UIC-I - 9

GENERAL CORRESPONDENCE

YEAR(S):

2002 → 1972

Price, Wayne

From: Price, Wayne
Sent: Tuesday, April 09, 2002 11:14 AM
To: 'dpavlich@giant.com'
Cc: Foust, Denny; Perrin, Charlie
Subject: Giant Class I Well-Bloomfield

Contacts: Dave Pavlich

Dear Dave:

Please make note the Class I Well at Giant-Bloomfield is currently operating under Discharge Plan GW-130. OCD is updating its RBDMS data base records and we are assigning this permit to UIC-CLI-009. Since I do not have Barry Holman's E-mail would you please copy him on this change.

Also, back in January I sent you an E-mail concerning the proper name that should be on Giant's Well Bond. Did you get that corrected?

Price, Wayne

From: Price, Wayne
Sent: Thursday, January 17, 2002 10:42 AM
To: 'dpavlich@giant.com'
Cc: Foust, Denny; Chavez, Frank; 'david_cobrain@nmenv.state.nm.us'
Subject: Giant Class I Well and Giant Bloomfield Hammond Ditch Project

Contacts: Dave Pavlich

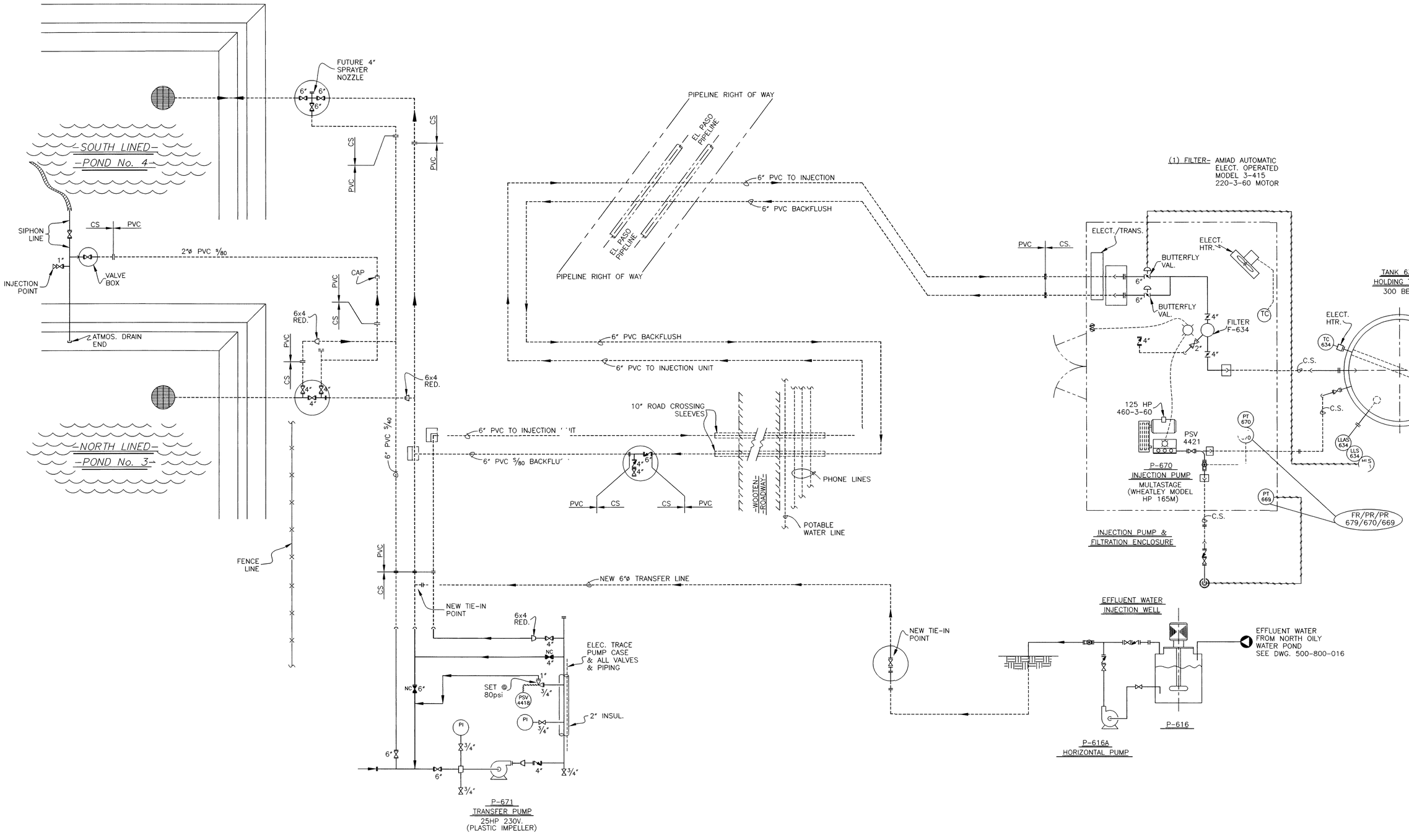
Dear Dave:

Giant Class I Well:

Please provide us the name of the company in which the Class I Well at the Bloomfield refinery should be listed as. The bond that we have for this well is listed under San Juan Refining Company Bond No. SLR 111 4156 1149 for $30,000.00. The previous bond No. 610 195321 8 $30,000.00 was listed under Bloomfield Refining Company. This bond was cancelled on 8/5/96.

Giant Bloomfield Hammond Ditch:

During my recent visit to the ditch project we discussed that Giant would provide OCD information pertaining to the design and construction of the new groundwater remediation collection system and the groundwater drain system. Please submit for OCD approval a modification of the discharge plan that includes these changes.



NOTES

NO.	REVISION	BY	DATE	CHECKED	DATE	APPROVED	DATE
1	REVISED & REDRAWN ON CAD	NHB	10/99				

REFERENCE DWGS.

JOB No.

SCALE	NTS
DRAWN BY	NHB
INITIAL CHK.	
FINAL CHK.	
ENGR.	
APPR. BY	
AFE/WO No.	NONE
DATE	10-11-99

EFFLUENT WATER INJECTION WELL & TRANSFER SYSTEM

GIANT REFINING CO.

BLOOMFIELD REFINERY — BLOOMFIELD NEW MEXICO

DWG. NO. D-500-800-031 — REV. 1

Nate H. Bigay

Nate H. Bigay

The Santa Fe New Mexican

Since 1849. We Read You.

NM OIL CONSERVATION DIVISION
ATTN: LUPE SHERMAN
2040 S. PACHECO ST.
SANTA FE, NM 87505

AD NUMBER: 111196 ACCOUNT: 56689
LEGAL NO: 66148 P.O.#: 000199000278
269 LINES 1 time(s) at $ 118.43
AFFIDAVITS: 5.25
TAX: 7.73
TOTAL: 131.41

Approved by L Perez-OCD 10/08/99

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, B Perner being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTE FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication #66148 a copy of which is hereto attached was published in said newspaper 1 day(s) between 09/29/1999 and 09/29/1999 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 29 day of September, 1999 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ Betty Perner
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 30 day of September A.D., 1999

Notary B Mathie

Commission Expires 3-13-2001

OFFICIAL SEAL
B MATHIE
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131

(GW-130) Giant Refining Company, Lynn Shelton, P.O. Box 159, Bloomfield, New Mexico 87413, has submitted a renewal application for the previously approved discharge plan for its Bloomfield Petroleum Refinery Class I (non-hazardous) disposal well located in the NW/4 SW/4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. Up to 2380 barrels (100,000 gallons) per day of non-hazardous refinery waste will be disposed of by injection into the Cliff House formation at a depth from 3400 to 3600 feet. The total dissolved solids concentration of the waste is approximately 15,600 mg/l. The total dissolved solisd concentration of the formation fluids is approximately 25,000 mg/l. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 10 feet to 30 feet and is a water zone directly caused by seepage from Hammond Ditch. The ditch water has a total dissolved solids concentration of approximately 200 mg/l. The discharge plan addresses the operation and monitoring of the well, associated surface facilities, and provides a contingency plan in the event of an accidental spill, leak and/or any other unauthorized discharge to the surface and/or sub-surface.

(GW-001) Giant Refining Company, Lynn Shelton, P.O. Box 159, Bloomfield, New Mexico 87413, has submitted a renewal application for the previously approved discharge plan for its Bloomfield Petroleum Refinery located in the NW/4 NE/4 and the S/2 NE/4 and the N/2 NW/4 SW/4 and the SE/4 NW/4 SW/4 and the NE/4 SW/4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The renewal application consist of methods and procedures for handling products, waste, waste water management, and site investigation/ abatement plans. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 10 feet to 30 feet and is a water zone directly caused by seepage from Hammond Ditch. The ditch water has a total dissolved solids concentration of approximately 200 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 22th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
Will Olson
for LORI WROTENBERY,
Director

Legal 66148
Pub. September 29, 1999

AFFIDAVIT OF PUBLICATION

Ad No. 41810

STATE OF NEW MEXICO
County of San Juan:

ALETHIA ROTHLISBERGER, being duly sworn says: That she is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Friday, October 1, 1999

and the cost of publication is:$86.80

Alethia Rothlisberger

On 10-4-99 ALETHIA ROTHLISBERGER appeared before me, whom I know personally to be the person who signed the above document.

Christine B. Boyer

My Commission Expires May 3, 2003.

COPY OF PUBLICATION

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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(GW-001) Giant Refining Company, Lynn Shelton, P.O. Box 159, Bloomfield, New Mexico 87413, has submitted a renewal application for the previously approved discharge plan for its Bloomfield Petroleum Refinery located in the NW/4 NE/4 and the S/2 NE/4 and the N/2 NW/4 SW/4 and the SE/4 NW/4 SW/4 and the NE/4 SW/4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The renewal application consist of methods and procedures for handling products, waste, waste water management, and site investigation/abatement plans. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 10 feet to 30 feet and is a water zone directly caused by seepage from Hammond Ditch. The ditch water has a total dissolved solids concentration of approximately 200 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

Legal No. 41810, published in The Daily Times, Farmington, New Mexico, Friday, October 1, 1999.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 22th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

SEAL

for LORI WROTENBERY, Director

GIANT INDUSTRIES, INC.

111 Road 4990
Bloomfield, New Mexico 87413

505
632.8006

September 16, 1999

Mr. Wayne Price
NMOCD
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: **Discharge Plan GW-130 Renewal**
SWD Well #WD-1
San Juan County, New Mexico

Dear Mr. Price:

Giant Refining Company – Bloomfield submits this notice of application for renewal of Discharge Plan GW-130, SWD Well #WD-1 at this site.

No elements of the discharge plan have been changed.

Enclosed is a check for $50.00 to cover the filing fee.

If you need additional information, please contact me at (505) 632 4168.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company – Bloomfield

Enclosure

Cc: John Stokes, Vice President, Giant Refining Company
Sarah Allen, Corporate Counsel, Giant Industries, Inc.
Denny Foust, NMOCD, Aztec

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. 1930 dated 9/17/99,

or cash received on _____ in the amount of $ 50.00

from GIANT INDUSTRIES ARIZONA INC

for INJECTION WELL GW-130
(Facility Name) (DP No.)

Submitted by: WAYNE PRICE Date: 9/21/99

Submitted to ASD by: Wayne Price Date: 9/21/99

Received in ASD by: _____ Date: _____

Filing Fee ✓ New Facility ___ Renewal ✓

Modification ___ Other _____
(specify)

Organization Code 521.07 Applicable FY 2000

To be deposited in the Water Quality Management Fund.

Full Payment ___ or Annual Increment ___

1930

GIANT INDUSTRIES ARIZONA, INC.
DBA GIANT REFINING COMPANY - BLOOMFIELD
P. O. BOX 159 PH. 632-8013
BLOOMFIELD, NM 87413

95-207/1022

DATE September 17, 1999

PAY TO THE ORDER OF NMOCD ---------- $ 50.00

Fifty and NO/100 ---------- DOLLARS

Security features included. Details on back.

Citizens Bank
Bloomfield Branch
320 West Broadway
Bloomfield, NM 87413

AMOUNTS OVER 500.00 REQUIRE COUNTER SIGNATURE

FOR Filing Fee-Injection Well Permit
Renewal GW-130

⑈001930⑈ ⑆102202078⑆ 03145573⑈06

© DELUXE RBF

GIANT
REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

October 13, 1997

Roger Anderson
Environmental Bureau Chief
NM Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: One month pH report — WD #1 Injection Well
GW 130 — San Juan County

Dear Mr. Anderson:

Giant Refining Company - Bloomfield submits the one month pH report on the process wastewater that is being pumped from the evaporation lagoons into the injection well at this facility, as required by the September 5, 1997 letter from your office.

This report corroborates Giant's suspicion that the 1.8 pH that was reported for the process wastewater was an error.

If you need further information, please contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

TLS/tls

Enclosure

cc: John Stokes, Refinery Manager
Denny Foust, NMOCD, Aztec
Robert S. Dinwiddie, NMED/HRMB
Greg Lyssy, USEPA Region VI

GIANT REFINING COMPANY - BLOOMFIELD

ONE MONTH pH REPORT

SEPTEMBER 8 TO OCTOBER 8, 1997

DATE	VALUE	DATE	VALUE
9/8/97	7.19	9/24/97	7.15
9/9/97	7.24	9/25/97	7.46
9/10/97	7.20	9/26/97	7.33
9/11/97	7.23	9/27/97	7.56
9/12/97	7.18	9/28/97	7.63
9/13/97	7.13	9/29/97	7.88
9/14/97	7.00	9/30/97	8.13
9/15/97	7.24	10/1/97	8.29
9/16/97	7.16	10/2/97	8.25
9/17/97	7.35	10/3/97	8.51
9/18/97	7.54	10/4/97	8.27
9/19/97	7.57	10/5/97	8.44
9/20/97	7.42	10/6/97	8.57
9/21/97	7.44	10/7/97	8.62
9/22/97	7.42	10/8/97	8.59
9/23/97	7.28		

TLS 97

GIANT REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

November 19, 1996

Roger Anderson
Environmental Bureau Chief
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Release Notification Injection Well WD #1
Giant Refining Company - Bloomfield San Juan County

Dear Mr. Anderson:

Giant Refining Company - Bloomfield submits this notice of a release of refinery wastewater from a valve and plug on the Class 1 injection well (WD #1) at this facility.

Specifically, the injection well had been shut in to replace the gears in the totalizer meter, as had been described in the November 13 monthly report to your office. After the well was shut in at the injection pump and at the wellhead, a maintenance employee had began to depressure the line that was shut in into a five gallon bucket inside the pump house. At approximately 8:30 am, a plug was removed from a globe valve near the wellhead to bleed any water that might be leaking back through the wellhead. From 8:30 till 8:50 seven gallons of wastewater ran onto the ground. The valve was closed at 8:50 and the plug reinstalled.

A vacuum truck was dispatched at 9:05 to remove the water, which was dumped into the refinery process wastewater system.

Please note that the injection system was not leaking. This can be verified by the report of Mr. Ernest Cardona, of your Aztec office, who inspected the well on November 14, 1996. The integrity of the system is intact. This release of seven gallons of water was caused by the depressuring of the system for maintenance.

The maintenance and terminal employees have been counseled about the fact that no leaks or releases are allowed at this facility and that every effort must be made to prevent releases from occurring. Additionally, a notice will be posted in the injection pump house to this effect and a memo to all refinery employees regarding the facility's no release policy is being distributed.

The steps taken by Giant in training affected employees, and posting notices in appropriate locations, will permit inappropriate depressuring or other releases in the future.

If you need additional information, please contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

TLS/tls

cc: John Stokes, Refinery Manager
Kathleen O'Leary, Regulatory Affairs Coordinator
Denny Foust, OCD Aztec
Ron Weaver, Terminal Manager
Don Wimsatt, Maintenance Manager

Mark Ashley

OIL CONSERVATION DIVISION
RECEIVED
'96 NO 4 AM 8 52

GIANT REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

October 15, 1996

Mr. Frank Chavez
District Supervisor
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RECEIVED
OCT 22 1996
OIL CON. DIV.

Re: SWD Disposal Well #WD-1
Giant Refining Company - Bloomfield Refinery

Dear Mr. Chavez:

Giant Refining Company - Bloomfield (GRC) submits the following report on the natural gas pressure that is building up on the Braden Head of the above referenced well. As I had relayed to you in the September 16, 1996 letter to you, a gas meter was installed on the Braden Head on August 26, 1996 to determine the volume of the release.

As of today, the total volume of natural gas that has flowed from the Braden Head is 726 cubic feet. This appears to be a minor discharge in that it does not appear to be a threat to human health or the environment and does not pose a safety hazard.

Considering that the cement on the 856 feet of surface casing was circulated to the surface; that the formations above the surface casing are protected by the surface casing, the well casing and the production tubing; and the low volume of the release, GRC proposes to install piping on the Braden Head with a tee, valve and gauge (see attached drawing) to allow for the gas to bleed off continuously and to monitor the pressure on the Braden Head on an intermittent basis.

If you have additional questions, please call me at (505) 632 8013.

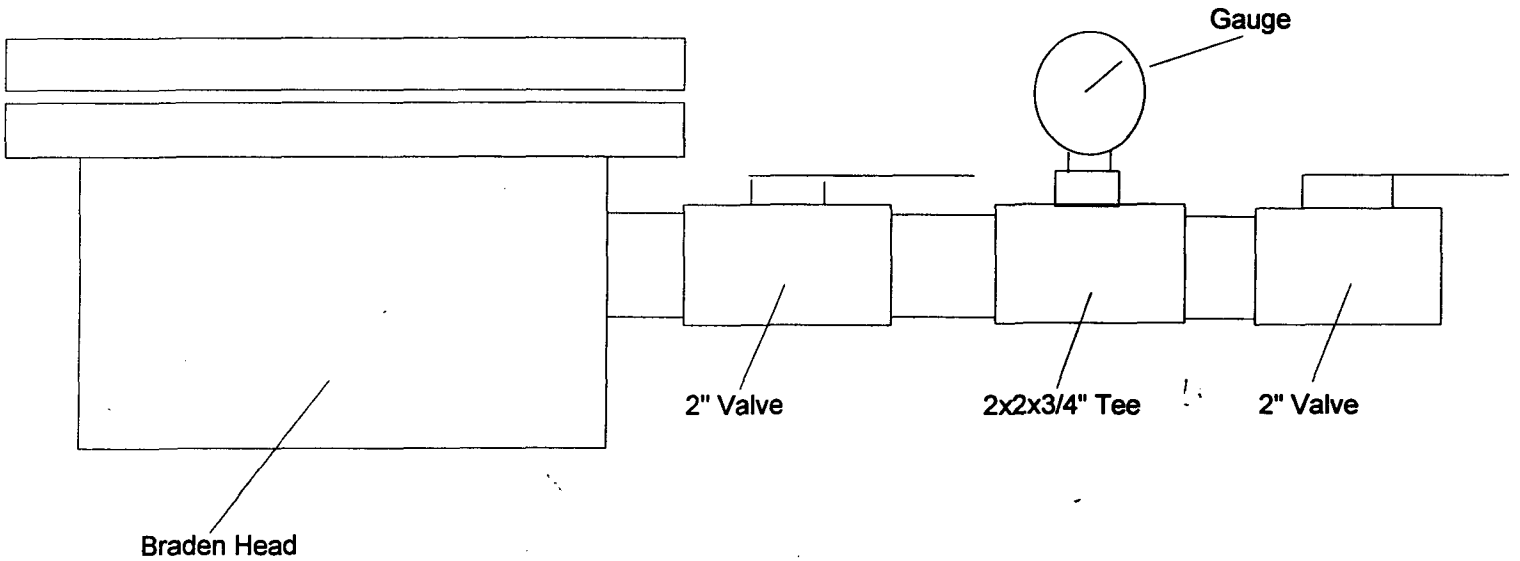
Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

TLS/tls

Enclosure

cc: John Stokes, Refinery Manager
Mark Ashley, NMOCD, Santa Fe



GIANT REFINING COMPANY - BLOOMFIELD

BRADEN HEAD MODIFICATIONS

Oct-96

Mark Ashley

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 Fax (505)334-6170

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

November 8, 1996

Mr Lynn Shelton
Giant Industries
PO Box 159
Bloomfield NM 87413

Re: Disposal #1, I-27-29N-11W, 30-045-29002

Dear Mr. Shelton:

Your proposal for monitoring the gas on the bradenhead of the referenced well is hereby accepted.

Should the nature of the gas flow change or conditions of the well change such that this small flow could be considered a more serious problem, we will direct further testing and action. The next time that the well tubing is pulled for service, we will require that you run a Noise Log or similar device to determine the entry point of the gas behind the pipe.

Sincerely,

Frank T. Chavez
District Supervisor

FTC\sh

GIANT REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

October 15, 1996

Mr. Frank Chavez
District Supervisor
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: SWD Disposal Well #WD-1
Giant Refining Company - Bloomfield Refinery

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As of today, the total volume of natural gas that has flowed from the Braden Head is 726 cubic feet. This appears to be a minor discharge in that it does not appear to be a threat to human health or the environment and does not pose a safety hazard.

Considering that the cement on the 856 feet of surface casing was circulated to the surface; that the formations above the surface casing are protected by the surface casing, the well casing and the production tubing; and the low volume of the release, GRC proposes to install piping on the Braden Head with a tee, valve and gauge (see attached drawing) to allow for the gas to bleed off continuously and to monitor the pressure on the Braden Head on an intermittent basis.

If you have additional questions, please call me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

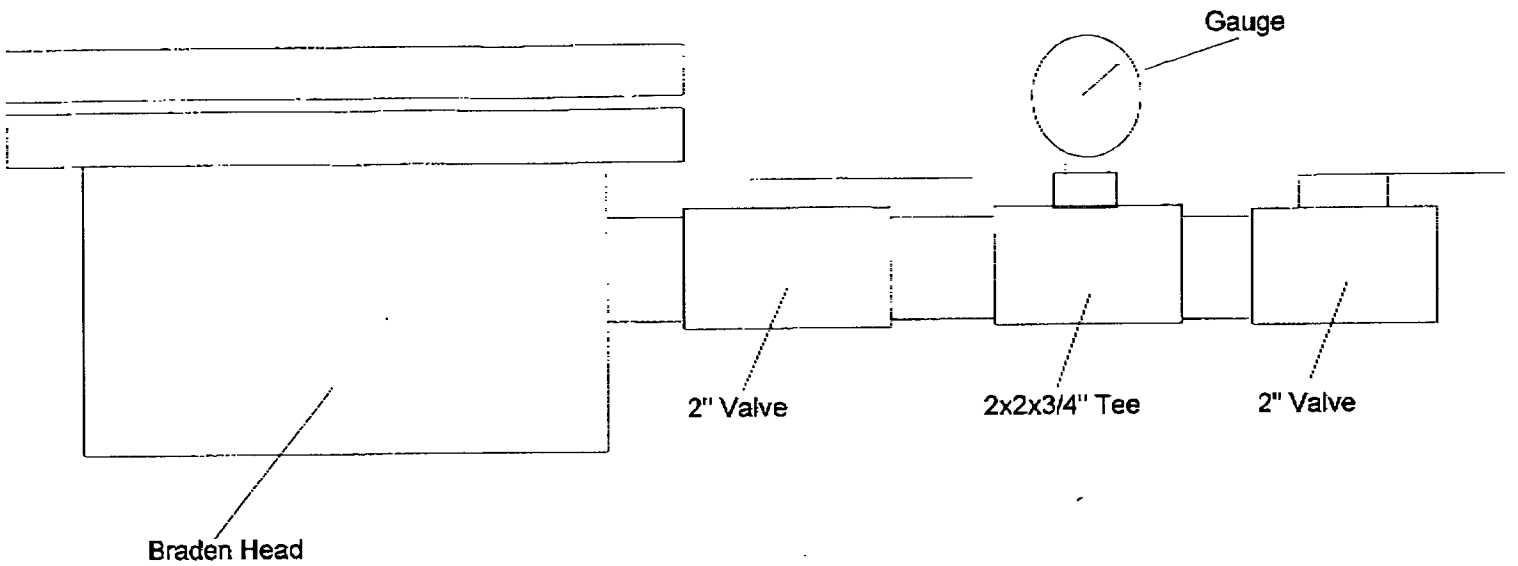
TLS/tls

Enclosure

cc: John Stokes, Refinery Manager
Mark Ashley, NMOCD, Santa Fe

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Mark Ashley	From Denny Foust
Co. NMOCD	Co. NMOCD
Dept. Santa Fe	Phone # 334-6178
Fax # 827-8177	Fax # 334-6170



GIANT REFINING COMPANY - BLOOMFIELD

BRADEN HEAD MODIFICATIONS

Oct-96

Mark Ashley

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

Form C-105
Revised 1-1-89

WELL API NO. 30-045-29002

5. Indicate Type of Lease STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ☐ DRY ☐ OTHER CLASS I INJECTION

b. Type of Completion: NEW WELL ☐ WORK OVER ☒ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER

7. Lease Name or Unit Agreement Name: SWD WELL (CLASS I) Disposal

2. Name of Operator: GIANT REFINING COMPANY Bloomfield Refining

8. Well No. #1

3. Address of Operator: P.O. BOX 159 BLOOMFIELD, NM 87413

9. Pool name or Wildcat

4. Well Location
Unit Letter I : 2442 Feet From The SOUTH Line and 1250 Feet From The EAST Line
Section 27 Township 29 N Range 11 W NMPM County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
12-17-93	12-23-93	1-22-94	KB 5545', DF 5544, GL 5532	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
3601'		N/A		X	

19. Producing Interval(s), of this completion - Top, Bottom, Name: DISPOSAL - MESA VERDE

20. Was Directional Survey Made: NO

21. Type Electric and Other Logs Run: ELECTRIC INDUCTION; BOND LOG

22. Was Well Cored: NO

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24#	856'	12 1/4	[illegible]	
5 1/2"	15.5#	3601'	7 7/8"	[illegible]	

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OIL CON. DIV.
DIST. 3

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 7/8" 6.5#	3584-10	3221 KB

26. Perforation record (interval, size, and number)
3276' - 3514' 316 HOLES
.45 X 4 PER FOOT

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
3452 - 3514'	1500 GAL 15% HCl
3276 - 3324'	1500 GAL 15% HCl

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
N/A		

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

30. List Attachments
DRILLING REPORT BY PAUL THOMPSON; WESTERN TREATMENT REPORT

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Lynn Shelton Printed Name LYNN SHELTON Title ENV. MGR. Date 8/27/96

1-14-96 to 1-22-96

B.J Services Company —Treatment Report

Date 01/17/96 District FARMINGTON F. Receipt _____ Operator GIANT REFINERY
Lease WD #1 Well No. _____ Field BASIN Location SEC 26 T29N R11W
County SAN JUAN State NM Stage Number _____ This Zone ☐ This Well ☐

WELL DATA OG☐ NG☐ NO☐ OO☐ WD☐ IW☐ Misc.☐ Depth TD/PBTD 3650 Formation MESA VERDE
Tubing Size 2 7/8 WT. _____ Set at: 3224 Type Packer _____ Set At 3224
Casing Size 5 1/2 WT. 15.5 Set From SURFACE To TD Liner Size _____ Wt. _____
Liner Set From _____ To _____ Open Hole: Size _____ From _____ To _____ Casing Perforations: Size _____
Holes Per Foot 4 Intervals 3276-3514
Previous Treatment 5000 GAL 15% Prior Production NONE

TREATMENT DATA Pad Used: Yes☐ No☒ Pad Type _____
Treating Fluid Type: Foam☐ Water☐ Acid☐ Oil☐ Treat. Fluid Vol. 1500 Gal.
Base Fluid Type 15% HCL WITH ADDS Base Fluid Vol. 1500 Gal.
Foam Qual.: _____ % Mitchell☐ Slurry☐ Surface☐ Downhole☐ Total Prop Qty. _____ Lbs.
Prop Type: Sand☐ WP-1☐ WP-3☐ Baux.☐ Other _____
Prop Mesh Sizes, Types and Quantities _____
Hole Loaded With H20 Treat Via: Tubing☒ Casing☐ Anul.☐ Tubing & Anul.☐
Ball Sealers: _____ In _____ Stages of _____
Types and Number of Pumps Used 1 ACID MASTER
Auxiliary Materials 1500 GAL 15% HCL WITH ADDS

PROCEDURE SUMMARY PUMP 1500 GAL 15% HCL, 1470 GAL H20 FLUSH

LIQUID/GAS PUMPED AND CAPACITIES IN BBLS.

Tubing Cap.	12.5
Casing Cap.	7.0
Annular Cap.	
Open Hole Cap.	
Fluid to Load	
Pad Volume	
Treating Fluid	36
Flush	12
Overflush	23
Fluid to Recover	7
Total N^2	
Total CO_2	

Time AM/PM	Treating Pressure-Psi		Surface Slurry BBLS. Pumped		Slurry Rate BPM	Surface CO_2 BBLS. Pumped		CO_2 Rate BPM	Surface N^2 MSCF Pumped		N^2 Rate SCFM	Comments
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
9:54	0-2000											PT LINES
9:58	400				4.2							START HCL
10:09	900		36	36	4.2-3.0							START H20 FLUSH
10:19	400		35	71								SHUTDOWN

Treating Pressure: Min. 400 Max. 900 Avg. 750 Customer Representative BILLIE FERRELL
Inj. Rate on Treating Fluid 3.0-4.2 Rate on Flush 4.2 Western Representative R. MARTINEZ
Avg. Inj. Rate 3.5 I.S.D.P. 400 Flush Dens. lb./gal. *.34 Distribution _____
Final Shut-in Pressure _____ in _____ Minutes _____
Operator's Maximum Pressure 1000

Job Number _____ Recommendation ID # _____

BJ Services Company —Treatment Report

Date 01/20/96 District FARMINGTON F. Receipt L396242 Operator GIANT EXPLORATION
Lease WD #1 Well No. _____ Field MESA VERDE Location SEC 28 T29N R11W
County SAN JUAN State NM Stage Number 1 This Zone X This Well X

WELL DATA OG☐ NG☐ NO☐ OO☐ WD☒ IW☐ Misc.☐ Depth TD PB _____ Formation CLIFFHOUSE-MENEFEE
Tubing Size 2 3/8 WT. 4.7 Set at: 3425 Type Packer S RIT Set At: VARIOUS
Casing Size 5 1/2 WT. 17 Set From SURFACE To TD Liner Size _____ Wt. _____
Liner Set From _____ To _____ Open Hole: Size _____ From _____ To _____ Casing Perforations: Size .38
Holes Per Foot 4 Intervals 3452-3324
Previous Treatment _____ Prior Production _____

TREATMENT DATA Pad Used: Yes☒ No☐ Pad Type KCL H20
Treating Fluid Type: Foam☐ Water☐ Acid☒ Oil☐ Treat. Fluid Vol. 5000 Gal.
Base Fluid Type 15% HCL Base Fluid Vol. 10,105 Gal.
Foam Qual.: _____% Mitchell☐ Slurry☐ Surface☐ Downhole☐ Total Prop Qty. _____ Lbs.
Prop Type: Sand☐ WP-1☐ WP-3☐ Baux.☐ Other _____
Prop Mesh Sizes, Types and Quantities _____
Hole Loaded With KCL H20 Treat Via: Tubing☒ Casing☐ Anul.☐ Tubing & Anul.☐
Ball Sealers: _____ In _____ Stages of _____
Types and Number of Pumps Used 1 ACID MASTER
Auxiliary Materials 5000 GAL 15% HCL, 10 GAL I-22, 25 GAL FERROTROL 300L
PUMPED AS TREATED BELOW

PROCEDURE SUMMARY _____

LIQUID/GAS PUMPED AND CAPACITIES IN BBLS.
Tubing Cap. 13.3
Casing Cap. _____
Annular Cap. _____
Open Hole Cap. _____
Fluid to Load _____
Pad Volume _____
Treating Fluid 119
Flush 84.5
Overflush _____
Fluid to Recover 240.6
Total N^2 _____
Total CO_2 _____

Time AM/PM	Treating Pressure-Psi		Surface Slurry BBLS. Pumped		Slurry Rate BPM	Surface CO_2 BBLS. Pumped		CO_2 Rate BPM	Surface N^2 MSCF Pumped		N^2 Rate SCFM	Comments
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
1:05	0-250				0-2.6							LOAD HOLE
1:15	0-750		15	15	0-2.75							BRK 1ST SETT H20
1:23	750		5.0	20	0-2.7							START ACID 1ST SETT
1:37	775		36.0	56.0	2.6							START FLUSH 1ST SETT
1:42	100		13.8	69.8	2.6-0							SHU TDOWN
2:07	0-800		15.0	84.8	0-2.6							PUMP ACID AWAY
2:28	1500											TEST BRIDGE PLUG
2:42	0-250			84.8	0-2.6							H20 AHEAD
2:44	800		5.0	89.8	2.6							START ACID 2ND SETT
3:03	800		48.0	137.8	2.6							START FLUSH 2ND SETT
3:07	200		13.0	150.8	2.6-0							SHUTDOWN
3:30	900		1	165.8	0-2.6							PUMP ACID AWAY
3:51	0-1500		15.0	165.8								TEST BP
4:37	1000		6.9	172.7								TEST BS
4:43	0-800			172.7	0-2.6							H20 AHEAD
4:45	800		4.2	176.9	2.6							START ACID 3RD SETT
4:57	900		36.0	212.9	2.6							START FLUSH 3RD SETT
5:16	800		12.7	225.6	2.4							PUMP ACID AWAY
5:23	800-200		15.0	240.6	2.4-0							

Treating Pressure: Min. _____ Max. 1500 Avg. 800 Customer Representative P. THOMPSON
Inj. Rate on Treating Fluid 2.6 Rate on Flush 2.6 Western Representative T.M. CRABB
Avg. Inj. Rate 2.6 I.S.D.P. 200 Flush Dens. lb./gal. 8.34 Distribution _____
Final Shut-in Pressure _____ in _____ Minutes _____
Operator's Maximum Pressure 1000 PSI

Job Number _____ Recommendation ID # _____

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield Refinery
Well Name: SWD #1
Date: Jan. 18, 1996
Report No.: 1
Field: Blanco Mesa Verde
Location: SE 27 29N 11W
Contractor: Drake Rig #22
Supervisor: Paul Thompson

Work Summary:

Order out $CaCO_3$ mud to kill well. Wait on mud. Mix gel and $CaCO_3$ in 80 bbls of produced water. Not enough $CaCO_3$ to raise weight above 8.7 ppg. Left well flowing to pond overnight. Will mix additional mud 1/19/96.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	1,060	Wellhead Equip.:	0
Anchors:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Wireline:	0	Sucker Rods:	0
Packers, BPs,:	0	Tanks:	0
Drilling Fluids:	0	Separators,Dehys:	0
Water:	0	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	1,425
		Cumulative Cost:	

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: Jan. 19, 1996 Report No.: 2
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

Well flowing to pond overnight. Shut in well and pressure built to 320# in 45 min. Wait on mud. Pumped 20 bbls of 10.0 ppg $MgCl_2$ down tubing. Tubing died. Nipple down wellhead and remove tubing donut. Nipple up BOP. Released packer and well started to flow up the tubing. Pumped 30 bbls of $MgCl_2$ down tubing but tubing did not die. Very little flow from the casing. Worked pipe up and down to try and relax packer rubbers. Pumped another 30 bbls of $MgCl_2$ down tubing but tubing did not die. Flowed tubing back to rig pit until it started making produced water. Installed stripper rubber and pulled two stands of 2-7/8" tubing. Well was flowing water 4' above the tubing. Shut in tubing and wait on mud. Mixed 30 bbls. of 12.0 ppg barite based mud. Killed tubing and TOH with a total of 97 jts. of 2-7/8" cement lined injection tubing. Well unloaded during last 5 stands. Change rams. Picked up 4-3/4" bit and 5-1/2" casing scraper on 2-3/8" workstring. TIH with 21 joints and shut down for dark. Left well flowing to pond through annulus.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	2,056	Wellhead Equip.:	0
Anchors:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Wireline:	0	Sucker Rods:	0
Packers, BPs,:	613	Tanks:	0
Drilling Fluids:	2,566	Separators,Dehys:	0
Water:	170	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	5,770
		Cumulative Cost:	

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: Jan. 20, 1996 Report No.: 3
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

Well flowing to pond overnight. Finish TIH with bit and scraper. Found PBTD at 3525'KB. Bottom perf at 3514'. TOH and lay down bit and scraper. Pick up Mt. States RBP and packer on 2-3/8" workstring. Set RBP at 3520' and packer at 3425'. Establish rate into perfs from 3452' - 3514' with 2% KCl water. Acidize perfs with 1500 gal. of 15% HCl. Average injection rate = 2.6 BPM; Average treating pressure = 750#; maximum injection rate = 2.6 BPM; maximun treating pressure = 800#. ISIP = 100#. No pressure breaks during the treatment. Displaced acid below packer with 13.8 bbls of 2% KCl water and let acid soak for 20 min. Final pressure = 200#. Flush acid into formation with 15 bbls of 2% KCl water. Released packer and RBP. Reset RBP at 3433'KB and pressure tested to 1500# - held OK. Set packer at 3330'KB. Establish rate into perfs from 3346' - 3416' with 2% KCl water. Acidize perfs with 2000 gal. of 15% HCl. AIR = 2.55 BPM; ATP = 800#; MIR = 2.6 BPM; MTP = 800#. ISIP = 150#. No pressure breaks during the treatment. Displaced acid below packer with 13.0 bbls of 2% KCl water and let acid soak for 20 min. Flush acid into formation with 15 bbls of 2% KCl water. Released packer and RBP. Reset RBP at 3338'KB. RBP did not pressure test. Moved and reset RBP twice but it still did not test. Left RBP at 3343'KB. Set packer at 3236'KB. Pressure tested annulus to 1000# - held OK. Establish rate into perfs from 3276' - 3324' with 2% KCl water. Acidize perfs with 1500 gal. of 15% HCl. AIR = 2.5 BPM; ATP = 800#; MIR = 2.5 BPM; MTP = 800#. ISIP = 100#. No pressure breaks during the treatment. Displaced acid below packer with 12.6 bbls of 2% KCl water and let acid soak for 15 min. Flush acid into formation with 15 bbls of 2% KCl water. Released packer and RBP and started TOH. Shut down for the night. Left well flowing to the pond.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	2,056	Wellhead Equip.:	0
Anchors:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Wireline:	0	Sucker Rods:	0
Packers, BPs,:	1,665	Tanks:	0
Drilling Fluids:	0	Separators,Dehys:	0
Acid:	5,646	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
		Total Daily Cost:	9,732

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: Jan. 21, 1996 Report No.: 4
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

Finish TOH with packer and RBP. Lay down 2-3/8" workstring. Pick up Mt. States Arrowset I 5-1/2" packer on 97 jts (3202.92') of 2-7/8", 6.5#, J-55, EUE cement lined tubing and set packer at 3221'KB. Pumped 20 gal of packer fluid into annulus prior to setting packer. Set donut in wellhead. Pressure tested annulus but donut was leaking. Removed donut and will redress packing elements. Left well shut in overnight.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	1,660	Wellhead Equip.:	0
Anchors:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Wireline:	350	Sucker Rods:	0
Packers, BPs,:	1,004	Tanks:	0
Packer Fluids:	225	Separators,Dehys:	0
Water:	0	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**3,604**
		Cumulative Cost:	

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: Jan. 22, 1996 Report No.: 5
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:
Installed redressed donut. Pressure tested annulus to 1000#. Held OK. Nipple up wellhead. Tefteller retrieved tubing choke on wireline. Tubing pressure was 320#. Reconnected well to injection line. Rigged down and released rig. FINAL REPORT.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	758	Wellhead Equip.:	278
Anchors:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Wireline:	525	Sucker Rods:	0
Packers, BPs,:	0	Tanks:	0
Packer Fluids:	0	Separators,Dehys:	0
Water:	0	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	81	Meters, LACT,ect.:	0
Trucking:	800	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**2,442**
		Cumulative Cost:	

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
2040 Pacheco St.
Santa Fe, NM 87505

Form C-105
Revised 1-1-89

WELL API NO. 30-045-29002

5. Indicate Type of Lease STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ☐ DRY ☐ OTHER CLASS 1 INJECTION

b. Type of Completion: NEW WELL ☐ WORK OVER ☒ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER

7. Lease Name or Unit Agreement Name: SWD WELL (CLASS 1)

2. Name of Operator: GIANT REFINING COMPANY (Bloomfield)

8. Well No. WD #1

3. Address of Operator: P.O. BOX 159 BLOOMFIELD, NM 87413

9. Pool name or Wildcat

4. Well Location
Unit Letter I : 2442 Feet From The SOUTH Line and 1250 Feet From The EAST Line
Section 27 (27) Township 29N Range 11W NMPM County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
12-17-93	12-23-93	1-22-94	KB 5545', DF 5544', GL 5530'	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
3601'		N/A		X	

19. Producing Interval(s), of this completion - Top, Bottom, Name: DISPOSAL - MESA VERDE

20. Was Directional Survey Made: NO

21. Type Electric and Other Logs Run: ELECTRIC INDUCTION; BOND LOG

22. Was Well Cored: NO

RECEIVED
AUG 28 1996
OIL CON. DIV.
DIST. 3

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24#	856'	12 1/4"		
5 1/2"	15.5#	3601'	7 7/8"		

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 7/8" 6.5#	3581'	3221 KB

26. Perforation record (interval, size, and number)
3276 - 3514' 316 HOLES
.45 X 4 PER FOOT

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
3276 - 3514'	SEE ATTACHED (SAND FRACTURE)

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
N/A		

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

30. List Attachments: WESTERN TREATMENT REPORT

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Lynn Shelton Printed Name LYNN SHELTON Title ENV. MGR. Date 8/27/96

3-1-96 to 3-7-96

The Western Company — Treatment Report

Date March 1, 1996 | District Farmington NM | F.Receipt 398367 | Operator Giant Refinery
Lease Bloomfield WD | Well No. 1 | Field Blanco | Location SEC.27,T29N,R11W
County San Juan | State New Mexico | Stage Number 1 | This Zone ☒ | This Well ☒

WELL DATA

OG ☐ NG ☐ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD/PB 3,600' Formation Mesa Verde
Tubing Size N/A Wt. N/A Set at: N/A Type Packer N/A Set at N/A
Casing Size 5 1/2" Wt. 15.5# Set From SURFACE To TD Liner Size N/A Wt.
Liner Set From To Open Hole: Size N/A From To
Casing Perforation: Size .45 Holes Per Foot 4 Intervals 3,276' - 3,514' 316 HOLES
Previous Treatment N/A Prior Production N/A

TREATMENT DATA

Pad Used: Yes ☒ No ☐ Pad Type Slick Water
Treat. Fluid Type: Foam ☐ Water ☒ Acid ☐ Oil ☐ Vol. 130,410 Gal.
Base Fluid type H2O Base Fluid Vol. 123,354 Gal.
Foam Qual. N/A % Mitchell ☐ Slurry ☐ Surface ☐ Downhole ☐ Total Prop Qty. 153,940 Lbs.
Prop Type: Sand ☒ WP-1 ☐ WP-3 ☐ Baux. ☐ Other
Prop Mesh Sizes, Types and Quantities 20/40 Arizona 153,940
Hole Loaded With H2O Treat Via: Tubing ☐ Casing ☒ Anul. ☐ Tubing & Anul. ☐
Ball Sealers: N/A in Stages of
Types and Number of Pumps Used 6 PACESETTER 1000'S
Auxiliary Materials 54# XCIDE-207 / 89 G. FRW-30

PROCEDURE SUMMARY

PUMP:21,588 G. PAD/19,824 G. 1/2#/21,000 G. 1#/11,214 G. 1 1/2#
47,040 G. 2#/ 3,150 G. FLUSH.

LIQUID/GAS PUMPED AND CAPACITIES IN BBLS.

Tubing Cap.	N/A
Casing Cap.	78
Annular Cap.	N/A
Open Hole Cap.	N/A
Fluid to Load	N/A
Pad Volume	514
Treating Fluid	2516
Flush	75
Over Flush	N/A
Fluid to Recover	2937
Total N2	N/A
Total CO2	N/A

Time AM/PM	Treating Press.-Psi		Surface Slurry bbls Pumped		Slurry Rate BPM	Surface CO2 bbls Pumped		CO2 Rate BPM	Surface N2 MSCF Pumped		N2 Rate SCFM	Comments Safety Meeting/Test Lines
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
PM5:50	0		0	0	60							START PAD
5:58	1700		514	514	65							START 1/2#
6:05	1580		486	1000	65							START 1#
6:14	1510		525	1525	66							START 1 1/2#
6:18	1500		285	1810	65							START 2#
6:37	1470		220	3030	65							START FLUSH
6:38	1000		75	3105	40							SHUT DOWN 5 MINS-720
												10 MINS-710

Treating Pressure: Min 1470 Max. 1700 Avg. 1500 Customer Representative Paul Thomson
Inj. Rate on Treating Fluid 65 Rate on Flush 65 Western Representative Harry Mitchell
Avg. Inj. Rate 65 I.S.D.P. 750 Flush Dens. lbs/gal 8.34 Distribution NORMAL

Job Number

Final Shut-in Pressure 700 In 15 Minutes
Operator's Maximum Pressure (psi) 3500
Recommendation ID# FM050525

9-3-96

GIANT MEETING

Mark Ashley, Lynn Shelton, Roger Anderson, Denny Foust, Reid Carroll, John Stokes, Carl Sanchez

They want the fine reduced because of "good faith" actions after occurrence. This is their only well ever.

Limit device set at 1125 PSI.

3100
55) X X600
165
5500

They want inject. pres. fine eliminated.

SWD-528 requires limiting device.

They want annular pressure fine eliminated.

They want leak reporting fine eliminated.

All fines other than $5K will be waived.

INFORMAL MTG. 9-3-96 11:00 AM

(1) Lynn Shelton / John STOKES

- Lynn opens - discuss NOV
- Discuss Fine Reduction.

- Conditions - August 8, 1996 - Letter.
- pressure swing on annulus -
  175 psig (day) to 40 psig (night)
- exceeding surface injection pressure -
  - limit 955 psig. → can inject at 1150 psig due have a p-limit device. (1125 psig) P shut down.
- leak - was at about 700 gallons per day
- Not optid - aversite on Lynns part.

-- Tension set 2° Mountain States Packer.

Mtg. Minutes for MS

Roger Anderson

NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 Fax (505)334-6170

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

CERTIFIED RECEIPT #P-471-215-168

August 26, 1996

Mr Lynn Shelton
Giant Industries
PO Box 159
Bloomfield NM 87413

RE: Disposal #1, I-27-29N-11W, API# 30-045-29002

Dear Mr. Shelton:

This letter is to confirm our oral authorization of August 23, 1996, for Giant to resume injecting into Disposal #1.

Mr. Denny Foust and I inspected the well site on August 23rd with Ron Weaver and yourself representing Giant Industries. The injection facility was not experiencing any leaks. A continuous pressure recording instrument was in place and recording the injection rate, tubing pressure and annular pressure graphically. Corresponding mechanical gauges were in place and operational. A factory calibrated pressure limiting device was installed to operate at 25 psi below the current permitted injection pressure of 1150 psi. When we tested the pressure limiting device, it indicated a possible shut down pressure of up to 1166 psi. This may be due to the electronic design of the device, pressure surges or other factors. There was also discussion from Mr. Weaver that the flow meter might not be accurately calibrated. I have authorized injection to continue for a period of thirty days to allow for pressure to build up downhole, for the electronic problems to be addressed and for a check to be conducted of the meter. We will conduct another test of the shut down device at the end of thirty days.

In addition, we notified you that the water holding tank appears to lack the one and a third containment volume required by the approved discharge plan. Giant has also failed to file any plans to address the bradenhead gas situation as required in my July 3, 1996, letter. Giant shall take actions including written notification to resolve these two issues within thirty days.

Sincerely,

Frank T. Chavez
District Supervisor

FTC\sh

cc: well file

Mark Ashley

From: Rand Carroll
Sent: Monday, August 26, 1996 11:12 AM
To: Mark Ashley
Subject: Registered: Rand Carroll

Your message

To: Rand Carroll
Subject: Giant Refinery Meeting
Sent: 8/26/96 10:41:00 AM

was read on 8/26/96 11:12:00 AM

Mark Ashley

From: Mark Ashley
Sent: Monday, August 26, 1996 10:41 AM
To: Rand Carroll
Cc: William Lemay
Subject: Giant Refinery Meeting
Importance: High

Rand,
Giant has rescheduled the meeting for September 3, 1996 at 11 AM. If you have any questions, give me a call.
See you then.
Mark

Mark Ashley

From: William Lemay
Sent: Friday, August 23, 1996 2:41 PM
To: Mark Ashley
Subject: Read: Giant Refinery Fine
Importance: High

Your message

To:	Rand Carroll
Cc:	William Lemay
Subject:	Giant Refinery Fine
Sent:	8/22/96 11:17:00 AM

was read on 8/23/96 2:41:00 PM

Mark Ashley

From: Rand Carroll
Sent: Thursday, August 22, 1996 11:42 AM
To: Mark Ashley
Subject: Registered: Rand Carroll

Your message

To: Rand Carroll
Subject: Giant Refinery Fine
Sent: 8/22/96 11:17:00 AM

was read on 8/22/96 11:42:00 AM

Mark Ashley

From: Mark Ashley
Sent: Thursday, August 22, 1996 11:17 AM
To: Rand Carroll
Cc: William Lemay
Subject: Giant Refinery Fine
Importance: High

Rand,
Please set aside Friday September 6, 1996 at 11 am to meet with Giant Refinery regarding the OCD fine. We will be meeting in the small conference room. If you would like to review any of Giant's file, please stop by my office.

Submit to Appropriate
District Office
State Lease -- 6 copies
Fee Lease -- 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-101
Revised 1-1-89

API NO. (assigned by OCD on New Wells) 30-045-29002

5. Indicate Type of Lease STATE ☐ FEE

6. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:
DRILL [X] RE-ENTER ☐ DEEPEN ☐ PLUG BACK ☐

b. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER Class I Injection SINGLE ZONE [XX] MULTIPLE ZONE ☐

7. Lease Name or Unit Agreement Name
Bloomfield Refining

2. Name of Operator
Bloomfield Refining Company 37218

8. Well No.
Disposal ~~[redacted]~~ #1

3. Address of Operator
P.O. Box 159, Bloomfield, NM 87413

9. Pool name or Wildcat
Blanco Mesa Verde 72319

4. Well Location
Unit Letter I : ~~1200~~ 2442 Feet From The ~~East~~ South Line and ~~2442,31~~ 1250 Feet From The ~~South~~ East

Section 27 Township 29N Range 11W NMPM San Juan Cou

10. Proposed Depth	11. Formation	12. Rotary or C.T.
3,600'	Cliff House	Rotary

13. Elevations (Show whether DF, RT, GR, etc.)	14. Kind & Status Plug. Bond	15. Drilling Contractor	16. Approx. Date Work will start
5530' GR	CLB	Aztec Well Service	10-16-93

17.
PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4"	8 5/8"	48 #	830'	400	Surface
7 7/8"	5 1/2"	15.5#	3500'	700	Surface

Bloomfield Refining Co. proposes to drill, log, and set casing through the Cliff House formation (Mesa Verde) into the upper Menefee formation and upon examination of the E-logs, a portion of the Cliff House and upper Menefee formation will be selectively perforated, stimulated and tested as needed. Surface casing will be set below the Ojo Alamo (569'-743'). The purpose of the well, is a Class I Non-Hazardous Injection Facility. Permit Application and Discharge Plan on file with OCD, Santa Fe (Kathy Brown)

RECEIVED
SEP 24 1993
OIL CON. DIV.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE David Roderick TITLE Vice President, Refining DATE 9/23/93

TYPE OR PRINT NAME David Roderick TELEPHONE NO. 632-8

(This space for State Use)

APPROVED BY Charles Gholson TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE 10/21/93

CONDITIONS OF APPROVAL, IF ANY:

SWD-528

10-21-94

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
Bloomfield Refining Company	Bloomfield Disposal	1

Unit Letter	Section	Township	Range	County
I	27	29N	11W NMPM	San Juan

Actual Footage Location of Well:
2442.3 feet from the South line and 1250.4 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
5530	KCH (MV)	Blanco Mesa Verde	N/A Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

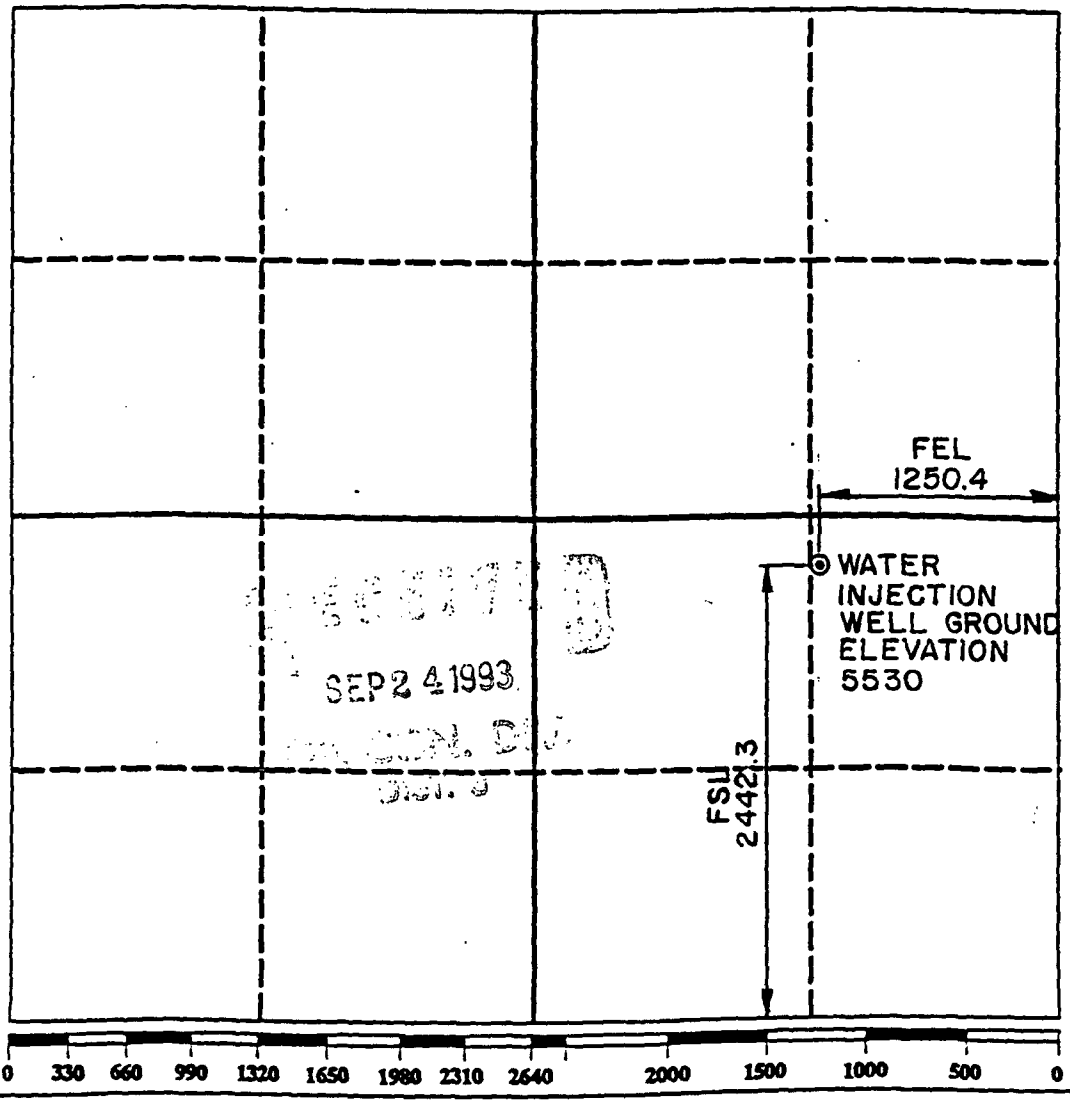
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation N/A

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the informati contained herein is true and complete to t best of my knowledge and belief.

Signature: David Roderick

Printed Name: David Roderick

Position: Vice Pres., Refining

Company: Bloomfield Refining Co.

Date: 9-23-93

SURVEYOR CERTIFICATION

I hereby certify that the well location show on this plat was plotted from field notes actual surveys made by me or under m supervison, and that the same is true an correct to the best of my knowledge an belief.

9/20/93

Date Surveyed

Signature & Seal of Professional Surveyor: EDWARD P. CHENEY, REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR, STATE OF NEW MEXICO, 6534

Certificate No.

1880.00
1920.00
1960.00
2000.00
2040.00
2080.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00

THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

BLOOMFIELD REFINING DISPOSAL #1 1-22-9

Test #2

	Time	Rate	PSI
START	12,50 PM	.5 BPM	515
1	1.05	1 BPM	580
2	1.20	2.1 BPM	645
3	1.35	3 BPM	733
4	1.50	4.1 BPM	860
5	2.05	5 BPM	1045
6	2.20	6 BPM	1170
7	2.35	7 BPM	1372
8	2.50	8 BPM	1612
9	3.05	9.1 BPM	1515
10	3.20	10 BPM	2185

Wellfile

TIERRA
ENVIRONMENTAL CORPORATION

CORPORATE OFFICE
12205 E. Skelley Drive
Tulsa, OK 74128
918-437-6200

OPERATIONS OFFICE
909 W. Apache
Farmington, NM 87401
505-325-0924

December 13, 1993

RECEIVED
DEC 14 1993
OIL CON. DIV.
DIST.

Mr. Frank Chavez
District Supervisor
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: DISPOSAL OF DRILLING FLUIDS FOR BLOOMFIELD REFINERY
WD #1 I-27-29N-11W 2442 FSL, 1250 FEL

Dear Mr. Chavez:

This is a proposal for disposing of the drilling fluid that will be generated during the drilling of the Bloomfield Refinery WD #1 during the third week of December 1993 by Aztec Well Service.

The well will be drilled with unweighted clear water. The water will be "mudded up" with bentonite clay just prior to TD @ 3600 feet to clean and stabilize the hole.

A number of obstacles e.g. pipelines are in the immediate well site area which precludes construction of an earthen reserve to accommodate the drilling operation.

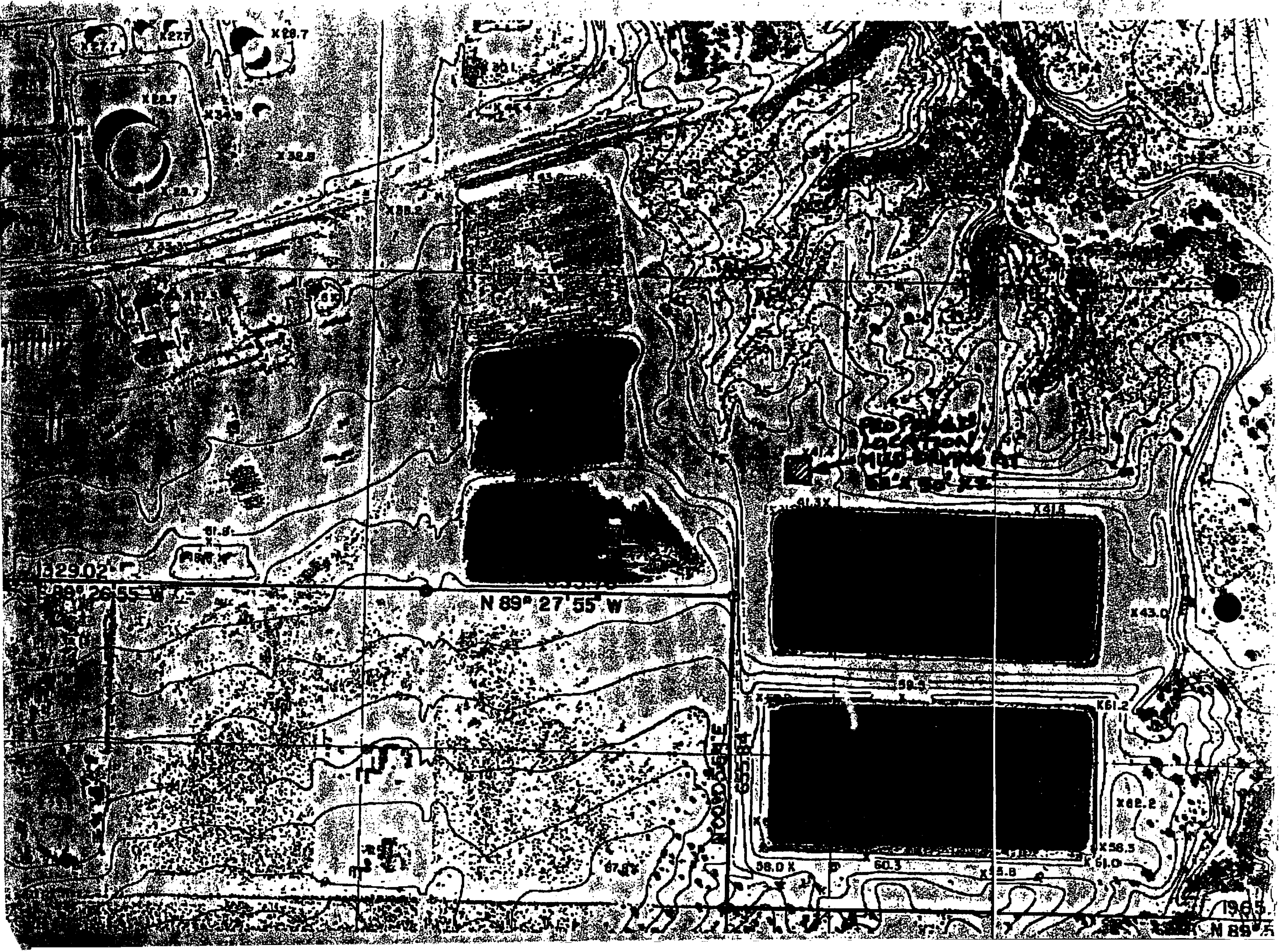
Therefore, it is proposed that the cuttings and water generated during drilling be transferred to a 250 bbl steel holding tank from the rig's steel mud tank. The spent drilling fluid (water and cuttings) will then be pumped from the holding tank and transferred via truck to an earthen reserve pit on the refinery property (see attached schematic for location).

Sincerely,

TIERRA ENVIRONMENTAL CORPORATION

Dan Hoover

L. Daniel Hoover, Ph.D
Director of Research


N 89° 27' 55" W
X 29.7
X 27.7
X 41.8
41.3 X
X 43.0
59.5
X 61.2
X 62.2
X 56.5
61.0
58.0 X
60.3
N 89°

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

October 7, 1993

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Bloomfield Refining Company
1150 County Road 4990
Bloomfield, New Mexico 87413

RECEIVED
OCT 15 1993
OIL CON. DIV.
DIST. 3

Re: $30,000 Single Well Bond
Bloomfield Refining Company, Principal
North River Insurance Company, Surety
1250.4' FEL and 2442.3' FSL of
Sec. 27, T-29-N, R-11-W, San Juan County
Bond No. 610 195321 8

Gentlemen:

The Oil Conservation Division hereby approves the above-referenced bond and rider thereto effective October 6, 1993.

Sincerely,

WILLIAM J. LEMAY,
Director

dr/

cc: Oil Conservation Division
Aztec, New Mexico

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

DEC 29 1993
OIL CON. DIV.

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE ☑

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Bloomfield Refining WD

1. Type of Well: OIL WELL ☐ GAS WELL ☐ XX OTHER INJECTION

2. Name of Operator: BLOOMFIELD REFINING

8. Well No.: #1

3. Address of Operator: AGENT — ON SITE TECHNOLOGIES, LTD. 325-8786, P.O. BOX 2606 Farmington, NM 87499

9. Pool name or Wildcat: BLANCO MESA VERDE

4. Well Location
Unit Letter I : 1250 Feet From The EAST Line and 2442 Feet From The SOUTH Line

Section 27 Township 29N Range 11W NMPM San Juan County

10. Elevation (Show whether DF, RKB, RT, GR, etc.): 5544 DF

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	XX	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	XX		
OTHER: DRILLING OPERATIONS	XX			OTHER:			☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

WELL WAS SPUDDED ON 12¼ Surface hole at 2:00 12/17/93

12-19-93 Drill to 861' set 8 5/8: J55, 24# casing at 856' RKB cement with 280 sx pagesetter lite, 200sx Class "B" neat, circulate 50BBl to surface.

12-23-93 TD 7 7/8" hole at 3601 at 8:30 am, ran logs, and set 5½" casing at 3595', cemented with 410 sx pacesetter lite and 250 sx Class "B" neat, circulated 50 BBL cement to surface. Rig released at 12 noon on 12/24/93.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Joe A. Wilbanks TITLE Agent DATE 12-27-93

TYPE OR PRINT NAME JOE A. WILBANKS TELEPHONE NO. 325-8

(This space for State Use)

APPROVED BY Original Signed by CHARLES GHOLSON TITLE DEPUTY OIL & GAS INSPECTOR, DIST. III DATE DEC 30 1993

CONDITIONS OF APPROVAL, IF ANY:

to Appropriate District Office

Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
JAN 17 1996
OIL CON. DIV.
DIST. 3

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: SWD WELL (CLASS I) W.D

1. Type of Well: OIL WELL ☐ GAS WELL ☐ OTHER CLASS I INJECTION

2. Name of Operator: GIANT REFINING COMPANY - BLOOMFIELD

8. Well No. #1

3. Address of Operator: P.O. BOX 159.

9. Pool name or Wildcat

4. Well Location
Unit Letter I : 2442 Feet From The SOUTH Line and 1250 Feet From The EAST

Section 27 Township 29 Range 11 NMPM

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☒	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMEN	
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

GIANT REFINING COMPANY-BLOOMFIELD PROPOSES TO RESTIMU
THE REFERENCED WELL BY ACIDIZING THE CLIFFHOUSE AND U
MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A ST
RATE INJECTION TEST. IF CONDITIONS WARRANT FURTHER
ACTION, THE 2 7/8" 6.5# CEMENT LINED PRODUCTION TUBING W
BE PULLED AND A 2 3/8" WORK STRING WILL BE PLACED. A S.P.I.
TOOL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERFORA
SECTIONS FOR ACIDIZING. THE WORK STRING WILL BE REMOVED AND THE ORIGINA
PRODUCTION TUBING WILL BE RUN INTO THE HOLE. AT COMPLETION,

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Lynn Shelton TITLE ENVIRONMENTAL MANAGER DATE 1-17-96

TYPE OR PRINT NAME LYNN SHELTON TELEPHONE NO. 505 632

(This space for State Use)

APPROVED BY Johnny Robinson TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE JAN 17 19

CONDITIONS OF APPROVAL, IF ANY:

MECHANICAL INTEGRITY TEST WILL BE PERFORMED.

District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MAR - 4

Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE ☐ FE

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
SWD WELL (CLASS I) W.

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER CLASS I INJECTION WELL

2. Name of Operator
GIANT REFINING COMPANY - BLOOMFIELD

8. Well No.
Disposal #1

3. Address of Operator
P.O. BOX 159

9. Pool name or Wildcat

4. Well Location
Unit Letter I : 2442 Feet From The SOUTH Line and 1250 Feet From The EAST

Section 27 Township 29 Range 11 NMPM Co

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☒	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONME	
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

GIANT REFINING COMPANY - BLOOMFIELD PROPOSES TO INCREASE TH ABILITY TO PUMP WASTEWATER INTO THE WELL BY SAND FRACTURIN THE CLIFFHOUSE AND UPPER MENEFEE FORMATION (THE PERMITED DISPOSAL ZONES). THE PLAN CALLS FOR 150,000 # OF SAND TO BE PUMPED INTO THE FORMATION. AFTER FRACING, ~~THE~~ A WORK STRING WILL BE RUN INTO THE HOLE TO CIRCULATE OUT THE RESIDUAL SAND. THE PRODUCTION TUBING WILL BE RETURNED THE HOLE. A STEP RATE INJECTION TEST WILL BE PERFORMED WELL AS A MECHANICAL INTEGRITY TEST ON THE CASING & PACK THE WELLHEAD WILL BE REBUILT TO CORRECT ANY SEAL PROBLEMS.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Lynn Shelton TITLE ENVIRONMENTAL MANAGER DATE 3-1-96

TYPE OR PRINT NAME LYNN SHELTON TELEPHONE NO. 632-8

(This space for State Use)

APPROVED BY Johnny Robinson TITLE DATE MAR - 4

CONDITIONS OF APPROVAL, IF ANY:

* Notify OCD in time to witness MIT

GIANT
REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

July 8, 1996

Mark Ashley
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Injection Well Records

Dear Mr. Ashley:

Giant Refining Company - Bloomfield submits the enclosed injection well records for injection well WD #1 at our refinery in Bloomfield.

These records go back to when Giant began operating the well in November, 1995. I will continue to look for the injection well records prior to Giant's operation of this facility.

Also included are two copies (for 1995 and 1996 to date) of the monthly spreadsheets that are submitted to both the OCD office in Santa Fe and Aztec. It provides a summary of the injection activities at the facility.

There are no maintenance records for the three way valve, other than a standing work-order to grease the valve weekly per manufacturers suggestion. Giant is currently in the process of re-engineering the valve system to eliminate the three way valve and replace it with a simpler, more reliable system. This will effectively eliminate the design fault of the existing valve for this service.

If you need additional information, please contact me at (505) 632 8013.

Sincerely:

Lynn Shelton

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

TLS/tls

cc: John Stokes, Refinery Manager, Giant Refining Company - Bloomfield

WASTE WATER INJECTION LOG

Dates: From 6/17/96 to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	139.2	951.7	167.3	270659	—	—	—	12:00	AS
	2	139.9	956.0	145.5	270851	—	—	—	0013	BS
Tuesday	1	148.3	949.4	161.0	270921	✓	—	—	1208	AS
	2	145.8	950.9	150	270979	—	—	—	1154	BS
Wednesday	1	151.4	951.5	167	271051	✓	—	—	1:10	AS
	2	144.0	931.6	173	—	—	—	—	1225	BS
Thursday	1	149.8	947.3	155	221110	—	—	—	1202	AS
	2	141.7	940.4	160	221151	—	—	—	1145	BS
152.3? Friday	1	152.3	952.4	181	—	—	✓	✓	—	AS
	2	149.6	949.8	162	221207	Added	Added	—	1200	Rick
Saturday	1	122.5	937.8	144	221454	—	—		1208	AS
	2	106.1	922.4	171	—	—	—	—	1214	BS
Sunday	1	149.5	954.6	144	221541	✓	✓	✓	1154	AS
	2	150.0	951.8	132	221541	✓	—	—	1200	AS

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From _____ to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS	
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE							
Monday	1										
	2										
Tuesday	1										
	2										
Wednesday	1										
	2										
Thursday	1	108.8	659.4	1.4	188983	OK	OK	Yes	1438p	ZH	10/5
	2										
Friday	1										
	2										
Saturday	1										
	2										
Sunday	1										
	2										

NOTES: (valve lineup at ponds, unusual conditions, etc.) Started Pump @ 11 AM
Turned off @ 1600p

[redacted]

THIS IS THE ONLY
GARY WILLIAMS
RECORD THAT
I HAVE FOUND
SO FAR.
Lynn

GIANT REFINING COMPANY - BLOOMFIELD
P.O. BOX 159
BLOOMFIELD, NEW MEXICO 87413

MONTHLY INJECTION WELL REPORT
DISCHARGE PLAN GW-130 EXP. DATE 11/4/98
NE1/4 SE1/4 SECTION 27, T29N, R11W
NMPM, SAN JUAN COUNTY, NEW MEXICO

PERIOD 1995	AMOUNT OF WATER FROM RIVER (GALLONS)	AMOUNT TO SOLAR EVAP PONDS (GALLONS)	TOTALIZER AMOUNT INJECTED (GALLONS)	CALCULATED AMOUNT INJECTED (GALLONS)	DOWN-TIME (HRS)	INJECTION PRESSURE MAX (PSIA)	INJECTION PRESSURE MIN (PSIA)	INJECTION PRESSURE AVG (PSIA)	ANNULAR PRESSURE MAX (PSIA)	ANNULAR PRESSURE MIN (PSIA)	ANNULAR PRESSURE AVG (PSIA)	ON-LINE FLOW RATES MAX (GPM)	ON-LINE FLOW RATES MIN (GPM)	ON-LINE FLOW RATES AVG (GPM)
JAN	11,597,000	3,794,400												
FEB	9,384,000	3,427,200	2,291,200	2,844,000	72	809	643	706	220	12	100	111	57	79
MAR	10,659,000	3,178,300	4,383,100	5,498,880	28	949	763	870	220	37	100	151	98	128
APR	9,977,000	3,371,300	289,400	316,800	669	902	712	807	70	64	67	136	85	110
MAY	12,691,000	2,578,000	3,619,800	4,269,240	213	891	800	870	20	7	14	144	124	134
JUN	11,802,000	2,418,100	3,707,300	4,172,760	201	918	839	869	8	0	4	150	127	134
JUL	12,631,000	3,354,900	3,959,000	4,885,200	36	916	812	860	2	0	1	132	97	115
AUG	11,836,800	3,650,600	633,100	794,880	600	842	712	807	1	0	1	103	88	92
SEP	11,746,600	2,314,000	0	0	720	0	0	0	0	0	0	0	0	0
OCT	12,773,800	4,017,600	0	0	744	0	0	0	0	0	0	0	0	0
NOV	12,062,800	5,572,800	1,271,600	1,746,000	420	838	457	735	24	1	7	153	85	97
DEC	10,569,000	5,758,560	2,478,000	3,628,800	168	919	732	811	36.3	1.4	16	129	98.4	105

CERTIFICATION: Lynn Shelton DATE: 2-5-96

TLS 2/96

GIANT REFINING COMPANY - BLOOMFIELD
P.O. BOX 159
BLOOMFIELD, NEW MEXICO 87413

MONTHLY INJECTION WELL REPORT
DISCHARGE PLAN GW-130 EXP. DATE 11/4/98
NE1/4 SE1/4 SECTION 27, T29N, R11W
NMPM, SAN JUAN COUNTY, NEW MEXICO

PERIOD 1996	AMOUNT OF WATER FROM RIVER (GALLONS)	AMOUNT TO SOLAR EVAP PONDS (GALLONS)	TOTALIZER AMOUNT INJECTED (GALLONS)	CALCULATED AMOUNT INJECTED (GALLONS)	DOWN-TIME (HRS)	INJECTION PRESSURE MAX (PSIA)	INJECTION PRESSURE MIN (PSIA)	INJECTION PRESSURE AVG (PSIA)	ANNULAR PRESSURE MAX (PSIA)	ANNULAR PRESSURE MIN (PSIA)	ANNULAR PRESSURE AVG (PSIA)	ON-LINE FLOW RATES MAX (GPM)	ON-LINE FLOW RATES MIN (GPM)	ON-LINE FLOW RATES AVG (GPM)
JAN	10,943,000	5,296,800	2,784,200	2,349,216	528	961.4	866	886.11	21.5	-0.1	1.15	142.6	69	108.76
FEB	9,951,000	3,975,700	3,908,900	3,357,330	0	946.8	889.4	915.27	195.1	-0.2	106.94	132.5	110.2	116.77
MAR	9,755,000	2,970,900	4,329,400	4,980,917	192	1014	938.0	975.7	215.3	9.5	97.0	156.0	138.8	150.39
APR	10,960,000	3,546,200	4,464,100	5,301,850	8	1166	901.3	954.84	220	74.1	149.06	160.1	102.1	126.96
MAY	11,265,000	3,518,900	*	4,535,554	48	1142	879.1	951.99	219.6	77.5	155.68	148.9	86.3	108.61
JUN														
JUL														
AUG														
SEP														
OCT														
NOV														
DEC														

CERTIFICATION: Lynn Shelton DATE: 6/20/96

WASTE WATER INJECTION LOG

Dates: From 11/14/95 to 11-19-95

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	123.0	456.5	24.0	189216	~	~	~	12:00	AC
	2									
Tuesday	1									
	2	153.4	837.7	1.3	189934	OK	OK	Yes	11~~2~~5	~~JH~~
Wednesday	1	92.7	706.3	2.2	190766	~	~	~	11:30	AC
	2	89.8	704.4	3.3	191367	~	~	Yes	12 10/A	~~JH~~
Thursday	1	86.7	701.8	4.6	191840	~	~		12:15	
	2	86.0	710.1	5.1	192318	~	~	Yes	23 37/P	~~JH~~
Friday	1	82.2	716.4	5.1	192~~8~~73	~	~	~	12:00	
	2	90.2	729.6	5.6	193420	~	~	Yes	23 49/P	~~JH~~
Saturday	1	99.8	759.3	6.0	193970	~	~	~	12:00	
	2	85.5	725.0	6.7	194390	~	~	~	9:30	AC
Sunday	1	85.5	727.6	7.2	195042	~	~	NO	12:15	
	2	85.6	729.9	7.8	195510	~	~	YES	11:00	AC

NOTES: (valve lineup at ponds, unusual conditions, etc.) Maintain 80-90 GPM for time being 11-15 11:00 AM RO

WASTE WATER INJECTION LOG

Dates: From 11-20-95 to 11-26-95

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	87.3	734.3	8.5	196117	✓	✓	Yes	12:40	RL
	2									
Tuesday	1	99.6	746.3	3.0	196267	Added	Added	~~Yes~~ ✓	16[35]	~~JH~~
	2			(Pump off)						
Wednesday	1	99.7	742.4	3.7	196565	✓	✓	✓	12[25]	R.L.
	2	99.5	755.7	5.8	197134	✓	✓	✓	23:30	MLL.
Thursday	1	99.2	760.2	5.5	197771	✓	✓		12[00]	Rick
	2	98.9	766.5	6.3	198382	✓	✓	✓	12[00] AM	MLL.
Friday	1	99.0	772.4	6.5	198991	✓	✓		12:00	AL
	2	94.9	764.0	7.8	199593	✓	✓	✓	midnite	MLL
Saturday	1	94.9	768.1	8.2	200142	✓	✓		11:25	AL
	2	95.3	771.7	10.4	200735	OK	OK	Yes	23[39]	~~JH~~
Sunday	1	97.1	778.1	10.9	201361	✓	✓		12:00	AL
	2	97.2	778.5	12.1	201932	OK	OK	Yes	23[47]	~~JH~~

NOTES: (valve lineup at ponds, unusual conditions, etc.) Shut inj. well down @ 20:30 (pump not staying on) couldn't reset pump out @ ponds! Wiring problems at P-671 Back on @ 10:30 AM 11-22

WASTE WATER INJECTION LOG

Dates: From 11/27/95 to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	84.0	743.3	16.0	202461	✓	✓		12:30	AL
	2	75.2	725.3	16.6	202756	✓	✓	Yes	2345	BH
Tuesday	1	99.1	784.7	21.9	203325	✓	✓		4:55	MA
	2	99.4	788.7	29.3	203735	✓	✓	Yes	2300	RO
Wednesday	1	95.0	777.5	29.5	204378	✓	✓		Noon	AL
	2									
Thursday	1									
	2									
Friday	1									
	2									
Saturday	1									
	2									
Sunday	1									
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.) Maintain @ 75 GPM - 11.27.95 -
11-28 - Tried to Close out filter, went from 150 lbs
to 90 lbs. (Shut pump down @ 16:00 Switch
problems | pumped out tank

WASTE WATER INJECTION LOG

Dates: From 12-8 to 12-10

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1									
	2									
Tuesday	1									
	2									
Wednesday	1									
	2									
Thursday	1									
	2									
Friday	1	100.2	732.0	36.3	204619	✓	✓	Yes	15:30	
	2	100.9	760.5	1.4	205028	✓	✓	Yes	23:30	✓
Saturday	1	99.1	766.0	3.0	205640	✓	✓		11:30	MQ
	2	101.1	777.0	5.2	206226	✓	✓	Yes	23:00	Rick
Sunday	1									
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.) started back up @ Larry worked on level switches

Found Pond Pump tripped 04:00 Sun

* Shut down pump @ Approx. Noon 12/10, switch not working properly.

WASTE WATER INJECTION LOG

Dates: From 12-11-95 to 12-17-95

		Obtained from Rustrak Recorder			gal x100 P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	99.4	747.8	20.4	206969	✓	✓	yes	14:50	MM.
	2	100.1	762.1	6.0	207383	✓	✓	yes	23:15	Rick
Tuesday	1	99.7	769.4	6.1	208023	✓	✓	✓	11:45	AS
	2	100.2	774.3	6.1	208700	—	—	yes	1:00	AL
Wednesday	1	100.0	779.1	8.5	209438	✓	✓	✓	15:00	AS
	2	99.7	781.9	9.4	209883	—	—	NO CHARTS	12:00 A	AL
Thursday	1	99.9	784.3	7.3	210389	✓	✓		10:00	RS
	2	100.9	792.7	13.1	211136	✓	✓	yes	12:30	AL
Friday	1	98.4	786.0	9.0	211722	✓	✓	✓	11:50	Rick
	2	99.6	790.1	11.0	212362	—	—	yes	12:20	AL
Saturday	1	100.3	792.1	11.6	212918	✓	✓		11:15	RS
	2	101.2	797.1	12.6	213581	✓	✓	yes	24:00	AS
Sunday	1	100.6	795.0	13.2	214146	✓	✓		11:00	RS
	2	101.6	799.3	15.5	214804	✓	✓	yes	24:00	AS

784500 gal/week

NOTES: (valve lineup at ponds, unusual conditions, etc.) Pump running again @ 14:45, Lanny worked on switches,

12/11

WASTE WATER INJECTION LOG

Dates: From 12-18-95 to 12-24-95

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	99.6	795.5	16.2	215382	✓	✓		11:00	RO
	2	99.8	797.7	17.0	216072	✓	✓	YES	24:00	~~RO~~
Tuesday	1	105.8	816.7	19.2	216763	—	—		12:30	AL
	2	104.4	813.3	17.3	217335	—	—	Yes	23:00	~~AL~~
Wednesday	1	106.9	824.9	18.1	217977	—	—		11:30	AL
	2	105.1	827.4	17.5	218647	—	—	Yes	23:50/p	~~AL~~
Thursday	1	105.0	834.0	19.0	219352	—	—		13:00	AL
	2	105.4	837.7	17.3	219737	✓	—	Yes	23:00	~~AL~~
Friday	1	105.4	835.0	15.3	220451	✓	✓		12:15	MO
	2	105.7	836.2	16.6	221041	—	—	Yes	23:00	~~MO~~
Saturday	1	105.4	832.8	16.3	221818	✓	✓	—	13:30	AL
	2	106.1	830.1	15.3	222376	—	—	YES	24:00	AL
Sunday	1	106.1	827.8	13.6	223048	✓	✓	NO	12:00	AL
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.) Down 12-21-95 13:00. Bad tank switches - back on @ 16:00. Changed out Chart At 17:00 Pump Shut OFF By ITSELF 17:30 ~~17:00~~

WASTE WATER INJECTION LOG

Dates: From 12/25/95 to 12/31/95

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	104.0	815.9	23.6	223617	✓	✓	yes	19:20	AL
	2	105.1	822.4	22.4	224502	✓	✓		11:45	Rick
Tuesday	1	105.1	824.4	27.5	224772	✓	✓	✓	17:10	~~BH~~
	2	105.3	825.8	25.8	225152	✓	✓	yes	23:45	MC
Wednesday	1	105.5	828.5	25.9	225759	✓	✓	✓	11:10/A	~~BH~~
	2	105.3	830.7	30.6	226425	✓	✓	yes	23:30	MC
Thursday	1	120.6	886.0	28.5	227048	✓	✓	✓	11:00	Rick
	2	122.5	899.4	18.7	227852	✓	✓	yes	23:45	MC
Friday	1	121.1	892.6	18.8	228583	✓	✓	✓	11:05	Rick
	2	128.8	919.0	21.2	229349	✓	✓	yes	23:30	MC
Saturday	1					All Shut down		~~✓~~		
	2					—	—	Yes	23:15	~~BH~~
Sunday	1									
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.)

STARTED PUMP A 19:20 12/25/95

New 50 Micron filter @ 11:00 - Increased down hole flow to 120. Up to 130 (checked well @ 03:30 found it had been going off + on since About 1:00) Shut pump down @ 05:00 wouldn't stay running, Valve wasn't changing back to pond, Pressure from pond pump (130 LBS.) Gauge out there showing pegged out! (filter might be plugged) 300 + ? ! ?

WASTE WATER INJECTION LOG

Dates: From 1/1/96 to 1/7/96

		Obtained from Rustrak Recorder			Gal x100						
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	110.3	838.6	1.1	229617	✓	✓	yes	9:30	JHS
	2	142.6	959.6	6.2	230553	—	—	yes	23:30/p	~~JHS~~
Tuesday	1	124.5	889.9	0.1	231259	✓	✓		10:40	MM
	2	132.9	923.1	21.5	232088	✓	✓	yes	25:10/	Rick
Wednesday	1	142.7	947.0	0.4	233137	✓	✓	NO	14:30	JS
	2	140.9	961.4	0.4	233703	✓	✓	yes	23:00	Rick
Thursday	1	129.9	925.5	-0.1	234512	✓	✓		10:45	MM
	2	119	891.9	-0.1	235268	✓	✓	yes	23:00	Rick
Friday	1	118.6	895.0	0.6	236087	—	—	—	12:10/	~~JHS~~
	2	118.9	895.0	0.2	236756	—	—	yes	23:00	Rick
Saturday	1	114.8	894.5	0.6	237918	—	—	—	16:30/	JHS
	2	114.9	893.4	-0.1	238291	✓	✓	yes	23:15	MM
Sunday	1	112.1	895.3	-0.1	239235	—	—	—	14:40/	JHS
1-7-96	2	109.2	889.7	-0.0	239704	✓	✓	yes	23:30	MM
1-8-96		110.5	891.3							
		69.0	893.3							

NOTES: (valve lineup at ponds, unusual conditions, etc.)

Started P20 pump at 9:30 AM - Change to Back to 180.3

WASTE WATER INJECTION LOG

Dates: From 1-22-96 to 1/28/96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	127.5	804.4	-0.0	252587	✓	✓		17:00	MQ
	2	0.1	853.6	0.1	252610	✓	✓	Yes	24:00	AS
Tuesday	1	—	885.9	0.1	—	✓	✓	—	10:00	R
	2	—	909.4	0.1	252610	✓	✓	Yes	00:00 PM	JH
Wednesday	1	—	804	0.1	252660	✓	✓	✓	12:00	AS
	2	—	850.1	0.1	252610	✓	✓	Yes	23:20 P	JH
Thursday	1	110?	830.1	-0.1	"	✓	✓	✓	11:20	MQ
	2	"	887.5	-0.1	"	✓	✓	Yes	23:35	JH
Friday	1	—	856.6	0.1	252610	✓	✓	✓	12:00	AS
	2	—	898.2	-0.1	"	✓	✓	YES	23:57 P	JH
Saturday	1	—	897.5	0.1	"	✓	✓	✓	15:00	AS
	2	—	856.3	-0.1	"	✓	✓	Yes	23:15 P	JH
Sunday	1	16.5	865.1	0.1	252614 "	✓	✓	✓	12:45	AS
1-28	2	136.1	918.7	-0.1	253117	✓	✓	Yes	23:12 P	JH
1-29 current		119.9	866.0							
		119.5	871.9							
1-30		117.8	870.5							
		116.0	870.1							
1-31		117.2	876.2							

NOTES: (valve lineup at ponds, unusual conditions, etc.) Started back up 10:00 AM
1-22-96 - Meter not Totaling. 1-22-96

WASTE WATER INJECTION LOG

Dates: From 1/29/96 to 2/4/96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	119.0	866.0	0.1	253825	✓	✓		11:00	RA
	2	119.5	871.9	-0.1	254615	✓	✓	yes	Midnite	MM.
Tuesday	1	112.8	870.5	-0.2	255385	-	-	-	12:45 P	JH
	2	116.0	870.1	-0.2	256063	✓	✓	yes	23:50	MM
Wednesday	1	117.2	876.2	-0.2	256806	✓	✓		12:15	Rick
	2	119.7	812.6	-0.2	257459	✓	✓	yes	23:00	Rick
Thursday	1	112.5	889.4	0.2	258163	✓	✓	-	11:00	RA
	2	108.0	881.3	-0.2	258884	✓	✓	yes	23:30	MM.
Friday	1	110.9	917.6	-0.2	259602	✓	✓	-	12:15	Rick
	2	111.8	918.4	-0.1	260219	✓	✓	yes	23:15	MM.
Saturday	1	111.0	911.4	-0.1	260908	✓	-	-	11:10	AC
	2	119.5	941.5	-0.1	261660	-	-	Yes	23:45 P	JH
Sunday	1	114.5	916.3	-0.1	262379	-	-	-	11:45	AC
	2	117.7	929.8	-0.1	263117	-	-	Yes	23:30 P	JH
		180	935.0							

NOTES: (valve lineup at ponds, unusual conditions, etc.) Ops - maintain just less than 950# on the 2" disch. pressure by adjusting flow rate 2-2-96

WASTE WATER INJECTION LOG

Dates: From 2/5/96 to 2/11/96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	121.0	940 5	-0.2	264029	✓	✓	✓	14:00	AC
	2	122.2	948.0	-0.2	264618	✓	✓	Yes	23 30 p	JH
Tuesday	1	119.5	932.2	-0.2	265398	✓	✓		12:10	MH.
	2	111.4	905.0	-0.2	266053	✓	✓	yes	23 00	Rick
Wednesday	1	1325	985.2	✓	266810	✓	✓	✓	11:30	BC
	2	110.5	895.9	-0.2	267508	✓	✓	yes	23 00	Rick
Thursday	1	129.6	968.2	-0.2	268310	✓	✓		12:30	MH
	2	123.3	939	-0.2	268964	✓	✓	yes	23 00	Rick
Friday	1	116.9	910.5	✓	269981	✓	✓	✓	16 00 p	JH
	2	123.5	933.2	-0.2	270394	✓	✓	yes	23 00	Rick
Saturday	1	117.9	910.8	-0.3	271167	✓	✓	✓	11 50 A	JH
	2	121.0	923.5	-0.2	271937	✓	✓	yes	12:30	AC
Sunday	1	123.6	934.2	-0.2	272678	✓	✓	✓	12 00 p	JH
	2	121.1	925.8	-0.2	273421	✓	✓	yes	23:55	MH.

NOTES: (valve lineup at ponds, unusual conditions, etc.) Maintain Discharge Pressure to Just Under 950# - adjusting Flow Rate when needed.
Adjusted BACK TO 938.1 + 120.9
2/8) Adjusted Back to 121 — 933.5
" to 112.3 - 899.3

WASTE WATER INJECTION LOG

Dates: From 2/12/96 to 2-18-96

		Obtained from Rustrak Recorder			P-670					
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	120.1	919.3	-0.2	274175	—	—	—	12:00 N	JH
	2	125.5	944.2	-0.2	274929	—	—	yes	23:55	JH
Tuesday	1	116.4	911.7	-0.2	275673	✓	✓		12:00	Rick
	2	119.2	924.6	-0.2	276392	✓	✓	yes	23:50	JH
Wednesday	1	109.0	895.3	-0.2	277000	✓	✓		12:30	AL
	2	121.6	937.1	71.8	277663	✓	✓	yes	23:55	JH
Thursday	1	117.7	934.3	78.7	278408	✓	✓		12:01	AL
	2	118.0	928.1	106.3	279108	✓	✓	yes	23:50	JH
Friday	1	120.1	932.5	109.4	279828	✓	✓		11:30	AL
	2	122.4	945.6	126.7	280612	✓	✓	yes	24:00	JH
Saturday	1	122.0	945.0	149.6	281344	✓	✓		12:00	JH
	2	119.2	936.1	162.7	282026	✓	✓	yes	23:00	Rick
Sunday	1	119.9	941.9	184.3	282807	✓	✓		11:45	JH
	2	117.2	934.3	195.1	283486	✓	✓	yes	2300	Rick

931,000?

NOTES: (valve lineup at ponds, unusual conditions, etc.)

9:02 - 279674 to pond

9:49 - 279722 to tank

72200
6-7400
-180

WASTE WATER INJECTION LOG

Dates: From 2-19-96 to 2-25-96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	118.4	942.1	88.7	284296	✓	✓		12:10	JLL
	2	115.7	933.3	80.2	284938	✓	✓	yes	23:00	Ricle
Tuesday	1	116.3	944.3	83.5	285912	✓	✓	—	15:00	AS
	2	117.7	956.2	86.3	286452	✓	✓	YES	24:10	AL
Wednesday	1	111.9	936.5	87.9	287150	✓	—	—	12:15	AS
	2	113.8	948.5	92.2	287797	✓	✓	YES	11:30	AL
Thursday	1	112.0	943.5	94.5	288561	✓	✓	✓	12 35 P	JH
	2	107.8	927.7	99.1	289259	✓	✓	YES	1:00	AL
Friday	1	110.2	939.7	100.9	289856	✓	✓	✓	12:00	RC
	2	110.9	943.4	94.8	290365	✓	✓	YES	11:30	AL
Saturday	1	110.6	927.4	105.4	291082	✓	✓		12:10	Ricle
	2	110.7	927.8	101.3	291712	✓	✓	YES	23:30	AS
Sunday	1	110.6	927.8	106.9	292496	✓	✓		12:05	Ricle
	2	112.1	934.4	107.1	293141	✓	✓	YES	24:10	AS

NOTES: (valve lineup at ponds, unusual conditions, etc.)

WASTE WATER INJECTION LOG

Dates: From 2-26 to _____

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	TIME	INITIALS
Monday	1	113.2	940.3	111.7	293806	✓	✓		12 AM	RS
	2	112.0	936.1	115.7	294501	✓	✓	Yes	23:50	AS
Tuesday	1	112.4	937.3	117.8	295229	—	—		12:30	AC
	2	112.4	939.2	115.9	295861	—	—	Yes	23:20 P	AS
Wednesday	1	112.6	939.3	118.2	296617	—	—	—	12:30	AC
	2	113.8	944.3	115.8	297252	—	—	Yes	23:15 P	AS
Thursday	1	114.1	946.8	119	298014	✓	—		12:25	AC.
	2									
Friday	1									
	2									
Saturday	1									
	2									
Sunday	1									
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.) shut pumps down @ 12:25
2/29 for fracing

WASTE WATER INJECTION LOG

Dates: From 3-6-96 to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	156.0	950.8	141-9	298084	✓	—	yes	11:00	RLL
	2	151.9	957.0	10.8	299096	✓	✓	yes	23:55	ML
Tuesday	1	146.4	944.0	9.8	300091	—	—		12:45	AC
	2	149.4	960.3	9.5	300954	—	—	Yes	11:50p	~~AC~~
Wednesday	1	142.0	938.0	11.7	301893	—	—		12:45	AC
	2	140.6	938.3	18.3	302664	✓	✓	Yes	23:25p	~~AC~~
Thursday	1									
	2									
Friday 3-8	1									
	2									
Saturday 3-9	1									
	2									
Sunday 3-10	1									
	2									

NOTES: (valve lineup at ponds, unusual conditions, etc.) System down for Frac.
Maintain slightly less than 950#.
Back on at 11
3 WAY VALVE STARTED LEAKING AGAIN AT 18:30 3/8/96 AND IS GETTING WORSE.

WASTE WATER INJECTION LOG

Dates: From 3-11-96 to 3-17-96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	143.5	950.8	15.0	303167	✓	✓		10:00	AS
	2	147.2	964.7	10.0	304485	—	—	Yes	12 PM	[illegible]
Tuesday	1	138.8	965.3	31.3	305239	✓	✓		11:30	MC
	2	140.9	957.1	57.4	306057	✓	✓	yes	23:00	Rick
Wednesday	1	143.4	965.3	82.1	306936	✓	—		11:10	[illegible]
	2	140.3	953.3	72.1	307793	✓	✓	yes	23:00	[illegible]
Thursday	1	154.0	1000.0	137.4	308786	✓	✓		12:20	[illegible]
	2	155.1	999.7	142.1	309635	✓	✓	yes	23:00	Rick
Friday	1	155.5	993.5	177.4	310781	✓	✓	—	13:20	[illegible]
	2	155.3	982.2	188.8	311533	✓	✓	yes	23:00	RD
Saturday	1	155.3	982.4	215.3	312683	—	—	—	13:15 P	[illegible]
	2	154.0	975.8	51.4	313520	✓	✓	yes	23:55	[illegible]
Sunday	1	153.8	975.1	55.9	314527	—	—	—	12:35 P	[illegible]
	2	152.4	970.9	55.7	315412	✓	✓	yes	23:55	[illegible]

NOTES: (valve lineup at ponds, unusual conditions, etc.)

(147.5 - 962.5 At 12:15 - 3-11-96)

150.1 976.2 At 17:00

149 958 At 18:30

3/12 25% Flow Rate @ 28.3, Press. 949.2

WASTE WATER INJECTION LOG

Dates: From 3/18 to _____

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	153.7	975.8	61.6	316437	✓	✓		13:00	AC
	2	149.2	970.3	60.5	317282	✓	✓	Yes	23:50	MC
Tuesday	1	151.0	965.8	72.8	318218	✓	Added ✓	✓	12:00	RM
	2	147.4	962.9	65.0	319165	✓	✓	Yes	00:05	AS
Wednesday	1	150.5	969.0	112.3	319957	✓	✓		10:30	SC
	2	148.5	955.5	122.0	320934	✓	✓	Yes	23:30	AS
Thursday	1	152.5	973.5	131.2	322005	✓	✓	✓	13:00	RC
	2	150.8	972.0	62.6	322804	✓	✓	Yes	23:30	AS
Friday	1	152.0	974.0	172.5	323739	✓	✓		11:20	AC
	2	152.0	974.2	154.9	324727	✓	✓	Yes	23:58	AS
Saturday	1	152.8	978.0	160.6	325618	✓	✓		11:30	MC
	2	152.5	979.2	199.5	326601	✓	✓	Yes	12:00	AC
Sunday	1	152.5	982.2	95.8	327449	✓	✓		10:50	MC
	2	152.0	984.0	96.2	328396	✓	✓	Yes	23:50	RC

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 3/25 to 3-31-96

		Obtained from Rustrak Recorder			P-670					
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	152.5	984.0	92.5	329387	✓	—		11:35	MC
	2	152.1	982.2	88.0	330289	✓	✓	yes	23:05	RM
Tuesday	1									
	2	150.0	975.1	82.8	332161	✓	—	yes	1:30	AC
Wednesday	1	151.0	980.9	91.5	333946	✓	✓	—	11:35	
	2	152.0	990.3	83.2	334105	—	—	yes	2:00	AC
Thursday	1	152.5	992.4	89.5	334894	✓	—		12:30	
	2	152.0	992.1	84.6	335791	—	—	yes	11:45	AC
Friday	1	152.9	993.5	86.4	336731	✓	—		12:00	Rick
	2	151.3	995.4	209.8	337731	—	—	yes	12:40	AC
Saturday	1	151.0	993.7	210.5	338631	—	—		12:15	Rick
	2	153.0	1007.	96.3		Added	Added	yes	24:00	
Sunday	1	153.3	1014	153.7	340525	✓	—	✓	23:30	RM
	2	152.0	1014	140.3	341578	Added ✓	✓	yes	23:15	

NOTES: (valve lineup at ponds, unusual conditions, etc.)

Lowered ANNULAR PRESSURE. 1-30-96 - 3-31-96

WASTE WATER INJECTION LOG

Dates: From 4-1 to 4-7

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	154.0	1026	153.8		✓	✓	342409	12:10	RC
	2	153.4	1030	160.5	343333	✓	✓	Yes	24:00	~~AC~~
Tuesday	1	140.9	978.0	196.0	344300	✓	✓		12:30	AC
	2	145.3	1002.	192.3	345127	—	—	Yes	00:7A	~~AC~~
Wednesday	1	141.3	999.1	172.2	345993	—	—		12:30	AC
	2	110.2	905.6	163.1	346684	—	—	Yes	23:20/P	~~AC~~
Thursday	1	114.8	903.6	195.4	347491	—	—		12:30	AC
	2	114.9	903.9	176.2	348118	—	—	Yes	23:20/P	~~AC~~
Friday	1	124.9	955.3	166.9	348910	✓	✓	✓	12:00	~~AC~~
	2	131.5	980.6	144.1	349730	—	✓	Yes	23:27/P	~~AC~~
Saturday	1	137.0	1000	169.6	350583	✓	✓	✓	12:15	AC
	2	127.9	955.1	176.8	351362	—	—	YES	12:00	AC
Sunday	1	138.5	1015	161.6	252270	✓	✓	✓	14:00	~~AC~~
	2	128.0	957.7	163.7	152936	—	—	YES	1:30	AC

NOTES: (valve lineup at ponds, unusual conditions, etc.)

WASTE WATER INJECTION LOG

Dates: From 4-8-96 to 4-14-96

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	147.4	1051	217.9	153643	✓	✓	✓	12:30	[illegible]
	2	126.4	958.3	185.3	054359	—	—	YES	1:00	JC
Tuesday	1	118.1	922.5	97.0	055043	—	—	—	12 05 P	[illegible]
	2	118.9	939.0	151.0	155719	✓	✓	yes	23:25	[illegible]
Wednesday	1	124.9	985.4	188.0	156665	—	—	—	13 40	[illegible]
	2	141.7	1075	96.0	157776	✓	✓	Yes	midnight	[illegible]
Thursday	1	127.9	994.2	95.4	158170	✓	✓		13 40	RM
119.1	2	[illegible]	949.6	96.2	158819	✓	✓	yes	00:15	[illegible]
Friday	1	110.7	910.4	98.7	059457	—	—		10:45	JC
	2	119.0	940.2	93.0	060293	✓	✓	Yes	23:50	[illegible]
Saturday	1	117.4	934.4	112.6	061136	—	—	—	13:00	JC
	2	141.4	1067.	102.3	161828	—	—	Yes	23 07 P	[illegible]
Sunday	1	120.5	954.6	111.5	062826	—	—		14:00	JC
	2	115.5	933.3	109.9	163416	—	—	Yes	00 10 A	[illegible]

NOTES: (valve lineup at ponds, unusual conditions, etc.) Pond Pump Was OFF @ 17:29
Started Backup OK - Started Inj Pump at 17:55 P. F Fill

WASTE WATER INJECTION LOG

Dates: From 4/15/96 to ____________

		Obtained from Rustrak Recorder								
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	150.5	1116.0	109.7	064198	—	—		12:30	[illegible]
	2	135.5	1032	108.6	064949	Added	—	Yes	24:00	[illegible]
Tuesday	1	149.6	1099	100.4	065728	—	—		12:00	[illegible]
	2	130.8	993.5	106.9	866445	✓	✓	Yes	23:00	Rick
Wednesday	1	141.5	1039	74.1	867267	—	—		12:00	[illegible]
	2	122.4	987.4	138.6	767992	✓	✓	yes	23:30	Rick
Thursday	1	113.7	944.0	106.9	768726	Added	—		11:00	[illegible]
	2	120.1	969.6	206.5	769530	✓	✓	yes	23:00	Rick
Friday	1	114.2	936.0	220.0	770292	~~Added~~ —	Added 1 gallon —	—	11:50p	[illegible]
	2	118	1122	144.0	770844	✓	✓	yes	23:00	Rick
Saturday	1	103.3	908.1	177.9	771761	—	—	—	12:35p	[illegible]
	2	111.7	931.6	186.7	772457	—	—	yes	00:05	[illegible]
Sunday	1	109.5	922.6	127.0	773268	—	—	—	12:30p	[illegible]
	2	132.7	1022.1	93.1	674064	—	—	yes	23:55	[illegible]

NOTES: (valve lineup at ponds, unusual conditions, etc.) ____________

WASTE WATER INJECTION LOG

Dates: From 4/20/96 to 4/27

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	116.9	953.3	100.9	674869	–	–		11:50	[illegible]
	2	104.6	902.0	85.0	675621	✓	–	yes	23:50	[illegible]
Tuesday	1	140.9	1196	111.0	676449	✓	✓		12:00	Rick
	2	1664	1166	85.6	677049	Added	–	yes	24:00	[illegible]
Wednesday	1	142.5	1068	124.6	677876	✓	Added 1 gal		12:00	[illegible]
	2	153.9	1131	124.1	678598	✓	✓	yes	24:00	[illegible]
Thursday	1	107.3	916.0	151.0	679428	–	✓		12:00	[illegible]
	2	149.7	1115	157.5	680192	Added	✓	yes	24:00	[illegible]
Friday	1	114.5	940.0	191.0	681021	✓	✓		11:55	[illegible]
	2	122.1	974.4	215.3	681780	Added ✓	–	yes	24:00	[illegible]
Saturday	1	107.7	911.0	171.9	682491	✓	✓		11:45	[illegible]
	2	116.7	951.7	195.7	583315	✓	✓	yes	12:05	Rick
Sunday	1	112.0	928.9	180.9	584096	✓	✓		12:00	[illegible]
	2	105.1	901.3	193.9	584806	Added	✓	yes	23:00	Rick

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 4-29 to 5-5

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	115.3	945.4	192.7	385618	✓	✓		11:55	
	2	109.0	923.8	219.8	386351	✓	Added 1 1/2 gallons	yes	23 00	Rick
Tuesday	1	116.4	932.3	217.8	387355	✓	✓	✓	14:00	
	2	114.5	953.0	176.6	387974	✓	✓	yes	12:30	
Wednesday	1	116.2	962.3	213.1	388701	✓	✓	✓		
	2	113.6	951.5	162.2	389464	✓	✓	yes	12:20	
Thursday	1	114.6	956.8	218.8	390912	✓	✓	✓	13:00	
	2	114.5	958.4	170.6	391016	✓	✓	yes	1:00	
Friday	1	117.1	971.3	219.6	291833	✓	✓		1340	
	2	~~140.7~~	1100	139.6	392508	✓	✓	yes	12:00	
Saturday	1	114.2	953.3	197.0	293242	✓ ~~Added 1/4 gallon~~	Added 1 1/2 gallons		11:30	~~Rick~~
	2	114.6	956.6	126.7	294111	Added 1/4 gallon	✓	yes	24:00	
Sunday	1	102.1	903.1	122.1	294835	✓	✓		12:00	Rick
	2	115.1	965.6	124.5	295566	Added ✓	✓	yes	23:45	

NOTES: (valve lineup at ponds, unusual conditions, etc.)

Meter Looks Like its Acting Up Again

Meter going backwards & crazy

WASTE WATER INJECTION LOG

Dates: From 5-6 to 5/12/96

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	TIME	INITIALS
Monday	1	119.0	987	144.3	296358	✓	✓		1145	[illegible]
	2	~~1~~148.9	1142	132.4	197318	Added ✓	? ✓	Yes	24:00	[illegible]
Tuesday	1	115.7	966.6	153.1	198219	✓	✓		13:20	[illegible]
	2	110.6	946.6	160.1	198875	—	—	Yes	1138/p	[illegible]
Wednesday	1	106.8	934.3	140.2	199419	✓	—		11:40	[illegible]
	2	116.8	981.0	148.9	100685	—	—	Yes	2345/p	[illegible]
Thursday	1	108.5	943.2	108.4	101685	—	—		11:30	AC
	2	110.5	944.2	141.9	102605	—	—	Yes	2330	[illegible]
Friday	1	132.9	1055.0	108.6	103713	✓	✓		11:45	[illegible]
	2	105.9	922.0	141.1	104592	—	—	Yes	2340/p	[illegible]
Saturday	1	107.2	935.9	95.8	105970	Added ✓	✓	✓	15:00	[illegible]
	2	125.0	1025	143.1	106738	—	—	Yes	12:20	AC
Sunday	1	120.4	1015	118.3	107840	—	—	[illegible]	13:00	[illegible]
	2	103.9	932.3	148.2	108568	✓	✓	Yes	12:30	AC

NOTES: (valve lineup at ponds, unusual conditions, etc.)

1-D (6-05970) sitting Right in the Center of Both.
5-12 Pump At Ponds went down - Had to Unlock it to Reset.

WASTE WATER INJECTION LOG

Dates: From 5-13 to 5-19-96

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	115.6	990.6	199.2	109549	Added	Over Flowing	✓	11:45	✓
	2	90.3	886.4	190.3	110491	—	—	YES	1:00	AL
Tuesday	1	88.1	879.1	166.1	111275	—	Pressured up	—	12:17	✓
	2	95.5	910.8	165.0	111948	✓	✓	yes	00:00	✓
Wednesday	1	90.0	902.6	134.9	112839	—	—	—	14:02	✓
	2	86.3	899.6	220.6	113316	✓	✓	yes	23:58	✓
Thursday	1									
	2									
Friday	1									
	2									
Saturday	1	103.7	943.0	145.0	013908	—	—	YES	10:15A	AL
	2	107.3	961.5	172.6	014129	—	—	YES	00:19A	✓
Sunday	1	92.3	894.3	183.6	014949	—	—		11:30	AL
	2	102.3	935.0	171.4	015715	—	—	YES	00:09	✓

NOTES: (valve lineup at ponds, unusual conditions, etc.) Pond pump kept losing suction since about 4:00 Am ? Couldn't get it to pick up shut down pump.
Pump back on at 1400 5-17-96 [illegible]

NEW Chart 5/18/96 10:15 got pump started up

WASTE WATER INJECTION LOG

Dates: From 5-16-96 to 5-23

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	TIME	INITIALS
Monday	1	0.5	910.9	191.3	371608	Added ½ gal	✓	—	12:00	[illegible]
	2	0.1	926.3	161.0		✓	✓		1:00	AC
Tuesday	1	0.4	944.6	161.1	581656	—	—	—	14:57 P	[illegible]
	2	0.2	936.2	160.5	681697	✓	✓		23:55	[illegible]
Wednesday	1	0.5	946.2	160.3	781668	—	—	—	14:07 P	[illegible]
	2	0.2	943.5	88.9	781776	✓	✓		23.55	[illegible]
Thursday	1	101.3	952.7	148.3	New 580891	—	—	—	13:20	[illegible]
	2	147.5	951.0	134.9	581620	✓	✓		00:25	[illegible]
Friday	1	149.0	953.3	158.3	582466	✓	✓		11:30	AC
	2	147.3	953.5	178.1	583487	✓	✓		23:55	[illegible]
Saturday	1	149.8	954.0	177.0	584546	✓	✓		2:00 P	AC
	2	142.7	946.2	146.8	585255	—	—	—	23:58 P	[illegible]
Sunday	1									
	2	150.0	946.1	143.2	586463	—	—		15:00	AC
		147.2	953.8	147.8	587144	—	—	—	00:20 A	[illegible]

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 5/20 to 5/26

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	106.7	942.9	126.3	016863	—	—		14:30	AL
	2	97.3	909.3	169.4	017528	—	—	Yes	23:54	BH
Tuesday	1	100.2	950.3	116.6	018563	Added 1.5 qts. —	—		12:10	MM
	2	76.4	924.1	176.1	019278	✓	✓	Yes	23:10	Rick
Wednesday	1	105.0	944.5	160.8	020739	✓	✓		11:30	MM.
	2	105.4	945.4	180.6	020996	✓	✓	yes	23:00	Rick
Thursday	1	106.8	944.5	161.6	022162	Added —	✓		12:25	[illegible]
	2	103.3	932.1	173.6	023354	✓	✓	Yes	23:10	Rick
Friday	1	108.9	955.8	77.5	024745	Added qt —	—	—	14:10	BH
	2	109.7	958.3	130.0	025657	✓	Added	Yes	23:00	BH
Saturday	1	91.3	884.0	136.9	026891	—	—	—	13:00 p	BH
	2	95.0	890.8	125.7	027779	✓	✓	Yes	23:50	[illegible]
Sunday	1	99.9	913.5	164.5	029044	—	—	—	12:30	BH
	2	100.4	918.9	184.5	030289	—	—	Yes	00:25	MM.

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 5-27-96 to 6-2-96

		Obtained from Rustrak Recorder								
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	106.3	937.2	190.7	931962	—	—	—	1445	[illegible]
	2	109.5	948.1	136.0	932749	✓	✓	yes	23:50	[illegible]
Tuesday	1	109.1	953.3	177.0	934027	✓	✓		1145	R.O
	2	105.9	745.9	142.8	935128	Added 1 qt ✓	1 qt Added ✓	yes	24:00	[illegible]
Wednesday	1	108.0	959.0	160.1	936590	✓	✓		12:00	[illegible]
	2	102.1	940.5	110.5	937559	Added 1 qt	✓	yes	24:00	[illegible]
Thursday	1	106.7	955.0	139.9	938823	Added	✓		14:30	R.O
	2	110.5	968.2	116.3	839561	Added 1 qt ✓	✓	yes	24:00	[illegible]
Friday	1	103.8	941.5	170.4	840986	✓	✓		11:15	[illegible]
	2	137.0	1058	90.2	842042	✓	1 qt Added ✓	yes	24:00	[illegible]
Saturday	1	116.9	959.4	149.8	943656	✓	✓		12:05	[illegible]
	2	114.8	954.5	166.0	944464	✓	added [illegible]	yes	23:01	Rick
Sunday	1	109.4	932.1	161.6	945862	Added ✓	✓		11:40	[illegible]
	2	111.8	946.7	222.0	946725	✓	✓	yes	22:59	[illegible]
		108.16	951.99	155.68						

NOTES: (valve lineup at ponds, unusual conditions, etc.)

WASTE WATER INJECTION LOG

Dates: From 6-3-96 to 6-10-96

		Obtained from Rustrak Recorder			P-670					
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	955.8	113.4	116.7	948058	✓	✓		12:00	dlr
	2	108.5	941.3	115.6	849108	✓	✓	yes	23:00	Rick
Tuesday	1	108.5	940.3	102.3	850558	✓	—	✓	12:15	dlr
	2									
Wednesday	1									
	2									
Thursday	1									
	2									
Friday	1	91.8	876.4	127.1	861015	✓	✓	yes	15:30	Rick
	2	117.2	951.3	105.4	861903	—	—	yes	12:45	AC
Saturday	1	127.8	994.3	173.2	953149	—	—	—	12:35 P	BH
	2	110.1	932.6	124.3	953804	—	—	yes	23:30	dlr
Sunday	1	116.8	936.5	65.8	855338	—	—	—	12:25 P	BH
	2	120.1	956.9	121.9	856788	—	—	yes	24:00	dlr

NOTES: (valve lineup at ponds, unusual conditions, etc.)

Shut Starter motor at 7:15 Transfer Pump won't come on

Jackson 6-7-96 15:00

WASTE WATER INJECTION LOG

Dates: From 6-10-96 to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	129.4	994.3	127.0	857565	Added	✓		12:00	
	2	129.2	994.3	113.6	858319	✓	✓	Yes	24:00	
Tuesday	1	123.4	953.3	120.8	859262	✓	✓		10:30	
	2	123.5	954.4	124.3	861164	—	—	Yes	2355	
Wednesday	1	0.5	938.0	158.4	862039	✓	✓		16:00	
	2	0.3	967.0	123.7	862054	✓	✓	Yes	2335	
Thursday	1	128.1	937.0	81.8	862853					
	2	124.5	962.9	82.8	963562	✓	✓	Yes	23[illegible]	Rick
Friday	1	122.8	955.0	86.8	165572	Added 1/2 gal	✓	✓	15:00	
	2	122.6	952.7	117.4	265973	✓	✓	Yes	2300	Rick
Saturday	1	120.0	957.6	157.0	267591	Added 1 qt ✓	✓	✓	12:00	
	2	121.3	950.3	187.0	268480	✓	✓	YES	12:00	
Sunday	1	121.9	949.4	98.3	269882	✓	✓	✓	12:00	
	2	120.9	947.7	155.0	270718	✓	✓		1:30	

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 6/24/96 to _____

		Obtained from Rustrak Recorder			P-670	OILERS	CRANKCASE	CHART	TIME	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED		INITIALS
Monday	1	152.9	1083	155.7	588133	✓	✓	—	12:00	
	2	103.4	952.7	127.9	589002	—	—	—	00 09/A	
Tuesday	1	153.5	953.0	141.2	589940	✓	✓		12:10	
	2	151.9	952.1	167.4	590801	✓	✓		23:15	
Wednesday	1	150.0	952.5	168.6	591778	✓	✓		11:50	
	2	148.6	949.7	168.3	592658	✓	Added		23:00	
Thursday	1	152.0	950.1	180.0	593620	✓	✓		11:30	
	2	150.8	951.8	196.9	594487	✓	✓		23:00	
Friday	1	148.2	948.3	128.7	595674	Added	—	—	14:00	
	2	149.1	950.3	144.9	596398	✓	✓		23:45	
Saturday	1	137.4	943.6	121.5	making some Noise 597200	—	—	—	11:20 A	
	2	151.7	950.5	153.3	597897	✓	✓		00:05	
Sunday	1	148.1	948.6	169.0	598059	—	—	—	13:00 P	
	2	150.9	950.0	158.2	598883	✓	✓		00:05	

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

WASTE WATER INJECTION LOG

Dates: From 7/1/96 to _____

		Obtained from Rustrak Recorder			P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE						
Monday	1	948.2	101.1	189.6	598102	✓	✓	✓	12:10	AL
	2	150.6	949.5	88.4	598113	✓	✓		23:56	AL
Tuesday	1	158.7	957.9 79.1	42.1	598132	✓	✓		12:10	RL
	2	148.7	[illegible]	79.3	598146	✓	✓		24:00	RL
Wednesday	1									
	2									
Thursday	1									
	2									
Friday	1									
	2									
Saturday	1									
	2									
Sunday	1									
	2									

meter not working - 7-2-96

NOTES: (valve lineup at ponds, unusual conditions, etc.) _____

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 Fax (505)334-6170

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

July 3, 1996

Mr. Lynn Shelton
Giant Industries
P. O. Box 159
Bloomfield NM 87413

Re: Disposal #1, I-27-29N-11W, 30-045-29002

Dear Mr. Shelton:

This letter is to confirm the oral directive I gave you this morning to shut in the referenced well.

On this day Mr. Denny Foust and I inspected the referenced well site. We found that the well was injecting water at 1100 psi thereby exceeding the 955 psi pressure limit. Also, the casing pressure had dropped below the minimum 100 psi pressure required by your discharge plan. Finally, there was no effective pressure limiting device installed on the injection system nor was there a working recorder as required by your discharge plan and the injection approval order.

In the injection plant there was an ongoing discharge of approximately 700 gallons a day of refinery waste water from a leaking valve. A shop-built tray and gutter were diverting the water flow out of the injection building where it was soaking in and running as far as 500 feet to the bar ditch by the road. No effort had been made to report or contain the discharge until we arrived then a small livestock watering tank was brought in to catch the water.

On 2/14/96 Mr. Ernie Busch from this office witnessed a mechanical integrity test on the well. At that time he discovered that there were pressure and a small gas flow from the bradenhead. You are hereby directed to submit reports of that incident with an evaluation as to whether or not this poses a hazard which could cause migration of the injected fluid.

You may not start injection until this office has inspected the facility and determined that you are in compliance.

Sincerely,

Frank T. Chavez, District Supervisor

cc: Roger Anderson
well file

GIANT
REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

April 30, 1996

Mr. Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Permit Modification, GW 130, Injection Well WD #1
Giant Refining Company - Bloomfield, San Juan County

Dear Mr. Anderson:

Pursuant to Sections 3-109 and 5-101 of the New Mexico Water Quality Control Commission, Giant Refining Company - Bloomfield requests a permit modification to our existing permit GW 130. Specifically, Giant is requesting an increase in the allowable surface injection pressure of 955 psi to 1150 psi.

To insure that the injection well would perform satisfactorily at the higher injection pressures, the well was sand fractured on March 1, 1996 by BJ Services. After cleanup, a Step Rate Injection Test was performed, with Ernie Busch of the Aztec OCD office observing. Copies of the original frac data, step rate test data (including the Tefteller downhole data) and the graph of the step rate test are included to document the reasoning for the increase in injection pressure.

Please note that the Step Rate Injection Test was run to a maximum of 1435 psi surface pressure, but due to a problem with the surface equipment, and the subsequent failure to let the bottom hole pressure stabilize, the data has been disputed, even though the bottom hole pressure rose only 25 psi during the test. Rather than go to the expense of another Step Rate Test, Giant is accepting the 1150 psi limit and reserves the right to perform another Step Rate Test if additional work is performed on the well. 1150 psi will allow for adequate day to day injection rates that should handle refinery demand, but it does not give Giant the leeway to inject extra water during periods of high flow or low evaporation when inventories are high.

As required by Section 3-114.B.1.(a) of the WQCC Regulations, Giant is submitting a check for fifty (50) dollars. Since this is an existing permit, Giant requests a waiver of the flat fee as noted in Section 3-114.B.5.

If there is additional information that you require, please do not hesitate to contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

Enclosures

cc: John Stokes, Refinery Manager, Giant Refining Company - Bloomfield
Ernie Busch, NM OCD, Aztec
Mark Ashley, NM OCD, Santa Fe

1087

GIANT INDUSTRIES ARIZONA, INC.
DBA GIANT REFINING COMPANY - BLOOMFIELD
P. O. BOX 159 PH. 632-8013
BLOOMFIELD, NM 87413

95-207/1022

DATE May 1, 1996

PAY TO THE ORDER OF New Mexico Oil Conservation Division ---------- $ 50.00

Fifty and NO/100 ---------- DOLLARS

Citizens Bank
90 Years of Service 1905-1995
Bloomfield Branch
320 West Broadway
Bloomfield, NM 87413

AMOUNTS OVER 500.00 REQUIRE COUNTER SIGNATURE

FOR Filing Fee for permit modification

⑈001087⑈ ⑆102202078⑆ 03145573⑈06

© DELUXE RBP

The Western Company — Treatment Report

Date March 1, 1996 | District Farmington NM | F.Receipt 398367 | Operator Giant Refinery
Lease Bloomfield WD | Well No. 1 | Field Blanco | Location SEC.27,T29N,R11W
County San Juan | State New Mexico | Stage Number 1 | This Zone ☒ | This Well ☒

WELL DATA

OG ☐ NG ☐ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD/PB 3,600' Formation Mesa Verde
Tubing Size N/A Wt. N/A Set at: N/A Type Packer N/A Set at N/A
Casing Size 5 1/2" Wt. 15.5# Set From SURFACE To TD Liner Size N/A Wt.
Liner Set From To Open Hole: Size N/A From To
Casing Perforation: Size .45 Holes Per Foot 4 Intervals 3,276' - 3,514' 316 HOLES
Previous Treatment N/A Prior Production N/A

TREATMENT DATA

Pad Used: Yes ☒ No ☐ Pad Type Slick Water
Treat. Fluid Type: Foam ☐ Water ☒ Acid ☐ Oil ☐ Vol. 130,410 Gal.
Base Fluid type H2O Base Fluid Vol. 123,354 Gal.
Foam Qual. N/A % Mitchell ☐ Slurry ☐ Surface ☐ Downhole ☐ Total Prop Qty. 153,940 Lbs.
Prop Type: Sand ☒ WP-1 ☐ WP-3 ☐ Baux. ☐ Other
Prop Mesh Sizes, Types and Quantities 20/40 Arizona 153,940
Hole Loaded With H2O Treat Via: Tubing ☐ Casing ☒ Anul. ☐ Tubing & Anul. ☐
Ball Sealers: N/A In Stages of
Types and Number of Pumps Used 6 PACESETTER 1000'S
Auxiliary Materials 54# XCIDE-207 / 89 G. FRW-30

PROCEDURE SUMMARY

PUMP:21,588 G. PAD/19,824 G. 1/2#/21,000 G. 1#/11,214 G. 1 1/2#
47,040 G. 2#/ 3,150 G. FLUSH.

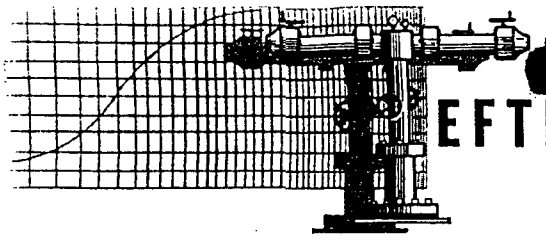
LIQUID/GAS PUMPED AND CAPACITIES IN BBLS.

Tubing Cap.	N/A
Casing Cap.	78
Annular Cap.	N/A
Open Hole Cap.	N/A
Fluid to Load	N/A
Pad Volume	514
Treating Fluid	2516
Flush	75
Over Flush	N/A
Fluid to Recover	2937
Total N2	N/A
Total CO2	N/A

Time AM/PM	Treating Press.-Psi		Surface Slurry bbls Pumped		Slurry Rate BPM	Surface CO2 bbls Pumped		CO2 Rate BPM	Surface N2 MSCF Pumped		N2 Rate SCFM	Comments Safety Meeting/Test Lines
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
PM5:50	0		0	0	60							START PAD
5:58	1700		514	514	65							START 1/2#
6:05	1580		486	1000	65							START 1#
6:14	1510		525	1525	66							START 1 1/2#
6:18	1500		285	1810	65							START 2#
6:37	1470		220	3030	65							START FLUSH
6:38	1000		75	3105	40							SHUT DOWN 5 MINS-720
												10 MINS-710

Treating Pressure: Min 1470 Max. 1700 Avg. 1500 Customer Representative Paul Thomson
Inj. Rate on Treating Fluid 65 Rate on Flush 65 Western Representative Harry Mitchell
Avg. Inj. Rate 65 I.S.D.P. 750 Flush Dens. lbs/gal 8.34 Distribution NORMAL
Final Shut-in Pressure 700 In 15 Minutes
Operator's Maximum Pressure (psi) 3500
Recommendation ID# FM050525

Job Number



EFTELLER, INC.

BHP • BU • PI • DD • GWT • BFS • GOR • FL • TS

reservoir engineering data

FARMINGTON, NEW MEXICO / MIDLAND, TEXAS
GRAND JUNCTION, COLORADO

P. O. Box 1198
Farmington, New Mexico 87499
(505) 325-1731

Farmington Fax (505) 325-1148
Midland Fax (915) 682-5329
Grand Junction Fax (303) 241-7634

GIANT REFINING

SWD (CLASS I) NO. WD-1

MARCH 7, 1996

Customer	GIANT REFINING
Street	7415 E. MAIN
City/State.....	FARMINGTON, NM 87402
Country	U.S.A.
Service Company	TEFTELLER, INC.
Well Name	SWD (CLASS I) NO. WD-1
Well Location	SAN JUAN COUNTY, NM
Field / Pool	MESA VERDE FORMATION
Status (Oil, Gas, Other)	WATER DISPOSAL
Test Type	STEP RATE TEST
Date of Test	3-7-96
Producing Interval	3276' - 3514'
Recorder Depth	3400'
Recorder Position	
Shut In Date ..... Start:	3-7-96
Stop:	3-7-96
Duration:	7 HOURS
Bottom Hole Temperature	

Gauge Identification

Gauge Manufacturer	MICRO-SMART SYSTEMS
Serial Number	224
Model Number	SP2000
Pressure Range	
Battery Type	
Calibration I.D.	
Last Calibration	10/ 3/95

Gauge Setup Parameters

Probe Set Up Time	3/ 7/96 7:46: 0
Time Delay to First Reading	
Test Type Selection	STEP RATE TEST
Test Duration Selection	7 HOURS

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	07:46:00	.0000	.01	67.58		
03/07	08:16:30	.5083	.47	46.90		
03/07	08:19:00	.5500	.89	44.34		
03/07	08:19:15	.5542	.93	44.16		
03/07	08:22:00	.6000	1.35	41.84		
03/07	08:22:15	.6042	1.38	41.69		
03/07	08:27:00	.6833	1.78	38.85		
03/07	08:27:15	.6875	1.81	38.73		
03/07	08:38:15	.8708	2.04	36.47		
03/07	08:38:30	.8750	8.77	36.51		
03/07	08:38:45	.8792	701.41	36.53		
03/07	08:39:00	.8833	667.26	36.55		
03/07	08:39:15	.8875	654.50	36.58		
03/07	08:39:30	.8917	663.26	36.60		
03/07	08:39:45	.8958	686.24	36.63		
03/07	08:39:48	.8969	690.35	36.72		
03/07	08:39:52	.8979	702.55	36.85		
03/07	08:39:56	.8990	711.16	36.99		
03/07	08:40:00	.9000	714.85	37.12		
03/07	08:40:03	.9010	722.01	37.25		
03/07	08:40:07	.9021	730.35	37.38		
03/07	08:40:11	.9031	736.44	37.52		
03/07	08:40:15	.9042	741.33	37.65		
03/07	08:40:18	.9052	748.88	37.78		
03/07	08:40:22	.9063	757.63	37.91		
03/07	08:40:26	.9073	762.79	38.05		
03/07	08:40:30	.9083	769.41	38.18		
03/07	08:40:33	.9094	775.09	38.33		
03/07	08:40:37	.9104	780.64	38.52		
03/07	08:40:41	.9115	784.19	38.70		
03/07	08:40:45	.9125	790.41	38.88		
03/07	08:40:48	.9135	796.62	39.07		
03/07	08:40:52	.9146	800.84	39.25		
03/07	08:40:56	.9156	806.92	39.43		
03/07	08:41:00	.9167	814.99	39.61		
03/07	08:41:03	.9177	824.66	39.80		
03/07	08:41:07	.9187	833.53	39.98		
03/07	08:41:11	.9198	841.07	40.17		
03/07	08:41:15	.9208	848.88	40.35		
03/07	08:41:18	.9219	857.74	40.55		
03/07	08:41:22	.9229	864.35	40.76		
03/07	08:41:26	.9240	869.89	40.97		
03/07	08:41:30	.9250	877.29	41.19		
03/07	08:41:33	.9260	884.43	41.40		
03/07	08:41:37	.9271	891.04	41.61		
03/07	08:41:41	.9281	897.11	41.83		
03/07	08:41:45	.9292	905.31	42.04		
03/07	08:41:48	.9302	908.99	42.25		
03/07	08:41:52	.9312	915.33	42.46		
03/07	08:41:56	.9323	921.93	42.68		
03/07	08:42:00	.9333	927.21	42.89		
03/07	08:42:03	.9344	933.15	43.10		
03/07	08:42:07	.9354	937.36	43.32		
03/07	08:42:11	.9365	944.23	43.55		
03/07	08:42:15	.9375	948.84	43.78		
03/07	08:42:18	.9385	955.17	43.99		
03/07	08:42:22	.9396	960.71	44.22		
03/07	08:42:26	.9406	967.58	44.45		
03/07	08:42:30	.9417	973.12	44.67		
03/07	08:42:33	.9427	977.06	44.90		
03/07	08:42:37	.9438	983.13	45.12		
03/07	08:42:41	.9448	989.47	45.35		
03/07	08:42:45	.9458	995.00	45.58		
03/07	08:42:48	.9469	1001.34	45.80		
03/07	08:42:52	.9479	1007.67	46.03		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:42:56	.9490	1015.20	46.25		
03/07	08:43:00	.9500	1023.40	46.48		
03/07	08:43:03	.9510	1031.72	46.71		
03/07	08:43:07	.9521	1039.52	46.94		
03/07	08:43:11	.9531	1046.79	47.16		
03/07	08:43:15	.9542	1052.98	47.39		
03/07	08:43:18	.9552	1059.32	47.61		
03/07	08:43:22	.9563	1066.45	47.84		
03/07	08:43:26	.9573	1072.12	48.07		
03/07	08:43:30	.9583	1081.64	48.30		
03/07	08:43:33	.9594	1085.05	48.51		
03/07	08:43:37	.9604	1089.92	48.74		
03/07	08:43:41	.9615	1097.45	48.97		
03/07	08:43:45	.9625	1104.18	49.19		
03/07	08:43:48	.9635	1112.63	49.42		
03/07	08:43:52	.9646	1119.90	49.65		
03/07	08:43:56	.9656	1129.02	49.88		
03/07	08:44:00	.9667	1137.34	50.10		
03/07	08:44:03	.9677	1146.06	50.33		
03/07	08:44:07	.9688	1154.25	50.55		
03/07	08:44:11	.9698	1161.78	50.78		
03/07	08:44:15	.9708	1171.30	51.00		
03/07	08:44:18	.9719	1179.75	51.23		
03/07	08:44:22	.9729	1186.61	51.46		
03/07	08:44:26	.9740	1194.67	51.69		
03/07	08:44:30	.9750	1201.93	51.91		
03/07	08:44:33	.9760	1211.04	52.14		
03/07	08:44:37	.9771	1216.04	52.36		
03/07	08:44:41	.9781	1227.55	52.59		
03/07	08:44:45	.9792	1236.40	52.81		
03/07	08:44:48	.9802	1244.45	53.04		
03/07	08:44:52	.9812	1251.71	53.27		
03/07	08:44:56	.9823	1260.69	53.49		
03/07	08:45:00	.9833	1268.35	53.72		
03/07	08:45:03	.9844	1275.47	53.93		
03/07	08:45:07	.9854	1286.05	54.16		
03/07	08:45:11	.9865	1292.10	54.40		
03/07	08:45:15	.9875	1300.29	54.63		
03/07	08:45:18	.9885	1308.87	54.86		
03/07	08:45:22	.9896	1316.65	55.09		
03/07	08:45:26	.9906	1323.37	55.31		
03/07	08:45:30	.9917	1329.69	55.54		
03/07	08:45:33	.9927	1339.60	55.78		
03/07	08:45:37	.9937	1340.87	56.01		
03/07	08:45:41	.9948	1342.81	56.24		
03/07	08:45:45	.9958	1350.46	56.47		
03/07	08:45:48	.9969	1354.65	56.71		
03/07	08:45:52	.9979	1353.14	56.94		
03/07	08:45:56	.9990	1363.44	57.18		
03/07	08:46:00	1.0000	1378.65	57.41		
03/07	08:46:03	1.0010	1385.90	57.65		
03/07	08:46:07	1.0021	1393.14	57.88		
03/07	08:46:11	1.0031	1404.51	58.12		
03/07	08:46:15	1.0042	1414.27	58.35		
03/07	08:46:18	1.0052	1424.17	58.59		
03/07	08:46:22	1.0063	1432.48	58.82		
03/07	08:46:26	1.0073	1443.97	59.06		
03/07	08:46:30	1.0083	1458.25	59.30		
03/07	08:46:33	1.0094	1467.22	59.54		
03/07	08:46:37	1.0104	1475.79	59.78		
03/07	08:46:41	1.0115	1489.80	60.02		
03/07	08:46:45	1.0125	1502.61	60.27		
03/07	08:46:48	1.0135	1511.57	60.51		
03/07	08:46:52	1.0146	1518.94	60.75		
03/07	08:46:56	1.0156	1527.91	61.00		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:47:00	1.0167	1537.13	61.24		
03/07	08:47:03	1.0177	1547.95	61.48		
03/07	08:47:07	1.0187	1557.84	61.73		
03/07	08:47:11	1.0198	1568.40	61.97		
03/07	08:47:15	1.0208	1576.56	62.21		
03/07	08:47:18	1.0219	1587.77	62.46		
03/07	08:47:22	1.0229	1598.06	62.71		
03/07	08:47:26	1.0240	1605.15	62.96		
03/07	08:47:30	1.0250	1614.24	63.22		
03/07	08:47:33	1.0260	1623.59	63.47		
03/07	08:47:37	1.0271	1633.34	63.72		
03/07	08:47:41	1.0281	1640.57	63.98		
03/07	08:47:45	1.0292	1650.18	64.23		
03/07	08:47:48	1.0302	1659.53	64.48		
03/07	08:47:52	1.0313	1670.74	64.74		
03/07	08:47:56	1.0323	1679.95	64.99		
03/07	08:48:00	1.0333	1690.63	65.24		
03/07	08:48:03	1.0344	1701.82	65.51		
03/07	08:48:07	1.0354	1713.16	65.78		
03/07	08:48:11	1.0365	1723.16	66.05		
03/07	08:48:15	1.0375	1732.36	66.32		
03/07	08:48:18	1.0385	1744.75	66.60		
03/07	08:48:22	1.0396	1756.47	66.87		
03/07	08:48:26	1.0406	1766.47	67.14		
03/07	08:48:30	1.0417	1775.01	67.41		
03/07	08:48:33	1.0427	1785.41	67.68		
03/07	08:48:37	1.0438	1795.01	67.95		
03/07	08:48:41	1.0448	1805.93	68.22		
03/07	08:48:45	1.0458	1816.59	68.50		
03/07	08:48:48	1.0469	1822.47	68.79		
03/07	08:48:52	1.0479	1832.72	69.08		
03/07	08:48:56	1.0490	1842.30	69.38		
03/07	08:49:00	1.0500	1845.52	69.67		
03/07	08:49:03	1.0510	1854.97	69.97		
03/07	08:49:07	1.0521	1865.22	70.27		
03/07	08:49:11	1.0531	1875.73	70.56		
03/07	08:49:15	1.0542	1886.24	70.86		
03/07	08:49:18	1.0552	1898.08	71.15		
03/07	08:49:22	1.0562	1910.84	71.44		
03/07	08:49:26	1.0573	1922.81	71.74		
03/07	08:49:30	1.0583	1934.11	72.04		
03/07	08:49:33	1.0594	1945.94	72.33		
03/07	08:49:37	1.0604	1958.46	72.56		
03/07	08:49:41	1.0615	1969.38	72.79		
03/07	08:49:45	1.0625	1981.11	73.01		
03/07	08:49:48	1.0635	1993.35	73.24		
03/07	08:49:52	1.0646	2006.27	73.47		
03/07	08:49:56	1.0656	2018.25	73.70		
03/07	08:50:00	1.0667	2030.23	73.92		
03/07	08:50:03	1.0677	2043.80	74.16		
03/07	08:50:07	1.0688	2056.71	74.38		
03/07	08:50:11	1.0698	2069.88	74.61		
03/07	08:50:15	1.0708	2081.20	74.84		
03/07	08:50:18	1.0719	2091.21	75.01		
03/07	08:50:22	1.0729	2100.81	75.20		
03/07	08:50:26	1.0740	2109.89	75.39		
03/07	08:50:30	1.0750	2115.12	75.58		
03/07	08:50:33	1.0760	2118.09	75.77		
03/07	08:51:22	1.0896	2118.23	78.56		INSTRUMENT @ 3400'
03/07	08:51:41	1.0948	2117.88	79.80		
03/07	08:51:45	1.0958	2117.79	80.09		
03/07	08:52:00	1.1000	2117.44	81.15		
03/07	08:52:03	1.1010	2117.36	81.42		
03/07	08:52:18	1.1052	2117.08	82.47		
03/07	08:52:22	1.1063	2116.73	82.74		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:53:15	1.1208	2116.67	86.12		
03/07	08:54:15	1.1375	2117.04	89.75		
03/07	08:54:45	1.1458	2117.29	91.56		
03/07	08:55:00	1.1500	2117.51	92.47		
03/07	08:55:48	1.1635	2117.64	95.13		
03/07	08:56:37	1.1771	2117.93	97.22		
03/07	08:57:30	1.1917	2118.04	99.00		
03/07	08:58:30	1.2083	2118.34	100.51		
03/07	08:59:30	1.2250	2118.45	102.04		
03/07	09:00:30	1.2417	2118.53	103.26		
03/07	09:01:30	1.2583	2118.79	104.02		
03/07	09:02:30	1.2750	2118.71	104.78		
03/07	09:03:30	1.2917	2118.77	105.37		
03/07	09:04:30	1.3083	2118.81	105.75		
03/07	09:05:30	1.3250	2118.86	106.12		
03/07	09:06:30	1.3417	2118.90	106.41		
03/07	09:07:30	1.3583	2118.95	106.59		
03/07	09:08:30	1.3750	2118.99	106.78		
03/07	09:09:30	1.3917	2119.02	106.92		
03/07	09:10:30	1.4083	2119.04	107.00		
03/07	09:11:30	1.4250	2119.07	107.09		
03/07	09:12:30	1.4417	2119.10	107.17		
03/07	09:13:30	1.4583	2119.12	107.22		
03/07	09:14:30	1.4750	2119.15	107.26		
03/07	09:15:30	1.4917	2119.14	107.30		
03/07	09:16:30	1.5083	2119.14	107.33		
03/07	09:17:30	1.5250	2119.14	107.35		
03/07	09:18:30	1.5417	2119.14	107.36		
03/07	09:19:30	1.5583	2119.15	107.38		
03/07	09:20:30	1.5750	2119.15	107.41		
03/07	09:21:30	1.5917	2119.15	107.43		
03/07	09:22:30	1.6083	2119.14	107.44		
03/07	09:23:30	1.6250	2119.16	107.45		
03/07	09:24:30	1.6417	2119.14	107.45		
03/07	09:25:30	1.6583	2119.16	107.45		
03/07	09:26:30	1.6750	2119.17	107.45		
03/07	09:27:30	1.6917	2119.15	107.47		
03/07	09:28:30	1.7083	2119.14	107.48		
03/07	09:29:30	1.7250	2119.14	107.49		
03/07	09:30:30	1.7417	2119.17	107.49		
03/07	09:31:30	1.7583	2119.11	107.49		
03/07	09:32:30	1.7750	2119.10	107.50		
03/07	09:33:30	1.7917	2119.11	107.51		
03/07	09:34:30	1.8083	2119.11	107.51		
03/07	09:35:30	1.8250	2119.14	107.51		
03/07	09:36:30	1.8417	2119.11	107.52		
03/07	09:37:30	1.8583	2119.41	107.53		
03/07	09:38:30	1.8750	2119.00	107.54		
03/07	09:39:30	1.8917	2119.05	107.54		
03/07	09:40:30	1.9083	2119.08	107.54		
03/07	09:41:30	1.9250	2119.08	107.54		
03/07	09:42:30	1.9417	2119.10	107.54		
03/07	09:43:30	1.9583	2119.11	107.54		
03/07	09:44:30	1.9750	2119.10	107.55		
03/07	09:45:30	1.9917	2119.08	107.55		
03/07	09:46:30	2.0083	2119.06	107.55		← RATE #1 - 0.06 BPM — START TEST
03/07	09:47:30	2.0250	2119.12	107.56		
03/07	09:48:30	2.0417	2119.10	107.56		
03/07	09:49:30	2.0583	2119.09	107.56		
03/07	09:50:30	2.0750	2119.44	107.56		
03/07	09:51:30	2.0917	2119.39	107.57		
03/07	09:52:30	2.1083	2119.57	107.57		
03/07	09:53:30	2.1250	2119.65	107.57		
03/07	09:53:45	2.1292	2119.69	107.57		
03/07	09:54:00	2.1333	2119.20	107.58		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	10:55:45	3.1625	2125.47	107.49		
03/07	10:56:45	3.1792	2125.59	107.49		
03/07	10:57:45	3.1958	2125.72	107.47		
03/07	10:58:45	3.2125	2125.83	107.46		
03/07	10:59:45	3.2292	2125.91	107.44		
03/07	11:00:45	3.2458	2126.00	107.44		RATE #5 - 3.0 BPM
03/07	11:01:45	3.2625	2126.09	107.42		
03/07	11:02:45	3.2792	2126.19	107.41		
03/07	11:03:45	3.2958	2126.28	107.39		
03/07	11:04:45	3.3125	2126.38	107.38		
03/07	11:05:45	3.3292	2126.44	107.37		
03/07	11:06:45	3.3458	2126.52	107.37		
03/07	11:07:15	3.3542	2126.59	107.36		
03/07	11:07:30	3.3583	2127.17	107.35		
03/07	11:07:45	3.3625	2127.47	107.35		
03/07	11:08:00	3.3667	2127.65	107.35		
03/07	11:09:00	3.3833	2127.76	107.33		
03/07	11:10:00	3.4000	2127.84	107.33		
03/07	11:11:00	3.4167	2127.98	107.32		
03/07	11:12:00	3.4333	2128.09	107.32		
03/07	11:13:00	3.4500	2128.20	107.32		
03/07	11:14:00	3.4667	2128.31	107.32		
03/07	11:15:00	3.4833	2128.43	107.32		
03/07	11:16:00	3.5000	2128.51	107.32		RATE #6 - 3.6 BPM
03/07	11:17:00	3.5167	2128.59	107.32		
03/07	11:18:00	3.5333	2128.68	107.31		
03/07	11:19:00	3.5500	2128.80	107.32		
03/07	11:20:00	3.5667	2128.91	107.32		
03/07	11:21:00	3.5833	2129.01	107.32		
03/07	11:21:45	3.5958	2129.05	107.32		
03/07	11:22:00	3.6000	2129.55	107.32		
03/07	11:22:15	3.6042	2130.20	107.32		
03/07	11:23:15	3.6208	2130.43	107.32		
03/07	11:24:15	3.6375	2130.48	107.33		
03/07	11:25:15	3.6542	2130.60	107.34		
03/07	11:26:15	3.6708	2130.75	107.35		
03/07	11:27:15	3.6875	2130.89	107.36		
03/07	11:28:15	3.7042	2131.06	107.36		
03/07	11:29:15	3.7208	2131.23	107.37		
03/07	11:30:15	3.7375	2131.38	107.37		
03/07	11:31:15	3.7542	2131.53	107.37		RATE #7 - 4.4 BPM
03/07	11:32:15	3.7708	2131.65	107.37		
03/07	11:33:15	3.7875	2131.75	107.37		
03/07	11:34:15	3.8042	2131.89	107.37		
03/07	11:35:15	3.8208	2132.00	107.36		
03/07	11:36:15	3.8375	2132.09	107.37		
03/07	11:36:45	3.8458	2132.16	107.37		
03/07	11:37:00	3.8500	2130.31	107.37		
03/07	11:37:15	3.8542	2130.87	107.37		
03/07	11:37:30	3.8583	2132.81	107.37		
03/07	11:38:00	3.8667	2133.18	107.37		
03/07	11:38:15	3.8708	2133.27	107.37		
03/07	11:39:15	3.8875	2133.36	107.37		
03/07	11:40:15	3.9042	2133.45	107.37		
03/07	11:41:15	3.9208	2133.56	107.37		
03/07	11:42:15	3.9375	2133.69	107.37		
03/07	11:43:15	3.9542	2133.81	107.37		
03/07	11:44:15	3.9708	2133.93	107.36		
03/07	11:45:15	3.9875	2134.07	107.35		
03/07	11:46:15	4.0042	2134.23	107.35		
03/07	11:47:15	4.0208	2134.38	107.34		
03/07	11:48:15	4.0375	2134.53	107.33		
03/07	11:49:15	4.0542	2134.65	107.32		RATE #8 - 5.5 BPM
03/07	11:50:15	4.0708	2134.78	107.31		
03/07	11:51:15	4.0875	2134.90	107.32		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	11:52:15	4.1042	2135.01	107.31		
03/07	11:52:30	4.1083	2134.92	107.31		
03/07	11:52:45	4.1125	2134.47	107.31		
03/07	11:53:00	4.1167	2131.52	107.31		
03/07	11:53:15	4.1208	2131.31	107.31		
03/07	11:53:30	4.1250	2136.13	107.31		
03/07	11:53:45	4.1292	2137.31	107.31		
03/07	11:54:33	4.1427	2137.66	107.33		
03/07	11:55:22	4.1563	2137.96	107.35		
03/07	11:56:15	4.1708	2138.08	107.35		
03/07	11:57:15	4.1875	2138.18	107.36		
03/07	11:58:15	4.2042	2138.32	107.38		
03/07	11:59:15	4.2208	2138.47	107.39		
03/07	11:59:45	4.2292	2138.53	107.39		
03/07	12:00:00	4.2333	2139.02	107.39		
03/07	12:00:15	4.2375	2139.28	107.39		
03/07	12:00:30	4.2417	2139.59	107.39		
03/07	12:01:30	4.2583	2139.40	107.39		
03/07	12:02:30	4.2750	2139.44	107.39		
03/07	12:03:30	4.2917	2139.52	107.38		
03/07	12:04:30	4.3083	2139.64	107.37		
03/07	12:05:00	4.3167	2139.72	107.36		
03/07	12:05:15	4.3208	2137.55	107.36		
03/07	12:05:30	4.3250	2141.24	107.36		
03/07	12:05:45	4.3292	2144.53	107.36		
03/07	12:06:00	4.3333	2143.98	107.36		
03/07	12:07:00	4.3500	2143.85	107.36		
03/07	12:07:48	4.3635	2144.23	107.37		
03/07	12:08:03	4.3677	2143.80	107.37		
03/07	12:08:07	4.3688	2143.58	107.37		
03/07	12:08:22	4.3729	2143.44	107.39		
03/07	12:08:26	4.3740	2133.73	107.39		
03/07	12:08:56	4.3823	2133.33	107.39		
03/07	12:09:00	4.3833	2133.23	107.39		
03/07	12:09:45	4.3958	2132.82	107.40		
03/07	12:10:00	4.4000	2132.59	107.39		
03/07	12:10:30	4.4083	2132.24	107.37		
03/07	12:10:45	4.4125	2132.09	107.37		
03/07	12:11:45	4.4292	2131.82	107.34		
03/07	12:12:45	4.4458	2131.49	107.31		
03/07	12:13:45	4.4625	2131.18	107.29		RECALIBRATE FLOW METER
03/07	12:14:45	4.4792	2131.09	107.28		
03/07	12:15:45	4.4958	2130.95	107.26		
03/07	12:16:15	4.5042	2130.85	107.25		
03/07	12:16:30	4.5083	2130.28	107.25		
03/07	12:16:45	4.5125	2129.83	107.25		
03/07	12:17:00	4.5167	2130.31	107.25		
03/07	12:17:30	4.5250	2130.65	107.24		
03/07	12:17:45	4.5292	2131.72	107.24		
03/07	12:18:45	4.5458	2131.60	107.24		RATE #1-A - 2.0 BPM
03/07	12:19:45	4.5625	2131.66	107.23		
03/07	12:20:45	4.5792	2131.79	107.23		
03/07	12:21:45	4.5958	2131.83	107.24		
03/07	12:22:45	4.6125	2132.21	107.24		
03/07	12:23:00	4.6167	2132.94	107.24		
03/07	12:24:00	4.6333	2133.07	107.24		RATE #2-A - 3.0 BPM
03/07	12:24:30	4.6417	2133.42	107.24		
03/07	12:24:45	4.6458	2133.55	107.24		
03/07	12:25:45	4.6625	2133.68	107.25		
03/07	12:26:45	4.6792	2133.64	107.26		
03/07	12:27:45	4.6958	2133.56	107.27		
03/07	12:28:30	4.7083	2133.56	107.28		
03/07	12:28:45	4.7125	2135.74	107.28		RATE #3-A - 4.0 BPM
03/07	12:29:45	4.7292	2135.93	107.30		
03/07	12:30:45	4.7458	2136.02	107.31		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	12:30:48	4.7469	2136.06	107.32		
03/07	12:30:52	4.7479	2136.59	107.32		
03/07	12:31:41	4.7615	2136.61	107.35		
03/07	12:32:30	4.7750	2136.83	107.35		
03/07	12:33:30	4.7917	2136.72	107.36		
03/07	12:34:30	4.8083	2136.74	107.36		RATE #4-A - 5.0 BPM
03/07	12:34:45	4.8125	2138.34	107.36		
03/07	12:35:00	4.8167	2139.11	107.36		
03/07	12:35:48	4.8302	2139.51	107.37		
03/07	12:36:37	4.8438	2139.83	107.39		
03/07	12:37:30	4.8583	2139.93	107.39		
03/07	12:38:30	4.8750	2140.01	107.39		RATE #5-A - 5.0 BPM
03/07	12:39:30	4.8917	2140.16	107.40		
03/07	12:40:30	4.9083	2140.33	107.41		
03/07	12:41:30	4.9250	2140.50	107.41		
03/07	12:42:30	4.9417	2140.68	107.41		
03/07	12:43:30	4.9583	2140.86	107.41		
03/07	12:44:30	4.9750	2141.03	107.40		RATE #6-A - 5.0 BPM
03/07	12:45:30	4.9917	2141.20	107.40		
03/07	12:46:30	5.0083	2141.37	107.39		
03/07	12:47:30	5.0250	2141.54	107.39		
03/07	12:48:30	5.0417	2141.71	107.39		
03/07	12:49:30	5.0583	2141.87	107.37		
03/07	12:49:45	5.0625	2141.90	107.37		SHUT PUMPING DOWN — END TEST
03/07	12:50:00	5.0667	2135.05	107.37		
03/07	12:50:30	5.0750	2134.77	107.37		
03/07	12:50:45	5.0792	2134.59	107.37		
03/07	12:51:45	5.0958	2134.22	107.37		
03/07	12:52:33	5.1094	2133.94	107.37		
03/07	12:53:30	5.1250	2133.77	107.35		
03/07	12:54:30	5.1417	2133.43	107.34		
03/07	12:55:30	5.1583	2133.16	107.32		
03/07	12:56:30	5.1750	2133.00	107.32		
03/07	12:57:30	5.1917	2132.89	107.32		
03/07	12:58:30	5.2083	2132.76	107.32		
03/07	12:59:30	5.2250	2132.63	107.31		
03/07	13:00:30	5.2417	2132.49	107.30		
03/07	13:01:30	5.2583	2132.35	107.30		
03/07	13:02:30	5.2750	2132.20	107.30		
03/07	13:03:30	5.2917	2132.07	107.30		
03/07	13:04:30	5.3083	2131.95	107.30		
03/07	13:05:30	5.3250	2131.82	107.30		
03/07	13:06:30	5.3417	2131.70	107.30		
03/07	13:07:30	5.3583	2131.59	107.30		
03/07	13:08:30	5.3750	2131.50	107.30		
03/07	13:09:30	5.3917	2131.42	107.30		
03/07	13:10:30	5.4083	2131.34	107.31		
03/07	13:11:30	5.4250	2131.25	107.32		
03/07	13:12:30	5.4417	2131.16	107.32		
03/07	13:13:30	5.4583	2131.07	107.33		
03/07	13:14:30	5.4750	2131.00	107.34		
03/07	13:15:30	5.4917	2130.92	107.35		
03/07	13:16:30	5.5083	2130.83	107.36		
03/07	13:17:30	5.5250	2130.76	107.36		
03/07	13:18:30	5.5417	2130.70	107.37		
03/07	13:19:30	5.5583	2130.65	107.37		
03/07	13:19:45	5.5625	2130.64	107.37		INSTRUMENT OFF BOTTOM
03/07	13:20:00	5.5667	2121.09	107.37		
03/07	13:20:15	5.5708	2116.62	107.37		
03/07	13:20:18	5.5719	2113.06	107.37		
03/07	13:20:22	5.5729	2109.66	107.32		
03/07	13:20:26	5.5740	2106.12	107.27		
03/07	13:20:30	5.5750	2102.19	107.22		
03/07	13:20:33	5.5760	2098.39	107.17		
03/07	13:20:37	5.5771	2094.33	107.12		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:20:41	5.5781	2090.27	107.07		
03/07	13:20:45	5.5792	2086.07	107.02		
03/07	13:20:48	5.5802	2082.27	106.97		
03/07	13:20:52	5.5813	2078.60	106.93		
03/07	13:20:56	5.5823	2074.41	106.88		
03/07	13:21:00	5.5833	2070.21	106.83		
03/07	13:21:03	5.5844	2066.05	106.68		
03/07	13:21:07	5.5854	2061.93	106.43		
03/07	13:21:11	5.5865	2060.17	106.19		
03/07	13:21:15	5.5875	2058.55	105.95		
03/07	13:21:18	5.5885	2056.92	105.71		
03/07	13:21:22	5.5896	2054.90	105.46		
03/07	13:21:26	5.5906	2051.56	105.22		
03/07	13:21:30	5.5917	2049.15	104.98		
03/07	13:21:33	5.5927	2046.73	104.74		
03/07	13:21:37	5.5938	2044.19	104.50		
03/07	13:21:41	5.5948	2041.51	104.26		
03/07	13:21:45	5.5958	2038.70	104.01		
03/07	13:21:48	5.5969	2035.78	103.70		
03/07	13:21:52	5.5979	2033.13	103.35		
03/07	13:21:56	5.5990	2030.23	103.00		
03/07	13:22:00	5.6000	2027.32	102.66		
03/07	13:22:03	5.6010	2024.15	102.31		
03/07	13:22:07	5.6021	2018.60	101.96		
03/07	13:22:11	5.6031	2011.21	101.62		
03/07	13:22:15	5.6042	2003.56	101.27		
03/07	13:22:18	5.6052	1995.90	100.92		
03/07	13:22:22	5.6062	1987.98	100.57		
03/07	13:22:26	5.6073	1980.06	100.22		
03/07	13:22:30	5.6083	1970.82	99.88		
03/07	13:22:33	5.6094	1954.60	99.50		
03/07	13:22:37	5.6104	1935.87	99.14		
03/07	13:22:41	5.6115	1917.14	98.79		
03/07	13:22:45	5.6125	1898.01	98.43		
03/07	13:22:48	5.6135	1879.80	98.07		
03/07	13:22:52	5.6146	1860.53	97.72		
03/07	13:22:56	5.6156	1840.60	97.36		
03/07	13:23:00	5.6167	1820.54	97.01		
03/07	13:23:03	5.6177	1800.61	96.65		
03/07	13:23:07	5.6188	1780.80	96.30		
03/07	13:23:11	5.6198	1762.32	95.94		
03/07	13:23:15	5.6208	1742.11	95.58		
03/07	13:23:18	5.6219	1721.77	95.24		
03/07	13:23:22	5.6229	1703.41	94.90		
03/07	13:23:26	5.6240	1683.72	94.57		
03/07	13:23:30	5.6250	1663.90	94.24		
03/07	13:23:33	5.6260	1643.81	93.89		
03/07	13:23:37	5.6271	1622.27	93.56		
03/07	13:23:41	5.6281	1602.58	93.23		
03/07	13:23:45	5.6292	1582.75	92.89		
03/07	13:23:48	5.6302	1562.79	92.55		
03/07	13:23:52	5.6312	1542.95	92.22		
03/07	13:23:56	5.6323	1522.19	91.89		
03/07	13:24:00	5.6333	1502.35	91.55		
03/07	13:24:03	5.6344	1482.91	91.23		
03/07	13:24:07	5.6354	1461.75	90.90		
03/07	13:24:11	5.6365	1441.11	90.58		
03/07	13:24:15	5.6375	1420.86	90.26		
03/07	13:24:18	5.6385	1400.75	89.94		
03/07	13:24:22	5.6396	1378.39	89.61		
03/07	13:24:26	5.6406	1359.19	89.29		
03/07	13:24:30	5.6417	1338.42	88.97		
03/07	13:24:33	5.6427	1318.69	88.65		
03/07	13:24:37	5.6438	1297.38	88.33		
03/07	13:24:41	5.6448	1275.67	88.01		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:24:45	5.6458	1255.68	87.68		
03/07	13:24:48	5.6469	1233.96	87.37		
03/07	13:24:52	5.6479	1213.96	87.06		
03/07	13:24:56	5.6490	1192.90	86.74		
03/07	13:25:00	5.6500	1173.29	86.43		
03/07	13:25:03	5.6510	1152.23	86.12		
03/07	13:25:07	5.6521	1130.24	85.81		
03/07	13:25:11	5.6531	1109.17	85.50		
03/07	13:25:15	5.6542	1087.97	85.18		
03/07	13:25:18	5.6552	1066.90	84.88		
03/07	13:25:22	5.6563	1047.54	84.57		
03/07	13:25:26	5.6573	1032.41	84.25		
03/07	13:25:30	5.6583	1017.80	83.94		
03/07	13:25:33	5.6594	1000.95	83.63		
03/07	13:25:37	5.6604	984.75	83.33		
03/07	13:25:41	5.6615	970.14	83.03		
03/07	13:25:45	5.6625	955.92	82.73		
03/07	13:25:48	5.6635	941.04	82.43		
03/07	13:25:52	5.6646	926.95	82.12		
03/07	13:25:56	5.6656	913.39	81.82		
03/07	13:26:00	5.6667	899.96	81.52		
03/07	13:26:03	5.6677	887.05	81.22		
03/07	13:26:07	5.6687	875.47	80.91		
03/07	13:26:11	5.6698	864.41	80.61		
03/07	13:26:15	5.6708	852.95	80.32		
03/07	13:26:18	5.6719	842.29	80.01		
03/07	13:26:22	5.6729	831.89	79.73		
03/07	13:26:26	5.6740	820.95	79.44		
03/07	13:26:30	5.6750	810.15	79.15		
03/07	13:26:33	5.6760	799.09	78.86		
03/07	13:26:37	5.6771	788.81	78.58		
03/07	13:26:41	5.6781	778.01	78.29		
03/07	13:26:45	5.6792	768.13	78.00		
03/07	13:26:48	5.6802	758.38	77.72		
03/07	13:26:52	5.6813	749.82	77.43		
03/07	13:26:56	5.6823	741.40	77.14		
03/07	13:27:00	5.6833	733.89	76.86		
03/07	13:27:03	5.6844	726.92	76.58		
03/07	13:27:07	5.6854	719.41	76.32		
03/07	13:27:11	5.6865	712.30	76.06		
03/07	13:27:15	5.6875	706.38	75.79		
03/07	13:27:18	5.6885	700.98	75.53		
03/07	13:27:22	5.6896	696.11	75.26		
03/07	13:27:26	5.6906	691.78	74.99		
03/07	13:27:30	5.6917	687.57	74.73		
03/07	13:27:33	5.6927	683.63	74.46		
03/07	13:27:37	5.6937	679.42	74.20		
03/07	13:27:41	5.6948	675.35	73.93		
03/07	13:27:45	5.6958	672.07	73.67		
03/07	13:27:48	5.6969	668.79	73.41		
03/07	13:27:52	5.6979	665.77	73.18		
03/07	13:27:56	5.6990	663.01	72.94		
03/07	13:28:00	5.7000	660.39	72.69		
03/07	13:28:03	5.7010	658.43	72.46		
03/07	13:28:07	5.7021	657.00	72.22		
03/07	13:28:11	5.7031	655.70	71.97		
03/07	13:28:15	5.7042	654.13	71.74		
03/07	13:28:18	5.7052	652.83	71.50		
03/07	13:28:22	5.7063	652.57	71.25		
03/07	13:28:26	5.7073	652.13	71.02		
03/07	13:28:30	5.7083	651.46	70.78		
03/07	13:29:18	5.7219	651.46	68.12		
03/07	13:29:37	5.7271	651.36	67.29		
03/07	13:29:41	5.7281	654.43	67.12		
03/07	13:29:45	5.7292	654.38	66.96		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:29:48	5.7302	434.67	66.79		
03/07	13:29:52	5.7312	233.34	66.63		
03/07	13:29:56	5.7323	188.64	66.46		
03/07	13:30:00	5.7333	140.10	66.30		
03/07	13:30:03	5.7344	108.90	66.15		
03/07	13:30:07	5.7354	67.50	66.01		
03/07	13:30:11	5.7365	37.22	65.88		
03/07	13:30:15	5.7375	22.81	65.74		
03/07	13:30:18	5.7385	16.20	65.61		
03/07	13:30:22	5.7396	.07	65.47		

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* *
* EVENT SUMMARY *
* *
****

COMPANY : GIANT REFINING

PAGE : B

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

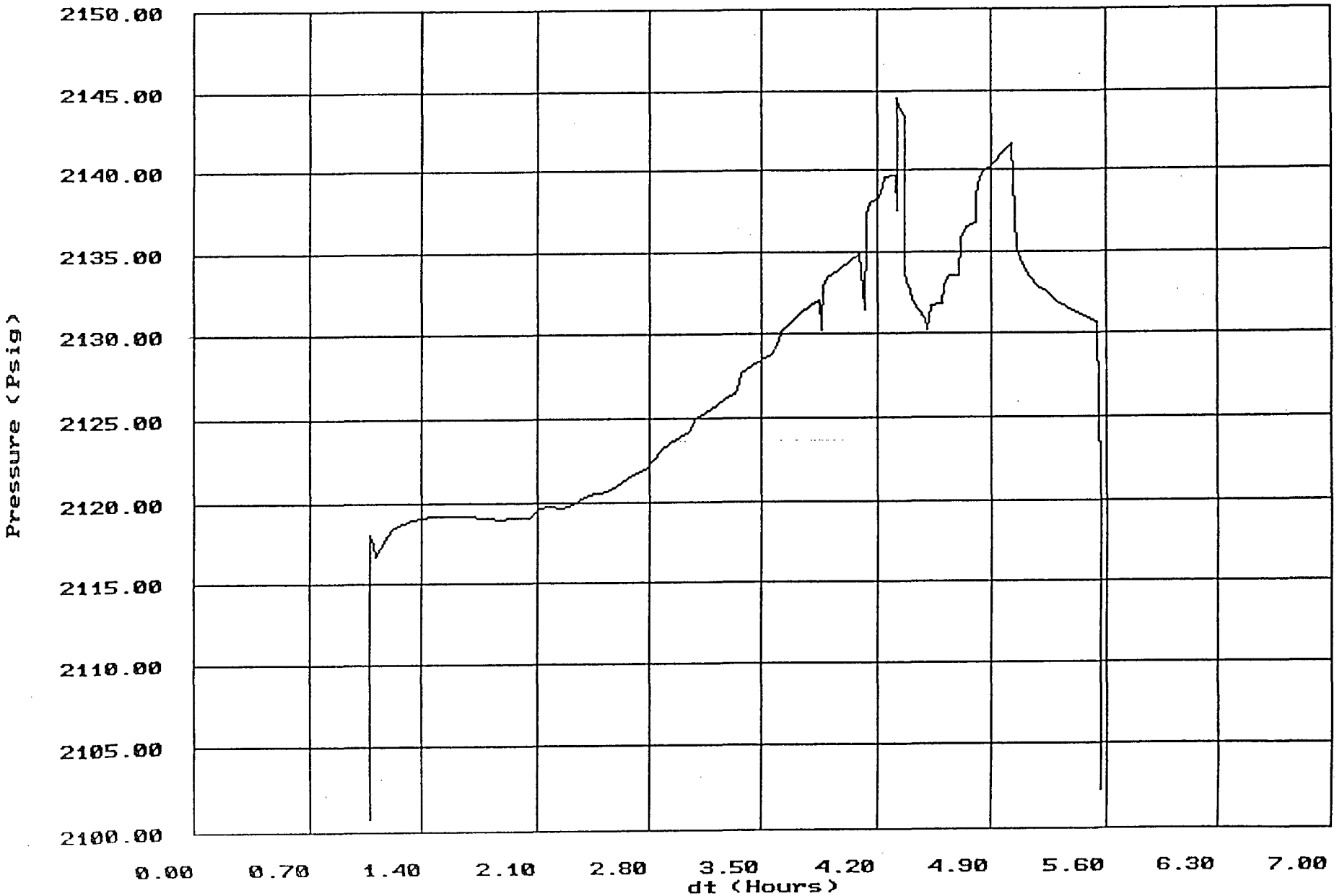
Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Key Event	Pressure Psig	Temp Deg F
03/07	08:51:22	1.0896	INSTRUMENT @ 3400'	2118.23	78.56
03/07	09:46:30	2.0083	RATE #1 - 0.Ø6 BPM	2119.06	107.55
03/07	10:01:30	2.2583	RATE #2 - 1.1 BPM	2119.69	107.57
03/07	10:31:30	2.7583	RATE #3 - 2.0 BPM	2121.88	107.61
03/07	10:46:00	3.0000	RATE #4 - 2.5 BPM	2123.96	107.51
03/07	11:00:45	3.2458	RATE #5 - 3.0 BPM	2126.00	107.44
03/07	11:16:00	3.5000	RATE #6 - 3.6 BPM	2128.51	107.32
03/07	11:31:15	3.7542	RATE #7 - 4.4 BPM	2131.53	107.37
03/07	11:49:15	4.0542	RATE #8 - 5.5 BPM	2134.65	107.32
03/07	12:13:45	4.4625	RECALIBRATE FLOW METER	2131.18	107.29
03/07	12:18:45	4.5458	RATE #1-A - 2.0 BPM	2131.60	107.24
03/07	12:24:00	4.6333	RATE #2-A - 3.0 BPM	2133.07	107.24
03/07	12:28:45	4.7125	RATE #3-A - 4.0 BPM	2135.74	107.28
03/07	12:34:30	4.8083	RATE #4-A - 5.0 BPM	2136.74	107.36
03/07	12:38:30	4.8750	RATE #5-A - 5.0 BPM	2140.01	107.39
03/07	12:44:30	4.9750	RATE #6-A - 5.0 BPM	2141.03	107.40
03/07	12:49:45	5.0625	SHUT PUMPING DOWN	2141.90	107.37
03/07	13:19:45	5.5625	INSTRUMENT OFF BOTTOM	2130.64	107.37

GIANT REFINING

Pressure vs dt

SWD (CLASS I) NO. WD-1
SAN JUAN COUNTY, NM
F224307.RED

TEFTELLER, INC.
3-7-96
STEP RATE TEST



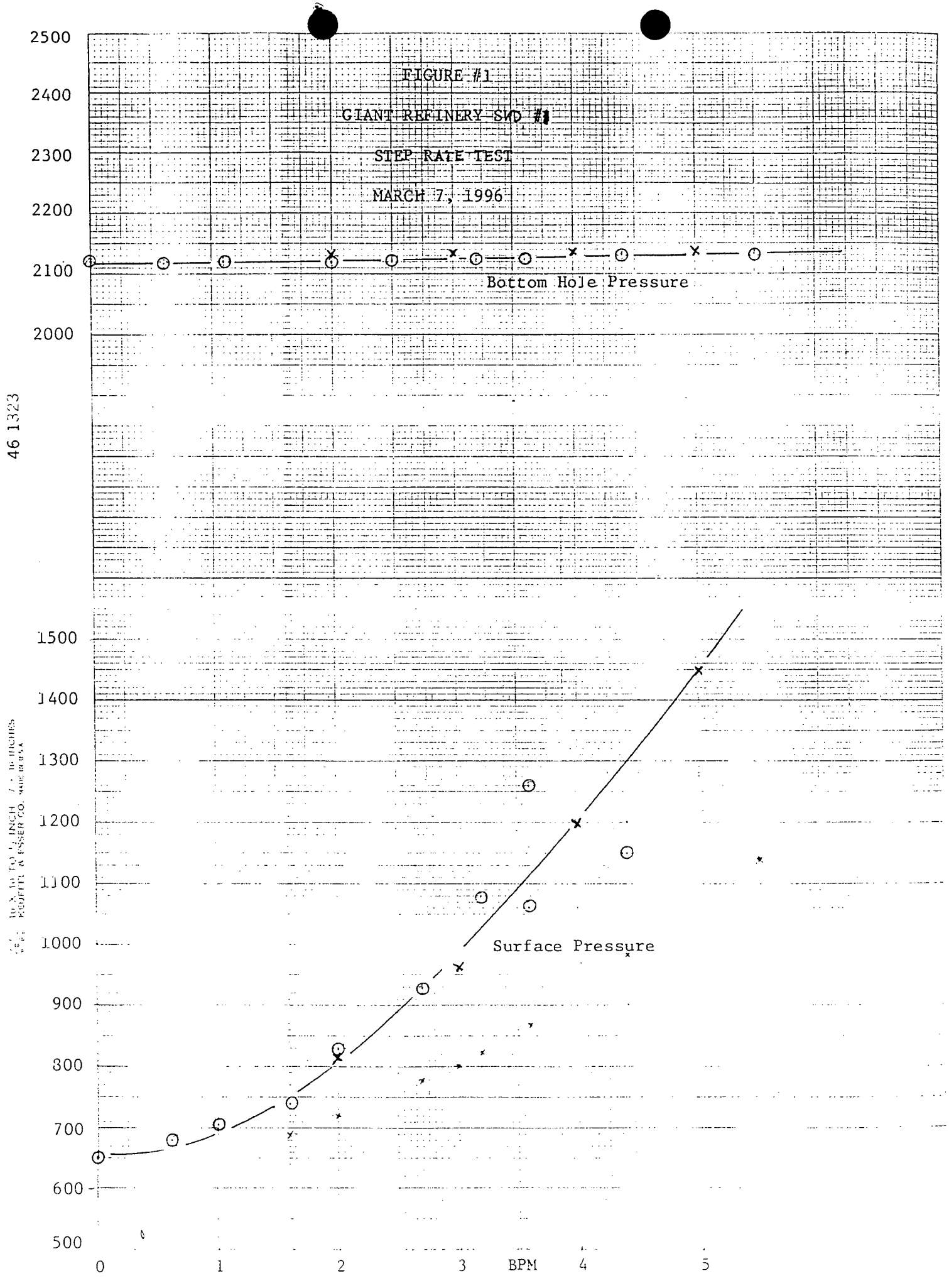


FIGURE #1
GIANT REFINERY SWD #1
STEP RATE TEST
MARCH 7, 1996
Bottom Hole Pressure
Surface Pressure
2500
2400
2300
2200
2100
2000
1500
1400
1300
1200
1100
1000
900
800
700
600
500
0
1
2
3
BPM
4
5
46 1323

GIANT REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

April 30, 1996

Mr. Frank Chavez
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Workover Report, Giant Refining Company - Bloomfield WD-1
San Juan County, New Mexico

Dear Mr. Chavez:

Giant Refining Company - Bloomfield (Giant) submits the summary of the workover activities, including the sand fracture, for its Class 1 Injection Well, including the Workover and Completion Report by Mr. Paul Thompson of Walsh Engineering and Production, Incorporated, who was the supervising consultant for the workover.

Drake Drilling Rig #22 was moved onto the site on March 1, 1996 and rigged up. The 2 7/8" production tubing was pulled using a snubbing unit from Live Well service. A WSI tree saver was rigged up and the well was sand fractured by BJ Services using 153,940 pounds of 20/40 Arizona sand. After the frac job, the WSI tree saver and BJ Services were rigged down and the well was shut in for two days to allow for normalizing. The well was flowed back on March 4, 1996 but the pressure did not drop enough to trip in with the 2 3/8" work string. Live Well Service rigged up on March 5, 1996 and tripped into hole with 2 3/8" work string. Sand was circulated out. Started trip out of hole with 2 3/8" work string. Finish TOH on March 6, 1996 and trip in with 2 7/8" production tubing. Set Packer at 3221' KB. Pumped 20 bbl packer fluid into annulus prior to setting packer and set donut. Pressure tested annulus to 1200 psi, packer held. Rig down Live Well and BOP. Nipple up wellhead.

The Step Rate Injection Test and the Mechanical Integrity Test were performed on March 7, 1996 and were witnessed by Mr. Ernie Busch of your office. Copies of the Tefteller data and the graph by Paul Thompson are included for you perusal.

If you require additional information, please do not hesitate to contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

Enclosures

cc: John Stokes, Refinery Manager, Giant Refining Company - Bloomfield
Mark Ashley, NM OCD, Santa Fe

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: March 1, 1996 Report No.: 1
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

Move on location and rig up Drake #22. Tefteller set tubing plug in "F" nipple. ND wellhead and NU BOP. Rig up Live Well Service. Release packer and TOH with 97 joints of 2-7/8" cement lined tubing and Mt. States 5-1/2" packer. Rig down Live Well Service and rig up WSI tree saver and BJ. Initial welhead pressure was 770#. Fraced well with 20,000 gal. pad of slick water followed by 153,900# of 20/40 sand at 1/2 - 2 ppg. Job completed at 1830 hrs. 3/1/96. ISIP = 750#, 5 min. = 720#, 10 min. = 710#. 15 min. = 710#. AIR = 65 BPM, MIR = 66 BPM, ATP = 1500#, MTP = 1770#. Total fluid = 2937 bbls. All water contained 0.5 gal/1000 of friction reducer and biocide. Rig down WSI and BJ. Shut well in for the weekend.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	2,200	Wellhead Equip.: WSI	2,081
Snubbing Unit:	2,615	Subsurface Equip.:	0
Rig Move:	700	Artificial Lift Eq.:	0
Frac:	28,326	Sucker Rods:	0
Packers, BPs,:	300	Tanks Rental:	1,200
Acid:	0	Separators,Dehys:	0
Water:	1,000	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**38,787**
		Cumulative Cost:	**38,787**

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: March 4, 1996 Report No.: 2
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

SICP = 660#. Flowed well to frac tanks to relieve pressure. Flowed 2000 bbls of water with some sand to frac tanks. Casing pressure dropped to 240# but still could not push 2-3/8" tubing into the well. Shut in well. Will snub in tubing 3/5/96.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	1,350	Wellhead Equip.:	0
Snubbing Unit:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Frac:	0	Sucker Rods:	0
Packers, BPs,:	0	Tanks Rental:	0
Acid:	0	Separators,Dehys:	0
Water:	1,500	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	234	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	3,084
		Cumulative Cost:	41,871

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: March 5, 1996 Report No.: 3
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

SICP = 650#. Rigged up Live Well Service. Snubbed in hole with 2-3/8" workstring with notched collar and string float on bottom. Tagged sand at 3343'KB. Cleaned out sand to PBTD at 3525'KB. Circulated conventional to flow back tanks. Pumped 100 bbls of water down the tubing at PBTD to clean the annulus. Well was making very little sand. Shut in well and start TOH with tubing with snubbing unit. Shut down for snubbing unit repairs with 6 joints of 2-3/8" tubing in the hole.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	1,850	Wellhead Equip.:	0
Snubbing Unit:	3,000	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Frac:	0	Sucker Rods:	0
Packers, BPs,:	0	Tanks Rental:	300
Acid:	0	Separators,Dehys:	0
Water:	1,000	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**6,515**
		Cumulative Cost:	**48,386**

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: March 6, 1996 Report No.: 4
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Drake Rig #22 Supervisor: Paul Thompson

Work Summary:

SICP = 630#. Finish TOH and lay down 2-3/8" workstring. Add 2' spool to BOP stack. Picked up 5-1/2" X 2-7/8" Mt. States Arrowset 1 packer on 97 joints (3202.92') of 2-7/8", 6.5#, J-55, EUE cement lined tubing. Set packer at 3221'KB. Pumped 20 gal. of packer fluid into annulus prior to setting packer. Set donut in wellhead and pressure tested annulus to 1200# held OK. Rig down Live Well service. Nipple down BOP and nipple up wellhead. Tefteller retrieved tubing plug. Prepare for step rate injection test 3/7/96.

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	2,000	Wellhead Equip.:	0
Snubbing Unit:	2,851	Subsurface Equip.:	0
Rig Move:	500	Artificial Lift Eq.:	0
Frac:	0	Sucker Rods:	0
Packers, BPs,:	1,250	Tanks Rental:	0
Packer Fluid:	225	Separators,Dehys:	0
Water:	0	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	365	Meters, LACT,ect.:	0
Trucking:	300	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**7,491**
		Cumulative Cost:	**55,877**

WALSH ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: **Giant Bloomfield Refinery** Well Name: **SWD #1**
Date: March 7, 1996 Report No.: 5
Field: Blanco Mesa Verde Location: SE 27 29N 11W
Contractor: Supervisor: Paul Thompson

Work Summary:

SITP = 640#. Run Tefteller bottom hole pressure gauge to mid pint of the perfs at 3400". Rig up BJ pumping equipment. Run step rate injection test from 0.5 to 5.5 BPM using fresh water. Maximum surface treating pressure was 1460#. Pulled pressure gauges. Ran mechanical integrety test on 2-7/8" X 5-1/2" annulus. Held 350 # for 30 min. Both tests witnessed by Mr. Ernie Busch of the NMOCD. Rigged down BJ. Initial pressure on the bradenhead was 350#. Blew well down to slight vent in 10 min. Left bradenhead valve open.

FINAL REPORT

Daily Costs:

Roads and Loc.:	0	Tubulars:	0
Rig Costs:	0	Wellhead Equip.:	0
Snubbing Unit:	0	Subsurface Equip.:	0
Rig Move:	0	Artificial Lift Eq.:	0
Pump Trucks:	1,521	Sucker Rods:	0
Packers, BPs,:	0	Tanks Rental:	0
BHP Gauges:	1,056	Separators,Dehys:	0
Water:	0	Flowlines:	0
Bits and Mills:	0	Installation/Labor:	0
Permits:	0	Fittings, Valves, ect.:	0
Supervision:	278	Meters, LACT,ect.:	0
Trucking:	0	Electrical Equip.:	0
Drill Collars:	0	Misc.:	0
		Total Daily Cost:	**2,855**
		Cumulative Cost:	**58,732**

The Western Company — Treatment Report

Date March 1, 1996 | District Farmington NM | F.Receipt 398367 | Operator Giant Refinery
Lease Bloomfield WD | Well No. 1 | Field Blanco | Location SEC.27,T29N,R11W
County San Juan | State New Mexico | Stage Number 1 | This Zone ☒ | This Well ☒

WELL DATA

OG ☐ NG ☐ NO ☐ OO ☐ WD ☐ IW ☐ Misc. ☐ Depth TD/PB 3,600' Formation Mesa Verde
Tubing Size N/A Wt. N/A Set at: N/A Type Packer N/A Set at N/A
Casing Size 5 1/2" Wt. 15.5# Set From SURFACE To TD Liner Size N/A Wt.
Liner Set From To Open Hole: Size N/A From To
Casing Perforation: Size .45 Holes Per Foot 4 Intervals 3,276' - 3,514' 316 HOLES
Previous Treatment N/A Prior Production N/A

TREATMENT DATA

Pad Used: Yes ☒ No ☐ Pad Type Slick Water
Treat. Fluid Type: Foam ☐ Water ☒ Acid ☐ Oil ☐ Vol. 130,410 Gal.
Base Fluid type H2O Base Fluid Vol. 123,354 Gal.
Foam Qual. N/A % Mitchell ☐ Slurry ☐ Surface ☐ Downhole ☐ Total Prop Qty. 153,940 Lbs.
Prop Type: Sand ☒ WP-1 ☐ WP-3 ☐ Baux. ☐ Other
Prop Mesh Sizes, Types and Quantities 20/40 Arizona 153,940
Hole Loaded With H2O Treat Via: Tubing ☐ Casing ☒ Anul. ☐ Tubing & Anul. ☐
Ball Sealers: N/A In Stages of
Types and Number of Pumps Used 6 PACESETTER 1000'S
Auxiliary Materials 54# XCIDE-207 / 89 G. FRW-30

PROCEDURE SUMMARY

PUMP:21,588 G. PAD/19,824 G. 1/2#/21,000 G. 1#/11,214 G. 1 1/2#
47,040 G. 2#/ 3,150 G. FLUSH.

LIQUID/GAS PUMPED AND CAPACITIES IN BBLS.

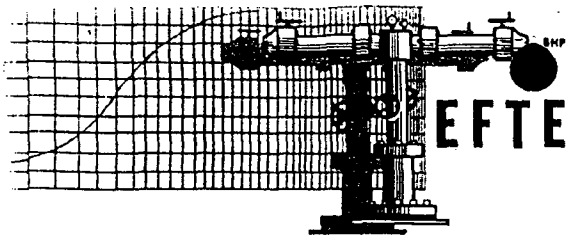
Tubing Cap.	N/A
Casing Cap.	78
Annular Cap.	N/A
Open Hole Cap.	N/A
Fluid to Load	N/A
Pad Volume	514
Treating Fluid	2516
Flush	75
Over Flush	N/A
Fluid to Recover	2937
Total N2	N/A
Total CO2	N/A

Time AM/PM	Treating Press.-Psi		Surface Slurry bbls Pumped		Slurry Rate BPM	Surface CO2 bbls Pumped		CO2 Rate BPM	Surface N2 MSCF Pumped		N2 Rate SCFM	Comments Safety Meeting/Test Lines
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
PM5:50	0		0	0	60							START PAD
5:58	1700		514	514	65							START 1/2#
6:05	1580		486	1000	65							START 1#
6:14	1510		525	1525	66							START 1 1/2#
6:18	1500		285	1810	65							START 2#
6:37	1470		220	3030	65							START FLUSH
6:38	1000		75	3105	40							SHUT DOWN 5 MINS-720
												10 MINS-710

Treating Pressure: Min 1470 Max. 1700 Avg. 1500 Customer Representative Paul Thomson
Inj. Rate on Treating Fluid 65 Rate on Flush 65 Western Representative Harry Mitchell
Avg. Inj. Rate 65 I.S.D.P. 750 Flush Dens. lbs/gal 8.34 Distribution NORMAL

Job Number

Final Shut-in Pressure 700 In 15 Minutes
Operator's Maximum Pressure (psi) 3500
Recommendation ID# FM050525



EFTELLER, INC.

reservoir engineering data

FARMINGTON, NEW MEXICO / MIDLAND, TEXAS
GRAND JUNCTION, COLORADO

P. O. Box 1198
Farmington, New Mexico 87499
(505) 325-1731

Farmington Fax (505) 325-1148
Midland Fax (915) 682-5329
Grand Junction Fax (303) 241-7634

GIANT REFINING

SWD (CLASS I) NO. WD-1

MARCH 7, 1996

Customer	GIANT REFINING
Street	7415 E. MAIN
City/State.....	FARMINGTON, NM 87402
Country	U.S.A.
Service Company	TEFTELLER, INC.
Well Name	SWD (CLASS I) NO. WD-1
Well Location	SAN JUAN COUNTY, NM
Field / Pool	MESA VERDE FORMATION
Status (Oil, Gas, Other)	WATER DISPOSAL
Test Type	STEP RATE TEST
Date of Test	3-7-96
Producing Interval	3276' - 3514'
Recorder Depth	3400'
Recorder Position	
Shut In Date ..... Start:	3-7-96
Stop:	3-7-96
Duration:	7 HOURS
Bottom Hole Temperature	

Gauge Identification

Gauge Manufacturer	MICRO-SMART SYSTEMS
Serial Number	224
Model Number	SP2000
Pressure Range	
Battery Type	
Calibration I.D.	
Last Calibration	10/ 3/95

Gauge Setup Parameters

Probe Set Up Time	3/ 7/96 7:46: 0
Time Delay to First Reading	
Test Type Selection	STEP RATE TEST
Test Duration Selection	7 HOURS

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	07:46:00	.0000	.01	67.58		
03/07	08:16:30	.5083	.47	46.90		
03/07	08:19:00	.5500	.89	44.34		
03/07	08:19:15	.5542	.93	44.16		
03/07	08:22:00	.6000	1.35	41.84		
03/07	08:22:15	.6042	1.38	41.69		
03/07	08:27:00	.6833	1.78	38.85		
03/07	08:27:15	.6875	1.81	38.73		
03/07	08:38:15	.8708	2.04	36.47		
03/07	08:38:30	.8750	8.77	36.51		
03/07	08:38:45	.8792	701.41	36.53		
03/07	08:39:00	.8833	667.26	36.55		
03/07	08:39:15	.8875	654.50	36.58		
03/07	08:39:30	.8917	663.26	36.60		
03/07	08:39:45	.8958	686.24	36.63		
03/07	08:39:48	.8969	690.35	36.72		
03/07	08:39:52	.8979	702.55	36.85		
03/07	08:39:56	.8990	711.16	36.99		
03/07	08:40:00	.9000	714.85	37.12		
03/07	08:40:03	.9010	722.01	37.25		
03/07	08:40:07	.9021	730.35	37.38		
03/07	08:40:11	.9031	736.44	37.52		
03/07	08:40:15	.9042	741.33	37.65		
03/07	08:40:18	.9052	748.88	37.78		
03/07	08:40:22	.9063	757.63	37.91		
03/07	08:40:26	.9073	762.79	38.05		
03/07	08:40:30	.9083	769.41	38.18		
03/07	08:40:33	.9094	775.09	38.33		
03/07	08:40:37	.9104	780.64	38.52		
03/07	08:40:41	.9115	784.19	38.70		
03/07	08:40:45	.9125	790.41	38.88		
03/07	08:40:48	.9135	796.62	39.07		
03/07	08:40:52	.9146	800.84	39.25		
03/07	08:40:56	.9156	806.92	39.43		
03/07	08:41:00	.9167	814.99	39.61		
03/07	08:41:03	.9177	824.66	39.80		
03/07	08:41:07	.9187	833.53	39.98		
03/07	08:41:11	.9198	841.07	40.17		
03/07	08:41:15	.9208	848.88	40.35		
03/07	08:41:18	.9219	857.74	40.55		
03/07	08:41:22	.9229	864.35	40.76		
03/07	08:41:26	.9240	869.89	40.97		
03/07	08:41:30	.9250	877.29	41.19		
03/07	08:41:33	.9260	884.43	41.40		
03/07	08:41:37	.9271	891.04	41.61		
03/07	08:41:41	.9281	897.11	41.83		
03/07	08:41:45	.9292	905.31	42.04		
03/07	08:41:48	.9302	908.99	42.25		
03/07	08:41:52	.9312	915.33	42.46		
03/07	08:41:56	.9323	921.93	42.68		
03/07	08:42:00	.9333	927.21	42.89		
03/07	08:42:03	.9344	933.15	43.10		
03/07	08:42:07	.9354	937.36	43.32		
03/07	08:42:11	.9365	944.23	43.55		
03/07	08:42:15	.9375	948.84	43.78		
03/07	08:42:18	.9385	955.17	43.99		
03/07	08:42:22	.9396	960.71	44.22		
03/07	08:42:26	.9406	967.58	44.45		
03/07	08:42:30	.9417	973.12	44.67		
03/07	08:42:33	.9427	977.06	44.90		
03/07	08:42:37	.9438	983.13	45.12		
03/07	08:42:41	.9448	989.47	45.35		
03/07	08:42:45	.9458	995.00	45.58		
03/07	08:42:48	.9469	1001.34	45.80		
03/07	08:42:52	.9479	1007.67	46.03		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:42:56	.9490	1015.20	46.25		
03/07	08:43:00	.9500	1023.40	46.48		
03/07	08:43:03	.9510	1031.72	46.71		
03/07	08:43:07	.9521	1039.52	46.94		
03/07	08:43:11	.9531	1046.79	47.16		
03/07	08:43:15	.9542	1052.98	47.39		
03/07	08:43:18	.9552	1059.32	47.61		
03/07	08:43:22	.9563	1066.45	47.84		
03/07	08:43:26	.9573	1072.12	48.07		
03/07	08:43:30	.9583	1081.64	48.30		
03/07	08:43:33	.9594	1085.05	48.51		
03/07	08:43:37	.9604	1089.92	48.74		
03/07	08:43:41	.9615	1097.45	48.97		
03/07	08:43:45	.9625	1104.18	49.19		
03/07	08:43:48	.9635	1112.63	49.42		
03/07	08:43:52	.9646	1119.90	49.65		
03/07	08:43:56	.9656	1129.02	49.88		
03/07	08:44:00	.9667	1137.34	50.10		
03/07	08:44:03	.9677	1146.06	50.33		
03/07	08:44:07	.9688	1154.25	50.55		
03/07	08:44:11	.9698	1161.78	50.78		
03/07	08:44:15	.9708	1171.30	51.00		
03/07	08:44:18	.9719	1179.75	51.23		
03/07	08:44:22	.9729	1186.61	51.46		
03/07	08:44:26	.9740	1194.67	51.69		
03/07	08:44:30	.9750	1201.93	51.91		
03/07	08:44:33	.9760	1211.04	52.14		
03/07	08:44:37	.9771	1216.04	52.36		
03/07	08:44:41	.9781	1227.55	52.59		
03/07	08:44:45	.9792	1236.40	52.81		
03/07	08:44:48	.9802	1244.45	53.04		
03/07	08:44:52	.9812	1251.71	53.27		
03/07	08:44:56	.9823	1260.69	53.49		
03/07	08:45:00	.9833	1268.35	53.72		
03/07	08:45:03	.9844	1275.47	53.93		
03/07	08:45:07	.9854	1286.05	54.16		
03/07	08:45:11	.9865	1292.10	54.40		
03/07	08:45:15	.9875	1300.29	54.63		
03/07	08:45:18	.9885	1308.87	54.86		
03/07	08:45:22	.9896	1316.65	55.09		
03/07	08:45:26	.9906	1323.37	55.31		
03/07	08:45:30	.9917	1329.69	55.54		
03/07	08:45:33	.9927	1339.60	55.78		
03/07	08:45:37	.9937	1340.87	56.01		
03/07	08:45:41	.9948	1342.81	56.24		
03/07	08:45:45	.9958	1350.46	56.47		
03/07	08:45:48	.9969	1354.65	56.71		
03/07	08:45:52	.9979	1353.14	56.94		
03/07	08:45:56	.9990	1363.44	57.18		
03/07	08:46:00	1.0000	1378.65	57.41		
03/07	08:46:03	1.0010	1385.90	57.65		
03/07	08:46:07	1.0021	1393.14	57.88		
03/07	08:46:11	1.0031	1404.51	58.12		
03/07	08:46:15	1.0042	1414.27	58.35		
03/07	08:46:18	1.0052	1424.17	58.59		
03/07	08:46:22	1.0063	1432.48	58.82		
03/07	08:46:26	1.0073	1443.97	59.06		
03/07	08:46:30	1.0083	1458.25	59.30		
03/07	08:46:33	1.0094	1467.22	59.54		
03/07	08:46:37	1.0104	1475.79	59.78		
03/07	08:46:41	1.0115	1489.80	60.02		
03/07	08:46:45	1.0125	1502.61	60.27		
03/07	08:46:48	1.0135	1511.57	60.51		
03/07	08:46:52	1.0146	1518.94	60.75		
03/07	08:46:56	1.0156	1527.91	61.00		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:47:00	1.0167	1537.13	61.24		
03/07	08:47:03	1.0177	1547.95	61.48		
03/07	08:47:07	1.0187	1557.84	61.73		
03/07	08:47:11	1.0198	1568.40	61.97		
03/07	08:47:15	1.0208	1576.56	62.21		
03/07	08:47:18	1.0219	1587.77	62.46		
03/07	08:47:22	1.0229	1598.06	62.71		
03/07	08:47:26	1.0240	1605.15	62.96		
03/07	08:47:30	1.0250	1614.24	63.22		
03/07	08:47:33	1.0260	1623.59	63.47		
03/07	08:47:37	1.0271	1633.34	63.72		
03/07	08:47:41	1.0281	1640.57	63.98		
03/07	08:47:45	1.0292	1650.18	64.23		
03/07	08:47:48	1.0302	1659.53	64.48		
03/07	08:47:52	1.0313	1670.74	64.74		
03/07	08:47:56	1.0323	1679.95	64.99		
03/07	08:48:00	1.0333	1690.63	65.24		
03/07	08:48:03	1.0344	1701.82	65.51		
03/07	08:48:07	1.0354	1713.16	65.78		
03/07	08:48:11	1.0365	1723.16	66.05		
03/07	08:48:15	1.0375	1732.36	66.32		
03/07	08:48:18	1.0385	1744.75	66.60		
03/07	08:48:22	1.0396	1756.47	66.87		
03/07	08:48:26	1.0406	1766.47	67.14		
03/07	08:48:30	1.0417	1775.01	67.41		
03/07	08:48:33	1.0427	1785.41	67.68		
03/07	08:48:37	1.0438	1795.01	67.95		
03/07	08:48:41	1.0448	1805.93	68.22		
03/07	08:48:45	1.0458	1816.59	68.50		
03/07	08:48:48	1.0469	1822.47	68.79		
03/07	08:48:52	1.0479	1832.72	69.08		
03/07	08:48:56	1.0490	1842.30	69.38		
03/07	08:49:00	1.0500	1845.52	69.67		
03/07	08:49:03	1.0510	1854.97	69.97		
03/07	08:49:07	1.0521	1865.22	70.27		
03/07	08:49:11	1.0531	1875.73	70.56		
03/07	08:49:15	1.0542	1886.24	70.86		
03/07	08:49:18	1.0552	1898.08	71.15		
03/07	08:49:22	1.0562	1910.84	71.44		
03/07	08:49:26	1.0573	1922.81	71.74		
03/07	08:49:30	1.0583	1934.11	72.04		
03/07	08:49:33	1.0594	1945.94	72.33		
03/07	08:49:37	1.0604	1958.46	72.56		
03/07	08:49:41	1.0615	1969.38	72.79		
03/07	08:49:45	1.0625	1981.11	73.01		
03/07	08:49:48	1.0635	1993.35	73.24		
03/07	08:49:52	1.0646	2006.27	73.47		
03/07	08:49:56	1.0656	2018.25	73.70		
03/07	08:50:00	1.0667	2030.23	73.92		
03/07	08:50:03	1.0677	2043.80	74.16		
03/07	08:50:07	1.0688	2056.71	74.38		
03/07	08:50:11	1.0698	2069.88	74.61		
03/07	08:50:15	1.0708	2081.20	74.84		
03/07	08:50:18	1.0719	2091.21	75.01		
03/07	08:50:22	1.0729	2100.81	75.20		
03/07	08:50:26	1.0740	2109.89	75.39		
03/07	08:50:30	1.0750	2115.12	75.58		
03/07	08:50:33	1.0760	2118.09	75.77		
03/07	08:51:22	1.0896	2118.23	78.56		INSTRUMENT @ 3400'
03/07	08:51:41	1.0948	2117.88	79.80		
03/07	08:51:45	1.0958	2117.79	80.09		
03/07	08:52:00	1.1000	2117.44	81.15		
03/07	08:52:03	1.1010	2117.36	81.42		
03/07	08:52:18	1.1052	2117.08	82.47		
03/07	08:52:22	1.1063	2116.73	82.74		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	08:53:15	1.1208	2116.67	86.12		
03/07	08:54:15	1.1375	2117.04	89.75		
03/07	08:54:45	1.1458	2117.29	91.56		
03/07	08:55:00	1.1500	2117.51	92.47		
03/07	08:55:48	1.1635	2117.64	95.13		
03/07	08:56:37	1.1771	2117.93	97.22		
03/07	08:57:30	1.1917	2118.04	99.00		
03/07	08:58:30	1.2083	2118.34	100.51		
03/07	08:59:30	1.2250	2118.45	102.04		
03/07	09:00:30	1.2417	2118.53	103.26		
03/07	09:01:30	1.2583	2118.79	104.02		
03/07	09:02:30	1.2750	2118.71	104.78		
03/07	09:03:30	1.2917	2118.77	105.37		
03/07	09:04:30	1.3083	2118.81	105.75		
03/07	09:05:30	1.3250	2118.86	106.12		
03/07	09:06:30	1.3417	2118.90	106.41		
03/07	09:07:30	1.3583	2118.95	106.59		
03/07	09:08:30	1.3750	2118.99	106.78		
03/07	09:09:30	1.3917	2119.02	106.92		
03/07	09:10:30	1.4083	2119.04	107.00		
03/07	09:11:30	1.4250	2119.07	107.09		
03/07	09:12:30	1.4417	2119.10	107.17		
03/07	09:13:30	1.4583	2119.12	107.22		
03/07	09:14:30	1.4750	2119.15	107.26		
03/07	09:15:30	1.4917	2119.14	107.30		
03/07	09:16:30	1.5083	2119.14	107.33		
03/07	09:17:30	1.5250	2119.14	107.35		
03/07	09:18:30	1.5417	2119.14	107.36		
03/07	09:19:30	1.5583	2119.15	107.38		
03/07	09:20:30	1.5750	2119.15	107.41		
03/07	09:21:30	1.5917	2119.15	107.43		
03/07	09:22:30	1.6083	2119.14	107.44		
03/07	09:23:30	1.6250	2119.16	107.45		
03/07	09:24:30	1.6417	2119.14	107.45		
03/07	09:25:30	1.6583	2119.16	107.45		
03/07	09:26:30	1.6750	2119.17	107.45		
03/07	09:27:30	1.6917	2119.15	107.47		
03/07	09:28:30	1.7083	2119.14	107.48		
03/07	09:29:30	1.7250	2119.14	107.49		
03/07	09:30:30	1.7417	2119.17	107.49		
03/07	09:31:30	1.7583	2119.11	107.49		
03/07	09:32:30	1.7750	2119.10	107.50		
03/07	09:33:30	1.7917	2119.11	107.51		
03/07	09:34:30	1.8083	2119.11	107.51		
03/07	09:35:30	1.8250	2119.14	107.51		
03/07	09:36:30	1.8417	2119.11	107.52		
03/07	09:37:30	1.8583	2119.41	107.53		
03/07	09:38:30	1.8750	2119.00	107.54		
03/07	09:39:30	1.8917	2119.05	107.54		
03/07	09:40:30	1.9083	2119.08	107.54		
03/07	09:41:30	1.9250	2119.08	107.54		
03/07	09:42:30	1.9417	2119.10	107.54		
03/07	09:43:30	1.9583	2119.11	107.54		
03/07	09:44:30	1.9750	2119.10	107.55		
03/07	09:45:30	1.9917	2119.08	107.55		
03/07	09:46:30	2.0083	2119.06	107.55		← RATE #1 - 0.06 BPM — START TEST
03/07	09:47:30	2.0250	2119.12	107.56		
03/07	09:48:30	2.0417	2119.10	107.56		
03/07	09:49:30	2.0583	2119.09	107.56		
03/07	09:50:30	2.0750	2119.44	107.56		
03/07	09:51:30	2.0917	2119.39	107.57		
03/07	09:52:30	2.1083	2119.57	107.57		
03/07	09:53:30	2.1250	2119.65	107.57		
03/07	09:53:45	2.1292	2119.69	107.57		
03/07	09:54:00	2.1333	2119.20	107.58		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	10:55:45	3.1625	2125.47	107.49		
03/07	10:56:45	3.1792	2125.59	107.49		
03/07	10:57:45	3.1958	2125.72	107.47		
03/07	10:58:45	3.2125	2125.83	107.46		
03/07	10:59:45	3.2292	2125.91	107.44		
03/07	11:00:45	3.2458	2126.00	107.44		RATE #5 - 3.0 BPM
03/07	11:01:45	3.2625	2126.09	107.42		
03/07	11:02:45	3.2792	2126.19	107.41		
03/07	11:03:45	3.2958	2126.28	107.39		
03/07	11:04:45	3.3125	2126.38	107.38		
03/07	11:05:45	3.3292	2126.44	107.37		
03/07	11:06:45	3.3458	2126.52	107.37		
03/07	11:07:15	3.3542	2126.59	107.36		
03/07	11:07:30	3.3583	2127.17	107.35		
03/07	11:07:45	3.3625	2127.47	107.35		
03/07	11:08:00	3.3667	2127.65	107.35		
03/07	11:09:00	3.3833	2127.76	107.33		
03/07	11:10:00	3.4000	2127.84	107.33		
03/07	11:11:00	3.4167	2127.98	107.32		
03/07	11:12:00	3.4333	2128.09	107.32		
03/07	11:13:00	3.4500	2128.20	107.32		
03/07	11:14:00	3.4667	2128.31	107.32		
03/07	11:15:00	3.4833	2128.43	107.32		
03/07	11:16:00	3.5000	2128.51	107.32		RATE #6 - 3.6 BPM
03/07	11:17:00	3.5167	2128.59	107.32		
03/07	11:18:00	3.5333	2128.68	107.31		
03/07	11:19:00	3.5500	2128.80	107.32		
03/07	11:20:00	3.5667	2128.91	107.32		
03/07	11:21:00	3.5833	2129.01	107.32		
03/07	11:21:45	3.5958	2129.05	107.32		
03/07	11:22:00	3.6000	2129.55	107.32		
03/07	11:22:15	3.6042	2130.20	107.32		
03/07	11:23:15	3.6208	2130.43	107.32		
03/07	11:24:15	3.6375	2130.48	107.33		
03/07	11:25:15	3.6542	2130.60	107.34		
03/07	11:26:15	3.6708	2130.75	107.35		
03/07	11:27:15	3.6875	2130.89	107.36		
03/07	11:28:15	3.7042	2131.06	107.36		
03/07	11:29:15	3.7208	2131.23	107.37		
03/07	11:30:15	3.7375	2131.38	107.37		
03/07	11:31:15	3.7542	2131.53	107.37		RATE #7 - 4.4 BPM
03/07	11:32:15	3.7708	2131.65	107.37		
03/07	11:33:15	3.7875	2131.75	107.37		
03/07	11:34:15	3.8042	2131.89	107.37		
03/07	11:35:15	3.8208	2132.00	107.36		
03/07	11:36:15	3.8375	2132.09	107.37		
03/07	11:36:45	3.8458	2132.16	107.37		
03/07	11:37:00	3.8500	2130.31	107.37		
03/07	11:37:15	3.8542	2130.87	107.37		
03/07	11:37:30	3.8583	2132.81	107.37		
03/07	11:38:00	3.8667	2133.18	107.37		
03/07	11:38:15	3.8708	2133.27	107.37		
03/07	11:39:15	3.8875	2133.36	107.37		
03/07	11:40:15	3.9042	2133.45	107.37		
03/07	11:41:15	3.9208	2133.56	107.37		
03/07	11:42:15	3.9375	2133.69	107.37		
03/07	11:43:15	3.9542	2133.81	107.37		
03/07	11:44:15	3.9708	2133.93	107.36		
03/07	11:45:15	3.9875	2134.07	107.35		
03/07	11:46:15	4.0042	2134.23	107.35		
03/07	11:47:15	4.0208	2134.38	107.34		
03/07	11:48:15	4.0375	2134.53	107.33		
03/07	11:49:15	4.0542	2134.65	107.32		RATE #8 - 5.5 BPM
03/07	11:50:15	4.0708	2134.78	107.31		
03/07	11:51:15	4.0875	2134.90	107.32		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	11:52:15	4.1042	2135.01	107.31		
03/07	11:52:30	4.1083	2134.92	107.31		
03/07	11:52:45	4.1125	2134.47	107.31		
03/07	11:53:00	4.1167	2131.52	107.31		
03/07	11:53:15	4.1208	2131.31	107.31		
03/07	11:53:30	4.1250	2136.13	107.31		
03/07	11:53:45	4.1292	2137.31	107.31		
03/07	11:54:33	4.1427	2137.66	107.33		
03/07	11:55:22	4.1563	2137.96	107.35		
03/07	11:56:15	4.1708	2138.08	107.35		
03/07	11:57:15	4.1875	2138.18	107.36		
03/07	11:58:15	4.2042	2138.32	107.38		
03/07	11:59:15	4.2208	2138.47	107.39		
03/07	11:59:45	4.2292	2138.53	107.39		
03/07	12:00:00	4.2333	2139.02	107.39		
03/07	12:00:15	4.2375	2139.28	107.39		
03/07	12:00:30	4.2417	2139.59	107.39		
03/07	12:01:30	4.2583	2139.40	107.39		
03/07	12:02:30	4.2750	2139.44	107.39		
03/07	12:03:30	4.2917	2139.52	107.38		
03/07	12:04:30	4.3083	2139.64	107.37		
03/07	12:05:00	4.3167	2139.72	107.36		
03/07	12:05:15	4.3208	2137.55	107.36		
03/07	12:05:30	4.3250	2141.24	107.36		
03/07	12:05:45	4.3292	2144.53	107.36		
03/07	12:06:00	4.3333	2143.98	107.36		
03/07	12:07:00	4.3500	2143.85	107.36		
03/07	12:07:48	4.3635	2144.23	107.37		
03/07	12:08:03	4.3677	2143.80	107.37		
03/07	12:08:07	4.3688	2143.58	107.37		
03/07	12:08:22	4.3729	2143.44	107.39		
03/07	12:08:26	4.3740	2133.73	107.39		
03/07	12:08:56	4.3823	2133.33	107.39		
03/07	12:09:00	4.3833	2133.23	107.39		
03/07	12:09:45	4.3958	2132.82	107.40		
03/07	12:10:00	4.4000	2132.59	107.39		
03/07	12:10:30	4.4083	2132.24	107.37		
03/07	12:10:45	4.4125	2132.09	107.37		
03/07	12:11:45	4.4292	2131.82	107.34		
03/07	12:12:45	4.4458	2131.49	107.31		
03/07	12:13:45	4.4625	2131.18	107.29		RECALIBRATE FLOW METER
03/07	12:14:45	4.4792	2131.09	107.28		
03/07	12:15:45	4.4958	2130.95	107.26		
03/07	12:16:15	4.5042	2130.85	107.25		
03/07	12:16:30	4.5083	2130.28	107.25		
03/07	12:16:45	4.5125	2129.83	107.25		
03/07	12:17:00	4.5167	2130.31	107.25		
03/07	12:17:30	4.5250	2130.65	107.24		
03/07	12:17:45	4.5292	2131.72	107.24		
03/07	12:18:45	4.5458	2131.60	107.24		RATE #1-A - 2.0 BPM
03/07	12:19:45	4.5625	2131.66	107.23		
03/07	12:20:45	4.5792	2131.79	107.23		
03/07	12:21:45	4.5958	2131.83	107.24		
03/07	12:22:45	4.6125	2132.21	107.24		
03/07	12:23:00	4.6167	2132.94	107.24		
03/07	12:24:00	4.6333	2133.07	107.24		RATE #2-A - 3.0 BPM
03/07	12:24:30	4.6417	2133.42	107.24		
03/07	12:24:45	4.6458	2133.55	107.24		
03/07	12:25:45	4.6625	2133.68	107.25		
03/07	12:26:45	4.6792	2133.64	107.26		
03/07	12:27:45	4.6958	2133.56	107.27		
03/07	12:28:30	4.7083	2133.56	107.28		
03/07	12:28:45	4.7125	2135.74	107.28		RATE #3-A - 4.0 BPM
03/07	12:29:45	4.7292	2135.93	107.30		
03/07	12:30:45	4.7458	2136.02	107.31		

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	12:30:48	4.7469	2136.06	107.32		
03/07	12:30:52	4.7479	2136.59	107.32		
03/07	12:31:41	4.7615	2136.61	107.35		
03/07	12:32:30	4.7750	2136.83	107.35		
03/07	12:33:30	4.7917	2136.72	107.36		
03/07	12:34:30	4.8083	2136.74	107.36		RATE #4-A - 5.0 BPM
03/07	12:34:45	4.8125	2138.34	107.36		
03/07	12:35:00	4.8167	2139.11	107.36		
03/07	12:35:48	4.8302	2139.51	107.37		
03/07	12:36:37	4.8438	2139.83	107.39		
03/07	12:37:30	4.8583	2139.93	107.39		
03/07	12:38:30	4.8750	2140.01	107.39		RATE #5-A - 5.0 BPM
03/07	12:39:30	4.8917	2140.16	107.40		
03/07	12:40:30	4.9083	2140.33	107.41		
03/07	12:41:30	4.9250	2140.50	107.41		
03/07	12:42:30	4.9417	2140.68	107.41		
03/07	12:43:30	4.9583	2140.86	107.41		
03/07	12:44:30	4.9750	2141.03	107.40		RATE #6-A - 5.0 BPM
03/07	12:45:30	4.9917	2141.20	107.40		
03/07	12:46:30	5.0083	2141.37	107.39		
03/07	12:47:30	5.0250	2141.54	107.39		
03/07	12:48:30	5.0417	2141.71	107.39		
03/07	12:49:30	5.0583	2141.87	107.37		
03/07	12:49:45	5.0625	2141.90	107.37		SHUT PUMPING DOWN — END TEST
03/07	12:50:00	5.0667	2135.05	107.37		
03/07	12:50:30	5.0750	2134.77	107.37		
03/07	12:50:45	5.0792	2134.59	107.37		
03/07	12:51:45	5.0958	2134.22	107.37		
03/07	12:52:33	5.1094	2133.94	107.37		
03/07	12:53:30	5.1250	2133.77	107.35		
03/07	12:54:30	5.1417	2133.43	107.34		
03/07	12:55:30	5.1583	2133.16	107.32		
03/07	12:56:30	5.1750	2133.00	107.32		
03/07	12:57:30	5.1917	2132.89	107.32		
03/07	12:58:30	5.2083	2132.76	107.32		
03/07	12:59:30	5.2250	2132.63	107.31		
03/07	13:00:30	5.2417	2132.49	107.30		
03/07	13:01:30	5.2583	2132.35	107.30		
03/07	13:02:30	5.2750	2132.20	107.30		
03/07	13:03:30	5.2917	2132.07	107.30		
03/07	13:04:30	5.3083	2131.95	107.30		
03/07	13:05:30	5.3250	2131.82	107.30		
03/07	13:06:30	5.3417	2131.70	107.30		
03/07	13:07:30	5.3583	2131.59	107.30		
03/07	13:08:30	5.3750	2131.50	107.30		
03/07	13:09:30	5.3917	2131.42	107.30		
03/07	13:10:30	5.4083	2131.34	107.31		
03/07	13:11:30	5.4250	2131.25	107.32		
03/07	13:12:30	5.4417	2131.16	107.32		
03/07	13:13:30	5.4583	2131.07	107.33		
03/07	13:14:30	5.4750	2131.00	107.34		
03/07	13:15:30	5.4917	2130.92	107.35		
03/07	13:16:30	5.5083	2130.83	107.36		
03/07	13:17:30	5.5250	2130.76	107.36		
03/07	13:18:30	5.5417	2130.70	107.37		
03/07	13:19:30	5.5583	2130.65	107.37		
03/07	13:19:45	5.5625	2130.64	107.37		INSTRUMENT OFF BOTTOM
03/07	13:20:00	5.5667	2121.09	107.37		
03/07	13:20:15	5.5708	2116.62	107.37		
03/07	13:20:18	5.5719	2113.06	107.37		
03/07	13:20:22	5.5729	2109.66	107.32		
03/07	13:20:26	5.5740	2106.12	107.27		
03/07	13:20:30	5.5750	2102.19	107.22		
03/07	13:20:33	5.5760	2098.39	107.17		
03/07	13:20:37	5.5771	2094.33	107.12		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:20:41	5.5781	2090.27	107.07		
03/07	13:20:45	5.5792	2086.07	107.02		
03/07	13:20:48	5.5802	2082.27	106.97		
03/07	13:20:52	5.5813	2078.60	106.93		
03/07	13:20:56	5.5823	2074.41	106.88		
03/07	13:21:00	5.5833	2070.21	106.83		
03/07	13:21:03	5.5844	2066.05	106.68		
03/07	13:21:07	5.5854	2061.93	106.43		
03/07	13:21:11	5.5865	2060.17	106.19		
03/07	13:21:15	5.5875	2058.55	105.95		
03/07	13:21:18	5.5885	2056.92	105.71		
03/07	13:21:22	5.5896	2054.90	105.46		
03/07	13:21:26	5.5906	2051.56	105.22		
03/07	13:21:30	5.5917	2049.15	104.98		
03/07	13:21:33	5.5927	2046.73	104.74		
03/07	13:21:37	5.5938	2044.19	104.50		
03/07	13:21:41	5.5948	2041.51	104.26		
03/07	13:21:45	5.5958	2038.70	104.01		
03/07	13:21:48	5.5969	2035.78	103.70		
03/07	13:21:52	5.5979	2033.13	103.35		
03/07	13:21:56	5.5990	2030.23	103.00		
03/07	13:22:00	5.6000	2027.32	102.66		
03/07	13:22:03	5.6010	2024.15	102.31		
03/07	13:22:07	5.6021	2018.60	101.96		
03/07	13:22:11	5.6031	2011.21	101.62		
03/07	13:22:15	5.6042	2003.56	101.27		
03/07	13:22:18	5.6052	1995.90	100.92		
03/07	13:22:22	5.6062	1987.98	100.57		
03/07	13:22:26	5.6073	1980.06	100.22		
03/07	13:22:30	5.6083	1970.82	99.88		
03/07	13:22:33	5.6094	1954.60	99.50		
03/07	13:22:37	5.6104	1935.87	99.14		
03/07	13:22:41	5.6115	1917.14	98.79		
03/07	13:22:45	5.6125	1898.01	98.43		
03/07	13:22:48	5.6135	1879.80	98.07		
03/07	13:22:52	5.6146	1860.53	97.72		
03/07	13:22:56	5.6156	1840.60	97.36		
03/07	13:23:00	5.6167	1820.54	97.01		
03/07	13:23:03	5.6177	1800.61	96.65		
03/07	13:23:07	5.6188	1780.80	96.30		
03/07	13:23:11	5.6198	1762.32	95.94		
03/07	13:23:15	5.6208	1742.11	95.58		
03/07	13:23:18	5.6219	1721.77	95.24		
03/07	13:23:22	5.6229	1703.41	94.90		
03/07	13:23:26	5.6240	1683.72	94.57		
03/07	13:23:30	5.6250	1663.90	94.24		
03/07	13:23:33	5.6260	1643.81	93.89		
03/07	13:23:37	5.6271	1622.27	93.56		
03/07	13:23:41	5.6281	1602.58	93.23		
03/07	13:23:45	5.6292	1582.75	92.89		
03/07	13:23:48	5.6302	1562.79	92.55		
03/07	13:23:52	5.6312	1542.95	92.22		
03/07	13:23:56	5.6323	1522.19	91.89		
03/07	13:24:00	5.6333	1502.35	91.55		
03/07	13:24:03	5.6344	1482.91	91.23		
03/07	13:24:07	5.6354	1461.75	90.90		
03/07	13:24:11	5.6365	1441.11	90.58		
03/07	13:24:15	5.6375	1420.86	90.26		
03/07	13:24:18	5.6385	1400.75	89.94		
03/07	13:24:22	5.6396	1378.39	89.61		
03/07	13:24:26	5.6406	1359.19	89.29		
03/07	13:24:30	5.6417	1338.42	88.97		
03/07	13:24:33	5.6427	1318.69	88.65		
03/07	13:24:37	5.6438	1297.38	88.33		
03/07	13:24:41	5.6448	1275.67	88.01		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:24:45	5.6458	1255.68	87.68		
03/07	13:24:48	5.6469	1233.96	87.37		
03/07	13:24:52	5.6479	1213.96	87.06		
03/07	13:24:56	5.6490	1192.90	86.74		
03/07	13:25:00	5.6500	1173.29	86.43		
03/07	13:25:03	5.6510	1152.23	86.12		
03/07	13:25:07	5.6521	1130.24	85.81		
03/07	13:25:11	5.6531	1109.17	85.50		
03/07	13:25:15	5.6542	1087.97	85.18		
03/07	13:25:18	5.6552	1066.90	84.88		
03/07	13:25:22	5.6563	1047.54	84.57		
03/07	13:25:26	5.6573	1032.41	84.25		
03/07	13:25:30	5.6583	1017.80	83.94		
03/07	13:25:33	5.6594	1000.95	83.63		
03/07	13:25:37	5.6604	984.75	83.33		
03/07	13:25:41	5.6615	970.14	83.03		
03/07	13:25:45	5.6625	955.92	82.73		
03/07	13:25:48	5.6635	941.04	82.43		
03/07	13:25:52	5.6646	926.95	82.12		
03/07	13:25:56	5.6656	913.39	81.82		
03/07	13:26:00	5.6667	899.96	81.52		
03/07	13:26:03	5.6677	887.05	81.22		
03/07	13:26:07	5.6687	875.47	80.91		
03/07	13:26:11	5.6698	864.41	80.61		
03/07	13:26:15	5.6708	852.95	80.32		
03/07	13:26:18	5.6719	842.29	80.01		
03/07	13:26:22	5.6729	831.89	79.73		
03/07	13:26:26	5.6740	820.95	79.44		
03/07	13:26:30	5.6750	810.15	79.15		
03/07	13:26:33	5.6760	799.09	78.86		
03/07	13:26:37	5.6771	788.81	78.58		
03/07	13:26:41	5.6781	778.01	78.29		
03/07	13:26:45	5.6792	768.13	78.00		
03/07	13:26:48	5.6802	758.38	77.72		
03/07	13:26:52	5.6813	749.82	77.43		
03/07	13:26:56	5.6823	741.40	77.14		
03/07	13:27:00	5.6833	733.89	76.86		
03/07	13:27:03	5.6844	726.92	76.58		
03/07	13:27:07	5.6854	719.41	76.32		
03/07	13:27:11	5.6865	712.30	76.06		
03/07	13:27:15	5.6875	706.38	75.79		
03/07	13:27:18	5.6885	700.98	75.53		
03/07	13:27:22	5.6896	696.11	75.26		
03/07	13:27:26	5.6906	691.78	74.99		
03/07	13:27:30	5.6917	687.57	74.73		
03/07	13:27:33	5.6927	683.63	74.46		
03/07	13:27:37	5.6937	679.42	74.20		
03/07	13:27:41	5.6948	675.35	73.93		
03/07	13:27:45	5.6958	672.07	73.67		
03/07	13:27:48	5.6969	668.79	73.41		
03/07	13:27:52	5.6979	665.77	73.18		
03/07	13:27:56	5.6990	663.01	72.94		
03/07	13:28:00	5.7000	660.39	72.69		
03/07	13:28:03	5.7010	658.43	72.46		
03/07	13:28:07	5.7021	657.00	72.22		
03/07	13:28:11	5.7031	655.70	71.97		
03/07	13:28:15	5.7042	654.13	71.74		
03/07	13:28:18	5.7052	652.83	71.50		
03/07	13:28:22	5.7063	652.57	71.25		
03/07	13:28:26	5.7073	652.13	71.02		
03/07	13:28:30	5.7083	651.46	70.78		
03/07	13:29:18	5.7219	651.46	68.12		
03/07	13:29:37	5.7271	651.36	67.29		
03/07	13:29:41	5.7281	654.43	67.12		
03/07	13:29:45	5.7292	654.38	66.96		

COMPANY: GIANT REFINING

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07	13:29:48	5.7302	434.67	66.79		
03/07	13:29:52	5.7312	233.34	66.63		
03/07	13:29:56	5.7323	188.64	66.46		
03/07	13:30:00	5.7333	140.10	66.30		
03/07	13:30:03	5.7344	108.90	66.15		
03/07	13:30:07	5.7354	67.50	66.01		
03/07	13:30:11	5.7365	37.22	65.88		
03/07	13:30:15	5.7375	22.81	65.74		
03/07	13:30:18	5.7385	16.20	65.61		
03/07	13:30:22	5.7396	.07	65.47		

****
*   *
* EVENT SUMMARY *
*   *
****

COMPANY : GIANT REFINING

PAGE : B

WELL NAME : SWD (CLASS I) NO. WD-1

DATE : 03/08/96

WELL LOCATION : SAN JUAN COUNTY, NM

FILE REF: F224307.RED

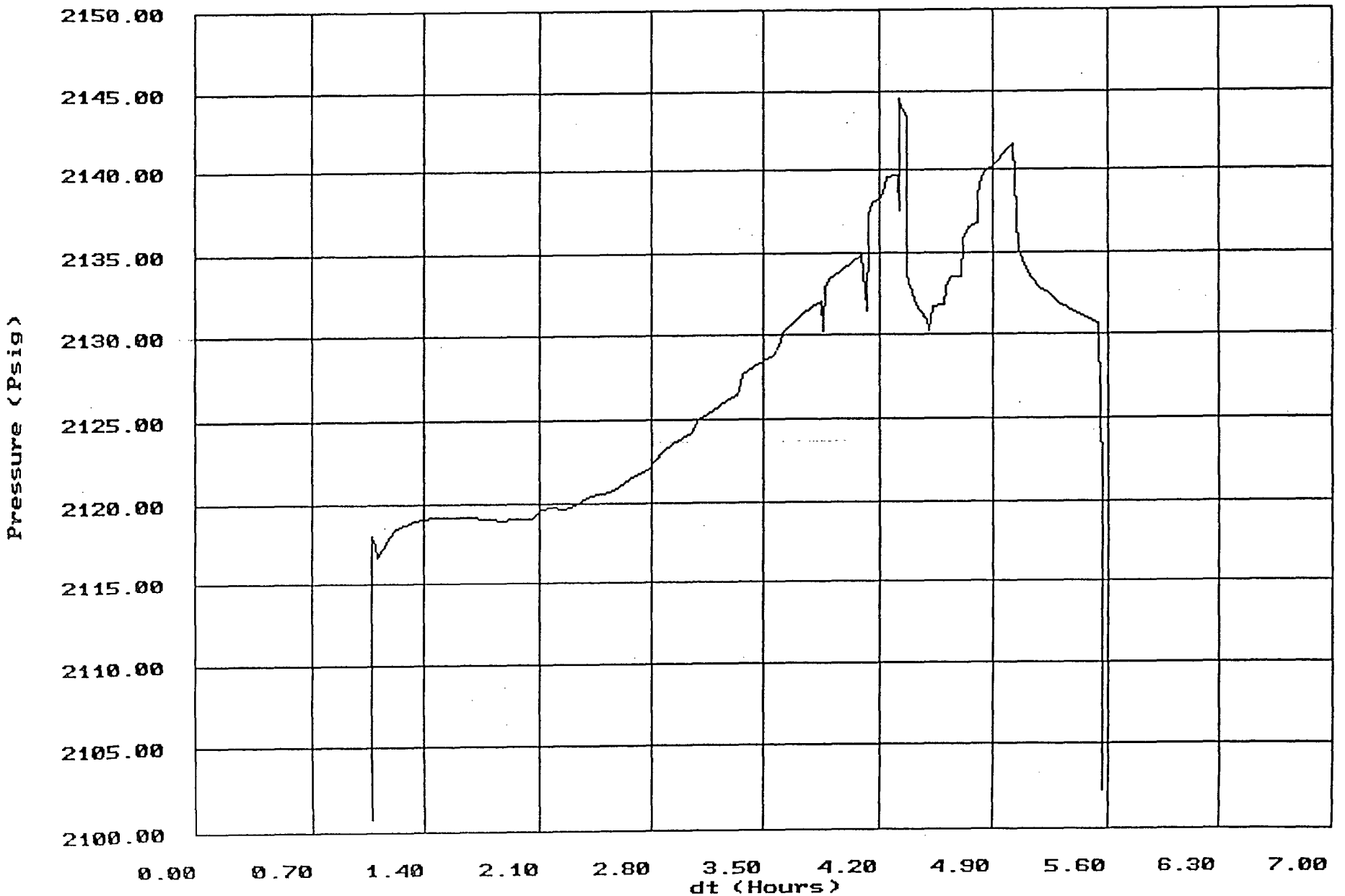
Date MM/DD	Time hh:mm:ss	Test Time hhhh.hhhh	Key Event	Pressure Psig	Temp Deg F
03/07	08:51:22	1.0896	INSTRUMENT @ 3400'	2118.23	78.56
03/07	09:46:30	2.0083	RATE #1 - 0.96 BPM	2119.06	107.55
03/07	10:01:30	2.2583	RATE #2 - 1.1 BPM	2119.69	107.57
03/07	10:31:30	2.7583	RATE #3 - 2.0 BPM	2121.88	107.61
03/07	10:46:00	3.0000	RATE #4 - 2.5 BPM	2123.96	107.51
03/07	11:00:45	3.2458	RATE #5 - 3.0 BPM	2126.00	107.44
03/07	11:16:00	3.5000	RATE #6 - 3.6 BPM	2128.51	107.32
03/07	11:31:15	3.7542	RATE #7 - 4.4 BPM	2131.53	107.37
03/07	11:49:15	4.0542	RATE #8 - 5.5 BPM	2134.65	107.32
03/07	12:13:45	4.4625	RECALIBRATE FLOW METER	2131.18	107.29
03/07	12:18:45	4.5458	RATE #1-A - 2.0 BPM	2131.60	107.24
03/07	12:24:00	4.6333	RATE #2-A - 3.0 BPM	2133.07	107.24
03/07	12:28:45	4.7125	RATE #3-A - 4.0 BPM	2135.74	107.28
03/07	12:34:30	4.8083	RATE #4-A - 5.0 BPM	2136.74	107.36
03/07	12:38:30	4.8750	RATE #5-A - 5.0 BPM	2140.01	107.39
03/07	12:44:30	4.9750	RATE #6-A - 5.0 BPM	2141.03	107.40
03/07	12:49:45	5.0625	SHUT PUMPING DOWN	2141.90	107.37
03/07	13:19:45	5.5625	INSTRUMENT OFF BOTTOM	2130.64	107.37

GIANT REFINING

Pressure vs dt

SWD (CLASS I) NO. WD-1
SAN JUAN COUNTY, NM
F224307.RED

TEFTELLER, INC.
3-7-96
STEP RATE TEST



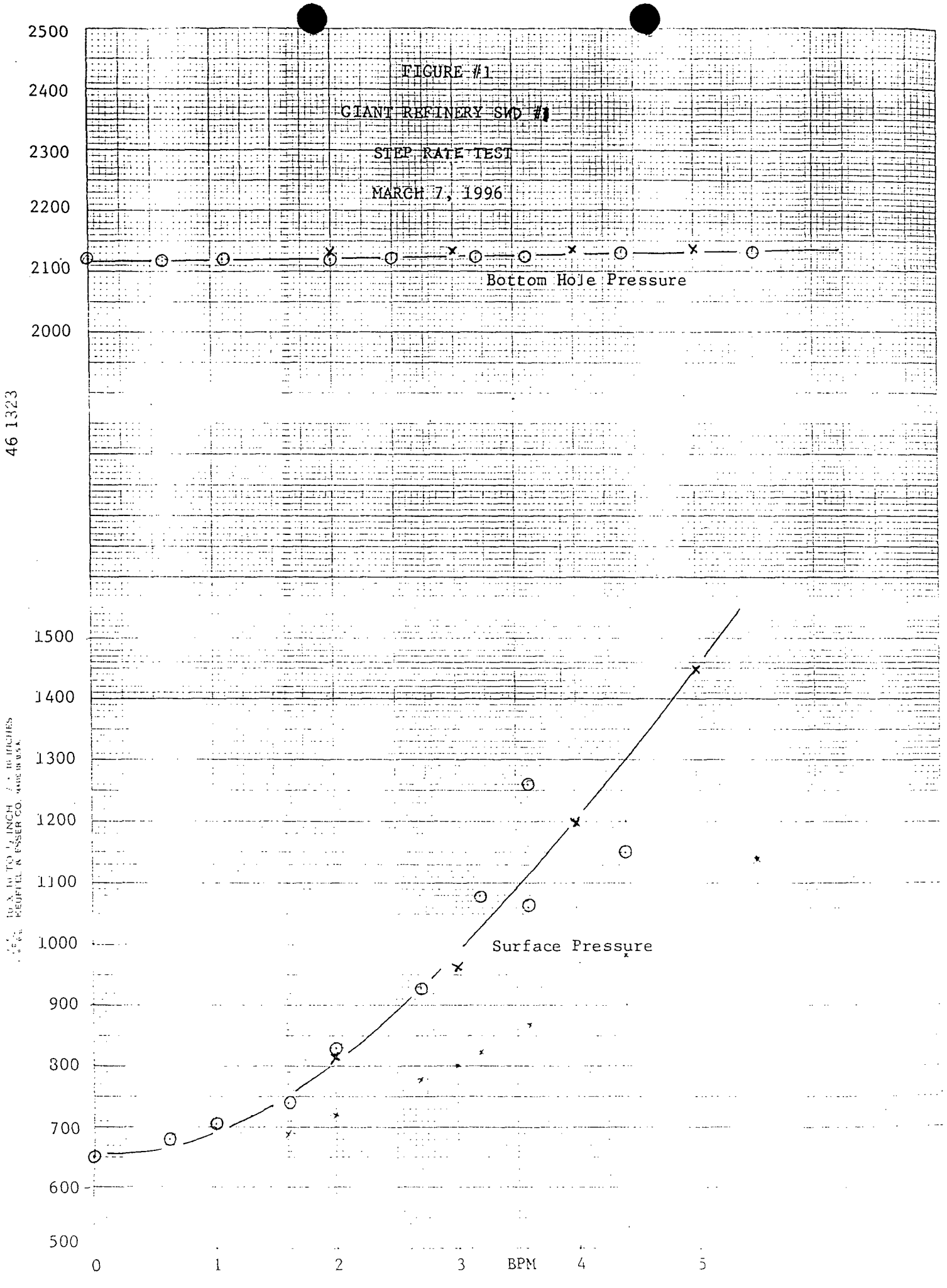


FIGURE #1
GIANT REFINERY SWD #1
STEP RATE TEST
MARCH 7, 1996
Bottom Hole Pressure
Surface Pressure
2500
2400
2300
2200
2100
2000
1500
1400
1300
1200
1100
1000
900
800
700
600
500
0
1
2
3
BPM
4
5
46 1323

BJ SERVICES COMPANY

GIANT REFINERY

BLOOMFIELD WD #1
SAN JUAN COUNTY, NM
MESA VERDE FORMATION

SLICKWATER FRAC WD WELL

PREPARED FOR

MR. PAUL THOMPSON

SERVICE POINT

FARMINGTON, NM
(505) 327-6222

FEBRUARY 29, 1996

FM050525

PREPARED BY

MIKE MCNEESE
SR. DISTRICT ENGINEER
FARMINGTON

SALES REPRESENTATIVE

MIKE MCNEESE
TECH REP II

FM050525 01

BJ SERVICES COMPANY

OPERATOR: GIANT REFINERY
WELL: BLOOMFIELD WD #1
FORMATION: MESA VERDE

WELL DATA

Net Pay	84 ft
Depth to Middle Perforation	3,395 ft
Casing	5 1/2", 15.5#
Fracture Gradient	.45 psi/ft
Bottom Hole Frac Pressure	1,528 psi
Bottom Hole Temperature	115 deg F
Perforated Interval	3276'-3514' 4 JSPF
	316 HOLES

FM050525 01 01

BJ SERVICES COMPANY

FRAC CALCULATIONS

OPERATOR: GIANT REFINERY
WELL: BLOOMFIELD WD #1
FORMATION: MESA VERDE

DEFINITIONS

BHFP = Bottom Hole Frac Pressure

HH = Hydrostatic Head

PF = Friction Loss in 5 1/2", 15.5# CASING

PFP = Perforation Friction Pressure
= [2.93 X (rate/perfs)^2 / (perf diam)^4] X spec gravity

ISDP = Instantaneous Shut Down Pressure
= BHFP - HH

STP = Surface Treating Pressure
= BHFP - HH + PF + PF + PFP

HHP = Hydraulic Horsepower
= STP x Rate / 40.80

CALCULATIONS

BHFP = 0.600 psi/ft x 3395 ft = **2037 psi**

HH = 0.433 psi/ft x 3395 ft = **1470 psi**

PF = 85 psi/1000 ft x 3395 ft = **288 psi**

PFP = $\frac{[2.93 \times (60.0 \text{ bpm} / 316)^2]}{(0.450 \text{ in})^4} \times 1.00$ = **3 psi**

ISDP = 2037 psi - 1470 psi = **567 psi**

STP = 2037 psi - 1470 psi + 288 psi + 3 psi = **858 psi**

HHP = (858 psi x **60.0 bpm**) / 40.80 = **1261 hhp**

* Surface treating pressure (STP) estimated using a 0.600 psi/ft frac gradient. The frac gradient should be verified by ISDP calculation during prepad or pad.

BHP = SP + HH - PF

FM0S052S 01 01

BJ SERVICES COMPANY

OPERATOR: GIANT REFINERY
WELL: BLOOMFIELD WD #1
FORMATION: MESA VERDE

FLUID & PROPPANT PUMPING SCHEDULE

FLUID TYPE	FLUID VOLUME (GALS)	PROPPANT				VOLUME		
		CONC. (LB/GAL)	TOTAL (LBS)	MESH SIZE	TYPE	FLUID (BBLS)	SLURRY (BBLS)	CUM (BBLS)
SLICK H2O	26000	0.00	0			619	619	619
SLICK H2O	20000	0.50	10000	20/40	SAND	476	487	1106
SLICK H2O	20000	1.00	20000	20/40	SAND	476	498	1604
SLICK H2O	20000	1.50	30000	20/40	SAND	476	509	2113
SLICK H2O	45000	2.00	90000	20/40	SAND	1071	1169	3282
FLUSH	3150	0.00	0			75	75	3357
TOTALS	**134150**		**150000**			**3193**	**3357**	**3357**

RATE SCHEDULE

FLUID TYPE	FLUID VOLUME (GALS)	PROPPANT CONC. (LB/GAL)	SLURRY RATE (BPM)	FLUID RATE (BPM)	PROPPANT RATE (LBS/MIN)	SLURRY VOLUME (BBLS)	PUMP TIME HH:MM:SS
SLICK H2O	26000	0.00	60.0	60.0	0.0	619	00:10:19
SLICK H2O	20000	0.50	60.0	58.7	1232.1	487	00:08:06
SLICK H2O	20000	1.00	60.0	57.4	2410.7	498	00:08:17
SLICK H2O	20000	1.50	60.0	56.2	3539.2	509	00:08:28
SLICK H2O	45000	2.00	60.0	55.0	4620.9	1169	00:19:28
FLUSH	3150	0.00	60.0	60.0	0.0	75	00:01:15
					TOTAL PUMP TIME		**00:55:56**

FM050525 01 01

BJ SERVICES COMPANY

COST ESTIMATE

MESA VERDE SLICKWATER FRAC

QTY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE	GROSS AMOUNT	DISC (%)	NET AMOUNT
75	GAL	FRW-30, FRICTION REDUCER	37.70	2,827.50	38.0	1,753.05
54	LBS	XCIDE-207, BACTERIACIDE	37.00	1,998.00	38.0	1,238.76
30	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80	54.00	38.0	33.48
105000	GAL	PROP CONC PUMP CHG 0.0 TO 4 PPG	0.04	4,200.00	38.0	2,604.00
1500	CWT	20/40 MESH ARIZONA	7.92	11,880.00	38.0	7,365.60
1125	T-M	DELIVERY CHARGE, 15 MILES	1.00	1,125.00	38.0	697.50
1	UNIT	MASTER MIXER 51 TO 60 BPM	2,080.00	2,080.00	38.0	1,289.60
6	EACH	FRAC PUMP MINIMUM CHARGE	2,500.00	15,000.00	38.0	9,300.00
30	MILES	LIGHT EQUIPMENT 1 VEH. 30 MILES	1.80	54.00	38.0	33.48
300	MILES	HEAVY EQUIPMENT 10 VEH. 30 MILES	2.95	885.00	38.0	548.70
1	EACH	DENSIOMETER	575.00	575.00	38.0	356.50
1	EACH	SAND MASTER/KING < 4000 CWT 3 DAYS	925.00	925.00	38.0	573.50
1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1,965.00	1,965.00	0.0	1,965.00
			TOTALS:	$43,568.50		$27,759.17

THE TECHNICAL DATA CONTAINED IN THIS PROPOSAL IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF WRITING AND IS SUBJECT TO FURTHER ANALYSIS AND TESTING. THE PRICING DATA CONTAINED IN THIS PROPOSAL ARE ESTIMATES ONLY AND MAY VARY DEPENDING ON THE WORK ACTUALLY PERFORMED. PRICING DOES NOT INCLUDE FEDERAL, STATE AND LOCAL TAXES OR ROYALTIES.
THIS QUOTATION IS BASED ON BJ SERVICES COMPANY BEING AWARDED THE WORK ON A FIRST CALL BASIS AND WITHIN THIRTY (30) DAYS OF THE PROPOSAL DATE. THESE PRICES WILL BE SUBJECT TO REVIEW IF THE WORK IS DONE AFTER THIRTY (30) DAYS FROM THE PROPOSAL DATE, OR ON A SECOND OR THIRD CALL BASIS.
CUSTOMER WILL BE CHARGED FOR ALL 'SPECIAL PROPPANTS' DELIVERED TO LOCATION, WHETHER THEY ARE PUMPED OR NOT. ALL PROPPANTS OTHER THAN STANDARD GRADE FRAC SAND ARE CONSIDERED 'SPECIAL PROPPANTS'.

FM050525 01 01

BJ SERVICES COMPANY

COST ESTIMATE

MESA VERDE SLICKWATER FRAC

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
75	GAL	FRW-30, FRICTION REDUCER	1,753.05
54	LBS	XCIDE-207, BACTERIACIDE	1,238.76
30	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT V	33.48
105000	GAL	PROP CONC PUMP CHG 0.0 TO 4 PPG	2,604.00
1500	CWT	20/40 MESH ARIZONA	7,365.60
1125	T-M	DELIVERY CHARGE, 15 MILES	697.50
1	UNIT	MASTER MIXER 51 TO 60 BPM	1,289.60
6	EACH	FRAC PUMP MINIMUM CHARGE	9,300.00
30	MILES	LIGHT EQUIPMENT 1 VEH. 30 MILES	33.48
300	MILES	HEAVY EQUIPMENT 10 VEH. 30 MILES	548.70
1	EACH	DENSIOMETER	356.50
1	EACH	SAND MASTER/KING < 4000 CWT 3 DAYS	573.50
1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1,965.00
		TOTALS:	$27,759.17

THE TECHNICAL DATA CONTAINED IN THIS PROPOSAL IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF WRITING AND IS SUBJECT TO FURTHER ANALYSIS AND TESTING. THE PRICING DATA CONTAINED IN THIS PROPOSAL ARE ESTIMATES ONLY AND MAY VARY DEPENDING ON THE WORK ACTUALLY PERFORMED. PRICING DOES NOT INCLUDE FEDERAL, STATE AND LOCAL TAXES OR ROYALTIES.
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FM050525 01 01

BJ SERVICES COMPANY
FIELD RECEIPT WORKSHEET

MESA VERDE SLICKWATER FRAC

PRODUCT CODE	QUANTITY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE
H0596	75	GAL	FRW-30, FRICTION REDUCER	37.70
H4726	54	LBS	XCIDE-207, BACTERIACIDE	37.00
J7416	30	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80
J4606A	105,000	GAL	PROP CONC PUMP CHG 0.0 TO 4 PPG	0.04
NOTPR	1,500	CWT	20/40 MESH ARIZONA	7.92
J4016	1,125	T-M	DELIVERY CHARGE, 15 MILES	1.00
F3066A	1	UNIT	MASTER MIXER 51 TO 60 BPM	2080.00
J1416	6	EACH	FRAC PUMP MINIMUM CHARGE	2500.00
J3916	30	MILES	LIGHT EQUIPMENT 1 VEH. 30 MILES	1.80
J3906	300	MILES	HEAVY EQUIPMENT 10 VEH. 30 MILES	2.95
J3216	1	EACH	DENSIOMETER	575.00
J3106	1	EACH	SAND MASTER/KING < 4000 CWT 3 DAYS	925.00
J3006	1	EACH	TREATMENT MONITORING VAN (T.M.V.)	1965.00

FM050525 01

BJ SERVICES COMPANY

Treatment Requirements for: **MESA VERDE WD WELL**

FRAC/FLUSH: **134,000 GALLONS SLICKWATER PUMPED VOLUME**
150,000 GALLONS TO BE MIXED

Made Up With:
0.38 Pounds XCIDE-207, BACTERIACIDE

Containing per 1000 Gallons:
0.50 Gallons FRW-30, FRICTION REDUCER

RUN FRW-30 ON THE FLY AT 0.5 GAL/M. MONITOR FRW-30 RATE TO CONTROL FRICTION. RECALCULATE FLUSH ON LOCATION.

PROPPANTS: 150,000 Pounds 20/40 MESH ARIZONA

FM050525

PRODUCT DESCRIPTIONS

FRW-30 (Friction Reducer)

An anionic polymeric friction reducer used in water and light brines. Friction reduction of up to 80% can be achieved.

X-CIDE 207 (Bacteriacide)

A non-ionic isothiasolin bacteriacide in a convenient, solid granular form. It provides broad spectrum control of slime forming and sulfate-reducing bacteria in oilfield water

C-104 NAME CHANGE

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

February 2, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-931

Mr. John Stokes
Giant Refining Company-Bloomfield
P.O. Box 159
Bloomfield, New Mexico 87413

Re: Notice of Violation
Giant Refining Company-Bloomfield Class I Well Disposal
Discharge Plan GW-130
San Juan County, New Mexico

Dear Mr. Stokes:

On January 12, 1996 Giant Refining Company-Bloomfield (Giant) notified the New Mexico Oil Conservation Division (OCD) about a buildup of non-exempt waste due to injection problems at the Class I disposal well operated by Giant. On January 19, 1996 Giant contracted with Sunco Trucking Company (Sunco) to transport the excess non-exempt wastes offsite for disposal. On January 24, 1996 Giant informed the OCD that due to the injection problems, non-exempt wastes were transported offsite by Sunco to Sunco Disposal Facility. The OCD requested information on January 25, 1996 from Giant regarding the transportation by Sunco. Giant responded on January 26, 1996 with the requested information.

Under Discharge Plan GW-130, disposal of non-exempt wastes generated by Giant is limited to injection in the Class I well operated by Giant. The terms and conditions of Discharge Plan GW-130 do not allow for offsite disposal of non-exempt wastes without prior OCD approval. The off-site disposal of non-exempt wastes constitutes a violation of the terms and conditions of Discharge Plan GW-130 under the New Mexico Water Quality Act (Chapter 74, Article 6 NMSA 1978).

Future violations will subject Giant to the penalty provisions provided in Section 74-6-10 NMSA 1978 of the New Mexico Water Quality Act and Giant may be assessed civil penalties up to $15,000 per day.

If you have any questions, please call Roger Anderson at (505) 827-7152.

Sincerely,

William J LeMay
Director

WJL/mwa

xc. OCD Aztec Office

GIANT
REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

January 26.1996

Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Giant Refining Company Class I Injection Well
Discharge Plan GW-130
San Juan County, New Mexico

Dear Mr. Anderson:

Giant Refining Company - Bloomfield ("Giant") submits the following information that you requested in your letter of January 25, 1995. This information is provided in numerical order per your letter.

1. *Did Giant Refining Company receive prior approval from the OCD to dispose of the wastes offsite?*

In the phone conversation on January 12, 1996, Giant asked OCD about options that might be available onsite. Giant was told at that time that the only emergency option was trucking to another facility or permitting and building additional evaporation lagoons.

2. *Where were the wastes stored prior to offsite disposal?*

The water that was trucked offsite was taken from the return flow line in the South Lined Evaporation Pond and from two tanks. The 20,640 barrels of water taken offsite from the evaporation pond was essentially water that was flowing out of the refinery's injection well. An additional 465 barrels of water was taken offsite from two 400 barrel tanks that received water directly from the well.. No other storage facilities were used.

3. *Who transported the wastes for disposal?*

All water was transported by Sunco Trucking.

4. *What facility disposed of the wastes?*

All water was disposed of by Sunco Trucking at its disposal facility located on Crouch Mesa.

5. *What were the disposed volumes?*

20,640 barrels of water were taken from the South Lined Evaporation Pond and 465 barrels were taken from two tanks that received water directly from the infection well

6. *What is the current status of the Class I well?*

Water from the evaporation ponds is being pumped into the well in accordance with permit requirements.

7. *Please submit the results of all tests performed on the wastes.*

The results are attached.

8. *Please submit the results of the latest Mechanical Integrity Test performed on the Class I well.*

Although the Mechanical Integrity Test for 1996 is tentatively scheduled for Wednesday, January 31, 1996 (as arranged by phone with the OCD office in Aztec), Giant is submitting a copy of the August 17, 1995 Mechanical Integrity Test which was obtained from the OCD files in Aztec.

9. *Please submit all other paperwork associated with this disposal incident.*

Giant is not clear what additional paperwork that you might require. Please let us know if there is paperwork that you would like to see that has not been appended to this letter.

Although there was no possibility of harm to human health or the environment in connection with the water transported offsite by Sunco Trucking, Giant shares OCD's concerns regarding the proper disposal of water from Giant's injection well. Giant was not aware, nor did OCD inform Giant in the above-referenced January 12, 1996 telephone conversation, that Giant could only dispose of water at certain types of OCD-approved injection wells. Further, Sunco Trucking never informed Giant that there was any problem disposing of the water at Sunco's Crouch Mesa facility. If any requirements were violated by Giant, Giant deeply regrets them.

Thank you for the time that you have taken to fully explain this issue. If you require additional information, please do not hesitate to contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

cc: John Stokes, Refinery Manager, Giant Refining Company - Bloomfield
Kim Bullerdick, Corporate Counsel, Giant Industries Arizona, Inc.

STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

New Mexico DRUG FREE It's a State of Mind

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROA
AZTEC, NEW MEXICO 874
(505) 334-61

MECHANICAL INTEGRITY TEST REPORT

(TA or UIC)

Date of Test Aug 17, 1995 Operator Bloomfield Refining

Lease Name SWD well (Class I) W.D Well # 1 Location: Unit I Sec 27 Twn 29 Rge 11

Land Type: State ___ Federal ___ Private X Indian ___

Well Type: Water Injection ___ Salt Water Disposal X Gas Injection ___ Producing Oil/Gas ___ Pressure Observation ___

Temporarily Abandoned Well (Y/N): ___ TA Expires: ___

Casing Pres. 0 Tbg. SI Pres. ___ Max. Inj. Pres. 955# Limit

Bradenhead Pres. ___ Tbg. Inj. Pres. ___

Tubing Pres. 860

Int. Casing Pres. ___

Pressured annulus up to 800 psi. for 30 mins. Test (passed)/failed.

REMARKS:

Test Started at 9:20 am, test concluded At 9:50 800#

RECEIVED
AUG 17 1995
OIL CONS. DIV.
DIST. 3

By D. Pinning (Operator Representative)

Witness Ernest Cardona Deputy Oil Gas Inspector (NMOCD)

CONNIE PINNING CONSULTING ENGINEER
(Position)

612 DIAMOND
FARMINGTON, NM 87401

BJ SERVICES

API W A T E R A N A L Y S I S

Company:	GIANT EXP.	W.C.N.A. Sample No.:	
Field:		Legal Description:	
Well:	WD #1	Lease or Unit:	
Depth:		Water.B/D:	
Formation:	MV	Sampling Point:	
State:	NM	Sampled By:	
County:	SAN JUAN	Date Sampled:	01/12/95
		Type of Water(Produced,Supply, ect.):	PROD.

PROPERTIES

pH:	7.00	Iron, Fe(total):	0
Specific Gravity:	1.000	Sulfide as H2S:	0
Resistivity (ohm-meter):	1.00	Total Hardness:	
Tempature:	78F	(see below)	

D I S S O L V E D SOLIDS

CATIONS	mg/l		me/l		
Sodium, Na:	874	:	38		
Calcium, Ca:	120	:	6	Sample(ml): 10.0 ml of EDTA:	3.00
Magnesium, Mg:	15	:	1	Sample(ml): 10.0 ml of EDTA:	.60
Barium, Ba:	N/A	:	N/A		
Potassium, K:	30	:	1		

ANIONS	mg/l		me/l		
N: .500 Chloride, Cl:	886	:	25	Sample(ml): 10.0 ml of AgNO3:	.50
Sulfate, SO4:	600	:	13		
Carbonate, CO3:		:		Sample(ml): 1.0 ml of H2SO4:	
Bicarbonate, HCO3:	488	:	8	Sample(ml): 25.0 ml of H2SO4:	2.00

Total Dissolved Solids (calculated):	3013		
Total Hardness:	360	Sample(ml): 10.0 ml of EDTA:	3.60

REMARKS AND RECOMMENDATIONS: SAMPLE HAS HYDROCARBON ODOR

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

July 11, 1995

Mr. Roger Anderson
Environmental Bureau
New Mexico OCD
2040 South Pacheco
Santa Fe, New Mexico 87505

Mr. Denny Foust
New Mexico OCD
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Monthly Water Effluent Report

Dear Sirs:

Please find attached our June 1995 waste water effluent (GW-001) and injection well (GW-130) reports, with the analytical data for the second quarter.

Please call me if you need any additional information.

Sincerely,

Chris Hawley
Environmental Manager

CH/jm

Enclosure

cc: Joe Warr
Dave Roderick
Ron Weaver
Chad King
John Goodrich

BLOOMFIELD REFINING COMPANY
P. O. BOX 159
BLOOMFIELD, NEW MEXICO 87413

MONTHLY INJECTION WELL REPORT
DISCHARGE PLAN GW-130, EXP. DATE: 11/4/1998
NE/4 SE/4, SECTION 27, T29N, R11W,
NMPM, SAN JUAN COUNTY, NEW MEXICO

PERIOD	AMOUNT OF WATER FROM RIVER (GALLONS)	AMOUNT TO SOLAR EVAP PONDS (GALLONS)	TOTALIZER AMOUNT INJECTED (GALLONS)	CALCULATED AMOUNT INJECTED (GALLONS)	DOWN-TIME (HRS)	INJECTION PRESSURE			ANNULAR PRESSURE			ON-LINE FLOW RATES		
						MAX (PSIA)	MIN (PSIA)	AVG (PSIA)	MAX (PSIA)	MIN (PSIA)	AVG (PSIA)	MAX (GPM)	MIN (GPM)	AVG (GPM)
1995														
JAN	11,597,000	3,794,400												
FEB	9,384,000	3,427,200	2,291,200	2,844,000	72	809	643	706	220	12	100	111	57	79
MAR	10,659,000	3,178,300	4,383,100	5,498,880	28	949	763	870	220	37	100	151	98	128
APR	9,977,000	3,371,300	289,400	316,800	669	902	712	807	70	64	67	136	85	110
MAY	12,691,000	2,578,000	3,619,800	4,269,240	213	891	800	870	20	7	14	144	124	134
JUN	11,802,000	2,418,100	3,707,300	4,172,760	201	918	839	869	8	0	4	150	127	134
JUL														
AUG														
SEP														
OCT														
NOV														
DEC														
TOTAL	66,110,000	18,767,300	14,290,800	17,101,680										

CERTIFICATION: [signature] DATE: 7-11-95

NOTES:
1. DOWNTIME IS NOT INCLUDED IN OPERATING DATA. FOR EXAMPLE, THE AVERAGE FLOW RATE FOR FEBRUARY IS BASED ON 25 DAYS.
2. MAXIMUM FLOW RATE DURING A SHORT TEST ON MARCH 7, 1995 WAS 151 GPM AT 949 PSI.

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Bloomfield Refining Co.**		
Project:	Bloomfield, NM	Date Reported:	06/22/95
Sample ID:	GW-130 Inj.	Date Sampled:	05/22/95
Laboratory ID:	W00571	Time Sampled:	1300
Sample Matrix:	Water	Date Received:	05/22/95
Condition:	Cool/Intact		

Parameter	Analytical Result	Units		Units
Lab pH	8.5	s.u.		
Lab Conductivity @ 25° C	27,000	umhos/cm		
Total Dissolved Solids @ 180°C	11,500	mg/L		
Total Dissolved Solids (Calc)	11,300	mg/L		
Sodium Absorption Ratio (SAR)	42.9	ratio		
Total Hardness as CaCO3	1,340	mg/L		
Total Alkalinity as CaCO3	306	mg/L		
Bicarbonate as HCO3	349	mg/L	5.72	meq/L
Carbonate as CO3	12	mg/L	0.40	meq/L
Hydroxide as OH	0	mg/L	0.00	meq/L
Chloride	5,370	mg/L	151.37	meq/L
Sulfate	1,620	mg/L	33.83	meq/L
Calcium	375	mg/L	18.69	meq/L
Magnesium	99	mg/L	8.11	meq/L
Potassium	69	mg/L	1.77	meq/L
Sodium	3,610	mg/L	157.10	meq/L
Cations			185.67	meq/L
Anions			191.34	meq/L
Cation/Anion Difference			1.50	%

FIELD pH = 8.3

FIELD CONDUCTIVITY = 10,000 +++

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported by M. Kluta

Reviewed by mh

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Bloomfield Refining Co.**		
Project:	Bloomfield, NM	Date Reported:	06/22/95
Sample ID:	GW-130 Inj.	Date Sampled:	05/22/95
Laboratory ID:	W00571	Time Sampled:	1300
Sample Matrix:	Water	Date Received:	05/22/95
Condition:	Cool/Intact		

Parameter	Dissolved Analytical Result	Units
Arsenic	0.023	mg/L
Barium	<0.5	mg/L
Cadmium	0.003	mg/L
Chromium	<0.02	mg/L
Lead	0.063	mg/L
Mercury	<0.001	mg/L
Selenium	0.006	mg/L
Silver	<0.01	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Reported by: M. Kluta

Reviewed by: mh

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis

Dissolved Metals

Client:	**Bloomfield Refining Co.**	Date Reported:	06/22/95
Project:	Bloomfield NM	Date Sampled:	05/22/95
Laboratory ID:	W00571	Date Received:	05/22/95
Sample Matrix:	Water		

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Arsenic	0.010	0.010	mg/L	**100%**
Barium	1.02	1.00	mg/L	**102%**
Cadmium	0.004	0.004	mg/L	**100%**
Chromium	0.98	1.00	mg/L	**98%**
Lead	1.06	1.00	mg/L	**106%**
Mercury	0.002	0.002	mg/L	**100%**
Selenium	0.010	0.010	mg/L	**100%**
Silver	1.01	1.00	mg/L	**101%**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: M. Kluth

Reviewed by: mh

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis

Dissolved Metals

Client:	**Bloomfield Refining Co.**	Date Reported:	06/22/95
Project:	Bloomfield NM	Date Sampled:	05/22/95
Laboratory ID:	W00571	Date Received:	05/22/95
Sample Matrix:	Water		

Spike Analysis

Parameter	Spiked Sample Result	Sample Result	Spike Added	Percent Recovery
Arsenic	0.046	0.00	0.100	**91%**
Barium	0.55	0.06	0.50	**98%**
Cadmium	0.002	0.00	0.005	**95%**
Chromium	0.47	0.00	0.50	**94%**
Lead	0.51	0.00	0.50	**102%**
Mercury	0.004	0.00	0.00	**90%**
Selenium	0.049	0.003	0.100	**95%**
Silver	0.44	0.00	0.50	**87%**

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
"Standard Methods For The Examination Of Water And Waste Water", 18th ed., 1992.

Comments: Quality control run concurrently with the above sample lab numbers.

Reported by: M. Kluite

Reviewed by: mh

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Bloomfield Refining Co.

Project ID:	Bloomfield NM	Report Date:	06/06/95
Sample ID:	GW-130 Inj.	Date Sampled:	05/22/95
Lab ID:	W00571	Date Received:	05/22/95
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	06/05/95

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	1.0
Toluene	11.8	1.0
Ethylbenzene	ND	1.0
m,p-Xylenes	1.6	1.0
o-Xylene	ND	1.0

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	114.2	75 -125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Anna Schaerer
Analyst

MK
Review

imL

Inter-Mountain Laboratories, Inc.

Inorganics Laboratory
11183 SH 30 College Station, Texas 77845
Phone (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0692

EPA Method 624
PURGEABLES

Client:	**BLOOMFIELD REFINING CO.**		
Project:	Bloomfield, NM	Report Date:	06/02/95
Sample ID:	GW-130 Inj	Date Sampled:	05/22/95
Laboratory ID:	W571/0695G00868	Date Received:	05/24/95
Sample Matrix:	Water	Date Extracted:	05/24/95
Preservative:	Cool, HCl	Date Analyzed:	05/24/95
Condition:	Intact, pH<2	Time Analyzed:	11:48 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Benzene	ND	0.005
Bromoform	ND	0.005
Carbon tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromomethane	ND	0.005
Chloroethane	ND	0.010
2-Chloroethyl Vinyl Ether	ND	0.010
Chloroform	ND	0.005
Dibromochloromethane	ND	0.005
Dichlorodifluoromethane	ND	0.010
1,3-Dichlorobenzene	ND	0.005
1,2-Dichlorobenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethylene	ND	0.005
1,2-Dichloropropane	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
Ethylbenzene	ND	0.005
Methyl Bromide	ND	0.010
Methyl Chloride	ND	0.010
Methylene Chloride	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethylene	ND	0.005
Toluene	ND	0.005
1,2-Trans-dichloroethene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethylene	ND	0.005
Trichlorofluoromethane	ND	0.010
Vinyl Chloride	ND	0.005

ND - Analyte not detected at stated limit of detection.

jml

Inter-Mountain Laboratories, Inc.

Inorganics Laboratory
11183 SH 30 College Station, Texas 77845
Phone (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0692

EPA Method 624

PURGEABLES

ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINING CO.**
Project: Bloomfield, NM
Sample ID: GW-130 Inj
Laboratory ID: W571/0695G00868

Report Date: 06/02/95
Date Sampled: 05/22/95
Date Analyzed: 05/24/95
Time Analyzed: 11:48 PM

Tentative Identification	Retention Time (Minutes)	Concentration (mg/L)
None detected at reportable levels.		

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	112%	86 - 118%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	95%	86 - 115%

Reference: Method 624 - Purgeables, 40 Code of Federal Regulations, Part 136, Appendix A, July 1993.

Comments: A capillary column is used instead of a packed column as in the reference above.

Analyst

Review

imL

Inter-Mountain Laboratories, Inc.

Inorganics Laboratory
11183 SH 30 College Station, Texas 77845
Phone (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0692

MATRIX SPIKE / SPIKE DUPLICATE ANALYSIS

EPA Method 624 - PURGEABLES

Laboratory ID:	Matrix Spike and Spike Duplicate	Report Date:	06/01/95
Sample Matrix:	Water	Date Sampled:	05/22/95
Preservative:	NA	Date Received:	05/24/95
Condition:	NA	Date Analyzed:	05/31/95
		Time Analyzed:	1:59 PM/3:06 PM

MATRIX SPIKE ANALYSIS

Analyte	Spiked Sample Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery	QC Limits Recovery
1,1 - Dichloroethene	0.065	ND	0.050	131%	61 - 145
Trichloroethene	0.059	ND	0.050	118%	71 - 120
Benzene	0.059	ND	0.050	118%	76 - 127
Toluene	0.054	ND	0.050	107%	76 - 125
Chlorobenzene	0.061	ND	0.050	122%	75 - 130

MATRIX SPIKE DUPLICATE ANALYSIS

Analyte	Duplicate Result (mg/L)	Percent Recovery	Original Spike Recovery	RPD	QC Limits RPD	QC Limits Rec.
1,1 - Dichloroethene	0.065	129%	131%	1%	14%	61 - 145
Trichloroethene	0.057	114%	118%	4%	14%	71 - 120
Benzene	0.057	113%	118%	5%	11%	76 - 127
Toluene	0.050	101%	107%	6%	13%	76 - 125
Chlorobenzene	0.059	119%	122%	3%	13%	75 - 130

ND - Analyte not detected at stated limit of detection

Spike Recovery: 0 out of 10 outside QC Limits
RPD: 0 out of 5 outside QC Limits

Quality Control:

Surrogate	Spike Recovery	Spike Dup. Recovery	Recovery Limits
Dibromofluoromethane	112%	101%	86 - 118%
Toluene-d8	108%	97%	88 - 110 %
Bromofluorobenzene	107%	105%	86 - 115 %

Reference: Method 624 - Purgeables, 40 Code of Federal Regulations, Part 136, Appendix A, July 1993.

Comments: A capillary column is used instead of a packed column as in the reference above.

Analyst

Review

iml

Inter-Mountain Laboratories, Inc.

Inorganics Laboratory
11183 SH 30 College Station, Texas 77845
Phone (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0692

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 624 - PURGEABLES

Sample ID: Method Blank
Laboratory ID: MB0524D
Sample Matrix: Water

Report Date: 06/02/95
Date Extracted: N/A
Date Analyzed: 05/24/95
Time Analyzed: 7:46 PM

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Benzene	ND	0.005
Bromoform	ND	0.005
Carbon tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chlorodibromomethane	ND	0.005
Chloroethane	ND	0.010
2-Chloroethyl Vinyl Ether	ND	0.010
Chloroform	ND	0.005
Dibromochloromethane	ND	0.005
Dichlorodifluoromethane	ND	0.010
1,3-Dichlorobenzene	ND	0.005
1,2-Dichlorobenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethylene	ND	0.005
1,2-Dichloropropane	ND	0.005
trans-1,3-Dichloropropene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
Ethylbenzene	ND	0.005
Methyl Bromide	ND	0.010
Methyl Chloride	ND	0.010
Methylene Chloride	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Tetrachloroethylene	ND	0.005
Toluene	ND	0.005
1,2-Trans-dichloroethene	ND	0.005
1,1,1-Trichloroethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Trichloroethylene	ND	0.005
Trichlorofluoromethane	ND	0.010
Vinyl Chloride	ND	0.005

ND - Analyte not detected at stated limit of detection

imL

Inter-Mountain Laboratories, Inc.

Inorganics Laboratory
11183 SH 30 College Station, Texas 77845
Phone (409) 776-8945 FAX (409) 774-4705

Organics Laboratory
3304 Longmire Drive College Station, Texas 77845
Phone (409) 774-4999 Fax (409) 696-0692

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 624 - PURGEABLES

ADDITIONAL DETECTED COMPOUNDS

Report Date: 06/02/95
Sample ID: Method Blank
Laboratory ID: MB0524D
Date Sampled: 05/24/95
Date Analyzed: 05/24/95
Time Analyzed: 7:46 PM

Tentative Identification	Retention Time (Minutes)	Concentration* (mg/L)
None detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Dibromofluoromethane	96%	80 - 118%
Toluene-d8	104%	88 - 110%
Bromofluorobenzene	97%	86 - 115%

Reference: Method 624 - Purgeables, 40 Code of Federal Regulations, Part 136, Appendix A, July 1993.

Comments: A capillary column is used instead of a packed column as in the reference above.

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Assurance / Quality Control

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Method Blank Analysis

Sample Matrix: Water
Lab ID: Method Blank

Report Date: 06/06/95
Date Analyzed: 05/31/95

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	111.6	75-125%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Anna Schaeres
Analyst

MK
Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis
BTEX

Client: **Bloomfield Refining Co.**
Project: Bloomfield NM
Sample Matrix: Water

Date Reported: 06/06/95
Date Analyzed: 06/05/95

Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery
Benzene	9.1	10.0	**91%**
Toluene	8.3	10.0	**83%**
Ethylbenzene	9.2	10.0	**92%**
m+p-Xylene	9.6	10.0	**96%**
o-Xylene	7.5	10.0	**75%**

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	113.7	75-125%

Reference: Method 5030, Purge and Trap: Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Reported by Anna Schaeer

Reviewed by MK

imi
Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
BLOOMFIELD REFINING CO	BLOOMFIELD NM	

Sampler: (Signature)	Chain of Custody Tape No.
[signature]	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	BTEX, 8020	624	METALS 6010, 7060, 7470	Ca, K, Mg, Na, Bicarb, Carb, Cl, SO4	TDS	Remarks
GW-130 INJ	5/22/95	1:00P		WATER	6	2	2	1	1		BTEX ≈ 0,0
											SAME AS
											LAB ID, W02734

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	5/22/95	4:00P	[signature]	5/23/95	16:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945
☐ 1701 Phillips Circle, Gillette, Wyoming 82718, Telephone (307) 682-8945
☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
☐ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450
☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945
☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

28247

GW-130 Discharge Permit

SUNCO [illegible] #1

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

January 25, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-928

Mr. Lynn Shelton
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

Re: Giant Refining Company Class I Well Disposal
Discharge Plan GW-130
San Juan County, New Mexico

Dear Mr. Shelton:

On January 12, 1996 Giant Refining Company notified the New Mexico Oil Conservation Division (OCD) about injection problems concerning the Class I disposal well. On January 24, 1996 Giant Refining Company informed the OCD that due to the injection problems, Class I non-exempt wastes were hauled offsite to a Class II disposal well.

Please provide the following information to the OCD by 4:00 PM on January 26, 1996:

1. Did Giant Refining Company receive prior approval from the OCD to dispose of the wastes offsite?
2. Where were the wastes stored prior to offsite disposal?
3. Who transported the wastes for disposal?
4. What facility disposed of the wastes?
5. What were the disposed volumes?
6. What is the current operating status of the Class I well?
7. Please submit the results of all tests performed on the wastes.
8. Please submit the results of the latest Mechanical Integrity Test performed on the Class I well.
9. Please submit all other paperwork associated with this disposal incident.

If you have any questions, please call Mark Ashley at (505) 827-7155.

Sincerely,

Roger Anderson
Environmental Bureau Chief

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 3:30 PM	Date 1-24-96

Originating Party	Other Parties
Mr. Shelton - Giant	Pat Sanchez - OCD

Subject: Giant Class I well workover - Backflow water.

Discussion: Mr. Shelton called to inform OCD Santa Fe that Giant had shipped Class I backflow water to Sunco Disposal - A Class II facility. At the time of the workover and shipment Mr. Shelton and his consultant Mr. Paul Thompson did not know that Sunco could not take Non-exempt Class I fluids. Mr. Shelton does not want to involve Sunco since they thought they were taking wastes from an ordinary well workover/ produced water.

Conclusions or Agreements

Mr. Shelton will be in touch with Roger Anderson in the Morning.

Distribution: Giant, RCA, MA, CE, File.

Signed: Patricia W. Sanchez

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 4:25 pm	Date 1-24-96
Originating Party		Other Parties
Pat Sanchez - OCD		Chuck Badsgard - Sunco

Subject: Water hauled from Giant Class I well to Sunco Class II well.

Discussion: Talked to Mr. Badsgard about the water hauled from the Giant Class I well to Sunco Class II well - I explained per Federal UIC / SDWA regulations a Class II well can only take "Exempt" oil field wastes and cannot accept Class I "Non-Exempt" wastes. He thought the "water" was just ordinary produced water / workover flowback. He asked who is the contact at Giant and I told him Mr. Lynn Shelton.

Conclusions or Agreements

Mr. Chuck Badsgard will call Roger Anderson in the Morning.

Distribution: RCA, CE, MA, File.

Signed: Patricia W. Sanchez

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal | Time 3:30 | Date 1-12-98

Originating Party	Other Parties
LYNN SHELTON	MARK ASHLEY, ROGER ANDERSON

Subject GW-130 DISPOSAL

Discussion LYNN CALLED & SAID GIANT'S CLASS I WELL HAS NOT TAKEN THE FLUID & WANTED TO KNOW IF THEY COULD GET RID OF IT IN THEIR UNLINED PONDS UNTIL THEY WORK IT OVER. I CONSULTED ROGER ANDERSON, AND WE TOLD LYNN THAT WE COULD NOT STORE IN UNLINED PONDS, AND THAT WE MUST PROPOSE AN ALTERNATE METHOD.

Conclusions or Agreements

Distribution

Signed Mark Ashley

S.W.D AND\ OR INJECTION WELL INSPECTION REPORT

API #: 30-045-29002

DATE: 11-14-95 CLASS 1:[X] CLASS 2:[ ] S.W.D:[X] INJECTION:[ ]

OPERATOR: Giant Refining (Bloomfield)

WELL NAME: Giant Ref. Class 1 S.W.D WELL#: 1

LOCATION: UT. LETTER: I SEC: 27 TWN: 29N RGE: 11W

PRESS. LIMIT: 1150 INJ. PRESS: 989 TBG\CSG ANNULUS PRESS: 151.5

BRADENHEAD PRESS. 0 * INTERMEDIATE CSG.PRESS. N/A

REQUIRED POSITIVE TBG\CSG ANNULUS PRESS. TO BE MAINTAINED ON WELL AS STIPULATED ON WFX OR S.W.D. ORDER: S.W.D # 578 ⇒ 100# min.

TYPE OF PRESSURE LIMITING DEVICE USED : Electric Shut-Off, shuts electric motor down on injection pump

PRESSURE SETTING OF PRESSURE LIMITING DEVICE : _____

(PRESSURE SETTING OF PRESSURE LIMITING DEVICE NOT TO EXCEED PRESSURE LIMIT)

REMARKS: Well last inspected on 10-1-96 by E.C.

* positive meter reading on B.H — 211200

At the time of this inspection the work to increase the capacity of the dirt containment around H2O tank had been completed. Mr. Lynn Shelton to be sending diagram w/ measurements of modifications done to increase capacity of dirt containment.

INSPECTOR: Ernest Cordova N.M.O.C.D

WITNESS (IF AVAILABLE): Ron Lane

Bloomfield Refining Company
A Gary-Williams Energy Corporation Subsidiary

OIL CONSERV. ON DIVISION
RECEIVED
'95 OCT 18 AM 8 52

October 4, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. William J. LeMay, Director
State of New Mexico
Energy, Minerals & Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Mr. Roger Anderson, Bureau Chief
State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Mr. Frank Chavis, District Manager
State of New Mexico
Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Subject: *Transfer of Ownership*

Gentlemen:

Bloomfield Refining Company (BRC), a wholly-owned subsidiary of Gary-Williams Energy Corporation of Denver, Colorado, is formally notifying the State of New Mexico Oil Conservation Division of the sale of the Bloomfield, New Mexico refinery to San Juan Refining Company (SJRC), a wholly-owned subsidiary of Giant Industries Arizona, Inc. effective October 4, 1995. BRC and SJRC request that the refinery's Discharge Plan GW-001 and Class 1 Injection Well Discharge Plan GW-130 be transferred to SJRC. The GW-001 Plan is for the 5-year period ending June 7, 1999 and the GW-130 Plan is for the 5-year period ending November 4, 1998.

If you have any questions concerning this matter, please contact either Paul Rosswork for BRC at (303) 628-3800 or Kim Bullerdick for SJRC at (602) 585-8850.

Sincerely,

BLOOMFIELD REFINING COMPANY

David J. Younggren
Senior Vice President
370-17th Street, Suite 5300
Denver, CO 80202-5653

SAN JUAN REFINING COMPANY

A. Wayne Davenport
Vice President and Chief Financial Officer
23733 North Scottsdale Road
Scottsdale, AZ 85255

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

RECEIVED
JUN 21 1995
Environmental Bureau
Oil Conservation Division

June 15, 1995

Mr. Denny Foust
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Mr. Roger Anderson
New Mexico OCD
2040 South Pacheco
Santa Fe, New Mexico 87505

Dear Sirs:

Attached is a subsequent notification of a spill that occurred at Bloomfield Refining Company on June 14, 1995. Approximately 100 barrels of waste water was spilled inside the injection well tank dike. The spilled material was immediately recovered by vacuum truck.

Please call me if you need additional information.

Sincerely,

Chris Hawley
Environmental Manager

CH/jm

Enclosure

cc: Dave Roderick
Joe Warr
John Goodrich
Ron Weaver

NEW MEXICO OIL CONSERVATION COMMISSION

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR	Bloomfield Refining Company				ADDRESS	P. O. Box 159, Bloomfield, N.M. 87413	
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY	Bloomfield Refining Company						
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 27	TWP. T29N	RGE. R11W	COUNTY San Juan
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK	Immediately south of Bloomfield, New Mexico						
DATE AND HOUR OF OCCURENCE	6/14/95 at 12:30 p.m.				DATE AND HOUR OF DISCOVERY	6/15/95 at 6:50 a.m.	
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED		IF YES, TO WHOM	Denny Foust	
BY WHOM	Chris Hawley				DATE AND HOUR	6/15/95 at 8:48 a.m.	
TYPE OF FLUID LOST	Waste water				QUANTITY OF SPILL	100 bbls	QUANTITY RECOVERED 80 bbls	LOSS 20 bbls
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY				

IF YES, DESCRIBE FULLY**

DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**

Lost water flow from evaporation pond to injection well tank, when injection pump shut off, water back-flowed from well to tank and overflowed tank because check valve was not working. Blocked in and wrote work order to repair check valve.

DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**

Water contained inside dike. Vacuumed up and returned to evaporation ponds.

DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Industrial			
SURFACE CONDITIONS	SANDY	SANDY LOAM X	CLAY	ROCKY	WET	DRY X	SNOW

DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**

Warm, windy, no precipitation during period.

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

SIGNED Chris Hawley TITLE ENVR. MGR. DATE 6-15-95

*SPECIFY **ATTACH ADDITIONAL SHEETS IF NECESSARY

OIL CONSERVATION DIVISION
RECEIVED
'95 JUN 22 AM 8 52

NEW MEXICO OIL CONSERVATION COMMISSION

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

RECEIVED
JUN 3 2 1995
Environmental Bureau
Oil Conservation Division

NAME OF OPERATOR	Bloomfield Refining Company					ADDRESS	P. O. Box 159, Bloomfield, N.M. 87413	
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*		
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*	
NAME OF FACILITY	Bloomfield Refining Company							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 27	TWP. T29N	RGE. R11W	COUNTY San Juan
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK	Immediately south of Bloomfield, New Mexico							
DATE AND HOUR OF OCCURENCE	6/14/95 at 12:30 p.m.				DATE AND HOUR OF DISCOVERY	6/15/95 at 6:50 a.m.		
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED		IF YES, TO WHOM	Denny Foust		
BY WHOM	Chris Hawley				DATE AND HOUR	6/15/95 at 8:48 a.m.		
TYPE OF FLUID LOST	Waste water				QUANTITY OF SPILL	100 bbls	QUANTITY RECOVERED 80 bbls	LOSS 20 bbls
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY					

IF YES, DESCRIBE FULLY**

RECEIVED
JUN 19 1995
OIL CON. DIV.
DIST. 3

DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**

Lost water flow from evaporation pond to injection well tank, when injection pump shut off, water back-flowed from well to tank and overflowed tank because check valve was not working. Blocked in and wrote work order to repair check valve.

DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**

Water contained inside dike. Vacuumed up and returned to evaporation ponds.

DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Industrial				
SURFACE CONDITIONS	SANDY	SANDY LOAM X	CLAY	ROCKY	WET	DRY X	SNOW	

DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**

Warm, windy, no precipitation during period.

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

SIGNED Chris Hawley TITLE ENVR. MGR. DATE 6-15-95

*SPECIFY **ATTACH ADDITIONAL SHEETS IF NECESSARY

SF 6/19/95

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

OIL CONSERVATION DIVISION
RECEIVED
'95 FEB 16 AM 8 52

February 6, 1995

RECEIVED
FEB 21 1995
Environmental Bureau
Oil Conservation Division

Mr. Roger Anderson
New Mexico OCD
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Mr. Denny Foust
New Mexico OCD
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Class 1 Injection Well - GW-130

Dear Sirs:

Please be advised that Bloomfield Refining Company began continuous injection of refinery wastewater on February 3, 1995. Quarterly reporting will begin for the period ending on March 31, 1995. Please send me a copy of Form C-120-A for the monthly reporting.

If you have any questions, please call me.

Sincerely,

Chris Hawley
Environmental Manager

CH/jm

cc: Joe Warr
Dave Roderick
John Goodrich

p:\wp\chawley\injectn

Cliff House

Dip SW, ≈ 115' thick, ≈ 45' net sand

10-18% porosity

Offset Wells Within ½ mile

1) P/A wells need proper plugging
2) Producing wells must be cemented across proposed injection zone.

Injection Zone

3400'-3600' CH

TDS > 10,000 ppm

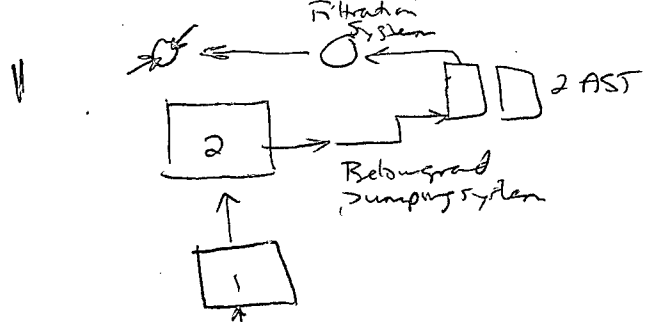
Cliffhouse (upper unit)	3294'	114'	Mesaverde Group
unconf.	3408'		
Menefee (middle unit)	3408	600'	
	4008		

Water Zones

Quaternary Sand/Gravel	0'	25'-75'
Nacimiento	570'	570'
Ojo Alamo	569'	165'
	734'	

TD Wells - 20-305'

Surface casing @ 830 OK



CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP

Proposed Injection Well: BLOOMFIELD REFINING CO. Class I Well
Proposed Injection Zone: 3294 to 3460 Formation: Cliffhouse/Menefee
Minimum Required TOC: 2794 Feet Yield: 70%

Well Name	No.	Type	T.D.	Casing	Depth	Borehole	Cement	TOC
Bloomfield Refining WD-1	1	CLASS I	3600	8.625	830	11	200 sx	180
				5.5	3600	7.875	550	978
Amoco/Sullivan Gas Com-D	1-E	PROD	6329	9.625	293	12.25	325 sx	(564)
				4.5	6329	7.875	1570	636
Amoco/Davis Gas Com-J	1	PROD	4331	9.625	316	12.25	350 sx	(607)
				7	4330	8.75	1050	(1,439)
Union Texas Pet/Calvin (Meridian)	3	PROD	5970	9.625	314	12.25	270 sx	(398)
				7	5155	8.75	1942	(5,516)
Supron Energy/Congress (Meridian)	9	PROD	2960	7.625	216	9.875	175 sx	(457)
				2.875	2959	6.625	550	621
Southern Union Prod/Calvi (Meridian)	1	PROD	6450	10.75	267	15	225 sx	(44)
				4.5	6453	7.875	494	4,662
Amoco/Davis Gas Com-F	1-E	PROD	6386	8.625	306	12.25	300 sx	(294)
				5.5	6388	7.875	1000	1,620
Pan American/Davis Gas Un (Amoco)	1	PROD	6365	8.625	332	12.25	225 sx	(118)
				4.5	6365	7.875	875	3,192
Amoco/Davis Gas Com-G	1	PROD	2951	8.625	295	12.25	350 sx	(405)
				4.5	2951	7.875	825	(41)
Union Texas Pet/Congress	16	PROD	6200	9.625	306	13.5	187 sx	(10)
				7	5200	8.75	742	1,123
Southern Union Prod/Congr	5	PROD	6470	8.625	285	12.25	200	(115)
				4.5	6462	6.25	610	1,551

GW-130

1992-1993

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. 7026041 dated 11/12/93,
or cash received on 11/18/93 in the amount of $ 1430.00
from Bloomfield Refining Company (BRC)
for BRC Class 1 Nonhazardous Well GW-130
(Facility Name) (DP No.)
Submitted by: _____ Date: _____
Submitted to ASD by: Kathy Brown Date: 11/18/93
Received in ASD by: [illegible] Date: 11/18/93
Filing Fee X New Facility X Renewal ___
Modification ___ Other _____
(specify)
Organization Code 521.07 Applicable FYs 94

To be deposited in the Water Quality Management Fund.
Full Payment X or Annual Increment ___

Bloomfield Refining Company
A Gary-Williams Energy Corporation Subsidiary

Republic Plaza
370 17th Street, Suite 5300
Denver, Colorado 80202
(303) 628-3800

FIRST BANK
EAST GRAND FORKS
EAST GRAND FORKS, MINNESOTA 56721
75-1592/912

CHECK NUMBER
7026041
7026041

DATE ISSUED	AMOUNT
11/12/93	$***1,430.00

PAY ****1,430.00 **********

THIS CHECK VOID UNLESS CASHED WITHIN 120 DAYS OF ISSUE DATE

GENERAL ACCOUNT

[signature] SR. V.P.

Two Signatures Required if $25,000 or More
Special Signatures Required if $100,000 or More

TO THE ORDER OF
NMED-WATER QUALITY MANAGEMENT
NM ENERGY,MINERALS & NATURAL
RESOURCES DEPT.
OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NM 87504

"07026041" :091215927: 468180042 0"

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

AMENDED ADMINISTRATIVE ORDER SWD-528

APPLICATION OF BLOOMFIELD REFINING COMPANY FOR WASTE WATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Bloomfield Refining Company made application to the New Mexico Oil Conservation Division on September 22, 1992, for permission to complete for Class I non-hazardous waste water disposal its Bloomfield Refining Well No. 1 located 2442 feet from the South line and 1250 feet from the West line (Unit I) of Section 27, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;

(3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and

(4) The applicant has presented satisfactory evidence that all requirements prescribed in Part 5 of the Water Quality Control Commission regulations will be met.

(5) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, Bloomfield Refining Company is hereby authorized to complete its Bloomfield Refining Well No. 1 located 2442 feet from the South line and 1250 feet from the West line (Unit I) of Section 27, Township 29 North, Range 11 West, NMPM, San Juan

County, New Mexico, in such manner as to permit the injection of waste water for disposal purposes into the Cliffhouse and Upper Menefee formations at approximately 3294 feet to 3460 feet through 2 7/8-inch plastic-lined tubing set in a packer located at approximately 3240 feet.

IT IS FURTHER ORDERED THAT:

The operator shall have in effect, prior to commencing construction operations, a plugging bond approvable by the Division, for the estimated amount required to plug the well according to the proposed closure plan and adjusted for inflation for the estimated life of the well.

Additionally, the operator shall, as a requirement of said well's construction, circulate cement to the surface, on the surface, intermediate and long strings of casing, as applicable.

Prior to commencing injection operations into said well, the operator shall either, 1) perform cement squeeze operations to establish a top of cement in both wells at approximately 2800 feet or, 2) plug and abandon the Amoco Davis Gas Com Unit F Well No. 1.

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and maintained at a pressure of 100 psi and equipped with a device for continuous monitoring of the pressure pursuant to the approved Division Discharge Plan GW-130.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 659 psi.

The operator shall conduct on an annual basis, a mechanical integrity test in a manner pursuant to conditions in the approved Division Discharge Plan GW-130.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Cliffhouse and Upper Menefee formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisors of the Aztec district office and the Environmental Bureau of the Division of the date and time of the installation of disposal equipment and of the annual mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Aztec district office and the Environmental Bureau of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The operator shall provide a representative analysis of the injected fluids on a quarterly basis, pursuant to WQCC 5-208.A.2.(a).

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 6 th day of October, 1993.

WILLIAM J. LEMAY, Director

WJL/BES/amg

xc: Oil Conservation Division - Hobbs
Environmental Bureau - Santa Fe
Files: GW-1
GW-130

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

ADMINISTRATIVE ORDER SWD-528

APPLICATION OF BLOOMFIELD REFINING COMPANY FOR WASTE WATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO.

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Bloomfield Refining Company made application to the New Mexico Oil Conservation Division on September 22, 1992, for permission to complete for Class I non-hazardous waste water disposal its Bloomfield Refining Well No. 1 located 2164 feet from the South line and 703 feet from the West line (Unit L) of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;

(3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and

(4) The applicant has presented satisfactory evidence that all requirements prescribed in Part 5 of the Water Quality Control Commission regulations will be met.

(5) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

The applicant herein, Bloomfield Refining Company is hereby authorized to complete its Bloomfield Refining Well No. 1 located 2164 feet from the South line and 703 feet from the West line (Unit L) of Section 26, Township 29 North, Range 11 West, NMPM, San Juan

County, New Mexico, in such manner as to permit the injection of waste water for disposal purposes into the Cliffhouse and Upper Menefee formations at approximately 3294 feet to 3460 feet through 2 7/8-inch plastic-lined tubing set in a packer located at approximately 3240 feet.

IT IS FURTHER ORDERED THAT:

The operator shall have in effect, prior to commencing construction operations, a plugging bond approvable by the Division, for the estimated amount required to plug the well according to the proposed closure plan and adjusted for inflation for the estimated life of the well.

Additionally, the operator shall, as a requirement of said well's construction, circulate cement to the surface, on the surface, intermediate and long strings of case, as applicable.

Prior to commencing injection operations into said well, the operator shall perform cement squeeze operations on the Meridian Oil Calvin Well No. 1 and on the Amoco Davis Gas Com Unit F Well No. 1, to establish a top of cement in both wells at approximately 2800 feet.

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and maintained at a pressure of 100 psi and equipped with a device for continuous monitoring of the pressure pursuant to the approved Division Discharge Plan GW-130.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 659 psi.

The operator shall conduct on an annual basis, a mechanical integrity test in a manner pursuant to conditions in the approved Division Discharge Plan GW-130.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Cliffhouse and Upper Menefee formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisors of the Aztec district office and the Environmental Bureau of the Division of the date and time of the installation of disposal equipment and of the annual mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Aztec district office and the Environmental Bureau of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The operator shall provide a representative analysis of the injected fluids on a quarterly basis, pursuant to WQCC 5-208.A.2.(a).

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 20th day of August, 1993.

WILLIAM J. LEMAY, Director

WJL/BES/amg

xc: Oil Conservation Division - Hobbs
Environmental Bureau - Santa Fe
Files: GW-1
GW-130

TIERRA
ENVIRONMENTAL CORPORATION

CORPORATE OFFICE
6846 S. Canton, Suite 100
Tulsa, OK 74136
918-496-3200

REGIONAL OFFICE
909 W. Apache
Farmington, NM 87401
505-325-0924

January 21, 1993

Ms. Kathy Brown
New Mexico Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, New Mexico 87504

RE: BLOOMFIELD REFINERY PROPOSED INJECTION WELL FORMATION WATER QUALITY INFORMATION AND INJECTION PRESSURE INFORMATION:

Dear Ms. Brown:

In the application sent to you, prepared by Tierra Environmental Company, Inc. on page 4, Item 5, the application made reference to a water quality analysis from Basin Disposal. On page 6, second paragraph reference was again made to Basin Disposal's well. In speaking with our geologist, he had obtained that information verbally. A written report was never obtained. We have made every attempt to obtain the report from Basin Disposal, but to no avail. They cannot locate one. I would respectfully submit, that if one does exist, it would be in the OCD files. Also, the other information described on page 6 paragraphs 1 and 2 was obtained from the San Juan Basin Geological Society regarding the estimated TDS levels in the Cliff House formations.

The injection pressure for the well is estimated to be about 1200-1500 psi, (refer to application page 3, item VII. 3.) The actual injection pressure will be determined by a step rate injection test, following completion, in order to determine the surface parting or fracturing pressure in the proposed formation. Once that pressure has been established, a limiting pressure device will be designed and installed to insure pressures are kept below the maximum fracture pressure. Following the test, the intention is to use hydrostatic pressure from the storage tanks for injection, should that pressure not exceed the maximum. If that pressure proves not sufficient for efficient injection and pumping is required, providing the maximum pressures allow, a system will be designed to increase the injection pressure. In any case a pressure limiting device will be designed and installed. Prior to installation the designed will be submitted to OCD for approval.

Tierra Environmental has submitted to Bloomfield Refining, three (3) options, we feel are viable solutions to the problem of two (2) wells that OCD identified as not cemented to the top of the injection formation. That information will be forwarded to you, when they make a decision as to which option they wish to pursue.

I hope this information is sufficient and we appreciate your cooperation.

Sincerely,

Phillip C. Nobis
Vice President
Risk Management

cc: BRC
file

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary

January 6, 1993

Ms. Kathy Brown
New Mexico Oil Conservation Division
P. O. Box 2088
Land Office Building
Santa Fe, New Mexico 87504

RECEIVED
JAN 11 1993
OIL CONSERVATION DIV.
SANTA FE

RE: Discharge Plan GW-130, Class 1 Well
Bloomfield Refining Company
San Juan County, New Mexico

Dear Ms. Brown:

Bloomfield Refining Company is anxious to complete the permitting process for our proposed injection well as quickly as possible. We are therefore submitting this preliminary response to your letter of November, 1992.

1. Chemical Analysis of Injection Fluids: Bloomfield Refining Company agrees to do all analyses of injection fluids in accordance with OCD requirements.

2. Oily-Water Pond Sampling: The wastewater treatment method has been shown to be very effective and can be easily improved if necessary. BRC must ensure that all waste water that leaves the north oily-water pond is not hazardous under the current hazardous waste treatment plan. In addition, the 5-acre lined ponds can be used to further treat the waste water before injection to be absolutely sure that treatment is sufficient. This can be done by adding additional aeration or keeping an adequate level in the ponds to increase residence time before injection.

   BRC has been maintaining a record of analysis of the waste water downstream of the oily ponds for some time and proposes that data (see Attachment 1) is sufficient at this time to assure you that the waste water to be injected will not be hazardous.

3. Quarterly Reporting: BRC agrees to provide quarterly reports as per your requirements.

4. Monthly Reporting: BRC agrees to provide monthly reports in accordance with OCD Rule 1120 which requires monthly submittal of Form C-120-A.

5. Area of Review: Our consultant, Tierra Environmental Company, Inc. is reviewing the two wells within the area of review and will be providing a report. Any work necessary for these wells will be included in our work plan and submitted for your approval.

6. Injection Pressure: Tierra will address the injection pressure question in their report. If it is found to be necessary, in your opinion, BRC will submit a contingency plan to install the proper pressure regulating equipment.

7. Spill Containment: BRC agrees to install spill containment systems in accordance with OCD requirements. Design of these systems will be included in the final design and will be submitted to the OCD for approval prior to construction.

8. Chemical Analysis of Disposal Zone: Tierra will submit a copy of the referenced chemical analysis.

9. Plugging Bond: BRC will have a plugging bond in place prior to commencing construction. A complete closure plan with revised estimates will be submitted prior to commencing construction.

10. Discharge Plan GW-1 Requirements:

    a. Pond 1 and Pond 2: Operation of an injection well will likely improve the ability to manage the double-lined ponds. More freeboard will be possible, allowing for quicker response to problems. At this time, no spray or aeration systems are anticipated.

    b. Clay-Lined Ponds & Spray Irrigation Area: These units will be permanently closed. Based on analytical results (see Attachment 1), no significant problems are anticipated for closure. BRC will provide the closure plan for these units within 60 days of operation of the injection well.

    c. South & North Oily Water Ponds: BRC is currently planning to double line these ponds in early 1994. The double lining will be completed in accordance with both RCRA and NM OCD requirements. A detailed schedule and plan will be submitted to the OCD for approval and comment prior to installation.

If you need any additional information or have any question about our above commitments, please contact me at (505) 632-8013 or Mr. Phil Nobis at (505) 325-0924.

Sincerely,

Chris Hawley
Environmental Manager

cc: Phil Nobis, Tierra Environmental Co.
Dave Roderick
Joe Warr
John Goodrich

ATTACHMENT 1

Bloomfield has determined that the only parameter that could cause the waste water to be hazardous is the concentration of benzene. The column labeled NOWPE gives the results of samples taken from the sump immediately downstream of the last oily water pond located adjacent to the API separator. These results must be below 0.500 ppm for the waste water to be considered non-hazardous. As you can see from the following list, we are now well below this requirement. Actual analytical reports from the laboratory are available for your review if you so desire.

BLOOMFIELD REFINING COMPANY
REFINERY WASTEWATER UNDER RCRA

Benzene Concentrations in Refinery Wastewater (mg/l)

DATE	API	SOWP	NOWPW	NOWPE
4-26-90	9.16	6.62	3.03	2.27
Began aeration program				
9-11-90	9.90	6.10	2.30	1.60
9-13-90	7.00	1.10	1.40	1.50
9-17-90	9.80	1.70	0.81	0.75
9-19-90	10.00	1.30	0.97	0.64
9-21-90	8.70	0.01	0.74	0.56
Effective date of TC regulation - 9/25/90				
9-25-90	12.00	1.90	0.97	0.46
10-08-90	20.90	1.79	0.78	<0.01
10-23-90	-	-	0.85	0.30
11-07-90	-	-	-	0.15
11-28-90	-	-	0.54	0.44
12-14-90	-	-	-	0.20
1-09-91	-	-	-	0.25
2-04-91	-	-	-	0.43
2-20-91	-	-	-	0.35
3-07-91	-	-	-	0.22
4-08-91	-	-	-	0.27
Additional aerators put in service.				
Effective date of F037 & F038 waste listing - 5/2/91.				
5-03-91	-	1.20	0.67	0.15
6-05-91	-	-	-	0.02
7-02-91	-	<0.005	-	<0.005
8-06-91	-	<0.0025	<0.0025	0.0027
9-06-91	-	-	-	<0.025
10-04-91	-	-	-	0.003
12-06-91	-	-	-	0.160
12-13-91	-	0.017	-	<0.010
1-06-92	-	-	-	0.406
2-05-92	-	-	-	0.027
3-05-92	-	-	-	0.288
4-07-92	-	-	-	0.002
5-08-92	-	-	-	0.120
6-05-92	-	-	-	0.0183
6-29-92	-	-	-	0.0013
Installed additional aerator in NOWP-E				
7-30-92	-	-	-	<0.0002
9-08-92	-	-	-	<0.0005
10-14-92	-	-	-	<0.0002
11-13-92	-	-	-	<0.0002
12-11-92	-	-	-	0.022

SUMMARY OF TOXICITY CHARACTERISTIC RESULTS OF BLOOMFIELD REFINERY WASTEWATER

7-30-92

	PARAMETER	UNITS	REGULATORY LIMITS	DETECTION LIMITS	NORTH OILY WATER POND DISCHARGE	SOUTH EVAPORATION POND	NORTH EVAPORATION POND
			1	2	3	4	5	6
2	ARSENIC	mg/l	5.0	0.1	<0.1	<0.1	<0.1
3	BARIUM	mg/l	100.0	0.5	0.5	0.5	0.5
4	CADMIUM	mg/l	1.0	0.005	<0.005	<0.005	<0.005
5	CHROMIUM	mg/l	5.0	0.01	0.01	<0.01	<0.01
6	LEAD	mg/l	5.0	0.2	<0.2	<0.2	<0.2
7	MERCURY	mg/l	0.2	0.001	<0.001	<0.001	<0.001
8	SELENIUM	mg/l	1.0	0.1	<0.1	<0.1	<0.1
9	SILVER	mg/l	5.0	0.01	<0.01	<0.01	<0.01
12	1,1-DICHLOROETHENE	mg/l	0.7	0.02	ND	ND	ND
13	1,2-DICHLOROETHANE	mg/l	0.5	0.02	ND	ND	ND
14	2-BUTANONE	mg/l	200.0	0.1	ND	ND	ND
15	BENZENE	mg/l	0.5	0.02	ND	ND	ND
16	CARBON TETRACHLORIDE	mg/l	0.5	0.02	ND	ND	ND
17	CHLOROBENZENE	mg/l	100.0	0.02	ND	ND	ND
18	CHLOROFORM	mg/l	6.0	0.02	ND	ND	ND
19	TETRACHLOROETHENE	mg/l	0.7	0.02	ND	ND	ND
20	TRICHLOROETHENE	mg/l	0.5	0.02	ND	ND	ND
21	VINYL CHLORIDE	mg/l	0.2	0.02	ND	ND	ND
24	1,4-DICHLOROBENZENE	mg/l	7.5	0.02	ND	ND	ND
25	HEXACHLOROETHANE	mg/l	3.0	0.02	ND	ND	ND
26	NITROBENZENE	mg/l	2.0	0.02	ND	ND	ND
27	HEXACHLORO-1,3-BUTADIENE	mg/l	0.5	0.02	ND	ND	ND
28	2,4,6-TRICHLOROPHENOL	mg/l	2.0	0.02	ND	ND	ND
29	2,4,5-TRICHLOROPHENOL	mg/l	400.0	0.02	ND	ND	ND
30	2,4-DINITROTOLUENE	mg/l	0.13	0.02	ND	ND	ND
31	HEXACHLOROBENZENE	mg/l	0.13	0.02	ND	ND	ND
32	PENTACHLOROPHENOL	mg/l	100.0	0.02	ND	ND	ND
33	O-CRESOL	mg/l	200.0	0.02	ND	ND	ND
34	M&P-CRESOL	mg/l	200.0	0.02	ND	ND	ND
35	PYRIDINE	mg/l	5.0	0.2	ND	ND	ND

ND = NOT DETECTED AT STATED DETECTION LIMIT.

Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

CASE NARRATIVE

On 6 August 1992, six TCLP extracts were received by Inter-Mountain Laboratories, Inc. at 1633 Terra Ave., Sheridan, Wyoming. The sample custody document indicated request for analysis of parameters from the TC Rule analyte list. The samples arrived cool and intact, custody sheets remained with the extract.

The TCLP preparation and extraction was performed following the steps defined by the EPA using Method 1311, SW-846, November 1990, and found in the Federal Register, 40 CFR 261, Volume 55, No. 126, June 1990. A duplicate analysis was prepared to evaluate the extraction reproducibility. Relative percent differences were reported only if the analyte concentrations exceeded five times the detection levels. A matrix spike was used to determine matrix effect on the recovery of the target analytes. Matrix spike information was used, via the TC Rule, for the final calculation of the analyte concentrations. Method blanks were used to determine any method induced contamination.

Limits of detection for each instrument or analysis were determined with respect to matrix effect, instrument performance under standard operating conditions and sample dilution. TCLP results were reported as mass per unit volume of leachate. Data qualifiers may have been used in accordance with USEPA data validation guidelines.

Reviewed by: _____
Thomas Bury
Laboratory Manager/IML-Sheridan

Data File ID: _____00-600_____

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TCLP REFERENCE LIST:

1.0 Date of Sampling: ___30 July 1992_____

Date of Laboratory Receipt: ___31 July 1992_____

Date of TCLP Extraction: ___4 August 1992_____

2.0 Quality Control Parameters:

Holding Times Maintained: ____X_____ Yes _____ No

Method Blank Data: ____X_____ Yes _____ No

Matrix Spike Data: ____X_____ Yes _____ No

Data Qualifiers: ____X_____ Yes _____ No

J = Estimated Quantity; B = Present in Blank; R = Data Unusable;
UJ = Analyzed but Not Detected, Sample Detection Value.

3.0 Analyte Information:

Parameter:	CAS #:	Regulatory Level (mg/L)	Detection Level (mg/L)	Method
Arsenic	7440-38-2	5.0	0.1	6010A
Barium	7440-39-3	100	0.5	6010A
Cadmium	7440-43-9	1.0	0.005	6010A
Chromium	7440-47-3	5.0	0.01	6010A
Lead	7439-92-1	5.0	0.2	6010A
Mercury	7439-97-6	0.2	0.001	7470A
Selenium	7782-22-4	1.0	0.1	6010A
Silver	7440-22-4	5.0	0.01	6010A

4. 0 Comments: _____

_____

_____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923346	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/21/92
Laboratory ID:	B923346	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Ogranic Acid	27.10	0.2	mg/L
Unknown Ogranic Acid	27.35	0.7	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	121
Toluene-d8	105
Bromofluorobenzene	104

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

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Inter-Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	1 NOWPE Discharge	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923346	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/10/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

Inter·Mountain Laboratories, Inc.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/24/92
Laboratory ID:	B923346	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/10/92

Parameter	Retention Time(min.)	Concentration	Units
Hydrocarbon envelope	10 - 38		
Unknown hydrocarbon	16.75	0.01	mg/L
Unknown hydrocarbon	18.47	0.02	mg/L
Unknown hydrocarbon	20.00	0.03	mg/L
Unknown hydrocarbon	20.68	0.02	mg/L
Unknown hydrocarbon	23.18	0.03	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	56
Phenol-d6	52
Nitrobenzene-d5	79
2-Fluorobiphenyl	86
2,4,6-Tribromophenol	94
Terphenyl-d14	98

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	1 NOWPE Discharge	Date Sampled:	07/30/92
Lab ID:	B923346/5658	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by:

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923347	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923347	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Organic Acid	21.90	0.2	mg/L
Unknown Organic Acid	27.10	0.2	mg/L
Unknown Organic Acid	27.35	0.5	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	116
Toluene-d8	102
Bromofluorobenzene	102

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923347	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923347	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Hydrocarbon envelope	12 - 34		
Unknown hydrocarbon	13.71	0.02	mg/L
Unknown hydrocarbon	19.13	0.03	mg/L
Unknown hydrocarbon	21.56	0.01	mg/L
Unknown hydrocarbon	22.32	0.02	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	34
Phenol-d6	37
Nitrobenzene-d5	57
2-Fluorobiphenyl	67
2,4,6-Tribromophenol	68
Terphenyl-d14	63

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	2 South Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923347/5659	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.

Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.

Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923348	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923348	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Organic Acid	21.94	0.4	mg/L
Unknown Organic Acid	27.13	0.1	mg/L
Unknown Organic Acid	27.36	0.4	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	119
Toluene-d8	103
Bromofluorobenzene	104

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	3 North Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923348	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923348	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown hydrocarbon	12.94	0.02	mg/L
Unknown hydrocarbon	13.72	0.03	mg/L
Unknown aromatic	13.11	0.03	mg/L
Unknown hydrocarbon	19.11	0.03	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	20
Phenol-d6	30
Nitrobenzene-d5	64
2-Fluorobiphenyl	67
2,4,6-Tribromophenol	44
Terphenyl-d14	70

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	3 North Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923348/5660	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.

Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.

Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: _____

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	1 NOWPE	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923349	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Date Reported:	08/21/92
Laboratory ID:	B923349	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Toluene	17.15	0.02	mg/L
Xylene(total)	19.80,20.26	0.9	mg/L
Unknown Organic Acid	17.18	0.2	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	105
Toluene-d8	103
Bromofluorobenzene	100

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923349	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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910 Technology Boulevard, Suite B
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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Date Reported:	08/24/92
Laboratory ID:	B923349	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown substituted aromatic	9.51	0.02	mg/L
Unknown substituted phenol	13.05	0.02	mg/L
Naphthalene	13.41	0.018	mg/L
2-Methylnaphthalene	15.36	0.019	mg/L
1-Methylnaphthalene	15.63	0.02	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	47
Phenol-d6	54
Nitrobenzene-d5	60
2-Fluorobiphenyl	61
2,4,6-Tribromophenol	83
Terphenyl-d14	72

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	1 NOWP-E	Date Sampled:	07/30/92
Lab ID:	B923349/5661	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.6	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: 

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910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	0.05	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923350	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Toluene	17.15	0.14	mg/L
Ethylbenzene	19.65	0.06	mg/L
Xylene(total)	19.80,20.26	0.25	mg/L
Unknown Hydrocarbon	14.99	0.1	mg/L
Unknown Aromatic	21.95	0.07	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	109
Toluene-d8	103
Bromofluorobenzene	101

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923350	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown ketone	7.29	0.02	mg/L
Unknown substituted aromatic	9.50	0.03	mg/L
Naphthalene	13.41	0.018	mg/L
2-Methylnaphthalene	15.36	0.018	mg/L
1-Methylnaphthalene	15.63	0.01	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	46
Phenol-d6	44
Nitrobenzene-d5	65
2-Fluorobiphenyl	69
2,4,6-Tribromophenol	83
Terphenyl-d14	69

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	2 South Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923350/5662	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	1.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923351	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923351	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Carbon Disulfide	5.72	0.035	mg/L
Unknown Hydrocarbon	17.48	0.4	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	105
Toluene-d8	104
Bromofluorobenzene	98

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	3 North Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923351	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923351	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	42
Phenol-d6	40
Nitrobenzene-d5	68
2-Fluorobiphenyl	70
2,4,6-Tribromophenol	78
Terphenyl-d14	79

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	3 North Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923351/5663	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	1.0	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Trip Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	B923352	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	None	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Trip Blank	Date Reported:	08/21/92
Laboratory ID:	B923352	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	118
Toluene-d8	108
Bromofluorobenzene	102

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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QUALITY ASSURANCE / QUALITY CONTROL

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
METHOD BLANK

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	Method Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Q217A	Date Received:	NA
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	NA	Date Analyzed:	08/05/92
Condition:	NA		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Method Blank	Date Reported:	08/21/92
Laboratory ID:	Q217A	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	96
Toluene-d8	104
Bromofluorobenzene	92

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
METHOD BLANK

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	Method Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Q218A	Date Received:	NA
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	NA	Date Analyzed:	08/06/92
Condition:	NA		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	Method Blank	Date Reported:	08/21/92
Laboratory ID:	Q218A	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	107
Toluene-d8	104
Bromofluorobenzene	94

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	TMB - 217	Date Received:	NA
Sample Matrix:	Water	Date Extracted-TCLP:	NA
Preservation:	NA	Date Analyzed:	08/06/92
Condition:	NA	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result	Detection Limit	Units
1,4-Dichlorobenzene	ND	0.02	mg/L
Hexachloroethane	ND	0.02	mg/L
Nitrobenzene	ND	0.02	mg/L
Hexachloro-1,3-butadiene	ND	0.02	mg/L
2,4,6-Trichlorophenol	ND	0.02	mg/L
2,4,5-Trichlorophenol	ND	0.02	mg/L
2,4-Dinitrotoluene	ND	0.02	mg/L
Hexachlorobenzene	ND	0.02	mg/L
Pentachlorophenol	ND	0.02	mg/L
o-Cresol	ND	0.02	mg/L
m & p-Cresol *	ND	0.02	mg/L
Pyridine	ND	0.2	mg/L

ND - Compound not detected at stated Detection Limit.
* - Compounds coelute by GCMS.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Date Reported:	08/24/92
Laboratory ID:	TMB - 217	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Parameter	Retention Time(min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	41
Phenol-d6	32
Nitrobenzene-d5	51
2-Fluorobiphenyl	47
2,4,6-Tribromophenol	48
Terphenyl-d14	61

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS
METHOD BLANK ANALYSIS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	TCLP Method Blank	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Blank 70	Date Received:	NA
Sample Matrix:	Extraction Fluid	Date Extracted-TCLP:	08/03/92
Preservation:	NA	Date Analyzed:	08/10/92
Condition:	NA	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result	Detection Limit	Units
1,4-Dichlorobenzene	ND	0.02	mg/L
Hexachloroethane	ND	0.02	mg/L
Nitrobenzene	ND	0.02	mg/L
Hexachloro-1,3-butadiene	ND	0.02	mg/L
2,4,6-Trichlorophenol	ND	0.02	mg/L
2,4,5-Trichlorophenol	ND	0.02	mg/L
2,4-Dinitrotoluene	ND	0.02	mg/L
Hexachlorobenzene	ND	0.02	mg/L
Pentachlorophenol	ND	0.02	mg/L
o-Cresol	ND	0.02	mg/L
m & p-Cresol *	ND	0.02	mg/L
Pyridine	ND	0.2	mg/L

ND - Compound not detected at stated Detection Limit.
* - Compounds coelute by GCMS.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Date Reported:	08/24/92
Laboratory ID:	Blank 70	Date Sampled:	01/19/00
Sample Matrix:	Extraction Fluid	Date Analyzed:	08/10/92

Parameter	Retention Time(min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	70
Phenol-d6	56
Nitrobenzene-d5	96
2-Fluorobiphenyl	89
2,4,6-Tribromophenol	101
Terphenyl-d14	118

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
Quality Control/Blank Analysis

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	IML Blank 70	Date Analyzed:	08/08/92
Lab ID:	5664		
Matrix:	Fluid		

Parameter:	Analytical Result	(Units)
Arsenic	<0.1	mg/L
Barium	<0.5	mg/L
Cadmium	<0.005	mg/L
Chromium	<0.01	mg/L
Lead	<0.2	mg/L
Mercury	<0.001	mg/L
Selenium	<0.1	mg/L
Silver	<0.01	mg/L

Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: 

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
MATRIX SPIKE SUMMARY

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Matrix Spike	Date Reported:	08/21/92
Laboratory ID:	W3349	Date Sampled:	NA
Sample Matrix:	Extraction Fluid	Date Received:	NA
Preservation:	NA	Date Extracted TCLP:	08/04/92
Condition:	NA	Date Analyzed:	08/05/92

Parameter	Spike Added (ug/L)	Sample Concentration (ug/L)	Matrix Spike Concentration (ug/L)	Matrix Spike Recovery (%)
Vinyl Chloride	100	0	69	69
1,1-Dichloroethene	100	0	102	102
1,2-Dichloroethane	100	0	126	126
Chloroform	100	0	108	108
Carbon Tetrachloride	100	0	108	108
Trichloroethene	100	0	99	99
Benzene	100	0	90	90
Tetrachloroethene	100	0	99	99
Chlorobenzene	100	0	98	98
Methyl Ethyl Ketone	100	0	66	66

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS
MATRIX SPIKE SUMMARY

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Blank Matrix Spike	Date Reported:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	TBS-217	Date Received:	NA
Sample Matrix:	Extraction Fluid	Date Extracted:	08/05/92
Preservation:	NA	Date Analyzed:	08/10/92
Condition:	NA		

Parameter	Matrix Spike Conc.	Sample Conc.	Matrix Spike Recovery	Spike Amount	Percent Recovery
1,4-Dichlorobenzene	63	0	63	100	63
Hexachloroethane	54	0	54	100	54
Nitrobenzene	94	0	94	100	94
Hexachloro-1,3-butadiene	66	0	66	100	66
2,4,6-Trichlorophenol	120	0	120	100	120
2,4,5-Trichlorophenol	114	0	114	100	114
2,4-Dinitrotoluene	86	0	86	100	86
Hexachlorobenzene	91	0	91	100	91
Pentachlorophenol	59	0	59	100	59
o-Cresol	92	0	92	100	92
m,p-Cresol	85	0	85	100	85
Pyridine	61	0	61	100	61

All values are total nanograms.

Reference:

Method 8270, Semivolatile Organics - GC/MS, Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency, SW-846, Vol. IB, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
Quality Control/Matrix Spike

Client: **Bloomfield Refining**
Sample ID: 1 NOWPE Discharge
Lab ID: B923346/5658
Date: 08/23/92

Parameter:	Spiked Sample Result mg/L	Sample Result mg/L	Spike Added mg/L	Percent Spike Recovery
Arsenic	2.5	<0.1	2.5	100.0
Barium	2.4	0.5	2.0	95.0
Cadmium	0.517	<0.005	0.500	103.4
Chromium	0.98	0.01	1.00	97.0
Lead	1.8	<0.2	2.0	90.0
Mercury	0.0100	<0.001	0.010	100.0
Selenium	2.4	<0.1	2.5	96.0
Silver *	0.06	<0.01	0.50	12.0

* Low recovery due to the percipitation of silver with inorganic chlorides.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Laboratory Data Validation, Functional Guidelines for Evaluating Inorganics Analyses, USEPA, July 1988.

Reviewed by: 

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350 Duplicate	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

Inter-Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923350 Duplicate	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown substituted aromatic	9.51	0.02	mg/L
Unknown substituted aromatic	10.08	0.01	mg/L
Naphthalene	13.39	0.015	mg/L
2-Methylnaphthalene	15.37	0.016	mg/L
1-Methylnaphthalene	15.62	0.01	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	39
Phenol-d6	40
Nitrobenzene-d5	55
2-Fluorobiphenyl	64
2,4,6-Tribromophenol	81
Terphenyl-d14	69

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
Quality Control/Duplicate Analysis

Client: **Bloomfield Refining**
Sample ID: 1 NOWPE Discharge
Lab ID: B923346/5658
Date: 08/23/92

Parameter:	Initial Sample Result mg/L	Second Sample Result mg/L	Relative Percent Difference
Arsenic	<0.1	<0.1	
Barium	0.5	0.5	0.0
Cadmium	<0.005	<0.005	
Chromium	0.01	0.01	0.0
Lead	<0.2	<0.2	
Mercury	<0.001	<0.001	
Selenium	<0.1	<0.1	
Silver	<0.01	<0.01	

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Laboratory Data Validation, Functional Guidelines for Evaluating Inorganics Analyses, USEPA, July 1988.

Reviewed by: _____

Farmington → Bozeman

CHAIN OF CUSTODY RECORD

Inter-Mountain Laboratories, Inc.

Client/Project Name	Project Location	ANALYSES / PARAMETERS
IML - Farmington	BR	
Sampler: (Signature) Orig. COC	**Chain of Custody Tape No.** None	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP BUA	TCLP Metals	TCLP VOA	Remarks
1 NDWPE Discharge	073092	0900	B923346	Water	4				
2 South Evap Pond	"	0930	B923347	"	4				
3 North Evap Pond	"	1006	B923348	"	4				
1 NDWP-E	"	1140	B923349	Sludge	3				
2 South Evap Pond	"	0930	B923350	"	3				
3 North Evap Pond	"	1000	B923351	"	3				
Trip Blank			B923352						
				NFE					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	073092	1655	UPS		
UPS	7/31/92	1030	Billie J. Perry	7/31/92	1030

Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945

☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450

☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

05934

iml Inter-Mountain Laboratories, Inc.

00-600

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Bloomfield Refining Co. via IML - Farmington	Bozeman → Sheridan	
Sampler: (Signature) Client	**Chain of Custody Tape No.** Ref. Blank C.O.C. # 10378	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP M+	Remarks
5658 05	8/4/92	08:30	B923346	Water	1	✓	
			B923347	Water	2	✓	
		↓	B923348	Water	2	✓	
		09:15	B923349	Sludge	2	✓	
			B923350	Sludge	2	✓	
	↓	↓	B923351	Sludge	2	✓	

DRL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D.R. Lingenfelter	8/5/92	16:00	UPS	8/5/92	16:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945
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☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945
☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

10379

Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Bloomfield Ref. via Farmington IML	Bozeman → Sheridan	
Sampler: (Signature) Client	**Chain of Custody Tape No.** COC # 10379	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP MT					Remarks
Blank 70	8/4/92	09:30	Blank 70	Extract #1	2	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D.R. Lingenfelter	8/5/92	16:00	UPS	8/5/92	16:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

10378

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945

☐ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

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☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

imL
Inter- Mountain
Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
BLOOMFIELD REFINING COMPANY	BLOOMFIELD / NM

Sampler: (Signature)	Chain of Custody Tape No.
CHRIS HANLEY	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP BNA	TCLP METALS	TCLP VOA's	TCLP VOA's	Remarks
1 NOWP-E DISCHARGE	7-30-92	9:00a		WATER	4	1	1	0	2	
2 SOUTH EVAP POND	7-30-92	9:30a		WATER	4	1	1	0	2	
3 NORTH EVAP POND	7-30-92	10:00a		WATER	4	1	1	0	2	
1 NOWP-E	7-30-92	11:40a		SLUDGE	3	1	1	1		
2 SOUTH EVAP POND	7-30-92	9:30a		SLUDGE	3	1	1	1		
3 NORTH EVAP POND	7-30-92	10:00a		SLUDGE	3	1	1	1		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
CHRIS HANLEY	7/30/92	3:55P		7/30/92	1600
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945	☐ 1714 Phillips Circle Gillette, Wyoming 82716 Telephone (307) 682-8945	☒ 2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737	☐ 910 Technology Blvd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450	☐ Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945	☐ 3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-4999

0102

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

November 18, 1992

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-875

Mr. David Roderick
Refinery Manager
Bloomfield Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

RE: Discharge Plan GW-130, Class 1 Well
Bloomfield Refining Company
San Juan County, New Mexico

Dear Mr. Roderick:

The Oil Conservation Division (OCD) has received and is in the process of reviewing the above referenced discharge plan application. The application submitted was a request for a modification to the discharge plan GW-1 for the Bloomfield Refining Company (BRC). The OCD has determined that a new discharge plan is required for the proposed Class 1 injection well since it is regulated under Part 5 of the Water Quality Control Commission regulations and the refinery is regulated under Part 3. The following comments and requests for additional information are based on the application dated September 10, 1992, and the supplemental information dated September 24, 1992. Submission of the following information will allow review of the discharge plan application to continue.

1. Chemical Analysis of Injection Fluids: BRC has proposed various annual and quarterly analyses of the injection fluids on page 3 of the disposal application. The OCD requires the following analyses of injection fluids on a quarterly basis:

Nov. 9, 1992

[redacted] Class I - BRC - Haz Waste Meeting, Coby

1)

API Seperator - a processing unit
When remove the solids it's waste.
- Waters going through only subject to TCLP (ie Benzene).
- If solids carry over then the fluids would be considered hazard w/out TCLP.
-

Proposal - Test API waters ~~and~~ to determine non hazardous. If it is non hazardous & then ~~water~~ comingles with ~~non~~ exempt streams, then is still non-haz even if benzene > 10 ppm.

Oily/Water Ponds are
May '94 - Hazardous waste treatment unit (aerators)

Test at oily water pond - this is where the ~~oil~~ haz waste determination is made.

Weekly for 3 months & then monthly after for TC organics. If see problem then back to weekly TCLP except pesticides/herbicides). Maybe drop certain constituents if ND for 3 months.

HAZ WASTE: Currently, monthly testing of sump is required by ED (Haz Mat Bureau) for BTEX.

Affidavit of Publication

No. 14094

'E OF NEW MEXICO,

ty of Eddy:

ary D. Scott being duly

h, says: That he is the Publisher of The

ia Daily Press, a daily newspaper of general circulation,

shed in English at Artesia, said county and state, and that

ereto attached Legal Notice

published in a regular and entire issue of the said Artesia

Press, a daily newspaper duly qualified for that purpose

n the meaning of Chapter 167 of the 1937 Session Laws of

days

ate of New Mexico for 1 consecutive weeks on

me day as follows:

Publication October 9, 1992

d Publication

Publication

h Publication

Sam D. Scott

scribed and sworn to before me this 23rd day

October 19 92

Barbara Ann Boans

Notary Public, Eddy County, New Mexico

ommission expires September 23, 1996

Copy of Publication

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-101) - Smith Energy Services, Brake Stevenson, District Manager, 2198 East Bloomfield Highway, Farmington, New Mexico 87401, has submitted a discharge plan application for their Farmington Service Facility located in the SE/4 SW/4, Section 14, Township 29 North, Range 13 West, NMPM, San Juan County, New Mexico. Approximately 1000 gallons per day of waste water is treated in an oil/water separator prior to transfer to the City of Farmington wastewater treatment system. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 27 feet with a total dissolved solids concentration ranging from 600 mg/l to 900 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-114) - Dowell Schlumberger, Richard B. Connell, Manager, 500 Richey Street, Artesia, New Mexico 88210, has submitted a discharge plan application for their Artesia Service Facility located in the SE/4 SE/4, Section 4, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 280 gallons per day of waste water with a total dissolved solids concentration of approximately 1100 mg/l is stored in a closed top steel tank prior to disposal at an OCD approved off site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 15 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-128) - GPM Gas Corporation, Vincent B Bernard, Safety and Environmental Supervisor, 4044 Penbrook, Odessa, Texas 79762, has submitted a discharge plan application for their Hat Mesa Compressor Station located in the SW/4 SE/4, Section 4, Township 21 South, Range 32 East, NMPM, Lea County, New Mexico. Approximately 1250 gallons per day of waste water with a total dissolved solids concentration of approximately 5000 mg/l is stored in a closed top steel tank prior to disposal at an OCD approved off site treatment and disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-129) - Gas Company of New Mexico, Sam Mohler, Compressor Operations Supervisor, P.O. Box 1899, Bloomfield New Mexico 87413, has submitted a discharge plan application for its Crouch Mesa Compressor Station located in the NE/4 NE/4, Section 23, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico. Approximately 15 gallons per day of waste water will be stored in a fiberglass tank prior to disposal at an OCD approved off site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 252 feet with a total dissolved solids concentration of approximately 1500 mg/l.

The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-130) - Bloomfield Refining Company, David Roderick, Refinery Manager, P.O. Box 159, Bloomfield, New Mexico 87413, has submitted a discharge plan application to construct and operate a Class I (non-hazardous) disposal well located in the NW/4 SW/4, Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. Up to 2380 barrels (100,000 gallons) per day of non-hazardous refinery waste will be disposed of by injection into the Cliff House formation at a depth from 3400 to 3600 feet. The total dissolved solids concentration of the waste is approximately 15,600 mg/l. The total dissolved solids concentration of the formation fluids is approximately 25,000 mg/l. The discharge plan addresses construction, operation and monitoring of the well and associated surface facilities and provides a contingency plan in the event of accidental spills, leaks and other unauthorized discharges to the ground surface. Ground water most likely to be affected by any accidental discharge is at a depth from approximately 10 to 30 feet and is a water zone directly caused by seepage from Hammond Ditch. The ditch water has a total dissolved solids concentration of approximately 200 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of September, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s-William J.LeMay
WILLIAM J. LEMAY,
Director

SEAL

Published in the Artesia Daily Press, Artesia, N.M. October 9, 1992.

Legal 14094

AFFIDAVIT OF PUBLICATION

No. 30140

STATE OF NEW MEXICO,
County of San Juan:

CHRISTINE HILL being duly sworn, says: "That she is the NATIONAL AD MANAGER of The Farmington Daily Times, a daily newspaper of general circulation published in English in Farmington, said county and state, and that the hereto attached LEGAL NOTICE

was published in a regular and entire issue of the said Farmington Daily Times, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for ONE consecutive (days) (//////) on the same day as follows:

First Publication FRIDAY, OCTOBER 9, 1992

Second Publication

Third Publication

Fourth Publication

and the cost of publication was $ 81.33

Christine Hill

Subscribed and sworn to before me this 20 day of OCTOBER, 1992.

Ginny Beck
Notary Public, San Juan County, New Mexico

My Comm expires: ~~JULY 3, 1993~~ April 2, 1996

COPY OF PUBLICATI

NOTICE OF PBLICATION
STATE OF NW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant t New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 875042088, Telephone (505) 827-5800:

(GW-101) - Smith Energy Services, Brake Stevenson, District Manager, 2198 East Bloomfield Highway, Farmington, New Mexico 87401, has submitted a discharge plan application for their Farmington Service Facility located in the SE/4 SW/4, Section 14, Township 29 North, Range ~~13 West, NMPM, San~~ duan County, ~~New~~ Mexico. Approximately 1000 gallons per day of waste water is treated in an oil/water separator prior to transfer to the City of Farmington wastewater treatment system. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 27 feet with a total dissolved solids concentration ranging from 600 mg/l to 900 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-114) - Dowell Schlumberger, Richard B. Connell, Manager, 500 Richey Street, Artesia, New Mexico 88210, has submitted a discharge plan application for their Artesia Service Facility located in the SE/4 SE/4, Section 4, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. Approximately 280 gallons per day of waste water with a total dissolved solids concentration of approximately 1100 mg/l is stored in a closed top steel tank prior to disposal at an OCD approved off site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 15 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-128) - GPM Gas Corporation, Vincent B. Bernard, Safety and Environmental Supervisor, 4044 Penbrook, ~~Odessa~~ Texas 79762, has submitted a discharge plan application for their Hat Mesa Compressor Station located in the SW/4 SE/4, Section 4, Township 21 South, Range 32 East, NMPM, Lea County, New Mexico. Approximately 1250 gallons per day of waste water with a total dissolved solids concentration of approximately 5000 mg/l is stored in a closed top steel tank prior to disposal at an OCD approved off site treatment and disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-129) - Gas Company of New Mexico, Sam Mohler, Compressor Operations Supervisor, P.O. Box 1899, Bloomfield New Mexico 87413, has submitted a discharge plan application for its Crouch Mesa Compressor Station located in the NE/4 NE/4, Section 23, Township 29 North, Range12 West, NMPM, San Juan County, New Mexico. Approximately 15 gallons per day of waste water will be stored in a fiberglass tank prior to disposal at an OCD approved off site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 252 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-130) - Bloomfield Refining Company, David Roderick, Refinery Manager, P.O. Box 159, Bloomfield, New Mexico 87413, has submitted a discharge plan application to construct and operate a Class I (non-hazardous) disposal well located in the NW/4 SW/4, Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. Up to 2380 barrels (100,000 gallons) per day of non-hazardous refinery waste will be disposed of by injection into the Cliff House formation at a depth from 3400 to 3600 feet. The total dissolved solids concentration of the waste is approximately 15,600 mg/l. The total dissolved solids concentration of the formation fluids is approximately 25,000 mg/l. the discharge plan addresses construction, operation and monitoring of the well and associated surface facilities and provides a contingency plan in the event of accidental spills, leaks and other unauthorized discharges to the ground surface. Ground water most likely to be affected by any accidental discharge is at a depth from approximately 10 to 30 feet and is a water zone directly cause by seepage from Hammond Ditch. The ditch water has a total dissolved solids concentration of approximately 200 mg/l.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held., A hearing will be held if the Director determines there is significant public interest. If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of September, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, Director

SEAL

Legal No 30140 published in the Farmington Daily Times Farmington, New Mexico on Friday, October 9, 1992.

STATE OF NEW MEXICO
County of Bernalillo ss

OIL CONSERVATION DIVISION
RECEIVED
'92 OCT 13 PM 8 57

Thomas J. Smithson being duly sworn declares and says that he is National Advertising manager of the **Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chaper 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 10 day of October, 1992, and the subsequent consecutive publications on ....., 1992.

Thomas J. Smithson

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 10 day of Oct., 1992.

Bernadette Ortiz

PRICE $51.71

12-18-93 Statement to come at end of month.

CLA-22-A (R-12/92) ACCOUNT NUMBER C81873

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe, New Mexico 87504-2088, telephone (505) 827-5800:

(GW-101) Smith Energy Services, Brake Stevenson, District Manager, 2198 East Bloomfield Highway, Farmington, New Mexico 87401, has submitted a discharge plan application for their Farmington Service Facility located in the SE/4 SW/4 Section 14, Township 29 North, Range 13 West, NMPM, San Juan County, New Mexico. Approximately 1000 gallons per day of waste water is treated in an oil/water separator prior to transfer to the City of Farmington wastewater treatment system. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 27 feet with a total dissolved solids concentration ranging from 600 mg/l to 900 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed

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(GW-129) Gas Company of New Mexico, Sam Mohler, Compressor Operations Supervisor, PO Box 1899, Bloomfield, New Mexico 87413, has submitted a discharge plan application for its Crouch Mesa Compressor Station located in the NE/4 NE/4, Section 23, Township 29 North, Range 12 West, NMPM, San Juan County, New Mexico. Approximately 15 gallons per day of waste water will be stored in a fiberglass tank prior to disposal at an OCD approved off site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 252 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed

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Any interested person may obtain further information from the Oil and Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing sahll set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is signigicant public interest

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Given under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of September, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/William J. Lemay, Director

Journal: October 10, 1992

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 30th day of September, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S. E A L

WILLIAM J. LEMAY, Director

TIERRA ENVIRONMENTAL COMPANY, INCORPORATED

September 24, 1992

Roger Anderson, Bureau Chief
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RE: SUPPLEMENTARY INFORMATION FOR DISCHARGE PLAN MODIFICATION GW-1 - AUTHORIZATION TO INJECT BLOOMFIELD REFINING COMPANY:

Dear Mr. Anderson:

I have enclosed for your review, analysis results taken from the contents of the two (2) impoundments, from which injection will take place. The information you currently have, was taken from three (3) other impoundments along the waste stream, beginning with the oily water pond. This information refers to the two (2) new lined ponds that were constructed recently per GW-1, Section VI(C).

They are also shown in the diagram of the proposed injection facility by Brewer Associates in enclosure B, Well Data.

As you will see, the results look pretty good.

Sincerely,

Phillip C. Nobis
Vice President

cc: D. Foust
OCD Aztec
Files

909 WEST APACHE
FARMINGTON, NEW MEXICO 87401

TELEPHONE (505) 325-0924
FAX (505) 327-3303

SUMMARY OF ANALYTICAL RESULTS OF WATER IN NORTH DOUBLE LINED POND

8-20-92

	PARAMETER	UNITS	REGULATORY LIMITS	DETECTION LIMITS	NDLP RESULTS
1	BENZENE	ppb	500.	0.5	ND
2	TOLUENE	ppb		0.5	ND
3	ETHYL BENZENE	ppb		0.5	ND
4	m,p- XYLENE	ppb		1.0	ND
5	O- XYLENE	ppb		1.0	ND
6					
7	TOTAL DISSOLVED SOLIDS	mg/l			13600.
8	TOTAL SUSPENDED SOLIDS	mg/l			26.
9	FLUORIDE	mg/l			1.38
10	SULFIDE AS H_2S	mg/l			30.5
11	TOTAL NITRATE & NITRITE	mg/l		0.02	<0.02
12	TOTAL KJELDAHL NITROGEN	mg/l			0.13
13	AMMONIA	mg/l			7.13
14	TOTAL CYANIDE	mg/l		0.01	<0.01
15	PHENOLS	mg/l		0.01	<0.01
16	CHLORIDE	mg/l			5990.
17	SULFATE	mg/l			1740.
18					
19	TOTAL DISSOLVED METALS				
20	SILVER	mg/l		0.01	ND
21	ARSENIC	mg/l		0.005	ND
22	CADMIUM	mg/l		0.002	ND
23	CHROMIUM	mg/l		0.02	0.05
24	COPPER	mg/l		0.01	0.16
25	IRON	mg/l		0.05	0.05
26	MANGANESE	mg/l		0.02	0.28
27	LEAD	mg/l		0.02	ND
28	SELENIUM	mg/l		0.005	0.005
29	ZINC	mg/l		0.01	ND
30	ALUMINUM	mg/l		0.1	0.1
31	BORON	mg/l		0.01	1.61
32	BARIUM	mg/l		0.5	ND
33	COBALT	mg/l		0.01	ND
34	MOLYBDENUM	mg/l		0.02	0.02
35	NICKEL	mg/l		0.01	0.01
36					
37					
38					
39		ND = NOT DETECTED AT DETECTION LIMIT.			
40					

SUMMARY OF ANALYTICAL RESULTS OF WATER IN NORTH DOUBLE LINED POND

8-2092

	PARAMETER	UNITS	2 REGULATORY LIMITS	3 DETECTION LIMITS	4 NDLP RESULTS
1	TCLP METALS				
2	ARSENIC	mg/l	5.0	0.2	ND
3	BARIUM	mg/l	100.0	0.5	ND
4	CADMIUM	mg/l	1.0	0.05	ND
5	CHROMIUM	mg/l	5.0	0.05	ND
6	LEAD	mg/l	5.0	0.1	ND
7	MERCURY	mg/l	0.2	0.005	ND
8	SELENIUM	mg/l	1.0	0.2	ND
9	SILVER	mg/l	5.0	0.1	ND
10					
11	TCLP VOLATILE ORGANICS				
12	BENZENE	mg/l	0.5	0.005	ND
13	CARBON TETRACHLORIDE	mg/l	0.5	0.005	ND
14	CHLOROBENZENE	mg/l	100.	0.005	ND
15	CHLOROFORM	mg/l	6.0	0.005	ND
16	1,2-DICHLOROETHANE	mg/l	0.5	0.005	ND
17	1,1-DICHLOROETHYLENE	mg/l	0.7	0.005	ND
18	METHYL ETHYL KETONE	mg/l	200.	0.005	ND
19	TETRACHLOROETHYLENE	mg/l	0.7	0.005	ND
20	TRICHLOLOETHYLENE	mg/l	0.5	0.005	ND
21	VINYL CHLORIDE	mg/l	0.2	0.005	ND
22					
23	TCLP SEMIVOLATILE ORGANICS				
24	O-CRESOL	mg/l	200.	0.100	ND
25	M,P-CRESOL	mg/l	200.	0.100	ND
26	1,4-DICHLOROBENZENE	mg/l	7.5	0.100	ND
27	2,4-DINITROTOLUENE	mg/l	0.13	0.100	ND
28	HEXACHLOROBENZENE	mg/l	0.13	0.100	ND
29	HEXACHLORO-1,3-BUTADIENE	mg/l	0.5	0.100	ND
30	HEXACHLOROETHANE	mg/l	3.0	0.100	ND
31	NITROBENZENE	mg/l	2.0	0.100	ND
32	PENTACHLOROPHENOL	mg/l	100.	0.100	ND
33	PYRIDINE	mg/l	5.0	0.100	ND
34	2,4,5-TRICHLOROPHENOL	mg/l	400.	0.100	ND
35	2,4,6-TRICHLOROPHENOL	mg/l	2.0	0.100	ND
36					
37	METHOD 8010-HALOGENATED VOLATILES	ug/l		0.5-5.0	ND
38					
39		ND = NOT DETECTED AT DETECTION LIMIT			
40					

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Bloomfield Refinery

Case Narrative

On August 20, 1992 a single water sample was submitted to Inter-Mountain Laboratories, Farmington for analysis. The sample was received cool and intact and was designated "NDLP". Analysis for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) was performed on the water sample as per the accompanying chain of custody form.

The BTEX analysis was performed by EPA Method 5030, Purge and Trap, and EPA Method 8020, Aromatic Volatile Hydrocarbons, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph equipped with a Photoionization Detector. BTEX analytes were not detected in the sample, as indicated on the enclosed report sheets.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analysis of the sample reported here are found in Analysis of Water and Waste, SW-846, USEPA, 1986.

Quality control reports have been included for your information. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Dr. Denise A. Bohemier,
Organic Lab Supervisor

BRC9513

Inter·Mountain Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

BTEX
Volatile Aromatic Hydrocarbons

Bloomfield Refinery

Project Name:	NA	Report Date:	9/4/92
Sample ID:	NDLP	Date Sampled:	8/21/92
Sample Number:	9513	Date Received:	8/21/92
Sample Matrix:	water	Date Analyzed:	9/4/92
Preservative:	Cool, HCl		
Condition:	intact		

Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-xylene	ND	1.0
o-xylene	ND	1.0

ND - Analyte not detected at stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	101%	88-110%
4-Bromofluorobenzene	99%	86-115%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

QUALITY CONTROL REPORT
METHOD BLANK - VOLATILE AROMATIC HYDROCARBONS

Laboratory ID: MB0903B
Sample Matrix: Water

Date Analyzed: 9/3/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.0
o-Xylene	ND	1.0

ND - Analyte not detected at stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	95%	88-110%
Bromofluorobenzene	93%	86-115%

Reference:

Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1986.

Comments:

Analyst

Review

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

Quality Control Report
Matrix Spike Analysis

Sample Number:	9514	Report Date:	09/03/92
Sample Matrix:	Water	Date Sampled:	08/21/92
Preservative:	Cool,HCl	Date Received:	08/21/92
Condition:	Intact	Date Analyzed:	09/03/92

Analyte	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	Percent Recovery	Acceptance Limit
Benzene	10.0	ND	10.6	106%	39-150%
Toluene	10.0	ND	10.3	103%	46-148%
Ethylbenzene	10.0	ND	10.3	103%	32-160%
p,m-Xylene	20.0	ND	20.8	104%	NE
o-Xylene	10.0	ND	20.7	103%	NE

ND-Analyte not detected at stated detection limits.
NE-EPA has not established acceptance limits for this analyte.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	106%	88-110%
4-Bromofluorobenzene	105%	86-115%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, November 1986.

Comments:

Analyst

Review

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

QUALITY CONTROL REPORT
MATRIX SPIKE DUPLICATE - VOLATILE AROMATIC HYDROCARBONS

Sample Number:	9514	Date Sampled:	08/21/92
Sample Matrix:	Water	Date Received:	08/21/92
Preservative:	Cool,HCl	Date Analyzed:	09/03/92
Condition:	Intact		

Analyte	Spike Result (%)	Duplicate Result (%)	Percent Difference
Benzene	106%	103%	3%
Toluene	103%	101%	3%
Ethylbenzene	103%	100%	2%
p,m-Xylene	104%	102%	2%
0-Xylene	103%	101%	2%

ND-Analyte not detected at stated detection limit.

Quality Control: Duplicate acceptance limit set at 20% difference.

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	105%	88-110%
4-Bromofluorobenzene	105%	86-115%

Reference: Method 5030, Purge and Trap
Method 8020, Aromatic Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, November 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

CLIENT:	Bloomfield Refinery	DATE REPORTED:	09/14/92
ID:	NDLP		
SITE:	1500	DATE RECEIVED:	08/20/92
LAB NO:	F9513	DATE COLLECTED:	08/20/92

Total Dissolved Solids (180C), mg/L.	13600
Total Suspended Solids, mg/L.....	26
Fluoride, mg/L.....	1.38
Sulfide as H2S, mg/L.....	30.5
Total Nitrate and Nitrite, mg/L.....	<0.02
Total Kjeldahl Nitrogen, mg/L.....	0.13
Ammonia, mg/L.....	7.13
Total Cyanide, mg/L.....	<0.01
Phenols, mg/L.....	<0.01

	mg/L	meq/L
Chloride.....	5890	166
Sulfate.....	1740	36.3

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

CLIENT: Bloomfield Refinery
ID: NDLP
SITE: 1500
LAB NO: F9513

DATE REPORTED: 09/14/92
DATE RECEIVED: 08/20/92
DATE COLLECTED: 08/20/92

Trace Metals by AA (Dissolved Concentration), mg/L

	Analytical Result:	Detection Limit:
Silver (Ag)	ND	<0.01
Arsenic (As)	ND	<0.005
Cadmium (Cd)	ND	<0.002
Chromium (Cr)	0.05	<0.02
Copper (Cu)	0.16	<0.01
Iron (Fe)	0.05	<0.05
Manganese (Mn)	0.28	<0.02
Lead (Pb)	ND	<0.02
Selenium (Se)	0.005	<0.005
Zinc (Zn)	ND	<0.01

Trace Metals by ICAP (Dissolved Concentration), mg/L

	Analytical Result:	Detection Limit:
Aluminum (Al)	0.1	<0.1
Boron (B)	1.61	<0.01
Barium (Ba)	ND	<0.5
Cobalt (Co)	ND	<0.01
Molybdenum (Mo)	0.02	<0.02
Nickel (Ni)	0.01	<0.01

ND - Analyte "not detected" at the stated detection limit.

Wanda Orso
Water Lab Supervisor

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

CASE NARRATIVE

On August 22, 1992, one water sample was received by Inter-Mountain Laboratories - College Station, Texas. It was received cool and intact, and was identified by Project Location "NDLP". Analyses for Toxicity Characteristic Leaching Procedure (TCLP) Semivolatiles, TCLP Volatiles, Halogenated Volatile Organics, and TCLP Metals were performed according to the accompanying chain of custody form.

No target analytes were detected at reportable levels. Due to matrix interference the sample had to be diluted in order to run TCLP Semivolatiles within calibration range. Detection levels are therefore higher than usual for that analysis.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the organic analyses of samples reported here are found in "Test Methods for Evaluating Solid Waste", SW-846, USEPA, 1986. Inorganic analyses (TCLP Metals) were done by methods found in vol. 55 of the EPA Federal Register, June, 1990.

Quality Control reports have been included for your information and use. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Mary Higginbotham

Mary Higginbotham
Project Manager

BRC1669

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client: **Bloomfield Refinery**
Project Name: NA
Project Location: NDLP
Sample ID: NDLP
Sample Number: 9513/C921669
Sample Matrix: Water
Preservative: Cool
Condition: Intact

Report Date: 08/28/92
Date Sampled: 08/20/92
Date Received: 08/22/92
Date Analyzed: 08/27/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	5.0
Bromoform	ND	0.5
Bromomethane	ND	5.0
Carbon tetrachloride	ND	0.5
Chlorobenzene	ND	0.5
Chloroethane	ND	0.5
2-Chloroethylvinylether	ND	0.5
Chloroform	ND	0.5
Chloromethane	ND	5.0
Dibromochloromethane	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethene	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
Methylene Chloride	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Trichloroethene	ND	0.5
Trichlorofluoromethane	ND	0.5
Vinyl chloride	ND	5.0

ND - Analyte not detected at stated detection limit.

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS
Page 2 - Quality Control

Client:	**Bloomfield Refinery**		
Project Name:	NA	Report Date:	08/28/92
Sample ID:	NDLP	Date Sampled:	08/20/92
Sample Number:	NDLP	Date Received:	08/22/92
Sample Matrix:	9513/C921669	Date Analyzed:	08/27/92
Preservative:	Water		
Condition:	Cool		

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1-Chloro-2-Fluorobenzene	79%	75-125%
Bromochloromethane	90%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX DUPLICATE
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number:	C921669 Duplicate	Date Sampled:	08/20/92
Sample Matrix:	Water	Date Received:	08/22/92
Preservative:	Cool	Date Analyzed:	08/27/92
Condition:	Intact		

Analyte	Sample Result (ug/L)	Duplicate Result (ug/L)	Percent Difference
Bromodichloromethane	ND	ND	NA
Bromoform	ND	ND	NA
Bromomethane	ND	ND	NA
Carbon tetrachloride	ND	ND	NA
Chlorobenzene	ND	ND	NA
Chloroethane	ND	ND	NA
2-Chloroethylvinylether	ND	ND	NA
Chloroform	ND	ND	NA
Chloromethane	ND	ND	NA
Dibromochloromethane	ND	ND	NA
1,2-Dichlorobenzene	ND	ND	NA
1,3-Dichlorobenzene	ND	ND	NA
1,4-Dichlorobenzene	ND	ND	NA
Dichlorodifluoromethane	ND	ND	NA
1,1-Dichloroethane	ND	ND	NA
1,2-Dichloroethane	ND	ND	NA
1,1-Dichloroethene	ND	ND	NA
trans-1,2-Dichloroethene	ND	ND	NA
1,2-Dichloropropane	ND	ND	NA
cis-1,3-Dichloropropene	ND	ND	NA
trans-1,3-Dichloropropene	ND	ND	NA
Methylene Chloride	ND	ND	NA
1,1,2,2-Tetrachloroethane	ND	ND	NA
Tetrachloroethene	ND	ND	NA
1,1,1-Trichloroethane	ND	ND	NA
1,1,2-Trichloroethane	ND	ND	NA
Trichloroethene	ND	ND	NA
Trichlorofluoromethane	ND	ND	NA
Vinyl chloride	ND	ND	NA

ND - Analyte not detected at stated detection limit
NA - Value not applicable or calculated

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX DUPLICATE
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number:	C921669 Duplicate	Date Sampled:	08/20/92
Sample Matrix:	Water	Date Received:	08/22/92
Preservative:	Cool	Date Analyzed:	08/27/92
Condition:	Intact		

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1-Chloro-2-Fluorobenzene	93%	75-125%
Bromochloromethane	97%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.
3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX SPIKE
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number: C921671 Spike
Sample Matrix: Soil
Preservative: Warm
Condition: Intact

Date Sampled: 08/24/92
Date Received: 08/25/92
Date Analyzed: 08/28/92

Analyte	Spike Added (ug/Kg)	Sample Result (ug/Kg)	Spike Result (ug/Kg)	Percent Recovery	Acceptance Limit
Bromodichloromethane	44.8	ND	58.3	130%	42-172%
Bromoform	22.4	ND	24.1	107%	13-159%
Bromomethane	NA	ND	NA	NA	D-144%
Carbon tetrachloride	22.4	ND	25.7	115%	43-143%
Chlorobenzene	22.4	ND	24.7	110%	38-150%
Chloroethane	NA	ND	NA	NA	46-137%
2-Chloroethylvinylether	22.4	ND	23.1	103%	14-186%
Chloroform	22.4	ND	25.5	114%	49-133%
Chloromethane	NA	ND	NA	NA	D-193%
Dibromochloromethane	22.4	ND	24.2	108%	24-191%
1,2-Dichlorobenzene	22.4	ND	23.8	106%	D-208%
1,3-Dichlorobenzene	22.4	ND	23.1	103%	7-187%
1,4-Dichlorobenzene	22.4	ND	27.3	122%	42-143%
1,1-Dichloroethane	22.4	ND	24.1	107%	47-132%
1,2-Dichloroethane	22.4	ND	24.5	109%	51-147%
1,1-Dichloroethene	22.4	ND	23.6	105%	28-167%
trans-1,2-Dichloroethene	22.4	ND	22.7	101%	38-155%
1,2-Dichloropropane	22.4	ND	26.5	118%	44-156%
cis-1,3-Dichloropropene	22.4	ND	24.7	110%	22-178%
trans-1,3-Dichloropropene	22.4	ND	25.7	114%	22-178%
Methylene Chloride	22.4	ND	16.7	74%	25-162%
1,1,2,2-Tetrachloroethane	22.4	ND	26.3	118%	8-184%
Tetrachloroethene	22.4	ND	23.0	103%	26-162%
1,1,1-Trichloroethane	22.4	ND	24.7	110%	41-138%
1,1,2-Trichloroethane	22.4	ND	25.1	112%	39-136%
Trichloroethene	22.4	28.2	44.5	73%	35-146%
Trichlorofluoromethane	NA	ND	NA	NA	21-156%
Vinyl chloride	NA	ND	NA	NA	28-163%

ND - Analyte not detected at stated detection limit.

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX SPIKE
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	1-Chloro-2-Fluorobenzene	86%	75-125%
	Bromochloromethane	109%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Kevin Wadsworth
Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number: MB0827V1
Sample Matrix: Water

Date Sampled: NA
Date Received: NA
Date Analyzed: 08/27/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	5.0
Bromoform	ND	0.5
Bromomethane	ND	5.0
Carbon tetrachloride	ND	0.5
Chlorobenzene	ND	0.5
Chloroethane	ND	0.5
2-Chloroethylvinyl ether	ND	0.5
Chloroform	ND	0.5
Chloromethane	ND	5.0
Dibromochloromethane	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethene	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
Methylene Chloride	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Trichloroethene	ND	0.5
Trichlorofluoromethane	ND	0.5
Vinyl chloride	ND	5.0

ND - Analyte not detected at stated detection limit.

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK
METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number: MB0827V1 Date Analyzed: 08/27/92
Sample Matrix: Water

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	1-Chloro-2-Fluorobenzene	85%	75-125%
	Bromochloromethane	101%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: Method Blank
Laboratory ID: MB548
Sample Matrix: Reagent Water

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted: 08/26/92
Date Analyzed: 09/08/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
Bis(2-chloroethoxy)methane	ND	10
Bis(2-chloroethyl)ether	ND	10
Bis(2-chloroisopropyl)ether	ND	10
Bis(2-ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
m - Cresol	ND	10
p - Cresol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3 - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10
4,6 - Dinitro -2- methylphenol	ND	25

Inter-Mountain Laboratories, Inc.
3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)
METHOD BLANK ANALYSIS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: Method Blank
Laboratory ID: MB548

Report Date: 09/09/92
Date Sampled: N/A
Date Analyzed: 09/08/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di-n-octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: Method Blank
Sample Number: MB548

Report Date: 09/09/92
Date Sampled: N/A
Date Analyzed: 09/08/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
No compounds detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Soil Acceptance Limits
2 - Fluorophenol	52%	25 - 121 %
Phenol - d6	106%	24 - 113 %
Nitrobenzene - d5	98%	23 - 120 %
2 - Fluorobiphenyl	89%	30 - 115 %
2,4,6 - Tribromophenol	9%	19 - 122 %
Terphenyl - d14	95%	18 - 137 %

References:

Method 3510: Separatory Funnel Liquid-Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Mary Higginbotham
Analyst

Review

imi
Inter-Mountain
Laboratories, Inc.

11183 SH 30
College Station, TX 77845
Phone (409) 776-8945
FAX (409) 774-4705

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Measured Concentration (mg/L)	Spike Biased Concentration (mg/L)	Reporting Limit (mg/L)	Maximum Allowable Level (mg/L)	Method Reference
Arsenic	ND	ND	0.2	5.0	6010
Barium	ND	ND	0.5	100	6010
Cadmium	ND	ND	0.05	1.0	6010
Chromium	ND	ND	0.05	5.0	6010
Lead	ND	ND	0.1	5.0	6010
Mercury	ND	ND	0.005	0.2	7470
Selenium	ND	ND	0.2	1.0	6010
Silver	ND	ND	0.1	5.0	6010

ND - Parameter Not Detected at stated reporting level.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

Inter-Mountain
Laboratories, Inc.

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College Station, TX 77845
Phone (409) 776-8945
FAX (409) 774-4705

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - MATRIX SPIKE

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Unspiked Sample Concentration (mg/L)	Spiked Sample Concentration (mg/L)	Spike Amount (mg/L)	Percent Recovery	Method Reference
Arsenic	ND	1.06	1.00	106	6010
Barium	ND	1.18	1.00	118	6010
Cadmium	ND	0.42	0.50	84	6010
Chromium	ND	0.43	0.50	86	6010
Lead	ND	0.42	0.50	84	6010
Mercury	ND	0.022	0.025	88	7470
Selenium	ND	0.88	1.00	88	6010
Silver	ND	0.42	0.50	84	6010

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

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TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - DUPLICATE ANALYSIS

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Original Concentration (mg/L)	Duplicate Concentration (mg/L)	Relative Percent Difference	Reporting Limit (mg/L)	Method Reference
Arsenic	ND	ND	NC	0.2	6010
Barium	ND	ND	NC	0.5	6010
Cadmium	ND	ND	NC	0.05	6010
Chromium	ND	ND	NC	0.05	6010
Lead	ND	ND	NC	0.1	6010
Mercury	ND	ND	NC	0.005	7470
Selenium	ND	ND	NC	0.2	6010
Silver	ND	ND	NC	0.1	6010

NC - Noncalculable RPD due to value(s) less than RL.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

Inter-Mountain
Laboratories, Inc.

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FAX (409) 774-4705

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - METHOD BLANK

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Laboratory Number: 9513/C921669/14747
Sample Matrix: Water

Report Date: 9/9/92
Date Extracted: 8/25/92

Analyte	Measured Concentration (mg/L)	Reporting Limit (mg/L)	Method Reference
Arsenic	ND	0.2	6010
Barium	ND	0.5	6010
Cadmium	ND	0.05	6010
Chromium	ND	0.05	6010
Lead	ND	0.1	6010
Mercury	ND	0.005	7470
Selenium	ND	0.2	6010
Silver	ND	0.1	6010

ND - Parameter Not Detected at stated reporting level.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: NDLP
Laboratory ID: 9513 / C921669
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 09/01/92
Date Sampled: 08/20/92
Date Received: 08/22/92
TCLP Extraction: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	ND	0.005	0.5
Carbon tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6.0
1,2 - Dichloroethane	ND	0.005	0.5
1,1 - Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.005	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl chloride	ND	0.005	0.2

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	93%	76 - 114%
Toluene - d8	102%	88 - 110%
Bromofluorobenzene	98%	86 - 115%

Inter·Mountain Laboratories, Inc.

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College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: NDLP
Laboratory ID: 9513 / C921669

Report Date: 09/01/92
Date Sampled: 08/20/92
Date Analyzed: 09/01/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
Unknown hydrocarbon	4.05	0.006 *
Carbon disulfide	4.37	0.018

* - Concentration calculated using assumed relative response factor = 1

Comments:

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
MATRIX SPIKE ANALYSIS

Client:	**BLOOMFIELD REFINERY**		
Project Name:	NDLP	Report Date:	09/01/92
Sample ID:	Matrix Spike	Date Sampled:	08/20/92
Laboratory ID:	C921669 SPK	Date Received:	08/22/92
Sample Matrix:	Water	TCLP Extracted:	09/01/92
Condition:	Cool, Intact	Date Analyzed:	09/01/92

Analyte	Spiked Sample Concentration	Sample Concentration	Spike Recovered	Spike Added	Percent Recovery
Benzene	0.094	ND	0.094	0.100	94%
Carbon tetrachloride	0.092	ND	0.092	0.100	92%
Chlorobenzene	0.092	ND	0.092	0.100	92%
Chloroform	0.082	ND	0.082	0.100	82%
1,2 - Dichloroethane	0.087	ND	0.087	0.100	87%
1,1 - Dichloroethylene	0.093	ND	0.093	0.100	93%
Methyl ethyl ketone	0.125	ND	0.125	0.100	125%
Tetrachloroethylene	0.094	ND	0.094	0.100	94%
Trichloroethylene	0.090	ND	0.090	0.100	90%
Vinyl chloride	0.051	ND	0.051	0.100	51%

All units in mg/L.
ND - Not detected

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	95%	76 - 114%
Toluene - d8	100%	88 - 110%
Bromofluorobenzene	101%	86 - 115%

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB 0901F
Sample Matrix: Solid
Condition: NA

Report Date: 09/01/92
Date Sampled: NA
Date Received: NA
TCLP Extraction: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	ND	0.005	0.5
Carbon tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6.0
1,2 - Dichloroethane	ND	0.005	0.5
1,1 - Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.005	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl chloride	ND	0.005	0.2
Toluene	ND	0.005	NE
Xylenes, total	ND	0.005	NE

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	94%	76 - 114%
Toluene - d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB 0901F

Report Date: 09/01/92
Date Sampled: NA
Date Analyzed: 09/01/92

Analyte	Retention Time (minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Calculated using assumed relative response factor of 1

Comments:

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: Method Blank
Laboratory ID: MB 0901
Sample Matrix: Water
Condition: NA

Report Date: 09/01/92
Date Sampled: NA
Date Received: NA
Date Extracted: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	25
Acrolein	ND	50
Acrylonitrile	ND	50
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	20
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
1,2-Dichloroethene (total)	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE HYDROCARBONS

METHOD BLANK ANALYSIS

ADDITIONAL DETECTED COMPOUNDS

Client:	BLOOMFIELD REFINERY		
Project Name:	NDLP	Report Date:	09/01/92
Sample ID:	Method Blank	Date Sampled:	NA
Laboratory ID	MB 0901	Date Analyzed:	09/01/92

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
None detected at reportable levels.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2-Dichloroethane-d4	93%	76 - 114%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **Bloomfield Refinery**
Project Location: NDLP
Sample ID: NDLP
Laboratory ID: 9513/ C921669
Sample Matrix: Water
Condition: Cool, intact

Report Date: 09/09/92
Date Sampled: 08/20/92
Date Received: 08/22/92
Date Extracted -
TCLP: 08/25/92
BNA: 08/26/92
Date Analyzed: 09/08/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.100	200
m,p - Cresol	ND	0.100	200
1,4 - Dichlorobenzene	ND	0.100	7.5
2,4 - Dinitrotoluene	ND	0.100	0.13
Hexachlorobenzene	ND	0.100	0.13
Hexachloro-1,3-butadiene	ND	0.100	0.5
Hexachloroethane	ND	0.100	3.0
Nitrobenzene	ND	0.100	2.0
Pentachlorophenol	ND	0.100	100
Pyridine	ND	0.100	5.0
2,4,5 - Trichlorophenol	ND	0.100	400
2,4,6 - Trichlorophenol	ND	0.100	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	*	21 - 100%
Phenol - d6	*	10 - 94%
Nitrobenzene - d5	*	35 - 114%
2 - Fluorobiphenyl	*	43 - 116%
2,4,6 - Tribromophenol	*	10 - 123%
Terphenyl - d14	*	33 - 141%

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client:	**Bloomfield Refinery**		
Project Name:	NDLP	Report Date:	09/09/92
Sample ID:	NDLP	Date Sampled:	08/20/92
Laboratory ID:	9513/ C921669	Date Analyzed:	09/08/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
None detected at reportable levels		

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

*Surrogates lost due to dilution of sample needed for analysis

Mary Higginbotham
Analyst

Review

Inter-Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
MATRIX SPIKE ANALYSIS

Client: **Bloomfield Refinery**
Sample ID: TCLP Matrix Spike
Laboratory ID: BS537
Sample Matrix: Reagent Water

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted - 08/21/92
Date Analyzed: 08/21/92

Analyte	Concentration (mg/L)	Spike Added (mg/L)	Percent Recovery
o - Cresol	0.077	0.100	77%
m,p - Cresol	0.088	0.100	88%
1,4 - Dichlorobenzene	0.085	0.100	85%
2,4 - Dinitrotoluene	0.075	0.100	75%
Hexachlorobenzene	0.078	0.100	78%
Hexachloro-1,3-butadiene	0.075	0.100	75%
Hexachloroethane	0.079	0.100	79%
Nitrobenzene	0.075	0.100	75%
Pentachlorophenol	0.075	0.100	75%
Pyridine	0.078	0.100	78%
2,4,5 - Trichlorophenol	0.080	0.100	80%
2,4,6 - Trichlorophenol	0.076	0.100	76%

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	97%	21 - 100%
Phenol - d6	94%	10 - 94%
Nitrobenzene - d5	112%	35 - 114%
2 - Fluorobiphenyl	113%	43 - 116%
2,4,6 - Tribromophenol	100%	10 - 123%
Terphenyl - d14	111%	33 - 141%

Mary Higginbotham
Analyst

Review

Inter-Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB825
Sample Matrix: Reagent Water

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted -
TCLP: 08/25/92
BNA: 08/26/92
Date Analyzed: 08/26/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.010	200
m,p - Cresol	ND	0.010	200
1,4 - Dichlorobenzene	ND	0.010	7.5
2,4 - Dinitrotoluene	ND	0.010	0.13
Hexachlorobenzene	ND	0.010	0.13
Hexachloro-1,3-butadiene	ND	0.010	0.5
Hexachloroethane	ND	0.010	3.0
Nitrobenzene	ND	0.010	2.0
Pentachlorophenol	ND	0.010	100
Pyridine	ND	0.010	5.0
2,4,5 - Trichlorophenol	ND	0.010	400
2,4,6 - Trichlorophenol	ND	0.010	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	68%	21 - 100%
Phenol - d6	71%	10 - 94%
Nitrobenzene - d5	68%	35 - 114%
2 - Fluorobiphenyl	74%	43 - 116%
2,4,6 - Tribromophenol	74%	10 - 123%
Terphenyl - d14	101%	33 - 141%

Inter-Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name: Bloomfield Refinery

Project Location:

Sampler: (Signature) [signature]

Chain of Custody Tape No.:

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP Metals, Vol, Semi Vol	8010-8020	See attached letter	Remarks
NOLP	082092	1500		H_2O	9				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	8-20-92	1555	[signature]	082092	1555
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

- ☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945
- ☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
- ☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
- ☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450
- ☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945
- ☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

05234

August 19, 1992

- Phillip Nobis
- James Gurney

Roger Anderson - OCD
Kathy Brown - OCD

Abandon 2 unlined ponds
Use 2 lined ponds prior to injection.

8010/8020
8240 + ICAP for fluids on quarterly,
General Chem, Hg, As, quarterly basis

Plugging bond based on cost of plugging ~~(EPA)~~ 1000
Closure Plan - plug top to bottom

Will get a permit to drill through the Aztec office and a permit to inject (C-108) through David Catanach and a discharge plan modification through the Environmental Bureau.
Submit 5 copies (2-Aztec, 2-David, 2-us)

Can get permit to inject prior to drilling.

TIERRA ENVIRONMENTAL COMPANY, INCORPORATED

DRAFT #1

August 18, 1992

Mr. Roger Anderson, Bureau Chief
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 80

RE: APPLICATION FOR AUTHORIZATION TO INJECT/MODIFICATION OF DISCHARGE PLAN GW-1, FOR BLOOMFIELD REFINING COMPANY:

Dear Roger:

Tierra Environmental Company, Inc., has been retained by Bloomfield Refining Company (BRC), as their environmental consultants and engineers, re: the above captioned matters. We have just recently completed a feasibility study for Bloomfield Refining regarding the permitting, construction and operation of a Class I (non-hazardous) Injection Well and Facilities.

Based on that feasibility study, Tierra has been directed by BRC to proceed with the permit process on their behalf.

Enclosed herewith, is a "draft" letter of application for modification of their current discharge plan, including OCD form C-108 and all necessary attachments for authorization to inject. The injection well permit application, if approved by OCD, will replace Section VI (C) of BRC's current discharge plan, ie: the construction of two additional lined surface impoundments by 1992. If approved by OCD, the injection well and facilities will also eliminate the necessity for all spray irrigation practices currently being used periodically by BRC. Further BRC, following OCD approval of the injection well and facilities, would therefore abandon the existing two clay lined ponds and close them, preforming any remediation necessary as directed by OCD.

Please note that the applications for modification of the discharge plan and authorization to inject are preliminary "drafts". Most technical information concerning geology, waste stream, well data etc. is included. The notification requirements have not been implemented at this time, nor have water samples been obtained and analyzed from local domestic water wells.

Following OCD review of the "drafts", Tierra will finalize the permit applications, including the notification requirement, water analysis and any other information requested by OCD.

Sincerely,

Phillip C. Nobis

OCD

Phillip C. Nobis
Vice President

909 WEST APACHE
FARMINGTON, NEW MEXICO 87401

TELEPHONE (505) 325-0925
FAX (505) 327-1471

TIERRA Environmental Company, Inc.
909 West Apache
Farmington, New Mexico 87401
(505) 325-0924

APPLICATION FOR DISCHARGE PLAN MODIFICATION

Discharge Plan GW-1

Bloomfield Refinery
P.O. Box 159
Bloomfield, New Mexico 87413

The Bloomfield Refining Company (BRC) is applying for a modification of groundwater discharge plan (GW-1) for the Company's Bloomfield Refinery located in the NW/4 SE/ and the S/22 NE/4 and the N/22 NE/ SE/ of Section 27, and the S/2 NW/ and N/2 NW/4 SW/ and the SE/4 NW/4 SW/4 and the NE/4 SW/4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico.

The current discharge plan GW-1 expires on June 7, 1994.

BRC has applied for authorization to inject OCD form C-108 for a Class I (non-hazardous) disposal well and facilities to be located adjacent to and north of Pond 2, further identified in (Attachment 2) facility drawing.

The proposed zone of injection is at approximately 3200 to 3600 feet in depth and into the "Cliff House" and upper menefee Geological formations. A thorough geological investigation indicates that the proposed injection zone does not intersect any fresh water aquafur. TDS concentration within the Cliff House Formation are in excess of 10,000 ppm. (Source OCD Report at BLM Oil and Gas Conference, Albuquerque, N.M. May 22-23, 1986 by David Boyer, Hydrogeologist/Environmental Bureau, New Mexico Oil Conservation Division as revised September, 1987). A copy of OCD form C-108 describing the proposed well construction and all required technical data pursuant to OCD and WQCC Regulations is enclosed as addendum to Section VI (C), Proposed Modifications of the current discharge plan. It will replace C 3, Installation Schedule, "a third pond could be constructed in 1991 and a forth in 1992."

The proposed Class I Injection well and facilities adjacent to Pond 2, would preclude the necessity of construction of additional surface impoundments and therefore also allow BRC to abandon any spray irrigation practices completely.

APPLICATION FOR DISCHARGE PLAN MODIFICATION (continued)

The proposed injection well and facilities would draw waste water from Pond 2 by a below grade pumping system, for transfer to two (2) above ground storage tanks. From the tanks the wastewater would then be run through a filtration system and injected pursuant to the design information contained in Section VI C addendum OCD form C-108.

Pond 1 and Pond 2 would be kept at a moderate level in order to allow for emergency repairs of the injection system in the event of breakdown. In the event of a prolonged failure of the injection facility, high-rate portable aeration equipment could be installed to assist in the evaporation rate in both ponds 1 and 2, until necessary repairs are completed.

Testing of the effluent waste stream will be conducted at pond 2 prior to injection and will comply with OCD and WQCC Regulations.
The following constituents will be analyzed yearly;

1. Aromatic and halogenated hydrocarbon scan by EPA methods 601 and 602.

2. General water chemistry, to include calcium, magnesium, potassium, sodium, barcarbonate, chloride, sulfate, carbonate, TDS, pH and conductivity.

3. Heavy metals (by ICAP Scan) to include aluminum, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, molybdenum, nickel, silver, strontium, and zinc.

4. Heavy metals by atomic absorption to include As, Hg.

The following constituents will be analyzed quarterly;

1. chloride, pH, TDS, chromium and lead.

2. Aromatic and halogenated hydrocarbon scan by EPA Methods 601 and 602.

The proposed Class I Injection well and facilities will only be accepting BRC effluent waste stream. It will not accept any other waste from commercial or private sources.

BRC agrees to comply with the following regulatory requirements:

1. To prevent corrosion and provide maximum protection for the casing, injection shall be through plastic lined tubing with a packer set no more than 100 feet from the bottom of the long-string casing.

2. The casing-tubing annulus shall be filled with an inert fluid, and a minimum pressure of 100 psi maintained pursuant to WQCC 5-206.B.2.

APPLICATION FOR DISCHARGE PLAN MODIFICATION (continued)

3. Continuous monitoring devices shall be installed to provide a record of injection pressure, (vacuum) flow rate, flow volume and annular pressure, pursuant to WQCC 5-207. B.@. such devices shall be installed prior to injection of any industrial effluent.

4. Monthly reports of the disposal of produced water shall be submitted in accordance with Rules 704 and 1120 of the Division Class II Rules and Regulations.

5. The operator shall provide a representative analysis of the injected fluids quarterly pursuant to WQCC 5-208.A.2.(a).

6. Mechanical intercity for the effluent disposal well shall be demonstrated yearly during the life of the well pursuant to WQCC 5-207A. The type of test shall be approved by the Division and witnessed by an OCD representative.

7. The injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than the hydrostatic pressure from the injection storage tanks exerted at the wellhead.

8. BRC shall immediately notify the supervisor of the OCD Division Office in Aztec, New Mexico of the failure of the tubing, casing, or packer in the well or leakage of water from around said well or associated surface facility and take such steps as may be timely and necessary to correct such failure or leakage pursuant to WQCC 5-208A.1.

9. Pursuant to WQCC 5-208.2, the following quarterly reports will be submitted to the Director:

    a) The analyses as required in (5) above.

    b) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure.

    c) Any well workover.

TIERRA Environmental Company, Inc.
909 West Apache
Farmington, New Mexico 87401

APPLICATION FOR AUTHORIZATION TO INJECT

(Class I Disposal Well, non-hazardous)

I. Purpose: Disposal of refinery waste stream

II. Operator: Bloomfield Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

Contact Party: Tierra Environmental Company, Inc.
909 West Apache
Farmington, New Mexico 87401
Phillip C. Nobis
(505) 325-0924

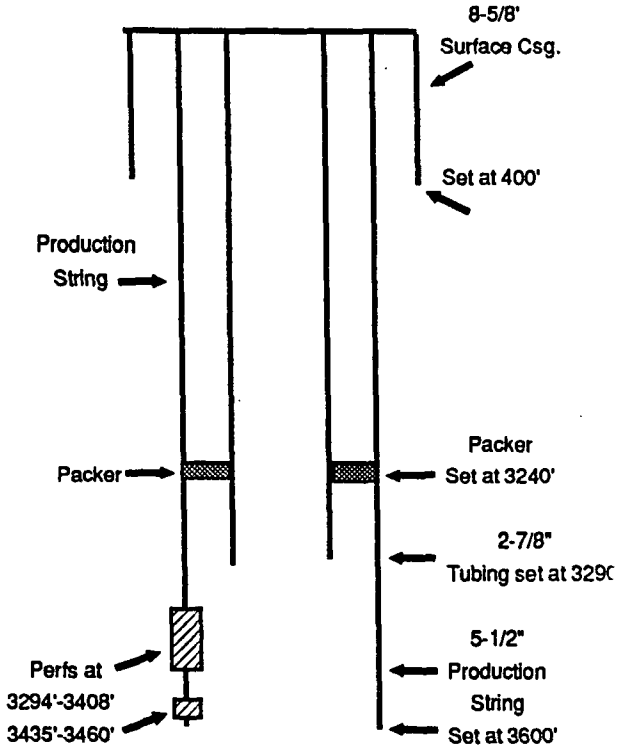
III. WELL DATA

IIIA. The following well data must be submitted for each injection well covered by this application. The data must be in tabular and schematic form and shall include:

(1) Lease Name: Bloomfield Refining WD-1 Well No. 1

Location: NW, SW, Section 26, T29N, R11W; San Juan County; FWL and FSL

(2) WELL SCHEMATICS DATA



(2) Surface Casing:

Size: 8-5/8", 48# Csg., cemented with 200 sx.
TOC: Surface, feet determined by circulation.
Hole Size: 11.0"
Set at: 400 feet

(2) Production String:

Size: 5.5", 15.5# Csg., cemented with 550 sx.
TOC: Surface, feet determined by circulation.
Hole Size: 7-7/8"
Set at: 3600 feet
Perforated interval: 3294'-3408' & 3435'-3460'at 4 JSPF, .5 EHD

(3) Tubing:

Size: 2-7/8", 4#, plastic lined
Set at: 3250'

(4) Packer:

Model: Guiberson, Uni-6: set at 50 feet above perforations or similar model.

IIIB. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well.

(1) Name of Injection formation: Cliff House Formation and Menefee Formation.
(2) Name of field or Pool (if applicable): N/A
(3) Is this a new well drilled for injection? Yes,
(4) Has the well ever been perforated in any zone(s)? No.
(5) Give depth to and name of any overlying or overlying oil or gas zones (pools) in this area.

Oil and Gas Zones

Producing Formation/Member	Type of Production	Formation Tops
Kirtland Shale (Farmington Sandstone)	Oil some Gas	734'
Fruitland Formation (sand and coal)	Gas	1419'
Pictured Cliffs Sandstone	Gas	1729'
Lewis Shale (Chacra Sand)	Gas	1804'
Cliff House Sandstone (injection zone)	Brine Water	3294'
Point Lookout Sandstone	Gas some Oil	4000'
Gallup Sandstone	Oil some Gas	5336'
Graneros/Dakota Formations	Gas	6196'

IV. Is this an expansion of an existing project? YES
If yes, give the Division order number authorizing the project: GW1, Bloomfield Refining.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around the proposed injection well. This circle identifies the well's "area of review". Map attached showing all wells within two miles of the proposed injection well and the location of the proposed injection well.

VI. Attach a tabulation of data on all wells of public record within the "area of review" which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging details. The list of wells below represents all wells within the "area of review" and D&A wells within the "area of review". Attached are PI completion reports or photo copies of plugging reports from OCD files in Aztec, NM on those wells found within 1/2 mile of the proposed injection well.

PRODUCING WELLS (OCD 4/2/92)

Location	Pool	Operator	Lease
1F26 29N11W	Basin Dakota	Amoco Production	Sullivan Gas Com
1F26 29N11W	Otero Chacra	Amoco Production	Davis Gas Com J
1F26 29N11W	Blanco Mesaverde	Amoco Production	Davis Gas Com J
3K26 29N11W	Armenta Gallup	Meridian Oil	Calvin
1M26 29N11W	Basin Dakota	Meridian Oil	Calvin
9N26 29N11W	Otero Chacra	Meridian Oil	Congress
1H 27 29N11W	Otero Chacra	Amoco Production	Davis Gas Com F
1H 27 29N11W	Basin Dakota	Amoco Production	Davis Gas Com F
1I 27 29N11W	Otero Chacra	Amoco Production	Davis Gas Com G
1I 27 29N11W	Basin Dakota	Amoco Production	Davis Gas Com F
9A34 29N11W	Otero Chacra	Meridian Oil	Summit
16A34 29N11W	Armenta Gallup	Meridian Oil	Congress

PLUGGED AND ABANDONED WELLS (PI)

1M26 29N11W	D&A in 1950 (Kpc)	Big Chief Western	Davis
2H27 29N11W	D&A in 1953 (Kpc)	Umbarger FB Trust	Davis PU
1I27 29N11W	D&A in 1953 (Kpc)	Umbarger FB Trust	Davis Pooled

VII. Attach data on the proposed operation, including:

(1) Average daily injection is anticipated to be approximately 2228 BPD.

(2) Whether the system is open or closed; Closed system.

(3) Proposed average and maximum injection pressures; Pressures projected at 1200-1500 psi.

(4) Sources and appropriate analysis of fluids to be injected are explained thoroughly in Section II of the Bloomfield Refining Company Discharge Plan GW-1, which was renewed by OCD, on February 4, 1992 and will expire on June 7, 1994. Constituent concentrations to be injected meet NMWQ & RCRA standards with the exception of Total Dissolved Solids (TDS), which are 2,136ppm. Under GW-1 the waste stream has been approved by OCD for land application.

The proposed injection zone ie: Cliff House, part of the Mesa Verde Group gave TDS concentrations above 10,000 ppm, TDS, The formation, pursuant to Section (70-2-12,B (15), NMSA 78 would not be considered fresh water and therefore would not be used for any purpose that would be impaired by contamination. Analysis of the Mesa Verde, Cliff House is discussed in item (5) below, and would appear to be compatible with the waste stream proposed for injection.

(5) If injection is for disposal purposes into a zone not productive of oil and gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc. A chemical analysis of the disposal zone (Cliff House) is attached and is from the Basin Disposal well in Section 3, T29N, R11W. see appendix.

VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological names, thickness, and depths. Give the geological name and depth to bottom of all underground sources of drinking water (aquifer containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying and underlying the proposed injection zone. The proposed injection interval for the subject well are sandstones of the Cliff House Formation and upper most sands of the Menefee Formation. The Cliff House and Menefee are the two upper most units of the Mesaverde Group.

Cliff House Sandstone Formation (injection zone); The Cliff House Sandstone is the upper most unit in the Mesaverde Group. West of Farmington, it forms the top or eastern flank of the Hogback monocline. This coastal marine, transgressive sandstone consists of very fine to fine-grained sand interbedded with thin gray shale units, and has an estimated thickness of about 114 feet at the proposed injection site.

Formation	Depth	Thickness
Cliff House	3294'	114'

Sandstone beds range in thickness from several feet to 30+ feet in the general area of Bloomfield and are separated by shales and siltstones. At the proposed injection well site sandstone beds in the lower part of the unit are commonly 4-8 feet in thickness. A 15-20 foot thick sand is projected to occur near the top of the Cliff House. Cliff House sandstone porosities range from 10-18 percent, which is considered normal for most Mesaverde sands. The Cliff House unconformably overlies the Menefee Formation. Produced water from Cliff House gas production is saline (high TDS) in the deeper portions of the basin and the unproductive areas around Bloomfield.

Upper Menefee Formation (potential injection zone):

The Menefee Formation, middle unit of the Mesaverde Group, consists of interbedded claystone, shale, sandstone, and coal beds. Sandstones are fine-grained, immature, lithic arkoses indicative of continental deposition. The thickness of the Menefee is estimated at 600 feet in the Bloomfield area.

Formation	Depth	Thickness
Menefee	3408'	600'

Some hydrocarbon production comes from the lower most sands of the unit and may be associated with the underlying Point Lookout. Upper sands within the Menefee may be potential injection zones if the sands can be shown to have some lateral extent and thickness, since most of these sands were deposited in channel or deltaic environments.

Water Wells:

New Mexico State Engineer's Office water well records in Albuquerque, New Mexico were reviewed, duplicated, and plotted, see attached Water Wells Map. Several additional wells were found in a Hydrologic Report 6, a 1983 New Mexico Bureau of Mines and Mineral Resources publication.

The known fresh water zones for this area of the San Juan Basin are the Nacimiento and the Ojo Alamo Formations of Tertiary Age. The Nacimiento occurs at the surface and is about 570 feet thick in the immediate area. The Ojo Alamo is about 165 thick at a depth of 569 to 734 feet. Most of the water wells in the area are completed in Quaternary sand and gravels at a depth of 25 to 75 feet. These sand and gravels rest on the underlying Nacimiento Formation along the San Juan River flood plain and terraces north of the river and the Bloomfield Refinery. One well in SE1/4 of Section 27, T29N, R11W, owned by C. W. Wooten, was drilled to a depth of 305 feet intersecting a water sand within the Nacimiento at 225 to 285 feet with an estimated yield of 10 gpm. This is the deepest water well drilled in the study area according to the State Engineer's Office records.

Ground Water/Aquifers:

The principal water yielding strata (low conductance-fresh water) of the San Juan Basin and in particular the Bloomfield area are sandstones associated with Quaternary sediments and the Nacimiento. Some sand lenses occur within the Nacimiento as evidenced by the cliffs along the south side of the San Juan River near the Bloomfield Refinery. These sands are recharged by the San Juan River and to a lesser extent through percolation from normal rain fall. The water table is most likely very near the surface in the Bloomfield area as evidenced by the shallow water wells. There are no Ojo Alamo water wells reported in the area.

These water wells and ground water tables in the general area should have no bearing on the proposed Cliff House injection horizon, some 2500-3000 feet below these horizons. Deeper sandstone strata associated with the Kirtland/Fruitland, Pictured Cliffs, Lewis, Cliff House, Menefee, Point Lookout, Mancos, Gallup, Dakota, and deeper Jurassic Formations contain brackish, saline or brine waters, based on the produced saline waters associated with oil and gas production from all of these referenced horizons. The total dissolved solids (TDS) increases with depth in these formation as they occur stratigraphically deeper within the San Juan Basin.

The Mesaverde field to the north and west of Bloomfield has been analyzed and contains 38,800 TDS. TDS in the sandstone strata underlying the Ojo Alamo Formation in the Bloomfield area are projected to contain at least 10,000 mg/l and as much as 100,000 mg/l. The Basin Disposal well in Section 3 of T29N, R11W, some 4 miles to the north contained over 25,000 TDS in the Cliff House as do most of the Fruitland Coal gas wells. There are no known reported fresh water aquifers stratigraphically below the Cliff House or directly above the Cliff House in the Bloomfield area.

IX. Describe the proposed stimulation program, if any. The Cliff house and sands of the upper Menefee will be perforated between 3294' - 3408 and possibly between 3435'-3460'. These intervals will be tested for infectivity and evaluated. At that time it will be determined if fracture stimulation is necessary. If the horizons are stimulated the job will be performed using a sand/water treatment system of 40,000+ gallons of water and 60,000 lbs of sand and possibly HCL., if needed.

X. Attach appropriate logging and test data on the well. Electric well logs, induction/bulk density, will be submitted upon completion of the proposed injection well. A CBL-VDL will be run prior to the completion of the proposed injection well.

XI. Attach a chemical analysis of fresh water from two or more fresh water wells within one mile of any injection or disposal well showing location of wells and dates samples were taken.

A well location map is attached, as well as well records from the NM State Engineers Office.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geological and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any under ground source of drinking water. The Mesaverde interval, in particular the Cliff House and Menefee Formations, is a complex section of interbedded sands and shales. The section is overlain by a thick section of Lewis Shales which is considered virtually impermeable to vertical water flow under existing overburden pressures. There are no known faults in the area, nor are faults common within the basin. The bentonitic content of shales overlying the Cliff House are not conducive to permitting open fractures or faults should they exist. Known fresh water zones for the Bloomfield are the Nacimiento and possibly the Ojo Alamo, as there are no water wells in the immediate area that draw water from the Ojo Alamo. The Ojo Alamo is found at approximately 569'-734' and is about 165 feet thick depending upon the location of the upper contact with the Nacimiento. Open faulting or fractures from the Cliff House through the Lewis shale, the already saline Pictured Cliffs and Fruitland Formations is highly uncommon and highly improbable. Off-setting well records within the "area of review" indicated adequate cement isolation between the proposed injection interval and known sources of drinking water or producing intervals. There is no other evidence indicating a hydrological connection between the Cliff House interval and known sources of near surface drinking water reported in the area.

PRODUCING WELLS

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 148

API Nbr: 30045240830000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: AMOCO PROD Oper Code: 065005
Lease: SULLIVAN GAS COM-D Well: 1-E Lease Code:
Field: BASIN Field Code: 003000

T029N R011W SEC26 Spot: NW SE NW
FOOTAGES: 1475FNL 1500FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5447GR RIG HT: Log Td:
Form@TD: 602DKOT

Other Depths: DRLR 6329 WSTD PBTD 6286 OLDTD
Permit: Proj Depth: Proj Form: 602DKOT

Status: GAS Spud Date: 01 19 1980
Hole Dir: VERTICAL Comp Date: 04 02 1980
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 602DKOT

Latitude: 36.70002 Source: USGS NAD27 Longitude: 107.96414

CASING:
9 5/8 @ 293 W/ 365SX
4 1/2 @ 6329 W/ 1570SX

TUBING INFO: 2 3/8" @ 6231

Contr: ARAPAHOE Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	1298MCFD		CUT %	48/64CK	HRS
602DKOT	PERF		2/FT	6086-6242	GROSS
PERF	6086-6105	6149-6187	6218-6242	-	
SWFR	6086-6242	156000 GALS	420000 LBS SAND	FBRKP:	
TP: 100	CP: 612	SITP:	SICP:	CAOF: 1684 MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
6040JAM 360 604FRLD 560 604PCCF 1620
604CLFH 3230 604MENF 3325 604PNLK 3950
603MNCS 4180 603GLLP 5210 603GRNR 6030
602DKOT 6065

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

#	IL	#	#	EL	#

#	GR	#	#	NE	#
#	DNC	#			

OTHER WELL INFO:

DEVIATION DATA:

Meas. Depth	Drift Angle	Meas. Depth	Drift Angle	Meas. Depth	Drift Angle
832	000.50	1304	000.50	2338	000.70
2810	001.00	3305	001.00	3809	001.20
4315	001.20	4818	001.50	5319	001.70
5822	002.00	6326	002.20		

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 149

API Nbr: 30045253290000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: AMOCO PROD Oper Code: 065005
Lease: DAVIS GAS COM-J Well: 1 Lease Code:
Field: BLANCO Field Code: 008500

T029N R011W SEC26 Spot: NW SE NW
FOOTAGES: 1480FNL 1450FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5460KB 5447GR RIG HT: Log Td:
Form@TD: 604MVRD

Other Depths: DRLR 4331 WSTD PBTD 4237 OLDTD
Permit: Proj Depth: 4000 Proj Form: 604MVRD

Status: 2 GAS Spud Date: 10 29 1982
Hole Dir: VERTICAL Comp Date: 01 13 1983
Numeric Class: INL-6 FNL-5
Alpha Class: INL-D FNL-DG
Prod Form: 604CHCR 604MVRD

Latitude: 36.70001 Source: USGS NAD27 Longitude: 107.96431

CASING:
9 5/8 @ 316 W/ 413SX SET PKR @ 3500
7 @ 4330 W/ 1437SX 2 1/16 TBG @ 2765

TUBING INFO: 2 3/8" @ 4020

Contr: AZTEC DRLG Tools: ROTARY RIG Nbr: 171

INITIAL POTENTIAL TESTS:

IPF	1126MCFD		CUT %	48/64CK	HRS
604CHCR	PERF JET		2/FT	2631-2772	GROSS
PERF	2631-2670	2734-2772	-	-	
SFFR	2631-2772	127000 GALS	191000 LBS SAND	FBRKP:	
RATE: B/MIN	ADDTV: NTGN	STAGES:	1691 SCF/BBL		
TP: 82	CP: 360	SITP:	SICP:	CAOF: MCFD	

NARRATIVE: FRACT W/20#, 2%KCL, 20/40 SD

IPF	749MCFD		CUT %	/64CK	HRS
604MVRD	PERF		2/FT	3970-4030	GROSS
PERF	3970-4002	4008-4030	-	-	
SGFR	3970-4030	94500 GALS	135000 LBS SAND	FBRKP:	
RATE: 52B/MIN	ADDTV:	STAGES:	1000 PSI		
TP: 55	CP:	SITP:	SICP:	CAOF: MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
6040JAM 486 604FRLD 1175 604PCCF 1644
604CHCR 2274 604CLFH 3224 604MENF 3330
604PNLK 3970 603MNCS 4196

FORMATION BASES: (Base & Depth)

6040JAM 575

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

#	GR	#	#	CORL	#
#	CORL	#	#	ILD	#
#	EL	#	#	DN	#
#	NEC	#	#	CA	#

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045256120000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: UNION TEXAS PET Oper Code: 091214
Lease: CALVIN Well: 3 Lease Code:
Field: ARMENTA Field Code: 001300

T029N R011W SEC26 Spot: SE NE SW
FOOTAGES: 1722FSL 2209FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5556KB 5544GR RIG HT: Log Td:
Form@TD: 603GLLP

Other Depths: DRLR 5970 WSTD PBTD 5923 OLDTD
Permit: Proj Depth: 5940 Proj Form: 603GLLP

Status: OIL Spud Date: 04 29 1983
Hole Dir: VERTICAL Comp Date: 06 29 1983
Numeric Class: INL-6 FNL-1
Alpha Class: INL-D FNL-DO
Prod Form: 603GLLP

Latitude: 36.69442 Source: USGS NAD27 Longitude: 107.96165

CASING:
9 5/8 @ 314 W/ #SX
7 @ 5155 W/ #SX

LINER: 4 1/2" # 4939- 5967 W/ # SX

Contr: FOUR CORNERS DRLG Tools: ROTARY RIG Nbr: 9

INITIAL POTENTIAL TESTS:

IPP	30BOPD 278MCFD		CUT %	/64CK	HRS
603GLLP	PERF		16/IT	5295-5870	GROSS
PERF	5295-5618	5673-5870	-	-	
ACID	5673-5870	1200 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	15% HCL		
SFFR	5673-5870	138677 GALS	85000 LBS SAND	FBRKP:	
ACID	5295-5618	2500 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	15% HCL		
SFFR	5295-5618	139330 GALS	200000 LBS SAND	FBRKP:	
GTY: 40.0	GOR: 9267	COND:	B/MMCF		

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
6040JAM 550 604KRLD 660 604PCCF 1720
604CLFH 3410 604PNLK 4030 603MNCS 4210
603GLLP 5290

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045245720000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: SUPRON ENERGY Oper Code: 081740
Lease: CONGRESS Well: 9 Lease Code:
Field: BLOOMFIELD Field Code: 010000

T029N R011W SEC26 Spot: NW SE SW
FOOTAGES: 800FSL 1725FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5606KB 5595GR RIG HT: Log Td: 2962
Form@TD: 604CHCR

Other Depths: DRLR 2960 WSTD PBTD 2927 OLDTD
Permit: Proj Depth: 2930 Proj Form: 604CHCR

Status: GAS Spud Date: 03 01 1981
Hole Dir: VERTICAL Comp Date: 04 15 1981
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 604CHCR

Latitude: 36.69189 Source: USGS NAD27 Longitude: 107.96327

CASING:
7 5/8 @ 216 W/ 75SX
2 7/8 @ 2959 W/ 550SX

Contr: AZTEC Tools: ROTARY RIG Nbr: 56

INITIAL POTENTIAL TESTS:

IPF	1122MCFD		CUT %	/64CK	3HRS
604CHCR	PERF		/	2746-2869	GROSS
PERF	2746-2746	2748-2748	2750-2750	2753-2753	
PERF	2756-2756	2840-2840	2846-2846	2849-2849	
PERF	2851-2851	2865-2865	2867-2867	2869-2869	
ACID	2746-2869	500 GALS	FBRKP:		
RATE: B/MIN	ADDTV: HCL	STAGES:	7 1/2%		
SFFR	2746-2869	47500 GALS	60000 LBS SAND	FBRKP:	
RATE: 20B/MIN	ADDTV:	STAGES:	20/40 SD		
TP:	CP: 83	SITP:	SICP: 922	CAOF: 1135 MCFD	
	FPCAOF: MCFD	ATP: 3800	ISP: 1600		

NARRATIVE: ACIDIZED W/10 BALL SEALERS
10 MIN/1400 PSI

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
6040JAM 568 604FRLD 1480 604PCCF 1750
604CHCR 2735

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

00218-02962 IL # # DNC #
GR

OTHER WELL INFO:

DRILLING FLUIDS
TYPE DEPTH:
DEPTH,WT: 2960 8.6

DEVIATION DATA:

Meas. Depth	Drift Angle	Meas. Depth	Drift Angle	Meas. Depth	Drift Angle
220	000.30	775	000.50	1335	001.50
2450	000.70				

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

LOG SURVEYS:

00314-05960	ILSF	#	00314-05951	NEC	#
00314-05951	DNC	#	05156-05969	TM	#
05156-05960	ILSF	#	#	NEC	#
#	DN	#	#	TM	#

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 159

API Nbr: 30045120030000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: SOUTHERN UNION PROD Oper Code: 081740
Lease: CALVIN Well: 1 Lease Code:
Field: BASIN Field Code: 003000

T029N R011W SEC26 Spot: SW SW
FOOTAGES: 1190FSL 1150FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5588DF RIG HT: Log Td:
Form@TD: 602DKOT

Other Depths: DRLR 6450 WSTD PBTD 6414 OLDTD

Status: GAS Spud Date: 10 24 1962
Hole Dir: VERTICAL Comp Date: 12 02 1962
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 602DKOT

Latitude: 36.69296 Source: USGS NAD27 Longitude: 107.96525

CASING:
10 3/4 @ 265 W/ 225SX
4 1/2 @ 6450 W/ 459SX

Contr: GARDNER Tools: RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	5931MCFD		CUT %	48/64CK	HRS
602DKOT	PERF		1/FT	6176-6348	GROSS
PERF	6176-6176	6184-6184	6196-6196	6210-6210	
PERF	6204-6204	6211-6211	6258-6258	6262-6262	
PERF	6268-6268	6272-6272	6275-6275	6284-6284	
PERF	6289-6289	6295-6295	6336-6336	6339-6339	
PERF	6342-6342	6345-6345	6348-6348	-	
SDFR	6176-6348		FBRKP:		
TP:	CP:	SITP:	SICP: 1934	CAOF: MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604PCCF 1750 604CLFH 3320 604PNLK 4100
603GLLP 5315 603GRNR 6070 603GRRS 6134
602DKOT 6175

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

OTHER WELL INFO:

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045240840000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: AMOCO PROD Oper Code: 065005
Lease: DAVIS GAS COM-F Well: 1-E Lease Code:
Field: BASIN Field Code: 003000

T029N R011W SEC27 Spot: NW SE NE
FOOTAGES: 1490FNL 1110FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5509GR RIG HT: Log Td:
Form@TD: 602DKOT

Other Depths: DRLR 6386 WSTD PBTD 6310 OLDTD
Permit: Proj Depth: 6430 Proj Form: 602DKOT

Status: 2 GAS Spud Date: 09 07 1980
Hole Dir: VERTICAL Comp Date: 02 25 1981
Numeric Class: INL-6 FNL-5
Alpha Class: INL-D FNL-DG
Prod Form: 604CHCR 603GRRS

Latitude: 36.69996 Source: USGS NAD27 Longitude: 107.97305

CASING:
8 5/8 @ 300 W/ 300SX
5 1/2 @ 6386 W/ #SX

TUBING INFO: 1 1/4" @ 2808

Contr: ARAPAHOE Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	2472MCFD		CUT %	48/64CK	HRS
604CHCR	PERF		2/FT	2701-2810	
SFFR	2701-2810	125000 GALS	225000 LBS SAND	FBRKP:	
RATE: 9B/MIN	ADDTV:	STAGES:			
TP: 192	CP:	SITP:	SICP:	CAOF: MCFD	
IPF	391MCFD		CUT %	48/64CK	HRS
603GRRS	PERF		2/FT	6163-6170	GROSS
602DKOT	PERF		2/FT	6224-6262	GROSS
PERF	6163-6170	6224-6262	-	-	
ACID	6163-6262	17262 GALS	FBRKP:		
RATE: B/MIN	ADDTV: KCL	STAGES:	2%		
SGFR	6163-6262	64000 GALS	257000 LBS SAND	FBRKP:	
RATE: 31B/MIN	ADDTV:	STAGES:			
TP: 22	CP:	SITP:	SICP:	CAOF: MCFD	

NARRATIVE: COMMINGLED

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG

604KRLD 1464	604PCCF 1704	604CHCR 2692
604MVRD 3272	603MNCS 4292	603GLLP 5882
603GRNR 6046	603GRRS 6160	602DKOT 6222

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045078250000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: PAN AMERICAN PETROLEUM Oper Code: 065005
Lease: DAVIS GAS UNIT-F Well: 1 Lease Code: 796
Field: BASIN Field Code: 003000

T029N R011W SEC27 Spot: SW NE SE
FOOTAGES: 1850FSL 1190FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5565KB 5554GR RIG HT: Log Td: 6365
Form@TD: 602DKOT

Other Depths: DRLR 6365 WSTD PBTD 6332 OLDTD
Permit: Proj Depth: 6400 Proj Form: 602DKOT

Status: GAS Spud Date: 10 04 1960
Hole Dir: VERTICAL Comp Date: 11 07 1960
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 602DKOT

Latitude: 36.69477 Source: USGS NAD27 Longitude: 107.97325

CASING:
8 5/8 @ 332 W/ 225SX
4 1/2 @ 6365 W/ 375SX

TUBING INFO: 2" @ 6189

Contr: BRINKERHOFF DRLG Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	4490MCFD		CUT %	48/64CK	3HRS
602DKOT	PERF		6/FT	6215-6240	GROSS
PERF	6215-6219	6227-6229	6236-6240	-	
SWFR	6215-6240	40000 GALS	40000 LBS SAND	FBRKP: 1500	
RATE: 39B/MINADDTV:		STAGES:	TREAT PRESS 2500		
TP: 407	CP:	SITP:	SICP: 2089	CAOF: 5083 MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604PCCF 1716 603GLLP 5304 603GRNR 6060
602DKOT 6156

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTF	3477MCFD		CUT %	48/64CK	3HRS
602DKOT	PERF		6/FT	6215-6240	GROSS
PERF	6215-6219	6227-6229	6236-6240	-	
SWFR	6215-6240	40000 GALS	40000 LBS SAND	FBRKP: 1500	
RATE: 39B/MINADDTV:		STAGES:	TREAT PRESS 2500		

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045235540000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: AMOCO PROD Oper Code: 065005
Lease: DAVIS GAS COM-G Well: 1 Lease Code:
Field: BLOOMFIELD Field Code: 010000

T029N R011W SEC27 Spot: SW NE SE
FOOTAGES: 1805FSL 1135FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5554GR RIG HT: Log Td:
Form@TD: 604CHCR

Other Depths: DRLR 2951 WSTD PBTD 2890 OLDTD
Permit: Proj Depth: 2950 Proj Form: 604CHCR

Status: GAS Spud Date: 10 11 1979
Hole Dir: VERTICAL Comp Date: 12 18 1979
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 604CHCR

Latitude: 36.69465 Source: USGS NAD27 Longitude: 107.97306

CASING:
8 5/8 @ 295 W/ 350SX
4 1/2 @ 2951 W/ 825SX

TUBING INFO: 2 3/8" @ 2853

Contr: LAMA Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	3570MCFD		CUT %	48/64CK	HRS
604CHCR	PERF		/	2827-2839	GROSS
PERF	2827-2833	2835-2839	-	-	
SWFR	2827-2839	53125 GALS	100000 LBS SAND	FBRKP:	
TP: 280	CP: 580	SITP:	SICP:	CAOF: 4949 MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604FRLD 1510 604PCCF 1688 604CHCR 2350

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

#	DNC	#	#	NE	#
#	IL	#			

OTHER WELL INFO:

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 203

API Nbr: 30045256570000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: UNION TEXAS PET Oper Code: 091214
Lease: CONGRESS Well: 16 Lease Code:
Field: UNNAMED Field Code: 099999

T029N R011W SEC34 Spot: C NE NE
FOOTAGES: 660FNL 660FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5609KB 5595GR RIG HT: Log Td: 6183
Form@TD: 603GLLP

Other Depths: DRLR 6200 WSTD PBTD 6160 OLDTD
Permit: Proj Depth: 6200 Proj Form: 603GLLP

Status: OIL Spud Date: 05 07 1983
Hole Dir: VERTICAL Comp Date: 07 04 1983
Numeric Class: INL-6 FNL-1
Alpha Class: INL-D FNL-DO
Prod Form: 603GLLP

Latitude: 36.68788 Source: USGS NAD27 Longitude: 107.97139

CASING:
9 5/8 @ 306 W/ #SX
7 @ 5200 W/ #SX

LINER: 4 1/2" # 5016- 6200 W/ # SX

Contr: ARAPAHOE DRLG Tools: ROTARY RIG Nbr: 10

INITIAL POTENTIAL TESTS:

IPP	20BOPD 262MCFD 3BW		CUT %	/64CK	HRS
603GLLP	PERF		/	5328-6148	GROSS
PERF	5328-5688	5764-5916	6086-6148	-	
ACID	6086-6148	10000 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	15% HCL		
ACFR	6086-6148	13000 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	20% HCL		
ACID	5764-5916	4000 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	15% HCL		
SFFR	5764-5916	82960 GALS	70000 LBS SAND	FBRKP:	
ACID	5328-5688	3000 GALS	FBRKP:		
RATE: B/MIN	ADDTV:	STAGES:	15% HCL		
TP: 40	CP: 139	SITP:	SICP:	CAOF: MCFD	
GTY: 42.0	GOR: 13100	COND:	B/MMCF		

NARRATIVE: PERFD 5328-5688 W/24 IT, 5764-5916 W/16 IT, 6086-6148 W/25 IT

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604OJAM 520 604KRLD 720 604FRLD 1450
604PCCF 1750 604LWIS 1810 604CHCR 2340
604CLFH 3330 604PNLK 4080 603MNCS 4300

603GLLP 5318

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

#	DNC	#	#	NEC	#
#	GR	#	#	ILD	#
00308-05151	ILDL	#	05194-06182	ILDL	#

OTHER WELL INFO:

BHT: 122 F @ 5152 TIME.SINCE.CIRC 3 LOG: ILDL RUN: 1
BHT: 156 F @ 6183 TIME.SINCE.CIRC 4 LOG: ILDL RUN: 2
DRILLING FLUIDS
TYPE DEPTH:
DEPTH,WT: 5152 9.4
TYPE DEPTH:
DEPTH,WT: 6183 9.0

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 216

API Nbr: 30045076720000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: SOUTHERN UNION PROD Oper Code: 081740
Lease: CONGRESS Well: 5 Lease Code: 803
Field: BASIN Field Code: 003000

T029N R011W SEC34 Spot: SW NE
FOOTAGES: 2510FNL 1570FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 6619DF 6610GR RIG HT: Log Td: 6470
Form@TD: 553MRSN

Other Depths: DRLR WSTD PBTD 6430 OLDTD
Permit: Proj Depth: 6475 Proj Form: 602DKOT

Status: GAS Spud Date: 09 05 1962
Hole Dir: VERTICAL Comp Date: 10 18 1962
Numeric Class: INL-6 FNL-2
Alpha Class: INL-D FNL-DG
Prod Form: 602DKOT

Latitude: 36.68279 Source: USGS NAD27 Longitude: 107.97451

CASING:
8 5/8 @ 285 W/ 200SX
4 1/2 @ 6462 W/ 610SX

TUBING INFO: 2" @ 6275

Contr: ASPEN DRLG Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

IPF	6306MCFD		CUT %	48/64CK	3HRS
602DKOT	PERF		4/FT	6171-6380	GROSS
PERF	6171-6179	6190-6204	6250-6286	6340-6380	
SWFR	6340-6380	50000 GALS	40000 LBS SAND	FBRKP: 1000	
RATE: 43B/MIN	ADDTV:	STAGES:	TREAT PRESS 2200		
SWFR	6250-6286	64000 GALS	60000 LBS SAND	FBRKP: 1200	
RATE: 49B/MIN	ADDTV:	STAGES:	TREAT 2600-2000		
SWFR	6171-6204	27500 GALS	25000 LBS SAND	FBRKP: 800	
RATE: 40B/MIN	ADDTV:	STAGES:	TREAT 3100-2400		
TP: 522	CP: 1213	SITP: 2016	SICP: 2024	CAOF: 8844 MCFD	

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG

604PCCF 1720	604CLFH 3290	604PNLK 4060
603GLLP 5308	603GRNR 6080	603GRRS 6128
602DKOT 6170	553MRSN 6450	

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

D&A (PLUGGED WELLS)

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 171

API Nbr: 30045078120000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: UMBARGER F B TRUSTEE Oper Code: 099999
Lease: DAVIS POOLED Well: 1 Lease Code: 4570
Field: FULCHER KUTZ Field Code: 028000

T029N R011W SEC27 Spot: SW NE SE
FOOTAGES: 1650FSL 990FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5564GR RIG HT: Log Td:
Form@TD: 604PCCF

Other Depths: DRLR 1804 WSTD PBTD OLDTD
Permit: Proj Depth: Proj Form: 604PCCF

Status: D&A Spud Date: 12 10 1952
Hole Dir: VERTICAL Comp Date: 03 15 1953
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 36.69422 Source: USGS NAD27 Longitude: 107.97256

CASING:
5 1/2 @ 1717 W/ #SX

Contr: Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604PCCF 1710

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTS	0BO 0MCFD		CUT %	/64CK	HRS
604PCCF	OPENHOLE		/	1727-1790	
XPLO	1727-1790	140 QTS	FBRKP:		
XPLO	1732-1790	78 QTS	FBRKP:		

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

(Form C-103)
(Revised 7/1/52)

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL	X	REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

March, 17, 1953 (Date) Aztec, New Mexico (Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Umberger Trustee (Company or Operator) Umberger Trustee Davis #1 (Lease)

F. B. Umberger (Contractor), Well No. 1 in the SE¼ ¼ of Sec. 27,

T. 29N, R. 11W, NMPM., Pooled Unit Pool, San Juan County.

The Dates of this work were as folows: 3/17/53 to 3/25/53

Notice of intention to do the work (was) (~~was not~~) submitted on Form C-102 on December 10 (Cross out incorrect words), 19 53,

and approval of the proposed plan (was) (~~was not~~) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

We run 2" tubing to a depth of 1740' and poured 50 sacks of cement into the Pictured Cliff Sands which would fill all open holes. Then we pulled 960' of 5½" casing, filling the hole with drilling mud as we came up. After 5½" casing was removed we used 17 sacks of cement, filling the top and setting 4" Marker as required by law.

I, hereby, request that the Bond on this job be released.

Witnessed by F. B. Umberger (Name) F. B. Umberger Trustee (Company) Trustee (Title)

Approved:
OIL CONSERVATION COMMISSION

Eugene C. Chappell (Name)

Oil and Gas Inspector Dist. #3. (Title) 7-10-53 (Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name F. B. Umberger

Position Trustee

Representing F. B. Umberger Trustee

Address Box 878, Aztec, New Mexico

(VI.) D&A Plugged Well Schematic

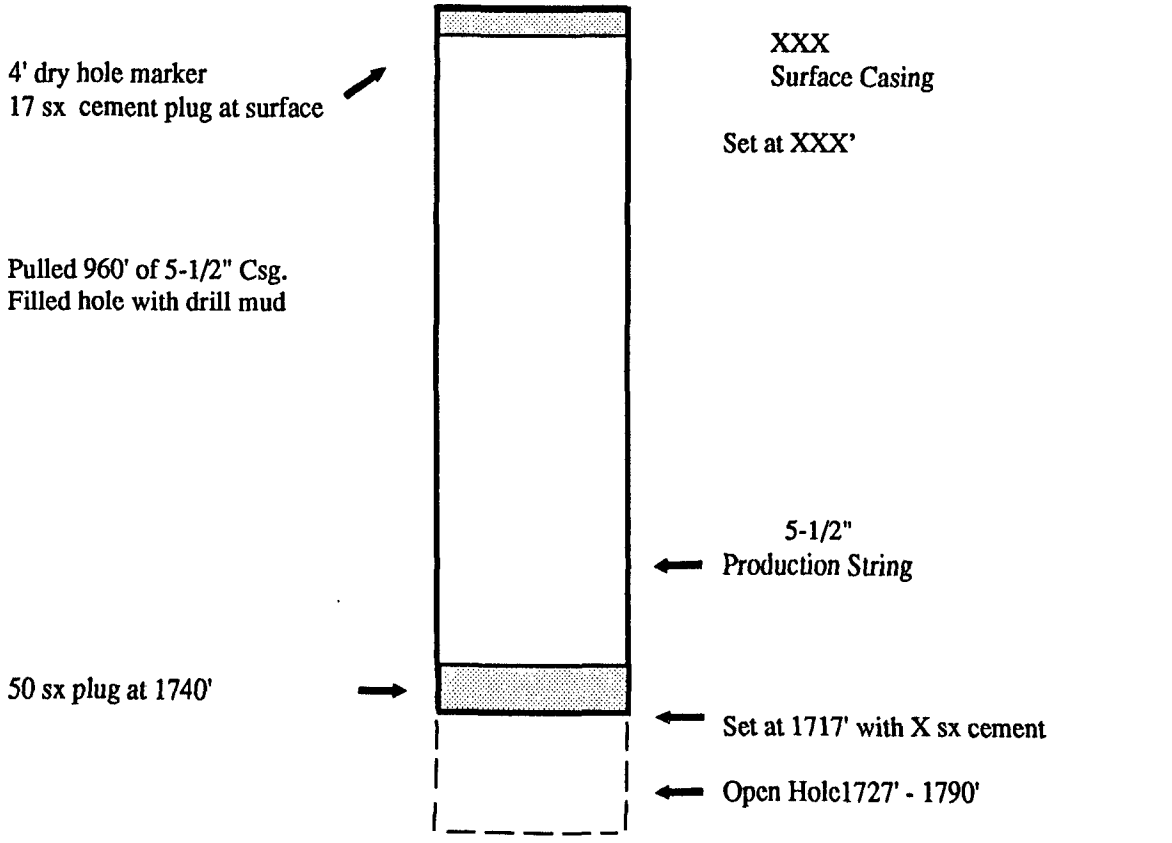
Well: Davis Pooled No. 1

Operator: Umbarger F B Trustee
Location: 1I27 29N11W; San Juan County, NM
Date Completed: 03-15-53
Date D&A: 03-25-53
Pool: Dry hole (Pictured Cliffs)

Plugging Operations

GR - 5564'

Completion Operations



"Well completed in lower Pictured Cliffs"

FULL WELL REPORT FOR FAR WEST RESOURCES

API Nbr: 30045077760000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: BIG CHIEF WESTERN Oper Code: 099999
Lease: DAVIS Well: 1 Lease Code: 4570
Field: FULCHER KUTZ Field Code: 028000

T029N R011W SEC26 Spot: NE SW SW

Oper Elev: 5590DF RIG HT: Log Td:
Form@TD: 604PCCF

Other Depths: DRLR 1870 WSTD PBTD OLDTD
Permit: Proj Depth: Proj Form: 604PCCF

Status: D&A Spud Date: 04 18 1950
Hole Dir: VERTICAL Comp Date: 10 25 1950
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 36.69239 Source: USGS NAD27 Longitude: 107.96585

CASING:
8 5/8 @ 86 W/ #SX
5 1/2 @ 1758 W/ #SX

Contr: Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

FORMATION TOPS: (Source,Names,Depths,Shows)

DLR
604PCCF 1750

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTF	OBO		CUT %	/64CK	HRS
604PCCF	OPENHOLE		/	1762-1827	
XPLO	1762-1827	320 QTS	FBRKP:		

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103
(Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

Name of Company	Address
Big Chief Western and Al Greer	

Lease	Well No.	Unit Letter	Section	Township	Range
Davis	1	M	26	29 North	11 West

Date Work Performed	Pool	County
See below	Fulcher-Kutz PC	San Juan County

THIS IS A REPORT OF: *(Check appropriate block)*

☐ Beginning Drilling Operations ☐ Casing Test and Cement Job ☐ Other *(Explain)*:

☒ Plugging ☐ Remedial Work

Detailed account of work done, nature and quantity of materials used, and results obtained.

Commenced operation for plugging of the Davis #1 well 11-7-58. Completed plugging operation 11-11-58. Work performed as follows:

11-8-58 - Shot pipe at 1408' & 1198'
11-9-58 - Shot pipe at 1017', 927' & 823' - pulled pipe into at 150'
11-10-58- Screwed back in pipe with die nipple at 150'. Shot pipe at 744' and recovered same at that point. Pipe had previously been shot by some other company at 300'but they had failed to shot pipe off.
11-11-58- Pumped in 35 sks cement on top of nub at 744' pumped in 10 sks cement in top of 9 5/8"surface pipe and placed 4" dry hole marker, leaving 4' above ground level.

RECEIVED
NOV 18 1958
OIL CON. COM.

Witnessed by	Position	Company

FILL IN BELOW FOR REMEDIAL WORK REPORTS *ONLY*

ORIGINAL WELL DATA

D F Elev.	T D	P B T D	Producing Interval	Completion Date

Tubing Diameter	Tubing Depth	Oil String Diameter	Oil String Depth

Perforated Interval(s)	

Open Hole Interval	Producing Formation(s)

RESULTS OF WORKOVER

Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover						
After Workover						

OIL CONSERVATION COMMISSION

Approved by: Original Signed Emery C. Arnold

Title: Supervisor Dist. # 3

Date: NOV 18 1958

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name: Al Greer (Owner)

Position: United Casing Pullers Inc.

Company: by [illegible]

(Form C-102)
(Revised 7/1/52)

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS NOTICES

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

Notice of Intention to Change Plans		Notice of Intention to Temporarily Abandon Well		Notice of Intention to Drill Deeper	
Notice of Intention to Plug Well	X	Notice of Intention to Plug Back		Notice of Intention to Set Liner	
Notice of Intention to Squeeze		Notice of Intention to Acidize		Notice of Intention to Shoot (Nitro)	
Notice of Intention to Gun Perforate		Notice of Intention (Other)		Notice of Intention (Other)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Aztec, New Mexico (Place) 5 November 1958 (Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Big Chief Western and Al Greer (Company or Operator) Davis Well No. 1 in M (Unit)

SW ¼ SW ¼ (40-acre Subdivision) of Sec. 26, T. 29N, R. 11W, NMPM., Fulcher-Kutz PC Pool

San Juan County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

This well originally drilled in 1950 by M. J. Florence and later transferred to Big Chief Western and Al Greer. Well was completed in Pictured Cliffs SS for 100 MCFPD and has been temporarily abandoned since completion. 8 3/4" csg was set at 86' and cemented with 55 sks. 5½" csg was set at 1758 and cemented with 120 sks. Intend to set 50' cement plug across csg shoe and cut and pull 5½" csg. 50' cement plug will be set across top of 5½" csg after cutting. 50' plug will be set at 600'. 10 sks cement plug will be set in top of surface csg and 4" marker 4' high installed. Location will be leveled.

RECEIVED
NOV 18 1958
OIL CON. COM.
DIST. 3

Approved NOV 18 1958, 19
Except as follows:

Al Green
Company or Operator

By

Position Owner

Send Communications regarding well to:

Name United Casing Pullers Inc

Address by J O Barnett Pres
Box 2055 Farmington

Approved
OIL CONSERVATION COMMISSION

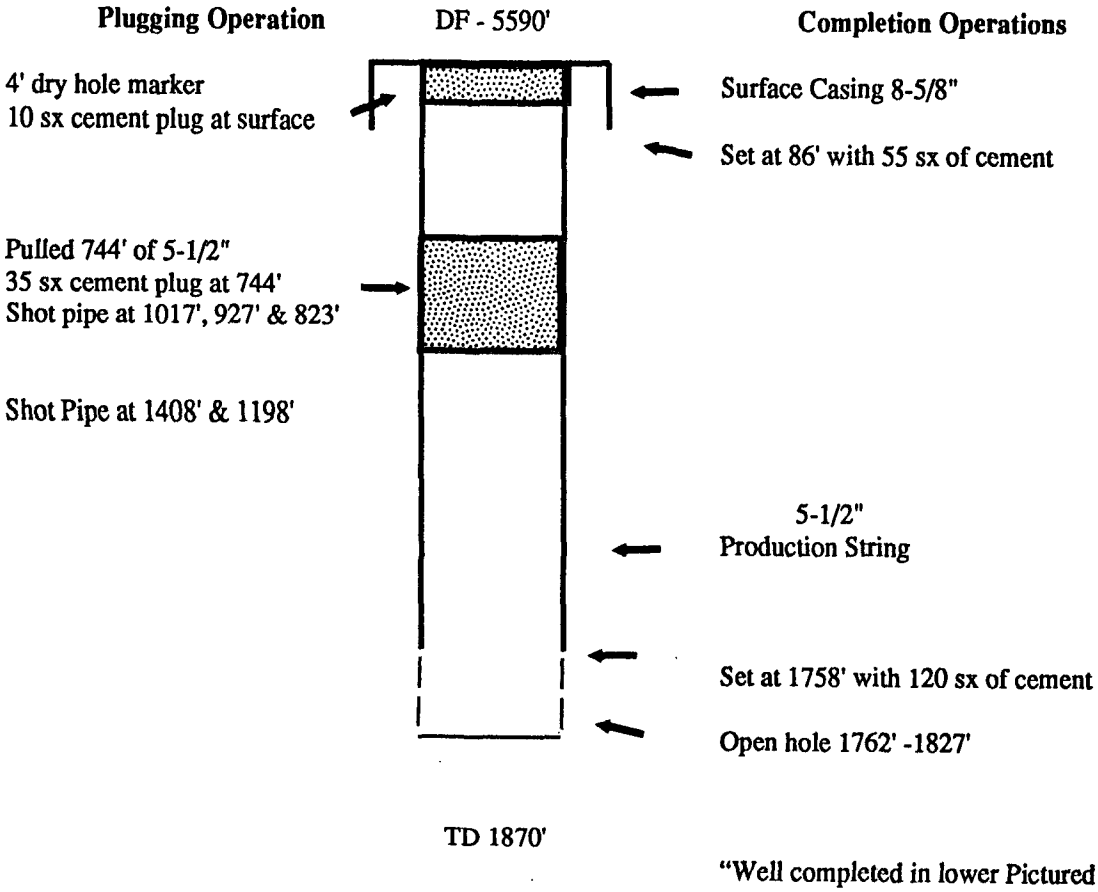
By Original Signed Emery C. Arnold

Title Supervisor Dist. # 3

(VI.) D&A Plugged Well Schematic

Well: Davis No. 1

Operator: Big Chief Western and Al Greer
Location: 1M26 29N11W; San Juan County, NM
Date Completed: 10-25-50
Date D&A: 11-11-58
Pool: Fulcher Kutz (Pictured Cliffs Production)



"Well completed in lower Pictured Cliffs"

FULL WELL REPORT FOR FAR WEST RESOURCES

CUST30 ********** JUN 05, 1992 12:49:14 ********** WELL 164

API Nbr: 30045078830000 State: NMEX County: SAN JUAN
Meridian: NEW MEXICO Meridn Code: 21
Province: SAN JUAN BASIN Prov Code: 202
Oper: UMBARGER F B TRUSTEE Oper Code: 099999
Lease: DAVIS P U Well: 2 Lease Code: 4570
Field: FULCHER KUTZ Field Code: 028000

T029N R011W SEC27 Spot: NW SE NE
FOOTAGES: 1450FNL 1120FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 5509GR RIG HT: Log Td:
Form@TD: 604PCCF

Other Depths: DRLR 1804 WSTD PBTD OLDTD
Permit: Proj Depth: Proj Form: 604PCCF

Status: D&A Spud Date: 01 03 1953
Hole Dir: VERTICAL Comp Date: 09 03 1953
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 36.70007 Source: USGS NAD27 Longitude: 107.97308

CASING:
8 1/4 @ 110 W/ #SX
5 1/2 @ 1717 W/ #SX

Contr: Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
604FMNG 793 604PCCF 1710

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTS	OBO	OMCFD	CUT %	/64CK	HRS
604FMNG	PERF		/	1463-1483	
SWFR	1463-1483		FBRKP:		

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

(Form C-103)
(Revised 7/1/52)

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

Submit this report in TRIPLICATE to the District Office, Oil Conservation Commission, within 10 days after the work specified is completed. It should be signed and filed as a report on Beginning Drilling Operations, Results of test of casing shut-off, result of plugging of well, result of well repair, and other important operations, even though the work was witnessed by an agent of the Commission. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Report by Checking Below

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF PLUGGING WELL	X	REPORT ON RECOMPLETION OPERATION		REPORT ON (Other)	

August 25, 1955 (Date) Aztec, New Mexico (Place)

Following is a report on the work done and the results obtained under the heading noted above at the

Basin Natural Gas Corporation (Company or Operator) Umberger-Trustee (Lease)

F. B. Umberger (Contractor), Well No. 8 in the SE ¼ NE ¼ of Sec. 27,

T. 29-N R. 11-W, NMPM., Pool, San Juan County.

The Dates of this work were as follows: August 18 and August 19, 1955

Notice of intention to do the work (was) (~~was not~~) submitted on Form C-102 on December 10 (Cross out incorrect words), 19 52

and approval of the proposed plan (was) (~~was not~~) obtained.

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Shot off 775' of 5½" casing, pulling 34 joints. Plugged well with 20 ~~pound~~ sacks of cement, 10 in the bottom and 10 in the top. Left 4' marker, 6' high.

It is hereby requested that the bond on this well be released.

RELEIVED
AUG 25 1955
OIL CON. COM.
DIST. 3

Witnessed by L.B. Vaught (Name) Basin Natural Gas Corp. (Company) Dist.-Supt.

Approved: OIL CONSERVATION COMMISSION

S. W. Roberts (Name)

PETROLEUM ENGINEER DIST. NO. 3 (Title) AUG 29 1955 (Date)

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name M. Franzuela

Position Asst. Treas

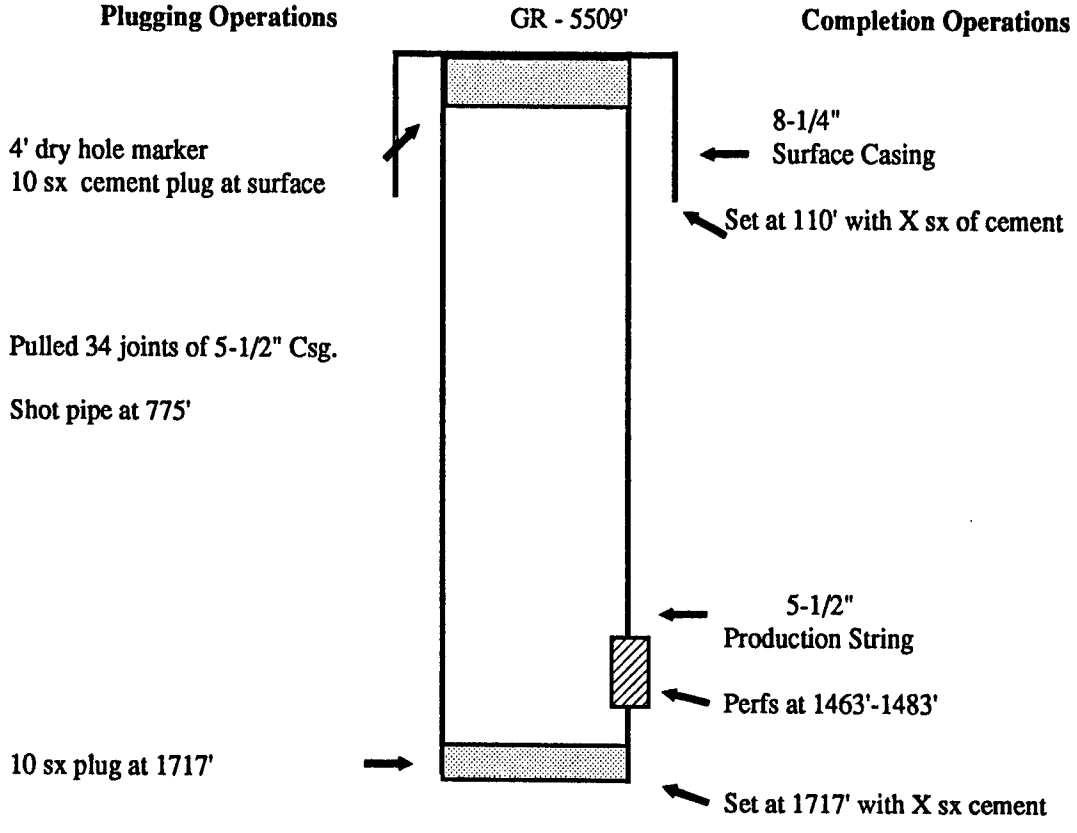
Representing Basin Natural Gas Corp.

Address 109 W. Chaco., Aztec, N.M.

(VI.) D&A Plugged Well Schematic

Well: Davis PU No. 2

Operator: Umbarger F B Trustee
Location: 2H27 29N11W; San Juan County, NM
Date Completed: 09-03-53
Date D&A: 08-25-55
Pool: Dry hole (Pictured Cliffs)



TD 1804'

"Well completed in lower Pictured Cliffs"

WATER WELLS

1 MILE RADIUS

Re[illegible]une 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Auther R. Carpenter Owner's Well No. 1

Street or Post Office Address 700 South Turner Box 16

City and State Bloomfield N.M.

Well was drilled under Permit No. SJ-1974 and is located in the:

a. ___ ¼ ___ ¼ ___ ¼ ___ ¼ of Section 22 Township 29N Range 11W N.M.P.M.

b. Tract No. ___ of Map No. ___ of the ___

c. Lot No. 2 of Block No. 4 of the Southside Addition Subdivision, recorded in San Juan County.

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

(B) Drilling Contractor Bond's Drilling Co. License No. WD-1084

Address P.O. Box 2713 Farm.

Drilling Began June 21-85 Completed June 24-85 Type tools Cable Size of hole 6 in.

Elevation of land surface or ___ at well is ___ ft. Total depth of well 47 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 11 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)
27'	29'	2'	Brown Sand, some blue Clay	12 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
6"	18.97	welded			30'		27'	31'
5"	Sch. 40	PVC	30'	47'	17'		30'	47'

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

85 JUL 22 AM 8:16
ALBUQUERQUE, N. MEX.

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 July 22, 1985

Quad ___ FWL ___ FSL ___

File No. SJ-1974 Use domestic Location No. 29N.11W.22.433 (San Juan)

Section 6. LOG OF HOLE

Depth in Feet		Thickness in Feet	Color and Type of Material Encountered
From	To		
0'	29'	29'	Brown Sand
29'	47'	18'	Blue Clay.

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.

[signature] WD-084
Driller

INSTRU[illegible]NS: This form should be executed in triplicate, preferably [illegible]ritten, 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.

Revised 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Walter N. Wampler Owner's Well No. ______
Street or Post Office Address Box 2336
City and State ~~Bloomfiel~~ Bloomfield, N.Mex.

Well was drilled under Permit No. SJ- 696 and is located in the:

a. ____ ¼ SW ¼ SE ¼ ____ ¼ of Section 22 Township 29N. Range 11 W. N.M.P.M.

b. Tract No. ______ of Map No. ______ of the ______

c. Lot No. 14 of Block No. 2 of the Bloomfield Southside Addition
Subdivision, recorded in San Juan County.

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

(B) Drilling Contractor WILLIAM J. [illegible] License No. WD-717

Address [illegible]

Drilling Began 6/27/73 Completed 7/1/73 Type tools CableTool Size of hole 6 in.

Elevation of land surface or ______ at well is 5300 ft. Total depth of well 34 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 12 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)
24	34	10	WaterBearing Sand& Gavel	15

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
6	.188		0	34	34	Drive Shoe	24	34

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 7/3/78

Quad ______ FWL ______ FSL ______

File No. RG-696 Use Dom. Location No. 29N.11W.22 430

San Juan Co.

K

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	24	24	Over Burden Sand & Boulders
24	34	10	WaterBearing Sand & Gravel

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.

W J Hazel
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

R June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Martin and Claire Gilbert Owner's Well No. 1
Street or Post Office Address 309 S. Johnson
City and State Bloomfield, N.M. 87413

Well was drilled under Permit No. SJ-2138 and is located in the:

a. NE ¼ SE ¼ ____ ¼ ____ ¼ of Section 22 Township 29N Range 11W N.M.P.M.

b. Tract No. ____ of Map No. ____ of the ____

c. Lot No. 6 of Block No. 5 of the Turner, No.2
Subdivision, recorded in San Juan County.

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

(B) Drilling Contractor Chivers Drilling Co. License No. WD-809
Address P.O. Box 663 Bloomfield N.M. 87413

Drilling Began 6-24-87 Completed 6-25-87 Type tools Cabletool Size of hole 7" in.

Elevation of land surface or ____ at well is ____ ft. Total depth of well 40' ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 7' ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
34	39	5	River Rocks	7gpm

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
7"	15 lbs.	welded	0	40	40	standerd	35	39

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

88 OCT 11 A 8:46
STATE ENGINEER OFFICE
DISTRICT
ALBUQUERQUE, N. MEX.

Section 5. PLUGGING RECORD

Plugging Contractor ____
Address ____
Plugging Method ____
Date Well Plugged ____
Plugging approved by:
____
State Engineer Representative

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

FOR USE OF STATE ENGINEER ONLY

Date Received 10-11-88

Quad ____ FWL ____ FSL ____

File No. SJ-2138 Use Dom Location No. 29N. 11W. 22. 420

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	Top Soil
3	9	6	Brown clay
9	33	24	Quick sand
33	39	6	River Rocks
39	40	1	Grey 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.

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.

Revised June 1972

TE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Carroll W. Wooten Owner's Well No. _____

Street or Post Office Address Box 1841

City and State Bloomfield, N.M. 87413

Well was drilled under Permit No. SJ-2148 and is located in the:

a. S½ NE ¼ SE ¼ ¼ of Section 27 Township 29 N Range 11 W 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 Bob Savage License No. WD-847

Address P.O. Box 2434 Farmington, NM. 87499

Drilling Began Oct-20-87 Completed Nov. 16-87 Type tools Rotary Size of hole 7 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 305 ft.

Completed well is ☑ shallow ☐ artesian. Depth to water upon completion of well 186 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)
225	285	60	water Sand Mixed with Bentonite	10

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
7	21	welded			39½	None		
4	PVC				306	None	266	306

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

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STATE ENGINEER OFFICE
DISTRICT I
ALBUQUERQUE, N. MEX.

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 Nov 19, 1987.

Quad _____ FWL _____ FSL _____

File No. SJ-2148 Use Dom Location No. 29N.11W.27.SW¼NE¼ (San Juan)

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	21	21	SAND
21	37	16	ROCKS
37	49	12	SAND STONE
49	225	176	GRAY Shale + CLAY
225	285	60	WATER SAND mixed with Bentonite
285	305	20	GRAY Shale + CLAY

Section 7. REMARKS AND ADDITIONAL INFORMATION

UNUSUAL FORMATION BECAUSE WATER SAND WAS MIXED with Bentonite AND the WATER taste very Bitter

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.

[signature]

Driller

INSTRUCTIONS: This form [illegible]

STATE ENGINEER OFFICE

WELL RECORD

Revised 1-1-1972

STATE ENGINEER OFFICE
SANTA FE, N.M. 87501

78 JUL 13 PM 1 17

Section 1. GENERAL INFORMATION

(A) Owner of well Edd H. BRown Owner's Well No. #1

Street or Post Office Address RT. #1 Box 248

City and State Aztec N.Mexico,

Well was drilled under Permit No. S.J. 700 and is located in the:

a. SW ¼ SW ¼ NW ¼ ¼ of Section 27 Township 29 N. Range 11 W. N.M.P.M.

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

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

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

(B) Drilling Contractor John C. Hargis License No. W.D. 724

Address RT. #1 Box 260-B Aztec N. Mex.

Drilling Began July 9 Completed July 10 Type tools Cable Size of hole 7 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 20 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 7 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)
10	20	10	Boulders & Sand	20

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
7	14	weld	0	20	20	Weld On Butler Larken	none	

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

78 JUL 17 A8:20
ALBUQUERQUE, N.M.

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 7/13/78

Quad _____ FWL _____ FSL _____

File No. SJ-700 Use Dom. Location No. 29N.11W.27 133

San Juan Co.

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	20	20	Boulders Sanr & Gravel Brown

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.

John C. Hargis
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 [illegible]