ground surface or soil horizon. Over time (decades or centuries) these constituents will either degrade naturally (e.g. hydrocarbons) or slowly migrate downward and enter the ground water zone (e.g. chloride). The presence of the reserve pit material in the burial trench will not interfere with the re-vegetation of the land nor the eventual return of this land to its full productive capacity for livestock grazing.

Pride Energy entered into a surface use agreement with the surface owner and surface lessee that provided compensation for surface damages associated with the two-acre parcel that comprises the production pad which includes the burial trench. Pride Energy is currently negotiating with the surface owner to mitigate any actual damages caused by the burial of the reserve pit material.

Proposed Remediation Plan

Improve Infiltration Barrier

Plate 10 shows the proposed improvements to the existing infiltration barrier that are intended to prevent ponding of precipitation over the liner systems installed at both the burial trench and the former pit area and to accelerate the re-vegetation of the site. With respect to improving the existing infiltration barrier, vegetation is as important as sloping the site to shed precipitation. Vegetation removes water from the root zone and minimizes the downward flux of water. After the proposed improvement, the infiltration barrier will be essentially identical to the Evapo-transpiration infiltration barrier tested by Sandia National Laboratories for use at hazardous and radioactive waste sites (See http://www.sandia.gov/caps/ALCD.htm). The plan calls for:

1. Grading the site to create a 3-5% slope that sheds surface flow away from the underlying liner systems while retaining a 4-foot soil buffer between the ground surface and liners. Prevention of ponding of precipitation limits the rate of percolation, thereby improving the infiltration barrier.
2. Creating alternating rows of topsoil (1-foot thick) and caliche. The theory behind this design is the rows of caliche will minimize wind erosion of topsoil and blow sand and soil will eventually cover the caliche rows and accelerate revegetation. Vegetation effectively removes soil water, limiting the rate of percolation, thereby improving the existing infiltration barrier.
3. Excavation of ponding areas to the east and west of the site, using the topsoil from the excavation in the infiltration barrier. We will also evaluate the use of drill cuttings derived from the fresh water drilling program at the INBE 13 #2 well, which will be spud in July.
4. Excavation of small drainage trenches that direct runoff to the ponding areas as shown in Plate 10.
5. Seeding the site with a mix approved by the landowner and surface leaseholder.

Install Water Supply - Monitoring Well

To measure any impact on ground water quality and to provide a benefit to the surface leaseholder, Pride will install a fully-penetrating water supply well on the east side of the access road as shown on Plate 10. This well is 10- to 30-feet down gradient from the burial trench and will allow for the collection of composite samples of the aquifer and discrete samples from the uppermost portion of the aquifer, from a depth of 40-feet below the water table and at the base of the aquifer (See Plate 11 and Appendix G). Because this well is located down gradient from the burial trench and the former reserve pit it will serve to identify impacts from both potential sources.

After consultation with the surface owner and surface leaseholder, Pride will allow the surface leaseholder to install a windmill or solar pump at this new supply well. This well can discharge water to the constructed ponding area to the east of the site for livestock, or to the existing stock pond west of the site.

Monitoring Program

Gypsum block moisture sensors will monitor the efficacy of the sloped and vegetated infiltration barrier described above. Gypsum blocks will be placed in two locations within the infiltration barrier at 2-feet, 3-feet and 4-feet below ground surface. Soil moisture content will be measured on a quarterly basis for two years after installation of the vegetative barrier to confirm drying of the vadose zone.

Pride will obtain samples and depth to water measurements from the monitoring/supply well and a sample from the up gradient windmill on a quarterly basis for the first two years and annually thereafter. In the event that water quality in the monitoring/supply well begins to exceed predictions of the simulation modeling, we'll follow the contingency plan below.

Contingency Plan

The purpose of the contingency plan is to mitigate impact before ground water exceeds the WQCC standards, if ground water impact above standards appears likely. In the event that water quality in the monitoring/supply well begins to exceed predictions of the simulation modeling, Pride will continue (or resume) quarterly sampling of ground water and begin pumping the well if the leaseholder is not already using the well as a supply well. Pumping should cause higher quality water from the base of the aquifer to dilute any salt contribution originating from the burial trench. In addition, Pride Energy will install another monitoring well between the former reserve pit and the burial trench and sample quarterly if data suggest that the former reserve pit is the source of constituents in ground water.

If the data collected after increasing the pumping rate suggest a decrease in water quality that is unacceptable to NMOCD, Pride will:

1. Remove and dispose of all burial trench contents in an NMOCD permitted centralized or commercial facility.

2. Over excavate the trench on all sides and beneath the bottom.
3. Take four confirmation samples to demonstrate that the burial trench contents did not contaminate the soil or bedrock adjacent to or beneath the burial trench.
4. If sampling suggests that a release has occurred, notify NMOCD within 24 hours of receipt of analyses.
5. Backfill the burial trench with clean fill to grade and cover to match adjacent areas.
6. Submit a report to NMOCD that documents all actions taken in accordance with implementation of this contingency plan.

Proposed Schedule

July	Address questions and concerns about this proposed plan with the landowner. Resolve any issues then work with the surface leaseholder to resolve concerns and address questions.
August	Submit modifications to this plan to mitigate any reasonable and appropriate concerns of the landowner and surface leaseholder.
October	Receive and address questions and concerns of NMOCD regarding this submission and the anticipated August amendment.
December	After NMOCD approval, implement the remedy that is negotiated with the landowner and surface leaseholder.

Comparison of Remedial Alternatives

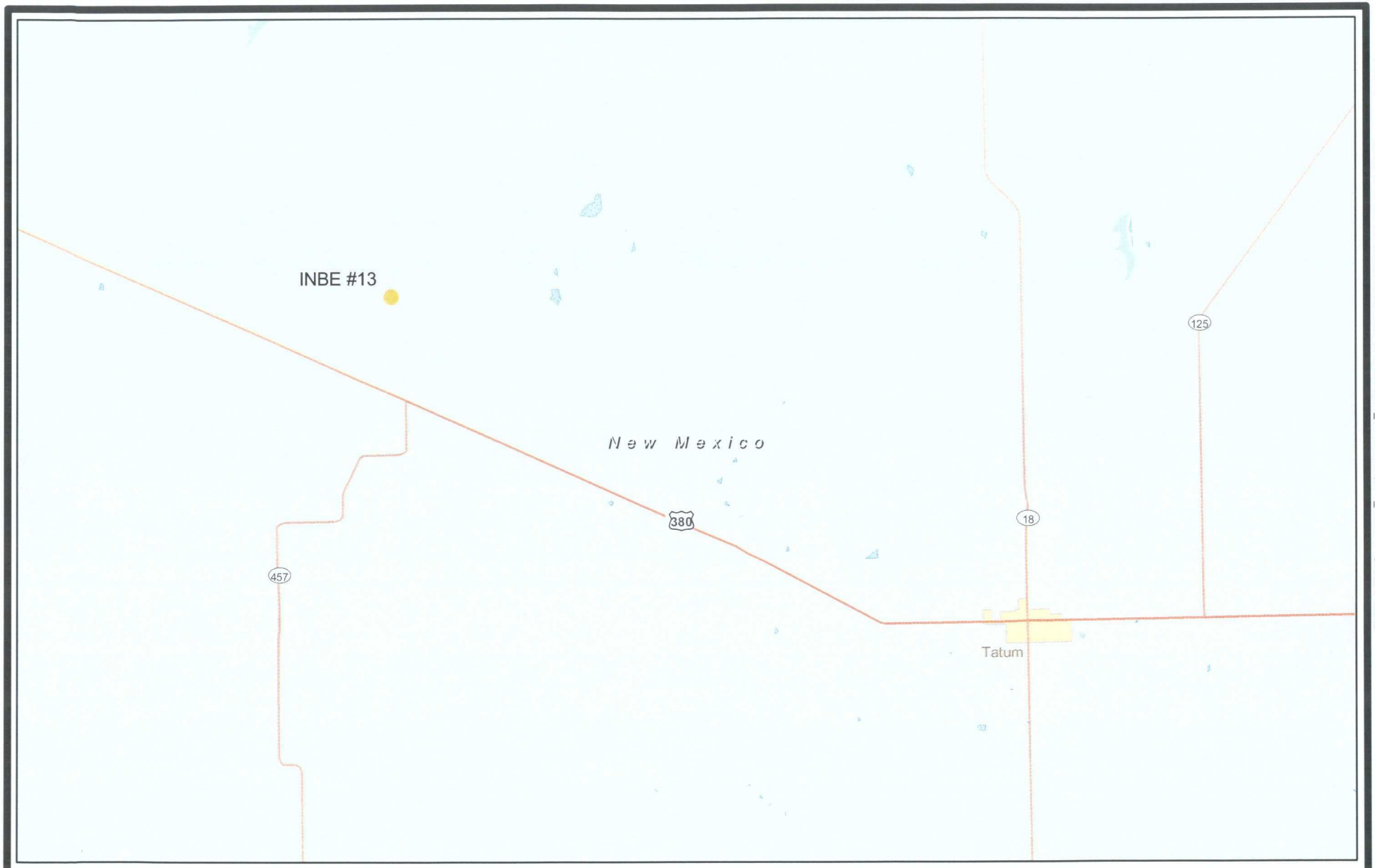
We used field data, laboratory analyses, site conditions, and the results of the simulations to evaluate the following corrective action alternatives:

1. Implementing the proposed plan described herein.
2. Implementing the contingency plan in lieu of the proposed plan.
3. No action.

Appendix H presents the ranking of these alternatives and shows that the proposed plan provides protection of fresh water, public health, the environment, safety and property, while satisfying the NMOCD ground water protection standards.

Plates

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104



0 1 2 Miles

N W E S

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Location of INBE #13 Relative to Tatum, NM

Plate 1

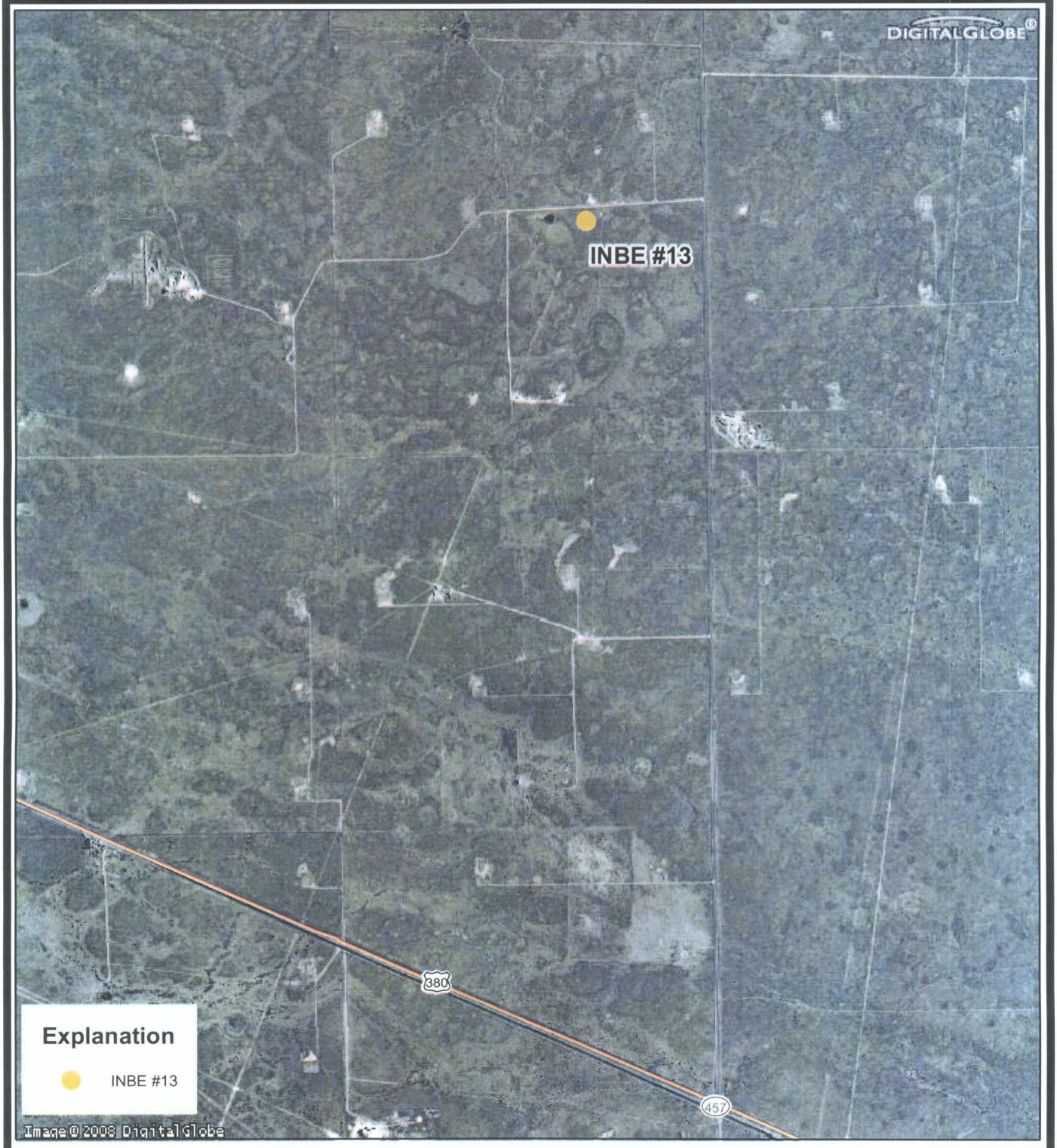
Pride Energy: INBE #13 Corrective Action Plan

June 2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P1_LOCATIONMAP.MXD

6/24/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P2_RECENTAERIAL.MXD



Source: ESRI ArcWeb Services, 2008

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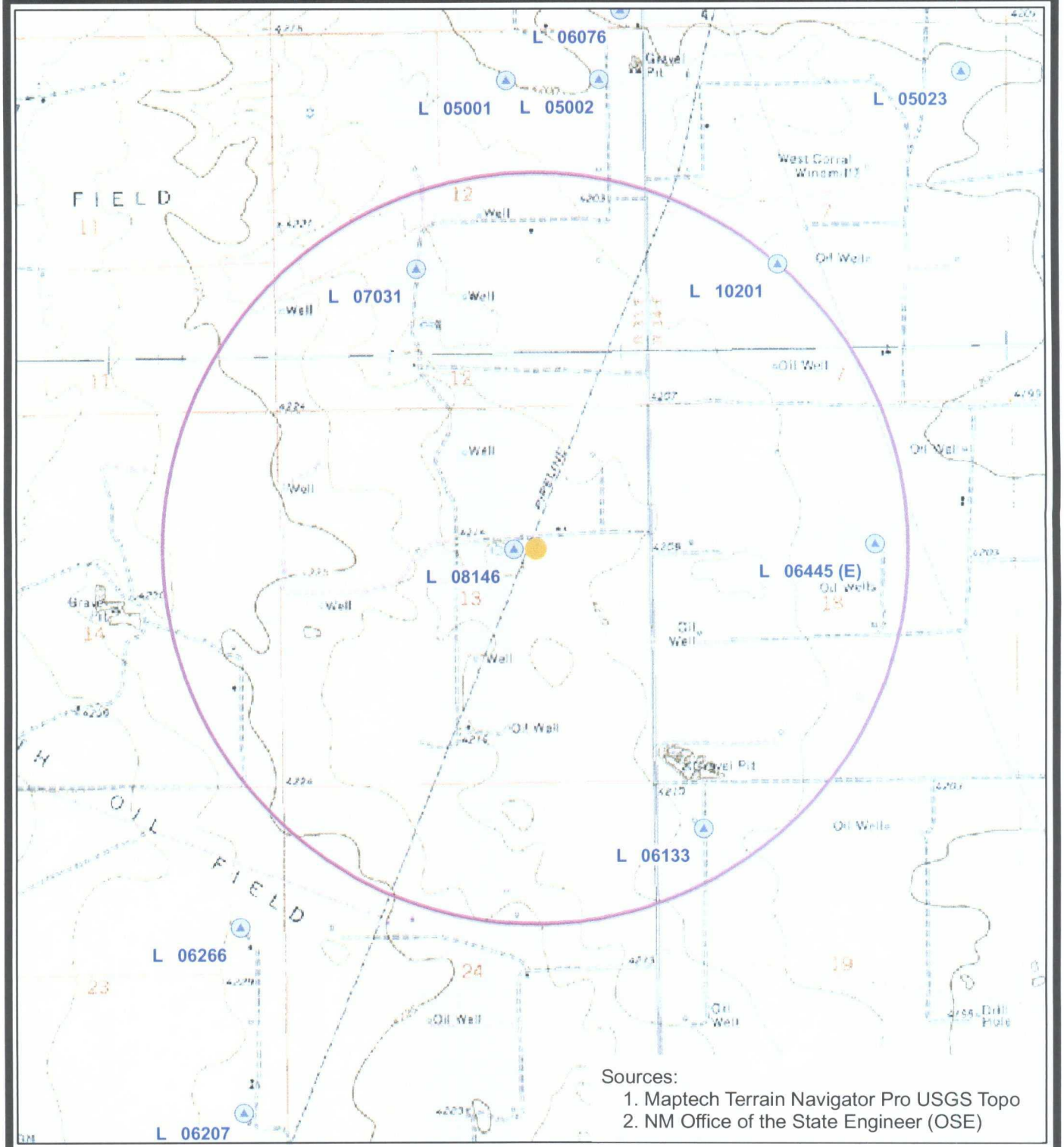
0 1,000 2,000
Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	2005 Aerial Photograph showing INBE #13 Relative to Highway 380	Plate 2
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/24/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P3_OSEWELLS.MXD



Explanation

- INBE #13
- Water well listed in the OSE database
- One mile radius from INBE #13

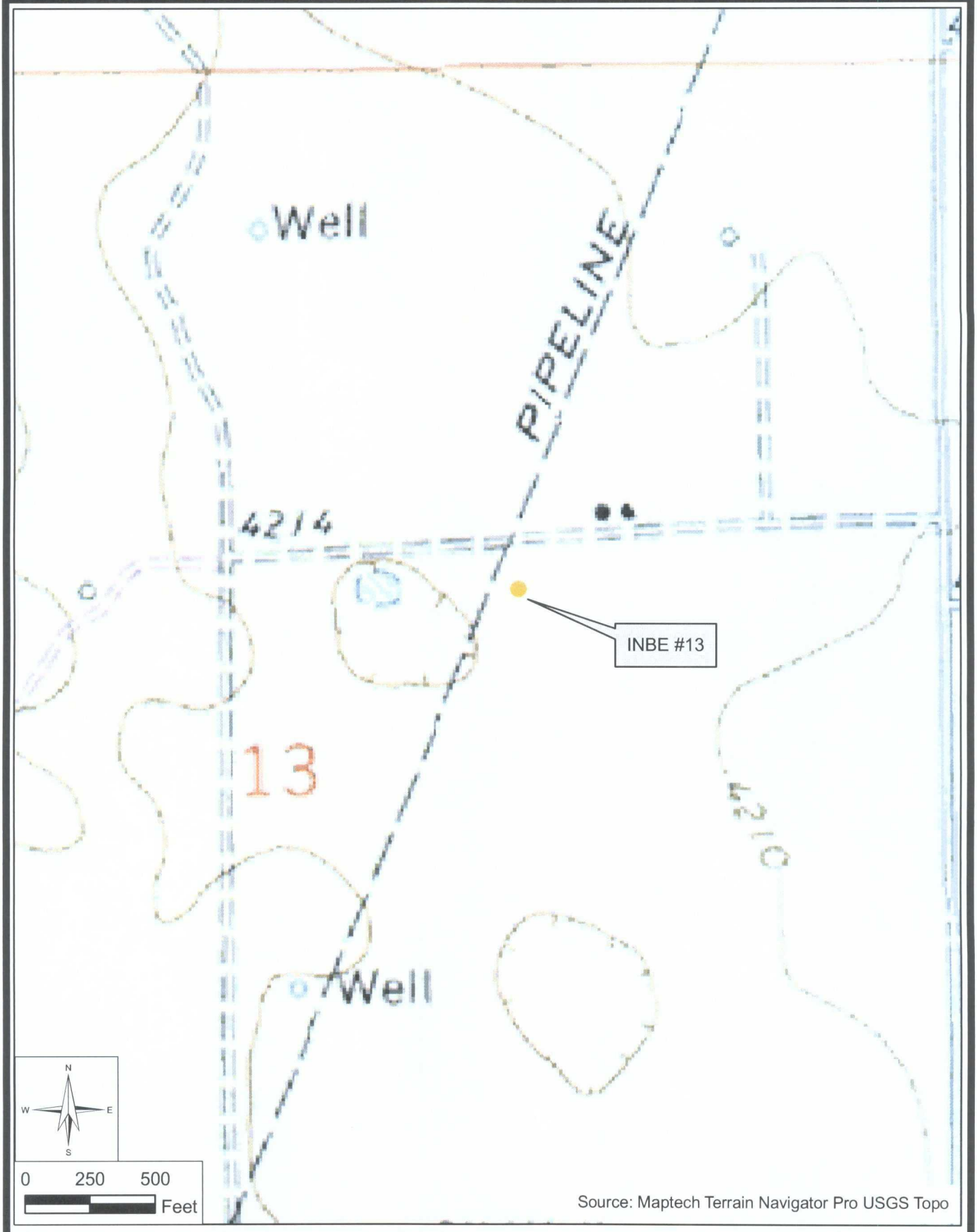
N
W
E
S

0 1,000 2,000
Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	USGS Topographic Map Showing Water Wells Listed in the Office of the State Engineer Database	Plate 3
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/24/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P4_NEARBYSURFACEWATERTOPO.MXD

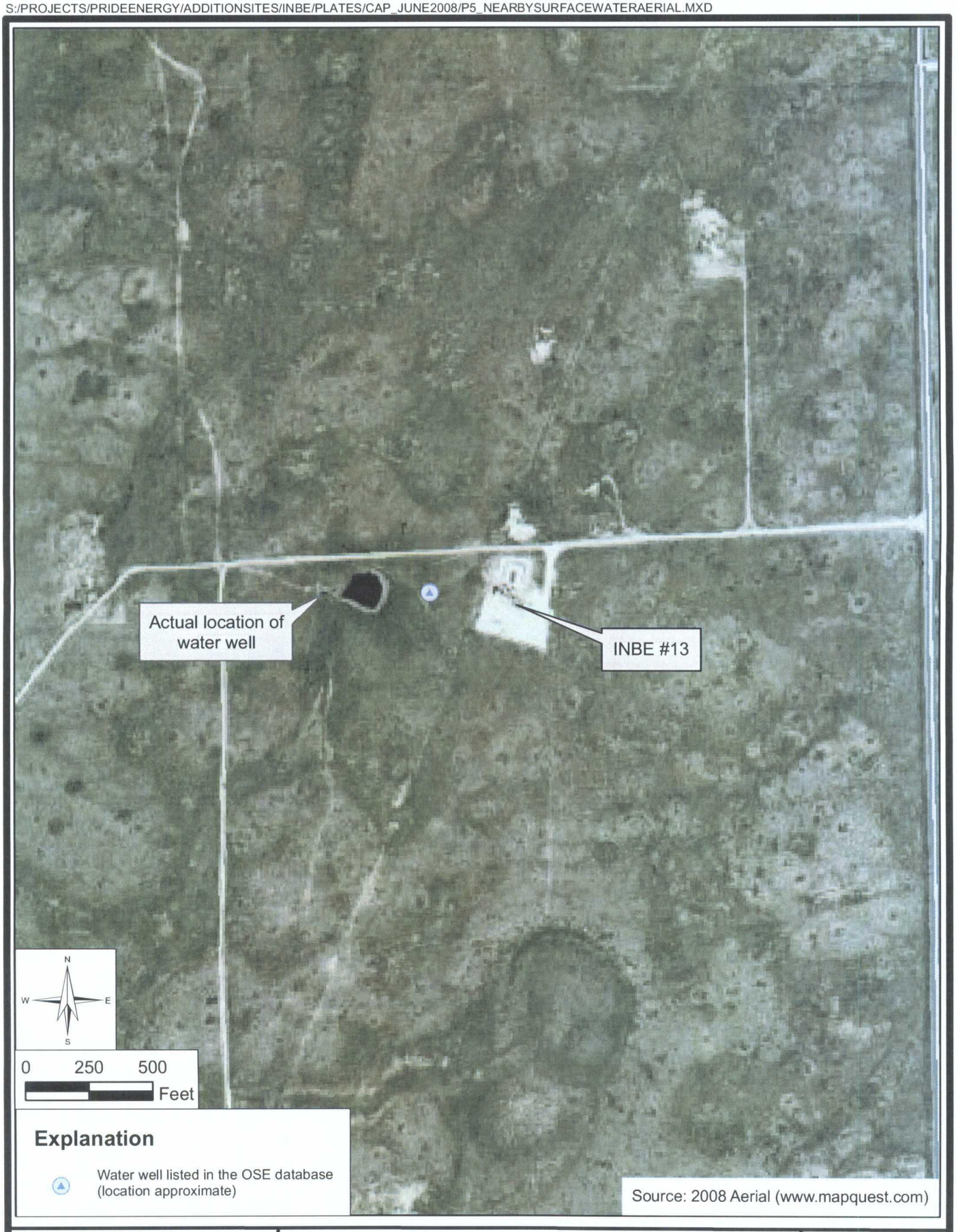


Source: Maptech Terrain Navigator Pro USGS Topo

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	USGS Topographic Map Showing Nearby Surface Waters	Plate 4
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/25/2008

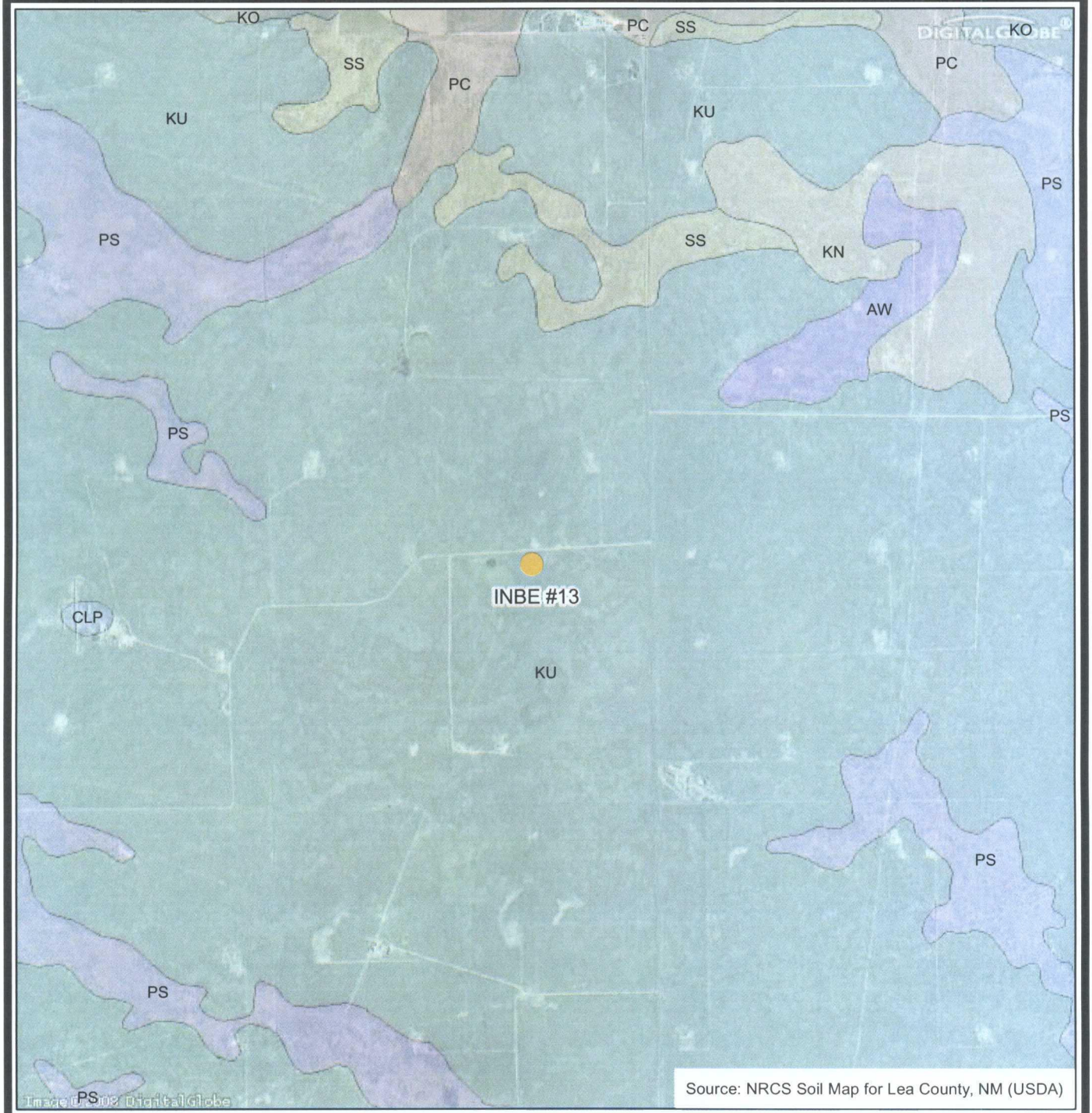
S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P5_NEARBYSURFACEWATERAERIAL.MXD



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	2008 Aerial Photograph Showing Nearby Surface Waters	Plate 5
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/25/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P6_SOILMAP.MXD



Explanation

Soil Unit, Soil Name

- AW, Arvana-Lea association
- CLP, Caliche pit
- KN, Kimbrough loam, 0 to 3 percent slopes
- KO, Kimbrough gravelly loam, 0 to 3 percent slopes
- KU, Kimbrough-Lea complex
- PC, Portales loam, 0 to 3 percent slopes
- PS, Portales-Stegall loams
- SS, Stegall and slaughter soils

N W E S

0 1,000 2,000 Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Soils Map	Plate 6
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/25/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/INBE/PLATES/CAP_JUNE2008/P7_USGS1996_POT.MXD

Explanation

▲ USGS gauging station showing 1996 ground water elevation (ft msl)

Potentiometric Surface

——— Equipotential line (feet msl)

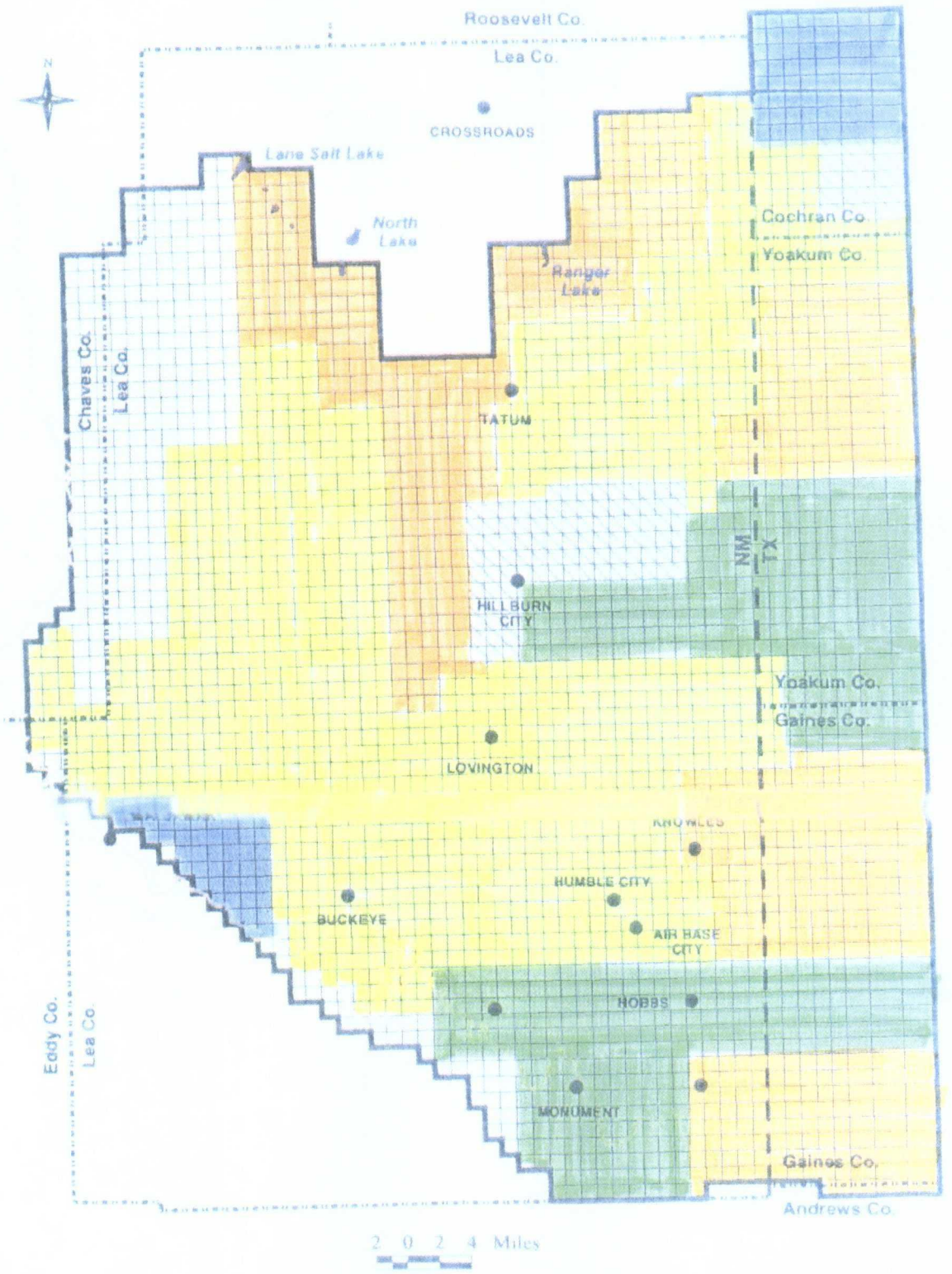
– – – Inferred equipotential line (feet msl)

N
W E
S

0 4,000 8,000
Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	1996 Potentiometric Surface	Plate 7
	Pride Energy: INBE #13 Corrective Action Plan	June 2008

6/25/2008

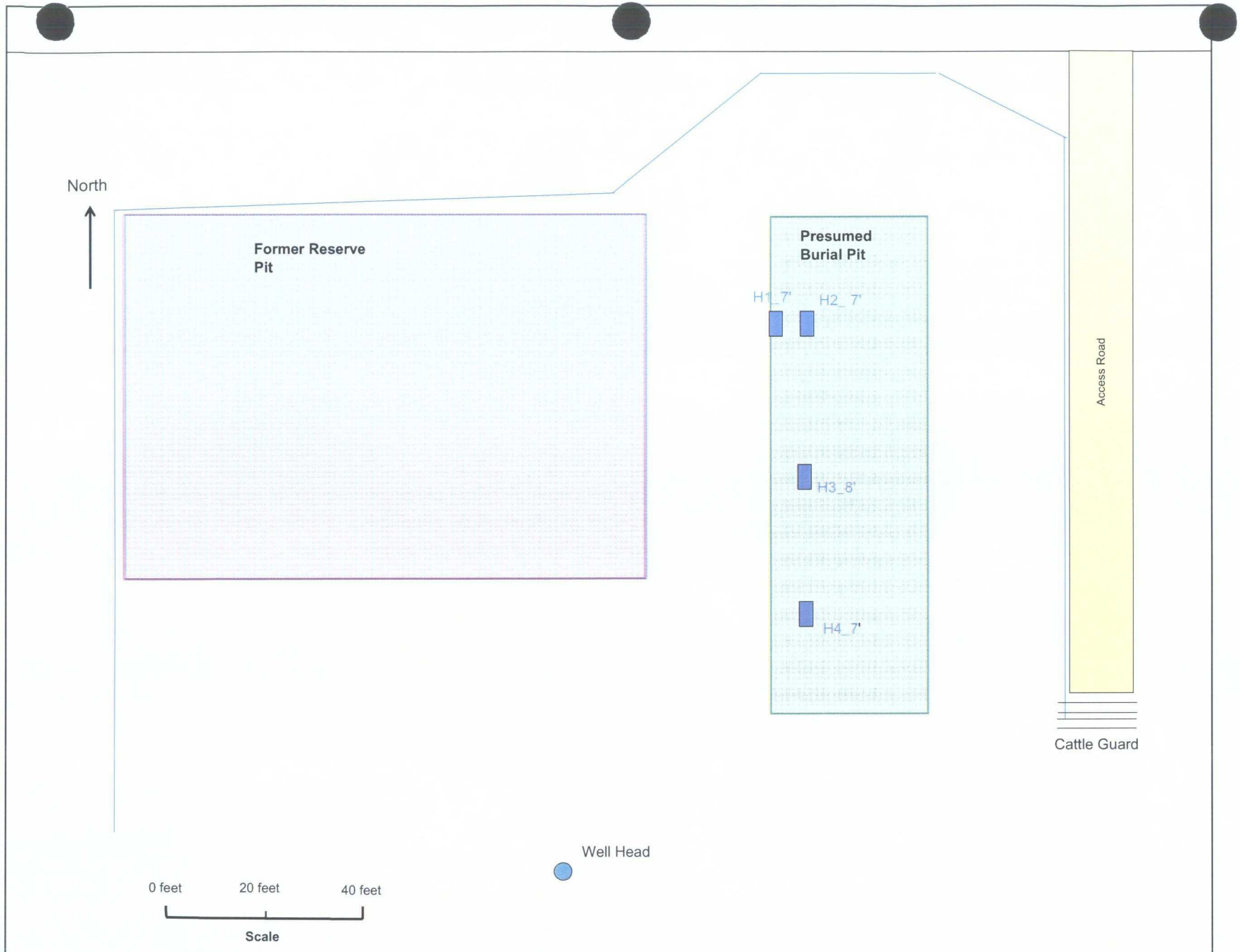


Legend

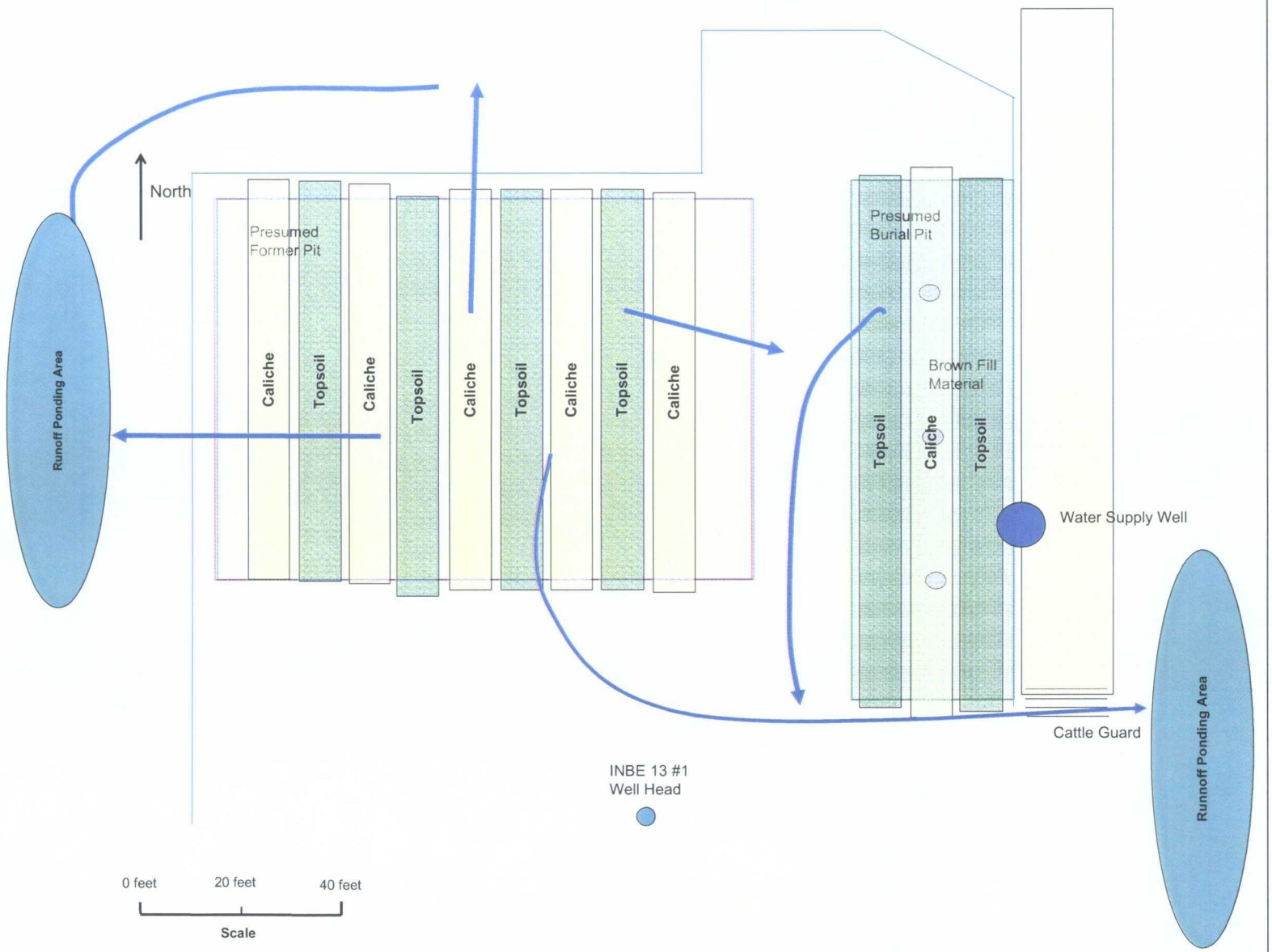
1-20	61-80
21-40	81-100
41-60	>100

Model Line
State Line
County Line

Figure 10 : Hydraulic Conductivity Distribution (ft/day)

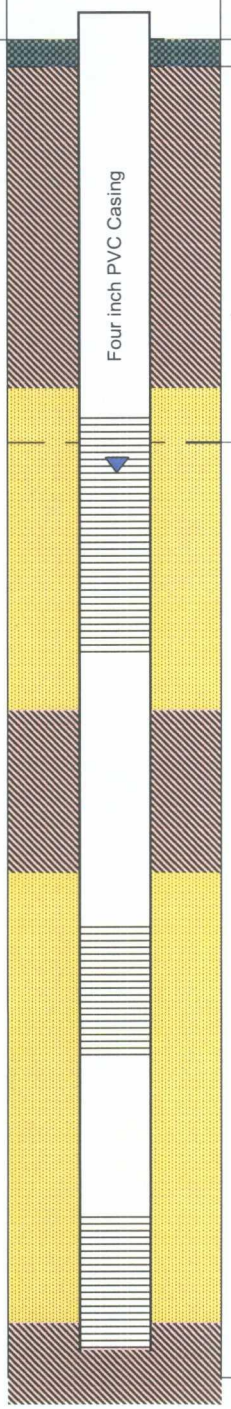


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 505-266-5004	**INBE 13 #1**	**Plate 9**
	Pride Energy	**June 2008**



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 505-266-5004	INBE 13 #1 Infiltration Barrier	Plate10
	Pride Energy	June 2008

Client:	Pride Energy	Well Description:	Schematic Drawing of Well Construction for Proposed Monitor/Recovery Well
Project Name:	INBE 13 #1		
Location:			

Depth (feet)	Comments:		Material Descriptions:
0.0	Ground Water is assumed to be 30 feet below ground surface. Well Depths are to be adjusted to actual depth to water.		Cement, 0-2 feet Hydrated bentonite, 2-28 feet Sand, 20-48 feet Screen 25-45 feet Hydrated bentonite 48-58 feet if possible Sand, 60-100 feet Screen 65-75 feet Screen 90-100 feet
2.0			
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R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 505-266-5004	INBE 13 #1	Plate 11
	Monitoring/Recovery Well Boring	June 2008

Appendix A

Elke Drilling Pit Closure Plan

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

DEC 2007
Received
Hobbs
OCD

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Pride Energy Company Telephone: 918-524-9200 e-mail address: larrym@pride-energy.com
Address: P O Box 701950 Tulsa, OK 74170-1950
Facility or well name: Inbe 13 #1 API #: 30-025-37840 U/L or Qtr/Qtr G Sec 13 T 11S R 35E
County: Lea Latitude 33-22-03.2 Longitude 103-33-51.4 NAD: 1927 ☐ 1983 ☐
Surface Owner: Federal ☐ State ☒ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Pit Volume ____ bbl	Volume: ____ bbl Type of fluid: ____ Construction material: ____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) **GW = 48'**	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) **XXX** (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) **XXX**
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) **XXX**
	Ranking Score (Total Points)	**20 points**

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface____ft. and attach sample results.
(5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: All excess drilling fluid will be removed. A burial pit will be excavated and lined with a 20 mil liner. The drilling mud will be mixed with Elke Environmental Solidification Product at a 20(mud) to 1(product) ratio to solidify the mud then placed in the burial pit. After all mud is removed the pit bottoms will be sampled Per NMOCD guidelines. The drilling pit will be backfilled with clean native soil and contoured to the surrounding area. A final report will be submitted after completion of The job.

NMOCD Hobbs will be given 48 hrs notice before start of job and 48 hrs notice before testing.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.**

Date: 12-10-07
Printed Name/Title Logan Anderson - Agent Signature

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title CHRIS WILLIAMS Signature Chris Williams Date: 12/10/07

Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768
Phone (432) 366-0043 Fax (432) 366-0884

February 25, 2008

New Mexico Oil Conservation Division
Mr. Chris Williams
1625 N. French Dr.
Hobbs, New Mexico 88240

Re: Pride Energy – Inbe 13 #1
UL 'G' Sec. 13 T11S R33E Lea County, NM
API # 30-025-37840

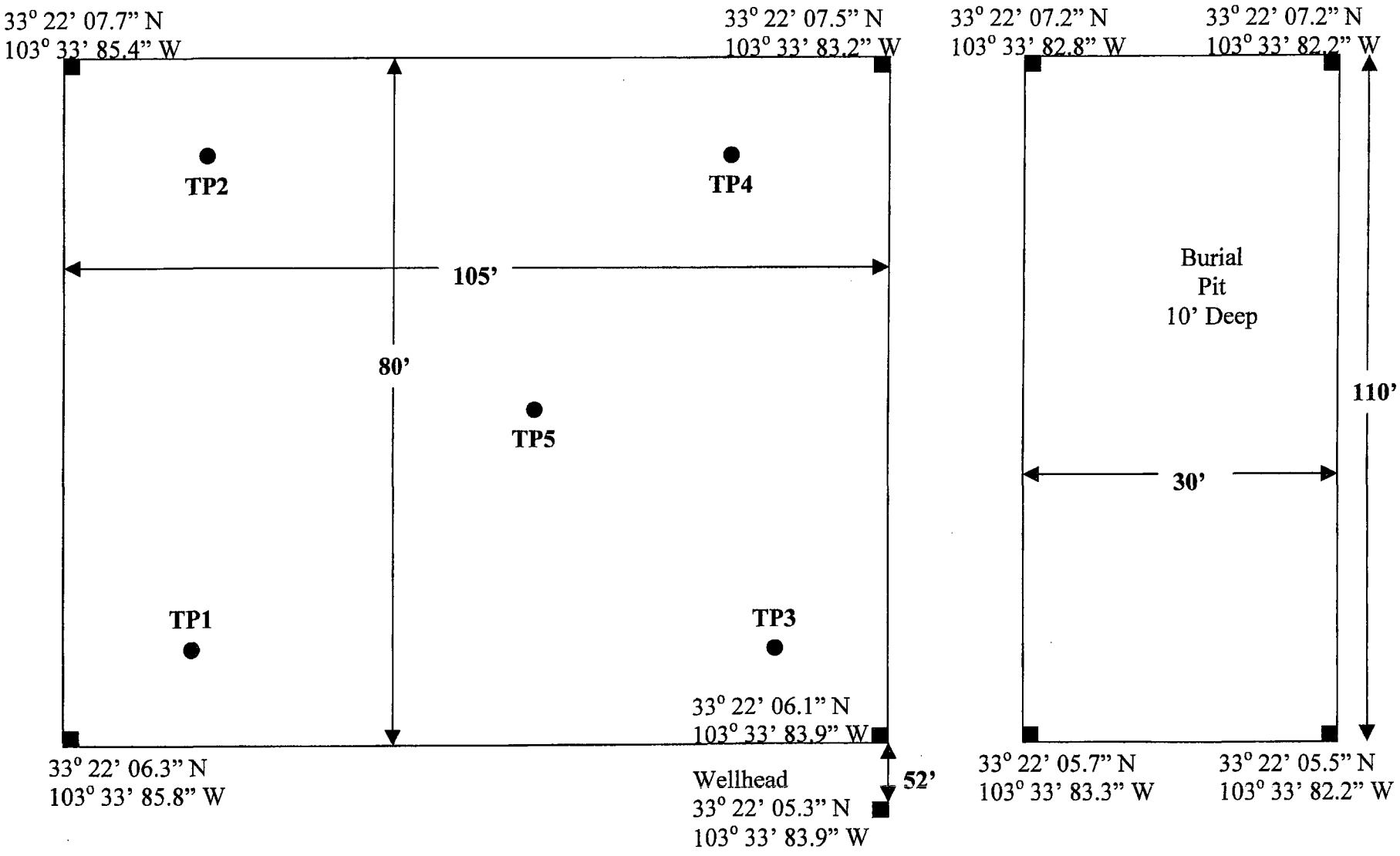
Mr. Chris Williams,

Elke Environmental was contracted by Pride Energy to complete the closure of the Inbe 13 #1 drilling pit. As per the C-144 filed and signed by Chris Williams on 12-10-07 a burial pit was constructed and lined with a 20 mil impervious liner. The drilling mud was mixed with Elke Environmental Solidification Product at a 20 (mud) to 1 (product) ratio to solidify the mud then placed in the burial pit. Bottom samples of the drilling pit were analyzed per NMOCD guidelines. A vertical delineation was performed with a trackhoe, dozer and an auger drill rig to a maximum depth of 31' where the samples did not met NMOCD standards. As per the email between Logan Anderson (Elke) and Chris Williams (NMOCD) on 1-7-08 a monitor well was installed on the southeast corner of the drilling pit and sampled per NMOCD guidelines. The water sample met NMOCD standards so the drilling pit was domed at 4' below ground surface then capped with a 20 mil impervious liner overlapping 3' in all directions. The burial pit was capped with a 20 mil impervious liner and the monitor well was plugged. The site was backfilled with clean native soil and contoured to the surrounding area then seeded with an approved seed mixture. If you have any questions about the enclosed report please contact me at the office.

Sincerely,

Logan Anderson

Pride Energy
Inbe 13 #1
UL 'G' Sec. 13 T11S R33E
Lea County, NM



Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Pride Energy **Analyst** Jason Jessup

Site Inbe 13 #1

Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP1	12-31-07	10'		11,413		33° 22' 04.1" N 103° 33' 51.1" W
TP1	1-2-08	15'		1,330		33° 22' 04.1" N 103° 33' 51.1" W
TP1	1-2-08	20'		741		33° 22' 04.1" N 103° 33' 51.1" W
TP1	1-2-08	25'		985		33° 22' 04.1" N 103° 33' 51.1" W
TP1	1-2-08	30'		264	17.3	33° 22' 04.1" N 103° 33' 51.1" W
TP2	12-31-07	10'		7,331		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	13'		1,507		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	16'		668		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	22'		613		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	25'		791		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	28'		591		33° 22' 04.3" N 103° 33' 51.0" W
TP2	1-2-08	31'		257	8.1	33° 22' 04.3" N 103° 33' 51.0" W
TP3	12-31-07	10'		7,580		33° 22' 03.8" N 103° 33' 50.4" W
TP3	1-2-08	15'		4,104		33° 22' 03.8" N 103° 33' 50.4" W
TP3	1-2-08	20'		3,594		33° 22' 03.8" N 103° 33' 50.4" W
TP3	1-2-08	25'		3,373		33° 22' 03.8" N 103° 33' 50.4" W
TP3	1-2-08	30'		409	4.7	33° 22' 03.8" N 103° 33' 50.4" W
TP4	12-31-07	10'		5,375		33° 22' 04.2" N 103° 33' 50.2" W

Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Pride Energy **Analyst** Jason Jessup

Site Inbe 13 #1

Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP4	1-2-08	15'		2,957		33° 22' 04.2" N 103° 33' 50.2" W
TP4	1-2-08	20'		1,231		33° 22' 04.2" N 103° 33' 50.2" W
TP4	1-2-08	25'		1,091		33° 22' 04.2" N 103° 33' 50.2" W
TP4	1-2-08	30'		234	9.3	33° 22' 04.2" N 103° 33' 50.2" W
TP5	12-31-07	10'		13,626		33° 22' 04.1" N 103° 33' 50.6" W
TP5	1-2-08	15'		7,976		33° 22' 04.1" N 103° 33' 50.6" W
TP5	1-2-08	20'		8,852		33° 22' 04.1" N 103° 33' 50.6" W
TP5	1-2-08	25'		6,301		33° 22' 04.1" N 103° 33' 50.6" W
TP5	1-2-08	30'		1,118	51.5	33° 22' 04.1" N 103° 33' 50.6" W
Background	1-2-08	Surface		268		

Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

Monitor Well Report Form

Client Pride Energy **Date** 1-28-08

Site Inbe 13 #1

Monitor Well ID	Depth of Water	Total Depth of Well	Feet of Water	Gallons of Water to Purge	Gallons of Water Purged	Time
MW-1	29.7'	52.2'	22.5'	11.0	11.0	12:43pm

Notes Sampled for TPH 8015M and Chloride

Signature _____

Analytical Report 295419

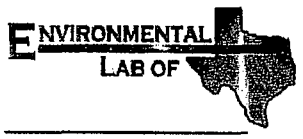
for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Pride Energy

10-JAN-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

10-JAN-08

Project Manager: **Logan Anderson**
Elke Environmental, Inc.
4817 Andrews Hwy
P.O. Box 14167 Odessa, tx 79768
Odessa, TX 79762

Reference: XENCO Report No: **295419**
Pride Energy
Project Address: Inbe 13 #1

Logan Anderson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 295419. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 295419 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 295419

Elke Environmental, Inc., Odessa, TX

Pride Energy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP1@30'	S	Jan-02-08 08:28	30' ft	295419-001
TP2@31'	S	Jan-02-08 09:14	31' ft	295419-002
TP3@30'	S	Jan-02-08 15:01	30' ft	295419-003
TP4@30'	S	Jan-02-08 10:10	30' ft	295419-004
TP5@30'	S	Jan-02-08 12:45	30' ft	295419-005

Certificate of Analysis Summary 295419

Elke Environmental, Inc., Odessa, TX

Project Name: Pride Energy

Project Id:

Contact: Logan Anderson

Project Location: Inbe 13 #1

Date Received in Lab: Fri Jan-04-08 02:45 pm

Report Date: 10-JAN-08

Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	295419-001		295419-002		295419-003		295419-004		295419-005	
	Field Id:	TP1@30'		TP2@31'		TP3@30'		TP4@30'		TP5@30'	
	Depth:	30' ft		31' ft		30' ft		30' ft		30' ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-02-08 08:28		Jan-02-08 09:14		Jan-02-08 15:01		Jan-02-08 10:10		Jan-02-08 12:45	
Percent Moisture	***Extracted:***										
	Analyzed:	Jan-07-08 17:30		Jan-07-08 17:30		Jan-07-08 17:30		Jan-07-08 17:30		Jan-07-08 17:30	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		20.3		8.31		15.5		16.7		19.4	
TPH by SW8015 Mod	***Extracted:***	Jan-07-08 14:55		Jan-07-08 14:55		Jan-07-08 14:55		Jan-07-08 14:55		Jan-07-08 14:55	
	Analyzed:	Jan-08-08 14:59		Jan-08-08 15:26		Jan-08-08 15:54		Jan-08-08 16:21		Jan-08-08 16:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	18.8	ND	16.4	ND	17.7	ND	18.0	ND	18.6
C12-C28 Diesel Range Hydrocarbons		ND	18.8	84.9	16.4	ND	17.7	18.9	18.0	19.5	18.6
C28-C35 Oil Range Hydrocarbons		ND	18.8	39.1	16.4	ND	17.7	ND	18.0	ND	18.6
Total TPH		ND		124		ND		18.9		19.5	
Total Chloride by EPA 325.3	***Extracted:***										
	Analyzed:	Jan-07-08 09:10		Jan-07-08 09:10		Jan-07-08 09:10		Jan-07-08 09:10		Jan-07-08 09:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		255	5.00	85.1	5.00	425	5.00	213	5.00	1400	5.00

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Pride Energy

Work Order #: 295419 **Project ID:**

Lab Batch #: 711871 **Sample:** 295419-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 711871 **Sample:** 295419-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	100	89	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 711871 **Sample:** 295419-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.1	100	89	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 711871 **Sample:** 295419-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	55.2	50.0	110	70-135	

Lab Batch #: 711871 **Sample:** 295419-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	100	88	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Pride Energy

Work Order #: 295419 **Project ID:**

Lab Batch #: 711871 **Sample:** 295420-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 711871 **Sample:** 295420-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	100	96	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 711871 **Sample:** 503175-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	100	88	70-135	
o-Terphenyl	42.3	50.0	85	70-135	

Lab Batch #: 711871 **Sample:** 503175-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.6	100	84	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 711871 **Sample:** 503175-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Pride Energy

Work Order #: 295419 **Project ID:**

Lab Batch #: 711552 **Sample:** 711552-1-BKS **Matrix:** Solid

Date Analyzed: 01/07/2008 **Date Prepared:** 01/07/2008 **Analyst:** IRO

Reporting Units: mg/kg **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY						
Total Chloride by EPA 325.3 **Analytes**	**Blank Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Control Limits %R**	**Flags**
Chloride	ND	100	93.6	94	75-125	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Pride Energy

Work Order #: 295419
Analyst: SHE
Lab Batch ID: 711871 **Sample:** 503175-1-BKS
Units: mg/kg

Date Prepared: 01/07/2008 **Batch #:** 1

Project ID:
Date Analyzed: 01/08/2008
Matrix: Solid

TPH by SW8015 Mod Analytes	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	902	90	1000	1020	102	12	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	826	83	1000	930	93	12	70-135	35	

Relative Percent Difference RPD = 200*|(D-F)/(D+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - LCS / MSD Recoveries

Project Name: Pride Energy

Work Order # : 295419 **Project ID:**

Lab Batch ID: 711871 **QC- Sample ID:** 295420-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/08/2008 **Date Prepared:** 01/07/2008 **Analyst:** SHE

Reporting Units: mg/kg

TPH by SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1050	1020	97	1050	1030	98	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1050	948	90	1050	948	90	0	70-135	35	

Lab Batch ID: 711552 **QC- Sample ID:** 295419-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/07/2008 **Date Prepared:** 01/07/2008 **Analyst:** IRO

Reporting Units: mg/kg

Total Chloride by EPA 325.3 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	255	1000	1230	98	1000	1230	98	0	75-125	30	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Pride Energy

Work Order #: 295419

Lab Batch #: 711555 **Project ID:**

Date Analyzed: 01/07/2008 **Date Prepared:** 01/07/2008 **Analyst:** JLG

QC- Sample ID: 295419-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	20.3	19.1	6	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Logan Anderson
Company Name: Elke Environmental
Company Address: P O Box 14167
City/State/Zip: Odessa, TX 79768
Telephone No: 432-366-0043 Fax No: 432-366-0884
Sampler Signature:
e-mail: la_elkeenv@yahoo.com

Project Name: Pride Energy
Project #:
Project Loc: Inbe 13 #1
PO #:
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 295419

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: GW=Drinking Water SL=Sludge SW=Surface Water SO=Soil GW=Groundwater S=Solid/Soil NP=Non-Potable Specify Other	Analyze For: 8015B	TPH: 418.1	TPH: TX 1005	TX 1006	TCLP: Cations (Ca, Mg, Na, K)	TOTAL: Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (pre-scheduled) 24, 48, 72 hrs	Standard TAT
001	TP1@30'		30'	1-2-08	8:28A		1	X								5	X			X										X
002	TP2@31'		31'	1-2-08	9:14A		1	X								5	X			X										X
003	TP3@30'		30'	1-2-08	3:01 P		1	X								5	X			X										X
004	TP4@30'		30'	1-2-08	10:10A		1	X								5	X			X										X
005	TP5@30'		30'	1-2-08	12:45 P		1	X								5	X			X										X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	1-4-08	2:45P			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				01/04/08	14:45

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) N N
Custody seals on cooler(s) N N
Sample Hand Delivered by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 5.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Elke Enviro.

Date/ Time: 01/04/08 1445.

Lab ID # : 295419

Initials: [illegible]

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	5.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	[illegible]

Variance Documentation

Contact: ______ Contacted by: ______ Date/ Time: ______

Regarding: ______

Corrective Action Taken: ______

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☒ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

Analytical Report 296653

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Pride Energy

01-FEB-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

01-FEB-08

Project Manager: **Logan Anderson**
Elke Environmental, Inc.
4817 Andrews Hwy
P.O. Box 14167 Odessa, tx 79768
Odessa, TX 79762

Reference: XENCO Report No: **296653**
Pride Energy
Project Address: Inbe 13 # 1

Logan Anderson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 296653. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 296653 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 296653

Elke Environmental, Inc., Odessa, TX

Project Name: Pride Energy

Project Id:

Contact: Logan Anderson

Project Location: Inbe 13 # 1

Date Received in Lab: Mon Jan-28-08 04:46 pm

Report Date: 01-FEB-08

Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	296653-001					
	Field Id:	MW-1					
	Depth:	29.7-52.2					
	Matrix:	WATER					
	Sampled:	Jan-28-08 12:46					
TPH by SW8015 MOD	***Extracted:***	Jan-29-08 11:02					
	Analyzed:	Jan-29-08 13:08					
	Units/RL:	mg/L	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	2.50				
C12-C28 Diesel Range Hydrocarbons		ND	2.50				
C28-C35 Oil Range Hydrocarbons		ND	2.50				
Total TPH		ND					
Total Chloride by EPA 325.3	***Extracted:***						
	Analyzed:	Jan-31-08 14:45					
	Units/RL:	mg/L	RL				
Chloride		95.7	5.00				

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Pride Energy

Work Order #: 296653 **Project ID:**

Lab Batch #: 713275 **Sample:** 296653-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015 MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	7.48	10.0	75	70-135	
o-Terphenyl	4.61	5.00	92	70-135	

Lab Batch #: 713275 **Sample:** 503924-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015 MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.83	10.0	88	70-135	
o-Terphenyl	5.23	5.00	105	70-135	

Lab Batch #: 713275 **Sample:** 503924-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015 MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.18	10.0	82	70-135	
o-Terphenyl	4.94	5.00	99	70-135	

Lab Batch #: 713275 **Sample:** 503924-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

TPH by SW8015 MOD Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	8.71	10.0	87	70-135	
o-Terphenyl	5.11	5.00	102	70-135	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Version: 1.006

Blank Spike Recovery

Project Name: Pride Energy

Work Order #: 296653 **Project ID:**

Lab Batch #: 713465 **Sample:** 713465-1-BKS **Matrix:** Water

Date Analyzed: 01/31/2008 **Date Prepared:** 01/31/2008 **Analyst:** IRO

Reporting Units: mg/L **Batch #:** 1

	BLANK /BLANK SPIKE RECOVERY STUDY					
Total Chloride by EPA 325.3 **Analytes**	**Blank Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Control Limits %R**	**Flags**
Chloride	ND	50.0	46.8	94	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

Version: 1.006

BS / BSD Recoveries

Project Name: Pride Energy

Work Order #: 296653
Analyst: SHE
Date Prepared: 01/29/2008
Project ID:
Date Analyzed: 01/29/2008
Lab Batch ID: 713275
Sample: 503924-1-BKS
Batch #: 1
Matrix: Water
Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 MOD Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	100	85.5	86	100	85.3	85	0	70-135	25	
C12-C28 Diesel Range Hydrocarbons	ND	100	103	103	100	102	102	1	70-135	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.006

ENVIRONMENTAL LAB OF

Form 3 - MS / MSD Recoveries

Project Name: Pride Energy

Work Order # 296653 **Project ID:**

Lab Batch ID: 713465 **QC- Sample ID:** 296653-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 01/31/2008 **Date Prepared:** 01/31/2008 **Analyst:** IRO

Reporting Units: mg/L

Total Chloride by EPA 325.3 Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	95.7	100	596	500	100	606	510	2	80-120	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Version: 1.006

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Logan Anderson
Company Name: Elke Environmental
Company Address: P O Box 14167
City/State/Zip: Odessa, TX 79768
Telephone No: 432-366-0043 Fax No: 432-366-0884
Sampler Signature: Logan Jessup e-mail: la_elkeenv@yahoo.com

Project Name: Pride Energy
Project #:
Project Loc: Tabe 13 #1
PO #:
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 296683

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: 8015B	TPH: 418.1 (8015B)	TPH: TX 1005	TX 1005	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX: 8021B/5030 or BTEX 8260	RCI	N.O.R.M.			RUSH TAT (Pre-Scheduled) 24, 72 hrs.	Standard TAT
01	MW-1	29.7	52.2	1-28-08	12:46pm		4	X		X						W		X				X											X	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Logan Jessup	1-28-08	4:46pm			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Sam	Date 1-28-08	Time 4:46

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star
VOA
Temperature Upon Receipt: 6.0 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Elke Env.

Date/ Time: 1-28-08 4:46

Lab ID # : 296653

Initials: ac

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	6.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	(Yes)	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	(Not Present)	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	Yes	(No)	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

Contact: Logan Contacted by: Brent Date/ Time: 1.28.08

Regarding: #13 All samples are preserved w/HCl, can not run Cl because we do not have any sample unpreserved.

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☒ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

DEC 2007
Received
Hobbs
OCD

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Pride Energy Company Telephone: 918-524-9200 e-mail address: larrym@pride-energy.com
Address: P O Box 701950 Tulsa, OK 74170-1950
Facility or well name: Inbe 13 #1 API #: 30-025-37840 U/L or Qtr/Qtr G Sec 13 T 11S
County: Lea Latitude 33-22-03.2 Longitude 103-33-51.4 NAD: 1927 ☐ 1983 ☐
Surface Owner: Federal ☐ State ☒ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Pit Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) **GW = 48'**	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) **XXX** (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) **XXX**
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) **XXX**
	Ranking Score (Total Points)	**20 points**

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface_____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: All excess drilling fluid will be removed. A burial pit will be excavated and lined with a 20 mil liner. The drilling mud will be mixed with Elke Environmental Solidification Product at a 20(mud) to 1(product) ratio to solidify the mud then placed in the burial pit. After all mud is removed the pit bottoms will be sampled Per NMOCD guidelines. The drilling pit will be backfilled with clean native soil and contoured to the surrounding area. A final report will be submitted after completion of The job.

NMOCD Hobbs will be given 48 hrs notice before start of job and 48 hrs notice before testing.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.**

Date: 12-10-07
Printed Name/Title Logan Anderson - Agent Signature

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title CHRIS WILLIAMS Signature Chris Williams Date: 12/10/07

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Final Report

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Pride Energy Company Telephone: 918-524-9200 e-mail address: larrym@pride-energy.com
Address: P O Box 701950 Tulsa, OK 74170-1950
Facility or well name: Inbe 13 #1 API #: 30-025-37840 U/L or Qtr/Qtr G Sec 13 T 11S R 33E
County: Lea Latitude 33-22-03.2 Longitude 103-33-51.4 NAD: 1927 ☐ 1983 ☐
Surface Owner: Federal ☐ State ☒ Private ☐ Indian ☐

Pit	**Below-grade tank**
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Pit Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) **XXX** (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) **XXX**
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) **XXX**
	Ranking Score (Total Points)	**20 points**

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: A burial pit was excavated and lined with a 20 mil liner. The drilling mud was mixed with Elke Environmental Solidification Product at a 20(mud) to 1(product) ratio to solidify the mud then placed in the burial pit. The burial pit was capped with a 20 mil impervious liner. After all mud was removed the pit bottoms were sampled Per NMOCD guidelines. A vertical delineation was performed with a trackhoe and an auger drill rig. Samples did not met NMOCD standards at a depth of 31'. A monitor well was installed on the southeast corner of the drilling pit and sampled per NMOCD guidelines. The water sample met NMOCD standards. The monitor well was plugged. The drilling pit was domed at 4' below ground surface and capped with a 20 mil impervious liner overlapping 3' in all directions. The site was backfilled with clean native soil and contoured to the surrounding area then seeded with a seed mixture approved by the landowner.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.**

Date: _____

Printed Name/Title _____ Signature _____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title _____ Signature _____ Date: _____

Appendix B

Kimbrough-Lea Complex Soil Unit

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Appendix B

KU—Kimbrough-Lea complex

Map Unit Setting

- Elevation: 3,600 to 4,200 feet
- Mean annual precipitation: 12 to 15 inches
- Mean annual air temperature: 58 to 60 degrees F
- Frost-free period: 195 to 205 days

Map Unit Composition

- Kimbrough and similar soils: 50 percent
- Lea and similar soils: 30 percent

Description of Kimbrough

Setting

- Landform: Plains
- Landform position (three-dimensional): Rise
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Calcareous alluvium and/or calcareous eolian deposits derived from sedimentary rock

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: 4 to 20 inches to petrocalcic
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 20 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 2.0
- Available water capacity: Very low (about 0.8 inches)

Interpretive groups

- Land capability (nonirrigated): 7s

- Ecological site: Very Shallow (R077XD074NM)

Typical profile

- 0 to 6 inches: Gravelly loam
- 6 to 16 inches: Cemented material

Description of Lea

Setting

- Landform: Plains
- Landform position (three-dimensional): Rise
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Loamy alluvium derived from sedimentary rock

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: 20 to 40 inches to petrocalcic
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 35 percent
- Gypsum, maximum content: 1 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 2.0
- Available water capacity: Low (about 4.6 inches)

Interpretive groups

- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4s
- Ecological site: Loamy (R077XD073NM)

Typical profile

- 0 to 10 inches: Loam
- 10 to 26 inches: Loam
- 26 to 36 inches: Cemented material

Appendix C

MW Well Log

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

File Number:

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: Pride Energy Work Phone:
Contact: Home Phone:
Address: P.O. Box 701950
City: Tulsa State: OK Zip: 74170

2. LOCATION OF WELL (A,B,C, or D required, E or F if known)

A. ____ 1/4 ____ 1/4 ____ 1/4 Section: 13 Township: 11S Range: 33E N.M.P.M.
in Lea County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: 33 d 22 m 04.0 s Longitude: 103 d 33 m 50.5 s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD _____ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: _____

I. On land owned by (required): State of New Mexico

3. DRILLING CONTRACTOR

License Number: WD-1456
Name: White Drilling Company, Inc. Work Phone: 325-893-2950
Agent: John W. White Home Phone: 325-893-2950
Mailing Address: P.O. Box 906
City: Clyde State: TX Zip: 79510

4. DRILLING RECORD: INBE 13 Well #1 MW-1

Drilling began: 01/22/08 ; Completed: 01/22/08 ; Type tools: Air Rotary ;
Size of hole: 6 1/8 in.; Total depth of well: 50.0 ft.;
Completed well is: shallow (shallow, artesian);
Depth to water upon completion of well: 26.40 ft.

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA: INBE 13 Well #1 MW-1

Depth in Feet From	Depth in Feet To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
26.40	50.0	23.6	Reddish brown sandy clay	

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
2.0	Sch. 40	4.0	0.0	30.0	30.0			
2.0	.020	4.0	30.0	50.0	20.0		30.0	50.0

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
50.0	28.0	6 1/8	10.0		8/16 sand.
28.0	10.0	6 1/8	3.0		Bentonite Pellets
10.0	0.0	6 1/8	10.0	1.997	Cement

8. PLUGGING RECORD

Plugging Contractor: White Drilling Company, Inc.

Address: P.O. Box 906, Clyde, TX 79510

Plugging Method: Hand Mix

Date Well Plugged: 02/04/2008

Plugging approved by: Chris Williams with NMOCD

State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1	20.0	50.0	1/Bent. Pellets
2	0.0	20.0	1/Cement
3			
4			
5			

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE: INBE 13 Well#1 MW-1

Depth in feet From	To	Thickness in feet	Color and Type of Material Encountered
0.0	24.0	24.0	Caliche.
24.0	50.0	26.0	Reddish brown sandy clay.

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS: INBE 13 Well#1 MW-1

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Driller

2/21/08
(mm/dd/year)

FOR STATE ENGINEER USE ONLY

Quad ____ ;FWL _____ ;FSL _____ ;Use _____ ;Location No. _____

File Number: _____ Trn Number: _____

Appendix D

Laboratory Data

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Analytical Report 304932

for

Pride Energy Company

Project Manager: Matt Pride

Pride Energy Company

INBE 13 #1

09-JUN-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

09-JUN-08

Project Manager: **Matt Pride**
Pride Energy Company
P.O. Box 701950

Tulsa, OK 74170

Reference: XENCO Report No: **304932**
Pride Energy Company
Project Address: T11S-R33E, Section 13, Unit Leter G

Matt Pride:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 304932. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 304932 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

Sample Cross Reference 304932

Pride Energy Company, Tulsa, OK

Pride Energy Company

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Windmill (L-08146)	W	May-28-08 13:00		304932-001

Certificate of Analysis Summary 304932
Pride Energy Company, Tulsa, OK

Project Name: Pride Energy Company

Project Id: INBE 13 #1 **Date Received in Lab:** May-31-08 01:05 pm
Contact: Matt Pride **Report Date:** 09-JUN-08
Project Location: T11S-R33E, Section 13, Unit Leter G **Project Manager:** Brent Barron, II

Analysis Requested						
	Lab Id:	304932-001				
	Field Id:	Windmill (L-08146)				
	Depth:					
	Matrix:	WATER				
	Sampled:	May-28-08 13:00				
Alkalinity by SM2320B	***Extracted:***					
	Analyzed:	Jun-06-08 15:00				
	Units/RL:	mg/L	RL			
Alkalinity, Total (as CaCO3)		168	4.00			
Inorganic Anions by EPA 300	***Extracted:***					
	Analyzed:	Jun-02-08 10:36				
	Units/RL:	mg/L	RL			
Chloride		46.3	2.50			
Sulfate		128	2.50			
Metals per ICP by SW846 6010B	***Extracted:***					
	Analyzed:	Jun-04-08 00:00				
	Units/RL:	mg/L	RL			
Calcium		82.6	0.100			
Magnesium		10.8	0.010			
Potassium		1.16	0.500			
Sodium		36.8	0.500			
DS by SM2540C	***Extracted:***					
	Analyzed:	Jun-02-08 16:15				
	Units/RL:	mg/L	RL			
Total dissolved solids		384	5.00			

Brent Barron
Odessa Laboratory Director

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL(PQL) and above the SQL(MDL).

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

* Outside XENCO'S scope of NELAC Accreditation

Blank Spike Recovery

Project Name: Pride Energy Company

Work Order #: 304932 **Project ID:** INBE 13 #1

Lab Batch #: 724706 **Sample:** 724706-1-BKS **Matrix:** Water

Date Analyzed: 06/06/2008 **Date Prepared:** 06/06/2008 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

Alkalinity by SM2320B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Alkalinity, Total (as CaCO3)	ND	200	174	87	80-120	

Lab Batch #: 724230 **Sample:** 724230-1-BKS **Matrix:** Water

Date Analyzed: 06/02/2008 **Date Prepared:** 06/02/2008 **Analyst:** LATCOR

Reporting Units: mg/L **Batch #:** 1

Inorganic Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
		BLANK /BLANK SPIKE RECOVERY STUDY				
Chloride	ND	10.0	10.1	101	85-115	
Sulfate	ND	10.0	9.03	90	90-110	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

Form 3 - MS Recoveries

Project Name: Pride Energy Company

Work Order #: 304932
Lab Batch #: 724230
Project ID: INBE 13 #1
Date Analyzed: 06/02/2008
Date Prepared: 06/02/2008
Analyst: LATCOR
QC- Sample ID: 304831-001 S
Batch #: 1
Matrix: Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	34.6	50.0	77.6	86	85-115	
Sulfate	13.6	50.0	55.2	83	90-110	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

Sample Duplicate Recovery

Project Name: Pride Energy Company

Work Order #: 304932

Lab Batch #: 724706 **Project ID:** INBE 13 #1
Date Analyzed: 06/06/2008 **Date Prepared:** 06/06/2008 **Analyst:** WRU
QC- Sample ID: 304932-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	168	172	2	20	

Lab Batch #: 724230
Date Analyzed: 06/02/2008 **Date Prepared:** 06/02/2008 **Analyst:** LATCOR
QC- Sample ID: 304831-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Inorganic Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	34.6	26.5	27	20	F
Sulfate	13.6	10.8	23	20	F

Lab Batch #: 724477
Date Analyzed: 06/04/2008 **Date Prepared:** 06/04/2008 **Analyst:** LATCOR
QC- Sample ID: 304932-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Metals per ICP by SW846 6010B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Calcium	82.6	80.9	2	25	
Magnesium	10.8	10.3	5	25	
Potassium	1.16	1.28	10	25	
Sodium	36.8	36.3	1	25	

Lab Batch #: 724353
Date Analyzed: 06/02/2008 **Date Prepared:** 06/02/2008 **Analyst:** WRU
QC- Sample ID: 304932-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	384	356	8	30	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

XENCO Laboratories / Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Company Name:	Pride Energy Company	Company Name:	R. T. Hicks Consultants Ltd.	Project Name:	Pride Energy Company
Direct Invoice To:	Matt Pride	Project Manager:	Randy Hicks	Project #:	INBE 13 #1
Billing Address:	P. O. Box 710950	Address:	901 Rio Grande Blvd NW	Project Location:	T11S-R33E, Section 13, Unit Letter G
City, State, Zip Code:	Tulsa, OK 74170-1950	City, State, Zip Code:	Albuquerque NM 87104	COC #:	
Telephone No:	918-524-9200	Telephone No:	505-266-5004		
Fax No:	918-524-9292	Fax No:	505-266-0745		
Email Report to:	mattp@pride-energy.com	Email Report to:	r@rthicksconsult.com		

Sampler: Gil Van Deventer (Printed) [signature] (Signature)

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl (BTEX only)	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)
301932 001	Windmill (L-08146)	05/28/08	1300	1	X							X			

LAB # (lab use only)	TPH 418.1 8015M 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B	RCI	N.O.R.M.	Total Dissolved Solids (160.1)	SPLP 1312	Chlorides	Total Fe and Mn	RUSH TAT (Pre-Schedule)	Standard TAT
301932 001		X	X								X					X

Special Instructions:
Email results to: r@rthicksconsult.com and mattp@pride-energy.com

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 7°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	5/29/08	1:25p			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			[signature]	5/31/08	1:17

13:050G

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Pride Energy Company

Date/ Time: 5/31/08 14:18

Lab ID #: 304932

Initials: JG

Sample Receipt Checklist

				Client Initials
#1 Temperature of container/ cooler?	(Yes)	No	7.8 °C	
#2 Shipping container in good condition?	(Yes)	No		
#3 Custody Seals intact on shipping container/ cooler?	(Yes)	No	Not Present	
#4 Custody Seals intact on sample bottles/ container?	(Yes)	No	Not Present	
#5 Chain of Custody present?	(Yes)	No		
#6 Sample instructions complete of Chain of Custody?	(Yes)	No		
#7 Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8 Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9 Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10 Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11 Containers supplied by ELOT?	(Yes)	No		
#12 Samples in proper container/ bottle?	(Yes)	No	See Below	
#13 Samples properly preserved?	(Yes)	No	See Below	
#14 Sample bottles intact?	(Yes)	No		
#15 Preservations documented on Chain of Custody?	(Yes)	No		
#16 Containers documented on Chain of Custody?	(Yes)	No		
#17 Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18 All samples received within sufficient hold time?	(Yes)	No	See Below	
#19 Subcontract of sample(s)?	Yes	(No)	Not Applicable	
#20 VOC samples have zero headspace?	Yes	No	(Not Applicable)	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, June 23, 2008

Katie Lee
R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104

TEL: (505) 266-5004
FAX (505) 266-0745

RE: Pride Energy

Order No.: 0806226

Dear Katie Lee:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 6/16/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc. **Date:** *23-Jun-08*

CLIENT: R.T. Hicks Consultants, LTD
Project: Pride Energy
Lab Order: 0806226

CASE NARRATIVE

See Corrective Action: [1487] TCLP leachate 0806226-08B reported with 21ppm CL in TCLP fluid MB for 300_W

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H2 com
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 10:30:00 AM
Lab ID:	0806226-01A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	13	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	4700	15		mg/Kg-dry	50	6/17/2008 9:02:41 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Value above quantitation range
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
S	Spike recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
RL	Reporting Limit

2

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H3 com
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 11:10:00 AM
Lab ID:	0806226-02A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	9.5	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	4700	30		mg/Kg-dry	100	6/17/2008 9:20:05 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

3

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H4 com
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 11:30:00 AM
Lab ID:	0806226-03A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	8.7	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	3500	30		mg/Kg-dry	100	6/17/2008 9:37:30 AM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H1 5' bgs
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 10:00:00 AM
Lab ID:	0806226-04A **Date Received:** 6/16/2008	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	19	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	15000	60		mg/Kg-dry	200	6/17/2008 12:31:38 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H2 7' bgs
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 10:30:00 AM
Lab ID:	0806226-05A **Date Received:** 6/16/2008	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	16	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	10000	30		mg/Kg-dry	100	6/17/2008 10:47:09 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H2 solid
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 10:20:00 AM
Lab ID:	0806226-06A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	16	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	16000	60		mg/Kg-dry	200	6/17/2008 12:49:02 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H3 solid
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 10:40:00 AM
Lab ID:	0806226-07A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	28	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	20000	150		mg/Kg-dry	500	6/17/2008 1:06:27 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H4 solid
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 11:20:00 AM
Lab ID:	0806226-08A	**Date Received:** 6/16/2008	**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ASTM 2216: PERCENT MOISTURE						Analyst: **CMH**
Percent Moisture	24	0.10		wt%	1	6/16/2008
EPA METHOD 9056A: ANIONS						Analyst: **SLB**
Chloride	20000	150		mg/Kg-dry	500	6/17/2008 1:58:42 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H4 solid
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 11:20:00 AM
Lab ID:	0806226-08B **Date Received:** 6/16/2008	**Matrix:**	LEACHATE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS SPLP EXTRACT						Analyst: **SLB**
Chloride	1200	5.0		mg/L	50	6/21/2008 5:25:53 AM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-Jun-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	H4 solid
Lab Order:	0806226	**Tag Number:**	
Project:	Pride Energy	**Collection Date:**	6/11/2008 11:20:00 AM
Lab ID:	0806226-08C	**Date Received:** 6/16/2008	**Matrix:** LEACHATE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS TCLP EXTRACT						Analyst: **SLB**
Chloride	1200	5.0		mg/L	50	6/21/2008 6:52:56 AM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: R.T. Hicks Consultants, LTD
Project: Pride Energy **Work Order:** 0806226

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 9056A: Anions									
Sample ID: MB-16221		*MBLK*			Batch ID:	**16221**	Analysis Date:	6/16/2008 10:53:20 PM	
Chloride	ND	mg/Kg	0.30						
Sample ID: MB-16220		*MBLK*			Batch ID:	**16220**	Analysis Date:	6/19/2008 2:42:57 PM	
Chloride	ND	mg/Kg	0.30						
Sample ID: LCS-16221		*LCS*			Batch ID:	**16221**	Analysis Date:	6/16/2008 11:10:45 PM	
Chloride	14.86	mg/Kg	0.30	99.1	90	110			
Sample ID: LCS-16220		*LCS*			Batch ID:	**16220**	Analysis Date:	6/19/2008 3:00:22 PM	
Chloride	14.51	mg/Kg	0.30	96.7	90	110			
Method: EPA Method 300.0: Anions									
Sample ID: MB		*MBLK*			Batch ID:	**R29032**	Analysis Date:	6/20/2008 9:24:40 AM	
Chloride	ND	mg/L	0.10						
Sample ID: LCS		*LCS*			Batch ID:	**R29032**	Analysis Date:	6/20/2008 9:42:04 AM	
Chloride	4.954	mg/L	0.10	99.1	90	110			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name RT HICKS | Date Received: 6/16/2008

Work Order Number 0806226 | Received by: AT

Checklist completed by: Signature | Date 6/16/08 | Sample ID labels checked by: Initials

Matrix: | Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
Samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**28°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: RT Hicks

Address:

Phone #:

email or Fax#: Katie@rthicksconsult.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☐ Rush

Project Name: Pride Energy

Project #: INBE 13#1

Project Manager: Katie Lee

Sampler:

On Ice: ☐ Yes ☒ No

Sample Temperature: 22

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0806226	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	total cl	soil moisture	cl via TCLP/SPLP, WET	Air Bubbles (Y or N)
6.11.08	1030	H2_com			1												X	X		
	1110	H3_com			2															
	1130	H4_com			3															
	1000	H2_5'bgs			4												X	X	X	
	1030	H2_7'bgs			5															
	1020	H2_solid			6															
	1040	H3_solid			7															
	1120	H4_solid			8												X			

Date	Time	Relinquished by	Received by
6.12.08	1650	Katie Lee	6/12/08 1650

Remarks: Total Cl only 48hr. TAT per K.L. 6/13/08

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix E

Modeling Protocols

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

APPENDIX E

To simulate the possible effects on ground water chloride concentration from the buried material at the INBE 13 #1 site, the gravity-driven vertical water flow through the vadose zone is simulated using HYDRUS-1D. The resultant chloride flux to ground water is used as input to a simple ground water mixing model. The output of the mixing model is a predicted chloride concentration in ground water at the down gradient edge of the affected area as would be observed in a monitoring well at this location.

HYDRUS-1D numerically solves the Richard's equation for water flow and the Fickian-based advection-dispersion equation for heat and solute transportation. The HYDRUS-1D flow equation includes a sink term (a term used to specify water leaving the system) to account for transpiration by plants. The solute transport equation considers advective, dispersive transport in the liquid phase, diffusion in the gaseous phase, nonlinear and non-equilibrium sorption, linear equilibrium reactions between the liquid and gaseous phases, zero-order production, and first-order degradation.

The ground water mixing model uses the chloride flux from the vadose zone to ground water provided by HYDRUS-1D and instantaneously mixes this chloride and water with the ground water flux of chloride plus water that enters the mixing cell beneath the subject site. We refer the reader to API Publication 4734, Modeling Study of Produced Water Release Scenarios (Hendrickx and others, 2005) for a general description of the techniques employed for this simulation experiment.

Two models were constructed for this site. The first model uses the most conservative assumptions for the site. The second model employs "conservative and favorable" assumptions. A description of the model input parameters are listed below and are synopsized in Table 2.

HYDRUS 1-D INPUTS

Soil Profile - The HYDRUS 1-D soil profile was chosen to be conservative of ground water quality by choice of materials having hydraulic conductivities greater than or equal to those observed during the boring of MW-1 at the site and from nearby borings logged by R.T. Hicks Consultants. In addition, thickness of higher hydraulic conductivity materials was set equal to the greater thicknesses observed in the nearby borings rather than that seen in at MW-1. Vadose zone soil profile variation with relatively small lateral displacement is common in southeastern New Mexico.

Dispersion lengths - Standard practice calls for employing a dispersion length that is 10% of the model length and was used in this simulation.

Climate – Weather data used in calculation of the initial condition and the predictive modeling was from the Pearl, New Mexico weather station, about 50 miles south-southeast of the site. This station is the closest station to the proposed study area for which the necessary HYDRUS-1D input file exists. Climate on the eastern plains of New Mexico is similar enough that this was considered an acceptable choice. The weather data spans the 46. 5 year period from July, 1946 to December, 1992,

HYDRUS-1D can also employ a uniform yearly infiltration rate that will obviously smooth the temporal variations. Because the atmospheric data are of high quality, we have elected to allow HYDRUS-1D to predict the deep percolation rate and the resultant variable flux to ground water. This choice results in higher predicted peak chloride concentrations in ground water due to temporally variable high fluxes from the vadose zone than would be predicted by an averaged infiltration rate. As such, this choice is conservative of ground water quality.

Soil Moisture - Because soils are relatively dry in this climate and vadose zone hydraulic conductivity varies with moisture content, it is important that simulations are started with representative soil moisture content. Commonly, the calculation of soil moisture content begins with using professional judgment as an initial input and then running sufficient years of weather data through the model to establish a "steady state" moisture content. For this simulation, multiple pulses of moisture were observed to transit the soil profile by year 12 of the initial condition calculation. Therefore, 46.5 years (1 cycle of the weather data) was considered sufficient to establish an initial moisture condition. This vadose zone moisture content profile was used as the initial condition for subsequent simulations.

Initial Chloride Profile – Within the vadose zone soil profile, the mass of chloride was simulated by placement of a five-foot thick layer of sandy clay placed 4 feet below ground level. Based upon laboratory analysis of 3 samples of the buried material (Table 2), this layer was modeled as having an average soil moisture content of 0.34 with a chloride concentration of 104,000 mg/L.

Table 1: Laboratory Results From Samples of Buried Material

Sample I.D.	Soil Chloride Concentration [mg/kg]	Percent Moisture [%]	Assumed Dry Bulk Density [kg/m^3]	Volumetric Moisture Content using Assumed Dry Bulk Density [-]	Resulting Chloride Concentration in Pore Water [mg/L]
H2 solid	16000	16.00	1500	0.24	116000
H3 solid	20000	28.00		0.42	91429
H4 solid	20000	24.00		0.36	103333

Because chloride is a conservative tracer (i.e. this ion neither mineralizes, volatilizes nor degrades over time), the chloride concentration within the modeling can be multiplied by a scaling factor to simulate other concentrations.

MIXING MODEL INPUTS

As described in API Publication 4734, the ground water mixing model takes the background chloride concentration in ground water multiplied by the ground water flux to calculate the total mass of ground water chloride entering the ground water mixing cell, which lies below the area of interest. The chloride and water flux from HYDRUS-1D is added to the ground water chloride mass and flux to create a final chloride concentration in ground water at an imaginary monitoring well located at the down gradient edge of the mixing cell (the edge of the release site).

Influence Distance - The influence distance is defined as the maximal length of the release parallel to groundwater flow direction. From 1996 USGS data (see Plate Whatever) ground water flow is to the east-northeast. Therefore, this dimension was taken as 35 feet,

Background Chloride Concentration – A 45.0 mg/L chloride concentration was used as the concentration of chloride in ground water based on data from a well approximately 600 feet west of the site. This reflects regional conditions.

Hydraulic Conductivity - Musharrafieh and Chudnoff (1999) assigned hydraulic conductivities of 41 to 60 feet/day for this area. Well logs from MW-1 and nearby wells show a sandy clay as being present at the top of the water bearing strata. This is consistent with the general trend of the Ogallala aquifer being composed of a fining upwards sequence. To be conservative of ground water quality at this site, the saturated hydraulic conductivity of the uppermost saturated zone is assumed as 30 feet/day for the "conservative scenario" and 50 feet/day for the "conservative and favorable scenario".

Groundwater Gradient - Hydraulic gradient from the 1996 USGS data was calculated as about 0.003. The resulting ground water fluxes are about 0.09 feet/day and 0.15 feet/day.

Aquifer Thickness – Aquifer thicknesses of 40 feet and 65 feet were employed for the proposed monitoring/supply well in the mixing model for the two scenarios.

For all variables for which field data did not exist, assumptions conservative of ground water quality were made. A summary of the input parameters and a description of the source information used in the HYDRUS-1D model for this application are provided in Table 1 below.

Table 2: Input Data for Simulation Experiment

Input Parameter, "Conservative Scenario"	Input Parameter,"Conservative and Favorable Scenario"	Source
Vadose Zone Thickness - 29 feet		From MW-1 at the site
Vadose Zone Texture		MW-1 Well Log, nearby boring logs and conservative assumptions
Dispersion Length - 10% of model length		Standard Modeling Practice
Climate		Pearl Weather Station Data, 46 years
Soil Moisture Content		HYDRUS-1D initial condition simulation
Initial soil chloride concentration profile		Lab Analysis of samples from Burial Pit
Length of Affected Area parallel to Ground Water flow is 35 feet		From Potentiometric Surface and Geometry of Burial Pit
Chloride Concentration in Ground Water - 45 mg/L		From well located about 600 feet upgradient
Ground Water Flux - 0.09 feet/day	Ground Water Flux - 0.15 feet/day	Calculated from Published Data
Screen Length in Monitoring/Supply Well - 40 feet	Screen Length in Monitoring/Supply Well - 65 feet	Well Logs in the Area

RESULTS AND CONCLUSIONS OF MODELING

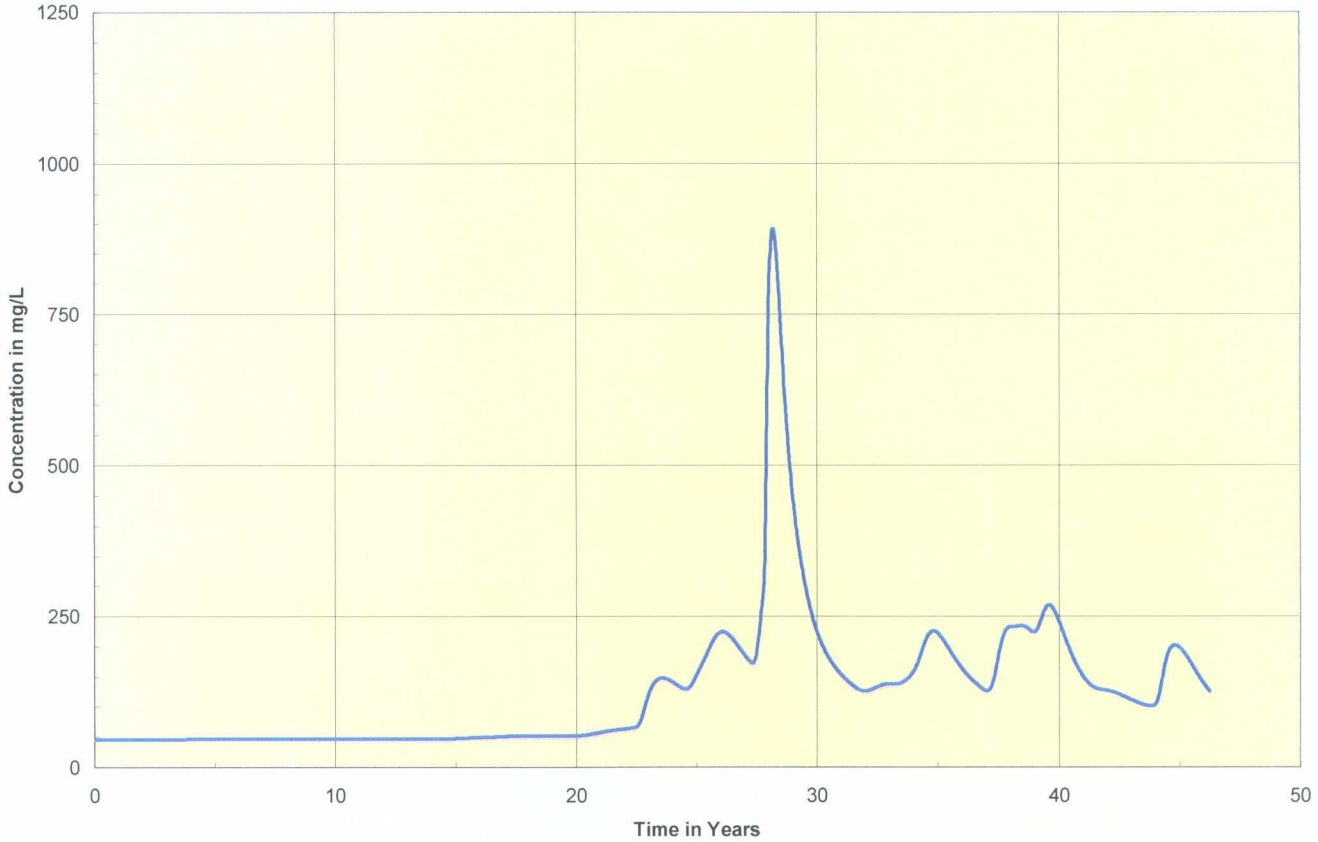
In order to model the effects of the buried, lined material on ground water:

1) A vadose zone soil profile based upon well logs from MW-1 at the site and from nearby borings was constructed. An initial condition moisture content was calculated by running one cycle (46.5 years of the weather data) through the soil profile.
2) The upper 10-feet of this soil profile was then removed and replaced with two layers to simulate the buried, lined material.
    i) First, an upper layer composed of a 3 foot thick layer of loam placed above a 1-foot thick layer of sand was constructed with an appropriate initial condition to simulate a constructed evapotranspiration (ET) barrier above the buried material. No positive heads were allowed at the surface to simulate a sloped cap with surface runoff. The lower boundary of this column was modeled as a free-drainage face (at each time step, a zero moisture content gradient is assumed). In other words, the moisture flux from this soil column is taken as equal to the moisture flux just above the boundary.
    ii) Five-feet of sandy clay were placed on top of the lower soil column with averaged moisture content and chloride concentrations (from laboratory analysis) to simulate the buried material. No liner was assumed to exist between the buried material and the lower vadose zone. Moisture and chloride fluxes move directly from the buried materials into the lower vadose zone.
3) The moisture flux from the upper layer (2i) is used as the input to the buried materials (2ii) and the lower vadose zone. To simulate linear degradation of the upper liner, the moisture flux from the upper layer (2i) was taken as 0.0 at Time = 0. The flux is "turned on" linearly and reaches "full value" at the end of the assumed liner lifespan. For later time, the unmodified moisture flux from the ET barrier (2i) is used as input to the lower vadose zone (2ii).
4) The resulting water and chloride fluxes are used as inputs to a simple ground water mixing model to predict chloride concentration in the proposed monitoring/supply well at the down-gradient edge of the burial pit.

As mentioned previously, two scenarios were modeled. Shown first in Figure 1 is predicted chloride concentration in the proposed monitoring/supply well for the "conservative scenario" assuming:

1) Complete upper liner degradation occurs over 20 years beginning at year zero
2) Loss of lower liner integrity at year zero
3) Vertical distribution of chloride is restricted to the uppermost 40-feet of the aquifer, which is also the screen length of the well
4) The hydraulic conductivity of the upper 40-feet of the aquifer is 30 feet/day
5) 100% of the chloride in the drilling waste is mobile

Figure 1: Predicted Chloride Concentration in a Monitoring/Supply Well, "Conservative Scenario", INBE 13 #1 Site

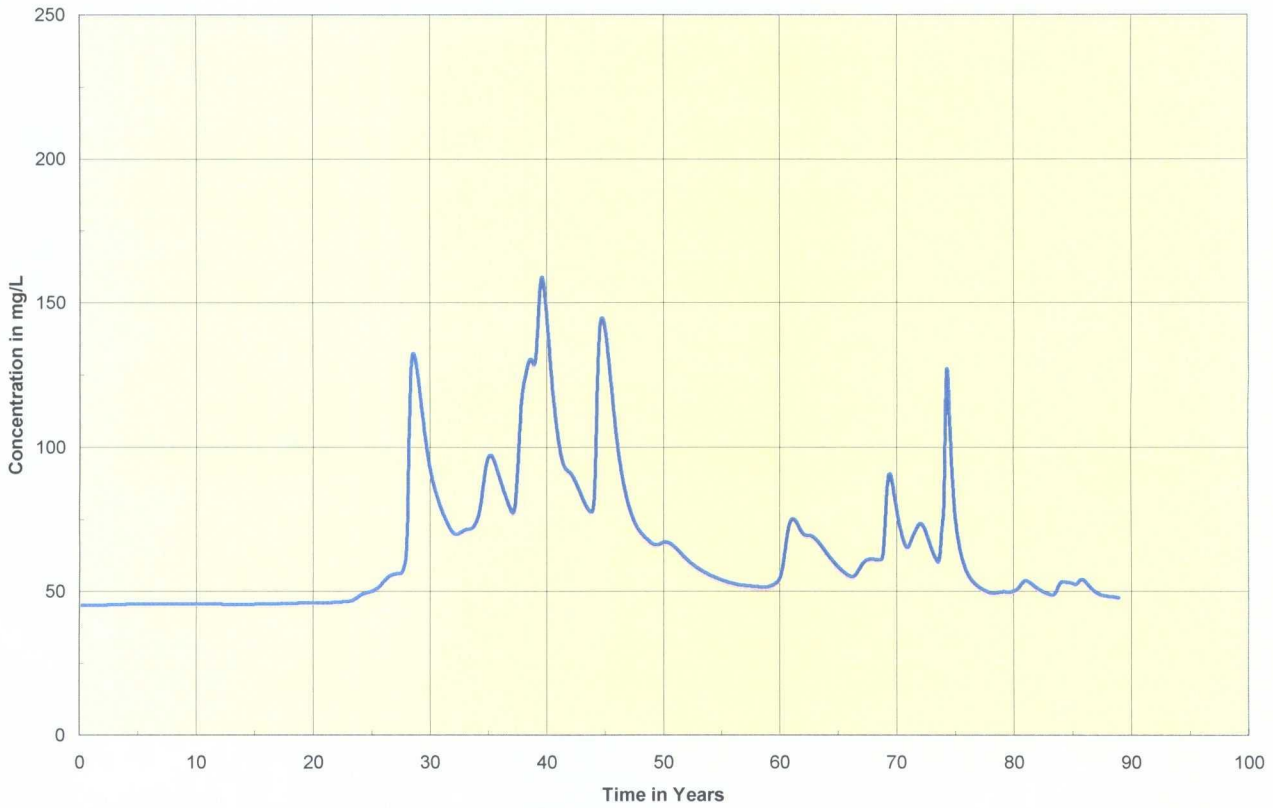


Peak chloride concentration in ground water is about 880 mg/L approximately 28 years from Time 0. WQCC water quality standards are exceeded for a little more than 2 years from year 27 to year 29 and again during year 39 (265 mg/L)

Shown in Figure 2 is predicted chloride concentration in the proposed monitoring/supply well for the "conservative and favorable scenario" assuming:

1) Complete upper liner degradation occurs over 40 years beginning at year zero
2) Loss of lower liner integrity occurs at year zero
3) A monitoring and supply well penetrates the full saturated thickness of the aquifer, which is 65 feet, and is placed at the down gradient edge of the burial trench
4) The hydraulic conductivity of the 65-foot thick aquifer is 50 feet/day
5) Water samples from this fully-penetrating well represent the water quality of the entire aquifer with higher quality water entering the well from the base of the aquifer

Figure 2: Chloride Concentration in a Proposed Monitoring/Supply Well, "Conservative and Favorable Scenario", INBE 13 #1 Site



Peak chloride concentrations average about 140 mg/L in years 28, 39, 44, and 74. Chloride concentration exceeds 100 mg/L for a total time of less than 13 years. No exceedance of New Mexico WQCC water quality standards is predicted.

Appendix F

Liner Manufacturer

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

February 20, 2002

LIFETIME OF POLYETHYLENE VAPOR RETARDERS

Raven Industries has not performed long term aging studies on polyethylene sheet and does not have data to predict lifetime in a buried application. Most polyethylene products are not used in applications where the useful life of the product is more than 20 years. Comments on lifetimes in excess of 100 years are based on anecdotal field data and limited accelerated aging studies. Polyethylene was discovered as a substance in 1933 and the first wave of linear polyethylenes, similar to those used in vapor retarders, became commercial in the late 1960's.

What we do know is that polyethylene is a chemically inert polymer, not containing any reaction prone functional groups or any groups that can be metabolized by microorganisms. Because of this, polyethylene, in the absence of UV and strong oxidizers, lasts a long time without loss of properties. In a buried application the main degradation mechanism is oxidation. This reaction takes place very slowly at ambient temperatures and is further hindered by the antioxidants that are part of the polyethylene formulation.

In order to predict lifetime limits due to oxidation, long term accelerated tests need to be performed. If the acceleration tool attempts to accelerate the degradation too much, the degradation mechanism is likely to be changed and the resulting prediction inaccurate. As a rule of thumb, an acceleration factor up to 10 is reasonable. A factor of 100 is not and those attempting to predict lifetimes based on such high acceleration factors are risking bad interpretations and a bad reputation.

All that aside, it is desirable to make some attempt at predicting lifetimes for vapor retarders that are used in applications where design lifetimes on are on the order of 100 years or more. Doctors Hsuan and Koerner of the Geosynthetic Research Institute are conducting such studies and pushing the envelope on the acceptable level of acceleration in a related product, geomembranes. In a paper published in the Journal of Geotechnical and Geoenvironmental Engineering in June of 1998, they published results showing that the depletion of the antioxidants in a buried polyethylene geomembrane would take 200 years or more at 20°C. Depletion of the antioxidants takes place prior to the induction period that precedes the degradation period. The time for the degradation to reach a point where the polymer is compromised is in itself very long and it's length is not speculated on in the paper.

Raven's vapor retarders are made from a similar but lower density polyethylene than evaluated in the above referenced paper, and do contain antioxidants for protection against oxidative degradation and hindered amine light stabilizers for protection against UV degradation. While Raven Industries is not willing to warrant, guarantee or predict a lifetime of 200 years in a buried application, there is data and evidence in the industry that indicate that such a prediction is not unreasonable.

Gary M. Kolbasuk
Raven Industries

Appendix G

Proposed Bailer for Discrete Sampling

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Point Source Sampling

Point source sampling can be used to profile an open borehole or screened well, to collect samples from distinct levels or points of inflow. There is negligible disturbance as can be caused by pumping and purging. Mixing of the sample with water from different levels in the well is minimized.

Purging and disposal of purged water can be avoided, because sampling directly from a specific depth collects the water that has just flowed into the well at that depth.

Solinst also manufactures the Model 425 Discrete Interval Sampler which is pressurized before lowering into the well to prevent water from entering the sampler until the sampling zone has been reached.

The Model 425T Transportable DIS is similar, but uses special shut-off valves to retain the volatiles in a zero headspace sampler, in down-hole condition, during transport to the laboratory. Discrete Interval Samplers are described on Data Sheet 425.

Model 429

Point Source Bailer

The Solinst Point Source Bailer has dual ball valves, top and bottom. This prevents a sample collected at a discrete depth from mixing with water from other depths during retrieval.

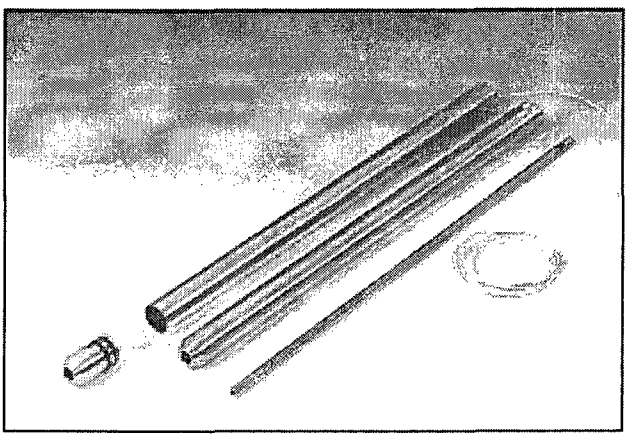
The Point Source Bailer is a simple and cost effective device for aquifer profiling. It needs no costly or hard to transport ancillary equipment, making it ideal for point source sampling in hard to access locations.

The miniature 0.5" (12.7 mm) diameter model is ideal for use in narrow tubes and direct push devices.

Bailer Capacity
Per 2 Foot Length

O.D. Inch	Capacity OZ	O.D. mm	Capacity ml
0.5	1.7	12.7	50
1.0	6.5	25.4	190
1.5	16	38.1	430
2.0	29	50.8	860

Point Source Bailers come in 2ft. (610 mm) length as standard or an optional 4 ft. (1220 mm) length



Method of Operation

The bailer is lowered slowly to the desired sample depth on a support line. As the bailer is being lowered, both ball valves open, allowing water to flow through the sampler.

On reaching the sampling depth, the bailer is raised using the support cable and optional winding reel. The weight of water and upward movement of the bailer keep both ball valves closed. The top ball valve prevents the sample in the bailer from mixing with water at higher levels in the borehole.

Once at the surface, the bailer is emptied by opening the top vent, and allowing the water to drain slowly through the sample release device into the sample container.

The Point-Source Bailer can then be decontaminated before taking the next sample.

Specifications

The Solinst Point Source Bailer is constructed of stainless steel with Teflon® ball valves and Viton® o-rings. The sampler comes complete with a stainless steel sample release device to avoid loss of valatiles during transfer to the sample vial.

The standard support line is stainless steel. Teflon® coated steel support line is also available. If desired, a Solinst storage and winding reel is available on which to store the cable.

Printed in Canada
10/00

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Appendix H

Alternative Rankings for Proposed Plan

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Albuquerque, NM 87104

Appendix H – Analysis of Corrective Action Alternatives

We used field data, laboratory analyses, site conditions and the results of the simulations to evaluate the following corrective action alternatives:

1. Improve the infiltration barrier with added soil, re-vegetation of the surface and installation of a monitoring – supply well (the recommended alternative
2. Dig-haul-dispose of the buried drilling waste and restoring the site to landowner specifications (the contingency plan).
3. No action

Regulatory Considerations

We are addressing this release under Rule 116, which states:

> (2) The Division shall be notified in accordance with Section 116 of 19.15.3 NMAC with respect to any release from any facility of oil or other water contaminant, in such quantity as may with reasonable probability be detrimental to water or cause an exceedance of the standards in Section 19, Subsection B, Paragraphs (1) and (2) or (3) of 19.15.1 NMAC.
>
> B. Reporting Requirements. Notification of the above releases shall be made by the person operating or controlling either the release or the location of the release in accordance with the following requirements:
>
> (1) A Major Release shall be reported by giving both immediate verbal notice and timely written notice pursuant to Subsection C, Paragraphs (1) and (2) of 19.15.3.116 NMAC. A Major Release is:
>
> (a) an unauthorized release of a volume, excluding natural gases, in excess of 25 barrels;
>
> (b) an unauthorized release of any volume which:
>
> (i) results in a fire;
>
> (ii) will reach a water course;
>
> (iii) may with reasonable probability endanger public health; or
>
> (iv) results in substantial damage to property or the environment;
>
> (c) an unauthorized release of natural gases in excess of 500 mcf; or
>
> (d) a release of any volume which may with reasonable probability be detrimental to water or cause an exceedance of the standards in Section 19, Subsection B, Paragraphs (1) and (2) or (3) of 19.15.1 NMAC.

The corrective action requirements of this rule are outlined below:

> D. Corrective Action. The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an abatement plan submitted in accordance with Section 19 of 19.15.1 NMAC.
> [1-1-50...5-22-73...2-1-96; A, 3-15-97; 19.15.3.116 NMAC - Rn, 19 NMAC 15.C.116, 11-15-01]

Although Rule 19 (Abatement Plan) does not apply to this site, this rule provides additional guidance relating to a corrective action under Rule 116. We compared the remedy proposed herein with the following sections of Rule 19 as well as the sections of Rule 116 presented above. Rule 19 states:

19.15.1.19 PREVENTION AND ABATEMENT OF WATER POLLUTION:

A. Purpose

(1) The purpose of this Rule are to:

(a) Abate pollution of subsurface water so that all ground water of the State of New Mexico which has a background concentration of 10,000 mg/L or less TDS, is either remediated or protected for use as domestic, industrial and agricultural water supply, and to remediate or protect those segments of surface waters which are gaining because of subsurface-water inflow, for uses designated in the Water Quality Standards for Interstate and Intrastate Surface Waters in New Mexico (20.6.4 NMAC); and

(b) Abate surface-water pollution so that all surface waters of the State of New Mexico are remediated or protected for designated or attainable uses as defined in the Water Quality Standards for Interstate and Intrastate Surface Waters in New Mexico (20.6.4 NMAC).

(2) If the background concentration of any water contaminant exceeds the standard or requirement of Section 19.15.1.19 NMAC, Subsection B, Paragraphs (1), (2) or (3) pollution shall be abated by the responsible person to the background concentration.

(3) The standards and requirements set forth in of Section 19.15.1.19 NMAC, Subsection B, Paragraphs (1), (2) or (3) are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.

B. Abatement Standards And Requirements

(1) The vadose zone shall be abated so that water contaminants in the vadose zone will not with reasonable probability contaminate ground water or surface water, in excess of the standards in Paragraphs (2) and (3) below, through leaching, percolation, or other transport mechanisms, or as the water table elevation fluctuates.

(2) Ground-water pollution at any place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/L or less, shall be abated to conform to the following standards:

(a) Toxic pollutant(s) as defined in 20.6.2.7 NMAC shall not be present; and

(b) The standards of 20.6.2.3103 NMAC shall be met.

(3) Surface-water pollution shall be abated to conform to the Water Quality Standards for Interstate and Intrastate Surface Waters in New Mexico 20.6.4 NMAC.

(4) Subsurface-water and surface-water abatement shall not be considered complete until eight (8) consecutive quarterly samples, or an alternate lesser number of samples approved by the Director, from all compliance sampling stations approved by the Director meet the abatement standards of Paragraphs (1), (2) and (3) above. Abatement of water contaminants measured in solid-matrix samples of the vadose zone shall be considered complete after one-time sampling from compliance stations approved by the director.

Selection of Ranking Criteria

The regulatory language identified above as well as a thorough examination of the NMOCD Rules and the Oil and Gas Act demonstrate that a responsible party must propose an action that creates an appropriate balance of costs and benefits with respect to:

1. Fresh water (surface water and ground water)
2. Public health (which the regulations associate with a water supply for human consumption)
3. The environment (e.g. habitat, soil productivity, air quality, etc.)
4. Safety (to humans)
5. Protection of property (e.g. loss of use)

Scoring of Alternatives

The table below presents the results of a simple method of ranking the alternatives. The corrective action that provided the highest net benefit received the highest score. Because we evaluated four possible actions, the highest possible score for an evaluation criterion was 3.

Corrective Action Alternative	Fresh Water	Public Health	Environment	Safety	Property	Total Score
Dig-Haul-Dispose-Import Soil	3	3	1	1	1	9
Improve Infiltration Barrier and Monitor	2	2	3	2	3	12
No Action	1	1	2	3	2	9

Protection of Fresh Water: The simulation modeling predicts that the no action and improvement of the infiltration barrier might result in ground water exceeding WQCC Standards at the site. Removal of the buried waste will eliminate the source of potential ground water contaminants and this alternative received the highest score. Because improvement of the infiltration barrier and re-vegetation will permanently reduce deep percolation of precipitation (and the attendant possibility of contaminant migration), we ranked this alternative higher than the no action alternative.

Protection of Public Health: There are no public or domestic water wells threatened by a potential release at or near the site. Our experience with similar sites and the simulation modeling performed for this site suggest that any impairment of water quality would be short-lived and localized. In the unlikely event that a water supply well for human consumption is placed at the site, the dig-haul-dispose option provides the highest level of protection and received the highest score.

Protection of the Environment: The No Action Alternative does not pose a threat to the environment because:

- the area of impact is small and does not represent a material reduction in habitat,
- a surface water course is not threatened by this release, and
- because of the existing liner and the depth of burial, salt migration to the root zone will not occur.

Although No Action does not harm the environment, we believe that improvement of the infiltration barrier through the addition of topsoil and more aggressive re-vegetation of the site provides an environmental benefit. Therefore, we ranked this corrective option highest of the three identified alternatives.

The dig-haul-dispose-import soil remedy will cause the greatest amount of air pollution in terms of exhaust and dust generation. This remedy will also create the greatest disturbance to the area in the form of soil compaction on haulage roads. We ranked this alternative the lowest of the three.

Protection of Human Safety: The remedy most protective of human safety limits the invasive corrective actions or actions that require significant hauling. Therefore, No Action is ranked highest and the dig-haul-dispose option is ranked lowest.

Mitigate the Damage to the Property: Improving the infiltration barrier through re-vegetation and the installation of a water supply well provides a benefit to the property owner and surface leaseholder. This alternative ranked highest.

The dig-haul-dispose alternative will create a hazard to livestock due to traffic and will not provide a material benefit to the landowner or the leaseholder. Therefore this alternative is the lowest ranked.

The No Action alternative provides no benefit and does no harm to the property and was ranked second.

Recommended Alternative

Improvement of the infiltration barrier, re-vegetation and installation of a monitoring-supply well provides the greatest benefit and the least overall risk.

Contingency Plan

Sampling of the proposed monitoring-supply well may require a re-evaluation of alternative rankings. We will re-evaluate this ranking after two quarters of ground water monitoring.

New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division

May 1, 2008

Mr. Matthew L. Pride
Pride Energy Company
P.O. Box 701950
Tulsa, OK 74170-1950

RE: REQUIREMENT TO SUBMIT REMEDIATION PLAN
PRIDE ENERGY - INBE 13 NO. 1 BURIAL TRENCH
UNIT LETTER G, SECTION 13, TOWNSHIP 11 SOUTH, RANGE 33 EAST
LEA COUNTY, NEW MEXICO
OCD CASE NO. 1R493

Dear Mr. Pride:

The Oil Conservation Division (OCD) has determined that Pride Energy must submit a remediation plan to remove and dispose of the drilling pit contents that it disposed of onsite in a burial trench at its Inbe 13 No. 1 well site located in Unit Letter G, Section 13, Township 11 South, Range 33 East, Lea County, New Mexico. OCD is requiring this action because Pride improperly disposed of its drilling pit's contents onsite. The vertical separation between the bottom of the burial trench and the ground water is less than 50 feet which violates OCD's Policy Memorandum 2005-2.

OCD hereby requires Pride Energy to submit a remediation plan pursuant to OCD Rule 116D; the work plan is due is due sixty (60) days from the receipt by Pride Energy of this written notice. Pride's remediation plan must specify how it will remove and dispose of the burial trench's contents and backfill and cover the burial trench. The work plan must also include a complete description of the site, including a site map, and a summary of the site history. The work plan shall specify the following:

1. All burial trench contents shall be removed and appropriately disposed of at either an OCD permitted landfill (or landfarm if chlorides contents meets Part 36 standards).

2. The burial trench shall be over excavated on all sides and beneath the bottom.

3. All excavated material shall be properly solidified for transport to the final disposal site.

4. Pride shall take, at a minimum, four confirmation samples to demonstrate that the burial trench contents did not contaminate the soil or bedrock adjacent to or beneath the burial trench. If a release has occurred, Pride shall inform OCD of this with 24 hours.

5. Pride shall backfill the burial trench with clean fill to grade and cover to match adjacent areas.

6. Pride shall submit a report to OCD that documents all actions taken in accordance with its remediation plan within 10 days of completion of tasks.

7. Pride shall install a monitor well to determine whether ground water has been impacted by a release from the burial trench.

After it has completed its removal of the burial trench contents, OCD will determine whether to require additional action from Pride Energy. Pride Energy should submit one paper copy and one electronic copy of all work plans and/or reports. Please refer to ***OCD Case No. 1R493*** on all future correspondence. If you have any questions, please contact Glenn von Gonten of my staff at (505) 476-3488.

Sincerely,

Glenn von Gonten

for Wayne Price
Environmental Bureau Chief

WP/gvg

cc: Chris Williams
Larry Johnson