eog resources

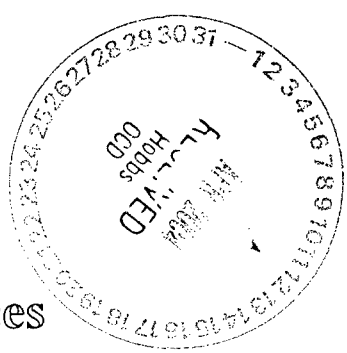
EOG Resources

Site Investigation Report

RHNU 606 Water Injection Facility Produced Water Spill

API#3002535907 0000

Lea County, New Mexico



B & H Environmental Services
Maintenance and Construction
2858 Steven Road Odessa, Texas 79764
432-550-8210

EOG - 7377
Incident - nPAC0605438714
application - pPAC0605439009

STATE ENGINEER OFFICE

WELL RECORD

9/15/93

Revised June 1972

Section 1. GENERAL INFORMATION

(A) Owner of well E O G Resourses Owner's Well No. _____

Street or Post Office Address P.O Box 2267

City and State Midland, Texas 79702

Well was drilled under Permit No. C-2336 and is located in the:

a. _____ ¼ NE ¼ NW ¼ NW ¼ of Section 13 Township 25-S Range 33-E. N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Glenn's Water Well Service, Inc. License No. WD 421

Address P.O. Box 692 Tatum, New Mexico 88267

Drilling Began 9/8/93 Completed 9/8/93 Type tools rotary Size of hole 7 7/8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 642 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 185 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
295	324	29	sand and gravel	20 gpm
470	484	14	sand rock	20 gpm
598	614	16	sand rock	20 gpm

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
8 5/8	.250		1	81	81	none	none	
6 5/8	.219		1	636	636	none	294	332
							446	484
							598	636

Section 4. 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

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received

Quad _____ FWL _____ FSL _____

File No. _____ Use _____ Location No. _____

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	3	3	sand
3	12	9	clay
12	22	10	caleche
22	38	16	sand and rock
38	73	35	loose sand (heaved bad)
73	172	99	red and blue clay
172	225	53	brown shale (stringers of sandrock)
225	275	50	brown and red sandrock
275	295	20	brown shale
295	324	29	sand and gravel (water)
324	465	141	blue and brown shale (hard)
465	470	5	red clay
470	484	14	red sandrock (water)
484	570	86	red and blue shale
570	571	1	rock
571	598	27	red shale
598	614	16	brown sandrock (water)
614	642	28	red shale

Section 7. REMARKS AND ADDITIONAL INFORMATION

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.

Cooky Elam
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

EOG 6-18-02

West of Jal 1m past Delaware Basin road, S about 6m to ww we drilled

Dirk Ellyson
Raymie

0682100 gallons # 954968-3
Pumps 68gpm on 90psi - Build 260 psi
79gpm on 40psi - Pumped down to 63gpm in 10 mins

Pulled SP16-20 20hp grundfos out on 533' of 2 3/8 8rd tubing

Set new 855250 - 25hp grundfos at 611.6' overall - WC at 186' - Fill to 617' - Set nitrogen air line at 586'
Well pumps to 55 gpm
New master meter # 297R486 at 1700 gals

Master #29
4400 gals

#95
06,825,500 gals

Dirk said well gauged 46.6 gpm 6-20
in tanks in 24 hours

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 18, 2003

EOG Resources, Inc., (EOG)
Attn: John Ellyson
POB 2267
Midland, TX 79702

Re: **Notice of Non-Compliance** - Fluids Release and Remediation Action Required
RHNU #603 - UL-?, Sec. 6-T25S-R34E

Dear Mr. Ellyson,

The New Mexico Oil Conservation Division (OCD) environmental personnel inspected the facility referenced above on December 10, 2003 and have determined that notification and remediation of the release are required.

Pursuant to OCD Rule 116 form C-141 *("Release Notification and Corrective Action")* must be submitted to the OCD district office within 15 days of the release. "Corrective Action" must be submitted and approved by the Division or with an abatement plan submitted in accordance with Rule 19.

EOG must submit a remediation plan by January 15, 2004 that includes the following:

1. EOG shall submit a C-141 spill report for this spill and a copy of the all C-141 spill reports from the above referenced facility from 2001 to present.
2. EOG shall perform delineation and remediation of the horizontal and vertical extent of TPH, BTEX and chloride contamination in the soil.
3. EOG shall propose a soil remediation level demonstrating that any remaining chloride contamination will not cause an exceedance in the New Mexico Water Quality Control Commission (WQCC) groundwater standard of 250 mg/L.
4. EOG shall notify OCD, (preferably email) at least 48-hr before sampling and backfilling and include a statement of that notification in the closure proposal.

Enclosed is a checklist for OCD District 1 remediation plans. If you have any questions or need assistance please write or call: (505) 393-6161, x113 or email psheeeley@state.nm.us

Sincerely,

Paul Sheeley-Environmental Engineer

Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
Bill Olson – Hydrologist
Larry Johnson - Environmental Engr.

eog resources

EOG Resources, Inc.
333 Clay Street, Suite 4200
Houston, Texas 77002

P.O. Box 4362
Houston, Texas 77210-4362

April 16, 2004

Mr. Paul Sheeley
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Notice of Non-Compliance
Immediate Notification and Remediation Action Incomplete
RHNU #606, UL-O Sec. 6-T25S-R34E
Lea County, New Mexico

Dear Mr. Sheeley,

As we discussed by telephone on April 15, 2004, a copy of the information EOG submitted to the New Mexico Oil Conservation Division (NMOCD) on January 12, 2004 regarding the November 22, 2003 produced water spill at the Red Hills North Unit (RHNU) #606 water injection station is attached. This information includes EOG's initial response to the above reference Notice of Non-Compliance, a corrected Form C-141, e-mail notification of the January 13, 2004 sampling event, the NMOCD Notice of Non-Compliance letter dated December 18, 2003, Form C-141 Reject Notice, and the denied Form C-141.

As you noted, the RHNU #606 is located on Bureau of Land Management (BLM) land. In accordance with BLM spill notification requirements, EOG submitted a spill report to the BLM concurrent with notification to the NMOCD on December 2, 2003.

Please call me at 713-651-6446 if you have any questions or need additional information.

Sincerely,

Cee Cee Candler
Sr. Environmental Specialist

cc: Dirk Ellyson – EOG Pitchfork
Jerry Ball – EOG Midland

Attachments

File: Environmental / Midland Division / Red Hills North 606 Injection Station

CeCee

eog resources

EOG Resources, Inc.
333 Clay Street, Suite 4200
Houston, Texas 77002

P.O. Box 4362
Houston, Texas 77210-4362

January 12, 2004

Mr. Paul Sheeley
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Notice of Non-Compliance
Immediate Notification and Remediation Action Incomplete
RHNU #606, UL-O Sec. 6-T25S-R34E
Lea County, New Mexico

Dear Mr. Sheeley,

In response to the New Mexico Oil Conservation Division (NMOCD) December 18, 2003 letter regarding the above referenced Notice of Non-Compliance, EOG Resources, Inc. (EOG) submits for review and approval the information requested by the NMOCD.

NMOCD Form C-141

On November 22, 2003, approximately 500 barrels (bbls) of produced water was release at the EOG RHNU 606 Water Injection Station. The spill was contained and the produced water was vacuumed up and returned to the produced water storage tanks on the location. Written spill notification was submitted to the NMOCD district office within 15 days as required by Rule 116. Immediate verbal notification was not provided because the volume of produced water not recovered was less than 25 bbls. Initial corrective action consisted of blending and raking the spill area to enhance natural onsite bioremediation. Some material from the spill area was used to reinforce a tank battery firewall. Contaminated material was not used for road spreading and no contaminated material was buried or removed for offsite disposal. Confirmatory sampling will delineate the vertical and horizontal scope of the spill area.

The attached Form C-141 has been revised to include information that was missing on the rejected Form C-141 submitted by EOG on December 2, 2003.

The NMOCD also requested copies of all Form C-141 spill reports for the EOG RHNU 606 Water Injection Facility since 2001. There are no additional Form C-141 spill reports for this facility and EOG is not aware of any reportable spills at this facility since 2001.

Depth to Groundwater and Analytical Documentation

Based on data on file with the New Mexico State Engineer Office, depth to groundwater is estimated to be approximately 190 feet. Site ranking criteria as described in NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993) is summarized below.

Ranking Criteria	Ranking Score
Depth to Groundwater	
> 100 feet	0
Well Head Protection Area	
>1000 feet from water source	
>200 feet from private domestic water source	0
Distance to Surface Water Body	
>1000 horizontal feet	0
Total Score:	0

Soil samples will be collected from the spill area by B&H Environmental and analyzed for total hydrocarbon and chloride content. B&H Environmental will conduct a field soil vapor headspace measurement and soil samples will be analyzed for BTEX if warranted based on the results of the field test.

Proposed Soil Remediation Level

EOG will determine if further remediation is necessary based on the results of the field and laboratory analytical results. EOG does not anticipate extensive additional remediation will be required due to the limited vertical extent of the contamination and lack of hydrocarbons in the produced water. Likewise, EOG will evaluate laboratory analytical data and the depth to groundwater to determine the potential for remaining chloride contamination to cause an exceedance in the New Mexico Water Quality Control Commission groundwater standard of 250 mg/L.

Sampling Notification

B&H Environmental will collect soil samples at the spill area the week of January 12, 2004. The NMOCD will be notified of the exact date and time via e-mail at least 48 hours prior to sample collection.

Please call me at 713-651-6446 if you have any questions or need additional information.

Sincerely,

Cee Cee Candler
Sr. Environmental Specialist

cc: Dirk Ellyson – EOG Pitchfork
Jerry Ball – EOG Midland

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-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **EOG Resources, Inc.**	Contact **Stan Wagner / Dirk Ellyson**
Address **P. O. Box 2267, Midland, TX 79702**	Telephone No. **432-686-3689 – 505-390-2900**
Facility Name **RHNU 606**	Facility Type **Water Injection Faciltiy**

Surface Owner **BLM**	Mineral Owner **BLM**	Lease No. **NM 30400**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	**6**	**25S**	**34E**	**530'**	**South**	**1650'**	**East**	**Lea**

Latitude 32° 09' 14" N **Longitude** 103° 30' 21" W

NATURE OF RELEASE

Type of Release **Produced water spill**	Volume of Release **450-500 bbl**	Volume Recovered **450-500 bbl**
Source of Release **Discharge pump on produced water tank**	Date and Hour of Occurrence **11/22/2003 Early AM**	Date and Hour of Discovery **11/22/2003 6AM**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **None**	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
Steel high pressure coated swage broke in pump discharge header causing spill. Replaced swage with a coated high pressure nipple and installed high-pressure hose to eliminate vibration. Installed actuator controlled valves to shut off source of water when pumps go down.

Describe Area Affected and Cleanup Action Taken.*
Water contained. Vacuumed up and pumped into produced water tanks on location. Spill area blended and raked to enhance natural onsite bioremediation. Some material from the spill area was used to reinforce the tank battery firewall. Contaminated material was not used for road spreading and no contaminated material was buried or removed for offsite disposal. Confirmatory sampling scheduled for 1/13/04 will delineate the vertical extent of the spill.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Cee Cee Candler	OIL CONSERVATION DIVISION	
Printed Name: **Cee Cee Candler**	Approved by District Supervisor:	
Title: **Senior Environmental Specialist**	Approval Date:	Expiration Date:
E-mail Address: **ccandler@eogreesources.com**	Conditions of Approval:	Attached ☐
Date: **January 12, 2004** Phone: **713-651-6446**		

* Attach Additional Sheets If Necessary

116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]

116.A. NOTIFICATION

(1) The Division shall be notified of any unauthorized release occurring during the drilling, producing, storing, disposing, injecting, transporting, servicing or processing of crude oil, natural gases, produced water, condensate or oil field waste including Regulated NORM, or other oil field related chemicals, contaminants or mixture thereof, in the State of New Mexico in accordance with the requirements of this Rule. [1-1-50...2-1-96; A, 3-15-97]

(2) The Division shall be notified in accordance with this Rule 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 19 NMAC 15.A.19. B(1), B(2) or B(3). [3-15-97]

116.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: [5-22-73...2-1-96; A, 3-15-97]

(1) A **Major Release** shall be reported by giving **both** immediate verbal notice and timely written notice pursuant to Paragraphs C(1) and C(2) of this Rule. 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 19 NMAC 15.A.19. B(1), B(2) or B(3). [3/15/97]

(2) A **Minor Release** shall be reported by giving timely written notice pursuant to Paragraph C(2) of this Rule. A Minor Release is an unauthorized release of a volume, greater than 5 barrels but not more than 25 barrels; or greater than 50 mcf but less than 500 mcf of natural gases. [3-15-97]

116.C. CONTENTS OF NOTIFICATION

(1) **Immediate verbal notification** required pursuant to Paragraph B shall be reported within twenty-four (24) hours of discovery to the Division District Office for the area within which the release takes place. In addition, immediate verbal notification pursuant to Subparagraph B.(1).(d). shall be reported to the Division's Environmental Bureau Chief. This notification shall provide the information required on Division Form C-141. [5-22-73 . 2-1-96; A, 3-15-97]

(2) **Timely written notification** is required to be reported pursuant to Paragraph B within fifteen (15) days to the Division District Office for the area within which the release takes place by completing and filing Division Form C-141. In addition, timely written notification required pursuant to Subparagraph B.(1).(d). shall also be reported to the Division's Environmental Bureau Chief within fifteen (15) days after the release is discovered. The written notification shall verify the prior verbal notification and provide any appropriate additions or corrections to the information contained in the prior verbal notification. [5-22-73...2-1-96; A, 3-15-97]

116.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 Rule 19 (19 NMAC 15.A. 19). [3-15-97]

"Sheeley, Paul" <PSheeley@state.nm.us>

01/12/2004 08:51 AM

To: "'CeeCee_Candler@eogresources.com'" <CeeCee_Candler@eogresources.com>

Subject: RE: Notification of Scheduled Sample Collection - EOG RHNU 606

Thanks,

Please proceed with your plans. I do not know if we will atttend.

PS

-----Original Message-----
From: CeeCee_Candler@eogresources.com
[mailto:CeeCee_Candler@eogresources.com]
Sent: Friday, January 09, 2004 1:55 PM
To: psheeley@state.nm.us
Cc: Dirk_Ellyson@eogresources.com
Subject: Notification of Scheduled Sample Collection - EOG RHNU 606

Paul:

EOG Resources plans to collect soil samples of the spill area at the EOG RHNU 606 Water Injection Station at approximately 10 AM on Tuesday, January 13, 2004. B&H Environmental will conduct field screening and develop a sample plan based on the results of the field screening.

Please let me know if you plan to be onsite during sample collection activities or if we need to re-schedule to accommodate your calendar. I can be reached by e-mail (ccandler@eogresources) or at 713-651-6446.

I cannot be present for sample collect next week but I will work with the EOG Pitchfork office and B&H Environmental to develop the sampling plan and remediation activities. A revised NMOCD Form C-141 and preliminary remediation plan will be forwarded by January 15, 2004 for your review and approval.

EOG New Mexico Contact:
Dirk Ellyson
(505) 390-2900
dellyson@eogresource.com

B&H Environmental Contact:
Gary Gee
(505) 631-8616
ggee@bhpipeline.com

Thanks,
CCC

ccandler@eogresources.com
(713) 651-6446 - Phone
(281) 633-1941 - Cell
(713) 651-6447 - Fax

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 18, 2003

EOG Resources, Inc., (EOG)
Attn: John Ellyson
POB 2267
Midland, TX 79702

Re: **Notice of Non-Compliance-Immediate Notification and Remediation Action Incomplete**
RHNU #606, UL-O, Sec. 6-T25S-R34E

Dear Mr. Ellyson,

The New Mexico Oil Conservation Division (OCD) environmental personnel inspected the facility referenced above on December 10, 2003 and determined that the remediation of the site and notification to the OCD were not performed in compliance with Rule 116.

Pursuant to OCD Rule 116: A major spill requires immediate notification and form C-141 *("Release Notification and Corrective Action")* must be submitted to the OCD district office within 15 days of the release. "Corrective Action" must be submitted and approved by the Division.

The OCD requires EOG to submit a remediation plan by January 15, 2004 that includes the following:

1. EOG shall submit a completed C-141 spill report for this spill and a copy of the all C-141 spill reports from the above referenced facility from 2001 to present.
2. EOG shall demonstrate that the remediation of the site is complete by determining the depth to groundwater for the site ranking criteria and submitting the typical analytical documentation.
3. EOG shall propose a soil remediation level demonstrating that any remaining chloride contamination will not cause an exceedance in the New Mexico Water Quality Control Commission (WQCC) groundwater standard of 250 mg/L.
4. EOG shall notify OCD, (preferably email) at least 48-hr before sampling and backfilling and include a statement of that notification in the closure proposal.

For guidance in this matter see: Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993, on the OCD website. If you have any questions or need assistance please write or call (505) 393-6161, x113 or email psheeley@state.nm.us

Sincerely,

Paul Sheeley - Environmental Engineer
Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
Bill Olson - Hydrologist
Larry Johnson - Environmental Engr.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

TO: Company/Operator EOG RHW-606
By: NMOCD Rep. Paul Sheeley
Date: 12-18-03

REJECT NOTICE

Please Note Your Attached C-141 Report(s) has been rejected because of the following reason(s):
Please make corrections and re-submit within 10 days unless otherwise allowed or marked for a longer time period.

✓ Wrong form: See proper form enclosed.

___ Incorrect or inaccurate information: See comments below.

___ "Initial" or "Final" box not marked.

✓ Missing Information: See comments below.

___ Wrong Operator! Operators are responsible to submit C-141 for all leaks & spills on their leases, pipelines and/or properties under their control.

✓ Improper Disposal of Oilfield Waste without NMOCD Approval:
___ Road spreading without NMOCD approval.
___ Landfarming without permit or NMOCD approval.
✓ Burying of Oilfield Waste without NMOCD Approval.
___ Offsite disposal without NMOCD Approval.
✓ Building roads, berms dykes with contaminated soils without NMOCD Approval.

___ Not Signed.

✓ NMOCD Cannot accept your C-141 as a "final" report at this time. Please do the following:
___ Submit a Site Corrective Action Plan for NMOCD approval within___ days.
✓ Please describe in detail what Clean-up Action was taken and area affected. If none taken explain why.
___ Please Describe in detail what Remediation action will be taken. If none planned please explain why.
___ Please describe what Remediation action will be taken? If none planned please explain why.
✓ Operator has indicated off-site disposal; please indicate where waste was disposed of.
✓ Was vertical extent of contamination checked? If Yes, please provide information. If No please provide explanation.
✓ Please provide vertical extent of contamination within 28 days. Please collect samples for one or more of the following: TPH X, BTEX X, Chloride X, Other___. Please provide a plot map of sample locations and depth sample was collected.

Comments:
missing info: Type of release, source, Dates
who notified who
email address
Lat + Long

Please re-submit C-141 or information requested and include a copy of this reject notice.

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

DENIED

State of New Mexico
Energy Minerals and Natural Resources

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

Pictures Coming

Form C-1
Revised March 17, 1

Submit 2 Copies to appropri
District Office in accordan
with Rule 116 on b
side of fo

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Repor

Name of Company EOG Resources, Inc.	Contact: Stan Wagner/Dirk Ellyson
Address PO Box 2267, Midland, TX 79702	Telephone No.: 432-686-3689
Facility Name RHNU 606	Facility Type: Water Injection Facility

Surface Owner BLM	Mineral Owner BLM	Lease No.: NM 30400

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	6	25S	34E	530'	South	1650'	East	Lea

NATURE OF RELEASE

Type of Release	Volume of Release 450-500 BBLS	Volume Recovered: 450-500 BBLS
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery: 11/22/ Early
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? 11/22/03 Early AM	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
Steel high pressure coated swage broke in pump discharge header causing spill. Replace swage with a coated high pressure nipple and instal high-pressure hose to eliminate vibration. Install aquator controlled valves to shut off source of water when pumps go down.

Describe Area Affected and Cleanup Action Taken.*
Water was contained on location. Vacuumed up water and pumped into tank.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground w surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of respons for compliance with any other federal, state, or local laws and/or regulations.

Signature: John F Ellyson	OIL CONSERVATION DIVISION
Printed Name: John F. Ellyson	Approved by District Supervisor:
Title: Senior Production Foreman	Approval Date: / Expiration Date:
Date: 12/2/03 Phone: 505-390-2900	Conditions of Approval: / Attached ☐

* Attach Additional Sheets If Necessary

BUREAU OF LAND MANAGEMENT
REPORT OF UNDESIRABLE EVENT (NTL-3A)

Operator: EOG Resources, Inc. Date/Time of Occurrence: 11/22/03 AM

Field/Unit Name: RHNU 606 Date/Time BLM Notified: _____

Location: Lea, County, New Mexico; ¼ ¼ Sec: 6, T. 25 S., R. 34 E.
530' FSL & 1650' FEL

Lease No. 30400, Surface Ownership: X Federal __ Indian __ Fee __ State
(Place an "X" to mark ownership.)

Type of Event: Oil Spill, Oil/Water Spill, Gas Venting, Toxic Fluid Spill, Saltwater Spill, Other Spill (Specify); Blowout, Fire, Injury, Fatality, Property Damage, Explosion: Spill- Mixture of fresh water and produced water.

Cause of Event: High pressure coated swage broke on pump discharge header.

10 minutes after leak was discovered Time Required To Control Event (hrs.)

Volumes Discharged or Consumed: 450-500 bbls contained on location

Volumes Recovered: 450-500 bbls.

Action Taken to Control Event/Resultant Damage/Clean-Up Procedures/Dates:
Vacuumed up water and pumped into tanks on 11/22/03. No damage. Replaced swage with a coated high-pressure nipple and installed high-pressure hose to eliminate vibration. Installed acuator controlled valves to shut off source of water when pumps go down.
Cause/Extent of Personnel Injury: None

Governmental Agencies Notified (Federal/State/Local):

General Remarks:

Signature: _____ Title: Senior Production Foreman Date: 12/2/03

FOR BLM USE ONLY

District/RA: _____ Event Classification (Class I, II, III):
Date Reported to Wyoming SO: _____ to WO:

Inspection Data: Onsite Insp. Date _____ Insp. Name
Insp. Type __ Insp. Hrs. __ Travel Hrs. __ Office Hrs.
Insp. No. __ Activity Code (SV or FA): __
Remarks

WY 3109-10 (June 1993)

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

April 22, 2004

EOG Resources, Inc., (EOG)
Attn: Cee Cee Candler, ccandler@eogresources.com
333 Clay St., Suite 4200
Houston, TX 7710-4362

Re: **Site Investigation Approval**
RHNU #606, UL-O, Sec. 6-T25S-R34E

Dear Ms. Candler,

The Spill Reports and Site Investigation referenced above and submitted to the New Mexico Oil Conservation Division (OCD) by B & H Environmental Services for EOG is **hereby approved.**

Please be advised that OCD approval of this plan does not relieve EOG of liability should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. In addition, OCD approval does not relieve EOG of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions or need assistance please write or call: (505) 393-6161, ext. 113, or e-mail: psheeeley@state.nm.us

Sincerely,

Paul Sheeley-Environmental Engineer
Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
William Olson - OCD Hydrologist
Larry Johnson - Environmental Engineer

eog resources

EOG Resources, Inc.
333 Clay Street, Suite 4200
Houston, Texas 77002

P.O. Box 4362
Houston, Texas 77210-4362

April 6, 2004

Mr. Paul Sheeley
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Notice of Non-Compliance
Immediate Notification and Remediation Action Incomplete
RHNU #606, UL-O Sec. 6-T25S-R34E
Lea County, New Mexico

Dear Mr. Sheeley,

As indicated in our January 12, 2004 reply to the New Mexico Oil Conservation Division (NMOCD) December 18, 2003 letter regarding the above referenced Notice of Non-Compliance, EOG Resources, Inc. (EOG) collected surface soil samples at the spill area on January 13, 2004. Field screening of the surface soil samples indicated chloride levels above 10,000 parts per million (ppm). Since B&H Environmental was not able to penetrate the caliche pad with a hand auger, EOG scheduled additional coring with a small drill rig to collect samples on February 5, 2004. As required, copies of pre-sampling notification to the NMOCD are attached. EOG's proposed risk-based closure is based on the results of analytical testing on samples collected January 13, 2004 and February 5, 2004.

Spill Delineation and Analytical Documentation

The RHNU 606 Water Injection Station is surrounded by a containment berm, which effectively contained the 500-barrel produced water release on November 22, 2003; thus, the horizontal extent of the spill area is confined to the caliche production pad. Samples to determine the vertical extent of the spill were collected on a five-point grid – one in each corner and one in the center of the production pad. A location plat identifying sample locations is attached.

None of the samples collected had a hydrocarbon odor and there was no visible hydrocarbon contamination in any of the samples. NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993) allows the use of field soil vapor headspace analysis to determine the total volatile organic vapor concentrations in lieu of laboratory analysis for benzene and benzene/toluene/ethylbenzene/xylene (BTEX) levels. Field screening with a Photolonization Detector (PID) did not encounter measurable hydrocarbons and EOG elects to substitute the PID measurement, which is less than 100 ppm, for benzene and BTEX laboratory analysis.

Sample Point No. 1, located in the northeast quadrant of the spill area, is the sample closest to the spill source. The 3-foot sample at this sample point was analyzed for Total Petroleum Hydrocarbon (TPH) concentrations using EPA Method Modified 8015. Analytical results indicate non-detectable concentrations of TPH, confirming the lack of hydrocarbon contamination as a result of the November 22, 2003 spill.

Field screening conducted on January 13, 2004 and February 5, 2004 determined chloride concentrations in mg/L (ppm) using a silver nitrate titration with a potassium chromate indicator. Chloride levels at the surface were approximately 11,000 ppm. Chloride concentration decreased rapidly with depth to concentrations less than 1,000 ppm at a depth of 2 – 3 feet, except at Sample Point No. 4, where chloride levels remained above 1,000 ppm to a depth of 5 feet. The deepest samples at each sample point were submitted to the laboratory for verification chloride analysis using EPA Method SW 846 9253. Laboratory analytical results verify the accuracy of field screening data. A summary of the analytical results is attached.

Depth to Groundwater

Produced water is injected at the RHNU 606 injection well in order to maintain pressure in the reservoir and enhance oil production. When produced water volumes are insufficient to maintain pressure, EOG relies on nearby water source wells to supplement water volumes on an emergency basis. The attached well record for EOG's closest water source well in Sec. 13 T25S R33E indicates the first water encountered is at 185 ft. Usable water was not encountered until 295 ft, 470 ft, and 598 ft. EOG's water well is completed in the water zone at approximately 600 ft. A second water source well, located in Sec. 32 T24S R34E, is also completed in the water zone at approximately 600 ft. Well records are not available for this second water well, which was drilled by an EOG predecessor company. A review of data on file with the New Mexico State Engineer Office, supports this estimated depth to shallowest groundwater of approximately 185 - 190 feet.

Site ranking criteria as described in NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* is summarized below.

Ranking Criteria	Ranking Score
Depth to Groundwater	
> 100 feet	0
Well Head Protection Area	
>1000 feet from water source	0
>200 feet from private domestic water source	0
Distance to Surface Water Body	
>1000 horizontal feet	0
Total Score:	0

Proposed Soil Remediation Level

Field PID screening for headspace vapors, laboratory analytical data and knowledge of the produced water chemical composition confirm there is no hydrocarbon contamination at the

RHNU 606 Water Injection Station; therefore, EOG proposes no remediation activities for hydrocarbon-contaminated soils.

Field screening and laboratory analytical data show elevated chloride levels (approximately 11,000 ppm) on the RHNU 606 production pad surface. Chloride levels decrease rapidly with depth to a concentration less than 1,000 ppm at a depth of 2 – 3 ft. Chloride contamination extends to a depth of 5 ft ± at Sample Point No. 4 in the southwest quadrant of the production pad. A copy of the Site Investigation Report prepared by B&H Environmental is attached.

Initial response to the produced water spill included removal of the water with a vacuum truck and then blending of the contaminated materials. Buried flowlines on location prevent extensive blending of the caliche surface. The produced water spill naturally collected in the low point on the production pad, which is the southwest corner. Also, since less surface equipment is located in the southwest quadrant of the production pad, this area was used for staging of vacuum trucks and remediation equipment and was the last area to be remediated. This short delay in removal of the spilled material may be the cause of the increased depth of chloride contamination.

Site ranking criteria in the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* indicates this site presents no risk to public health, fresh waters, animal or plant life, or the environment and does not interfere with the public welfare or use of the property. Vertical and horizontal extent of chloride contamination is limited and local groundwater sources are relatively deep. Based on site ranking criteria, EOG proposes to leave the chloride-contaminated material in place. The following considerations support the risk-based proposal to leave contaminated material in place:

- surface water is not endangered since the entire RHNU 606 Water Injection Station is diked;
- chloride contamination is confined to the top few feet of surface material and surface material on the production pad is caliche rather than native soil;
- although not as effective as gypsum, caliche will serve as a binding agent thus inhibiting movement of the contamination;
- the dramatic drop in chloride levels from 1 to 3 feet of depth and the 185-foot depth to groundwater indicate the potential for remaining chloride contamination to cause an exceedance in the New Mexico Water Quality Control Commission groundwater standard of 250 mg/L is negligible;
- although arid conditions reduce the potential for dilution of the chloride contamination, arid conditions also limit or restrict the movement of chlorides; and
- removal and replacement or aggressive on-site blending of the production pad surface would create additional risk to the environment due to the presence of buried in-service flowlines.

EOG requests concurrence from the NMOCD to leave chloride contaminated material in place. Please call me at 713-651-6446 if you have any questions or need additional information.

Sincerely,

Cee Cee Candler
Sr. Environmental Specialist

cc: Dirk Ellyson – EOG Pitchfork
Jerry Ball – EOG Midland

Attachments:
Pre-Sampling NMOCD Notifications
Location Plat
Summary of Analytical Data
Water Well Record
Site Investigation Report (prepared by B&H Environmental)

File: Environmental / Midland Division / Red Hills North 606 Injection Station
CERTIFIED MIAL: 70011140000432112564

eog resources

EOG Resources, Inc. P.O. Box 4362 Houston, TX 77210-4362

TO:	Paul Sheeley	FROM:	Cee Cee Candler
COMPANY:	NMOCD	DEPT:	Environmental, Health, & Safety
FAX #:	**505-393-0720**	PHONE#:	**713 651-6446**
		FAX #:	**713 651-6447**

TOTAL NUMBER OF PAGES (including this page) 9 DATE: April 15, 2004

If you do not receive this transmission in its entirety, please call Cee Cee Candler at 713-651-6446 .

Paul:

Please find attached EOG's 1/12/04 response to the NMOCD Notice of Non-Compliance at the Re Hills North Unit #606 Injection Station. I will forward a copy by mail as well.

Please call if you have any questions or need additional information.

Thanks,
CCC

Energy **Opportunity** **Growth**

eog resources

EOG Resources, Inc.
333 Clay Street, Suite 4200
Houston, Texas 77002

P.O. Box 4362
Houston, Texas 77210-4362

January 12, 2004

Mr. Paul Sheeley
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Notice of Non-Compliance
Immediate Notification and Remediation Action Incomplete
RHNU #606, UL-O Sec. 6-T25S-R34E
Lea County, New Mexico

Dear Mr. Sheeley,

In response to the New Mexico Oil Conservation Division (NMOCD) December 18, 2003 letter regarding the above referenced Notice of Non-Compliance, EOG Resources, Inc. (EOG) submits for review and approval the information requested by the NMOCD.

NMOCD Form C-141

On November 22, 2003, approximately 500 barrels (bbls) of produced water was release at the EOG RHNU 606 Water Injection Station. The spill was contained and the produced water was vacuumed up and returned to the produced water storage tanks on the location. Written spill notification was submitted to the NMOCD district office within 15 days as required by Rule 116. Immediate verbal notification was not provided because the volume of produced water not recovered was less than 25 bbls. Initial corrective action consisted of blending and raking the spill area to enhance natural onsite bioremediation. Some material from the spill area was used to reinforce a tank battery firewall. Contaminated material was not used for road spreading and no contaminated material was buried or removed for offsite disposal. Confirmatory sampling will delineate the vertical and horizontal scope of the spill area.

The attached Form C-141 has been revised to include information that was missing on the rejected Form C-141 submitted by EOG on December 2, 2003.

The NMOCD also requested copies of all Form C-141 spill reports for the EOG RHNU 606 Water Injection Facility since 2001. There are no additional Form C-141 spill reports for this facility and EOG is not aware of any reportable spills at this facility since 2001.

Depth to Groundwater and Analytical Documentation

Based on data on file with the New Mexico State Engineer Office, depth to groundwater is estimated to be approximately 190 feet. Site ranking criteria as described in NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993) is summarized below.

Ranking Criteria	Ranking Score
Depth to Groundwater	
> 100 feet	0
Well Head Protection Area	
>1000 feet from water source	
>200 feet from private domestic water source	0
Distance to Surface Water Body	
>1000 horizontal feet	0
Total Score:	0

Soil samples will be collected from the spill area by B&H Environmental and analyzed for total hydrocarbon and chloride content. B&H Environmental will conduct a field soil vapor headspace measurement and soil samples will be analyzed for BTEX if warranted based on the results of the field test.

Proposed Soil Remediation Level

EOG will determine if further remediation is necessary based on the results of the field and laboratory analytical results. EOG does not anticipate extensive additional remediation will be required due to the limited vertical extent of the contamination and lack of hydrocarbons in the produced water. Likewise, EOG will evaluate laboratory analytical data and the depth to groundwater to determine the potential for remaining chloride contamination to cause an exceedance in the New Mexico Water Quality Control Commission groundwater standard of 250 mg/L.

Sampling Notification

B&H Environmental will collect soil samples at the spill area the week of January 12, 2004. The NMOCD will be notified of the exact date and time via e-mail at least 48 hours prior to sample collection.

Please call me at 713-651-6446 if you have any questions or need additional information.

Sincerely,

Cee Cee Candler
Sr. Environmental Specialist

cc: Dirk Ellyson – EOG Pitchfork
Jerry Ball – EOG Midland

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

Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **EOG Resources, Inc.**	Contact **Stan Wagner / Dirk Ellyson**
Address **P. O. Box 2267, Midland, TX 79702**	Telephone No. **432-686-3689 – 505-390-2900**
Facility Name **RHNU 606**	Facility Type **Water Injection Faciltiy**

Surface Owner **BLM**	Mineral Owner **BLM**	Lease No. **NM 30400**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	**6**	**25S**	**34E**	**530'**	**South**	**1650'**	**East**	**Lea**

Latitude 32° 09' 14" N **Longitude** 103° 30' 21" W

NATURE OF RELEASE

Type of Release **Produced water spill**	Volume of Release **450-500 bbl**	Volume Recovered **450-500 bbl**
Source of Release **Discharge pump on produced water tank**	Date and Hour of Occurrence **11/22/2003 Early AM**	Date and Hour of Discovery **11/22/2003 6AM**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **None**	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
Steel high pressure coated swage broke in pump discharge header causing spill. Replaced swage with a coated high pressure nipple and installed high-pressure hose to eliminate vibration. Installed actuator controlled valves to shut off source of water when pumps go down.

Describe Area Affected and Cleanup Action Taken.*
Water contained. Vacuumed up and pumped into produced water tanks on location. Spill area blended and raked to enhance natural onsite bioremediation. Some material from the spill area was used to reinforce the tank battery firewall. Contaminated material was not used for road spreading and no contaminated material was buried or removed for offsite disposal. Confirmatory sampling scheduled for 1/13/04 will delineate the vertical extent of the spill.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Cee Cee Candler	OIL CONSERVATION DIVISION	
Printed Name: **Cee Cee Candler**	Approved by District Supervisor:	
Title: **Senior Environmental Specialist**	Approval Date:	Expiration Date:
E-mail Address: **ccandler@eogreesources.com**	Conditions of Approval:	Attached ☐
Date: **January 12, 2004** Phone: **713-651-6446**		

* Attach Additional Sheets If Necessary

eog resources

EOG Resources, Inc. P.O. Box 4362 Houston, TX 77210-4362

TO: Paul Sheeley FROM: Cee Cee Candler

COMPANY: NMOCD DEPT: Environmental, Health, & Safety

FAX #: **505-393-0720** PHONE#: **713 651-6446**

FAX #: **713 651-6447**

TOTAL NUMBER OF PAGES (including this page) 3 DATE: April 15, 2004

If you do not receive this transmission in its entirety, please call Cee Cee Candler at 713-651-6446 .

RE: Red Hills North Unit #606 Water Injection Station
Notice of Non-Compliance

Paul:

In our conversation this morning you mentioned BLM spill notification requirements. As soon as I became aware of the spill, I asked our field operations staff to notify the NMOCD and the BLM. A report was submitted to the BLM the same time we submitted our initial notification to NMOCD. A copy is attached for your files.

Please call if you have any questions or need additional information.

Thanks,
CCC

Energy **Opportunity** **Growth**

BUREAU OF LAND MANAGEMENT
REPORT OF UNDESIRABLE EVENT (NTL-3A)

Operator: EOG Resources, Inc. Date/Time of Occurrence: 11/22/03 AM

Field/Unit Name: RHNU 606 Date/Time BLM Notified: _____

Location: Lea, County, New Mexico; ¼ ¼ Sec: 6, T. 25 S., R. 34 E.
530' FSL & 1650' FEL

Lease No. 30400, Surface Ownership: X Federal __ Indian __ Fee __ State
(Place an "X" to mark ownership.)

Type of Event: Oil Spill, Oil/Water Spill, Gas Venting, Toxic Fluid Spill, Saltwater Spill, Other Spill (Specify); Blowout, Fire, Injury, Fatality, Property Damage, Explosion: Spill- Mixture of fresh water and produced water.

Cause of Event: High pressure coated swage broke on pump discharge header.

10 minutes after leak was discovered Time Required To Control Event (hrs.)

Volumes Discharged or Consumed: 450-500 bbls contained on location

Volumes Recovered: 450-500 bbls.

Action Taken to Control Event/Resultant Damage/Clean-Up Procedures/Dates:
Vacuumed up water and pumped into tanks on 11/22/03. No damage. Replaced swage with a coated high-pressure nipple and installed high-pressure hose to eliminate vibration. Installed acuator controlled valves to shut off source of water when pumps go down.
Cause/Extent of Personnel Injury: None

Governmental Agencies Notified (Federal/State/Local):

General Remarks:

Signature: _____ Title: Senior Production Foreman Date: 12/2/03

FOR BLM USE ONLY

District/RA: _____ Event Classification (Class I, II, III):
Date Reported to Wyoming SO: _____ to WO:

Inspection Data: Onsite Insp. Date _____ Insp. Name
Insp. Type __ Insp. Hrs. __ Travel Hrs. __ Office Hrs.
Insp. No. __ Activity Code (SV or FA): __
Remarks

WY 3109-10 (June 1993)

TRANSACTION REPORT

Apr-15-04 Thu 12:34 PM

Type	Receiving				
Date	Start	Sender	TX/RX Time	Pages	Note
Apr-15	12:32 PM		59s	3	OK

Cee Cee Candler
01/29/2004 10:13 AM

To: psheeley@state.nm.us
Subject: Notification of Scheduled Sample Collection - EOG RHNU 606

Paul:

Based on the results of field screening conducted by B&H Environmental on January 13, 2004, EOG Resources plans to collect additional samples of the spill area at the EOG RHNU 606 Water Injection Station on Tuesday, February 3, 2004. Since B&H Environmental was not able to penetrate the caliche pad during the initial field screening, EOG plans to use a drill rig to core through the production pad and collect samples at one foot intervals to determine the vertical extent of contamination.

I will be present for sample collection on Tuesday and will continue to work with the EOG Pitchfork office and B&H Environmental to develop the sampling plan and implement remediation activities.

EOG New Mexico Contact:
Dirk Ellyson
(505) 390-2900
dellyson@eogresource.com

B&H Environmental Contact:
Gary Gee
(505) 631-8616
ggee@bhpipeline.com

Thanks,
CCC

ccandler@eogresources.com
(713) 651-6446 - Phone
(281) 633-1941 - Cell
(713) 651-6447 - Fax

Cee Cee Candler
01/09/2004 02:54 PM

To: psheeley@state.nm.us
Subject: Notification of Scheduled Sample Collection - EOG RHNU 606

Paul:

EOG Resources plans to collect soil samples of the spill area at the EOG RHNU 606 Water Injection Station at approximately 10 AM on Tuesday, January 13, 2004. B&H Environmental will conduct field screening and develop a sample plan based on the results of the field screening.

Please let me know if you plan to be onsite during sample collection activities or if we need to re-schedule to accommodate your calendar. I can be reached by e-mail (ccandler@eogresources) or at 713-651-6446.

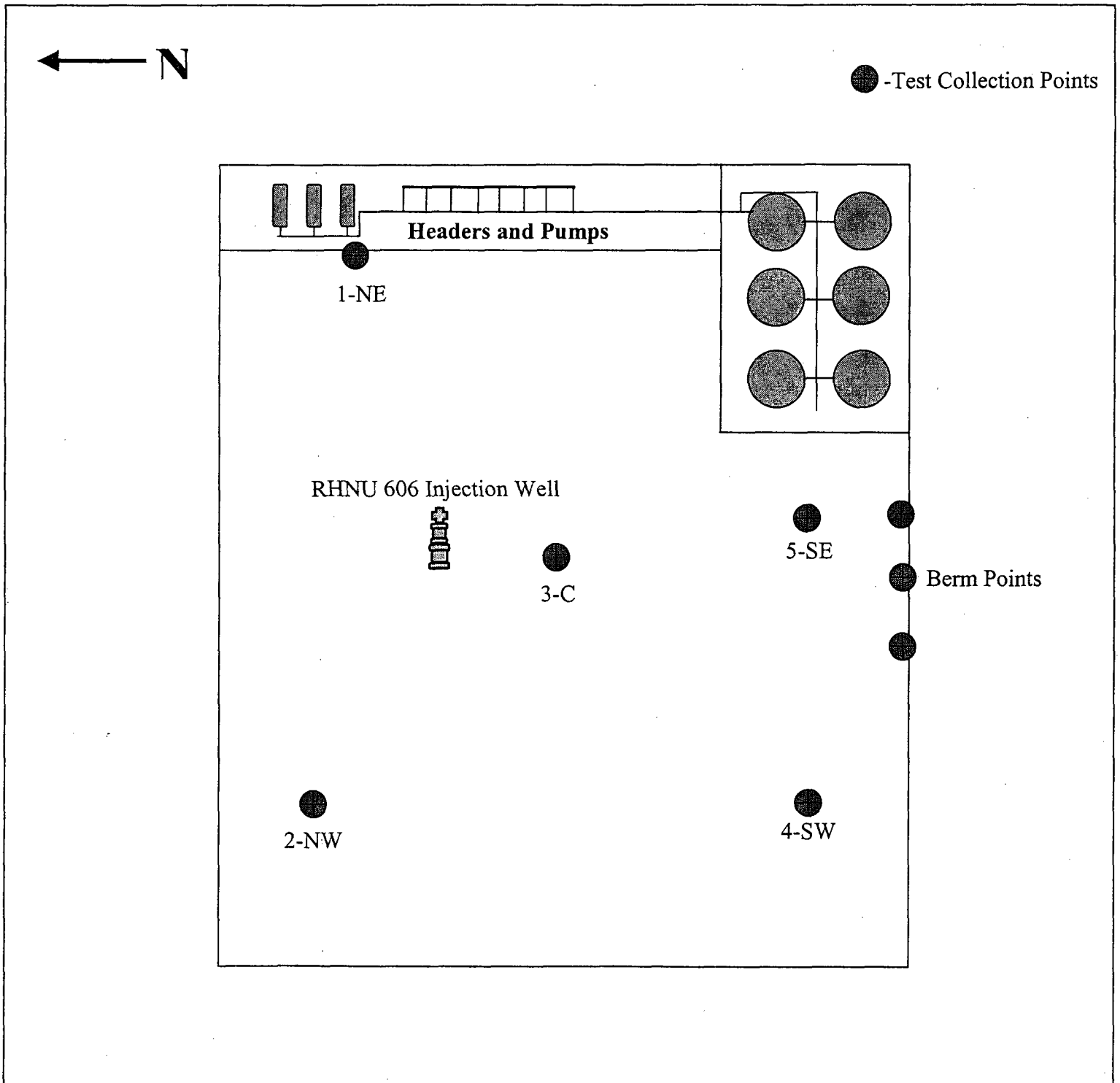
I cannot be present for sample collect next week but I will work with the EOG Pitchfork office and B&H Environmental to develop the sampling plan and remediation activities. A revised NMOCD Form C-141 and preliminary remediation plan will be forwarded by January 15, 2004 for your review and approval.

EOG New Mexico Contact:
Dirk Ellyson
(505) 390-2900
dellyson@eogresource.com

B&H Environmental Contact:
Gary Gee
(505) 631-8616
ggee@bhpipeline.com

Thanks,
CCC

ccandler@eogresources.com
(713) 651-6446 - Phone
(281) 633-1941 - Cell
(713) 651-6447 - Fax



Company: **EOG Resources** **P.O. Box 3229** **Carlsbad, New Mexico 88260**	**Project:** **RHNU 606 Water Injection Facility** **32° 09'13" N – 103° 30'21" W** **Lea County, New Mexico**	**B & H Environmental Services** **2858 Steven Road** **Odessa, Texas 79764** **915-550-8210**

EOG Resources, Inc.

Red Hills North Unit 606 Water Injection Station
Sec. 6-T25S-R34E in Lea County, New Mexico

ID	Location Description	Sample Date	Depth	Test Method	Chloride Concentration
1	NE quadrant of location	01-13-2004	0.8 ft	Field Screening	11,160 ppm
		02-05-2004	1.0 ft	Field Screening	11,000 ppm
		02-05-2004	3.0 ft	Field Screening	890 ppm
		02-05-2004	3.0 ft	Method 300	1490 ppm
2	NW quadrant of location	01-13-2004	0.8 ft	Field Screening	11,000 ppm
		02-05-2004	1.0 ft	Field Screening	7,340 ppm
		02-05-2004	3.0 ft	Field Screening	650 ppm
		02-05-2004		Method 300	638 ppm
3	Center of location	01-13-2004	0.8 ft	Field Screening	10,270 ppm
		02-05-2004	1.0 ft	Field Screening	2,060 ppm
		02-05-2004	2.0 ft	Field Screening	300 ppm
		02-05-2004	2.0 ft	Method 300	340 ppm
4	SW quadrant of location	01-13-2004	0.8 ft	Field Screening	11,329 ppm
		02-05-2004	1.0 ft	Field Screening	3,340 ppm
		02-05-2004	3.0 ft	Field Screening	1,320 ppm
		02-05-2004	4.0 ft	Field Screening	1,640 ppm
		02-05-2004	5.0 ft	Field Screening	1,325 ppm
		02-05-2004	7.0 ft	Field Screening	230 ppm
		02-05-2004	7.0 ft	Method 300	255 ppm
5	SE quadrant of location	01-13-2004	0.8 ft	Field Screening	11,080 ppm
		02-05-2004	1.0 ft	Field Screening	1,240 ppm
		02-05-2004	3.0 ft	Field Screening	410 ppm
		02-05-2004	3.0 ft	Method 300	638 ppm
		Berm	0.3 ft	Field Screening	26,270 ppm
1	Sample closest to spill source	02-05-2004	3.0 ft	Method 8015 TPH (C_6-C_{35})	ND ppm

B&H Environmental Services
Maintenance and Construction
2858 Steven Road Odessa, Texas 79764
432-550-8210

EOG Resources, Inc.
Midland Division
RHNU 606 Water Injection Facility
Unit O, Sec.6, T25S, R34E
530' FSL & 1650' FEL
Lea County, New Mexico

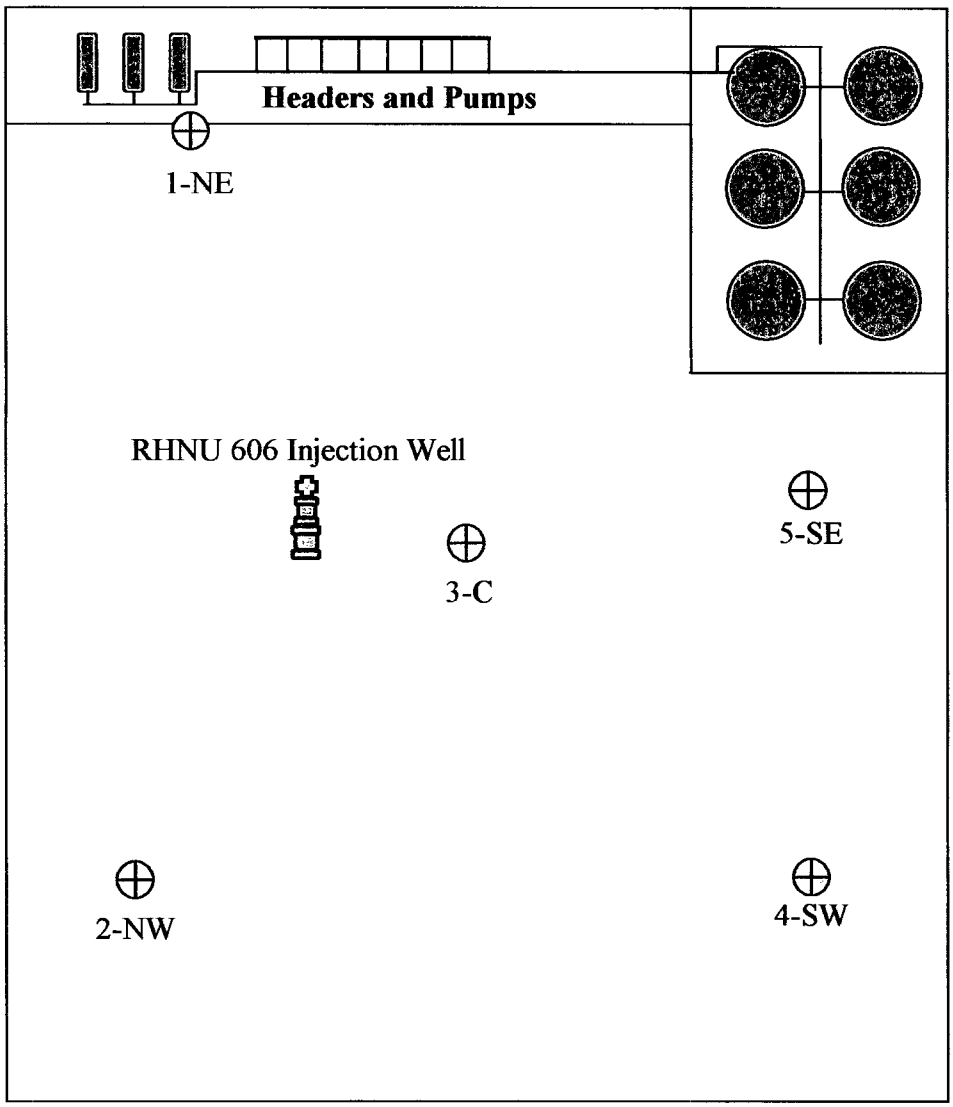
Subject: Produced Water Spill Chloride Investigation Summary

On February 5, 2004, B&H conducted a site investigation in regards to a produced water spill that occurred within the confines of the bermed location. B&H utilized a hollow stem auger drilling rig to soil bore the location and collect soil samples for chloride analysis. The location was soil bored and sampled in a manner to establish a representative analysis of the spill-affected area as determined by EOG Resources representative CeeCee Candler and B&H representative Derek Robinson. The soil samples were analyzed onsite for chlorides at approximately every foot in depth with bottom samples, collected from every soil boring, submitted to an independent laboratory for confirmation analysis. A sample collected from the soil boring that was near the leak source was analyzed for gasoline and diesel range petroleum hydrocarbons by EPA method 8015(m) to ensure that no contamination by these petroleum hydrocarbons exist.

Stacy S. Stribling
Environmental Specialist

← N

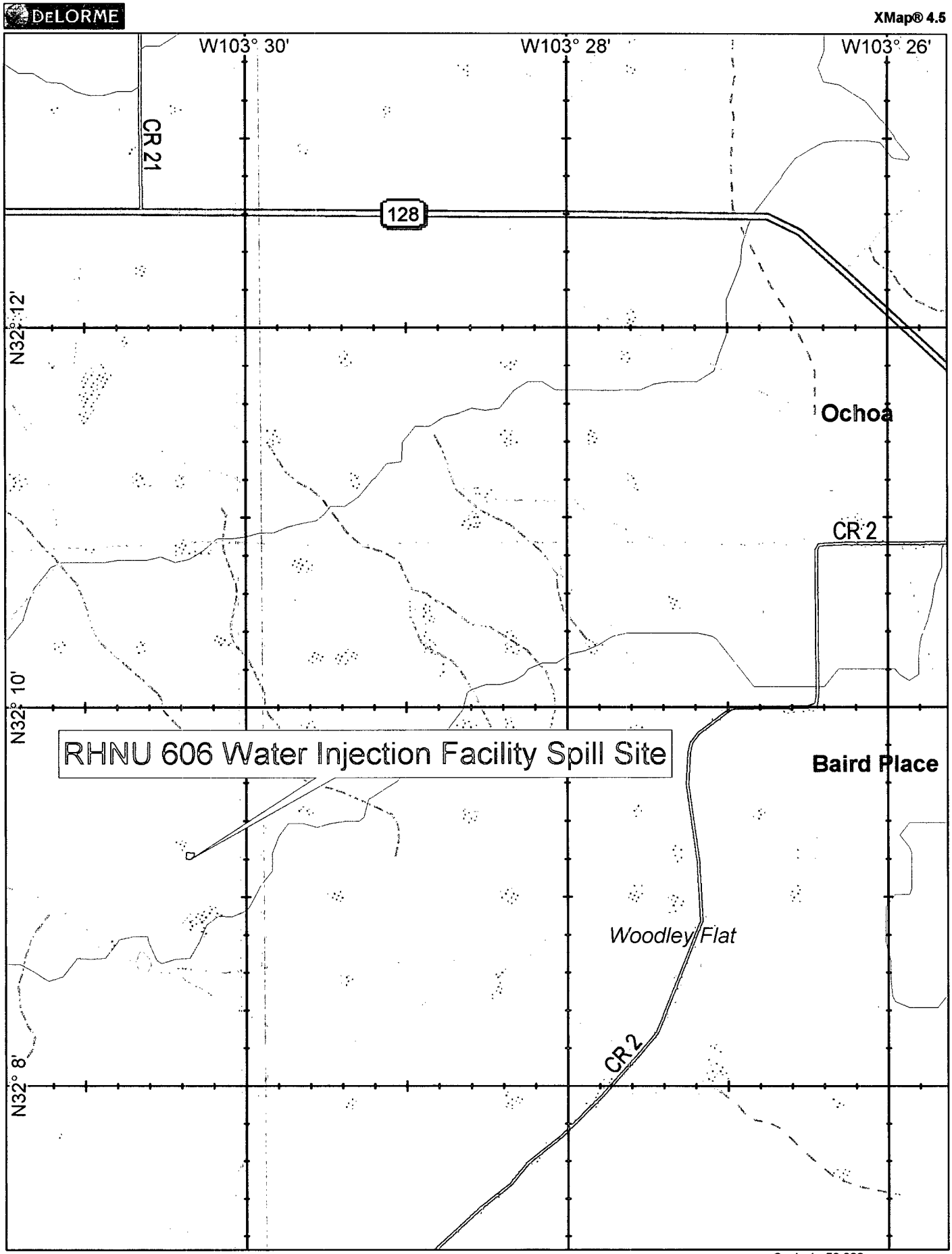
⊕ -Test Collection Points



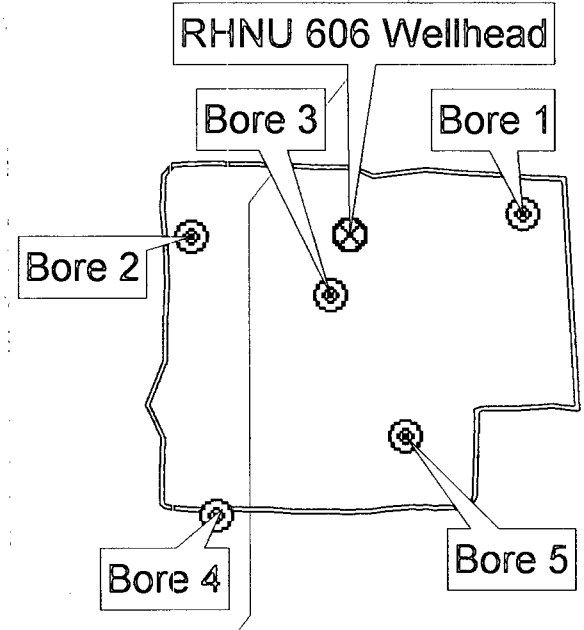
Field Chloride Analysis

Sample Point	Sample Depth	Sample Analysis
1-NE	3'	890 ppm
2-NW	3'	650 ppm
3-Center	2'	300 ppm
4-SW	7'	230 ppm
5-SE	3'	410 ppm

Company: **EOG Resources** **P.O. Box 3229** **Carlsbad, New Mexico 88260**	Project: **RHNU 606 Water Injection Facility** **32° 09'13" N – 103° 30'21" W** **Lea County, New Mexico**	B & H Environmental Services **2858 Steven Road** **Odessa, Texas 79764** **432-550-8210**


DeLORME
XMap® 4.5
W103° 30'
W103° 28'
W103° 26'
CR 21
128
N32° 12'
Ochoa
CR 2
N32° 10'
RHNU 606 Water Injection Facility Spill Site
Baird Place
Woodley Flat
CR 2
N32° 8'
Data use subject to license.
© 2004 DeLorme. XMap® 4.5.
www.delorme.com
TN
MN (8.6°E)
Scale 1 : 50,000
1" = 4,166.7 ft
Data Zoom 11-0

RHNU 606 Water Injection Facility Site Investigation



TN
MN (8.6°E)

Scale 1 : 1,600
0 40 80 120 160 200 ft
0 14 28 42 58 70 m
1" = 133.3 ft Data Zoom 16-0

B&H ENVIRONMENTAL SERVICES
2858 STEVEN ROAD ODESSA, TEXAS 79764 432-550-8210

ANALYTICAL REPORT FORM

CLIENT: EOG Resources Company

SITE: RHNU 606 Water Injection Facility Produced Water Spill

ANALYST: Derek Robinson **ANALYZER I.D.#** CTK01

SAMPLE ID	SAMPLE DATE	DEPTH	CHLORIDE	SAMPLE NOTE
TP1	2/5/04	1'	11,000ppm	
TP1	2/5/04	3'	890ppm	
TP2	2/5/04	1'	2060ppm	
TP2	2/5/04	3'	650ppm	
TP3	2/5/04	1'	2060ppm	
TP3	2/5/04	2'	300ppm	
TP4	2/5/04	1'	3340ppm	
TP4	2/5/04	3'	1320ppm	
TP4	2/5/04	4'	1640ppm	
TP4	2/5/04	5'	1325ppm	
TP4	2/5/04	7'	230ppm	
TP5	2/5/04	1'	1240ppm	
TP5	2/5/04	3'	410ppm	

ANALYST NOTES:

B&H ENVIRONMENTAL SERVICES
2858 STEVEN ROAD ODESSA, TEXAS 79764 432-550-8210

ANALYTICAL REPORT FORM

CLIENT: EOG Resources Company

SITE: RHNU 606 Water Injection Facility Produced Water Spill

ANALYST: Stacy Stribling **ANALYZER I.D.#** PID01

SAMPLE ID	SAMPLE DATE	DEPTH	VOC/ppm	SAMPLE NOTE
TP1	1/13/04	1'	0.00	Taken close to source

ANALYST NOTES:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Derek Robinson

B & H Maintenance & Construction

2858 Steven Road

Odessa, TX 79764

Project: EOG

Project Number: None Given

Location: RHNU Injection

Lab Order Number: 4B11007

Report Date: 02/12/04

B & H Maintenance & Construction	Project: EOG	Fax: (432) 368-4031
2858 Steven Road	Project Number: None Given	**Reported:**
Odessa TX, 79764	Project Manager: Derek Robinson	02/13/04 12:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP 1 @ 3'	4B11007-01	Soil	02/05/04 00:00	02/11/04 11:07
TP 2 @ 3'	4B11007-02	Soil	02/05/04 00:00	02/11/04 11:07
TP 3 @ 2'	4B11007-03	Soil	02/05/04 00:00	02/11/04 11:07
TP 4 @ 7'	4B11007-04	Soil	02/05/04 00:00	02/11/04 11:07
TP 5 @ 3'	4B11007-05	Soil	02/05/04 00:00	02/11/04 11:07

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

B & H Maintenance & Construction	Project: EOG	Fax: (432) 368-4031
2858 Steven Road	Project Number: None Given	**Reported:**
Odessa TX, 79764	Project Manager: Derek Robinson	02/12/04 11:28

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TP 1 @ 3' (4B11007-01)									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EB41102	02/11/04	02/12/04	EPA 8015M	
Diesel Range Organics >C12-C35	J [5.74]	10.0	"	"	"	"	"	"	J
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*89.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*89.2 %*	*70-130*		"	"	"	"	

B & H Maintenance & Construction	Project: EOG	Fax: (432) 368-4031
2858 Steven Road	Project Number: None Given	**Reported:**
Odessa TX, 79764	Project Manager: Derek Robinson	02/12/04 11:28

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TP 1 @ 3' (4B11007-01)									
Chloride	**1490**	20.0	mg/kg Wet	2	EB41103	02/11/04	02/11/04	SW 846 9253	
% Solids	**93.0**		%	1	EB41202	02/12/04	02/12/04	% calculation	
TP 2 @ 3' (4B11007-02)									
Chloride	**638**	20.0	mg/kg Wet	2	EB41103	02/11/04	02/11/04	SW 846 9253	
TP 3 @ 2' (4B11007-03)									
Chloride	**340**	20.0	mg/kg Wet	2	EB41103	02/11/04	02/11/04	SW 846 9253	
TP 4 @ 7' (4B11007-04)									
Chloride	**255**	20.0	mg/kg Wet	2	EB41103	02/11/04	02/11/04	SW 846 9253	
TP 5 @ 3' (4B11007-05)									
Chloride	**638**	20.0	mg/kg Wet	2	EB41103	02/11/04	02/11/04	SW 846 9253	

Quality Assurance Review

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB41102 - 8015M										
Blank (EB41102-BLK1)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*35.2*		*mg/kg*	*50.0*		*70.4*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.5*		*"*	*50.0*		*73.0*	*70-130*			
Blank (EB41102-BLK2)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*36.0*		*mg/kg*	*50.0*		*72.0*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.7*		*"*	*50.0*		*73.4*	*70-130*			
LCS (EB41102-BS1)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	443	10.0	mg/kg wet	500		88.6	75-125			
Diesel Range Organics >C12-C35	457	10.0	"	500		91.4	75-125			
Total Hydrocarbon C6-C35	900	10.0	"	1000		90.0	75-125			
Surrogate: 1-Chlorooctane	*44.9*		*mg/kg*	*50.0*		*89.8*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.2*		*"*	*50.0*		*72.4*	*70-130*			
LCS (EB41102-BS2)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	461	10.0	mg/kg wet	500		92.2	75-125			
Diesel Range Organics >C12-C35	438	10.0	"	500		87.6	75-125			
Total Hydrocarbon C6-C35	899	10.0	"	1000		89.9	75-125			
Surrogate: 1-Chlorooctane	*44.8*		*mg/kg*	*50.0*		*89.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*35.6*		*"*	*50.0*		*71.2*	*70-130*			
Calibration Check (EB41102-CCV1)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	516		mg/kg	500		103	80-120			
Diesel Range Organics >C12-C35	497		"	500		99.4	80-120			
Total Hydrocarbon C6-C35	1010		"	1000		101	80-120			
Surrogate: 1-Chlorooctane	*55.0*		*"*	*50.0*		*110*	*70-130*			
Surrogate: 1-Chlorooctadecane	*51.7*		*"*	*50.0*		*103*	*70-130*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB41102 - 8015M										
Calibration Check (EB41102-CCV2)				Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	524		mg/kg	500		105	80-120			
Diesel Range Organics >C12-C35	539		"	500		108	80-120			
Total Hydrocarbon C6-C35	1060		"	1000		106	80-120			
Surrogate: 1-Chlorooctane	*54.8*		*"*	*50.0*		*110*	*70-130*			
Surrogate: 1-Chlorooctadecane	*46.1*		*"*	*50.0*		*92.2*	*70-130*			
Matrix Spike (EB41102-MS1)		**Source: 4B11002-01**		Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	591	10.0	mg/kg dry	543	ND	109	75-125			
Diesel Range Organics >C12-C35	552	10.0	"	543	ND	102	75-125			
Total Hydrocarbon C6-C35	1140	10.0	"	1090	ND	105	75-125			
Surrogate: 1-Chlorooctane	*59.6*		*mg/kg*	*50.0*		*119*	*70-130*			
Surrogate: 1-Chlorooctadecane	*52.7*		*"*	*50.0*		*105*	*70-130*			
Matrix Spike (EB41102-MS2)		**Source: 4B11003-07**		Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	571	10.0	mg/kg dry	543	ND	105	75-125			
Diesel Range Organics >C12-C35	551	10.0	"	543	ND	101	75-125			
Total Hydrocarbon C6-C35	1120	10.0	"	1090	ND	103	75-125			
Surrogate: 1-Chlorooctane	*58.4*		*mg/kg*	*50.0*		*117*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.9*		*"*	*50.0*		*97.8*	*70-130*			
Matrix Spike Dup (EB41102-MSD1)		**Source: 4B11002-01**		Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	567	10.0	mg/kg dry	543	ND	104	75-125	4.15	20	
Diesel Range Organics >C12-C35	524	10.0	"	543	ND	96.5	75-125	5.20	20	
Total Hydrocarbon C6-C35	1090	10.0	"	1090	ND	100	75-125	4.48	20	
Surrogate: 1-Chlorooctane	*57.0*		*mg/kg*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.0*		*"*	*50.0*		*96.0*	*70-130*			
Matrix Spike Dup (EB41102-MSD2)		**Source: 4B11003-07**		Prepared & Analyzed: 02/11/04						
Gasoline Range Organics C6-C12	563	10.0	mg/kg dry	543	ND	104	75-125	1.41	20	
Diesel Range Organics >C12-C35	569	10.0	"	543	ND	105	75-125	3.21	20	
Total Hydrocarbon C6-C35	1130	10.0	"	1090	ND	104	75-125	0.889	20	
Surrogate: 1-Chlorooctane	*58.7*		*mg/kg*	*50.0*		*117*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.0*		*"*	*50.0*		*96.0*	*70-130*			

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB41103 - General Preparation (WetChem)										
Blank (EB41103-BLK1)				Prepared & Analyzed: 02/11/04						
Chloride	ND	20.0	mg/kg Wet							
Blank (EB41103-BLK2)				Prepared & Analyzed: 02/11/04						
Chloride	ND	20.0	mg/kg Wet							
Calibration Check (EB41103-CCV1)				Prepared & Analyzed: 02/11/04						
Chloride	4570		mg/kg	5000		91.4	80-120			
Calibration Check (EB41103-CCV2)				Prepared & Analyzed: 02/11/04						
Chloride	4360		mg/kg	5000		87.2	80-120			
Matrix Spike (EB41103-MS1)		**Source: 4B11002-01**		Prepared & Analyzed: 02/11/04						
Chloride	3190	20.0	mg/kg Wet	500	2760	86.0	80-120			
Matrix Spike (EB41103-MS2)		**Source: 4B11003-07**		Prepared & Analyzed: 02/11/04						
Chloride	4890	20.0	mg/kg Wet	500	4470	84.0	80-120			
Matrix Spike Dup (EB41103-MSD1)		**Source: 4B11002-01**		Prepared & Analyzed: 02/11/04						
Chloride	3190	20.0	mg/kg Wet	500	2760	86.0	80-120	0.00	20	
Matrix Spike Dup (EB41103-MSD2)		**Source: 4B11003-07**		Prepared & Analyzed: 02/11/04						
Chloride	4890	20.0	mg/kg Wet	500	4470	84.0	80-120	0.00	20	
Batch EB41202 - % Solids										
Blank (EB41202-BLK1)				Prepared & Analyzed: 02/12/04						
% Solids	100		%							

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB41202 - % Solids										
Duplicate (EB41202-DUP1)		**Source: 4B11002-01**		Prepared & Analyzed: 02/12/04						
% Solids	92.0		%		92.0			0.00	20	

Notes and Definitions

J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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

Project Manager: Derek Robinson
Company Name: B+H Environmental
Company Address: 2858 Steven Rd
City/State/Zip: Odessa, Texas 79764
Telephone No: _____ Fax No: _____
Sampler Signature: Derek Robinson

Project Name: EOG
Project #: _____
Project Loc: RHNU Injection
PO #: _____

4811007

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers 4oz. glass	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP: TPH: 418.1 / 8015M 1005 1006	TOTAL: Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, CO_3, HCO_3)	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-Schedule)	Standard TAT
-01	TP1 @ 3'	2-5-04		1	✓									✓		✓		✓									
-02	TP 2 @ 3'	"		1	✓									✓				✓									
-03	TP 3 @ 2'	"		1	✓									✓				✓									
-04	TP 4 @ 7'	"		1	✓									✓				✓									
-05	TP 5 @ 3'	"		1	✓									✓				✓									

Special Instructions:
Send results to Stacy Stribling

Sample Containers Intact? Y N
Temperature Upon Receipt: 1.0°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
Derek Robinson	2-11-04	11:07AM			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jessa McMurrey	02-11-04	1107