UIC-I - 9

GENERAL CORRESPONDENCE

YEAR(S): 2002 -> /972

Price, Wayne

From: Sent: To: Cc: Subject:

Ζ

Price, Wayne Tuesday, April 09, 2002 11:14 AM 'dpavlich@giant.com' Foust, Denny; Perrin, Charlie 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

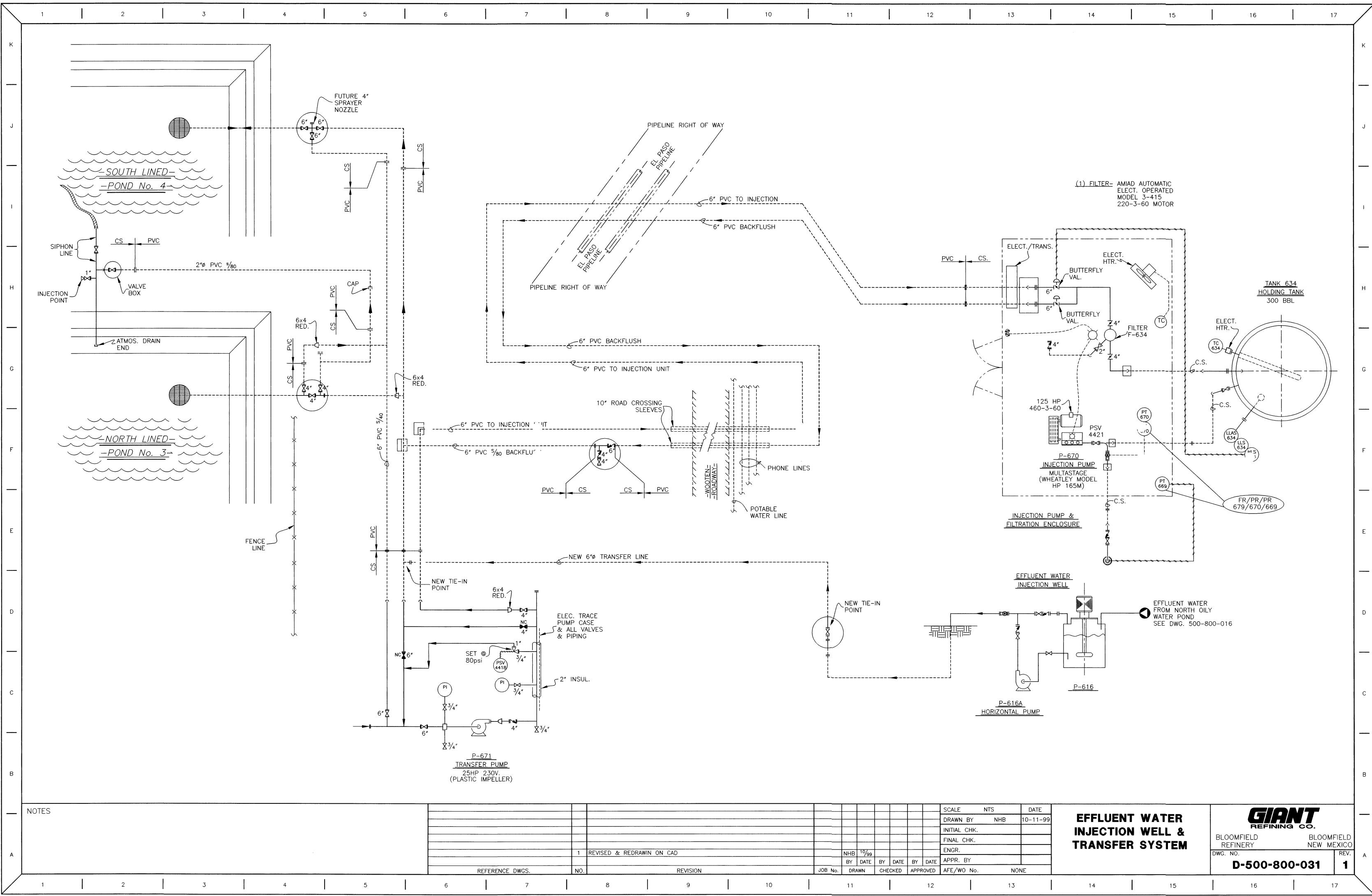
Dear Dave:

Giant Class | 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.



· · · · ·						· · · · · · · · · · · · · · · · · · ·
	7	8	9	10	11	12

	and the second state and the second state of t		 	(· · · · · · _										_		~
																l
																Γ
·····																\vdash
								·····								1
- · · -		,					·········									Ē
																F
		<u>, , , , , , , , , , , , , , , , , , , </u>	1	REVISED & RE	DRAWIN ON	CAD		······································		NHB	10/99					
											DATE	BY	DATE	BY	DATE	Ľ
·	REFERENCE	E DWGS.	NO.			REVISION			JOB No.	DR/	AWN	CHE	CKED	APPR	OVED	
6		7		8		9		10		11					12	-

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 A MARMO A MARMA MARMA

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

AFFIDAVIT OF PUBLICATION ----

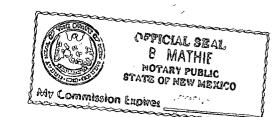
STATE OF NEW MEXICO COUNTY OF SANTA FE

I, B Reiner _ 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/ LEGAL ADVERTISEMENT REPRESENTATIVE

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

Notary Commission Expires



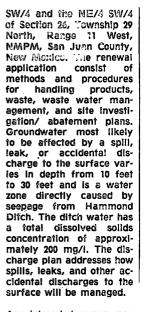
NOTICE OF PUBLICATION

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) Glant 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 Petroloum Refinery Class I (nonhazardous) 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 dis-posed 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 approxi-mately 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



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

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

My Commission Expires May 3, 2003.

COPY OF PUBLICATION

نبین ن

85

н.

918 Legals

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

Nótice 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) §27-7131:

> (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 solids 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.

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



Q



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

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 solids 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

SEAL

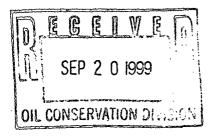
for

LORI WROTENBERY, Director



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.

ç.

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: CV 4

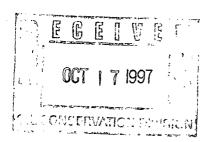
Lynn Shelton Environmental Manager Giant Refining Company – Bloomfield

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 chec	k No. 1930 dated 9/11/99,
or cash received on	in the amount of \$ 50^{44}
from GIANT INDUSTRIES ARIZONA	
for INSECTION WELL	GW-130 -
Submitted by: 20 AYNE PRICE	Date: 9/21/99
Submitted to ASD by: 2/ans fun	Date: 9/21/99
Received in ASD by:	Date:
Filing Fee 📈 New Facility	
Modification Other	
Organization Code <u>521.07</u>	
To be deposited in the Water Quality Full Payment or Annual 1	
	Increment 1930 95-207/1022
Full Payment or Annual 1 GIANT INDUSTRIES ARIZONA, INC. DBA GIANT REFINING COMPANY - BLOOMFIELD P. O. BOX 159 PH. 632-8013 BLOOMFIELD, NM 87413	Increment 1930
Full Payment or Annual 1 GIANT INDUSTRIES ARIZONA, INC. DBA GIANT REFINING COMPANY - BLOOMFIELD P. O. BOX 159 PH. 632-8013 BLOOMFIELD, NM 87413 PAY TO THE ORDER OF NMOCD	Increment 1930 95-207/1022 DATE _September 17, 1999 \$ 50.00
Full Payment or Annual I GIANT INDUSTRIES ARIZONA, INC. DBA GIANT REFINING COMPANY - BLOOMFIELD P. O. BOX 159 PH. 632-8013 BLOOMFIELD, NM 87413 PAY TO THE ORDER OF NMOCD Fifty and NO/100 Exercise Bank Boomfield Branch	Increment 1930 95-207/1022 DATE _ September 17, 1999
Full Payment or Annual 1 GIANT INDUSTRIES ARIZONA, INC. DBA GIANT REFINING COMPANY - BLOOMFIELD P. O. BOX 159 PH. 632-8013 BLOOMFIELD, NM 87413 PAY TO THE ORDER OF NMOCD Fifty and NO/100 AM	Increment 1930 95-207/1022 DATE September 17, 1999 \$ 50.00 DOLLARS DECOMPANY



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 GW 130 WD #1 Injection Well 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



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

GIANT REFINING COMPANY - BLOOMFIELD

ONE MONTH pH REPORT

SEPTEMBER 8 TO OCTOBER 8, 1997

DATE	VALUE	DATE	VALUE
010/07	7 40	0/04/07	745
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

In Shelton

in it tring

PLICONSERVICE IN DIVISION PEDICIFE

193 NG 25 EM 8 52



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:

CI H X

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

SH CONSERVE ON DIVISION RECEICED

October 15, 1996

196 MO + 6M 8 52

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

632-8013

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

011 COM. 1

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:

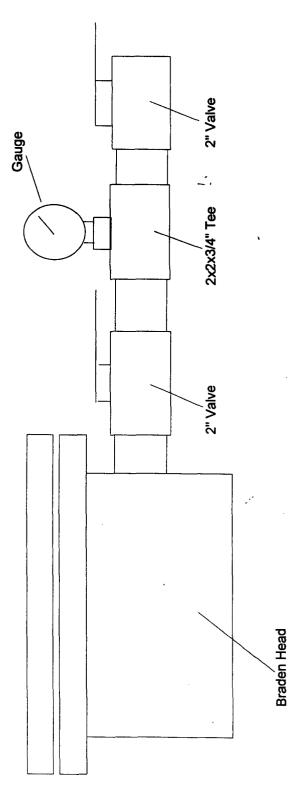
m

Lynn Shelton Environmental Manager Giant Refining Company - Bloomfield

TLS/tls

Enclosure

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



1 - A.H. r

GIANT REFINING COMPANY - BLOOMFIELD

BRADEN HEAD MODIFICATIONS

Oct-96

.



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

ARY E. JOHNSON GOVERNOR

March Ashley OIL CONSERVATION DIVISION AZTEC DISTRICT OFFICE 1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (808) 334-6178 Fax (808)334-6170

1:17 8 52

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.

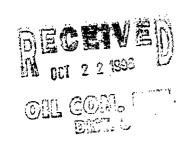
Frank T. Chavez **District Supervisor**

FTC\sh



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

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: mm

Lynn Shelton Environmental Manager Giant Refining Company - Bloomfield

TLS/tls

Enclosure

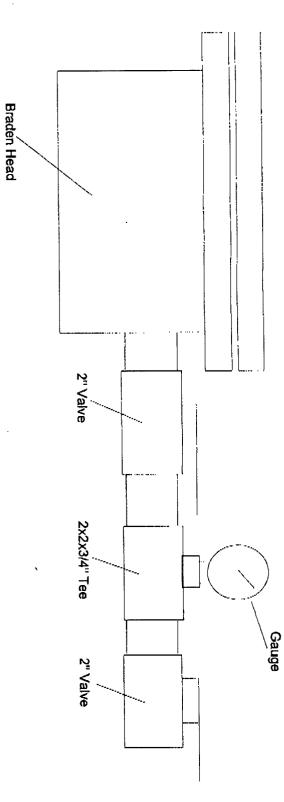
cc: John Stokes, Refinery Manager Mark Ashley, NMOCD, Santa Fe

Post-It" brand fax transmitta	1 memo 7671 # of pages . 2
Mark Asher	Co. NMOED
Co. NMOCD	Phone # 334-6178
Fax# 827-8177	Fax# 334-6170



BRADEN HEAD MODIFICATIONS

GIANT REFINING COMPANY - BLOOMFIELD



· · ·					Mark Ashley
Subasi to Appropriate District Office Suite Lease - 6 copies	Ener	State of New Y. Minerals and Nature			Form C-105 Review L-1-89
Fes Laus - 5 copies DISTRICT I P.O. Box 1980, Hobbs, NM		CONSERVAT		DN WELL APINO.	045-259202
DISTRICT II P.O. Drawer DD, Artada, I	IM HIZIO HIT B	52 Santa Fe,	NM 87505	5. Indicate Typ	STATE FEE
DISTRICT III 1000 Rio Brizos Rd., Azie				6. State Oil &	
WELL CO	MPLETION OR R	ECOMPLETION REI	PORT AND LOG		
IL Type of Well: OIL WELL	GAS WELL		LASS 1 INJEC-	TON 7. Lease Name	or Unit Agreement Name
b. Type of Completion: NEW WORK WELL OVER	Dearter - Flug			- Dist	WELL (CLASS L) Losal
2. Name of Operator GIAN	T REFININ	G COMPANY	Bloumsiers	lefil.ng & Well Nor	
3. Address of Operator P.O.	Box 159	BLOOMFIEL	D,NM 8741	9. Pool name o	r Wildcat
4. Well Location		et From The SOUT	•	-	- EAST
Unit Letter	L: <u>2776</u> Fo	et From The/	Line and	1250 Feet Fr	oun The <u>EAST</u> Line
Section 10. Date Spudded 11	27 To Date T.D. Reached	12. Data Compt. (Ready	Range //	NIMPM	County R, etc.) 14. Elev. Casinghead
12-17-93	12-23-93	1-22-94	KB 5	545', DF 55-14,	61 5530
15. Total Depth 3601	16. Plug Back T.D.	17. If Multipl Many Zot	e Compl. How 18	Drilled By	s 1 ^{Cable Tools}
19. Producing Interval(s), o DISPOSAL -	this completion - Top, MESA VER			- 2	0. Was Directional Survey Made
21. Type Electric and Other	r Logs Run		······	22. Was We	ll Cored
ELECTRI 23.		N ; BOND LOG			NO
CASING SIZE	WEIGHT LB /FT.	ASING RECORD	HOLE SIZE	CEMENTING R	ECORD S CONTRACTOR
<u>\$\$/8"</u> 5'/2"	24#	856' 3601'	12/4	Stor Canada	AUG 2 8 1996
<u></u>	13.3	2601			
·					OUL COM. DI
24.		NER RECORD		25. TU	BING RECORD
SIZE	TOP	BOTTOM SACKS C	EMENT SCREEN	2 7/8" (.5#	DEPTH SET PACKER SET 3584-10 3221 KB
26. Perforation recort $32.74'$	d (interval, size, and 3514 ¹ 3		27. ACII DEPTH IN		E, CEMENT, SQUEEZE, ETC. INT AND KIND MATERIAL USED
	45 ×4 per		3452 -	3514' 1500	GAL 15701+C1
-			3276-	3324 150	OGAL 15 POHCI
28. Date First Production		PRODI ction Method (Flowing, gas	UCTION		Well Status (Prod. or Shut-in)
N/A	Produ	alou Mabou (<i>riowing, gas</i>	iyi, pumping - Size ana ij	реринф)	Well Status (1702. Or Shinton)
Date of Test	Hours Tested	Choke Size Prod'n 1 Test Pe		Gas - MCF	Water - Bbl. Gas - Oil Ratio
Flow Tubing Press.	Casing Pressure	Calculated 24 Oil - Bi Hour Rate	bi. Gas - MC	Water - BbL	Oil Gravity - API - (Cor.,
29. Disposition of Gas (So	ld. used for fuei. vented.	elc.) ·		Test V	Vitnessed By
30. List Attachments			<u></u>		
DRILLI	JG REPORT	BY PAULTH	OMPEON; U	NESTERN TR	EATMENT <u>REPORT</u> ledge and belief
si. I nereby certify that	ine injormation show	n on boin sides of this for	rm is irue and completi	to the dest of my know	eage and venej
		L Direct			1
Signature Sym	n Shett	Printed Name	LYNN SHE	TTON Title ENV.	MGR. Date 8/27/96

118-96 to 1-72 41

BIServices Company — Treatment Report

Data 0	1/17/96	D	istrict _	FARMI	NGTON	F. Racelpi			Operator _	GIANT REFINERY
Lacsa <u>W</u>	D #1	V	all No.			Fiald	BAS	[N]	Location	SEC 26 T29N R11W
Churt y ,	SAN JU	IANS	.3:9	NM		Stage Nur	n'car		Thi s Z ane	🗆 This Well 🖸
									2650 5	
										Set At 3224
Casing S	Size 6	5 1/2 W	<u> </u>	15.56	et From	SURFACE	To '	TD Lina: S	Siza	
Linar Se	t From	To	··	 Oper	n Hole: S	jize	From	То	· Ca	asing Perforations: Size
						6-3514				
Pravious	s Treatme	nt 5	000 0	AL 1	57	Prior P	roduction_	NONE		
		Pad I	lead: N							LIQUID/GAS PUMPED AND
								Freat. Fluid Vol.		
			-	• •				1500		Gal
						-		al Prop Qty		
Prop Ty	pe: Sand	0 WP-1	o w	P-30	Baux.[]	Other				Annular Cap.
		Types and								Open Hole Cap
								g🛛 Anul.🛛		Anul.
										Pad Volume Treating Fluid
		er of Pump								Flush 12
Auxiliar	y Material	s <u>150</u>) GAL	15%	HCL WI	TH ADDS				Flush <u>12</u> Overflush <u>23</u>
··						1/70 017	****			Fluid to Recover _ 7
PROCE	DURE	PUMP I	500 G	AL 15	% HCL,	1470 GAL	HZO FL	USH		Total N ²
SUM	JARY									Total CO ₂
Time			Sur	ace	Siurry	Surface	CO, Rate	Surface	N ² Rate	[
AMPM	Treating P	ressure-Psi		BBLS.	Rate BPM	CO, BBLS. Pumped	BPM	N ^a MSCF Pumped	SCFM	Comments
			FU 11	hao	ן ייייט ן	rumpee	1	r unipsu		1
	STP	Annulus	S:ace	Total		Stace Total		Stage Total	1	
9:54	STP 0-2000		S:age	Total		Stage Total		Stage Total		PT LINES
9:54 9:58	0-2000		S:açe	Total	4.2			Stage Total		PT LINES START HCL
	0-2000 400		36		4.2			Stage Total		
9:58	0-2000 400 900							Stage Total		START HCL
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36				Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09	0-2000 400 900		36	36	4.2-3			Stage Total		START HCL START H20 FLUSH
9:58 10:09 10:19					4.2-3	.0				START HCL START H2O FLUSH SHUTDOWN
9:58 10:09 10:19	0-2000 400 900 400	e: Min			4.2-3	.0	/g	750_Cus		START HCL START H2O FLUSH SHUTDOWN
9:58 10:09 10:19	0-2000 400 900 400	e: Min	<u>36</u> 35		4.2-3	.0	/g	750 Cus 4.2 We	stern Repr	START HCL START H2O FLUSH SHUTDOWN
9:58 10:09 10:19	0-2000 400 900 400 	e: Min. ting Fluid		<u>36</u> 71	4.2-3	.0	/g /g Dens. lb.//	750 Cus 4.2 We gal. *.34 Dis	stern Repr tribution	START HCL START H2O FLUSH SHUTDOWN
9:58 10:09 10:19	0-2000 400 900 400 	e: Min		<u>36</u> 71	4.2-3	.0	/g 	750 Cus 4.2 We gal. *.34 Dis	stern Repr tribution	START HCL START H2O FLUSH SHUTDOWN
9:58 10:09 10:19	0-2000 400 900 400 	e: Min	36 35	36 71	4.2-3	.0	/g 	750 Cus 4.2 We gal. *.34 Dis	stern Repr tribution	START HCL START H2O FLUSH SHUTDOWN

BJ Services Company — Treatment Report

0219)1/20/9	<u>6</u> Di	istrict	FARMI	NGTON	F. R	oceipt MES	L396	5242	(Operator _	GIAN'	T EXPLOR	ATION
L9159_V			all NO.		10/	F13:0	MES	A VER			1638.31 <u>.</u> Te's 7ees	<u> </u>	28 T29N	
County _	SAN JU	AN S	.3:9		NM	5:33	ទ ៧២ភា	כ∋: <u> </u>			1732079	Δ	This Well	2
WELL D		G NG		0 0 18 W	о <u>л</u> v	/0-3X 1 .7	WC Set :	Misc.	Dapth 425	TD 23 Typa 9	F	ormatic RIT	CLIFF Sat At	HOUSE-MENEFE
Casing S	Siza 5	1/2 W	<u> </u>	s	et From	SURF	ACE_T	° `	[D	_Liner S	Sizə			
Linar Se	t From	To		Oper	n Hole: S	Size		From			C	asing Pa	arforations:	Size <u>.38</u>
		4												
Previous	Treatmen	nt				P	rior Pro	oduction						
. 1.11 . Anna Star	in the second	20.0									<u> </u>			
		rA Pad U Treat	ing Flui	d Type:	Foam] Water[] Acid		Treat. Fl	uid Vol.	5000)Gal.	CAPAC	AS PUMPED AND XITIES IN BBLS.
Base Flu	uid Type _	<u> 15% H</u>				_Base F	iluid Va	l	10,10)5		Gal.	Tubing Co	p <u>13.3</u>
		% Mit											Casing Ca	ρ
	•	WP-1)r						Annular Ca	ap
Prop Me	esh Sizes,	Types and	d Quant	ities									Open Hole	Сар
Hole Lo	aded With	<u>KC</u>	L H20)	Treat	t Via: Tu	Joing	Casin	gD A	nul.🖸	Tubing &	Anul.	Fluid to Lo	ad
Ball Sea	alers:		_ln			Stages o	of						Treation E	
		er of Pump												uid <u>119</u> 84.5
		<u> </u>			<u>HCL, 1</u>	O GAL	<u>1-22</u>	<u>, 25 G</u>	AL FEF	RROTRO	<u>L 300L</u>		Overflush	
		AS TREA											Fluid to Re	cover <u>240.6</u>
PROCE	DURE											s	Total N ²	
SUMA	MARY				<u> </u>							<u> </u>	Total CO ₂	
Timə AM/PM	Treating Pr	essure-Psi		ace BBLS. aped	Siurry Rate BPM	Surfa CO ₂ B Pum	BLS.	CO, Rate BPM	Surf N² M Pum	ISCF	N ² Rate SCFM		Com	ments
	STP	Annulus	Stage	Total		Stage	Total		S:açe	Total				
	0-250	Annulus			0-2.6		Total		S:açe	Total			HOLE	
1:15	0-250 0-750	Annulus	15	15	0-2.6 0-2.7	5	Total		S:age	Total		BRK 1	ST SETT	
1:15 1:23	0-250 0-750 750	Annulus	15 5.0	15 20	0-2.6 0-2.7 0-2.7	5	Total		S:age	Total		BRK STAR	IST SETT CACID 15	ST SETT
1:15 1:23 1:37	0-250 0-750 750 775	Annulus	15 5.0 36.0	15 20 56.0	0-2.6 0-2.7 0-2.7 2.6	5	Total		Stage	Total		BRK START START	IST SETT CACID 15 CFLUSH J	ST SETT
1:15 1:23 1:37 1:42	0-250 0-750 750 775 100	Annulus	15 5.0 36.0 13.8	15 20 56.0 69.8	0-2.6 0-2.7 0-2.7 2.6 2.6-0	5	Тотаі		Stage	Total		BRK START START SHU	IST SETT CACID 1S CFLUSH J TDOWN	ST SETT
1:15 1:23 1:37 1:42 2:07	0-250 0-750 750 775 100 0-800	Annulus	15 5.0 36.0 13.8	15 20 56.0 69.8	0-2.6 0-2.7 0-2.7 2.6	5			Siage			BRK START START SHU PUMP	IST SETT CACID 1S CFLUSH J CDOWN ACID AWA	ST_SETT
1:15 1:23 1:37 1:42 2:07 2:28	0-250 0-750 750 775 100 0-800 1500	Annulus	15 5.0 36.0 13.8 15.0	15 20 56.0 69.8 84.8	0-2.6 0-2.7 0-2.7 2.6 2.6-0 0-2.6	5			Stage			BRK START START SHU PUMP TEST	ST SETT CACID 1S FLUSH J CDOWN ACID AWA BRIDGE F	ST_SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42	0-250 0-750 750 775 100 0-800 1500 0-250	Annulus	15 5.0 36.0 13.8 15.0	15 20 56.0 69.8 84.8 84.8	0-2.6 0-2.7 0-2.7 2.6 2.6-0 0-2.6	5	Total					BRK START START SHU PUMP TEST H20	IST SETT ACID 1S FLUSH 1 TDOWN ACID AWA BRIDGE 1 AHEAD	ST SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44	0-250 0-750 750 775 100 0-800 1500 0-250 800	Annulus	15 5.0 36.0 13.8 15.0 5.0	15 20 56.0 69.8 84.8 84.8 89.8	0-2.6 0-2.7 0-2.7 2.6 2.6-0 0-2.6 0-2.6 2.6	5						BRK START START SHU PUMP TEST H20 START	IST SETT CACID IS FLUSH J TDOWN ACID AWA BRIDGE F AHEAD CACID 2N	ST_SETT LST_SETT AY PLUG ND_SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03	0-250 0-750 750 775 100 0-800 1500 0-250 800 800	Annulus	15 5.0 36.0 13.8 15.0 5.0 48.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 0-2.6 2.6 2.6	5						BRK START START SHU PUMP TEST H20 START START	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N FLUSH 2	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44	0-250 0-750 750 775 100 0-800 1500 0-250 800 800 200		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 137.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 0-2.6 2.6 2.6 2.6 2.6	5						BRK START START SHU PUMP TEST H20 START START SHUT	IST SETT ACID IS FLUSH J TDOWN ACID AWA BRIDGE H AHEAD F ACID 2N T FLUSH 2 DOWN	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30	0-250 0-750 750 775 100 0-800 1500 0-250 800 800 200		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 150.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 0-2.6	5						BRK J START SHU T PUMP TEST H20 J START START SHUT PUMP	IST SETT ACID IS FLUSH J TDOWN ACID AWA BRIDGE H AHEAD F ACID 2N FLUSH 2 DOWN ACID AWA	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51	0-250 0-750 750 775 100 0-800 1500 0-250 800 800 200 900		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 137.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 0-2.6	5						BRK START START SHU PUMP TEST H20 START SHUT PUMP TEST	ST SETT ACID 1S FLUSH J DOWN ACID AWA BRIDGE H AHEAD AACID 2N T FLUSH 2 DOWN ACID AWA BP	ST SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37	0-250 0-750 750 775 100 0-800 1500 0-250 800 800 200 900 0-1500		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 172.7	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 0-2.6	5						BRK START START SHU PUMP TEST START SHUTI PUMP TEST TEST	IST SETT ACID IS FLUSH J TDOWN ACID AWA BRIDGE H AHEAD F ACID 2N FLUSH 2 DOWN ACID AWA	ST SETT
$ \begin{array}{r} 1:15\\1:23\\1:37\\1:42\\2:07\\2:28\\2:42\\2:44\\3:03\\3:07\\3:30\\3:51\\4:37\\4:43\\4:45\end{array} $	0-250 0-750 750 775 100 0-800 1500 0-250 800 800 200 900 0-1500 1000 0-800 800		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 172.7 172.7	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 0-2.6 0-2.6 0-2.6 2.6	5						BRK START START SHU PUMP TEST H20 START SHUTI PUMP TEST TEST H20	ST SETT ACID 1S FLUSH J DOWN ACID AWA BRIDGE H AHEAD F ACID 2N F FLUSH 2 DOWN ACID AWA BP BS	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY
$\begin{array}{r} 1:15\\ 1:23\\ 1:37\\ 1:42\\ 2:07\\ 2:28\\ 2:42\\ 2:44\\ 3:03\\ 3:07\\ 3:30\\ 3:51\\ 4:37\\ 4:43\\ 4:45\\ 4:57\\ \end{array}$	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 172.7 172.7 172.7 176.9 212.9	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 0-2.6 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5						BRK J START START SHU T PUMP TEST H20 J STAR SHUTI PUMP TEST H20 J STAR	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD TACID 3	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY
$\begin{array}{r} 1:15\\ 1:23\\ 1:37\\ 1:42\\ 2:07\\ 2:28\\ 2:42\\ 2:44\\ 3:03\\ 3:07\\ 3:30\\ 3:51\\ 4:37\\ 4:43\\ 4:45\\ 4:57\\ 5:16 \end{array}$	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900 800 800		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 172.7 176.9 212.9 225.6	$\begin{array}{c} 0-2.6\\ 0-2.7\\ 0-2.7\\ 2.6\\ 2.6-0\\ 0-2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 0-2.6\\ 0-2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ $	5						BRK J START START SHU T PUMP TEST H20 J STAR STAR STAR STAR	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD TACID 3	ST_SETT IST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT
$\begin{array}{r} 1:15\\ 1:23\\ 1:37\\ 1:42\\ 2:07\\ 2:28\\ 2:42\\ 2:44\\ 3:03\\ 3:07\\ 3:30\\ 3:51\\ 4:37\\ 4:43\\ 4:45\\ 4:57\\ 5:16 \end{array}$	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 172.7 176.9 212.9 225.6	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 0-2.6 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5						BRK J START START SHU T PUMP TEST H20 J STAR STAR STAR STAR	IST SETT ACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD ACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD T ACID 3J T FLUSH	ST_SETT IST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT
$\begin{array}{r} 1:15\\ 1:23\\ 1:37\\ 1:42\\ 2:07\\ 2:28\\ 2:42\\ 2:44\\ 3:03\\ 3:07\\ 3:30\\ 3:51\\ 4:37\\ 4:43\\ 4:45\\ 4:57\\ 5:16 \end{array}$	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900 800 800		15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 172.7 176.9 212.9 225.6	$\begin{array}{c} 0-2.6\\ 0-2.7\\ 0-2.7\\ 2.6\\ 2.6-0\\ 0-2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 0-2.6\\ 0-2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ $	5						BRK J START START SHU T PUMP TEST H20 J STAR STAR STAR STAR	IST SETT ACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD ACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD T ACID 3J T FLUSH	ST_SETT IST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 800 800 800 800 800-20	0 	$ \begin{array}{r} 15 \\ 5.0 \\ 36.0 \\ 13.8 \\ 15.0 \\ \hline 5.0 \\ 48.0 \\ 13.0 \\ 13.0 \\ 1 \\ 15.0 \\ \hline 4.2 \\ 36.0 \\ 12.7 \\ 15.0 \\ \end{array} $	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 165.8 172.7 172.7 176.9 212.9 212.9 212.9 240.6	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5			300		stomer Reg	BRK J START START SHU T PUMP TEST H20 J START ST	IST SETT CACID 1S CFLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N CFLUSH 2 DOWN ACID AWA BP BS AHEAD T FLUSH 2 ACID AWA ACID AWA ACID AWA BC ACID AWA ACID AWA ACID AWA ACID AWA	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT AY THOMPSON
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 800 800 800 800 800-20	0 	$ \begin{array}{r} 15 \\ 5.0 \\ 36.0 \\ 13.8 \\ 15.0 \\ \hline 5.0 \\ 48.0 \\ 13.0 \\ 13.0 \\ 1 \\ 15.0 \\ \hline 4.2 \\ 36.0 \\ 12.7 \\ 15.0 \\ \end{array} $	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 165.8 172.7 172.7 176.9 212.9 212.9 212.9 240.6	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5			300		stomer Rep	BRK J START START SHU T PUMP TEST H20 J START ST	IST SETT CACID 1S CFLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N CFLUSH 2 DOWN ACID AWA BP BS AHEAD T FLUSH 2 ACID AWA ACID AWA ACID AWA BC ACID AWA ACID AWA ACID AWA ACID AWA	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT AY THOMPSON
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23 Traatin Inj. Rat	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900 800 800 800 800 900 800 900	• Min	15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7 15.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 172.7 172.7 172.7 172.7 212.5 225.6 240.6	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5		Flush	300 2.6		stern Repr	BRK J START START SHU T PUMP TEST H20 J START START SHUTI PUMP TEST H20 START STAR STAR STAR STAR STAR STAR STA	IST SETT CACID IS FLUSH J TDOWN ACID AWA BRIDGE H AHEAD CACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD T FLUSH 3 T FLUSH 3 ACID 3 T FLUSH 3 ALEAD T FLUSH 3 ALEAD ALEAD T FLUSH 3 ALEAD	ST_SETT ST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT AY THOMPSON . CRABB
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23 Traatin hj. Rat Avg. In	0-250 0-750 750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-1500 1000 0-800 800 800 800 800 800 900 800 800 900 800 8	0 	15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7 15.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5 5 	Avg	Flush)ens. lb./	300 2.6 gal8		stern Repr tribution	BRK START START SHU TEST H20 / START START START SHUTI PUMP TEST H20 / START START START START START START START START	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD FACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID 30 TFLUSH 3 ACID 30 ACID 30 ACI	ST_SETT LST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT 3RD_SETT AY THOMPSON
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23 Traatin Inj. Rat Avg. In Final S	0-250 0-750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-1500 1000 0-800 800 800 800 800 800 800 800 80	0 	$ \begin{array}{r} 15 \\ 5.0 \\ 36.0 \\ 13.8 \\ 15.0 \\ \hline 5.0 \\ 48.0 \\ 13.0 \\ 13.0 \\ 1 \\ 15.0 \\ 4.2 \\ 36.0 \\ 12.7 \\ 15.0 \\ \hline 15.0 \\ \end{array} $	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8 165.8 165.8 165.8 165.8 165.8 122.7 212.5 212.5 225.6 240.6	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5 	Avc	Flush)ens. lb./ Minute	300 2.6 gal8		stern Repr tribution	BRK START START SHU TEST H20 / START START START SHUTI PUMP TEST H20 / START START START START START START START START	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD FACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID 30 TFLUSH 3 ACID 30 ACID 30 ACI	ST_SETT ST_SETT AY PLUG ND_SETT 2ND_SETT AY RD_SETT AY THOMPSON . CRABB
1:15 1:23 1:37 1:42 2:07 2:28 2:42 2:44 3:03 3:07 3:30 3:51 4:37 4:43 4:45 4:57 5:16 5:23 Tratin hj. Rat Avg. In Final S Operate	0-250 0-750 750 750 775 100 0-800 1500 0-250 800 200 900 0-1500 1000 0-800 800 900 800 800 800 900 800 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 8	0 	15 5.0 36.0 13.8 15.0 5.0 48.0 13.0 1 15.0 6.9 4.2 36.0 12.7 15.0	15 20 56.0 69.8 84.8 84.8 89.8 137.8 150.8 165.8	0-2.6 0-2.7 2.6 2.6-0 0-2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6 2.6	5 5 1500 F 200 F	Avc	Flush)ens. lb./ Minute	300 2.6 gal8		stern Repr tribution	BRK START START SHU TEST H20 / START START START SHUTI PUMP TEST H20 / START START START START START START START START	IST SETT CACID 1S FLUSH J TDOWN ACID AWA BRIDGE H AHEAD FACID 2N FLUSH 2 DOWN ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID AWA ACID AWA ACID AWA BP BS AHEAD TACID 31 TFLUSH 3 ACID 30 TFLUSH 3 ACID 30 ACID 30 ACI	ST_SETT ST_SETT AY PLUG ND_SETT AY RD_SETT AY RD_SETT AY THOMPSON . CRABB

L

WALSH KNGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield Refinery Well Name: SWD #1Date: Jan. 18, 1996Report No.: 1Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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
Rig Costs:	1,060
Anchors:	0
Rig Move:	0
Wireline:	0
Packers, BPs,:	0
Drilling Fluids:	0
Water:	0
Bits and Mills:	0
Permits:	0
Supervision:	365
Trucking:	0
Drill Collars:	0

Tubulars:	0
Wellhead Equip.:	0
Subsurface Equip.:	0
Artificial Lift Eq.:	0
Sucker Rods:	0
Tanks:	0
Separators, Dehys:	0
Flowlines:	0
Installation/Labor:	. 0
Fittings, Valves, ect.:	0
Meters, LACT, ect.:	0
Electrical Equip.:	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 #1Date: Jan. 19, 1996Report No.: 2Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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, 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, 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 down tubing but tubing did not die. Flowed tubing back to MqCl₂ 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
Rig Costs:	2,056
Anchors:	0
Rig Move:	0
Wireline:	0
Packers, BPs,:	613
Drilling Fluids:	2,566
Water:	170
Bits and Mills:	0
Permits:	0
Supervision:	365
Trucking:	0
Drill Collars:	0

Tubulars:	0
Wellhead Equip.:	0
Subsurface Equip.:	0
Artificial Lift Eq.:	0
Sucker Rods:	0
Tanks:	0
Separators, Dehys:	0
Flowlines:	0
Installation/Labor:	.0
Fittings, Valves, ect.:	0
Meters, LACT, ect.:	0
Electrical Equip.:	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 #1Date: Jan. 20, 1996Report No.: 3Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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	Cost	cs:
Roads	and	Loc.:
Rig Co	sts	:
Anchor	s:	

	-		-
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: 9,73	2

Tubulars:

0

0

WALSE ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield Refinery Well Name: SWD #1Date: Jan. 21, 1996Report No.: 4Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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:

WALSE ENGINEERING AND PRODUCTION

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield Refinery Well Name: SWD #1Date: Jan. 22, 1996Report No.: 5Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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:

Subatily to Appropriate				as of New		-			For	- C-105
Diand Office Sule Lease - 6 copies		Enersy	, Munerals I		FLEBOU	rces Departmen			Revi	eed 1-1-89
Fos Lass - 5 copies DISTRICT I P.O. Box 1980, Hobbs, N	M 88240	OL		RVAT		DIVISION		エルア NO . ふ	0-045-	28002
DISTRICT II P.O. Drawer DD, Artesia	NM 88210					87505	5.	Indicate Type		
DISTRICT III 1000 Rio Brazos Rd., Az	100, NM 87410)				/	6	State Oil & C	ias Losso No.	<u></u>
WELL C	OMPLETIO			ION REPO		NDIOG		ΠΠΠ	///////////////////////////////////////	mm
14. Type of Well:							7.	Leus Name	or Unit Agreement I	Name
OIL WELL	GAS WE					1 INSECTION	•	wD w	ELL (CL	Ass 1)
WELL OVER				бул [] ОЛН	.			-		
2. Name of Operators	GM fierd			ANY			8	Well Na.	JD#1	
3. Address of Operator P.O. Bo	X 159				in	87413	9.	Pool name o	r Wildeat	
4. Well Location Unit Letter						Lipe and	250	Feet Fre	m The EA	ST Line
Section	21 2'	1		9 N	Range					County
	11. Date T.D. R		12. Date Con	apl. (Ready to		13. Elevatio	as (DFd	RKB. RT. GR		. Casinghead
A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNE	12-23-		1-1	22-94		KB 554	15'DA	5544',	44550'	
15. Total Depth 3601'		Back T.D.	17	7. If Muhiple Many Zone	N	How 18. Int. IA Dr	ervils illed By	Rotary Tools		
19. Producing Interval(s)	-	•		~				-12). Was Directional S	urvey Made
DISPOSAL 21. Type Electric and Ou	er Logs Run							22. Was Wel	NO i Cored	
ELECTR,	IC IND					<u></u>	l		APR OF	JUNATO
						rt all strings s			UE G	
CASING SIZE		<u>r lb.ft.</u>	DEPTH			DLE SIZE	CEM	ENTING RI		NOUNT POLICE
<u>\$3/A</u> \$'/z "	15.5		360			77/8"			AUDIZ	
									OIL do	
										146 DUV. 163
24							- <u>r</u> -			
SIZE	TOP		ER RECOR				25.		BING RECORD	1
SILE	10P		MOTTOM	SACKS CEN	MENT	SCREEN	27/8	STZE " 6,5#	DEPTH SET	PACKER SET
		<u> </u>		·····			1 - 18	· · · · · · · · · · · · · · · · · · ·	3281'	3221 KB
26. Perforation reco	ord (interval,	size, and	number)			27. ACID, S	HOT, F	RACTURI	E, CEMENT, SC	UEEZE, ETC.
3276 -	-		•	5		DEPTH INTER	VAL		NT AND KIND MA	
		000 E	OT			3276 - 3:	514'		ATTACHEL	
14	15 K 4,	PERM						(SAN	A FRACT	VKE)
28			<u> </u>	PRODI	CTIC)N	,	L		·
28. PRODUCTION Date First Production Production Method (Flowing, gas lift, pumping - Size and type pump) Well Status (Prod. or Shu N/A V/A						od. or Shua-in)				
Date of Test	Hours Teste	xd (Choke Size	Prod'a Fo Test Perio	-	Oil - Bbl.	Gas - MC		Vater - Bbl.	Gas - Oil Ratio
Flow Tubing Press.	Casing Pres		Calculated 24- Hour Rate	ાં - ઉદ્ય ન		Gas - MCF	Wal	Ler - BbL	Oil Gravity - A	Pl - 1Cor.,
29. Disposition of Gas (S	Sold. used for fi	el. venied, ei	c.)					Tes W	itnessed By	
30. List Antichments	ESTER	N me	EATME	ENT R	EPO	RT			<u></u>	<u></u>
31. 1 hereby certify the		•					the best	of my knowl	edge and belief	
Signature	m J	hill	¢	Printed Name	LYNI	N SHELTE	Tit	le ENV.	MGR.	Dare 8/27/96
3-1-96	to 3-	7-96								



The Western Company Treatment Report



	rch 1, 199		District Farmington NM F.Receipt 398367 Operator Giant Reflaery										
							Field Bianco Location			-			
						Stage Number <u>1</u> This Zo			-				
			State New Medico				-						This Well 🛛
	Image: NG NG NO OO WD IW Misc. Depth TD/PB 3,600' Formation Mesa Verde Image: No Image: NA WL N/A Set at: N/A Type Packer N/A Set at N/A												
Casten St		Tuoing W.	Size NA	w	/L_N/A_		Set at	" <u>N/A</u>		Lype rat	CKET <u>TVA</u>	Set a	
-												Wt	
	Iner 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												
				r	loies Per i	/00(<u>q</u>							
		N/A						Pno	r Product	tion <u>N/A</u>			222200000000000000000000000000000000000
	MARNI		Pad Used	i:Yes 🖾	No 🗖		Pad Ty	pe_ <u>Slick W</u>	Vater				
			Treat Fli	aid Type: '	Foam 🔲 V	Vater 🛛	Acid 🗖		Vol. 130,	410	Gal.		
Base Flui	id type <u>H</u> :	20		••				1 Vol. <u>123,</u>		-	C.1		
		96 Mitcl									1 34	Tubing Cap.	
-		 2 WP-1 [•								Casing Cap.	
		Types and Q										Annular Cap.	
		H2O					sing 🖂	Anul.	Tubin	e & Anul.	~ I	Open Hole Cap Fluid to Load_	
					-						I.	Pad Volume	
		of Pumps l								<u> </u>			
		54# XCIE						<u></u>				Treating Fluid	
1	W1000000000		<u>/u-av</u> ; <u>/ -</u> .		<u></u>		····	<u> </u>			1	Flush	
l		DIIM				<u>~~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		4/11 214(- 11/0#			Over Flush	
								<u>#/11,214 (</u>	<u>j. 1/47</u>			Fluid to Recover	
		1997 - 4 / 1 - 4	10 G. 2#/	3,150 0	<u>105n.</u>			- 2				Total N2	
		<u>u</u>						~~~ 7			T	Total CO2	<u>N/A</u>
Time	Trasting	PressPsi	Surf. Slurry		Slurty Rate		face bbls	CO2 Rate		rface MSCF	N2 Rate		omments
АМ/РМ	litauno	Plesser J.	Pum		BPM		aped	BPM		nped	SCFM	Salety M	eeting/Test Lines
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total			
PM5:50	0		0		60							START PAD	
5:58	1700		514		65						<u> </u>	START 1/2#	
6:05	1580		486	1000	65	!			<u> </u>	ļ		START 1#	
6:14	1510	1	525		66	i'	 	 		_		START 1 1/2#	£
6:18		1	285	1810	65	 		↓	·			START 2#	
6:37	1470	1	220	3030	65	├ ────	 	╂┦			+	SHIFT DOWN	
6:38	1000	<u> </u>	75	3105	40						+	SHUT DOWN	5 MINS-720
├ ───┤	i'	<u> </u>	<u>├</u>	·	 1		├	 +	i	 	+	10 MINS-710	
	i	<u> </u>	 †	i	·•		 	<u>}</u> †	í	1	+		
	I	t'			·	[<u> </u>			1	†		
	Í												
			<u> </u>		<u> </u>					<u> </u>	<u> </u>		
	ļ	ļ		ļ]	<u> </u>		ļ	ļ!	 	. 	<u> </u>		
	<u> </u>	ļ	↓	ļ]	ļ!	ļ		ļ	 	_	_	<u> </u>	
i	<u> </u>		<u> </u>	<u>نــــــ</u> ا	<u> </u>	<u> </u>		<u> </u>	<u>i</u>	1	<u> </u>		
1 .	-	Min <u>1470</u>			Max. 170			1500			•	ntative Paul Tho	
	e on Treati . Rate_ 65	ing Fluid_6	5	LS.D.P.	Rate on F			is. lbs/gal_l	• 2A	-	Represent tion NOR!	tative <u>Harry Mit</u> MAL	cheil
	*****	Final S	Shut-in Pre			t ·		15 155/gai_	5	—	aon <u>NOR</u> autes	MAL	
Job						3500							
	UDD NILLINDER Operator's Maximum Pressure (psi)_3500 Recommendation ID# FM050525												

3-96 Mark hally, Tym Shellon, Kozar Boderson, Reny Donst, Ald Carroll, John States, had Sarly Der nand the fine reduced because of "good harth" actions ainte occurance, alisinthear only well-ener. time device and of 1/25 PSI. 55 J'X1600 stry rand inject per eliminated. Sno-528 requires limiting plevice Sery mant amulas pressure pir eliminated. They want light reporting fine eliminated. all fines attenthan \$ 5K mil he normed,

Roger Anderson



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

AZTEC DISTRICT OFFICE 1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 07410 (506) 334-6170 Fax (506)334-6170

GARY E. JOHNSON GOVERNOR

80 MB MA AN 8 52

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





ł.

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
То:	Rand Carroli
Cc:	William Lemay
Subject:	Giant Refinery Meeting
Importance:	High

0

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

Page 1



Mark Ashley

From:	William Lemay
Sent:	Friday, August 23, 1996 2:41 PM
То:	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
То:	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
То:	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.

1 I						
Submit to Appr District Office State Lease 6 For Lease 5 c	cupics	Evergy, 1	State of New 146 Minerals and Natural R		ht	Form C-101 Revised 1-1-89
DISTRICT I	Hobbs, NM 88240	OILO	CONSERVATIO P.O. Box 200		ALT INC. (assigned b	y OCD on New Wells) 5-290-02
DISTRICT II), Artesis, NM 88210	Sa	anta Fe, New Mexico	87504-2088	S. Indicate Type of	
DISTRICT III 1000 Rio Brazo	Rd., Aziec, NM 8741	D			6. State Oil & Gas I	
AF	PLICATION FOR		O DRILL, DEEPEN, (OR PLUG BACK		
la. Type of Wo		<u></u>			7. Lease Name or U	nit Agreement Name
b. Type of Well	GAS	RE-ENTER	SINGLE	PLUG BACK		
WELL		Class I	Injection 20NE	XX ZONE	Bloomfield	Refining 137
Bloomfiel	d Refining Co	mpany <u>3-</u>	2:218		Disposal 🐲	
3. Address of C P.O. BOX	Operator 159, Bloomfie	eld,NM 8	37413		9. Pool pame or Wil Blanco Mesa	verde 723/0
4. Well Locatio		42 For For Fr	om The - Last Sou		250	Count h
						(
Section	27 	Townst	_{ip} 29N _{Ra}	_{nge} 11W	NMPM San Juar	Cou
			10. Proposed Depth 3,600		11. Formation Cliff House	12. Rotary or C.T. Rotary
13. Elevations (S 5530' GR	how whether DF, RT, G	R, etc.)	Kind & Status Plug. Bond CLB	15. Drilling Contra Aztec Wel	ictor 16. Apr	prox. Date Work will start)-16-93
17.			OPOSED CASING A			
SIZE OF H		FCASING	WEIGHT PER FOOT	SETTING DEPT		NT EST. TOP
12 1/4"	8 5/	'8"	48 <u></u> ∵ #	830'	400	Surface
7 7/8"	5 1/	2"	15.5#	3500'	700	Surface
formation E-logs, a perforate g jo Alamo	(Mesa Verde) portion of t d, stimulated (569'-743').	into the the Cliff and test The pu	es to drill, log e upper Menefee House and upper ted as needed. rpose of the wel and Discharge Pl	formation and Menefee form Surface casin 1, is a Class an on file wi	upon examinatic ation will be se g will be set be I Non-Hazardous	on of the electively elow the s Injection
	ACE DESCRIBE PROP YOUT PREVENTER PROGRA		AM: IF PROPOSAL IS TO DEEPE			NE AND PROPOSED NEW PROD
			to the best of my knowledge and	belief.		
SIONATURE		Caller			dent, Refining	DATE 9/23 93
TITE OR FRINT N	ME David Ro	derick				TELEPHONE NO. 632-80
(This space for Su	te Use)	Julso	~т	DEPUTY OIL 1. GAS	INSPECTOR, DIST. 43	10/21/93
	TROVAL, IF ANY:					
Swi	$> \cdot 52^{8}$				10-	21-94
<u> </u>						

۰.

Cubmin to Appropriate Distruct Office State Lease - 4 copies Fee Lease - 3 copies

ļ

1

330

0

660

990

1320 1650 1980 2310 2640

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

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-102 Revised 1-1-89

ļ.

OIL CONSERVATION DIVISION P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT II O. Drawer DD, Artenia, N	IM 88210					•
ISTRICT III 000 Rio Brazos Rd., Azter				EAGE DEDICATIO		
	fining Company		Bloom	field Disposal		Well No. 1
Juit Letter Section	27 29	IN	Range	11W	NMPM San J	uan
2442.3 feet f	well: rom the South	line and	1250.4		feet from the East	line
Ground level Elev. 5530	Producing Formation KCH (MV)		Pool Blanco	o Mesa Verde		Dedicated Acreage: N/A Acres
2. If more than a 3. If more than a unitization, fo Yes If answer is "no" this form if nece	list the owners and tract desc cusary.	ell, outline each and p is dedicated to the ? answer is "yes" typ riptions which have	i identify the o s well, have the pe of consolid s actually been	ownership thereof (both a he interest of all owners b fations <u>N/A</u> a consolidated. (Use rever	s to working interest and sea consolidated by con	munitization,
No allowable wi	Il be assigned to the well until indard unit, eliminating such in	all interests have b sterest, has been ap	een consolidat	ted (by communitization, s Division.	OPERA I hereby contained her	TOR CERTIFICATION certify that the informati ein in true and complete to t
			که سرده ویت می		Signature Printed Name David Ro	whether and belief.
				FEL	Company	es., Refining
				1250.4		YOR CERTIFICATION
	SEP2 4199	المستعدة		WATER INJECTION WELL GROU ELEVATION 5530	JNC supervison, a	ify that the well location sho was plotted from field notes is made by me or under t nel that the same is true a se best of my knowledge a
			m		Date Surveyer	9/20/93
	ك ، الانتاذين		FSU 2442		Signation & S Profession S 4 B B B B B B	RD P. CHE
[ŧ	<u> </u>	Centificate No	F NEALIS

2000

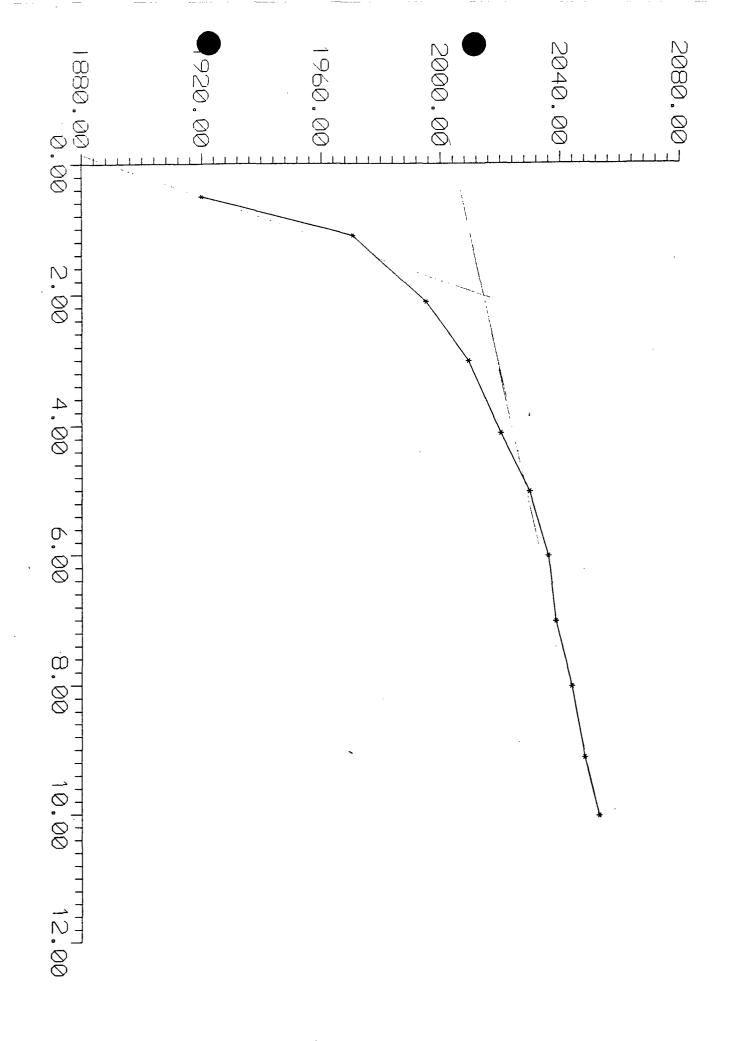
1500

1000

T

500

٦.



ĺ



THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

	BLOOMFIELD	REFINING	DISPOSAL #1	1-22-9.
• • •		Tes= #2		· · · ·
	Time	2.470	PSI	- ·
START	12,50 PM	· 5 BPM	515	
	1. 65	1 BPM	580	
2	1.20	2.1 BPm	643	
	135	3 BPM	233	
4	1.50	4.1 BPM	860	
	2 25	5 B.P.M.	<u>کت و اتمار</u>	
		6 Ban	11.75	
		and Brand	1372	
8	•	an Eller	16 12	
-	3.05	1.1810m	1912	
	2.25	10 EPM	2185	
`		·	·	
· · ·			Same S	ن 🗧

, . . .

.

· · ·

. -----

u a Manaz

. . .

Welltite

TIERRA ENVIRONMENTAL CORPORATION

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

UY

OPERATIONS OFFICE 909 W. Apache Farmington, NM 87401 505-325-0924 December 13, 1993

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

) # 3 E J V F -DEC1 41993 OIL CON DIST

RE: DISPOSAL OF DRILLING FLUIDS FOR BLOOMFIELD REFINERY WD #1 I = 27 - 29W - 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.

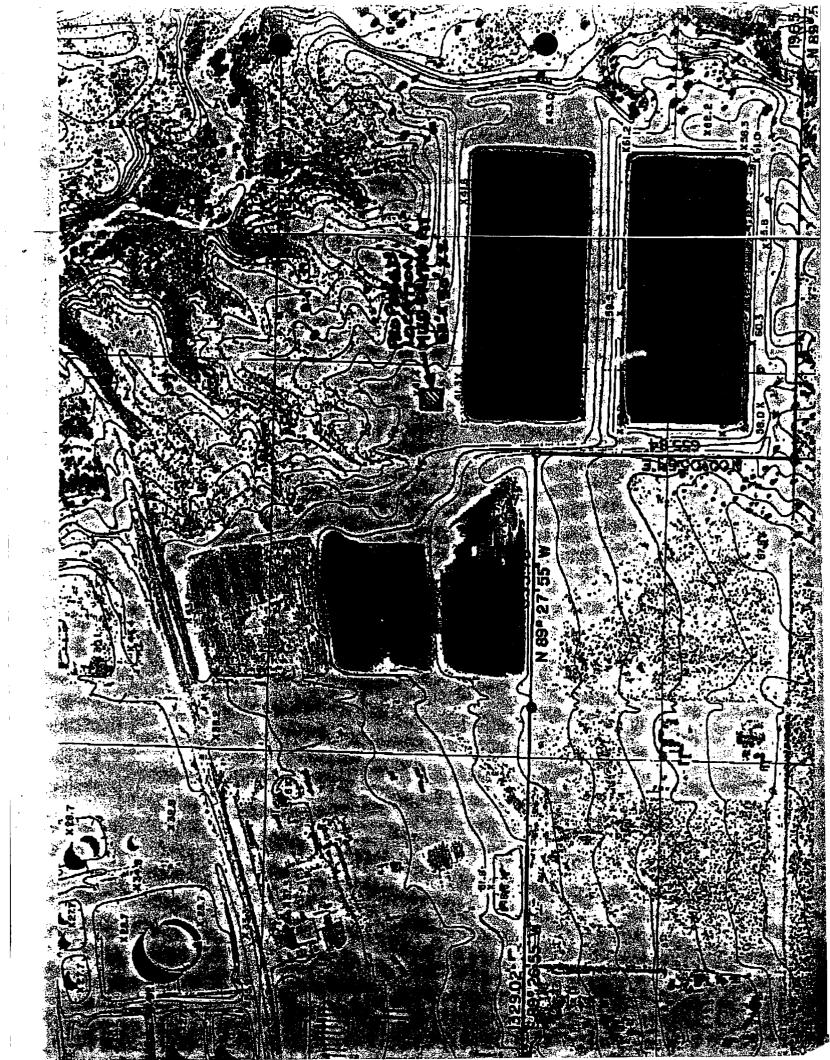
Therefore, it is proposed that the cuttings and water generated during drilling be transferred to a 250 bbl steel holding tank from the rig's steel mud tank. The spent drilling fluid (water and cuttings) will then be pumped from the holding tank and transferred via truck to an earthen reserve pit on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

Sincerely,

TIERRA ENVIRONMENTAL CORPORATION

)an Hosuer

L. Daniel Hoover, Ph.D Director of Research



STATE OF NEW MEXICO



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

October 7, 1993

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO 87504

(505) 827-5800

BRUCE KING GOVERNOR

ANITA LOCKWOOD CABINET SECRETARY

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

> > 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

Di l' 5 1 OCT1 5 1993 CH. CON. DIV. DIST. 3

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	State of N Every, Minerals and Nat	ural Rese	ources Department		Form C-103 Revised 1-1-89
DISTRICT I P.O. Box 1980, Hobbs, NM 88240	OIL CONSERVA P.O. B	ox 2088	. (WELL API NO.	· · · ·
DISTRICT II P.O. Drawer DD, Artonia, NM 88210	Santa Fe, New Ma	exico 8	7504-2088	5. Indicate Type	of Lesso STATE FEE
DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410	CON. DIV.			6. State Oli & G	······································
SUNDRY NOT (DO NOT USE THIS FORM FOR PRO DIFFERENT RESER	CES AND REPORTS OF	EEPEN O	R PLUG BACK TO A	1 -	w Unit Agreencet Name ield Refining WD
1. Type of Well: ORL GAS WELL WELL	XXonex	INJEC	TION	Disa	Sol?
2. Name of Operator BLOOMFIELD REFI	NING -			8. Well No. / #1	·····
3. Address of Operator ON SI	TE TECHNOLOGIES, BOX 2606 Farming	-		9. Pool same or	Wilden MESA VERDE
4. Well Location	50 Feet From TheEAST	. .		2 Peet Pro	m The SOUTH Line
Section 27	Township 29N	Rang	. 11W	NMPM San	Juan County
	10. Elevation (Show v 5544 DF	whether DF	7, RKB, RT, GR, etc.)		
11. Check . NOTICE OF INT	Appropriate Box to Indi ENTION TO:	icate Na		-	r Data REPORT OF:
	PLUG AND ABANDON		REMEDIAL WORK		
	CHANGE PLANS		COMMENCE DRILLING	OPNS. XX	
			CASING TEST AND CE	MENT JOB	
OTHER: DRILLING OPERA	TIONS	XX 0	OTHER:	····	
12. Describe Proposed or Completed Opera work) SEE RULE 1103.	tions (Clearly state all pertinent de	stails, and j	give pertinent dates, inclu	ling estimated date of	A starting any proposed
WELL WAS SPUDDE	O ON 12 ¹ / ₄ Surface	e hole	e at <mark>2:00</mark> 12	2/17/93	
cer	ill to 861' set ment with 280 sx at, circulate 50	x page	esetter lite	-	
5½ lit cer	7 7/8" hole at ' casing at 3595 te and 250 sx Cl ment to surface. /24/93.	5', ce Lass '	emented with "B" neat, ci	410 sx r rculated	acesetter 50 BBL
I bordby certify that the information above is true SKONATURE	1 set complete lefter best of my knowle Mush 4. WILBANKS	odge mei bei 1111.E	in Ayent		DATE <u>12-27-93</u> TELEPHONE NO. <u>325-8</u>
(This space for State Use) Original Signed by C	NARLES GHULSON		PUTA GALA BAD A		
APPROVED BY	······································	me	ير بن 73 × مالات ترامية يميت 	ما سرم وروار بروار کامی مراجع	DATE

The Set is a set is set is set is a set is a set is a			TION DIVISION	WELL API NO.
Interview Rd., Asso, NAT 1740 Interview Rd., Construction Rd., Construction Rd., Response Rd., Rd., Rd., Rd., Rd., Rd., Rd., Rd.,	DISTRICT II	Santa Fe New M	01 2088 10100 87504-2088	
Ideal Barbar Rd, Asse, NM, ET410 OUL GON, DUV. A Sub OI & Gui Leas No. Ideal Barbar Rd, Asse, NM, ET410 OUL GON, DUV. A Sub OI & Gui Leas No. IDEAL SUNDEY NOTICES AND BERGED SO NUMELS. T. Lease No. IDEAL OTHER CONSTRUCTION FOR PERMIT T. Lease No. IDEAL OTHER CLASS I INJECTION SUND WELL (CLASSIL). I. Type of Wall. OTHER CLASS I INJECTION SUND WELL (CLASSIL). I. Type of Wall. OTHER CLASS I INJECTION SUND WELL (CLASSIL). I. Type of Wall. OTHER CLASS I INJECTION SUND WELL (CLASSIL). I. Mare of Openior SUND WELL SUND WELL SUND WELL I. Mare of Openior I. SUNT COMPANY - BLOTO MELLO SUND WELL SUND WELL Vest Lossico I. S. 2027 Terming 27 SUND WELL SUND WELL Vest Lossico I. S. 2027 Terming 27 INTERNITION TO: SUBSEQUENT REPORT OF. Sund Clear Enservice (Market Market Market MARKET RT. CR. etc.) NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF. A ITERING CASING III. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF. SPERFORM REWORL W	P.O. Drewer DD, Artesia, NM \$8210	JAN 7 7 1996	D	
SUNDERV NOTICES AND SECTION WELLS (00 NOT USE THIS PORI FOR PROPOSALS) 1. Type of Well 00 PROFENT RESERVOR. USE APPLICATION FOR FEMANT (FORM C-101) FOR SUCH PROPOSALS) 1. Type of Well 0001 01001 1. Type of Well 0001 1. Type of Well 0001 1. Type of Well 0001 1. Type of Well 0011 1. Type of Well 00110 2. Name of Operator P. D. BOX 1. Type of Well	DISTRICT III 1000 Rio Brazos Rd., Aziec, NM \$7410	oil Con. Di		
Stall OTHERCLASS I INJECTION SWD WELLCCLASSIUN. 2 Name of Operator G. (ANT REFINING COMPANY - BLOTOM FIELD & Well No. ±1 3. Address of Operator 9. Pool same or Wildet 8. Well No. ±1 3. Address of Operator 9. Pool same or Wildet 9. Pool same or Wildet 4. Well Localio 9. Pool same or Wildet 9. Pool same or Wildet 4. Well Localio 27 Towaship 29 NATM 11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF: 11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF: 12. Decembor Proposed or Completed Operations (Cherry state of perimer details, and give periment dece, including estimated date of starting any proposed work) SEE RULE 1103. ALTERING COMPANY - BLOD MFIELD PROPOSES TO RESTING AND ADANDON 12. Decembor Proposed or Completed Operations (Cherry state of perimer details, and give periment dece, including estimated date of starting any proposed work) SEE RULE 1103. ALTERING COM MANDON 12. Decembor Proposed or Completed Operations (Cherry state of perimer details, and give perimers decembor to Dece	(DO NOT USE THIS FORM FOR PR DIFFERENT RESE	ICES AND REPORTS ON OPOSALS TO DRILL OR TO D RVOIR. USE "APPLICATION F	N WELLS EEPEN OR PLUG BACK TO A FOR PERMIT	7. Lease Name or Unit Agreement Name
2 Name of Operator i. Well No. #! 3. Address of Operator P.O. BOX ST P.O. BOX ST 4. Well No. #! 3. Pool same or Wildeit 2. No. Box ST 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Well No. #! 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Pool same or Wildeit 9. Pool same or Wildeit 10. Elevation 9. Pool same or Wildei		OTHERCL	ASS T INTECTION	SWD WELL (CLASSIN.
3. Addimain of Operation P. O. BOX 159. 9. Pool same or Wildowi 4. Well Location P. O. BOX 159. 9. Pool same or Wildowi Uala Letter 1.2442 Feet From The 29 10. NOTPM 10. Elevation (Cherry whether DF. RCB, RT. GR, etc.) NOTPM 11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTTCE OF INTENTION TO: SUBSEQUENT REPORT OF: 11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTTCE OF INTENTION TO: SUBSEQUENT REPORT OF: PERFORM REMEDIAL WORK PLUG AND ABANDON CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON 0.711 CR ALTER CASING OTHER: OTHER: OTHER: OTHER: 12. Detector Propoed or Completed Operations (Clearly state all periment datalit, and give periment data:, including estimated date of starting any propoed Work) SEE RULE 1103. Clearly state all periment datalit, and give periment data:, including estimated date of starting any propoed Work) SEE RULE 1103. Clearly state all periment datalit, and give periment data:, including estimated date of starting any propoed Work) SEE RULE 1103. Clearly State all periment datalit, and give periment data:, including estimated date of starting any propoed THE REFERENCE D WELL BY ACIDIE ING THE CLIFF HOUSE AND <tr< td=""><td>2. Name of Operator</td><td></td><td></td><td></td></tr<>	2. Name of Operator			
4. Well Location Unit Letter 1:21/12 Post Prom The 20 NMTPH Section 27 Toronable 29 NMTPH 10. Elevandon (Khow whether DR.R.B.RT. GR. etc.) NMTPH NMTPH 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 Alterning casing DULL OR ALTER CASING Conserved to Complete Operationa (Clearly state all periment details, and give periment details opens. PLUG AND ABANDON DULL OR ALTER CASING Conserved to Completed Operationa (Clearly state all periment details, and give periment details, and give periment details deta of starting any proposed Vorther: Completed Operationa (Clearly state all periment details, and give periment details, and give periment details deta of starting any proposed Work) SEE RULE 1103. Glearty state all periment details, and give periment details deta of starting any proposed Work) SEE RULE 1103. Glearty state all periment details, and give periment details deta of starting any proposed MERTIN REFERENCE D Well L BY ACIDIE ING THE CLIFF HOUSE AND THE REFERENCE D Well L BY ACIDIE ING THE CLIFF HOUSE AND THE REFERENCE D Well L BY	3. Address of Operator		NY - BLOOMFIELD	-++ 1
Section 27 Township 27 Leage INMPM 10. Elevation (Show whether DY, REB, RT, GR, etc.) 10. Elevation (Show whether DY, REB, RT, GR, etc.) 11. 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 Commerce Drilling orps. PLUG and abandon 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 commerce Drilling orps. PULI OR ALTER CASING CHANGE PLANS Commerce Drilling orps. PLUG and ABANDON OTHER: OTHER: OTHER: OTHER: Interviewer and the second of Completed Operations (Clearly state all periment data), and give periment data: including estimated data of starting any proposed 01.1 ANT REFERENCEO WELL BY ACIDIE iNA THE CLIFF HOUSE AND 12. Describe Proposed or Completed Operations (Clearly state all periment data), and give periment data: including estimated data of starting any proposed 01.1 ANT REFERENCEO WELL BY ACIDIE iNA THE CLIFF HOUSE AND 12. Describe Proposed or Completed Operations (Clearly state all periodstale data), and give peri	4. Well Location			
10. Elevendoa (Show whather DP, 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 PERFORM REMEDIAL WORK PLUG AND ABANDON COMMENCE DRILLING OPNS. PLUG AND ABANDON WULL OR ALTER CASING OMMENCE DRILLING OPNS. PLUG AND ABANDON WULL OR ALTER CASING OTHER: OTHER: 12. Describe Proposed or Completed Operations (Clearly state all persinent dealis, and give persinent deales, including estimated date of starting any proposed work) SEE RULE 1103. GLANT REFINING COMPANY-BLOOD MFIELD PROPOSES TO RESTING ALANT REFINING COMPANY-BLOOD MFIELD PROPOSES TO RESTING MESSTR ALTER INDER AND THE REFERENCED WELL BY ACIDIE ING THE CLIFF INDUSE AND MENER EEE FORMATIONS. AFTER SUCCESSFUL ACIDIE ING, A RATE INTECTION TEST, IF CONDITIONS WARRANT FURTHER ACTION, THE 27/8" GLSH CEMENT LINED PRODUCTION TUBING, A REFULED AND A 23/8" WORK STRING WILL BE FLACED. A S.I. BE PULLED AND A 23/8" WORK STRING WILL BE FLACED. AS.I. BE PULLED AND A 23/8" WORK STRING WILL BE FLACED. AND THE BRIEFING SECTIONS THE SECTION TEST. TOD L WILL BE USED TD IS ALATE EACH OF THE SEVEN PERF SECTION SEA STRING </td <td>Unit Letter: 29</td> <td><u>[2</u> Feet From The <u>50 (</u></td> <td><u>UTH</u> Line and <u>12</u></td> <td>SU Feet From The EAST</td>	Unit Letter: 29	<u>[2</u> Feet From The <u>50 (</u>	<u>UTH</u> Line and <u>12</u>	SU Feet From The EAST
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 CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB PULIG AND ABANDON CASING TEST AND CEMENT JOB OTHER: 12. Describe Proposed or Completed Operations (Clearly state all periment datas, and give periment datas, including estimated date of starting any proposed work) SEE RULE 1103. GI ANT REFERENCED VILL OR ALTER CASING OTHER: 12. Describe Proposed or Completed Operations (Clearly state all periment datas, and give periment datas, including estimated date of starting any proposed work) SEE RULE 1103. GI ANT REFERENCED WE LL BY ACIDIE ING THER THE REFERENCED WE LL BY ACIDIE ING THE REFERENCED WE LL BY CLIDIE ING MENER FEE FORMATION 5. AFTER REPORT NT EST. IF COMMENT TO NT EST. IF ACTION, THE 2 718'' G.544 CEMENT LINED PRODUCTION TUS	Section 27	Township 29	whether DF RKR PT (GP etc.)	NMPM
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF: PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK ALTERING CASING PERFORM REMEDIAL WORK CHANGE PLUG AND ABANDON CHANGE PLUG AND ABANDON PLUG AND ABANDON PULL OR ALTER CASING CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON WULL OR ALTER CASING CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON WILL OR ALTER CASING CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB OTHER: COMMENCE DRILLING OPNS. PLUG AND ARTICL STATIC STATICT OF THE STATIC STATIC STATICT OF THE STATIC S				
PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK ALTERING CASING EMPORARILY ABANDON CHANGE PLANS COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB COMMENCE DRILLING OPNS. PLUG AND ABANDON CASING TEST AND CEMENT JOB OTHER: OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON III OR ALTER CASING OTHER: OTHER: OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON III OR ALTER CASING OTHER: OTHER: OTHER: COMMENCE DRILLING OPNS. PLUG AND ABANDON III OS. CHANGE PARA MY- BLOD MAISLD PROPOSES TO RESTRICT WELL BY ACIDIZING, ATHE CLIFF INDUSE AND REMETING any proposed THE REFERENCED WELL BY ACIDIZING, THE CLIFF INDUSE AND RESTRICT THE REFERENCED WELL BY ACIDIZING, THE CLIFF INDUSE AND RATE INTECTION TEST. TE CONDITIONS WARRANT FURTHER RATE INTECTION TEST. TE CONDUCTION TUBING, A STRING REAL PULLEB AND A 23/8" WORK STRING WILL BE FLACED. A STRING BE PULLEB AND A 23/8" WORK STRING WILL BE FLACED. AND THE ORIGINAL SECTIONS, THE WORK A STRING WILL BE REMOVED AND THE ORIGIN SECTIONS, THE WORK STRING WILL BE REMOVED AND THE ORIGHT SECTIONS, ATHE WO				
EMPORARILY ABANDON CHANGE PLANS COMIMENCE DRILLING OPNS. PLUIG AND ABANDON CASING TEST AND CEMENT JOB CASING TEST AND CEMENT JOB CASING TEST AND CEMENT JOB DTHER: OTHER: OTHER: OTHER: 12. Describe Proposed or Completed Operations (Clearly state all pertinent deals), and give pertinent deals, including estimated date of starting any proposed OTHER: 12. Describe Proposed or Completed Operations (Clearly state all pertinent deals), and give pertinent deals, including estimated date of starting any proposed WORK) SEE RULE 1103. CAG MRANY - BLOD MAIELD PROPOSES TO REST IN THE REFERENCED WELL BY ACIDIZING THE CLIFF INDUSE AND THE REFERENCED WELL BY ACIDIZING THE CLIFF INDUSE AND THE REFERENCED WELL BY ACIDIZING THE CLIFF INDUSE AND THE REFERENCED WELL BY ACIDIZING THE CLIFF INDUSE AND RATE INTERCTION TEST. IF CONDITIONS WARRANT FURTHER ACTION, THE 2718" C.S## CEMENT LINED PRODUCTION TUBING ACTION, THE 2718" USED TD ISELATE EACH OF THE SEVEN TUBING BE PULLED AND A 2318" WORK STRING WILL BE PLACED. A SI SEVEN PERT TDOL WILL BE USED TD ISELATE EACH OF THE SEVEN PERT TOOL WILL BE USED TO ISELATE EACH OF THE MOLE. AT COMPLETING SEVEN PERT	, 57			—
ULL OR ALTER CASING CASING TEST AND CEMENT JOB DTHER: OTHER: 12. Describe Proposed or Completed Operations (Clearly state all periment data), and give periment data:, including estimated date of starting any proposed work SEE RULE 1103. GIANT REFINING COMPANY-BLOD MFIELD PROPOSES TO RESTING THE REFERENCED WELL BY ACIDIZING THE CLIFFINDUSE AND MENEREE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A THE REFERENCED WELL BY ACIDIZING THE CLIFFINDUSE AND MENEREE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A RATE INTECTION TEST. IF CONDITIONS WARRANT FURTHER ACTION, THE 2718" C.S# CEMENT LINED PRODUCTION TUBING ACTION, THE 2718" WORK STRING WILL BE PLACED. A S.I. BE PULLED AND A 2318" WORK STRING WILL BE PLACED. A S.I. BE RULLE BE WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF SECTIONS, THE WORK STRING WILL BE REMOVED AND THE ORIGI PRODUCTION TUBING WILL BE RUNINTD THE HOLE. AT COMPLETION Iberdy actily dut be information above is two and grouppedue to the box of any bookedge and beliet. SUMATURE LYNN SHELTON THE ENTROL THE ENTROL MANAGED DATE IT. STREETED. OTHER THE ENTROL THE ENTROL THE ENTROL				
DTHER: OTHER: 12. Describe Proposed or Completed Operations (Clearly state all periment details, and give periment dates, including estimated date of starting any proposed work) SEE RULE 1103. GIANT REFINING COMPANY-BLODMFIELD PROPOSES TO RESTING THE REFERENCED WELL BY ACIDIZING THE CLIFFIHOUSE AND MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A RATE INTECTION TEST. IF CONDITIONS WARRANT FURTHER ACTION, THE 27/8" G.S# CEMENT LINED PRODUCTION TUBING ACTION, THE STORE STRING WILL BE PRODUCTION TUBING BE PULLED AND A 23/9" WORK STRING WILL BE PROVED AND THE ORIGIN SECTIONSA.THE WORK STRING WILL BE REMOVED AND THE ORIGIN SECTIONSA.THE WORK STRING WILL BE RUMINTO THE HOLE. AT COMPLETION Iberty certify that the information doore is you and promplete to the test of my incontedge and belief. SOUNATURE LYNN SHELTON THE ENVIRONMENTAL MANAGER DATE 1-17.5 THE ENVIRONMENTAL MANAGER DATE 1-17.5 THE ON FRONCE BY ACTION TO BING ON THE DOWN OF AFFORDED AND THE DOWN OF AFFORDED AND SHELTON				
12. Describe Proposed or Completed Operations (Clearly state all persinent details, and give persinent dates, including estimated date of starting any proposed work) SEE RULE 1103. GIANT REFINING COMPANY-BLOD MFIELD PROPOSES TO RESTIN THE REFERENCED WELL BY ACIDIZING THE CLIFF HOUSE AND MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A RATE INJECTION TEST. IF CONDITIONS WARRANT FURTHE ACTION, THE 27/8" G.5# CEMENT LINED PRODUCTION TUBING ACTION, THE 27/8" G.5# CEMENT LINED PRODUCTION TUBING BE PULLED AND A 23/9" WORK STRING WILL BE FLACED. A S.I BE PULLED AND A 23/9" WORK STRING WILL BE FLACED. A S.I PROL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF TOOL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF I berdy certify that the information shows in two and peoplete to the best of any backwedge and belief. SOUNTION TUBING WILL BE RUNINTO THE HOLE. AT COMPLETION THE ENVIRONMENTAL MANAGER DATE THE ENVIRONMENTAL MANAGER DATE APROVED BY AND SHELTON THE DEFUTY OF LIGAS INSPECTOR, USI. 33 APPROVED BY AND AND THE DATE.	· · · · · · · · · · · · · · · · · · ·			
THE REFERENCED WELL BY ACIDIZING THE CLIFFITHOUSE AND MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A RATE INJECTION TEST. IF CONDITIONS WARRANT FURTHE ACTION, THE 27/8" G.S# CEMENT LINED PRODUCTION TUBING ACTION, THE 27/8" G.S# CEMENT LINED PRODUCTION TUBING BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.M BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.M FOOL WILL BE USED TO IS OLATE EACH OF THE SEVEN PERF SECTIONSA. THE WORK STRING WILL BE REMOVED AND THE ORIGIN PRODUCTION TUBING WILL BE RUNINTO THE HOLE. AT COMPLETION I bereby certify that the information above is gue and periphete to the best of any knowledge and belief. SHONATURE AMAN SHELTON THE ENVIRONMENTAL MANAGERDATE 1-17-9 (This space for State Use) CONDITIONS OF APPROVAL FANT.	work) SEE RULE 1103.			
MENEFEE FORMATIONS. AFTER SUCCESSFUL ACIDIZING, A RATE INJECTION TEST. IF CONDITIONS WARRANT FURTHER ACTION, THE 27/8" G.S# CEMENT LINED PRODUCTION TUBING BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.I. BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.I. FOOL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF SECTIONSA. THE WORK STRING WILL BE REMOVED AND THE ORIGI PROD UCTION TUBING WILL BE RUN INTO THE HOLE. AT COMPLETE Ibordy certify that the information above is you and pompleto to the best of my information and best of my information and the ORIGI THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE AND SHELTON THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE DEPHONE NO. 575				
RATE INJECTION TEST. IF CONDITIONS WARRANT FURTHER ACTION, THE 27/8" G.S# CEMENT LINED PRODUCTION TUBING BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.I. BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S.I. FOR ACCOLUTION FOR A 23/8" WORK STRING WILL BE REMOVED AND THE BERG FOR ACCOLUTION FOR STRING WILL BE REMOVED AND THE ORIGINAL PRODUCTION TUBING WILL BE RUNINTO THE HOLE. AT COMPLETE I bereby certify that the information above is gue and perpilete to the best of my knowledge and belief. STONATURE AMM SHELTON THE WORK STRING WILL BE FUYIRONMENTAL MANAGERDATE 1-17-9 TYPE OR FRUNT NAME LYNN SHELTON THE ENVIRONMENTAL MANAGERDATE 1-17-9 TYPE OR FRUNT NAME LYNN SHELTON THE MOLES OF STREETED AND THE BANK OF ANTED AND THE BANK OF ANTED A	THE REFERENCE	O WELL BY		
ACTION, THE 27/8" G.5# CEMENT LINES PRODUCTION TO CAR A 23/8" WORK STRING WILL BE PLACED. A S. A BE PULLED AND A 23/8" WORK STRING WILL BE PLACED. A S. A FOOL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF SECTIONSA, THE WORK STRING WILL BE REMOVED AND THE ORIGINAL PRODUCTION TUBING WILL BE RUN INTO THE HOLE. AT COMPLETE I bereby certify that the information above is true and promplete to the best of my knowledge and belief. SHONATURE APPROVED BY STRING WILL BE RUN INTO THE HOLE. AT COMPLETE TYPE OF FRINT NAME LYNN SHELTON THE ENVIRONMENTAL MANAGERDATE 1-17-9 TYPE OF FRINT NAME LYNN SHELTON THE DEPUTY OIL I GAS UNSPECTOR, DIST. #3 (AN 1 7 CONDITIONS OF ATTROVAL FANT:	MENEELE FOR	MATIONS. AF	TER SUCCESSI	FUL ACIDIZING, A
BE PULLED AND A 279 WORK STRING WILL BE THE SEVEN PERF TOOL WILL BE USED TO ISOLATE EACH OF THE SEVEN PERF SECTIONSA. THE WORK STRING WILL BE REMOVED AND THE ORIGI PRODUCTION TOBING WILL BE RUNINTO THE HOLE. AT COMPLETE I bereby certify that the information above is you and pomplete to the best of my knowledge and bellet. SHONATURE AMENDIAL STRING WILL BE RUNINTO THE HOLE. AT COMPLETE THE ENVIRONMENTAL MANAGERDATE 1-17-9 THE ENVIRONMENTAL MANAGERDATE 1-17-9 THE OF FRINT NAME LYNN SHELTON THE ENVIRONMENTAL MANAGERDATE 1-17-9 THE OF FRINT NAME LYNN SHELTON THE DEPUTY CILL GAS INSPECTOR, DIST. #3 IMM 1-7 CONDITIONS OF AFFROVAL, BANY:	MENEFEE FOR	MATIONS. AF	TER SUCCESSI F. CONDITIONS	UL ACIDIZING, A WARRANT FURTHE
TOOL WILL BE USED TO ISOLATE EACH OF THE DEVENTING OR ACIDITE SECTIONS, THE WORK STRING WILL BE REMOVED AND THE ORIGIN SECTIONS, THE WORK STRING WILL BE RUNINTO THE HOLE. AT COMPLETE PROVED BY STRING BOOMED TO BE THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE ENVIRONMENTAL MANAGER DATE 1-17-9 THE OR FRINT NAME LYNN SHELTON THE LYNN SHELTON THE LYNN ISPECTCH, DIST. #3 (This space for State Use) APPROVED BY ANY:	MENEREE FOR. RATE INTECT	MATIONS. AF	FER EUCCESSI F. CONDITIONS	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING
SECTIONSA, THE WOLL OF RUNINTO THE HOLE. AT COMPLETE PRODUCTION TUBING WILL BE RUNINTO THE HOLE. AT COMPLETE I bereby certify that the information above is true and pomplete to the best of my knowledge and belief. SKONATURE <u>APPROVED BY</u> <u>Shelton</u> <u>THE ENVIRONMENTAL MANAGERDATE 1-17-9</u> TYPE OR FRINT NAME <u>LYNN SHELTON</u> <u>TELEPHONE NO. 505</u> (This space for State Use) APPROVED BY <u>CEPUTY CIL 1 GAS INSPECTCR, DIST. #3</u> 1. <u>M. 1-7</u> CONDITIONS OF APPROVAL, IF ANY:	MENEREE FOR RATE INJECT ACTION, THE	MATIONS. AF TON TEST. I. 27/8" 6.5# CE	TER SUCCESSI F CONDITIONS MENT LINED I AV STRING WIL	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A 5.1
PRODUCTION TUBING WILL BE RUNINTO THE HOLE. AT COMPLETE I bereby certify that the information above is true and complete to the best of my knowledge and belief. SIONATURE <u>Shelter</u> <u>TITLE ENVIRONMENTAL MANAGERDATE 1-17-9</u> TYPE OR PRINT NAME <u>LYNN SHELTON</u> <u>TELEPHONE NO. 505</u> (This space for State Use) APPROVED BY <u>Comparison</u> <u>CEPUTY CIL L GAS INSPECTCR. USI. #3</u> <u>LAN 1 7</u> CONDITIONS OF AFFROVAL & ANY:	MENEFEE FOR RATE INJECT ACTION, THE BE PULLED AN	MATIONS. AF TON TEST. I 27/8" 6.5# CE 0 A 2 ³ /8" WO	TER SUCCESSA F CONDITIONS MENT LINED A RKSTRING WIL	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.I F THE SEVEN PERF
SKONATURE <u>LYNN Shetter</u> TTPE OR FRINT NAME <u>LYNN SHELTON</u> (This space for State Use) APPROVED BY <u>Champer Construction</u> APPROVED BY <u>Champer Construction</u> CONDITIONS OF APPROVAL & ANY:	MENEFEE FOR RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA, THE	MATIONS. AF 10N TEST, I 2 1/8" 6.5# CE 0 A 2 3/8" WO 0 SED TO 15 WORK STRING	TER SUCCESSA F CONDITIONS MENT LINED A RK STRING WIL OLATE EACH O WILL BE REMO	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.I F THE SEVEN PERF VED AND THE ORIGI
TYPE OR PRENT NAME LYNN SHELTON TELEPHONE NO. 505 (This space for State Use) APPROVED BY APPROVED BY APPROVAL & ANY: CONDITIONS OF APPROVAL & ANY:	MENEFEE FOR RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA. THE PRODUCTION TU	MATIONS. AF TON TEST. I 2 1/8" 6.5# CE D A 2 3/8" WO USED TO IS WORK STRING BING WILL B	TER SUCCESSI F CONDITIONS MENT LINED I RKSTRING WILL OLATE EACH O WILL BE REMO	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.I F THE SEVEN PERF VED AND THE ORIGI
(This space for State Use) APPROVED BY ALL AND ANY: CONDITIONS OF APPROVAL & ANY:	MENEFEE FOR. RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA, THE PRODUCTION TO I hereby certify that the information above is the	MATIONS. AF TON TEST. I 27/8" 6.5# CE DA 2 ³ /8" WO USED TO IS WORK STRING BING WILL B MOMMENTE TO TO IS	TER SUCCESSA F CONDITIONS MENT LINED A RKSTRING WIL OLATE EACH O WILL BE REMO CE RUN INTO THA Rego and belief.	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.M F THE SEVEN PERA VED AND THE ORIGI E HOLE. AT COMPLETE
APPROVED BY APPROVAL & ANY:	MENEFEE FOR. RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA, THE PRODUCTION TO I hereby certify that the information above is the	MATIONS. AF TON TEST. I 27/8" 6.5# CE DA 2 ³ /8" WO USED TO IS WORK STRING BING WILL B MOMMENTE TO TO IS	TER SUCCESSA F CONDITIONS MENT LINED A RKSTRING WIL OLATE EACH O WILL BE REMO CE RUN INTO THA Rego and belief.	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.I F THE SEVEN PERF VED AND THE ORIGI E HOLE. AT COMPLETIO
APPROVED BY AUTOMATIONS OF APPROVAL, & ANY:	MENEFEE FOR RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA. THE PRODUCTION TU I hereby certify that the information above is pu	MATIONS. AF TON TEST. I 27/8" 6.5# CE DA 2 ³ /8" WO USED TO IS WORK STRING BING WILL B MANNELLE	TER SUCCESSA F CONDITIONS MENT LINED A RKSTRING WIL OLATE EACH O WILL BE REMO CE RUN INTO THA Rego and belief.	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.M F THE SEVEN PERA VED AND THE ORIGI E HOLE. AT COMPLETE
	MENEFEE FOR. RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA, THE PRODUCTION TO SHONATURE AMME TYPEOR FRINT NAME LYNN	MATIONS. AF TON TEST. I 27/8" 6.5# CE DA 2 ³ /8" WO USED TO IS WORK STRING BING WILL B MANNELLE	TER SUCCESSA F CONDITIONS MENT LINED A RESTRING WIL OLATE EACH O WILL BE REMO <u>E RUNINTO THA</u> Mage and belief. <u>TITLE ENVIRONMEN</u>	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.M F THE SEVEN PERF VED AND THE ORIGI E HOLE. AT COMPLETE THE MANAGERDATE 1-17-9 TELETHONE NO. 505
	MENEFEE FOR RATE INJECT ACTION, THE BE PULLED AN TOOL WILL BE FOR ACIDIZ SECTIONSA. THE PRODUCTION TO I bordy certify that the information above is tou SKONATURE	MATIONS. AF TON TEST. I 27/8" 6.5# CE DA 2 ³ /8" WO USED TO IS WORK STRING BING WILL B MANNELLE	TER SUCCESSA F CONDITIONS MENT LINED A RESTRING WIL OLATE EACH O WILL BE REMO <u>E RUNINTO THA</u> Mage and belief. <u>TITLE ENVIRONMEN</u>	UL ACIDIZING, A WARRANT FURTHE PRODUCTION TUBING L BE PLACED. A S.M F THE SEVEN PERF VED AND THE ORIGI E HOLE. AT COMPLETE THE MANAGERDATE 1-17-9 TELETHONE NO. 505

•

ļ

• • •

P.O. Box 1980, Hobbs, NM 88240 DISTRICT II P.O. Drawer DD, Artesia, NM 88210	P.O.	ATION DIVIS Box 2088 Mexico 87504-2088	
`			5. Indicate Type of Lease
DISTRICT III 1000 Rio Brizos Rd., Aziec, NM 87410		MAR - 4 1000 1. 	6. State Oil & Gas Lesse No.
(DO NOT USE THIS FORM FOR PRO DIFFERENT RESERV	CES AND REPORTS POSALS TO DRILL OR TO VOIR. USE "APPLICATION 101) FOR SUCH PROPOSI) DEEPEN OR PLUG BAC N FOR PERMIT	
I. Type of Well: OE GAS WELL WELL	OTHER /	CLASS I NJECTION WEL	SWDWELL (CLASSI
L Name of Operator GIANT REFINING			8. Well No. ++ 1 -
Address of Operator P. O. BOX 159			9. Pool name or Wildcat
. Well Location		ITH Line and	1250 Feet From The EAST
Section 27	Township 29	Ranges 1)	NMPM
	10. Elevation (Size	w whether DF, RKB, RT, GR	i, etc.)
1. Check A NOTICE OF INT		dicate Nature of No	btice, Report, or Other Data SUBSEQUENT REPORT OF:
	PLUG AND ABANDO		
	CHANGE PLANS		
JLL OR ALTER CASING		CASING TES	
THER:			
work) SEE RULE 1103.			ales, including estimated date of starting any propose
ARILITY TO PILM	P WASTE WATE	R INTO THE	PROPOSES TO INCREASE WELL BY SAND FRACTO
THE CLIFFHOUSE	AND UPPER	MENEFEE FO	RMATION CTHE PERMI
			150,000 # OF SAND TO
PUMPED , NTO TH	E FORMATI	ON, AFTER A	TO CIRCULATE OUT TH
STRING WILL B	E RUN INTO	OUCTION TUR	BING WILL BE RETURN
THE HOLE A S	TEP RATE IN	JECTION TES	T WILL BE PERFORME
WELL AS A ME	ECHANICAL 11	NTEGRITY TE.	ST ON THE CASING VA
			ELT ANY SEAL PROBLEM
I bereby certify that the information above is true a stonature			NMENTAL MANAGERDATE 2-1
	SHELTON		TELEPHONE NO. 6.
(This space for State Use)	<u> </u>		
APPROVED BY Johnny Ro	hinson		
CONDITIONS OF APPROVAL, IF ANY:	,		
* Notify OCD inti	me to witness	MIT	

ł

,

| .

:

.

.

.



50 Road 4990	
P.O. Box 159 Bloomfield, New Mexico 8741	3
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.

ETATION DIMISIO

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 workorder 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:

Kym Shetton

Lynn Shelton Environmental Manager Giant Refining Company - Bloomfield .

TLS/tls

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

 $\frac{96 \text{ JU}}{17}$ WASTE WATER INJECTION LOG
Dates: From $\frac{6/(7/9)}{6}$ to _____

VED VED

		Obtained	from Rustra	k Recorder	P-670	OILERS	CRANKCASE	CHART	•	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER	LEVEL	LEVEL	CHANGED	TIME	INITIALS
				1 1233012	READING	·	·			/
Monday	1	139.1	951.7	167.3	210659	_			1.1:00	AS
	2	139.9	956.0	145.5	210 851			-	00 13	BA
_				_						A
Tuesday	1	148.3	949.4	-161.0	270921				-1208-	70
	2	145.5	450.9	150	270:219		· · · · ·		1154	50
Wednesda	y 1	151.4	951.5	167	191051	/	-		1:10	Uld
	2	144.0	931.6	173	'	4	<u> </u>		1225	35
Thursday	ſ	148,0	941.3	155	22110	-	1		1202	lle
	2	141.7	940.4	160	221151			<u> </u>	1145	Br
152.3?	21	1527	952.4	181	-		<u> </u>			A CONTRACT
	2	149.6	949.8	162	22201	Adlel	Added		12000	Fick
Saturday	1	122.5	931.3	144	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7	_	_		1205	le
	2	106.1	922.4	111		·	<u> </u>		1214	BB
Sunday	1	149.5	954.6	14	223549		/		1154	3 11
	⁻ 2	150,0	951.7		7.2.9541				1204	A.
	ſ									

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

			Date	s: Fron	n		_ to				
	Ob	tainec	d from Rustra	ak Recorder	P-670	OILERS	CRANKCASE	CHART	<u> </u>	OPERATOR	٦
		-670 N RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	TIME	INITIALS	
onday	1										
	2										4
esday	1							***			
	2										
ednesday	, 1										
	2										
ursday	1 10	8.8	659.4	1.4	188983	ok	or	Yes	143%	34	16
	2				 	<u>. </u>					4
iday	1										
	2										
turday	1			i E							
	2				,			······································			
Inday	1							•		. (
	2										
	1		1		1 1						

GARY WILLIAMS RECORD THAT I HAVE FOUND SO FAR. Kymm

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

1

i

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

		_										
s	AVG	(GPM)		62	128		110	134	134	115	92	0
ON-LINE FLOW RATES	MIN AVG	(GPM)	a the second as a second of	57	98		85	124	127	67	88	0
FLO	MAX	(GPM)	Le Discol Ma	111	151		136	144	150	132	103	0
SSURE	AVG	(PSIA)	ين بين ، ويني المريخ المريخ . المريخ المريخ الم	100	100		67	14	4	-	-	0
INJECTION PRESSURE ANNULAR PRESSURE	NIN	(PSIA)	18 B. C	12	37		64	7	0	0	0	0
ANNUL	MAX	(PSIA)		220	220	Ì	20	20	8	2	-	0
ESSURE	AVG	(PSIA)		206	870		807	870	869	860	807	0
ION PRI	MAX MIN	(PSIA) (PSIA)	N 28 - N	643	763		712	800	839	812	712	0
INJECT	MAX	(PSIA)		809	949		902	891	918	916	842	0
-NWOD	TIME	(HRS)	支付の変形	72	28		669	213	201	36	600	720
TOTALIZER CALCULATED AMOUNT AMOUNT	INJECTED	(GALLONS)		2,844,000	5,498,880		316,800	4,269,240	4,172,760	4,885,200	794,880	0
AMOUNT	_ <u>∠</u>	(GALLONS)		2,291,200	4,383,100		289,400	3,619,800	3,707,300	3,959,000	633,100	0
AMOUNT TO SOLAR	PERIOD FROM RIVER EVAP PONDS	(GALLONS)	3,794,400	3,427,200	3,178,300		3,371,300	2,578,000	2,418,100	3,354,900	3,650,600	2,314,000
AMOUNT OF WATER	FROM RIVER	(GALLONS)	11,597,000	9,384,000	10,659,000		9,977,000	12,691,000	11,802,000	12,631,000	11,836,800	11,746,600
	PERIOD	1995	NAL	FEB	MAR		APR	МАҮ	NUL	nr	AUG	SEP

0 735 811 732 457 919 838 744 420 168 1,746,000 3,628,800 1,271,600 2,478,000 4,017,600 5,572,800 5,758,560 12,773,800 12,062,800 10,569,000 DEC NOV NOV

£ CERTIFICATION

- 96 2-5 DATE:

]

105 06

98.4 85

16

4 0 **.**-

36.3 20

153 129 0

0 2

0

0

0

0

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

		-		<u> </u>
	s S	AVG	(GPM)	108 76
ON-LINE	FLOW RATES	NIM	(GPM)	69
C	FLO	MAX	(GPM)	147.6
	SURE	AVG	(PSIA)	1 15
	AR PRES	MIN	(PSIA)	10,
	ANNUL	MAX	(PSIA)	215
	SSURE	AVG	(PSIA)	886 11
	ON PRE	MIN	(PSIA)	866
	INJECTI	MAX	(PSIA)	9614
	DOWN-	TIME MAX MIN AVG MAX MIN AVG MAX MIN AVG	(HRS)	528
I U I A LIZEK CALCULA I EU	AMOUNT DOWN- INJECTION PRESSURE ANNULAR PRESSURE		(GALLONS) (GALLONS) (HRS) (HRS) (PSIA) (PSIA) (PSIA) (PSIA) (PSIA) (PSIA) (GPM) (GPM) (GPM) (GPM)	2 784 200 2 349 216 528 961 4 866 886 11 21 5 1 -0.1 1 15 1 142 6 9 108 76
101ALIZER (AMOUNT	INJECTED INJECTED	(GALLONS)	2 784 200
AMOUNT	TO SOLAR	EVAP PONDS	(GALLONS)	5 296 800
	~	/ER	lS)	
AMOUNT	OF WATER	FROM RIV	(GALLON	10 943
AMOUNT	OF WATER	PERIOD FROM RIVER EVAP PONDS	1996 (GALLONS) (GALLONS)	1010 010 010 1011

100.70	116.77	97.0 156.0 138.8 150.39	8 1 1166 901.3 954.84 220 74.1 149.06 160.1 102.1 126.96
03	110.2	138.8	102.1
142.0	132.5	156.0	160.1
01.1	106.94	97.0	149.06
	-0.2	9.5	74.1
C.12	195.1	215.3	220
000.11	915.27	975.7	954.84
200	889.4	938.0	901.3
901.4	946.8	1014 938.0 975.7 215.3	1166
220	0	192	8
2,349,210	3,368,900 3,357,330 0 946.8 889.4 915.27 195.1 -0.2 106.94 132.5 110.2 116.77	4,980,917	4,464,100 5.301,850
2,/84,200	3,908,900	4,329,400	4.464.100
2,295,8UU	3,975,700	2,970,900	3.546.200
10,943,000	9,951,000	9,755,000	10.960.000
NAL	FEB	MAR	APR

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 JUL <th></th> <th></th> <th> </th> <th></th> <th>_</th>			 		_
11,265,000 3,518,900 - 4,535,554 48 1142 879.1 951.99 219.6 77.5 155.68 148.9	108.61				
11,265,000 3,518,900 . 4,535,554 48	86.3				
11,265,000 3,518,900 . 4,535,554 48	148.9				
11,265,000 3,518,900 . 4,535,554 48	155.68				
11,265,000 3,518,900 . 4,535,554 48	77.5				
11,265,000 3,518,900 . 4,535,554 48	219.6				
11,265,000 3,518,900 . 4,535,554 48	951.99				
11,265,000 3,518,900 . 4,535,554 48	879.1				
11,265,000 3,518,900 * 4,535,554	1142				
11,265,000 3,518,900	48				
11,265,000	4,535,554				
11,265,000					
╤╽╽╽╽	3,518,900				
MAY JUN JUL AUG	11,265,000				
	MAY	NUL	JUL	AUG	

			[I
	_			
		_		
	_			
		i i		
 _				
SEP	o o	NON	ы Ош	

;

120/96 DATE:

ASTE WATER INJECTION LOG
 Dates: From <u>11/14/95</u> to <u>11-19-91</u>

		Obtained P-670	from Rustra	ak Recorder ANNULAR	P-670 DISCHARGED	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING				ļ	
Monday	1	123.0	456.5	24.0	189216				12:00	A1
	2									
Tuesday	1									
	2	153.4	837.7	1.3	189934	OK	or	Yes	11245	34
Wednesday	1	92.7	706.3	2.2	190766	-			11:30	A(
	2	89.8	704.4	3.3	191347		-	Yes	121%	IA
Thursday	1	86.7	701.8	4.6	191840	\smile		•	12:15	lac.
	2	86.0	710.1	5.1	192318			les	23 7	34
Friday	1	8.2	716.4	5.1	192893	V	V	~	12:00	ð
	2	90.2	729.6	5.6	193420		_	Yes	234%	J.B.
Saturday	1	99.8	759.5	6.0	193970	_			12:00	f
	2	85.5	725.0	6.7	194390		-		9:30	A
Sunday	1	85.5	727.6	7.2	195042		~	NO	12:15	Ð
	2	85.6	729.9	7.8	195510			Y55	11:00	A(
	l			I				1		

NOTES: (value lineup at ponds, unusual conditions, etc.) Maintain 80.90G/M for-

VASTE WATER INJECTIC LOG

Dates: From 1/-20-95 to 1/-26-95

		Obtained	d from Rustra	ak Recorder	P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR	DISCHARGED TOTALIZER	LEVEL	LEVEL	CHANGED	ТІМЕ	INITIALS
		91.		8 -	READING			1 -		0
Monday	1	87.3	734.3	8.5	196117		·e	Yes	12:40	th
	2									
Tuesday	1	99.6	744.3	3.0	196247	Added	Added	105-	16357	JH.
	2			Pin	hp d	FF)				
Wednesday	1	99,7	742.9	3.7	196,565	L		<u> </u>	12 25	Proto
	2	99.5	755.7	5.8	197134	_	\checkmark	V	23:30	Me.
Thursday	1	99,2	7602	5.5	197771	\checkmark	4		1200	Rick
·	2	98.9	7665	6.3	198382	~			12 Am	MR.
Friday	1	99.D	772.4	6.5	195991	/	_		12:00	41
	2	94,9	764.0	7.8	199593				midnite	the
Saturday	1	94.9	768.1	8.2	200142	1	<u> </u>		11:25	A
	2	95,3	771.7	10.4	200735	ОК	ok	Yes	23 301	34
Sunday	1	97.1	778.1	10.9	201361	_	~		12:00	A(
	2	97.2	778.5	12.1	201932	OK	ok	Yes	23 47	Z
										- ()

NOTES: (value lineup at ponds, unusual conditions, etc.) Shut inj. well down @ 20:30 (pump Not strying on) couldn't keset pump out @ Dond's! Wiring problems at P.691 Back on @ 10:30 AM 11-22 pond's IT

Obtained from Rustrak Recorder OILERS CRANKCASE CHART OPERATOR P-670 LEVEL CHANGED TIME INITIALS P-670 ANNULAR DISCHARGED LEVEL P-670 FLOW RATE PRESSURE PRESSURE TOTALIZER READING Al 12:30 84.0 16.0 743.3 202461 1 Monday <u>75.</u>2 12 16.6 les 725.3 202756 2 11.9 N:53 203325 Tuesday 1 203735 788.7 29.3 Ves 23 2 NOON 29.5 204378 77.5 05.0 Wednesday 1 2 Thursday 1 2 Friday 1 2 Saturday 1 2 Sunday 1 2

VASTE WATER INJECTION LOG

From <u>11/27/95</u> to

Dates:

NOTES: (valve lineup at ponds, unusual conditions, etc.) Main faith @ 75- GPM1 - 11-29-95 13 Clean at filter, went From 130/15: e 16:00 Switch down Dump rolo neel



Dates: From <u>12-8</u> to <u>12-10</u>

		Obtained	I from Rustra	ak 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									
	2		·							
Tuesday	1									
	2									
Wednesday	1									
	2									
Thursday	1			1						
	2							······································		
Friday	1	100.2	732.0	3/2	204619		C	Yes	15:30	
, nuu j	2	100.9	760.5		205028	L	V	Yos	13:34	k
Saturday	1		766.0	,	205640			-1	/1:30	110
Saturday	ł	101.1	7.47.0		2010226	~	V V	Ves	23 00	Rick.
Sundau								·····		
Sunday	1 2									
	ŀ									

NOTES: (valve lineup at ponds, unusual conditions, etc.) Started bart up @ Lairy worked on level switcher Found Pond Rump trapped 04.00 En Shut down pump & Approx. NOON 12/10, Switch not properti working

NASTE WATER INJECTION LOG

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

Jal X/UU P-670 Obtained from Rustrak Recorder OILERS CRANKCASE CHART OPERATOR P-670 P-670 ANNULAR DISCHARGED LEVEL LEVEL CHANGED ТІМЕ INITIALS FLOW RATE PRESSURE PRESSURE TOTALIZER READING 20.4 Ves 99.4 747.8 Monday 1 2010969 14:50 207383 Kck. 6.0 762.1 2 100.1 Ves 2315 169. 6.1 28003 11:45 Tuesday 1 774.3 6.1 208700 1:00 2 100.2 Y5.5 8.5 209438 7*H*. 15:00 00.0 Wednesday 1 NO 9.4 781,9 12:00 A 2 99.7 209883 CHARTS 210389 1000 784.3 7.3 4<u>4</u>.a Thursday 1 792,7 13.1 211136 425 100 9 12:30 2 1150 98.4 9.0 Kick 786.0 211722 1 Friday $\mathcal{A}($ 7901 212362 2 49.6 11.0 455 2:20 Ve 11.6 100.3 142.1 212910 Π Saturday 1 101.2 12.6 28600 213581 $\boldsymbol{\nu}$ yes 2 1100 19 13.2 214/46 795.0 1 1 100.6 Sunday 15.5 799.3 214814 2 14:00 les. 01.6 784500 gal/work NOTES: (valve lineup at ponds, unusual conditions, etc.) Kump Kywning 95Ain @ worked on Switche 14:45 Aany

19/11

VASTE WATER INJECTI NI LOG

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

		Obtained	d from Rustra	ak Recorder	P-670	OILERS	CRANKCASE	CHART	1	OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	TIME	INITIALS
Monday	1	99.6	795.5	16.2	215382	~			13.00	KQ
	2	99.8	797.1	17.0	21602			405	24:00	Æ
Tuesday	1	105.8	816.7	19.2	216763	_	_		12:30	A
	2	104.4	813.3	17.3	217335			Yes	2319	J.
Wednesday	1	106.9	824.9	18.1	217977	_	_	/	11:30	41
	2	105.1	827.4	17.5	218647		~	Yes	23 50	ZA
Thursday	1	105.0	834.0	19.0	219352				13:00	A(
	2	105.4	837.7	17.3	219737	<u>ب</u>		Pes	2300	It
Friday	1	165,4	835.0	15,3	220451	-	~		12.15	UQ.
	2	105.7	836.2	16.6	221041			Yes	2310	34
Saturday	1	105.4	832.8	16.3	22/8/8	2			13:30	<u>A</u>
	2	Ide.1	830 1	15.3	222376	_		Y55	24:00	AC
Sunday	1	106./	827.8	13.6	223048	\checkmark	V	NO	12:00	K
	2								•	
								[

NOTES: (valve lineup at ponds, unusual conditions, etc.) Down 12.21.95 13:00. 6ad 1 and switches hack a @ 16:00. Changed out Chanf At 17:00 Pupp Stut 6FF By FtSelf= 17:30 37M

From $\frac{12}{25}/95$ to $\frac{12}{31}$ 5:8-Dates: Obtained from Rustrak Recorder CRANKCASE P-670 OILERS CHART OPERATOR DISCHARGED P-670 LEVEL LEVEL CHANGED P-670 ANNULAR тіме INITIALS FLOW RATE PRESSURE PRESSURE TOTALIZER READING Al (815.9 184.0 23.6 19:20 Monday 23417 155 Rick 822.4 22.4 224502 2105,1 1145/ 105.1 824.4 224772 27.5 フタ Tuesday 825.8 2 105.3 25.8 225152 yes 23:45 10/A Wednesday 1 125.5 828.5 25.9 225759

VASTE WATER INJECTION LOG

2 105.3 830.7 30.6 23:30 226125 Yes 222048 120,6 1.00 886.0 Thursday 1 285 18.7 23:45 899,4 2 122.5 227852 Ves 228583 18.8 892.6 11:05 121.1 Fich 1 Friday 21.2 μO 178.8 229349 Z3:30 919.0 2 Nes down All Shut Ð Saturday 1 2315 Ye5 2 Sunday 1 2

NOTES: (valve lineup at ponds, unusual conditions, etc.) Starten /25/ 9.20 New 15 lown holy flow to Ø 11:00 Increa well Q 120.10 cked been 03'20 05:00 down a Since About Wouldnt stay Running changing back to Valve WASAt pond. Pressure from pond pump (130 LBS.) GAuge out there showin pegged (pilter might be plusged)

			نيو .		WAS	TE WA	1 1	JECTIC	DN LOG	i .	
	*		• ,	Date	s: Fro	m <u> (/ </u>	1/96	to!	17/90	[
÷	· .	-		•		- Gal × 100					
				d from Rustr		P-670	OILERS	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
			P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	Levec	Changed	1 mile	MIDELS
	Monday	1	110.3	838.6	1.1	229617	~	/	1/25	2:30	415
		2	<u> </u>	959.6		130553		-	Yes	2370	3Å
	, . , .		1			1					LA A
	Tuesday	1	124.5	889.9	0.1	231259				10:40	LUL .
		2	132.9	923.1	21.5	232088		K	yes	2519	Rick
	Wednesday	/ 1	142.1	947.0	0.4	233/37	V	V	NO	14:30	5
			140.9	961.4	0.4	233703		1	Yes	23:00	Rich
	<i>.</i> .	-		141 1					1		
	Thursday	1	129.9	925.5	-0.1	234512			<u>م</u>	10:45	Ml.
	. •	2	119	891.9	-0.1	2-35268	~		Yes	2300	Lict-
1.	Friday	1	118.6	8950	0.6	236087				12'01	34
		2		895.0	0.2	236756	-	-	Ves	2300	Rich
	Saturday	1		894.5	20	237918	-	-	· · · · ·	16 301	ZH
		ł	114,9	893,4	-0.1	238291	· /		yes	23:15	en
.						20011			-705	20.13	
ĺ	Sunday	1	112.1	895.3	-01	239235				14 40	3.Je
	1-7-96	2	109.2	889.7	-0.0	239704	V.	-	Ves	23:30	AR.
	· ·			12/3	Ň				r l		
	1-8-91		110.5	891.3 893.3							
. 5	1-0 1		69.0			•					•
	• • • • • •	· N	IOTES: (v	alve lineup a	t ponds, un	usual condi	-			0	· · · · · · · · · · · · · · · · · · ·
	·		5-1	Pic SO	Dimb	pt c	7.30 fm	- Clus	igo & L	Sell To	130.3
معري				8.9.						· · · · · ·	· · · · · · · · · · · · · · · · · · ·
÷				Andrea (n. 1997) Andrea (n. 1997) Andrea (n. 1997)			N	da daraf da			· · · · · · · · · · · · · · · · · · ·
	a fill a tha tha she an			ere bullet en d'hi The second			1.5.4 •				
		- 				n si Shi shek Nga					
					مرکز میں اور			ر هر ۲۰ ۲۰ مور بر ۲۰	ganan Kalon sa kat		
					. *						

1

• . •

۰.,

		,			TED IN					
		2 				JECTIC	,			
		Date	es: From	n <u>1-2</u> 0	2-96	to	1/28/	96		
	Obtain	ed from Rustr	ak Recorder	P-670	OILERS	CRANKCASE	CHART		OPERATOR	7
	P-670 FLOW RAT	P-670	ANNULAR PRESSURE	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	тиме .	INITIALS	
Monday	1 127.5	804.1	-0.0	252587				17:00	lle	-
	2 0.1	853.6	0.1	257610	V		yes	24:00	Å.	
Tuesday	1	885:9	0.1	-		L		10:00	R	
	2	909.4	0.1	252610			Ver	00 m	Ste	-
Wednesday	1	804	01	252660				12:00	A	
	2	850.1	0.1	252610			les	23%	34	
Thursday	1 110 2	830.1	-0.1	11				11:20	ille	
. *	2 (1	887.5	- 0.1	<u> </u>			Pes	23 35	3%	
Friday	1	856.6	0.1	252610				12:00	AS.	
	2	898.2	- 0.1	и			+ES	23:34	27	
Saturday	1	897.5	0,1	+7	\leq			15:00	£	
:	2	854.3	- 0.1	1	. /		Yes	25 %	- Eg-	
Sunday	16.5	865.1.	0-1	252614 11	M			14:45	Ľ	
1-28	2 136.1	918.7	- 0.1	253117			Yes	23'7/	34	
1-29 current	119.9		x							
1-30	117.8	0 0-10/		· · · ·	•			0		
1-31		valve lineup a	t ponds, uni		· .		back	up 10.	00 Am	
	1-22-	96 - 1	There No	it Tree	a) ing - 1-	-22-96	• • • •		·	
and a start of the	<u></u>				· · · · · · · · · · · · · · · · · · ·	· · · · ·	· · · ·		· .	
		¥ • • • • • • • • • • • • • • • • • • •		an a					•	منبنيهم
			₩***				inder Strike Georgia (1980)			
			· · · ·							

WASTE WATER INJECTION LOG

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

• •		•				•				
	•	Obtainer P-570 FLOW RATE	d from Rustr P-670 PRESSURE	ak Recorder	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	ТІМЕ	OPERATOR INITIALS
Monday	1	119.0	866.0	0.1	253825	L	1		11.00	la
	2	119.5	871,9	-0.1	254415	/	-	Y25	Milnite	the.
Tuesday	1	117.8	870.5	-0.2	255385			~	R 45	34
	2	11 Q	870.1	-0.2	256063		<u> </u>	YES	23:50	ue
Wednesday	/ 1	117.2	876.2	-0-2	256806	<u>ر</u>	~		なっ	Rick
	2	119.7	812.6	-012	257459			yes	23:00	Lick
Thursday	1	112.5	889.4	0.2	258163	L	۲	· · ·	11:00	P
. •	2	108.0	881.3	-0.2	258884	\checkmark		Yes	23:30	tul.
Friday	1	110.9	917.6	-0.2	2.59(di Z	. /	<i>.</i>		1215	Rich
	2	111.8	918.4	-0.1	260219			YES	23:15	lie.
Saturday	1	111.0	911.4	-0.1	260908	/	-		11:10	A(
	2	119.5	941.5	-0.1	261660	·		Yes	23 45	34
Sunday	1	114.5	9163	-0.1	261379	•			11:45	A
·	2	117.7	929.8	. 0.1	263117	-	-	Yes.	23.30/	35
• .		120	73.5.0	.]						
ten al j Saget de tal al de Saget						•	Assa			· .
	· /	IOTES: (vi		t ponds, unu	sual condit	ions, etc.)	<u>/ </u>	naint	ain (14	51

NOTES: (valve lineup at ponds, unusual conditions, etc.) () - maintain (145/ 1ess than 950th on the 2" disch, pressure by adjusting Flow rate 2-296

. 1915 - S. $\mathbb{Q}^{1,\mathbb{Z}^{2}}$.

en Seine Chine Seine

26. 18 A.

		· •		IIAU						
	:		Date	es: Fro	m_ a/s	-/96	_ toc	2/11/	96	
	•	Obtaine P-670 FLOW RATE	ed from Rustr	ak Recorder	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	אוד	OPERATOR INITIALS
Monday	1	121.0	9405	-0.2	264029	/	-	<u> </u>	14:00	A(
	2	122.2	948.0	-0.2	264618			Yes	23 30/	J.Y
Tuesday	1	119.5	932,2	-0.2	245398				12:10	Mel.
	2	111.4	905.0	-0.2	266053		L	Yes	2300	Pick
Wednesday	/ 1	1325	985.2		266810				11:50	m
	2	1 2	895.9	-0.2	267508	~		Yes	2312	Fict
Thursday	1	129.6	968.2	-0.2	268310				12:30	Mil
	2	123,3	939	-0.2	26-596-1	\checkmark	~	Yes	2.300	Rick
Friday	1	116.9	910.5	-	269981		<u> </u>		1600%	i de la
	2	123.5	933.2	-0.2	270394	r		Yes	2300	Rid
Saturday	1	117.9	910.8	-0.3	271167	\sim	~	/	1150/A	34
	2	121.0	923.5	-0.2	271937		<u> </u>	Yrs	12:30	AL
Sunday	1	123.4	934.2	-0.2	172678	-			120%	34
	2	121.1	925,8	-0.2	273421			Yes	23:55	the.
								,		·.

WASTE WATER INJECTION LOG

NOTES: (value lineup at ponds, unusual conditions, etc.) <u>Maintain</u> <u>Discharge Pressure</u> to Just Under 950[#] - adjusting Flow Rate when needed. <u>Adjusted BACK 70 938.1 + 120.9</u> 218) Adjusted BACK to 121 - 933.5

10 - 114 Justice WACK to 121 - (32)

an an an Alberta an Alb

. . . .

	WASTE WATER INJECTION LOG													
			Date	s: Fror	n <u>2/1</u> 2	2/94	to	2 - 18	- 96					
		0141			י. ר	/ . 	1	1	· · · ·	1 1				
		P-670 FLOW RATE	ed from Rustr P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS				
Monday	1	120.1	919.3	-0.2	274175	-	-		1200	34				
	2	1255	944.2	-0.2	274929			yes	23:55	the				
Tuesday	1	116.4	911.7	-0.2	275673	\checkmark	-		1200	Rick				
	2	119.2	924.6	-0.2	276392	V		Yes	78:50	5				
Wednesday	1	109.0	895.3	-0.2	277000			/	12:30	AL				
	2	121.6	937.1	71.8	277663			<u>4es</u>	B:55	P				
Thursday	1	117.7	934.3	78.7	278405	1	-		12:01	AL,				
. •	2	118.0	928.1	106.3	279108	\sim		Yes	28:50	A				
Friday	1	60.1	9325	109.4	279828		-	·	11:30	A(.				
	2	122.4	945.6	126.7	280612			yes	24:00	<i>b</i>				
Saturday	1	122.0	945,0	149,4	281344	~	<u> </u>	/	12:00	eld				
	2	1:4.2	936.1	162.7	282026	. 🗸	V	yes	23.00	Rick				
Sunday	1	119.9	941,9	184,3	282807	_	_		11:45	le.				
	2	117.2	934.3	195.1	283486	- 6-	<u>८</u>	Yes	2.300	Rick				
	1	l	1		31,000?		[
		•		9.										
-			alve lineup a		sual condit	ions, etc.)				<u></u>				
			79674											
12200	<u> </u>	. 44 -	279722	to to	onK	•				· .				
71.20 0			entre a lettere Relationer		· · · · ·	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • •							
					· · · · ·		×			·. ·				

1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 -

 $(r_{12},200)$

...t¹

. . .

ite net . • • \mathcal{X}^{*}

Dates: From <u>2-19-96</u> to <u>25-96</u>

	•	h	d from Rustr	والمتعادين بيبين والبوالا والتهامين	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	118.4	942.1	88.7	284296				12:10	like
	2	115,7	933.3	80.2	284938	~	5	yes	2300	Ricle
Tuesday	1	116.3	9443	Ø3.5	285912	\checkmark			15:00	A
	2	117.7	956.2	86.3	286452		-	VES	24:10	Al,
Wednesday	1	111.9	936.5	87.9	287150				12:15	B
	2	113.8	948.5	92.2	287797	1		455	11:30	Al
Thursday	1	112.0	943.5	94.5	288561	-			12 357	J.H.
	2	107.8	927.7	99.1	289259			YES	1:00	A(
Friday	1	1.10,2	939.7	100.9	289556	<i>i</i> ~	~	• —	1200	Res
	2	110.9	943.4	94.8	290365	-	-	VIS	11:30	AL
Saturday	1	İ10.6	927.4	105.4	291082	~		,	12/0	Rick
	2	110,7	927.8	101.3	29/7/2	V	r	425	23:30	A
Sunday	1	110.6	927.8	106.9	292444	~	-		12:05	Rick
	2	112.1	934.4	107.1	293141	-	_	4.05	24:10	5
				1				/		
		·			-					

.

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

WASTE WATER INJECTION LOG

Dates: From <u>2-26</u> to _____

	Г	Obtained	from Rustra	ak 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	13.2	940.3	///.7	293844	~	\checkmark		1200	Ra
	2	112,0	9361	105.7	294501			Ves	23:50	Æ
Fuesday	1	112.4	937.3	117.8	195229	/	/		12:30	AL
		12.4	939,2	115.9	295841			Yes	23200	34
Vednesday	1	12.6	93 9 .3	118.2	294617	-	-		12:30	$\mathcal{A}($
	2	13.8	944.3	115.8	297252			Yes	23 %	ZH
Thursday	1	ίΥ.ı	946.8	119	298014	\checkmark		;	12:25	all
	2							· _ · _		
riday	1									
×	2		•							
aturday	1									
	2									
unday	1						•			
•	2									
				,						
	NC	DTES: (va	alve lineup a	t ponds. unu	Isual condit	ions. etc.)	shut or	AMAN	town @	0 12'.
	2	129.	\cap	ichen (<u> </u>		<u> </u>
、				<u> </u>						

VASTE WATER INJECTION LOG

Dates: From 3 - 6 - 9 to ______ to _____

								······			
			Obtained P-670 FLOW RATE	from Rustra P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS	CRANKCASE LEVEL	CHART CHANGED	πмε	OPERATOR INITIALS
	Monday	-1	156.0	950.8	141-9	298084	~		Yos	11000	Rie
		2	151.9	957.0	10.8	299096			-yes_	23:55	MC.
/	/ Tuesday	1	146.4	944.0	9.8	300091				12:45	AE
	$\left(\right)$	2	149.4	940.3	9.5	300954	_		les	115%	J.
	Wednesday	1	142.0	938.0	11.7	301893				12:45	$\mathcal{A}($
	$\left(\right)$	2	140,4	938.3	18.3	302444	1		Yes	2325	and a
	Thursday	1									
	\leq	2		·							
5		1									
	3-8	2									
	Saturday 3-9	1									
	3-7	2									
	.0	1									
	3.10	2									
			[. [1					

NOTES: (value lineup at ponds, unusual conditions, etc.) System down for Frac. Maintain slightly less than 950°. Back on o. F. 11 cm 3 way values started leaking Agian At 18:30 3/8/96 And is getting workse.

WASTE WATER INJECTION LOG

Dates: From 3 - 11 - 96 to 3 - 17 - 86

					-			·		
		Obtained P-670 FLOW RATE	d from Rustra P-670 PRESSURE	AK Recorder	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	143.5	950.8	15.0	303-167	V	1		10:00	AS
	2	147.2	964.7	10.0	304485		_	Yes	12°4	Ŧ
Tuesday	1	/ 38. 8	965.3	31.3	305239	\mathcal{V}	\checkmark		11:30	MC
	2	140.9	957.1	57.4	30057		L	Yes	2.300-	Lick
Wednesday	1	143,4	945,3	82.1	306936	<u> </u>			11:10	ee.
	2	MO.3	953.3	72.1	307793	\checkmark	\checkmark	. Ves	7.3°3	Le. 9
Thursday	`1	154.0	1000.0	137.4	308782	2		:1	12:20	lec.
. •	2	155.1	999.7	1(12.1	3054035	\mathcal{L}	L	yes	2300	Rich
Friday	1	155.5	993.5		310781	. /	1		13207	Joy .
	2	155.3	982.2	188.8	311533	L-	~	Yes	23 (16)	23
Saturday	ł	155.3	982.4	215.3	312683	_	_		1315/	F
	2	154.0	975.8	51,4	313520		<u>·</u>	Ves	23:55	la
Sunday	1	153.8	975.1	55.9	314527				12357	If
	2	152.4	970.9	55.7	315412			Ves	23:55	lice
								(

NOTES: (valve lineup at ponds, unusual conditions, etc.) $\begin{array}{c} 147, 5 - 962.5 & Af 12.72 - 7 - 11 - 96 \\ 150.1 & 976_12 & Af 17:00 \\ 958 & Af 18:30 \\ 149 \end{array}$, 312 2 3% Flow Rate @ 28.3 , Press, 949.2

WASTE WATER INJECTION LOG

Dates: From <u>318</u>

8	to	
---	----	--

		Obtaine P-670 FLOW RATE	d from Rustra P-670 PRESSURE	AK Recorder	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	153.7	975.8	61.6	316437		-		13:00	4(
	2	149.2	970.3	40.5	317282			Ves	23:50	.llQ
Tuesday	1	151.0	965.8	72.8	3 18218	\checkmark	Added		.12.00	PKA
	2	147.4	962.9	65.0	319165		\sim	Yes	00:05	\mathcal{A}^{\sim}
Wednesday	1	150.5	969.0	112.3	319957		L		10 30	RQ
	2	148.5	955.5	122.0	320934	\checkmark		yes	23:36	Ø
Thursday	1	15,2.5	973.5	131.2	322005	V	V		13:00	7.0
	2/	50.8	972.0	62,6	322804	V	V	Yes	23:30	A
Friday	1		974.0	172.5	323739			/	11:20	Ą
	2	152.D	974.L	154.9	324727	u	L	Yes	13:51	A
Saturday	1	152.8	978,0	160.6	37-5618	/		1	11:30	all-
	2	152.5	979.2	199.5	326601		—	425	12:00	A(
Sunday	1	157.5	982.2		327449				10:50	lik.
	2	15.2.0	984.0	967.	328396	-		Ves	2.300	ZC

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

WASTE WATER INJECTION LOG Dates: From $\frac{3}{25}$ to $\frac{3 - 31 - 96}{25}$

		Obtaine P-670 FLOW RATE	d from Rustr P-670 PRESSURE	ak Recorder Annular pressure	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	152.5	984.0	97.5	329387				11:35	IR.
	2	152.1	982.2	88.0	330289	L	5	Yes	23.05	RM
Tuesday	1									
	2	150.0	975.1	82.8	332161	/		425	1:30	A
Wednesday	1 (151.0	980.9	91.5	332946	-	~	·	11:33	R
	2	1.52.0	990.3	83.2	334105			425	2:00	AC
Thursday	1	152.5	992,4	89.5	334 894		_	:	12:30	£
	2	152.0	992.1	84.4	375791	-	_	455	11:45	A(
Friday	1	152.9	913.5	86.4	336731	~	6		1200	Pichi
	2	151.3	995.4	209.8	337231			425	12:40	AL
Saturday	1	151.0	993,7	210.5	338631	_		•	1215	Rick
	2	153.0	1007.	96.5		Added	Addex	40s	24:00	S
Sunday	1	/53.3	1014	153.7	340525	L	-	1	D^{30}	Ro
	2	152,0	1014	140.3	341578	Addad	V	Yos	23:15	MC
		ĺ						(

NOTES: (valve lineup at ponds, unusual conditions, etc.) Konepsed ANULAR PRESSURG. 1-30-96 - 131-96

Dates: From <u>4-1</u> to <u>4-7</u>

		Ohtoino	d from Rustr		P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670	P-670	ANNULAR	DISCHARGED	LEVEL	LEVEL	CHANGED	тіме	INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING					
Monday	1	154.0	1028	153.8		2	L	342409	1210	R
·	2	153.4	1030	160.5	343333	\mathcal{U}	\checkmark	Yes	24:00	Æ
Tuesday	1	140.9	97F.0	196.0	344300	1	1	/	1R: 20	A-(
	2	145.3	1002.	192.3	345127	_	_	Yes	aa "/A	Eff
Wednesday	1	141.3	999.1	172.2	345993	<u> </u>	-		12:30	410
	2	110.2	985.6	163.1	346684		_	Yes	2320/	34
								•	• *	
Thursday	1	114.8	903.6	195.4	347491	-			12:30	4
	2	114. P	903.9	176.2	348118		_	Yes	2320/	Z
Friday	1	1249	955,3	166.9	348910	4	4		12:00	J.
	2	131.5	980.6	144.1	349730			Yes	2327/2	34
Saturday	1	131.0	1000	169.6	350583		~		12:15	A
	2	127.9	785.1	176.8	351362			425	12:00	AC
Sunday	1	138-5	1015	161.6	252270	/		~	14:00	Æ
4 -	2	128.0	957.7	163.7	152936	/	-	YES	1:30	71
				ĩ				1		

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

			Date	s: Fron	n <u> </u>	8-94	_ to _4_	-14-9	6	
		Obtaine P-670 FLOW RATE	d from Rustr P-670 PRESSURE	ak Recorder	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	тіме	OPERATOR INITIALS
Monday	1	147.4	1051	217.9	153643				12:30	S
	2	126.4	958.3	185.3	054359			425	1:00	AL
Tuesday	1	118.1	922.5	97.0	055043				12057	34
	2	118.9	939.0	157.0	155719			yes	23:25	lla
Wednesday	/ 1	124.9	985.4	188.0	156665				1340	ZH
	2	141.7	1075	Ale.U	1572.74			Ves	millnight	die
Thursday	1	127.9	994.2	95.4	158170	-	V		1340	Rм
119.	12		949,6	96.2	158819			yes	00:15	the
Friday	1	110.7	910.4	98.7	059457	-	<u> </u>		10:45	AC.
	2	119.0	940.2	9:3.0	060293			Ves	23:50	IR.
Saturday	1	117.4	934.4	112.6	X61136	-	_	-	13:00	41(
	2	/41.4	1067.	102.3	161828			Yes	23%	34.
Sunday	1	120.5	954.6	111.5	062826	~				+1(
	2	115.5	9:33.3	109.9	163416			Yes	10'%A	3Å
						l	. 1			

NOTES: (valve lineup at ponds, unusual conditions, etc.) fond fung Wors OFF @ 1729 Started Backup OK - Started Inj Puny et 175% FFill

Dates

Dates: From <u>4/15/94</u> to _____

		·						··		
			d from Rustr		P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	DISCHARGED TOTALIZER	LEVEL	LEVEL	CHANGED	TIME	INITIALS
					READING					ļ
										. 11
Monday	1	150.5	111 6.0	109.7	064198				12:30	41
	2	135.5	1032	108.6	26-1949	Addad	-	Yes	24:00	D
				,				l		1.0
Tuesday	1	149.6	1099	100.4	065728				12:00	IR.
	2	130.8	993.5	106.9	866445	V	4	Ves	2300	Rick
								/		
Wednesday	1	141.5	1039	74.1	867267				12:00	NQ.
	2	122.4	987.4	138.6	767992	L	L	Yes	73 30	Rick
				<u> </u>						
Thursday	1	113.7	944.0	106.9	768724	Added	/		11:00	lle.
	2	120.1	969.6	206.5	769530	V	V	Yes	2300	Rick
						Ritte	Added Igail			
Friday	1	114.2	934.0	220,0	770292				11 2/4	24
	2	148	1122	144.0	770844	5	L	Yes	2300	Rich
			000							
Saturday	1	103.3	908.1	177.9	771761		_	-	1235/p	E.
	2	111,7	931,6	186.7	772457		<u> </u>	Ves	00:05	tué.
							ŀ	N .	201	
Sunday	1	109.5	922.6	127.0	7732.68	_			12 3/4	S.J.
	2	132.7	1022 1	93,1	174064			Nes	23:55	lie.
								ι		
	1	1	1	· •	1	1	. I	1	i	1

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

Dates: From $\frac{4}{23}/94$ to $\frac{4}{27}$

					7			1	· · · · ·	T1
		Obtained P-670	d from Rustr	ANNULAR	P-670 DISCHARGED	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING					
			<u> </u>		READING		}		1	1/
Monday	1	116.9	953.3	100.9	674869	-	-		11:50	41
	2		902.0	85.0	675621			yes	23:50	le
Tuesday	1	16.9	1196	111.0	676449		~		1200	Rick
	2	1564	1166	85.6	677649	Added		405	24:00	Æ
Wednesday	1	42.5	1068	124.6	677876	L	Added	/	12 20	20
	2		1131	124.1	678598		-	Yes	24:00	Ð
				,				/*	ŕ	
Thursday	1	107.3	916.0	151.0	679428	-	1		12:00	416
	2	149.7	1115	157.5	680/92	Alter		YPS	24.00	5
Friday	1	114.5	940.0	191.0	681021			/	11.55	lee.
	2	122.1	974.4	215.3	681780	Addoc		405	24:00	J.
Saturday	1	107.7	911,0	171.9	682491	~	<u> </u>	L	11:45	Mel.
	2	116.1	951.7	195.1	58'3315	·V	V.	Yes	102:05	(ct
Sunday	1	112.0	928.9	180.9	584096	<u> </u>	V		12:00	NQ.
	2	105.1	901.3	193.9	584806	Added	V	Ves	23:00	Rick
			}							

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

Dates: From $\frac{4-29}{10}$ to 5-5

		P-670	d from Rustr	ANNULAR	DISCHARGED	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING					7
Monday	1	115.3	945,4	192.7	585618				11:55	lle
	2	109.0	923.8	219.8	586351	V	Added 112 gally	Yes	23 00	Rick
Tuesday	1	111.4	932.3	211.8	487355				14:00	A
	2	114.5	953.0	176.6	387974	/	-	1/25	12:30	$-\Lambda($
Wednesday	1	116.2	962.3	213.1	388701	/	_			34
	2	113.6	951.5	162.2	389464	-	-	425	12:20	$\mathcal{A}($
Thursday	1	114.6	956.8	218.8	3904/2				15:00	B
	2	114.5	958.4	170.6	391016			ý£s	1:00	4
Friday	1	117,1	971.3	219.6	291833		~	,	1340	RO
	2	140.7	1100	139.6	292508	1	-	YES	12:00	AC
Saturday	1	14.2	9533		293242	11 Horal	Addef 1/2 gaily	,	11-30	Fred
	2	114.6	456,6	126,7	294111	Adde to	V	yes	24:a	S
Sunday	1	102.1	903,1	122.1	29.4838	~		/	1200	Rick
	2	115.1	965.6	24.5	295566	Acted N	K	yes	13:45	S
								[

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

Meter Looks Like its Acting ye tym gaine Motestcrazy Kara

WASTE WATER INJECTION LOG												
			Date	s: Fron	n <u>5-6</u>	, 2	to	5/12	194			
									(
		Obtaine	d from Rustr	ak 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		L	4		1145	Ru		
	2	¥/48,9	1142	132,4	197318	Acted	31	yes	24:00	D		
Tuesday	1	115.7	966.6	153.1	198219				13:20	la		
	2	110.6	946.6	160.1	198875			Yes	1138/2	37		
Wednesday	1	106,8	934.3		199419				11:40	IQ.		
		116.8	981.0	148.9	100685			Yes	2345	74		
Thursday	1	108.5	943.2	108.6	101685	-			11:30	4(
	2	110.5	944,2	141.9	102605	•••••		Yes	2339	2A		
Friday	1	[32.0]	1055.0	188.6	103713			·	11:45	R		
	2	105.9	922,0	141.1	104592			Yes	2340/2	3th		
Saturday	1	107.2	935.9	95.8	605970	Achile d	\checkmark	/	15:00	S		
	2	125.0	1025	143.1	106738		<u> </u>	YES	12:20	AC		
Sunday	1	120.4	1015	118.3	107840			A	13:00	A		
	2	103.9	932.3	148.2	108568	-	C	425	12:30	AC		
								/				

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

6-05970) Sitting Right in the Contar \mathcal{O} down - Hap To Charlo -12 Dump Went DEN AS c/C 3 TO RESET. 17

Dates: From 5 - 13 to 5 - 19.96

			Date	5. 1101		· ·	_ 10			
		Obtained P-670 FLOW RATE	d from Rustra P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
Monday	1	115.6	990.6	199.2	12954	Added	Over		11:45	6
	2	90.3	886.4	190.3	110491	-	- '	VES	1:00	AL
Tuesday	1	88.1	879.1	166.1	111275	_	Pressured		12.7	JH.
	2	as.s	910.8	165.0	111948			yes	35.38	ler
Wednesday	1	90.0	902.6	1.34.9	112839				1408	34
	2	86.3	899.4	220.0	113310	\sim	<u> </u>	VES_	231.58	le
Thursday	1		``							
Friday	2									
	2									
Saturday	1	123.7	943.0	145.0	013908	~	-	1/25	10:15A	AL
	2	107.3	961.5	172,6	014129			Yes	00 %A	24
Sunday	1	92.3	894.3	183.6	014949	_	-		11:30	AL
	2	102.7	935.0	171.4	1			Jes !!!	00 00	5ª
	ľ	ļ								

NOTES: (value lineup at ponds, unusual conditions, etc.) fond pump Kept Suction Since About 4'.00 Am ? Conclusion get Pick up shutdown pump. Pump brek in at 1400 5-17-96 NEW CHART 5/18/96 10:15 got pump StuRtED up

Dates: From <u>5-16-96</u> to <u>5-23</u>

		Obtainer	J famme Devel							
		_ obtained	a from Kustr	ak Recorder	P-670	OILERS	CRANKCASE	CHART		OPERATOR
		P-670	P-670	ANNULAR	DISCHARGED	LEVEL	LEVEL	CHANGED	TIME	INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING					
		0.0	0 0			Addal		· · · · · · · · · · · · · · · · · · ·	1	
Monday	1	O.S	110.9	191.7	371608	1/2 9A1	1	·	12:00	A
- · · ·	_	0.1	011 5	-					1:00	T
	2	0.0	926.3	161.0	ļ				1.00	711
			_						177	- 14
Tuesday	1	0.4	944.6	161,1	581656				145%	SK
										600
	2	0.2	936.2	140.5	681677				23:55	Mux.
Wednesday	1	05	941,2	160.3	781118		_		1407	36
realizeday					t				-1-p	4
	2	0.2	943.5	88.9	781776				23.55	Jul 1
					New			,	· · · ·	
Thursday	1	1012	952.7	148.3		_	-		13207	34
maisuay		1			580871			······	1-2-1	en
	2	147.5	951.0	134.9	581420	/			00:25	lle.
Friday	1	149.0	953.3	158.3	58241.1	-	-		11:30	AC
-			9							
	2	147.3	953.5	178.1	583407				23:55	Ill.
Saturday	1	149.8	954 N	177.0	SEUSUL	-			2:00P	41
,	·ŀ	1127		11/1 01						-24
	2	171.1	946.2	144.8	585255	. —	-		2358	24
			į							
Sunday	1						ļ			
•	. ŀ	<u> </u>								
:	2	150.0	94F.1	143.2	5F6463	-	-		15:00	71(
		1472	9578	1478	587144				AM 20	-791
	I	/ c / c /	1510	11/19		1	1	ji	A-I	ET !

* s. s. s. s.

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

				WAS	TE WA	TER IN	JECTIC	N LOG	ì	
			Date	s: Fror	n <u>5/</u>	20	_ to _5	126		
		·			, -1		, 			,
		Obtaine P-670 FLOW RATE	d from Rustr P-670 PRESSURE	ak Recorder ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	тме	OPERATOR INITIALS
Monday	1	106.7	942.9	126.3	016863	-	-	ļ	14:30	AL
	2	97.3	909.3	169.4	017528	-		Yes	2354	3H
						Added s.				10.00
Tuesday	1	100.2	950,3	116.6	018563				12:10	<u>lec</u>
	2	They	924.1	176.1	019278	~		YES	23:10	Rick
Wednesday	1	105,0	944,5	160.8	020739				11:30	UQ.
		105.4	945.4	180.6	020996	V	<i>U</i> -	Yes	2300	Rick
						Added				
Thursday	1	106.8	944.5	161.6	0224/62				12:25	len
	2	103.3	932.1	173.6	023354	~	5	Ves	23 19	Rick
Friday	1	108,9	955.8	77.5	024745	Added at			1410	EH.
	2		958.3		025657	~	Holder	Ves	2300	30
Saturday	1	91.3	884.0	136.9	025891	-			13%	34
	2	95.0	890.8	125.7	67779		L.	Ves	23:50	ha
Sunday	1	99,9	913.5	164.5	029094			- ([*]	12 301	34
	2	100.4	918.9	184.5	030289	_		Ves	00:25	UQ.
				3		-		,		

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

·····

•

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

			16	1. D	1				1 .	<u> </u>
		P-670	from Rustra	ANNULAR	P-670 DISCHARGED	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	TIME	OPERATOR INITIALS
		FLOW RATE	PRESSURE	PRESSURE	TOTALIZER READING					
Monday	1	104.3	937.2	190.7	931962				14 457	34
	2	109.5	948.1	176.0	932741			yes	23:50	Jea
Tuesday	1	169.1	953.3	177.0	934021	V	<i>L</i>	Y	1145	Ro
	2	105.9	945.9	142.8	935128	Addod of.	Added	yes	24:00	X
Wednesday	1	108.0	959.0	160.1	936590	~	u		1200-	₹.
	2	1021	940.5	110.5	937558	Addod	\checkmark	425	24:00	A
Thursday	1	106.7	955.0	139.9	938823		-	/ ·	14 30	RO
	2	110,5	968.2	116.3	839561	Addel	V	Yes	24.00	A
Friday	1	103.8	941.5	170,4	840986			-	11:15	ao:
	2	139.0	1058	90.2	842-042	V	Acted V	-405 8	74:00	B
Saturday	1	116,9	959.4	149,8	TY3456			1	12:05	AR
	2	1/4.8	954.5	166.0	१५५५७५		end did	Ves	23:01	Rich
	ſ					Added				
Sunday	1	109.4	932.1	161,6	145862	~			11:40	Ill.
	2	111.8	946.7	222.0	946725	~	L	Ves	2259	TS.
	/	08.16	951,99	155.68			·			

.

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

5

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

		Ohtaina	d from Rustr	-k Pacardar	P-670	OILERS	CRANKCASE	CHART	· · · ·	OPERATOR
		P-670 FLOW RATE	P-670	ANNULAR	DISCHARGED TOTALIZER READING	LEVEL	LEVEL	CHANGED	тіме	INITIALS
Monday	1	955.8	113.4	116.7	948058				12:00	de
	2	108.5	941. 3	115.6	849108	~	L	Ves	23:00	Rick
Tuesday	1	08.5	940.3	102.3	350589	\checkmark		~	12:15	b
	2									
Wednesday	/ 1									
	2									
Thursday	1							:		
	2		•							
Friday	1	91.8	8764	127.1	86NIS		\checkmark	1/25	1530	Rick
	2	117.2	951.3	105.4	861903		<u> </u>	VES	12:45	AC
Saturday		127.8	994,3	173.2			1		1235/0	34
	2	110.1	9236	124.3	153804			(1es	23:30	VS.
Sunday	1		936.5	65.8	855338	_	_		12274	3.
	2	120.1	956.9	121.9	8567.88			(ps	24:00	S
	ľ			, T				/		

NOTES: (value lineup at ponds, unusual conditions, etc.) Shut Stancek Mouse At 7:15 FRAnstel 7-15 ump wort Come on 15:00 6-7-94 ackin

Dates: From <u>6-10-96</u> to _____

					_					
		Obtaine P-670 FLOW RATE	d from Rustr P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	тіме	OPERATOR INITIALS
Monday	1	129.4	994.3	127.0	857565	Adolect	~		12.000	R
	2	129.2	904.3	113.6	858319	~		405	24:00	Ø.
Tuesday	1	123.4	953.3	120.8	859.162	/	-		12:30	AL
	2	123.5	954.4	124.3	861164			ies	235 \$	3A
Wednesday	1	0.5	938. D	158.4	862039	_			16:00	AL
	2	0.3	967.0	123.7	862054			Yes	2335	34
Thursday	1	148.1	937.0	81.8	862F53			: 		91
	2	j24.5	962.9	82.8	963562		L	Yes	2300 -	Jack
Friday	1	122.8	955.D	8.8	165572	Added 12 941	<u> </u>		15:00	A
	2	122.6	952.7	117.4	265973	L		Yes	2300	Rick
Saturday	1	1200	957.6	157.0	2,0,894	Addod 16t V		u	12:00	J.
	2	121.3	950.3	187.0	26F4F0		<u> </u>	125	12:00	AC
Sunday	1	121.9	949.4	983	269882				12.00	Ø
	2	120,9	547.7	155.0	270718	-			1:30	11
		·								

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

١

WASTE WATER INJECTION LOG Dates: From $\frac{6}{24}/96$ to _____

		Obtained P-670 FLOW RATE	d from Rustra P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	тім.E	OPERATOR INITIALS
					READING	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
Monday	1	152,9	1087	155.7	588133	U	L.		12:00	S
	2	103.4	952.7	127.9	589002				00 %	34
Tuesday	1	153.5	953.0	141.2	589.940				12:10	ÛQ
	2	151.9	9521	167.4	5910801	~	V		2315	FS -
Wednesday	1	150.0	952.5	168.6	591778				11:50	lld
	2	148.6	949.7	188.3	572658	Í Í	Added		2300	he
Thursday	1	1 10.10	10950.1		593620			:	11:30	Na
	2	150.8	951.8	196.9	594487	4			2300	Rich
Friday	1	148.2	948.3	128.7	595674	Added			1400	34
	2	149.1	930.3	144.9	596398	\checkmark	Ú		25:45	1 A
Saturday	1	137.4	943.4	121.5	NUNINg Son Noise 597200				11207	II.
	2	151,7	950.5	153,3	597897	· _			00.05	the
Sunday	1	148.1	948.4	169.0	598059		_		1300	34
	2	150,9	950.0	158.2	548083		_		00.05	92

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

Dates:

From	7/1/94	to	

		Obtained P-670 FLOW RATE	P-670 PRESSURE	ANNULAR PRESSURE	P-670 DISCHARGED TOTALIZER READING	OILERS LEVEL	CRANKCASE LEVEL	CHART CHANGED	тм.Е	OPERATOR INITIALS
Monday	1	948.2	101.1	189.6	SAFIOL	-	-	1	12:10	AL
	2	150.6	949,5	88.4	598113				23:50	lle
Tuesday	1	158.7	957.9 79.1	42.1	598132	L	4		1210	Rich
	2	148.7	Qãão	79.3	598 MG	U	_		24:00	£
Wednesday	1									
· .	2									-
Thursday	1									
	2							•		
Friday	1			•						
	2						·			
Saturday	1									
	2									
Sunday	1									
	2									
							, I			ч. —
	N	OTES: (va	alve lineup a		incter no Fwi sual condit	nuling ions, etc.)	7-7-96			
						•				
									<u> </u>	
		•							. <u></u>	



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT CONSERV

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

GARY E. JOHNSON GOVERNOR

· 36 JU & RM 8

8 52 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



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

THTER, IF N DIVISION FOLF FED

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.

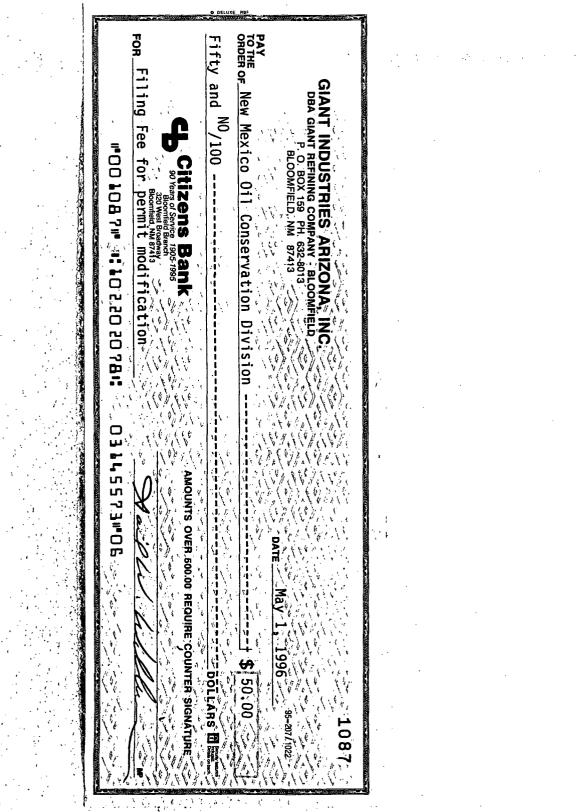
Sincerely:

OM

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



- 大学が、他にないたち~

D	STERN	The	West	ern Co	ompai	ny	Tre	eatment	Repo	<u>rt</u>		Page 1 of
Date <u>M</u>	arch 1, 199	6	District	Farmingt	on NM]	F.Receip	ot <u>398367</u>			Operator	Giant Refinery
Lease <u>B</u>	loomfield	WD	Well No.	1		I	Field B	lanco			Location	SEC.27,T29N,R11W
County_	San Juan		State <u>N</u>	ew Mexico	0	\$	Stage Ni	umber <u>1</u>			This Zone	2 🖂 This Well 🖾
	D)ATIA											0' Formation Mesa Verde
												Set at N/A
												Wt
		Size .45										
	Treatment							nite Prio				<u>1123</u>
TREA	IMENT	DATA										LIQUID/GAS PUMPED AN
] Oil 🔲 🕐				CAPACITIES IN BBLS.
	id type <u>H</u>							i Vol. <u>123</u> ,				Tubing Cap. <u>N/A</u>
-		% Mitcl		•					• • • • •		_Lbs.	Casing Cap. 78
-		₫ WP-1										Annular Cap. N/A
		ypes and Q						A		0.11	- I	Open Hole Cap. <u>N/A</u>
		H2O										Fluid to Load <u>N/A</u>
		- 6 Dum - 1					Sta	iges of			- 1	Pad Volume 514
		of Pumps I										Treating Fluid 2516
Auxiliary	y materials	54# XCIE	DE-20//8	9 G. FRW	-30							Flush75
				001010				- 1 1 00 //			Over Flush N/A
						2#/21,0	00 G. I	#/11,214 (3. 1_1/2#			Fluid to Recover 2937
SUM	MARY	47,04	0 G. 2#/	3,150 G.	rlusn.							Total N2 <u>N/A</u> Total CO2 N/A
			Sur	ace	Slurry	Sur	face		Sur	face	1	
Time AM/PM	Treating	PressPsi	Slurry Pum	/ bbls	Rate BPM	CO2	bbls iped	CO2 Rate BPM	N2 N	ASCF aped	N2 Rate SCFM	
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total		
PM5:50	0		0	0	60	X						START PAD
5:58	1700		514	514	65							START 1/2#
6:05	1580		486	1000	65							START 1#
6:14			525	1525	66							START 1 1/2#
6:18	1500 1470		285	1810	<u>65</u>		<u> </u>					START 2#
	14/0		220 75	3030 3105	40							START FLUSH SHUT DOWN 5 MINS-720
6:37								1 1				
	1000	·	/3	3105								10 MINS-710
6:37				3105								
6:37			73	3105								
6:37				3105								
6:37				3105								
6:37				3105								
6:37			/3	3105								
6:37				3105								
6:37 6:38		Min_147C				0		1500		Custome	r Represe	
6:37 6:38 	1000	Min_147C			Max170 Rate on F	lush_ 65				Western	Represent	10 MINS-710
6:37 6:38 	1000	ng Fluid <u>6</u>)	 	Max. <u>170</u> Rate on F . 750	lush_ 65	ush Den	s. lbs/gal_		Western Distribut	Represention_ <u>NOR</u>	10 MINS-710
6:37 6:38 Treating Inj. Rate Avg. Inj.	1000	ng Fluid_6		I.S.D.P essure_70	Max. <u>170</u> Rate on F . <u>750</u> 0	lush_65 F1	ush Den			Western Distribut	Represention_ <u>NOR</u>	10 MINS-710

EFTELLER, INC.

reservoir engineering data

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

FL • TS

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

> 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

Serving the Rocky Mountain Area & Permian Basin Area

03/08/96 File Reference F224307.RED

Gauge Identification

Gauge Setup Parameters

 Page A

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

WELL LOCATION : SAN JUAN COUNTY, NM

DATE : C

Date Time MM/DD 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 03/07 08:22:00	.5542 .6000	.93 1.35	44.16 41.84		
03/07 08:22:15	.6042	1.35	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 03/07 08:38:30	.8708 .8750	2.04 8.77	36.47 36.51		
03/07 08:38:30	.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 03/07 08:39:45	.8917 .8958	663.26 686.24	36.60 36.63		
03/07 08:39:49	.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 03/07 08:40:07	.9010 .9021	722.01 730.35	37.25 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 03/07 08:40:26	.9063 .9073	757.63 762.79	37.91 38.05		
03/07 08:40:20	.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 03/07 08:40:45	.9115 .9125	784.19 790.41	38.70 38.88		
03/07 08:40:45	.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 03/07 08:41:03	.9167 .9177	814.99 824.66	39.61 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 03/07 08:41:22	.9219 .9229	857.74 864.35	40.55 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 03/07 08:41:41	.9271	891.04 897.11	41.61 41.83		
03/07 08:41:41	.9281 .9292	905.31	41.03		
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 03/07 08:42:00	.9323 .9333	921.93 927.21	42.68		
03/07 08:42:00	.9344	933.15	42.89 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 03/07 08:42:22	.9385 .9396		43.99 44.22		
03/07 08:42:26	.9406		44.45		
03/07 08:42:30	.9417	973.12	44.67		
03/07 08:42:33	.9427		44.90		
03/07 08:42:37 03/07 08:42:41	.9438 .9448		45.12 45.35		
03/07 08:42:41	.9458		45.58		
03/07 08:42:48	.9469	1001.34	45.80		
03/07 08:42:52	.9479	1007.67	46.03		

PAGE 1 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE 2 OF 11

.

DATE : 03/08/96

FILE REF: F224307.RED

				·			FILE REF: F2243U7.RED
Date Time	Test Time	Pressure	Temp	deltaP	Comment		
MM/DD hh:mm:ss	hhhh.hhhh	Psig	Deg F	Psi	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 03/07 08:43:07	.9510 .9521	1031.72 1039.52	46.71 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 03/07 08:43:26	.9563	1066.45	47.84				
03/07 08:43:30	.9573 .9583	1072.12 1081.64	48.07 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 03/07 08:43:48	.9625 .9635	1104.18	49.19				
03/07 08:43:52	.9646	1112.63 1119.90	49.42 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 03/07 08:44:11	.9688 .9698	1154.25 1161.78	50.55 50.78				
03/07 08:44:15	.9708	1171.30	50.78				
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 03/07 08:44:33	.9750 .9760	1201.93	51.91				
03/07 08:44:37	.9771	1211.04 1216.04	52.14 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 03/07 08:44:56	.9812 .9823	1251.71 1260.69	53.27 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 03/07 08:45:15	.9865 .9875	1292.10	54.40				
03/07 08:45:18	.9885	1300.29 1308.87	54.63 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 03/07 08:45:37	.9927 .9937	1339.60	55.78				
03/07 08:45:41	.9948	1340.87 1342.81	56.01 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 03/07 08:46:00	.9990 1.0000	1363.44 1378.65	57.18				
03/07 08:46:03	1.0000	1385.90	57.41 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 03/07 08:46:22	1.0052 1.0063	1424.17 1432.48	58.59 58.82				
03/07 08:46:26	1.0073	1443.97	58.82 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 03/07 08:46:45	1.0115 1.0125	1489.80	60.02				
03/07 08:46:48	1.0125	1502.61 1511.57	60.27 60.51				
03/07 08:46:52	1.0146	1518.94	60.75				
03/07 08:46:56	1.0156	1527.91	61.00				

.....

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD hh:mm:ss	hhhh.hhhh	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
03/07 08:47:00	1.0167	1537.13	61.24		••••••
03/07 08:47:00	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 1.0219	1576.56 1587.77	62.21 62.46		
03/07 08:47:18 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 03/07 08:47:41	1.0271 1.0281	1633.34 1640.57	63.72 63.98		
03/07 08:47:41	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 03/07 08:48:03	1.0333 1.0344	1690.63 1701.82	65.24 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 03/07 08:48:22	1.0385 1.0396	1744.75 1756.47	66.60 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 03/07 08:48:45	1.0448 1.0458	1805.93 1816.59	68.22 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 03/07 08:49:03	1.0500 1.0510	1845.52 1854.97	69.67 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 03/07 08:49:26	1.0562 1.0573	1910.84 1922.81	71.44 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 03/07 08:49:45	1.0615	1969.38 1981.11	72.79 73.01		
03/07 08:49:45	1.0625	1993.35	73,24		
03/07 08:49:52	1.0646	2006.27	73.47		
03/07 08:49:56	1.0656		73.70		
03/07 08:50:00	1.0667		73.92		
03/07 08:50:03 03/07 08:50:07	1.0677 1.0688	2043.80 2056.71	74.16 74.38		
03/07 08:50:11	1.0698		74.61		
03/07 08:50:15	1.0708	2081.20	74.84		
03/07 08:50:18	1.0719		75.01		
03/07 08:50:22 03/07 08:50:26	1.0729 1.0740		75.20 75.39		
03/07 08:50:28	1.0740		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		79.80		
03/07 08:51:45 03/07 08:52:00	1.0958 1.1000		80.09 81.15		
03/07 08:52:00			81.42		
03/07 08:52:18	1.1052	2117.08	82.47		
03/07 08:52:22	1.1063	2116.73	82.74		

PAGE 3 OF 11

DATE : 03/08/96

FILE REF: F224307.RED



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

WELL LOCATION : SAN JUAN COUNTY, NM

			_				
Date Time MM/DD hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14	4.7 Psi Atm.	
03/07 08:53:15 03/07 08:54:15	1.1208 1.1375	2116.67 2117.04	86.12 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 03/07 08:57:30	1.1771 1.1917	2117.93 2118.04	97.22 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 03/07 09:02:30	1.2583 1.2750	2118.79 2118.71	104.02 104.78				
03/07 09:02:30	1.2917	2118.77	104.70				
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 03/07 09:08:30	1.3583 1.3750	2118.95 2118.99	106.59 106.78				
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 03/07 09:14:30	1.4583 1.4750	2119.12 2119.15	107.22 107.26				
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 03/07 09:19:30	1.5417 1.5583	2119.14 2119.15	107.36 107.38				
03/07 09:20:30	1.5750	2119.15	107.38				
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 03/07 09:25:30	1.6417 1.6583	2119.14 2119.16	107.45 107.45				
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 03/07 09:31:30	1.7417 1.7583	2119.17 2119.11	107.49 107.49				
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 03/07 09:37:30	1.8417 1.8583	2119.11 2119.41	107.52 107.53				
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 03/07 09:43:30	1.9417 1.9583	2119.10 2119.11	107.54 107.54				
03/07 09:44:30	1.9750	2119.10	107.55				
03/07 09:45:30	1.9917	2119.08	107.55			STAR	TTEST
03/07 09:46:30	2.0083	2119.06	107.55		RATE #1 - 0.06 BPI	1	
03/07 09:47:30 03/07 09:48:30	2.0250 2.0417	2119.12 2119.10	107.56 107.56				
03/07 09:48:30	2.0583	2119.10	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 03/07 09:53:45	2.1250 2.1292	2119.65 2119.69	107.57 107.57				
03/07 09:54:00	2.1333	2119.20	107.58				

PAGE 4 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date Time MM/DD 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 03/07 11:00:45	3.2292 3.2458	2125.91 2126.00	107.44 107.44		
03/07 11:01:45	3.2625	2126.09	107.42		RATE #5 - 3.0 BPM
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 03/07 11:05:45	3.3125 3.3292	2126.38 2126.44	107.38 107.37		
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 03/07 11:08:00	3.3625 3.3667	2127.47	107.35		
03/07 11:09:00	3.3833	2127.65 2127.76	107.35 107.33		
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 03/07 11:14:00	3.4500 3.4667	2128.20 2128.31	107.32		·
03/07 11:15:00	3.4833	2128.43	107.32 107.32		
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 03/07 11:19:00	3.5333	2128.68	107.31		
03/07 11:20:00	3.5500 3.5667	2128.80 2128.91	107.32 107.32		
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 03/07 11:23:15	3.6042 3.6208	2130.20 2130.43	107.32 107.32		
03/07 11:24:15	3.6375	2130.43	107.32		
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 03/07 11:28:15	3.6875 3.7042	2130.89	107.36		
03/07 11:29:15	3.7208	2131.06 2131.23	107.36 107.37		
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 03/07 11:33:15	3.7708	2131.65	107.37		
03/07 11:34:15	3.7875 3.8042	2131.75 2131.89	107.37 107.37		
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 03/07 11:37:15	3.8500 3.8542	2130.31	107.37		
03/07 11:37:30	3.8583	2130.87 2132.81	107.37 107.37		
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 03/07 11:41:15	3.9042 3.9208	2133.45	107.37		
03/07 11:42:15	3.9375	2133.56 2133.69	107.37 107.37		
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 03/07 11:47:15	4.0042 4.0208	2134.23 2134.38	107.35		
03/07 11:48:15	4.0208	2134.58	107.34 107.33		
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		

6 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

PAGE

•

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date Time MM/DD hh:mm:ss	Test Time s hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
03/07 11:52:1	5 4.1042	2135.01	107.31		
03/07 11:52:30	0 4.1083	2134.92	107.31		
03/07 11:52:4		2134.47	107.31		
03/07 11:53:00		2131.52 2131.31	107.31		
03/07 11:53:3		2136.13	107.31		
03/07 11:53:4		2137.31	107.31		
03/07 11:54:3		2137.66	107.33		
03/07 11:55:2		2137.96 2138.08	107.35 107.35		
03/07 11:57:1		2138.18	107.36		
03/07 11:58:1	5 4.2042	2138.32	107.38		
03/07 11:59:1		2138.47	107.39		
03/07 11:59:4		2138.53 2139.02	107.39 107.39		
03/07 12:00:1		2139.28	107.39		
03/07 12:00:3	0 4.2417	2139.59	107.39		
03/07 12:01:3		2139.40	107.39		
03/07 12:02:3 03/07 12:03:3		2139.44 2139.52	107.39 107.38		
03/07 12:04:3		2139.64	107.37		
03/07 12:05:0		2139.72	107.36		
03/07 12:05:1		2137.55	107.36		
03/07 12:05:3		2141.24	107.36		
03/07 12:05:4		2144.53 2143.98	107.36 107.36		
03/07 12:07:0		2143.85	107.36		
03/07 12:07:4		2144.23	107.37		
03/07 12:08:0		2143.80	107.37		
03/07 12:08:0		2143.58 2143.44	107.37 107.39		
03/07 12:08:2		2133.73	107.39		
03/07 12:08:5	6 4.3823	2133.33	107.39		
03/07 12:09:0		2133.23	107.39		
03/07 12:09:4		2132.82 2132.59	107.40 107.39		
03/07 12:10:3		2132.24	107.37		
03/07 12:10:4		2132.09	107.37		
03/07 12:11:4		2131.82	107.34		
03/07 12:12:4		2131.49 2131.18	107.31 107.29		RECALIBRATE FLOW METER
03/07 12:14:4		2131.09	107.28		
03/07 12:15:4		2130.95	107.26		
03/07 12:16:1		2130.85	107.25		
03/07 12:16:3		2130.28 2129.83	107.25 107.25		
03/07 12:17:0			107.25		
03/07 12:17:3			107.24		
03/07 12:17:4			107.24		
03/07 12:18:4			107.24		RATE #1-A - 2.0 BPM
03/07 12:19:4		2131.66 2131.79	107.23 107.23		
03/07 12:21:4			107.24		
03/07 12:22:4			107.24		
03/07 12:23:0			107.24		
03/07 12:24:0			107.24 107.24		RATE #2-A - 3.0 BPM
03/07 12:24:4			107.24		
03/07 12:25:4	45 4.6625	2133.68	107.25		
03/07 12:26:4			107.26		
03/07 12:27:4			107.27 107.28		
03/07 12:28:4			107.28		RATE #3-A - 4.0 BPM
03/07 12:29:4			107.30		
03/07 12:30:4	4.7458	2136.02	107.31		

PAGE 7 OF 11 DATE : 03/08/96

FILE REF: F224307.RED

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE 8 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

Data	Time	Test Time	Pressure	Tomo	deltaP	Comment
Date MM/DD	hh:mm:ss	hhhh.hhhh	Pressure	Temp Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
	12:30:48	4.7469	2136.06	107.32		
	12:30:52 12:31:41	4.7479 4.7615	2136.59 2136.61	107.32 107.35		
	12:32:30	4.7750	2136.83	107.35		
	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
	12:34:45	4.8125	2138.34	107.36		
-	12:35:00	4.8167 4.8302	2139.11 2139.51	107.36 107.37		
	12:35:48 12:36:37	4.8438	2139.83	107.39		
	12:37:30	4.8583	2139.93	107.39		
	12:38:30	4.8750	2140.01	107.39		RATE #5-A - 5.0 BPM
	12:39:30	4.8917	2140.16	107.40		
-	12:40:30	4.9083	2140.33 2140.50	107.41		
	12:41:30 12:42:30	4.9250 4.9417	2140.50	107.41		
	12:43:30	4.9583	2140.86	107.41		
	12:44:30	4.9750	2141.03	107.40		RATE #6-A - 5.0 BPM
-	12:45:30	4.9917	2141.20	107.40		
•	12:46:30	5.0083	2141.37	107.39		
	12:47:30 12:48:30	5.0250 5.0417	2141.54 2141.71	107.39 107.39		
-	12:49:30	5.0583	2141.87	107.37		
	12:49:45	5.0625	2141.90	107.37 -	<u> </u>	_ SHUT PUMPING DOWN END TEST
03/07	12:50:00	5.0667	2135.05	107.37		
	12:50:30	5.0750	2134.77	107.37		
	12:50:45	5.0792	2134.59	107.37		
	' 12:51:45 ' 12:52:33	5.0958 5.1094	2134.22 2133.94	107.37 107.37		
	12:53:30	5.1250	2133.77	107.35		
03/07	12:54:30	5.1417	2133.43	107.34		
	12:55:30	5.1583	2133.16	107.32		
	12:56:30	5.1750	2133.00	107.32		
	/ 12:57:30 / 12:58:30	5.1917 5.2083	2132.89 2132.76	107.32 107.32		
	12:59:30	5.2250	2132.63	107.31		
03/07	7 13:00:30	5.2417	2132.49	107.30		
	7 13:01:30	5.2583	2132.35	107.30		
	7 13:02:30	5.2750	2132.20	107.30		
	7 13:03:30 7 13:04:30	5.2917 5.3083	2132.07 2131.95	107.30 107.30		
	7 13:05:30	5.3250	2131.82	107.30		
	7 13:06:30	5.3417	2131.70	107.30		
03/07	7 13:07:30	5.3583	2131.59	107.30		
	7 13:08:30	5.3750	2131.50	107.30		
	7 13:09:30	5.3917	2131.42	107.30		
	7 13:10:30 7 13:11:30	5.4083 5.4250	2131.34 2131.25	107.31 107.32		
	7 13:12:30	5.4417	2131.16	107.32		
	7 13:13:30	5.4583	2131.07	107.33		
	7 13:14:30	5.4750	2131.00	107.34		
	7 13:15:30	5.4917	2130.92	107.35		
	7 13:16:30 7 13:17:30	5.5083 5.5250	2130.83 2130.76	107.36 107.36		
	7 13:18:30	5.5417	2130.70	107.37		
	7 13:19:30	5.5583	2130.65	107.37		
	7 13:19:45	5.5625	2130.64	107.37		INSTRUMENT OFF BOTTOM
	7 13:20:00	5.5667	2121.09	107.37		
	7 13:20:15 7 13:20:18	5.5708 5.5719	2116.62 2113.06	107.37 107.37		
	7 13:20:18	5.5729	2113.06	107.32		
	7 13:20:22	5.5740		107.27		
	7 13:20:30	5.5750		107.22		
	7 13:20:33	5.5760	2098.39	107.17		
03/0	7 13:20:37	5.5771	2094.33	107.12		

_

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE 9 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

							FILE REF: F224307.RED
Date Time MM/DD hh:mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp	deltaP	Comment	A. 4/ 7 D	
			Deg F	Psi	Ga. Press Ket.	to 14.7 Psi Atm.	
03/07 13:20:41	5.5781	2090.27	107.07				
3/07 13:20:45	5.5792	2086.07	107.02				
3/07 13:20:48	5.5802	2082.27	106.97				
03/07 13:20:52 03/07 13:20:56	5.5813 5.5823	2078.60 2074.41	106.93				
03/07 13:21:00	5.5833	2070.21	106.88 106.83				
3/07 13:21:03	5.5844	2066.05	106.68				
03/07 13:21:07	5.5854	2061.93	106.43				
3/07 13:21:11	5.5865	2060.17	106.19				
3/07 13:21:15	5.5875	2058.55	105.95				
3/07 13:21:18	5.5885	2056.92	105.71				
3/07 13:21:22	5.5896	2054.90	105.46				
3/07 13:21:26	5.5906	2051.56	105.22				
3/07 13:21:30	5.5917	2049.15	104.98			,	
3/07 13:21:33	5.5927	2046.73	104.74				
3/07 13:21:37	5.5938	2044.19	104.50				
3/07 13:21:41	5.5948	2041.51	104.26				
3/07 13:21:45	5.5958	2038.70	104.01				
)3/07 13:21:48)3/07 13:21:52	5.5969	2035.78	103.70				
3/07 13:21:56	5.5979 5.5990	2033.13 2030.23	103.35 103.00				
3/07 13:22:00	5.6000	2027.32	102.66				
3/07 13:22:03	5.6010	2024.15	102.31				
3/07 13:22:07	5.6021	2018.60	101.96				
3/07 13:22:11	5.6031	2011.21	101.62				
3/07 13:22:15	5.6042	2003.56	101.27				
3/07 13:22:18	5.6052	1995.90	100.92				
3/07 13:22:22	5.6062	1987.98	100.57				
3/07 13:22:26	5.6073	1980.06	100.22				
3/07 13:22:30	5.6083	1970.82	99.88				
03/07 13:22:33 03/07 13:22:37	5.6094	1954.60	99.50				
03/07 13:22:41	5.6104	1935.87	99.14				
03/07 13:22:45	5.6115 5.6125	1917.14 1898.01	98.79 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				
3/07 13:23:11	5.6198	1762.32	95.94				
3/07 13:23:15	5.6208	1742.11	95.58				
3/07 13:23:18	5.6219	1721.77	95.24				
3/07 13:23:22	5.6229	1703.41	94.90				
)3/07 13:23:26)3/07 13:23:30	5.6240	1683.72	94.57				
3/07 13:23:30	5.6250 5.6260	1663.90	94.24				
3/07 13:23:33	5.6271	1643.81 1622.27	93.89 93.56				
3/07 13:23:41	5.6281	1602.58	93.26 93.23				
3/07 13:23:45	5.6292	1582.75	92.89				
3/07 13:23:48	5.6302	1562.79	92.55				
3/07 13:23:52	5.6312	1542.95	92.22				
3/07 13:23:56	5.6323	1522.19	91.89				
3/07 13:24:00	5.6333	1502.35	91.55				
3/07 13:24:03	5.6344	1482.91	91.23				
3/07 13:24:07	5.6354	1461.75	90.90				
3/07 13:24:11	5.6365	1441.11	90.58				
3/07 13:24:15	5.6375	1420.86	90.26				
3/07 13:24:18	5.6385	1400.75	89.94				
13/07 13:24:22 13/07 13:24:26	5.6396	1378.39	89.61				
3/07 13:24:26	5.6406	1359.19	89.29				
3/07 13:24:30	5.6417 5.6427	1338.42	88.97				
3/07 13:24:33	5.6438	1318.69 1297.38	88.65 88.33				
3/07 13:24:41	5.6448	1275.67	88.01				
	2.0440		00.01				

1

ł

T

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date	Time	Test Time	Pressure	Temp	deltaP	Comment	
MM/DD	hh:mm:ss	hhhh.hhhh	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.	
03/07	13:24:45	5.6458	1255.68	87.68			
	13:24:48	5.6469	1233.96	87.37			
	13:24:52	5.6479	1213.96	87.06			
	13:24:56	5.6490	1192.90	86.74			
	13:25:00	5.6500	1173.29	86.43			
	13:25:03	5.6510	1152.23	86.12			
	13:25:07	5.6521	1130.24	85.81			
	13:25:11	5.6531	1109.17	85.50			
-	13:25:15	5.6542	1087.97	85.18			
•	13:25:18	5.6552	1066.90				
-	13:25:22	5.6563		84.88			
	13:25:26		1047.54	84.57			
	13:25:30	5.6573	1032.41	84.25			
		5.6583	1017.80	83.94			
	13:25:33	5.6594	1000.95	83.63			
	13:25:37	5.6604	984.75	83.33			
	13:25:41	5.6615	970.14	83.03			
	13:25:45	5.6625	955.92	82.73			
	13:25:48	5.6635	941.04	82.43			
	13:25:52	5.6646	926.95	82.12			
	13:25:56	5.6656	913.39	81.82			
	13:26:00	5.6667	899.96	81.52			
	13:26:03	5.6677	887.05	81.22			
	13:26:07	5.6687	875.47	80.91			
	13:26:11	5.6698	864.41	80.61			
	13:26:15	5.6708	852.95	80.32		·	
	13:26:18	5.6719	842.29	80.01	•		
	13:26:22	5.6729	831.89	79.73			
	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			_
	13:27:22	5.6896	696.11	75.26			* . ^{**}
03/07	13:27:26	5.6906	691.78	74.99			
	13:27:30	5.6917	687.57	74.73			
	13:27:33	5.6927	683.63	74.46			
	13:27:37	5.6937	679.42	74.20			
	13:27:41	5.6948	675.35	73.93			
	13:27:45	5.6958	672.07	73.67			
	13:27:48	5.6969	668.79				
03/07	13:27:52	5.6979	665.77	73.41			
03/07	13:27:56	5.6990	663.01	73.18			
	13:28:00	5.7000	660.39	72.94			
	13:28:03	5.7010	658.43	72.69			
	13:28:07	5.7021		72.46			
	13:28:11	5.7031	657.00	72.22			
	13:28:11	5.7042	655.70	71.97			
	13:28:13	5.7042	654.13	71.74			
03/07	13:28:22	5.7052	652.83	71.50			
03/07	13:28:22	5.7073	652.57	71.25			
	13:28:30		652.13	71.02			
	13:20:30	5.7083	651.46	70.78			
	13:29:18	5.7219	651.46	68.12			
		5.7271	651.36	67.29			· · · · · · · · · · · · · · · · · · ·
	13:29:41	5.7281	654.43	67.12			
03/07	13:29:45	5.7292	654.38	66.96			

PAGE 10 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

í

ļ

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date Time MM/DD 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		

PAGE 11 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

COMPANY : GIANT REFINING WELL NAME : SWD (CLASS I) NO. WD-1 WELL LOCATION : SAN JUAN COUNTY, NM

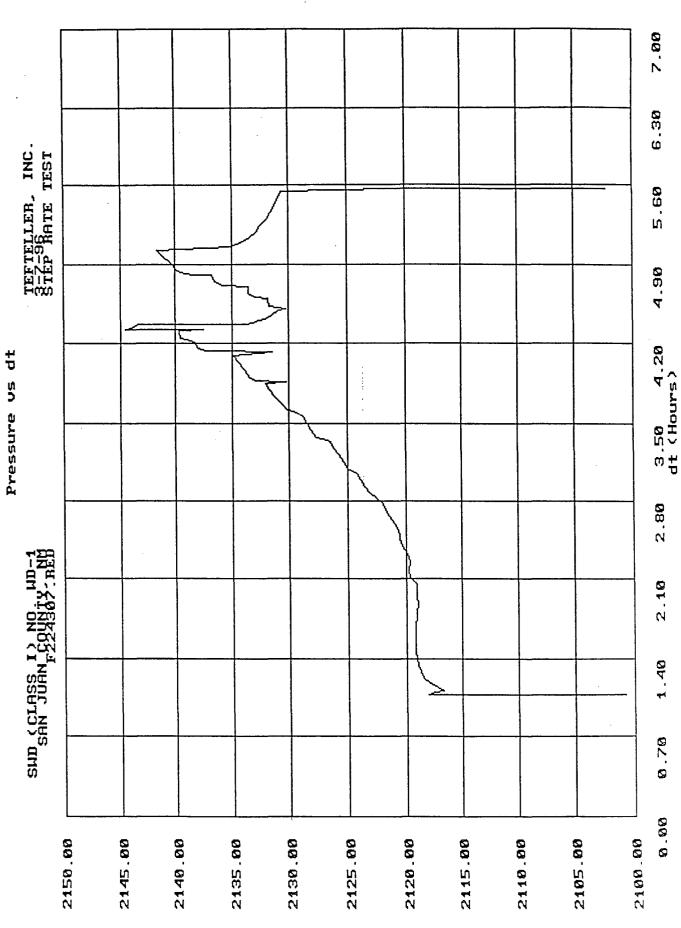
Date	Time	Test Time	Key Event	Pressure	Temp	
MM/DD	hh:mm:ss	hhhh.hhhh		Psig	Deg F	
03/07	08:51:22	1.0896	INSTRUMENT @ 3400'	2118.23	78.56	
03/07	09:46:30	2,0083	RATE #1 - 0.06 BPM	2119.06	107.55	
03/07	10:01:30	2.2583	RATE #2 - 1.1 BPM	2119.69	107.57	
03/07	10:31:30	2.7583	RATE #3 - 2.0 BPM	2121.88	107.61	
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	

PAGE : B

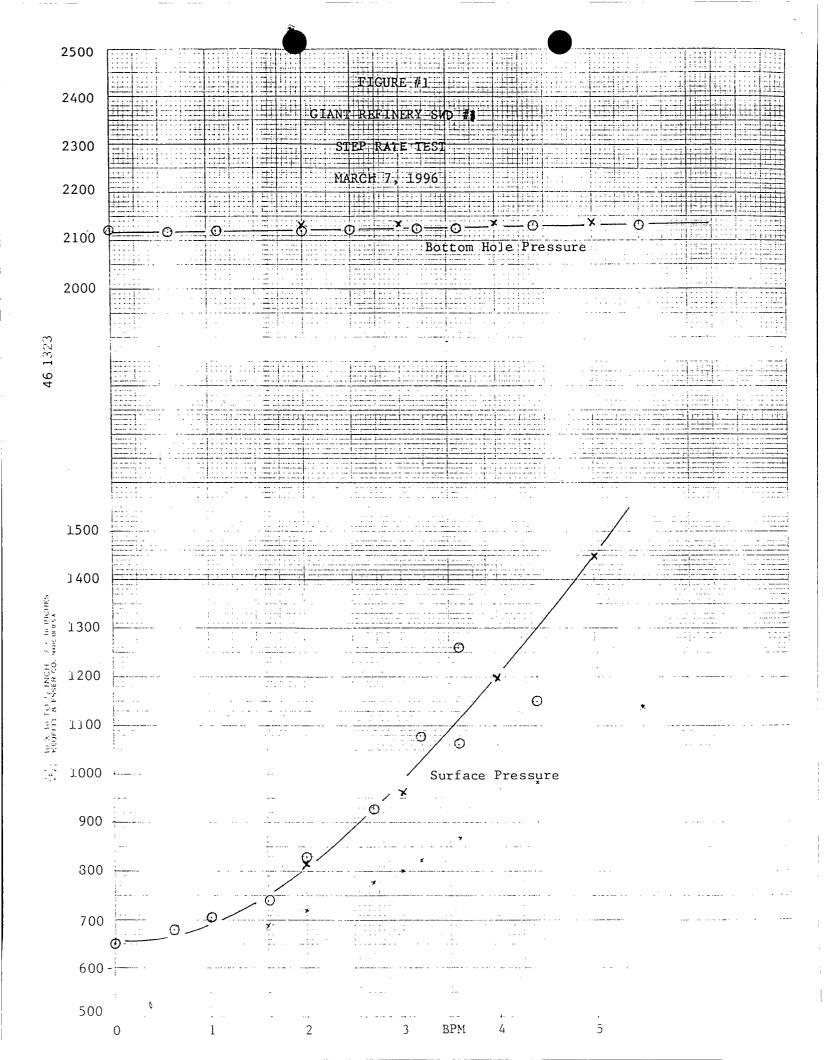
DATE : 03/08/96

FILE REF: F224307.RED

* EVENT SUMMARY * GIANT REFINING



(pist) anuseart





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.

- 1 E E2

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 RefineryWell Name: SWD #1Date: March 1, 1996Report No.: 1Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield RefineryWell Name: SWD #1Date: March 4, 1996Report No.: 2Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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
Rig Costs:	1,350
Snubbing Unit:	0
Rig Move:	0
Frac:	0
Packers, BPs,:	0
Acid:	0
Water:	1,500
Bits and Mills:	0
Permits:	0
Supervision:	234
Trucking:	0
Drill Collars:	0

Tubulars:	0
Wellhead Equip.:	0
Subsurface Equip.:	0
Artificial Lift Eq.:	0
Sucker Rods:	0
Tanks Rental:	0
Separators, Dehys:	0
Flowlines:	0
Installation/Labor:	0
Fittings, Valves, ect.:	0
Meters, LACT, ect.:	0
Electrical Equip.:	0
Misc.:	0
Total Daily Cost: 3,0	84
Cumulative Cost: 41,8	71

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield RefineryWell Name: SWD #1Date: March 5, 1996Report No.: 3Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: 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

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield RefineryWell Name: SWD #1Date: March 6, 1996Report No.: 4Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: Drake Rig #22Supervisor: Paul Thompson

Work Summary:

Daily Costa

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	
Rig Costs:	2,000	
Snubbing Unit:	2,851	
Rig Move:	500	
Frac:	0	
Packers, BPs,:	1,250	
Packer Fluid:	225	
Water:	0	
Bits and Mills:	0	
Permits:	0	
Supervision:	365	
Trucking:	300	
Drill Collars:	0	

Tubulars:	0
Wellhead Equip.:	0
Subsurface Equip.:	0
Artificial Lift Eq.:	0
Sucker Rods:	0
Tanks Rental:	0
Separators, Dehys:	0
Flowlines:	0
Installation/Labor:	0
Fittings, Valves, ect.:	0
Meters, LACT, ect.:	0
Electrical Equip.:	0
Misc.:	0
	491
Cumulative Cost: 55,	877

WORKOVER AND COMPLETION REPORT

Operator: Giant Bloomfield RefineryWell Name: SWD #1Date: March 7, 1996Report No.: 5Field: Blanco Mesa VerdeLocation: SE 27 29N 11WContractor: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
			,732

WES	TERN	The	Weste	ern Co	ompai	ny	<u>Tre</u>	eatment	Repo	• <u>rt</u>)	Page 1 of 1
Date Ma	urch 1, 199	6	District	Farmingt	on NM		F.Receip	ot 398367			Operator	Giant Refinery
			-				-					SEC.27,T29N,R11W
-												
County <u>San Juan</u> State <u>New Mexico</u> Stage Number <u>1</u> This Zone I This Well I												
WELL DATA OG NG OO WD IW Misc. Depth TD/PB_3,600' Formation_Mesa Verde Tubing Size_N/A Wt. NA Set at: NA Type Packer_N/A Set at N/A												
												Wt
Liner Set	From		To		_Open Ho	le: Size	N/A		From	······		
Casing Pe	erforation:	Size .45		1	Holes Per	Foot_4		Inte	rvals <u>3,2</u>	76' - 3,51	4' 316 HC	DLES
Previous	Treatment	<u>N/A</u>						Prio	r Produci	tion N/A		
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. Tubing Cap. N/A Prop Type: Sand WP-1 WP-3 Baux. Other N/A Casing Cap. N/A Prop Mesh Sizes, Types and Quantities 20/40 Arizona 153,940 Open Hole Cap. N/A Hole Loaded With H2O Treat Via: Tubing Casing Anul. Tubing & Anul. Fluid to Load Ball Sealers: N/A In Stages of Pad Volume Types and Number of Pumps Used 6 PACESETTER 1000'S Treating Fluid 2516 Auxiliary Materials 54# XCIDE-207 / 89 G. FRW-30 Flush 75 PUMP:21,588 G. PAD/19,824 G. 1/2#/21,000 G. 1#/11,214 G. 1 1/2# Fluid to Recover 2937 Total N2 N/A Total N2 N/A								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 Comments Comments				
АМ/РМ	8	PressPsi	Slurry Pum		BPM	Рип	nped	BPM	Pun	1ped	SCFM	Safety Meeting/ Test Lines
	STP	Annulus	Stage	Total		Stage	Total		Stage	Total	ļ	
PM5:50	0		0	0	60		ļ				ļ	START PAD
5:58	1700		514	514	65							START 1/2#
6:05	1580		486	1000	65			<u> </u>			ļ	START 1#
6:14	1510		525	1525	66		<u> </u>				┼	START 1 1/2#
6:18 6:37	1500		285	1810	<u>65</u>						+	START 2# START FLUSH
6:38	<u>1470</u> 1000		220 75	<u>3030</u> 3105	40							SHUT DOWN 5 MINS-720
0.00	1000		73	5105								10 MINS-710
		ļ					 	<u> </u>				
						 				<u> </u>		
							<u> </u>			╆────		
Treating	Pressures	Min 1470	,: 		Max. 170	ເ	Δ	1500		Custome	L. Repress	ntative Paul Thomson
-		ng Fluid 6			Max. 170 Rate on F			1300		-	-	tative Harry Mitchell
-	Rate 65	-6 . Iuiu_0	<u> </u>	I.S.D.P	•			s. Ibs/gal a	8.34	Distribut		
-		Final S	Shut-in Pre					15		-	utes	
Jobh		Opena	tor's Maxi mendatio		• •	3500			·			

İ

۰.

EFTELLER, INC.

reservoir engineering data

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

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

> 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

Serving the Rocky Mountain Area & Permian Basin Area

03/08/96 File Reference F224307.RED

CustomerGIANT REFINING
7415 E. MAIN
FARMINGTON, NM 87402
U.S.A.
Service CompanyWell NameSWD (CLASS I) NO. WD-1
SAN JUAN COUNTY, NM
Field / PoolWell LocationSAN JUAN COUNTY, NM
MESA VERDE FORMATION
WATER DISPOSALTest TypeSTEP RATE TEST
3-7-96
Producing IntervalTest Type.STEP RATE TEST
3276' - 3514'
3400'Recorder Depth3400'
StartShut In DateStart:
3-7-96
Stop:
3-7-96Bottom Hole TemperatureTemperature

Gauge Identification

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

Gauge Setup Parameters

 Page A



deltaP

Psi

. . . .

Comment

Ga. Press Ref. to 14.7 Psi Atm.

.

COMPANY: GIANT REFINING

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date Time	Test Time	Pressure	Temp
MM/DD hh:mm:ss	hhhh.hhhh	Psig	Deg F
03/07 07:46:00 03/07 08:16:30	.0000 .5083	.01	67.58 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 03/07 08:22:15	.6000 .6042	1.35	41.84
03/07 08:27:00	.6833	1.38 1.78	41.69 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 03/07 08:38:45	.8750 .8792	8.77 701.41	36.51 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 03/07 08:39:45	.8917 .8958	663.26	36.60
03/07 08:39:49	.8969	686.24 690.35	36.63 36.72
03/07 08:39:52	.8979	702.55	36.85
03/07 08:39:56 03/07 08:40:00	-8990	711.16	36.99
03/07 08:40:00	.9000 .9010	714.85	37.12 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 03/07 08:40:18	.9042 .9052	741.33	37.65
03/07 08:40:22	.9052	748.88 757.63	37.78 37.91
03/07 08:40:26	.9073	762.79	38.05
03/07 08:40:30 03/07 08:40:33	.9083	769.41	38.18
03/07 08:40:33	.9094 .9104	775.09 780.64	38.33 38.52
03/07 08:40:41	.9115	784.19	38.70
03/07 08:40:45 03/07 08:40:48	.9125	790.41	38.88
03/07 08:40:52	.9135 .9146	796.62 800.84	39.07 39.25
03/07 08:40:56	.9156	806.92	39.43
03/07 08:41:00 03/07 08:41:03	.9167	814.99	39.61
03/07 08:41:03	.9177 .9187	824.66 833.53	39.80 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 03/07 08:41:22	.9219 .9229	857.74 864.35	40.55 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 03/07 08:41:37	.9260	884.43	41.40
03/07 08:41:41	.9271 .9281	891.04 897.11	41.61 41.83
03/07 08:41:45	.9292	905.31	42.04
03/07 08:41:48 03/07 08:41:52	.9302	908.99	42.25
03/07 08:41:52 03/07 08:41:56	.9312 .9323	915.33 921.93	42.46 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 03/07 08:42:11	.9354 .9365	937.36 944.23	43.32 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 03/07 08:42:26	.9396	960.71	44.22
03/07 08:42:28	.9406 .9417	967.58 973.12	44.45 44.67
03/07 08:42:33	.9427	977.06	44.90
03/07 08:42:37 03/07 08:42:41	.9438	983.13	45.12
03/07 08:42:41	.9448 .9458	989.47 995.00	45.35 45.58
03/07 08:42:48	.9469	1001.34	45.80
03/07 08:42:52	.9479	1007.67	46.03

PAGE 1 OF 11

DATE : 03/08/96

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

WELL LOCATION : SAN JUAN COUNTY, NM

VCLL (LOCATION :	SAN JUAN LUU	NIT, NM				FILE REF: F224307.
Date 4M/DD	Time hh:mn:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14	4.7 Psi Atm.
3/07	08:42:56	.9490	1015.20	46.25		***************************************	· · · · · · · · · · · · · · · · · · ·
	08:43:00	.9500	1023.40	46.48			
	08:43:03	.9510	1031.72	46.71			
	08:43:07	.9521	1039.52	46.94			
	08:43:11	.9531	1046.79	47.16			
	08:43:15 08:43:18	.9542	1052.98	47.39			
	08:43:18	.9552 .9563	1059.32	47.61			
	08:43:26	.9573	1066.45 1072.12	47.84 48.07			
	08:43:30	.9583	1081.64	48.30			
	08:43:33	.9594	1085.05	48.51			
3/07	08:43:37	.9604	1089.92	48.74			
	08:43:41	.9615	1097.45	48.97			
	08:43:45	.9625	1104.18	49.19			
	08:43:48	.9635	1112.63	49.42			
	08:43:52	.9646	1119.90	49.65			
	08:43:56 08:44:00	.9656	1129.02	49.88			
	08:44:03	.9667 .9677	1137.34 1146.06	50.10			
	08:44:07	.9688	1154.25	50.33 50.55			
	08:44:11	.9698	1161.78	50.78			
3/07	08:44:15	.9708	1171.30	51.00			
3/07	08:44:18	.9719	1179.75	51.23			
3/07	08:44:22	.9729	1186.61	51.46			
	08:44:26	.9740	1194.67	51.69			
	08:44:30	.9750	1201.93	51.91			
	08:44:33	.9760	1211.04	52.14			
	08:44:37	.9771	1216.04	52.36			
	08:44:41 08:44:45	.9781	1227.55	52.59			
	08:44:45	.9792	1236.40 1244.45	52.81			
	08:44:52	.9812	1251.71	53.04 53.27			
	08:44:56	.9823	1260.69	53.49			
3/07	08:45:00	.9833	1268.35	53.72			
	08:45:03	.9844	1275.47	53.93			
	08:45:07	.9854	1286.05	54.16			
	08:45:11	.9865	1292.10	54.40			
	08:45:15	.9875	1300.29	54.63			
	08:45:18 08:45:22	.9885	1308.87	54.86			
	08:45:26	.9896 .9906	1316.65	55.09			
	08:45:30	.9917	1323.37 1329.69	55.31 55.54			
	08:45:33	.9927	1339.60	55.78			
	08:45:37	.9937	1340.87	56.01			
3/07	08:45:41	.9948	1342.81	56.24			
3/07	08:45:45	.9958	1350.46	56.47			
	08:45:48	.9969	1354.65	56.71			
	08:45:52	.9979	1353.14	56.94			
	08:45:56	.9990	1363.44	57.18			
•	08:46:00 08:46:03	1.0000	1378.65	57.41			
	08:46:03	1.0010 1.0021	1385.90 1393.14	57.65			
	08:46:11	1.0021	1393.14	57.88 58.12			
	08:46:15	1.0042	1414.27	58.35			
	08:46:18	1.0052	1424.17	58.59			
5/07	08:46:22	1.0063	1432.48	58.82			
	08:46:26	1.0073	1443.97	59.06			
	08:46:30	1.0083	1458.25	59.30			
	08:46:33	1.0094	1467.22	59.54			
	08:46:37	1.0104	1475.79	59.78			
	08:46:41	1.0115	1489.80	60.02			
	08:46:45	1.0125	1502.61	60.27			
	08:46:48 08:46:52	1.0135	1511.57	60.51			·
	08:46:52	1.0146 1.0156	1518.94 1527.91	60.75 61.00			
1/U/		1.0120	1221.91	01.00			

PAGE 2 OF 11

DATE : 03/08/96

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE	3 OF	11

DATE : 03/08/96

04/07 08:47:00 1.0167 1537.13 61.24 05/07 08:47:07 1.0187 1537.84 61.73 05/07 08:47:07 1.0187 1557.84 61.97 05/07 08:47:07 1.0187 1558.85 62.24 05/07 08:47:07 1.0203 1586.36 62.21 05/07 08:47:03 1.0203 1586.36 62.21 05/07 08:47:22 1.0220 1665.15 62.92 05/07 08:47:33 1.0220 1631.35 63.22 03/07 08:47:45 1.0022 1559.53 64.23 03/07 08:47:45 1.0022 1559.53 64.23 03/07 08:47:45 1.0022 1579.51 64.23 03/07 08:47:45 1.0022 1579.51 64.23 03/07 08:47:42 1.033.51 1670.65 163.23 03/07 08:44:81 1.0355 1723.16 64.50 03/07 08:44:41 1.0454	Date MM/DD hh	Tíme :mm:ss	Test Time hhhh.hhhh	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
05/07 08:47:07 1. 1.0187 157.64 61.73 03/07 08:47:15 1.0208 1576.56 62.21 03/07 08:47:15 1.0208 1576.56 62.21 03/07 08:47:22 1.0229 1595.66 62.76 03/07 08:47:23 1.0229 1595.66 62.76 03/07 08:47:23 1.0229 1595.66 62.76 03/07 08:47:33 1.0260 1625.59 63.47 03/07 08:47:45 1.0292 1650.16 44.23 03/07 08:47:46 1.0392 1650.16 44.23 03/07 08:47:46 1.0392 1650.16 45.29 03/07 08:47:48 1.0392 1650.16 45.29 03/07 08:47:48 1.0392 1650.16 45.29 03/07 08:47:48 1.0392 1650.16 45.29 03/07 08:47:48 1.0392 1650.16 45.29 03/07 08:48:40 1.0353 1670.77 45.47 03/07 08:48:15 1.0375 1723.16 65.27 03/07 08:48:15 1.0375 1723.16 65.05 03/07 08:48:15 1.0375 1723.16 65.05 03/07 08:48:15 1.0375 1723.16 65.05 03/07 08:48:15 1.0375 1723.16 65.02 03/07 08:48:15 1.0375 1723.16 65.02 03/07 08:48:15 1.0375 1723.16 65.02 03/07 08:48:10 1.0385 1764.77 65.47 05.170 08:48:10 1.0385 1764.77 65.40 03/07 08:48:41 1.0458 1805.93 66.22 03/07 08:48:41 1.0458 1805.93 66.22 03/07 08:48:41 1.0458 1805.93 66.22 03/07 08:48:45 1.0459 1825.27 69.08 03/07 08:48:45 1.0459 1825.27 69.08 03/07 08:48:45 1.0459 1825.27 70.55 03/07 08:49:15 1.052 1865.28 77.95 03/07 08:49:15 1.052 1865.29 77.57 05/07 08:49:15 1.052 1865.29 77.57 05/07 08:49:16 1.052 1865.29 77.57 05/07 08:49:16 1.052 1865.29 77.57 05/07 08:49:16 1.0552 1898.08 77.15 03/07 08:49:16 1.0552 1898.08 77.15 03/07 08:49:17 1.053 1895.59 77.55 03/07 08:49:18 1.055 1895.59 77.55 03/07 08:49:19 1.0551 1895.77 75.56 03/07 08:49:19 1.0552 1898.08 77.15 03/07 08:49:19 1.0552 1898.08 77.15 03/07 08:49:19 1.0552 1898.08 77.15 03/07 08:49:10 1.0553 1987.17 77.55 03/07 08:49:10 1.0552 1988.17 77.70 03/07 08:49:10 1.0552 1988.17 77.70 03/07 08:59:10 1.0648 2085.87 77.70 03/07 08:59:10 1.0648 2085.87 77.70 03/07 08:59:10 1.0648 2085.87 77.70 03/07 08:59:10 1.0648 2085.87 77.70 03/07 08:59:10	03/07 08	:47:00					
03/07 06:4/7:11 1.0196 1568.40 61.97 03/07 06:4/7:18 1.0219 1567.77 62.44 03/07 06:4/7:18 1.0219 1567.77 62.44 03/07 06:4/7:30 1.0250 1623.59 03/07 06:4/7:31 1.0261 1640.57 03/07 06:4/7:45 1.0252 1626.59 03/07 06:4/7:45 1.0252 1650.53 03/07 06:4/7:45 1.0252 1650.53 03/07 06:4/7:45 1.0252 1650.53 03/07 06:4/7:45 1.0252 1650.53 03/07 06:4/7:45 1.0252 1650.53 04.48 03/07 06:4/7:45 1.0252 1650.18 04.48 03/07 06:4/8:18 1.0353 1773.16 04.57 03/07 06:4/8:18 1.0353 1773.16 04.07 05:4/8:18 1.0353 1773.16 04.07 05:4/8:18 1.0353 1773.16 04.07 05:4/8:18 1.0353 1773.16 04.07 05:4/8:18 1.0353 1773.16 04.07 05:4/8:18 1.0353 1773.16 04.17 05:07 06:4/8:18 1.0353 1773.16 04.17 05:07 06:4/8:19 1.0353 1773.17 05:4/1 03/07 06:4/8:19 1.0617 175.01 07.78 05:4/1 1.0438 1705.01 07.78 05:4/1 1.0438 1705.01 07.79 05:4/1 1.0438 1705.01 07.79 05:4/1 1.0438 1705.01 07.70 05:4/1 1.0438 1705.01 07.70 05:4/1 1.0438 1705.01 07.77 05:4/1 1.0438 1705.01 07.77 05:4/1 1.0438 1705.01 07.77 05:4/1 1.0538 1703.17 07.77 05:4/1 1.0538 1703.17 07.77 05:4/1 1.0538 1703.17 07.77							
03/07 08:47:15 1.0208 1576.56 62.21 03/07 08:47:22 1.0229 1596.66 62.71 03/07 08:47:23 1.0229 1596.66 62.71 03/07 08:47:33 1.0201 1605.15 62.59 03/07 08:47:33 1.0201 1605.35 63.47 03/07 08:47:45 1.0222 1650.18 43.72 03/07 08:47:45 1.0222 1650.18 44.23 03/07 08:47:45 1.0223 1670.74 44.74 03/07 08:47:46 1.0302 1659.53 64.48 03/07 08:47:51 1.0213 1670.74 64.74 03/07 08:47:51 1.0213 1670.74 64.74 03/07 08:47:51 1.0213 1670.74 64.74 03/07 08:47:51 1.0233 1677.75 64.99 03/07 08:47:52 1.0313 1670.75 64.99 03/07 08:47:52 1.0313 1670.75 64.99 03/07 08:48:15 1.0373 1723.16 65.22 03/07 08:48:15 1.0373 1723.16 65.78 03/07 08:48:15 1.0373 1723.36 65.32 03/07 08:48:10 1.0351 1744.75 64.7 03/07 08:48:10 1.0351 1724.16 45.78 03/07 08:48:10 1.0351 1724.16 45.78 03/07 08:48:10 1.0351 1724.16 45.78 03/07 08:48:10 1.0351 1724.16 45.78 03/07 08:48:10 1.0351 1725.16 67.67 03/07 08:48:10 1.0351 1725.16 67.67 03/07 08:48:41 1.0468 1805.93 68.22 03/07 08:48:42 1.0469 1822.47 65.79 03/07 08:48:45 1.0469 1825.27 70.57 03/07 08:48:45 1.0469 1825.27 70.57 03/07 08:49:15 1.0522 1805.27 70.57 03/07 08:49:15 1.0522 1805.28 77.05 03/07 08:49:16 1.0522 1805.27 70.57 03/07 08:49:16 1.0552 1805.97 70.56 03/07 08:49:16 1.0552 1805.97 70.56 03/07 08:49:16 1.0552 1805.97 73.57 03/07 08:49:40 1.0555 1805.97 73.57 03/07 08:49:41 1.0558 1983.17 73.52 03/07 08:49:41 1.0558 1983.17 73.52 03/07 08:49:42 1.0552 1981.17 73.01 03/07 08:49:42 1.0552 1981.17 73.01 03/07 08:59:13 1.0670 2115.27 73.57 03/07 08:59:13 1.0708 2081.27 73.57 03/07 08:59:13 1.0708 2081.27 73.57 03/07 08:59:							
13/07 08:47:28 103/07 08:47:26 103/07 08:47:26 103/07 08:47:26 103/07 08:47:26 103/07 08:47:26 103/07 08:47:31 10220 104:47:33 10220 104:47:33 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 105:15 10220 10200 10220 10200							
03A7 08:47:22 1.0229 1598.66 62.71 03A7 08:47:33 1.0250 1614.24 63.22 03A7 08:47:33 1.0250 1614.24 63.22 03A7 08:47:37 1.0271 1635.34 63.47 03A7 08:47:41 1.0231 1640.57 63.93 03A7 08:47:41 1.0321 1640.57 64.74 03A7 08:47:46 1.0333 1670.55 64.74 03A7 08:47:46 1.0333 1670.55 64.74 03A7 08:47:46 1.0333 1670.55 64.74 03A7 08:46:01 1.0333 1670.55 64.39 03A7 08:46:11 1.0355 1723.16 64.05 03A7 08:46:13 1.0355 1723.16 64.09 03A7 08:46:13 1.0435 1744.75 64.60 03A7 08:46:13 1.0477 1775.01 67.41 03A7 08:46:13 1.0477 1775.01 67.41 03A7 08:46:45 1.0458 1816.59 64.52 03A7 08:46:45 1.0458 1816.59 64.52 03A7 08:46:45 1.0458 1816.59 64.							
13/07 08:47:33 1.0220 141.24 63.22 03/07 08:47:37 1.0271 1533.34 63.72 03/07 08:47:45 1.0272 1550.18 64.23 03/07 08:47:45 1.0272 1550.18 64.23 03/07 08:47:45 1.0272 1550.18 64.23 03/07 08:47:45 1.0272 1550.18 64.23 03/07 08:47:45 1.0273 1507.75 64.79 03/07 08:47:52 1.0313 1507.75 64.79 03/07 08:46:01 1.033 1507.75 64.79 03/07 08:46:11 1.0355 1723.16 65.78 03/07 08:46:11 1.0355 1723.16 65.78 03/07 08:46:11 1.0355 1723.16 65.78 03/07 08:46:12 1.0318 157.17 64.17 03/07 08:46:12 1.0355 1723.16 65.02 03/07 08:46:13 1.034 1701.82 65.51 03/07 08:46:13 1.0355 1723.16 65.78 03/07 08:46:14 1.0365 1724.75 64.30 03/07 08:46:14 1.0365 1724.76 67.14 03/07 08:46:15 1.0375 1732.35 64.32 03/07 08:46:15 1.0375 1732.37 65.32 03/07 08:46:15 1.0375 1732.37 65.32 03/07 08:46:16 1.0466 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1756.47 67.14 03/07 08:46:10 1.058 1755.01 67.49 03/07 08:46:10 1.058 1755.01 67.95 05/07 08:46:10 1.050 186.52 66.38 05/07 08:46:10 1.050 186.52 66.38 05/07 08:46:10 1.050 186.52 66.37 05/07 08:46:10 1.050 185.27 70.26 05/07 08:47.10 1.0552 1898.08 77.15 05/07 08:57.01 1.0664 2006.27 77.40 05/07 08:57.01 1.0667 2007.27 7.46 05/07 08:57.01 1.0667 2007.27 7.46 05/07 08:57.01 1.0668 2006.77 77.4							
Djor 08:47:33 1.0260 1623.59 63.47 OS/07 08:47:47 1.0271 1633.54 63.72 OS/07 08:47:45 1.0221 1640.57 63.98 OS/07 08:47:45 1.0322 1650.18 64.23 OS/07 08:47:46 1.0323 1670.55 64.48 D3/07 08:47:46 1.0331 1607.55 64.99 D3/07 08:46:10 1.0333 1600.65 65.24 D3/07 08:46:11 1.0354 1711.66 65.78 D3/07 08:46:11 1.0356 1721.46 64.05 D3/07 08:46:18 1.0356 1721.46 64.05 D3/07 08:46:18 1.0356 174.75 64.67 D3/07 08:46:26 1.0406 1766.47 67.14 D3/07 08:46:41 1.0447 1775.01 67.41 D3/07 08:44:42 1.0459 182.27 69.97 D3/07 08:44:41 1.0458 1816.59 64.52 D3/07 08:44:41 1.0452 184.52 67.78 D3/07 08:49:07 1.0510 184	•						
03/07 08:47:37 03/07 08:47:41 03/07 08:47:45 03/07 08:47:45 03/07 08:47:46 03/07 08:47:46 03/07 08:47:46 03/07 08:47:46 03/07 08:47:56 03/07 08:47:56 03/07 08:47:56 03/07 08:46:05 03/07 08:46:05 03/07 08:46:05 03/07 08:46:05 03/07 08:46:05 03/07 08:46:05 03/07 08:46:05 03/07 08:46:15 03/07 08:46:15 03/07 08:46:26 03/07 08:46:27 03/07 08:46:28 0.005 03/07 08:46:37 0.045 03/07 08:46:37 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 03/07 08:46:45 0.045 0.057 08:46:45 0.045 0.057 08:46:45 0.045 0.057 08:46:45 0.045 0.057 08:46:45 0.057 08:46:45 0.057 08:46:45 0.057 08:46:45 0.057 09:47 08:47 09:4							
03/07 08:47:41 1.0281 1640.57 63.98 03/07 08:47:45 1.0302 1659.53 64.42 03/07 08:47:46 1.0323 1670.95 64.99 03/07 08:47:56 1.0333 1690.63 65.51 03/07 08:46:40 1.0354 1713.16 65.78 03/07 08:44:18 1.0355 1723.16 66.05 03/07 08:44:18 1.0355 1724.75 66.037 03/07 08:44:18 1.0355 1744.75 66.04 03/07 08:44:18 1.0355 1744.75 66.04 03/07 08:44:18 1.0406 1766.47 67.14 03/07 08:44:13 1.0406 1766.47 67.14 03/07 08:44:13 1.0406 1762.47 68.29 03/07 08:44:14 1.0458 1816.59 68.50 03/07 08:44:15 1.0479 183.72 69.67 03/07 08:44:16 1.0521							
03/07 08:47:45 1.0222 1650.18 64.23 03/07 08:47:46 1.0333 1670.74 64.74 03/07 08:47:56 1.0333 1670.74 64.79 03/07 08:47:61 1.0333 1670.74 64.79 03/07 08:46:01 1.0344 1713.16 65.78 03/07 08:46:11 1.0354 1713.16 65.78 03/07 08:46:11 1.0354 1744.75 64.02 03/07 08:46:11 1.0354 1744.75 64.02 03/07 08:46:11 1.0354 1744.75 64.02 03/07 08:44:11 1.047 177.16 64.40 03/07 08:44:13 1.0427 1785.41 67.68 03/07 08:44:43 1.0469 1822.47 68.79 03/07 08:44:44 1.0469 1822.47 68.79 03/07 08:44:48 1.0469 1822.27 69.97 03/07 08:44:48 1.0469 1822.47 68.79 03/07 08:44:48 1.0510							
03/07 08:47:48 1.0302 1659.53 64.68 03/07 08:47:52 1.031 1670.74 64.74 03/07 08:47:52 1.0323 1670.95 64.99 03/07 08:48:03 1.0344 1701.82 65.51 03/07 08:48:07 1.0344 1701.82 65.51 03/07 08:48:07 1.0344 1701.82 65.51 03/07 08:48:17 1.0355 1723.16 66.05 03/07 08:48:18 1.0355 1723.16 66.05 03/07 08:48:18 1.0355 1723.36 66.32 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:18 1.0355 1724.75 66.60 03/07 08:48:28 1.0406 1726.47 67.14 03/07 08:48:28 1.0406 1726.47 67.14 03/07 08:48:1 1.0406 1726.47 67.14 03/07 08:48:1 1.0406 1726.47 67.14 03/07 08:48:1 1.0407 175.01 67.4 0 03/07 08:48:1 1.0408 1726.47 69.97 03/07 08:48:5 1.0429 1825.2 1.0429 1825.2 1.0429 1825.2 1.0429 1825.2 1.0429 1825.2 1.0429 1825.2 1.042 1.052 190.8 1.052 190.8 1.052 190.8 1.052 190.8 1.052 190.8 1.053 193.1 1 72.0 1.054 195.4 1.054 1054 10 105 10 1054 10 105 10 10 10 10 10 10 10 10 10 10 10 10 10							
03/07 08:47:56 1.0223 1679.95 64.99 03/07 08:48:00 1.0334 1701.82 65.51 03/07 08:48:07 1.0344 1701.82 65.51 03/07 08:48:107 1.0344 1701.82 65.51 03/07 08:48:107 1.0354 1713.16 65.78 03/07 08:48:11 1.0355 1723.16 66.05 03/07 08:48:11 1.0355 1723.36 66.32 03/07 08:48:18 1.0356 1764.47 66.68 03/07 08:48:28 1.0406 1766.47 67.44 03/07 08:48:28 1.0406 1766.47 67.44 03/07 08:48:33 1.0427 1785.41 67.95 03/07 08:48:48 1.0468 1816.59 68.50 03/07 08:48:48 1.0468 1816.59 68.50 03/07 08:48:48 1.0458 1816.59 68.50 03/07 08:48:48 1.0459 1822.47 68.70 03/07 08:48:56 1.0450 1842.52 00.67 03/07 08:49:01 1.0551 1855.22 70.27 03/07 08:49:11 1.0551 1855.22 70.27 03/07 08:49:11 1.0551 1855.22 70.27 03/07 08:49:13 1.0552 1898.62 70.86 03/07 08:49:13 1.0552 1898.62 70.86 03/07 08:49:13 1.0552 1898.62 70.86 03/07 08:49:13 1.0552 1898.62 70.86 03/07 08:49:13 1.0552 1993.35 73.24 03/07 08:49:13 1.0554 1914.54 77 73.01 03/07 08:49:13 1.0554 1914.54 77.55 03/07 08:49:14 1.0552 1989.62 71.15 03/07 08:49:15 1.0552 1918.52 70.27 03/07 08:49:15 1.0552 1918.57 73 70.56 03/07 08:49:16 1.0552 1918.57 73 70.56 03/07 08:49:16 1.0552 1918.57 73 70.56 03/07 08:49:16 1.0552 1918.57 73 70.56 03/07 08:49:16 1.0552 1918.57 73 70.56 03/07 08:49:16 1.0552 1918.57 73 70.56 03/07 08:59.51 1.0564 1200.62 73.47 03/07 08:59.51 1.0564 1200.62 73.47 03/07 08:59.51 1.0564 1200.82 75.20 03/07 08:59.51 1.0564 1200.83 75.20 03/07 08:59.51 1.0708 1281.23 78.56 185 03/07 08:59.51 1.000 1217.46 81.42	-						
05/07 08:40:03 1.0333 1400.63 45.24 05/07 08:40:03 1.0354 1701.82 45.51 05/07 08:40:03 1.0356 1723.16 66.05 05/07 08:40:11 1.0356 1723.16 66.05 05/07 08:40:11 1.0357 1732.36 66.32 05/07 08:40:13 1.0357 1732.36 66.37 05/07 08:40:22 1.0396 1756.47 67.14 05/07 08:40:33 1.0461 1766.47 67.14 05/07 08:40:33 1.0472 1785.41 67.68 05/07 08:40:33 1.0472 1785.41 67.68 05/07 08:40:42 1.0469 182.27 68.50 05/07 08:40:42 1.0469 182.27 68.50 05/07 08:40:42 1.0469 182.27 68.50 05/07 08:40:42 1.0479 1833.72 69.08 05/07 08:40:42 1.0479 1833.72 69.08 05/07 08:40:42 1.0479 1832.72 69.08 05/07 08:40:40 1.0510 1845.52 70.27 05/07 08:40:40 1.0510 1845.42 70.45 05/07 08:40:41 1.0521 1865.22 70.27 05/07 08:40:10 1.0521 186.20 70.27 05/07 08:40:10 1.0521 186.08 71.45 05/07 08:40:42 1.0542 1.0542 190.68 71.45 05/07 08:40:42 1.0542 190.68 71.45 05/07 08:40:42 1.0542 191.64 71.44 05/07 08:40:42 1.0542 193.55 73 70.55 05/07 08:40:43 1.0542 193.55 73 70.55 05/07 08:40:43 1.0543 192.41 77.74 05/07 08:40:43 1.0545 199.35 73.70 05/07 08:40:43 1.0545 199.35 73.70 05/07 08:40:45 1.0645 200.62 7.7347 05/07 08:50:01 1.0642 200.78 73.47 05/07 08:50:01 1.0642 200.78 73.47 05/07 08:50:01 1.0642 200.78 74.46 05/07 08:50:15 1.0768 208.77 74.48 05/07 08:50:15 1.0768 208.71 74.48 05/07 08:50:21 1.0708 208.73 73.70 05/07 08:50:15 1.0768 208.77 75.80 05/07 08:50:15 1.0768 208.77 75.80 05/07 08:50:15 1.0768 208.77 75.80 05/07 08:50:15 1.0768 208.77 75.80 05/07 08:50:16 1.0768 208.77 75.80 05/07 08:50:16 1.0768 208.77 75.80 05/07 08:50:16 1.0768 208.77 75.80 05/07 08:50:16 1.0768 208.77 75.80 05/07 08:50:16 1.0768 208.77 75.80 05/07 08:50:16 1.0768 218.27 78.80 05/07 08:52:05 1.0760 2118.48 75							
03/07 08:48:107 1.0354 1713.16 65.51 03/07 08:48:107 1.0355 1723.16 66.05 03/07 08:48:115 1.0375 1723.26 66.32 03/07 08:48:116 1.0375 1723.26 66.32 03/07 08:48:122 1.0364 1764.47 66.67 03/07 08:48:22 1.0406 1766.47 67.41 03/07 08:48:33 1.0427 1785.41 67.95 03/07 08:48:41 1.0458 1815.59 68.50 03/07 08:48:42 1.0458 1815.59 68.50 03/07 08:48:42 1.0459 182.27 69.08 03/07 08:49:00 1.0510 185.22 70.27 03/07 08:49:01 1.0511 185.22 70.27 03/07 08:49:01 1.0521 188.24 70.66 03/07 08:49:11 1.0531 197.73 72.55 03/07 08:49:13 1.052 1898.08 71.15 03/07 08:49:13 1.052 1898.42 70.66 03/07 08:49:13 1.052 1898.18 73.01 03/07 08:49:13 1.052 1898.18							
03/07 08:48:07 05/07 08:48:11 05/07 08:48:11 05/07 08:48:15 1.0355 07/07 08:48:18 05/07 08:48:18 05/07 08:48:18 1.0355 1747.5 05/07 08:48:18 1.0355 1747.5 05/07 08:48:18 1.0457 175.01 05/07 08:48:22 1.0458 1.0457 175.01 05/07 08:48:33 1.0477 175.01 05/07 08:48:33 1.0477 175.01 05/07 08:48:45 1.0458 1.0552 1.0522 1.0522 1.0522 1.0522 1.052 1.052 1.0552							
03/07 08:48:15 1.0375 1723.16 66.05 03/07 08:48:15 1.0375 1732.36 66.02 03/07 08:48:16 1.0386 1765.47 66.02 03/07 08:48:22 1.0404 1765.47 67.14 03/07 08:48:33 1.0427 1775.01 67.45 03/07 08:48:33 1.0427 1785.41 67.65 03/07 08:48:41 1.0438 1795.01 67.95 03/07 08:48:45 1.0458 1815.59 68.50 03/07 08:48:45 1.0469 1822.47 68.78 03/07 08:48:45 1.0469 1822.47 69.08 03/07 08:48:45 1.0469 1822.47 69.08 03/07 08:49:40 1.0500 1852.72 69.08 03/07 08:49:40 1.0510 1854.97 69.67 03/07 08:49:41 1.0521 1886.22 70.27 03/07 08:49:41 1.0511 1854.92 70.27 03/07 08:49:41 1.0522 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
03/07 08:48:18 1.0375 1772.36 66.32 03/07 08:48:18 1.0365 1774.47.5 66.60 03/07 08:48:26 1.0366 1766.47 67.14 03/07 08:48:33 1.0417 1775.01 67.41 03/07 08:48:33 1.0427 1785.41 67.68 03/07 08:48:33 1.0427 1785.41 67.68 03/07 08:48:31 1.0458 1816.59 68.22 03/07 08:48:43 1.0458 1816.59 68.22 03/07 08:48:45 1.0459 1822.47 69.08 03/07 08:48:45 1.0459 1822.47 69.08 03/07 08:49:03 1.0501 1845.52 69.08 03/07 08:49:04 1.0501 1856.22 70.27 03/07 08:49:01 1.0552 1898.08 71.15 03/07 08:49:13 1.0554 193.41 73.61 03/07 08:49:14 1.0615 1949.58 72.56 03/07 08:49:13 1.0554							
03/07 08:48:12 1.0386 1764.75 66.60 03/07 08:48:22 1.0406 1766.47 66.87 03/07 08:48:30 1.0417 1775.01 67.41 03/07 08:48:33 1.0427 1785.41 67.65 03/07 08:48:33 1.0427 1785.41 67.95 03/07 08:48:41 1.0438 1805.93 68.22 03/07 08:48:45 1.0429 1822.47 69.08 03/07 08:48:45 1.0409 1822.52 69.38 03/07 08:49:10 1.0500 1845.52 69.48 03/07 08:49:10 1.0510 1854.97 69.197 03/07 08:49:11 1.0511 1857.73 70.56 03/07 08:49:13 1.0522 1898.24 70.86 03/07 08:49:14 1.0553 1895.93 72.72 03/07 08:49:13 1.0549 1945.94 72.64 03/07 08:49:14 1.0552 1898.04 71.15 03/07 08:49:13 1.0549							
03/07 08:48:20 1.047 175.01 67.44 03/07 08:48:30 1.047 175.01 67.45 03/07 08:48:30 1.047 175.01 67.95 03/07 08:48:31 1.0428 175.01 67.95 03/07 08:48:41 1.0448 180.93 68.22 03/07 08:48:45 1.0458 1816.59 68.50 03/07 08:48:45 1.0458 1816.59 68.50 03/07 08:48:52 1.0467 1832.72 69.08 03/07 08:49:03 1.0500 1845.52 69.67 03/07 08:49:03 1.0510 1845.52 69.67 03/07 08:49:10 1.0551 1865.22 70.27 03/07 08:49:11 1.0551 1865.22 70.27 03/07 08:49:13 1.0552 1898.08 71.15 03/07 08:49:13 1.0552 1898.08 71.15 03/07 08:49:14 1.0552 1898.08 71.15 03/07 08:49:23 1.0552 1898.08 71.15 03/07 08:49:33 1.0552 1898.08 71.15 03/07 08:49:33 1.0554 1945.17 7.7 03/07 08:49:33 1.0554 1945.17 7.7 03/07 08:49:33 1.0554 1945.17 7.7 03/07 08:49:35 1.0646 1958.46 72.56 03/07 08:49:49:31 1.0652 1898.08 72.79 03/07 08:49:49:31 1.0652 1989.11 73.01 03/07 08:49:52 1.0662 1983.73.24 03/07 08:49:52 1.0662 1983.87 72.79 03/07 08:49:52 1.0664 208.23 73.42 03/07 08:49:54 1.0655 1980.18 72.79 03/07 08:49:52 1.0664 208.23 73.42 03/07 08:49:52 1.0664 208.25 73.70 03/07 08:49:52 1.0664 208.23 73.92 03/07 08:49:52 1.0665 208.25 73.67 03/07 08:49:52 1.0664 208.23 73.92 03/07 08:49:52 1.0668 208.77 7.47 03/07 08:49:52 1.0668 208.25 73.67 03/07 08:50:03 1.0760 201.2 75.80 03/07 08:50:03 1.0760 201.2 75.80 03/07 08:50:03 1.0760 201.2 75.80 03/07 08:50:26 1.0700 201.7 80.09 03/07 08:50:26 1.0700 201.7 80.09 03/07 08:50:26 1.0700 201.7 80.09 03/07 08:50:20 1.0700 201.7 80.09 03/07 08:50:20 1.0700 201.7 48.15 03/07 08:50:20 1.0700 201.7 48.15 03/07 08:50:20 1.0700 201.7 48.15 03/07 08:50:20 1.0700 201.7 48.1	03/07 08	3:48:18		1744.75			
03/07 08:48:30 1.04/7 1775.01 67.41 03/07 08:48:33 1.04/27 1785.41 67.68 03/07 08:48:33 1.04/27 1785.41 67.68 03/07 08:48:43 1.04/8 1805.93 68.22 03/07 08:48:44 1.04/8 1805.93 68.20 03/07 08:48:42 1.04/8 1816.59 68.50 03/07 08:48:52 1.04/79 1822.47 68.79 03/07 08:49:00 1.0500 1842.30 69.38 03/07 08:49:00 1.0500 1842.52 69.67 03/07 08:49:01 1.0510 1854.97 69.97 03/07 08:49:11 1.0521 1865.22 70.27 03/07 08:49:13 1.0552 1898.08 71.15 03/07 08:49:22 1.0562 1910.84 71.15 03/07 08:49:23 1.0552 1898.08 71.15 03/07 08:49:24 1.0552 1898.08 71.15 03/07 08:49:25 1.0562 1910.84 71.44 03/07 08:49:23 1.0552 1898.08 72.79 03/07 08:49:31 1.0553 1922.81 71.74 03/07 08:49:33 1.0594 1945.94 72.53 03/07 08:49:30 1.0553 1923.11 73.01 03/07 08:49:45 1.0625 1981.11 73.01 03/07 08:49:54 1.0655 1981.13 73.72 03/07 08:49:55 1.0664 2006.27 73.47 03/07 08:49:56 1.0657 2030.23 73.92 03/07 08:49:56 1.0657 2030.23 73.92 03/07 08:50:03 1.0677 203.80 74.16 03/07 08:50:13 1.0794 2041.20 74.84 03/07 08:50:13 1.0648 2056.71 74.38 03/07 08:50:14 1.0688 2056.71 74.38 03/07 08:50:15 1.0708 2081.20 75.80 03/07 08:50:16 1.079 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:18 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0792 2100.81 75.20 03/07 08:50:26 1.0750 2115.12 75.58 03/07 08:50:26 1.0750 2115.12 75.58 03/07 08:51:45 1.0088 2117.29 80.99 03/07 08:51:45 1.0088 2117.29 80.99 03/07 08:51:45 1.0088 2117.29 80.99 03/07 08:5							
03/07 00:44:33 03/07 00:44:37 03/07 00:44:37 03/07 00:44:37 03/07 00:44:37 1.048 1805.93 03/07 00:44:35 1.048 1815.59 05.07 03/07 00:44:52 1.0479 1822.27 05.08 03/07 00:44:52 1.0490 1825.27 05.07 03/07 00:44:52 1.0490 1825.27 05.07 03/07 00:49:03 1.0501 1855.27 05.07 03/07 00:49:03 1.0552 1865.22 1.0552 1890.08 71.15 03/07 00:49:18 1.0552 1890.08 71.15 03/07 00:49:18 1.0552 1890.08 71.15 03/07 00:49:18 1.0552 1890.08 71.15 03/07 00:49:18 1.0552 1992.81 71.74 03/07 00:49:18 1.0554 1995.46 72.56 03/07 00:49:49:13 1.0554 1995.46 72.56 03/07 00:49:49:14 1.0655 1995.38 72.79 03/07 00:49:49:15 1.0646 1995.46 72.56 03/07 00:49:49:45 1.0656 2018.25 73.47 03/07 00:49:56 1.0656 2018.25 73.47 03/07 00:50:01 1.0667 2030.23 73.92 03/07 00:50:01 1.0667 2030.23 73.92 03/07 00:50:01 1.0667 2030.23 73.92 03/07 00:50:01 1.0667 2030.23 73.92 03/07 00:50:01 1.0677 2043.80 74.16 03/07 00:50:01 1.0688 2056.71 74.38 03/07 00:50:15 1.0708 2018.20 75.20 03/07 00:50:15 1.0708 2018.20 75.39 03/07 00:50:21 1.0708 2115.12 75.58 03/07 00:50:22 1.0750 2116.20 75.77 03/07 00:50:21 1.0708 2117.78 80.09 03/07 00:51:42 1.0988 2117.78 80.99 03/07 00:51:42 1.0988 2117.78 80.99 03/07 00:52:00 1.000 2117.44 81.15							
03/07 08:44:37 1.0438 1795.01 67.95 03/07 08:44:45 1.0458 1805.93 68.22 03/07 08:48:45 1.0458 1816.59 68.50 03/07 08:44:52 1.0479 182.72 69.08 03/07 08:44:52 1.0479 182.72 69.08 03/07 08:44:52 1.0479 182.72 69.07 03/07 08:49:00 1.0500 1845.52 69.67 03/07 08:49:01 1.0501 1854.97 69.97 03/07 08:49:13 1.0510 1854.97 69.97 03/07 08:49:13 1.0512 1898.08 71.15 03/07 08:49:14 1.0552 1898.08 71.15 03/07 08:49:12 1.0552 1898.08 71.15 03/07 08:49:23 1.0552 1898.08 71.15 03/07 08:49:23 1.0552 1898.08 71.15 03/07 08:49:23 1.0554 1910.84 71.44 03/07 08:49:23 1.0554 1910.84 72.56 03/07 08:49:33 1.0554 1935.84 72.56 03/07 08:49:43 1.0655 1981.11 72.04 03/07 08:49:45 1.0655 1981.11 73.01 03/07 08:49:45 1.0655 1981.11 73.01 03/07 08:49:52 1.0666 2018.25 73.70 03/07 08:49:52 1.0666 2018.25 73.70 03/07 08:49:52 1.0666 2018.25 73.70 03/07 08:49:52 1.0666 2018.25 73.70 03/07 08:49:52 1.0668 2056.71 74.38 03/07 08:50:07 1.0688 2056.71 74.38 03/07 08:50:07 1.0688 2056.71 74.38 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:22 1.0770 2115.12 75.01 03/07 08:50:23 1.0770 2115.12 75.58 03/07 08:50:23 1.0770 2118.09 75.77 03/07 08:50:24 1.0986 2118.23 78.56 INSTRUMENT a 34004 03/07 08:50:24 1.0996 2118.23 78.56 03/07 08:50:24 1.0798 2118.29 75.39 03/07 08:50:24 1.0798 2118.23 78.56 03/07 08:50:23 1.0770 2118.10 75.77 03/07 08:50:24 1.0996 2118.23 78.56 03/07 08:50:23 1.0770 2118.10 75.77 03/07 08:50:24 1.0996 2118.23 78.56 03/07 08:50:24 1.0996 2118.24 75.58 03/07 08:50:24 1.0996 2118.23 78.56 03/07 08:50:24 1.0996 2118.24 75.58 03/07 08:50:24 1.0996 2118.24 75.58 03/07 08:50:24 1.0996 2118.24 75.58 03/07 08:50:24 1.0996 2118.24 75.58 03/07 08:50:24 1.0996 2118.24 75							
03/07 08:48:41 1.0448 1805.93 68.22 03/07 08:48:45 1.0458 1816.59 68.50 03/07 08:48:42 1.0479 1822.47 68.79 03/07 08:48:52 1.0479 1822.72 69.08 03/07 08:48:52 1.0479 1822.72 69.08 03/07 08:49:03 1.0500 1854.52 69.67 03/07 08:49:03 1.0510 1854.97 69.97 03/07 08:49:07 1.0521 1855.22 70.27 03/07 08:49:11 1.0551 1875.73 70.56 03/07 08:49:14 1.0552 1886.24 70.66 03/07 08:49:15 1.0552 1886.08 71.15 03/07 08:49:23 1.0552 1910.84 71.44 03/07 08:49:23 1.0554 1910.84 71.44 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:45 1.0652 1981.11 73.01 03/07 08:49:45 1.0652 1981.11 73.01 03/07 08:49:45 1.0652 1981.11 73.01 03/07 08:49:45 1.0652 1981.11 73.01 03/07 08:49:45 1.0656 2018.25 73.72 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:50:07 1.0688 2056.71 74.48 03/07 08:50:07 1.0688 2056.71 74.48 03/07 08:50:07 1.0688 2056.71 74.48 03/07 08:50:15 1.0708 2054.88 74.61 03/07 08:50:15 1.0708 2054.88 74.61 03/07 08:50:16 1.0709 2091.21 75.01 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:13 1.0760 2118.09 75.77 03/07 08:50:14 1.0948 2117.88 79.80 03/07 08:50:15 1.0708 2064.21 73.44 03/07 08:50:15 1.0708 2061.23 73.99 03/07 08:50:15 1.0708 2061.23 73.99 03/07 08:50:15 1.0708 2061.23 73.99 03/07 08:50:15 1.0708 2118.12 75.58 03/07 08:50:15 1.0708 2118.12 75.58 03/07 08:50:14 1.0948 2117.88 79.80 03/07 08:50:15 1.0708 2117.79 80.09 03/07 08:51:41 1.0948 2117.44 81.15 03/07 08:52:00 1.1000 2117.44 81.15							
03/07 08:48:45 1.0458 18:6.59 68:50 03/07 08:48:52 1.0479 1832.72 69:08 03/07 08:48:52 1.0479 1832.72 69:08 03/07 08:48:50 1.0490 1242.30 69:38 03/07 08:49:00 1.0500 1845.52 69:67 03/07 08:49:01 1.0510 1854.97 69:97 03/07 08:49:13 1.0551 1855.2 70.27 03/07 08:49:141 1.0552 1886.24 70.86 03/07 08:49:15 1.0552 1886.08 71.15 03/07 08:49:22 1.0562 1910.84 71.44 03/07 08:49:23 1.0554 1910.84 71.44 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:45 1.064 1958.46 72.56 03/07 08:49:45 1.0645 1981.11 73.01 03/07 08:49:45 1.0645 1981.11 73.01 03/07 08:49:54 1.0655 1981.11 73.01 03/07 08:49:55 1.0646 2006.27 73.47 03/07 08:50:00 1.0657 2033.80 74.16 03/07 08:50:10 1.0656 2018.25 73.70 03/07 08:50:10 1.0657 2033.80 74.16 03/07 08:50:11 1.0698 2056.71 74.38 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:16 1.0719 2091.21 75.01 03/07 08:50:12 1.0708 2081.20 74.84 03/07 08:50:13 1.0719 2091.21 75.01 03/07 08:50:14 1.0908 2056.71 75.20 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2181.97 75.80 03/07 08:50:15 1.0708 2181.97 75.80 03/07 08:50:15 1.0708 2181.23 78.56 1NSTRUMENT & 3400' 03/07 08:50:14 1.0948 217.83 79.80 03/07 08:50:14 1.0948 217.78 80.99 03/07 08:50:14 1.0948 217.78 80.99 03/07 08:50:14 1.0948 217.78 79.80 03/07 08:50:14 1.0948 217.78 80.99 03/07 08:50:14 1.0948 217.74 81.95 03/07 08:50:14 1.0948 217.74 81.95 03/07 08:50:14 1.0948 217.74 81.95							
03/07 08:48:52 1.0479 1832.72 69.08 03/07 08:48:56 1.0490 1842.30 69.38 03/07 08:49:03 1.0510 1845.52 69.67 03/07 08:49:03 1.0510 1845.52 70.27 03/07 08:49:11 1.0531 1875.73 70.56 03/07 08:49:15 1.0542 1886.24 70.66 03/07 08:49:22 1.0562 1910.84 71.44 03/07 08:49:23 1.0542 1910.84 71.44 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.35 03/07 08:49:41 1.0615 1969.38 72.79 03/07 08:49:48 1.0655 1981.11 72.04 03/07 08:49:48 1.0655 1981.11 72.04 03/07 08:49:48 1.0655 1981.11 72.04 03/07 08:49:52 1.0664 1958.46 72.56 03/07 08:49:52 1.0665 2018.125 73.70 03/07 08:49:52 1.0666 2018.25 73.70 03/07 08:49:52 1.0667 2030.23 73.92 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:01 1.0667 2030.23 73.92 03/07 08:50:01 1.0678 2081.80 74.16 03/07 08:50:15 1.0708 2081.80 74.61 03/07 08:50:21 1.0718 2081.80 74.61 03/07 08:50:26 1.0779 2100.81 75.20 03/07 08:50:26 1.0779 2100.81 75.20 03/07 08:50:26 1.0779 2100.81 75.20 03/07 08:50:26 1.0779 2100.81 75.58 03/07 08:50:26 1.0740 2109.89 75.39 03/07 08:50:21 1.0986 2118.23 78.56 INSTRUMENT a 3400' 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:52:00 1.1000 2117.46 81.5	03/07 08	3:48:45					
03/07 08:48:56 1.0490 1842.30 69.38 03/07 08:49:00 1.0500 1845.52 69.67 03/07 08:49:07 1.0521 1854.97 69.97 03/07 08:49:17 1.0521 1855.22 70.27 03/07 08:49:15 1.0542 1886.24 70.86 03/07 08:49:15 1.0542 1886.24 70.86 03/07 08:49:12 1.0552 1910.84 71.44 03/07 08:49:22 1.0562 1910.84 71.44 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.56 03/07 08:49:41 1.0615 1969.38 72.79 03/07 08:49:45 1.0662 1981.11 73.01 03/07 08:49:45 1.0662 1981.11 73.01 03/07 08:49:52 1.0646 2006.27 73.47 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:01 1.0667 2030.23 73.92 03/07 08:50:13 1.0677 2043.80 74.16 03/07 08:50:14 1.0698 2056.71 74.38 03/07 08:50:15 1.0708 2081.20 74.86 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:22 1.0740 2109.89 75.39 03/07 08:50:23 1.0750 2118.12 75.89 03/07 08:50:23 1.0750 2118.12 74.84 03/07 08:50:23 1.0750 2118.12 75.89 03/07 08:50:23 1.0760 2081.20 74.84 03/07 08:50:23 1.0760 218.10 75.20 03/07 08:50:24 1.0740 2109.89 75.39 03/07 08:50:25 1.0760 2118.09 75.77 03/07 08:50:23 1.0750 2118.12 75.80 03/07 08:50:23 1.0750 2118.12 75.80 03/07 08:50:23 1.0750 2118.23 78.56 INSTRUMENT a 3400 ⁴ 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:52:00 1.1000 2117.44 81.15 03/07 08:52:00 1.000 2117.45 81.42							
03/07 08:49:00 1.0500 185.52 69.67 03/07 08:49:03 1.0510 1854.97 69.97 03/07 08:49:11 1.0531 1855.22 70.27 03/07 08:49:11 1.0531 1875.73 70.56 03/07 08:49:18 1.0552 1888.08 71.15 03/07 08:49:18 1.0552 1898.08 71.45 03/07 08:49:22 1.0562 1910.84 71.44 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1958.46 72.56 03/07 08:49:37 1.0604 1958.46 72.56 03/07 08:49:41 1.0615 1969.38 72.79 03/07 08:49:48 1.0655 1981.11 73.01 03/07 08:49:48 1.0655 1981.11 73.01 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:49:56 1.0665 2018.25 73.70 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:13 1.0677 2043.80 74.16 03/07 08:50:13 1.0719 2081.20 74.84 03/07 08:50:13 1.0719 2081.20 74.84 03/07 08:50:13 1.0719 2081.20 74.84 03/07 08:50:26 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:31 1.0740 2109.89 75.39 03/07 08:50:31 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:33 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.12 75.86 03/07 08:50:30 1.0750 2118.23 78.56 03/07 08:50:30 1.0750 2118.23 78.56 03/07 08:50:30 1.0750 2118.23 78.56 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:52:03 1.0100 2117.44 81.15 03/07 08:52:00 1.1000 2117.45 81.42							
03/07 08:49:03 1.0510 1854.97 69.97 03/07 08:49:07 1.0521 1865.22 70.27 03/07 08:49:15 1.0521 1865.22 70.27 03/07 08:49:15 1.0542 1886.24 70.86 03/07 08:49:18 1.0552 1898.08 71.15 03/07 08:49:26 1.0573 1922.81 71.74 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.56 03/07 08:49:37 1.0604 1958.46 72.56 03/07 08:49:48 1.0655 1981.11 73.01 03/07 08:49:48 1.0655 1981.13 73.01 03/07 08:49:48 1.0655 1981.13 73.01 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:50:03 1.0677 2043.80 74.16 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:21 1.0709 2101.21 75.01 03/07 08:50:23 1.0770 2115.12 75.88 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:50:33 1.0770 2115.12 75.88 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:50:23 1.0075 2115.12 75.88 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:50:33 1.0760 2118.23 78.56 INSTRUMENT @ 3400'	•						
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 08:49:23 1.0593 1934.11 72.04 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.56 03/07 08:49:41 1.0615 1969.38 72.79 03/07 08:49:42 1.0625 1981.11 73.01 03/07 08:49:45 1.0625 1981.11 73.01 03/07 08:49:46 1.0635 1993.35 73.24 03/07 08:49:45 1.0665 2018.25 73.70 03/07 08:49:52 1.0646 2006.27 73.47 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:03 1.0677 2043.80 74.16 03/07 08:50:11 1.0698 2069.88 74.61 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:23 1.0740 2118.09 75.77 03/07 08:50:33 1.0760 2118.19 75.77 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:41 1.0988 2117.78 80.09 03/07 08:51:41 1.0988 2117.78 80.09 03/07 08:51:45 1.0958 2117.74 81.15 03/07 08:52:00 1.1000 2117.36 81.42							
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 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 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 08:49:45 1.0625 1981.11 73.01 03/07 08:49:52 1.0646 2006.27 73.47 03/07 08:49:52 1.0646 2006.27 73.47 03/07 08:50:00 1.0657 2030.23 73.92 03/07 08:50:01 1.0656 2030.23 73.92 03/07 08:50:13 1.0677 2043.80 74.16 03/07 08:50:15 1.0678 2064.87 74.38 03/07 08:50:15 1.0708 2064.88 74.61 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:22 1.0709 2115.12 75.88 03/07 08:50:23 1.0760 2118.09 75.77 03/07 08:51:42 1.0896 2118.23 78.56 INSTRUMENT a 3400' 03/07 08:51:41 1.0708 2011.28 78.56 03/07 08:51:45 1.0748 2117.78 79.80 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09							
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 08:49:33 1.0594 1945.94 72.33 03/07 08:49:33 1.0594 1945.94 72.33 03/07 08:49:37 1.0604 1958.46 72.56 03/07 08:49:45 1.0625 1981.11 73.01 03/07 08:49:45 1.0645 1993.35 73.24 03/07 08:49:56 1.0656 2018.25 73.70 03/07 08:50:00 1.0647 2030.23 73.92 03/07 08:50:01 1.0647 2030.23 73.92 03/07 08:50:07 1.0688 2056.71 74.38 03/07 08:50:11 1.0698 2069.88 74.61 03/07 08:50:18 1.0719 2091.21 75.01 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:23 1.0670 2115.12 75.58 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:41 1.0948 2117.88 79.80 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09							
03/07 08:49:22 1.0562 1910.84 71.44 03/07 08:49:26 1.0573 1922.81 71.74 03/07 08:49:33 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 08:49:56 1.0656 2018.25 73.70 03/07 08:59:61 1.0656 2018.25 73.70 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:07 1.0688 2056.71 74.38 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 1.0770 2091.21 75.01 03/07 08:50:22 1.0742 2100.81 75.20 03/07 08:50:22 1.0740 2109.89 75.39 03/07 08:50:33 1.0760 2115.12 75.58 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:41 1.0948 2117.28 79.80 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:52:03 1.1010 2117.44 81.15 03/07 08:52:03 1.1010 2117.44 81.15							
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 08:49:43 1.0604 1958.46 72.56 03/07 08:49:41 1.0615 1949.38 72.79 03/07 08:49:48 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 08:50:00 1.0667 2030.23 73.92 03/07 08:50:00 1.0667 2030.23 73.92 03/07 08:50:01 1.0667 2030.23 73.92 03/07 08:50:01 1.0688 2056.71 74.38 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 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 08:50:30 1.0750 2115.12 75.58 03/07 08:50:31 1.0750 2118.09 75.77 03/07 08:51:41 1.0948 2117.88 79.80 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 08:49:30 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 08:49:56 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 08:50:11 1.0698 2069.88 74.61 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:22 1.0729 2100.81 75.20 03/07 08:50:23 1.0779 2115.12 75.58 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:41 1.0948 2117.88 79.80 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:51:41 1.0958 2117.78 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 08:49:33 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 08:49:56 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 08:50:15 1.0708 2081.20 74.84 03/07 08:50:15 1.0708 2081.20 74.84 03/07 08:50:22 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 08:51:41 1.0948 2117.88 79.80 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09							
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 08:49:52 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 08:50:22 1.0729 2100.81 75.20 03/07 08:50:33 1.0750 2115.12 75.58 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:42 1.0896 2118.23 78.56 INSTRUMENT @ 3400' 03/07 08:51:41 1.0948 2117.88 79.80 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:51:45 1.0798 2117.44 81.15 03/07 08:52:03 1.1010 2117.46 81.42							
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 08:50:00 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 08:50:23 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 08:51:41 1.0948 2117.79 80.09 03/07 08:51:45 1.0958 2117.79 80.09 03/07 08:52:00 1.1000 2117.36 81.42							
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 08:50:11 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 08:50:30 1.0750 2115.12 75.58 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:50:33 1.0760 2118.09 75.77 03/07 08:51:41 1.0948 2117.88 79.80 03/07 08:51:41 1.0958 2117.79 80.09 03/07 08:51:45 1.0958 2117.74 81.15 03/07 08:52:00 1.1010 2117.46 81.42			1.0615	1969.38	72.79		
03/07 08:49:52 1.0646 2006.27 73.47 03/07 08:59:00 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 1.010 2117.36 81.42					<u> </u>		
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 1.0100 2117.36 81.42							
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 a 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 1.010 2117.36 81.42							
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 1.010 2117.36 81.42		-					
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 08:51:22 1.0896 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 1.010 2117.36 81.42							
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 08:51:32 1.0896 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 1.010 2117.36 81.42	03/07 0	8:50:07			74.38		
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 1.010 2117.36 81.42							
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 08:50:26 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 08:50:30 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 08:50:33 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 1.010 2117.36 81.42							
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				2118.09	75.77		
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	•		1.0896	2118.23	78.56		INSTRUMENT @ 3400/
03/07 08:52:00 1.1000 2117.44 81.15 03/07 08:52:03 1.1010 2117.36 81.42							
03/07 08:52:03 1.1010 2117.36 81.42							
03/07 08:52:22 1.1063 2116.73 82.74							



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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE 4 OF 11

DATE : 03/08/96

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		
•	08:54:15	1.1375	2117.04	89.75		
	08:54:45 08:55:00	1.1458	2117.29	91.56		
•	08:55:48	1.1500 1.1635	2117.51 2117.64	92.47 95.13		
	08:56:37	1.1771	2117.93	97.22		
	08:57:30	1.1917	2118.04	99.00		
	08:58:30	1.2083	2118.34	100.51		
	08:59:30 09:00:30	1.2250 1.2417	2118.45 2118.53	102.04 103.26		
	09:01:30	1.2583	2118.79	103.28		
	09:02:30	1.2750	2118.71	104.78		
	09:03:30	1.2917	2118.77	105.37		
	09:04:30 09:05:30	1.3083 1.3250	2118.81	105.75		
	09:06:30	1.3417	2118.86 2118.90	106.12 106.41		
03/07	09:07:30	1.3583	2118.95	106.59		
	09:08:30	1.3750	2118.99	106.78		
	09:09:30	1.3917	2119.02	106.92		
	09:10:30 09:11:30	1.4083 1.4250	2119.04	107.00		
	09:12:30	1.4250	2119.07 2119.10	107.09 107.17		
	09:13:30	1.4583	2119.12	107.22		
	09:14:30	1.4750	2119.15	107.26		
	09:15:30	1.4917	2119.14	107.30		
	09:16:30 09:17:30	1.5083 1.5250	2119.14 2119.14	107.33		
	09:18:30	1.5417	2119.14	107.35 107.36		
	09:19:30	1.5583	2119.15	107.38		
	09:20:30	1.5750	2119.15	107.41		
	09:21:30	1.5917	2119.15	107.43		
	09:22:30 09:23:30	1.6083 1.6250	2119.14 2119.16	107.44		
	09:24:30	1.6417	2119.16	107.45 107.45		
	09:25:30	1.6583	2119.16	107.45		
	09:26:30	1.6750	2119.17	107.45		
	09:27:30 09:28:30	1.6917 1.7083	2119.15	107.47		
	09:29:30	1.7250	2119.14 2119.14	107.48 107.49		
	09:30:30	1.7417	2119.17	107.49		
	09:31:30	1.7583	2119.11	107.49		
	09:32:30	1.7750	2119.10	107.50		· ·
	09:33:30 09:34:30	1.7917 1.8083	2119.11	107.51		
	09:35:30	1.8250	2119.11 2119.14	107.51 107.51		
	09:36:30	1.8417	2119.11	107.52		
•	09:37:30	1.8583	2119.41	107.53		
-	09:38:30	1.8750	2119.00	107.54		
	09:39:30 09:40:30	1.8917 1.9083	2119.05 2119.08	107.54 107.54		
	09:41:30	1.9250	2119.08	107.54		
	09:42:30	1.9417	2119.10	107.54		
-	09:43:30	1.9583	2119.11	107.54		
	09:44:30 09:45:30	1.9750	2119.10	107.55		
	09:45:50	1.9917 2.0083	2119.08 2119.06	107.55		RATE #1 - 0.06 BPM START TEST
-	09:47:30	2.0250	2119.08	107.55		KATE #1 - U.UO BPM
03/07	09:48:30	2.0417	2119.10	107.56		
	09:49:30	2.0583	2119.09	107.56		
	09:50:30 09:51:30	2.0750	2119.44	107.56		
	09:51:30	2.0917 2.1083	2119.39 2119.57	107.57 107.57		
	09:53:30	2.1250	2119.65	107.57		
	09:53:45	2.1292	2119.69	107.57		
US/07	09:54:00	2.1333	2119.20	107.58		

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

WELL LOCATION : SAN JUAN COUNTY, NM

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

PAGE 6 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

RATE #5 - 3.0 BPM

Ga. Press Ref. to 14.7 Psi Atm.

Comment

RATE #6 - 3.6 BPM

RATE #7 - 4.4 BPM

RATE #8 - 5.5 BPM

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date	Time	Test Time	Pressure	Temp	deltaP	Comment	
MM/DD	hh:mm:ss	hhhh hhhh	Psig	Deg F	Psi		
				009 1	F51	Ga. Press Ref. to 14.7 Psi Atm.	
07/07	11.53.15	/ 40/0	0475 04	447			
03/07	11:52:15	4.1042	2135.01	107.31			
	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			
	11:53:15	4.1208	2131.31				
				107.31			
	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			
	11:56:15						
		4.1708	2138.08	107.35			
	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			
	11:59:45	4.2292	2138.53	107.39			
-							
	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			
	12:02:30	4.2750	2139.44	107.39			
	12:03:30	4.2917	2139.52	107.38			
	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			
	12:05:30	4.3250					
			2141.24	107.36			
	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			
07/07	12:08:03						
		4.3677	2143.80	107.37			
	12:08:07	4.3688	2143.58	107.37			
	12:08:22	4.3729	2143.44	107.39			
03/07	12:08:26	4.3740	2133.73	107.39			
	12:08:56	4.3823	2133.33	107.39			
	12:09:00						
		4.3833	2133.23	107.39			
	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			
	12:10:45	4.4125					
			2132.09	107.37			
	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		DECALIPRATE FLOU METER	
03/07	12:14:45	4.4792	2131.09	107.28		RECALIBRATE FLOW METER	
03/07	12:15:45						
		4.4958	2130.95	107.26			
	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			
	12:17:00	4.5167	2130.31				
	12:17:30			107.25			
		4.5250	2130.65	107.24			
	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		SALE AT A LOV DER	
	12:20:45	4.5792	2131.79				
				107.23			
	12:21:45	4.5958	2131.83	107.24			
	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	
	12:24:30	4.6417				THE WERA T J.U BMM	
			2133.42	107.24			
	12:24:45	4.6458	2133.55	107.24			
05/07	12:25:45	4.6625	2133.68	107.25			
03/07	12:26:45	4.6792	2133.64	107.26			
	12:27:45	4.6958	2133.56	107.27			
	12:28:30	4.7083					
			2133.56	107.28			
	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			
			2.20.02				

PAGE 7 OF 11

DATE : 03/08/96

_	

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE 8 OF 11 DATE : 03/08/96

Date Time	Test Time	Pressure	Тетр	deltaP	Comment
MM/DD hh:mm:ss	hhhh.hhhh	Psig	Deg F	Psi	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 03/07 12:34:30	4.7917 4.8083	2136.72 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 03/07 12:36:37	4.8302 4.8438	2139.51 2139.83	107.37 107.39		
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 03/07 12:40:30	4.8917 4.9083	2140.16 2140.33	107.40 107.41		
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 03/07 12:45:30	4.9750 4.9917	2141.03 2141.20	107.40 107.40		RATE #6-A - 5.0 BPM
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 03/07 12:49:45	5.0583 5.0625	2141.87 2141.90	107.37 107.37 🕳	_	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 03/07 12:52:33	5.0958 5.1094	2134.22 2133.94	107.37 107.37		
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 03/07 12:57:30	5.1750 5.1917	2133.00 2132.89	107.32 107.32		
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 03/07 13:01:30	5.2417 5.2583	2132.49 2132.35	107.30 107.30		
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 03/07 13:06:30	5.3250 5.3417	2131.82 2131.70	107.30 107.30		
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		107.30		
03/07 13:10:30 03/07 13:11:30	5.4083 5.4250	2131.34 2131.25	107.31 107.32		
03/07 13:12:30	5.4417		107.32		
03/07 13:13:30	5.4583	2131.07	107.33		
03/07 13:14:30 03/07 13:15:30	5.4750 5.4917	2131.00 2130.92	107.34 107.35		
03/07 13:16:30	5.5083		107.35		
03/07 13:17:30	5.5250	2130.76	107.36		
03/07 13:18:30	5.5417		107.37		
03/07 13:19:30 03/07 13:19:45	5.5583 5.5625		107.37 107.37		INSTRUMENT OFF BOTTOM
03/07 13:20:00	5.5667		107.37		
03/07 13:20:15	5.5708	2116.62	107.37		
03/07 13:20:18	5.5719		107.37		
03/07 13:20:22 03/07 13:20:26	5.5729 5.5740		107.32 107.27		
03/07 13:20:30	5.5750		107.22		
03/07 13:20:33	5.5760	2098.39	107.17		
03/07 13:20:37	5.5771	2094.33	107.12		

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

WELL LOCATION : SAN JUAN COUNTY, NM

PAGE		9 OF	11
DATE	:	03/08/9	6

FILE REF: F224307.RED

J

							TTEE KET. TEE4JUT.KED
Date	Time	Test Time	Pressure	Temp	deltaP	Comment	
MM/DD	hh:mm:ss	հհհհ.հհհհ	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.	
						da. 11035 kc1. (0 14.1 PS1 Atm.	
03/07	13:20:41	5.5781	2090.27	107.07			
	13:20:45	5.5792	2086.07	107.02			
	13:20:48	5.5802	2082.27	106.97			
03/07	13:20:52	5.5813	2078.60	106.93			
	13:20:56	5.5823	2074.41	106.88			
	13:21:00	5.5833	2070.21	106.83			
	13:21:03	5.5844	2066.05	106.68			
	13:21:07	5.5854	2061.93	106.43			
	13:21:11	5.5865	2060.17	106.19			
	13:21:15	5.5875	2058.55	105.95			
-	13:21:18	5.5885	2056.92				
	13:21:22	5.5896	2054.90	105.71			
	13:21:26	5.5906		105.46			
	13:21:30		2051.56	105.22			
	13:21:33	5.5917	2049.15	104.98			
		5.5927	2046.73	104.74			
	13:21:37	5.5938	2044.19	104.50			
	13:21:41	5.5948	2041.51	104.26			
	13:21:45	5.5958	2038.70	104.01			
	13:21:48	5.5969	2035.78	103.70			
	13:21:52	5.5979	2033.13	103.35			
	13:21:56	5.5990	2030.23	103.00			
	13:22:00	5.6000	2027.32	102.66			
	13:22:03	5.6010	2024.15	102.31			
	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			
	13:22:41	5.6115	1917.14	98.79			
	13:22:45	5.6125	1898.01	98.43			
	13:22:48	5.6135	1879.80	98.07			
	13:22:52	5.6146	1860.53	97.72			
	13:22:56	5.6156	1840.60	97.36			
	13:23:00	5.6167	1820.54	97.01			
	13:23:03	5.6177	1800.61	96.65			
	13:23:07	5.6188	1780.80	96.30			
	13:23:11	5.6198	1762.32	95.94			
	13:23:15	5.6208	1742.11				
	13:23:18	5.6219		95.58			
	13:23:22	5.6229	1721.77	95.24			
			1703.41	94.90			
	13:23:26 13:23:30	5.6240	1683.72	94.57			
	13:23:30	5.6250	1663.90	94.24			
		5.6260	1643.81	93.89			
	13:23:37	5.6271	1622.27	93.56			
-	13:23:41	5.6281	1602.58	93.23			
	13:23:45	5.6292	1582.75	92.89			
	13:23:48	5.6302	1562.79	92.55			
	13:23:52	5.6312	1542.95	92.22			
	13:23:56	5.6323	1522.19	91.89			
	13:24:00	5.6333	1502.35	91.55			
	13:24:03	5.6344	1482.91	91.23			
	13:24:07	5.6354	1461.75	90.90			
	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			
	13:24:26	5.6406	1359.19	89.29			
	13:24:30	5.6417	1338.42	88.97			
	13:24:33	5.6427	1318.69	88.65			
	13:24:37	5.6438	1297.38	88.33			
	13:24:41	5.6448	1275.67	88.01			
				55.01			

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

WELL LOCATION : SAN JUAN COUNTY, NM

								1122 KELL 1224307.KEU
Date	Time	Test Time	Pressure	Temp	deltaP	Comment		
MM/DD	hh:mm:ss	hhhh hhhh	Psig	Deg F	Psi		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				
	13:25:03	5.6510	1152.23	86.12				
	13:25:07	5.6521	1130.24	85.81				
	13:25:11	5.6531	1109.17	85.50				
	13:25:15	5.6542	1087.97	85.18				
	13:25:18	5.6552	1066.90	84.88				
	13:25:22	5.6563	1047.54	84.57				
	13:25:26	5.6573	1032.41	84.25				
	13:25:30	5.6583	1017.80	83.94				
	13:25:33	5.6594	1000.95	83.63				
	13:25:37	5.6604	984.75	83.33				
	13:25:41	5.6615	970.14	83.03				
	13:25:45	5.6625	955.92	82.73				
	13:25:48	5.6635	941.04	82.43				
	13:25:52	5.6646	926.95	82.12				
	13:25:56	5.6656	913.39	81.82				
	13:26:00	5.6667	899.96					
	13:26:03	5.6677	887.05	81.52				
	13:26:07	5.6687	875.47	81.22				
-	13:26:11	5.6698		80.91				
	13:26:15	5.6708	864.41	80.61				
	13:26:13		852.95	80.32				
	13:26:22	5.6719	842.29	80.01				
	13:26:26	5.6729	831.89	79.73				
	13:26:30	5.6740	820.95	79.44				
		5.6750	810.15	79.15				
	13:26:33	5.6760	799.09	78.86				
	13:26:37	5.6771	788.81	78.58				
	13:26:41	5.6781	778.01	78.29				
	13:26:45	5.6792	768.13	78.00				
	13:26:48	5.6802	758.38	77.72				
	13:26:52	5.6813	749.82	77.43				
	13:26:56	5.6823	741.40	77.14				
	13:27:00	5.6833	733.89	76.86				
	13:27:03	5.6844	726.92	76.58				
	13:27:07	5.6854	719.41	76.32				
	13:27:11	5.6865	712.30	76.06				
	13:27:15	5.6875	706.38	75.79				
	13:27:18	5.6885	700.98	75.53				• -
	13:27:22	5.6896	696.11	75.26				
	13:27:26	5.6906	691.78	74.99				
	13:27:30	5.6917	687.57	74.73				
	13:27:33	5.6927	683.63	74.46				
	13:27:37	5.6937	679.42	74.20				
	13:27:41	5.6948	675.35	73.93				
03/07	13:27:45	5.6958	672.07	73.67				
	13:27:48	5.6969	668.79	73.41				
	13:27:52	5.6979	665.77	73.18				
	13:27:56	5.6990	663.01	72.94				
	13:28:00	5.7000	660.39	72.69				
	13:28:03	5.7010	658.43	72.46				
	13:28:07	5.7021	657.00	72.22				
	13:28:11	5.7031	655.70	71.97				
	13:28:15	5.7042	654.13	71.74				
03/07	13:28:18	5.7052	652.83	71.50				
	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				
	13:29:37	5.7271	651.36	67.29				

PAGE 10 OF 11

DATE : 03/08/96

FILE REF: F224307.RED

I.

1

651.36 654.43 654.38

5.7271 5.7281 5.7292

03/07 13:29:18 03/07 13:29:37 03/07 13:29:41 03/07 13:29:45

68.12 67.29 67.12 66.96

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

WELL LOCATION : SAN JUAN COUNTY, NM

Date T MM/DD hh:	Time :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		

PAGE 11 OF 11

DATE : 03/08/96

VENT

sυ

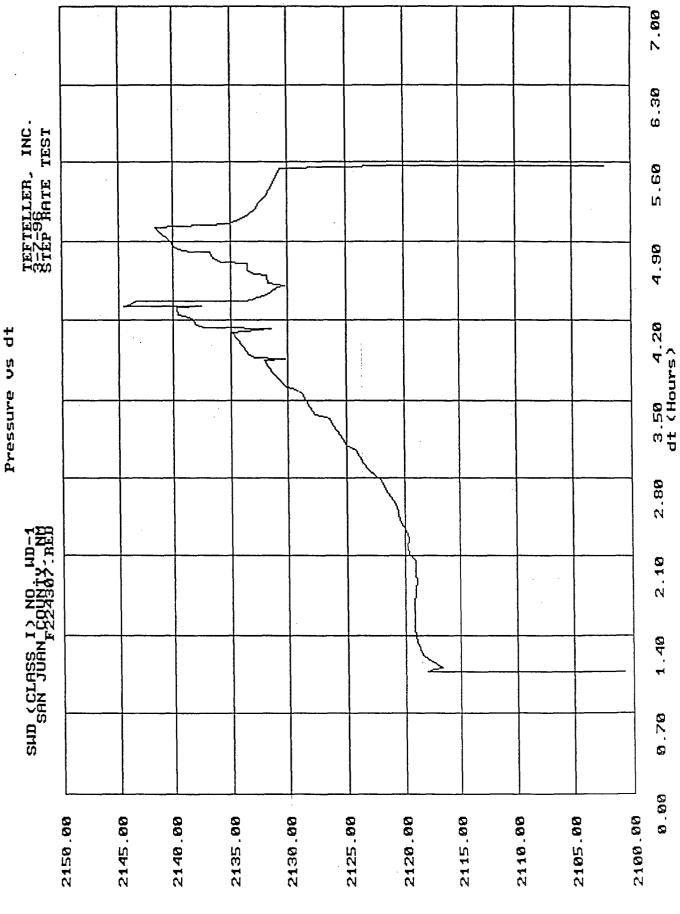
₽

COMPANY : GIANT REFINING WELL NAME : SWD (CLASS I) NO. WD-1 WELL LOCATION : SAN JUAN COUNTY, NM PAGE : B

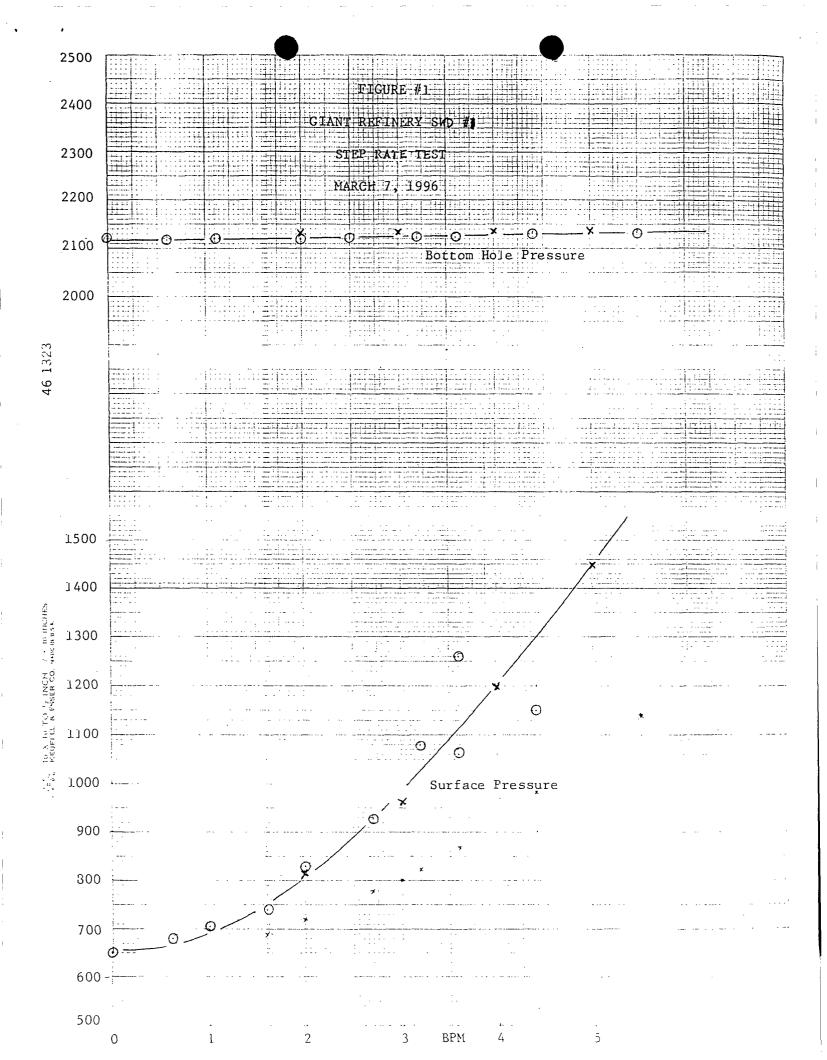
DATE : 03/08/96

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
	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



(Pisa) anuseara



BJ SERVICES COMPANY

.

GIANT REFINERY

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

P.01

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 FEB 29'96 11:03 FR BJ SERVICES FARMINGTO 05 327 5766

P.02

FM050525 01

BJ SERVICES COMPANY

OPERATOR: WELL: FORMATION:

GIANT REFINERY BLOOMFIELD WD #1 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

FEB 29'96 11:03 FR BJ SERVICES FARMINGTO 05 327 5766

FM050525 01 01

P.04

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
- 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	=	<u>{2.93 x (60.0 bpm /316)^2}</u> x 1.00 (0.450 in) ⁴	=	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.

BAP = SP+ HH- PF

.



FM050525 01 01

1

BJ SERVICES COMPANY

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

FLUID & PROPPANT PUMPING SCHEDULE

PLUID TYPE	FLUID Volume (GALS)		PRO TOTAL	MESH SIZE		FLUID (BBLS)	OLUME SLURRY (BBLS)	CUN (BBLS)
SLICK H20	26000	0.00	0			619	619	619
SLICK H20	20000	0.50	10000	20/40	SAND	476	487	1106
SLICK H20	20000	1.00	20000	20/40	SAND	476	498	1604
SLICK H20	20000	1.50	30000	20/40	SAND	476	509	2113
SLICK H20	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

Ŧ

ŝ

- i

FLUID Type	FLUID Volume (Gais)	PROPPANE CONC. (LB/GAL)	SLURRY RATE (BPM)	FLUID RATE (BPM)	PROFPANT RATE (LBS/MIN)	SLURRY VOLUME (BBLS)	PUMP TINE HH: MM: SS
SLICK H20	26000	0.00	60.0	60.0	0.0	619	00:10:19
SLICK H20	20000	0.50	60.0	58.7	1232.1	487	00:08:06
SLICK H20	20000	1.00	60.0	57.4	2410.7	498	00:08:1
SLICK H20	20000	1.50	60.0	56.2	3539.2	509	00:08:2
SLICK H20	45000	2.00	60.0	55.0	4620.9	1169	00:19:20
FLUSH	3150	0.00	60.0	60.0	0.0	75	00:01:1
				L1	TOTAL PUR	P TIME	00:55:50

FM050525 01 01

P.06

BJ SERVICES COMPANY

COST ESTIMATE

MESA VERDE SLICKWATER FRAC

QTY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE	GROSS Amount		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			
30	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80			
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'.

FEB 29'96 11:05 FR BJ SERVICES FARMINGTO 05 327 5766

FN050525 01 01

P.07

BJ SERVICES COMPANY

COST ESTIMATE

MESA VERDE SLICKWATER FRAC

QTY	UNIT	PRODUCT		net Amount
75	GAL	FRW-30, FRICTION REDUCER		1,753.05
54	LBS	XCIDE-207, BACTERIACIDE		1,238.76
30	MILES	CHEMICALS DELIVERY, LIGHT VEHICL	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 DA	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.

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 PUNPED OR NOT. ALL PROPPANTS OTHER THAN STANDARD GRADE FRAC SAND ARE CONSIDERED 'SPECIAL PROPPANTS'.

FEB 29'96 11:06 FR BJ SERVICES FARMINGTO 05 327 5766

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

** TOTAL PAGE.009 **

FEB 29'96 11:03 FR BJ SERVICES FARMINGTO 05 327 5766

FM050525 01

P.03

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



FH050525

P.08

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 CITANSE

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).

Mr. John Stokes February 2, 1996 Page 2

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



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

Giant Refining Company Class I Injection Well Re: **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?

NICES IN AN SIGN

10 m 1 m an 8 52

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. <u>Please submit the results of all tests performed on the wastes.</u>

The results are attached.

8. <u>Please submit the results of the latest Mechanical Integrity Test performed on the</u> <u>Class I well.</u>

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. <u>Please submit all other paperwork associated with this disposal incident.</u>

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.

BRUCE KING Governor		ANITA LOCKWOOD CABINET SECRETARY	1	1000 RIG Aztec, Ne
· · · •	MECHANI	CAL INTEGRIT (TA or UIC)		ORT
Date of Tes	a Aug 17 1995	Operator		iv.
-	0.			21_Twn 29_Rge
Land Type:	State	······	Well Type:	Water Injection _
	Federal Private X			Salt Water Disposal Gas Injection
	Indian		•	Producing Oil/Gas Pressure Observation
Temporaril	y Abandoned Well (Y	(/N):	TA Expires: _	
Casing Pres. Bradenhead P		Tbg. SI Pres Tbg. Inj. Pres		Max. Inj. Pres. <u>950</u> LIMIF
Tubing Pres. Int. Casing Pr	860	10g. Inj. 1100		CITAL
Pressured ann		96		
	tutus up to	_ psi. for1	nins. Test passed f	ailed.
		psi. for10 i	nins. Test passed f	ailed.
DEMARKS.				ailed.
DEMARKS.		psi. for <u>10</u>		ailed.
REMARKS.				ailed.
REMARKS.			<u>0 800</u> #	ailed.
REMARKS.			io 800#	ailed.
REMARKS.		st covcluded at 9:5		ailed.
DEMARKS.		st covcluded at 9:5		ailed.
DEMARKS.		Le concluded at 9:5		ailed.

BJ SERVICES

API WATER ANALYSIS

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 JI	UAN	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)

DISSOLVED SOLIDS

Calcium, Ca:	mg/l 874 120 15 N/A 30		3 ⁸ 6	Sample(ml): 10.0 ml of EDTA: 3.00 Sample(ml): 10.0 ml of EDTA: .60
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



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,

Como Honny

Chris Hawley / Environmental Manager

CH/jm

Enclosure

cc: Joe Warr Dave Roderick Ron Weaver Chad King John Goodrich ٩.

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

S	AVG (GPM)			79	128		110	134	134								
ON-LINE FLOW RATES	MIN (GPM)			57	98	i	68	124	127								
	MAX (GPM)			111	151		136	144	150								
SSURE	AVG (PSIA)			100	100	ľ	67	14	4								5
ANNULAR PRESSURE	MIN (PSIA)			12	37	Ċ	64	7	0								6-11-0
ANNU	MAX (PSIA)			220	220		0/	20	ω								DATE: 7-11-95
ESSURE	AVG (PSIA)			706	870	100	807	870	869								I
INJECTION PRESSURE	MIN (PSIA)			643	763		712	800	839								tre la
INJEC	MAX (PSIA)			809	949		902	891	918								March
-NWOD	TIME (HRS)			72	28	200	669	213	201								ICATION: Cothol Montan
CALCULATED	(GALLONS)			2,844,000	5,498,880		316,800	4,269,240	4,172,760							17,101,680	CERTIFICATION
TOTALIZER AMOUNT	INJECTED (GALLONS)			2,291,200	4,383,100		289,400	3,619,800	3,707,300							14,290,800	Ū
AMOUNT TO SOLAR	EVAP PONDS (GALLONS)		3,794,400	3,427,200	3,178,300		3,371,300	2,578,000	2,418,100							18,767,300	
	FROM RIVER (GALLONS)		11,597,000	9,384,000	10,659,000		9,977,000	12,691,000	11,802,000							66,110,000	
	PERIOD	1995	JAN	FEB	MAR		APR	МАҮ	NUL	חר	AUG	SEP	OCT	VOV	DEC	TOTAL	

NOTES:

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

. .

ł

1

:

-

I

2506	W. Main Street
armington, New	Mexico 87401

Client:	Bloomfield Refining Co.	Farmington, Nev	v Mexico 87401
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		

	Analytical			
Parameter	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. Klute

Reviewed by_

2506 W. Main Street armington, New Mexico 87401

Client: Bloomfield Refining Co.		Farmington, New Mexico 874		
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/Ľ
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. Klute

Reviewed by: Mh

2506 W. Main Street Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis Dissolved Metals

Client:

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

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: _____

Reviewed by:

Quality Control / Quality Assurance

Spike Analysis

Dissolved Metals

Client: Project: Laboratory ID: Sample Matrix: Bloomfield Refining Co. Bloomfield NM W00571 Water

Date Reported:06/22/95Date Sampled:05/22/95Date Received:05/22/95

	S	pike 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.Klute

Reviewed by:

2506 W. Main Street Farmington, New Mexico 87401

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; Tes Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.				
Commenter					

Comments:

Analyst



Review

inl

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: Project: Sample ID: Laboratory ID: Sample Matrix: Preservative: Condition: BLOOMFIELD REFINING CO. Bloomfield, NM GW-130 Inj W571/0695G00868 Water Cool, HCI Intact, pH<2

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

	Concentration	Detection Limit
Analyte	(mg/L)	(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.

Inorganics Laboratory

Inter-Mountain Laboratories, Inc.

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

EPA Method 624

Page 2

PURGEABLES

ADDITIONAL DETECTED COMPOUNDS

Client: Project: Sample ID: Laboratory ID:

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

> **BLOOMFIELD REFINING CO.** Bloomfield, NM GW-130 Inj W571/0695G00868

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

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

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.

Chestered Analyst

<u>Ulande Mlez</u> Review

Organics Laboratory

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

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

	Spiked Sample	Sample	Spike Added	Percent	QC Limits
Analyte	Result (mg/L)	Result (mg/L)	(mg/L)	Recovery	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

	Duplicate	Percent	Original Spike		QC	Limits
Analyte	Result (mg/L)	Recovery	Recovery	RPD	RPD	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

		Spike	Spike Dup	
Quality Control:	Surrogate	Recovery	<u>Recovery</u>	Recovery Limits
	Dibromofluoromethane	112%	101%	86 - 118%
	Toluene-d8	108%	97%	88 - 110 %
	Bromofluorobenzene	107%	105%	86 - 115 %

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

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

<u>ClustArlu</u> Analyst

<u>Ulond Mla</u> Review

inl

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

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 624 - PURGEABLES

Sample ID: Laboratory ID: Sample Matrix: Method Blank MB0524D Water Report Date:06/02/95Date Extracted:N/ADate Analyzed:05/24/95Time Analyzed:7:46 PM

	Concentration	Detection Limit
Analyte	(mg/L)	(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

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

QUALITY CONTROL REPORT - METHOD BLANK

EPA METHOD 624 - PURGEABLES

Page 2

ADDITIONAL DETECTED COMPOUNDS

Sample ID: Laboratory ID: Method Blank MB0524D

Report Date: 06/02/95 Date Sampled: 05/24/95 Date Analyzed: 05/24/95 Time Analyzed: 7:46 PM

Tentative	Retention Time	Concentration*
Identification	(Minutes)	(mg/L)
Non	e detected at reportable le	evels

* - 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.

Inspected Analyst

Ulench Milles Review

2506 W. Main Street Farmington, New Mexico 87401

Quality Assurance / Quality Control

2506 W. Main Street Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS QUALITY CONTROL REPORT

Method Blank Analysis

Sample Matrix:WaterReport Date:06/06/95Lab ID:Method BlankDate 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:	_	p; Method 8020, Aromatic Volatile Or Wastes, SW-846, United States Env er 1986.	•		

Comments:

Analyst

MK

Review

2506 W. Main Street Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis BTEX

Client:	Bloon
Project:	Bloom
Sample Matrix:	Water

mfield Refining Co. nfield NM

Date Reported: 06/06/95 Date Analyzed:

06/05/95

Known Analysis

	Found Concentration	Known Concentration	Porcent
Parameter	(ppb)	(opb)	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%

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

Comments:

Reported by Anna Schaeses

Reviewed by 7/1/

	<u> </u>	r	·····			r		··		 ·····	 1		1	_ <u>r</u>		
•				0'0'			734					Time 16:00	Time	1)me	1. Sec.	28247
		rks		BTEX 2 0,		45	woz					Date		Date		50
	ANALYSES / PARAMETERS	STA Remarks	tos'za			SAME ,	LABID, WOZ734									3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-4999
	SES / PAR	02420	12 200 20 12 200 200 12 200						<u>.</u>							304 Longmire Drive 3304 Longmire Drive College Station, TX 7 Telephone (409) 774
	ANALYS	~	129	4								X		jnature)		X 77845 776-8945
RD		678	'1 3 18	4								nature)	nature)	Received by laboratory: (Signature)		1183 SH 30 College Station, TX 77845 Tolephone (409) 776-8945
		ets	No. of Contain	9							 	Received by (Signature)	Received by: (Signature)	d by labo	, Inc.	1183 SH 30 College Station (4
N N N	2	-											Received	Receive	tories	a 59715 86-8457,
ISTO	2		Matrix	Å								Time #200 P	Time	Time	Laboratories,	1160 Research Dr. Bozeman, Montana 59715 Telephone (406) 586-8457,
CHAIN OF CUSTODY RECORD	Project Location BLOOMFIEL	Chain of Custody Tape No.		WIER								Date	Date	Date		l
AIN O	Project Location	of Custod	ber									1			Inter-Mountain	in Street M 87401 5) 326-473
CH		Chain	Lab Number												Inter-	2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737
	<u>_</u>			0	·						 	-			0	
	ر) مکار		Time	1:006												Circle ning 82716 07) 682-89
	BFINIA	547	Date	Straf								MAN				1701 Phillips Circle Gillette, Wyoming 82718 Telephone (307) 682-8945
Inter-Mourtain Laboratories, Inc.	Client/Project Name BLOUNFIGD RFINING CO	Sampler: (Signature) (UMM/ HMMM	Sample No./ Identification	GW-130 INJ								Relinquished by: (Signature)	Relinquished by: (Signature)	Relinquished by: (Signature)		Telephone (307) 672-8945

GW-130 PISCHARGE PERMIT

SUNCO NA -17 1=

EW 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

ICE OF THE SECRETARY P. O. BOX 6439 INISTRATIVE SERVICES DIVISION -TIVE SERVICES DIVISION - P. O. BOX 6429 - SANTA N AND MANAGEMENT DIVISION - P. O. BOX 6429 - SANTA FL, NM 87505-6429 ~ (505) 8)7-59)5 - (505) 827-5900 SANTA FE, NM 87505-6429 ENERGY CONSE RESOURCES CONSERVATION DIVISION - P. O. BOX 1948 - SANTA FE, NM 87504-1948 - (505) 827-5830 MINING AND MINERALS DIVISION - P. O. BOX 6429 SANTA FE, NM 87505-6429 - (505) 827-5970 OIL CONSERVATION DIVISION - P. O. BOX 6429 - SANTA FE. NM 87505-6429 - (505) 827-7131 PARK AND RECREATION DIVISION - P. O. BOX 1147 SANTA FE, NM 87504-1147 - (505) 827-7465



MEMORANDUM OF MEETING OR CONVERSATION

Time 3:30 PM 1-24-96 Date Telephone Personal Other Parties Originating Party Pat Sanchez - OLD Mr. Shelton - Gignt Subject Back flow Class I well workever -Giant water. Discussion Mr. Shelton called to inform OUD Sunta Fr shipped Class that Giant had backflow nater to Sunco Disposal CLASS facility. the of the workaver and Shipment Shiltm time Nr Thompson his consultant Mr. Paul did not Know that Sunco could take Non exempt net Shelton CLASS I Fluids. dues Mr. not want involve Sunco since they thought were they taking wastes from an ordinar oduled water. Conclusions or Agreements Shelton will be in touch with Reger the_ Anderson Morning 15 Giant, RCA, MA, CE, <u>Distribution</u> Signed File.



MEMORANDUM OF MEETING OR CONVERSATION

4:25 pm 1-24-96 Time Date Telephone Personal Originating Party Other Parties Pat Sanchez-Chuck OCD Budsgard Sunco <u>Subject</u> from Water hauled Giant Class I well toSunco well. Class II Discussion Mr. Badsgard about Talked the water to to Sunco from the Giant Class hauled well explained per Class I wel Federa regulations Class SDh a fie take. EXEMPT cni CIAS GCCIPT Cainnat on-Exin and wrater He th thought wastes. Markou ordinar roduced J45 nater flow black is who ask C Mr. Shelton. +a/dhim -and Inn onclusions or Agreements Mr. C Badsgard will Anderson Roher call Morning. the RCA, CE, MA, File. Distribution Signed

STATE OF NEW MEXICO OR CONSERVATION DIVISION	G OR CONVERSATION	
Telephone Personal Time 3,30	Date /-	12-98
Originating Party	Othe	er Parties
Una SHELTON	MARK ASHLQ	, ROGER MORSON
Gh-130 ASPOSAL		·
INCUSSION CALL AND CALLED & SAID GIANT'S CA AND OF IT IN THE AND & WINTED TO KA AND OF IT IN THEM WITHED AON I CONSULAED ROBER AND FROM, AND UN COULD NOT STOLE AN INITIED AN ARDPOSE AN ALTERNATE METHOD.	ON IF THEY COU IS UNTIC THEP IN HE TOLD LYNN TH	ILD GET JORK IT OVER. WT HE .
<u>inclusions or Adreements</u>		
<u>ariauzion</u>	ines Mak Bell	2

7/

S.W.D AND\ OR INJECTION WELL INSPECTION REPORT API #: 30-045-79002 DATE: 1-14-95 CLASS 1: [] CLASS 2:[] S.W.D: [] INJECTION:[] (Kloom Field NINA OPERATOR: TIM WELL NAME: UNIT 1 09010 WELL#: 79V 21 SEC: TWN: LOCATION: UT. LETTER: RGE: PRESS. LIMIT: 1150 INJ. PRESS: 981 TBG\CSG ANNULUS PRESS: 151.5 BRADENHEAD PRESS. () 🖌 INTERMEDIATE CSG.PRESS REQUIRED POSITIVE TBG\CSG ANNULUS PRESS. TO BE MAINTAINED ON WELL AS STIPULATED ON WFX OR S.W.D. ORDER: $S(1,1) \neq 578 \rightarrow 1004 \text{ mil}$. TYPE OF PRESSURE LIMITING DEVICE USED : Electric Chul-ON, Chuls electric motor nour of injection pamp **PRESSURE SETTING OF PRESSURE LIMITING DEVICE :** (PRESSURE SETTING OF PRESSURE LIMITING DEVICE NOT TO EXCEED PRESSURE LIMIT) -96 by E.C. Nederia un 10-1 **REMARKS:** CUGINA ON work to increase the endacity INSpecy en completed indinarian an measurements of modifications INCREASE CADACIL iment. undma N.M.O.C.D **INSPECTOR:** 11m WITNESS (IF AVAILABLE) :



October 4, 1995

CIL CONSERVE - JN DIVISION RECE VED

*95 OC 18 AM 8 52

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 V. Younggren

Senior Vice President 370-17th Street, Suite 5300 Denver, CO 80202-5653

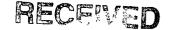
SAN JUAN REFINING COMPANY

a . Wayne Strongent

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



June 15, 1995



JUN 2 1 1995

Environmental Bureau Oil Conservation Division

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 MEXIA OIL CONSERVATION COMMISS

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

NATIE OF					ADPPFSS	1 F 0		loomfiel	a NM	87413
OPERATUR	Bloomfiel	d Refining						u , N.M.	0/413	
REPORT	FIRE	BREAK	SPILL	LEAK	BLOWOIJ	T	OTI	HER*		
OF			X							
TYPE OF	DRLG	PROD	TANK	PIFE	GÁSO	OIL		OTHER*		
FACILITY	WELL	WELL	BTTY	LINE	PLNT	RFY	Х			
NAME OF			C							
1 110226411		d Refining								
LOCATION O						SEC.		THP.	RGE. R11W	COUNTY San Juan
TER SECTION						27		T29N	KIIW	Sali Juan
DISTANCE A.				diately so		loomfi	ble	Now Mey	rico	
EST TOWN O		NT LANDMAR	<u>K</u> Immed	matery sc						
DATE AND H		1/05 at 10	. 20		DATE AN		¢	5/15/05 a	at 6:50 a	m
OF OCCUREN		4/95 at 12			OF DISC		·			
WAS IMMEDI		ES NO	NOT		IF YES,		nv l	Foust		
NOTICE GIV	EN?	X	QUIR	ED	TO WHON	1				
3Y	Chuic Haw	lov			DATE	ю 6	/15	/95 at 8:	:48 a.m.	
	Chris Haw				AND HOL	ЛК				1000
TYPE OF	Wasto	water			QUANTIT	100 b	b1s		9 80 bb1	LOSS 20 bbls
FLUID LOST				LOUANTT.	A			RECOVEREI		
DID ANY FL		H YES	N:0 X	QUANTI	I Y					
A WATERCOU IF YES, DE	KSE:		^	I ,,						
IF TES, DE	SURIDE FU									•
JESCRIPE C	AUSE OF D	ROBLEI AND	DEMEDIA		TAVENT					
		rom evapor				11 tanl	c u	vhen inie	oction nu	mn shut
off. wate	er back-f	lowed from	well to	tank and	overflow	ed tanl	k he	nen nge cause ch	eck valv	e was not
		in and wro							COR TUIT	
J					-F					
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**										
					••					
Water cor	Water contained inside dike. Vacuumed up and returned to evaporation ponds.									
1				-						
DESCRIPTIC	N I	ARMING	GRAZ	ING	URBAN		OTH	IER*		
OF AREA							•		strial	

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

SANDY

Warm, windy, no precipitation during period.

SANDY

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

CLAY

ROCKY

TITLE ENVR. MER.

WET

DRY

SNOW

DATE 6-15-95

M6 Howin SIGNED

SPECIFY

SURFACE

**ATTACH ADDITIONAL SHEETS IF NECESSARY

RECEIVED NOTIFICATION OF FIRE, BREAKS		U	WOUTS					
'95 JUN 22 AM 8 52								
NAME O:	ADDOFSS P. U. Box 159,	Rloomfield	FRED					
OPERATUR Bloomfield Refining Company								
REPORT FIRE BREAK SPILL LEAK	BLOWOIJT	DTHER*	UN 3 2 1995					
	GASO OIL		ronmental Bureau					
FACILITY WELL WELL BTTY LINE	HINT RFY X		nservation Division					
NAME OF FACILITY Bloomfield Refining Company								
LOCATION OF FACILITY (QUARTER/QUAR-	SEC.	TVP. RGE	COUNTY					
TER SECTION OR FOOTAGE DESCRIPTION)	27	T29N R	11W San Juan					
DISTANCE AND DIRECTION FROM NEAR- EST TOWN OR PROMINENT LANDMARK Immediately so	uth of Bloomfiel	d, New Mexico						
DATE AND HOUR	DATE AND HOUR							
OF OCCURENCE 6/14/95 at 12:30 p.m.	OF DISCOVERY	6/15/95 at 6	:50 a.m.					
WAS INMEDIATE YES NO NOT RE-	IF YES, Denny	/ Foust						
NOTICE GIVEN? X QUIRED		- <u></u>						
WHOM Chris Hawley	AND HOUR 6/1	L5/95 at 8:48						
TYPE OF	OUANTITY	QUANTITY	bbls 20 bbls					
FLUID LOST Waste water	OFSPILL 100 bb	RECOVERED 80	DDIS 20 DDIS					
DID ANY FLUIDS REACH YES NO QUANTIT A WATERCOURSE? X	Y .		PECEIVER					
IF YES, DESCRIBE FULLY**			JUN 1 9 1995					
			JUN 5 1350					
		(OLL CON. DIV.					
			DIST. 3					
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION	AKEN**		<u>616105</u>					
Lost water flow from evaporation pond to inje	ction well tank,							
off, water back-flowed from well to tank and			valve was not					
working. Blocked in and wrote work order to r	epair check valv	е.						
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKE	<u> ** .</u>							
Water contained inside dike. Vacuumed up and	returned to evap	oration ponds	•					
DESCRIPTION FARMING GRAZING	URBAN 0	THER*						
OF AREA		Industri	a1					
SURFACE SANDY SANDY CLAY	ROCKY	ET DRY	SNOW					
CONDITIONS LOAM X DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPER)								
	TUNES INCOLLIN	1100, 110.)						
Warm, windy, no precipitation during period.								
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS	TRUE AND COMPLE	TE TO THE DES						
KNOWLEDGE AND BELIEF								
SIGNED COMOHONIN II	TLE ENVE. MO	GR IN	TE 6-15-95					
*SPECIFY **ATTACH ADDITIONAL SHEET								
TACH ADDITIONAL SHEED	D IF NEUESSARY							
SF 6/19/95								

ļ

ţ.

ŀ

....

ł



OT CONSERVE OUN DIVISION RECEIVED

195 FE 176 AM 8 52

February 6, 1995

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

RECEIVED FEB 21 1995 Environmental Bureau Oil Conservation Division

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 Harp Dip SW, milis' thick, "45' net sand Offset Wells Within '2 Mile 1) P/A wells need proper plugging 2) Producing wells must be cemented agross proposed injection zone. Injection Zone (liffhouse 3294°) 114' (ipperunit) 3408' 3400-3600 (41 TDS > (0,000 pm Mesure de Group 3408 } 4008 } 600' Qaatemany Sand/Gravel 25-75-Waler Fones Nacimiento 0' 3575' 570' 3575' Ojo Alamo 569' 3165' TD wells - 20-305' OK Surface casing @ 830 £ = 1 2 AST Belongrad Sumping system

TUnion Texas Pet/Congress Southern Union Prod/Congr Pan Southern Union Prod/Calvi Supron Energy/Congress B Amoco/Davis Gas Com-G Union Well Name CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP Amoco/Davis Gas Com-F Amoco/Davis Gas Com-J Amoco/Sullivan Gas Com-D Proposed Injection Zone: Minimum Required TOC: Proposed Injection Well: (Amoco) American/Davis Gas hrield Refining WD-1 Texas Pet/Calvin maridian Ч No. 1-E 1 – E 16 ຫ Ч Ч Ч 9 ω Ч Ч BLOOMFIELD REFINING CO. Class 3294 to 2794 Feet PROD PROD PROD PROD PROD PROD PROD PROD PROD PROD Туре CLASS 3460 н 6470 6200 6386 2951 6365 6450 2960 5970 4331 6329 3600 T.D. 8.625 4.5 8.625 5.5 8.625 8.625 7.625 9.625 4.5 8.625 5.5 9.625 10.75 9.625 9.625 Casing 4.5 4.5 4.5 7 7 I Well Formation:Cliffhouse/Menefee 285 6462 306 5200 295 2951 332 6365 267 6453 216 2959 314 5155 316 4330 293 6329 306 6388 3600 Depth 830 Yield: Borehole 12.25 12.25 7.875 12.25 7.875 12.25 15 7.875 9.875 6.625 12.25 7.875 11 7.875 12.25 8.75 12.25 8.75 13.5 70% 300 1000 270 1942 1050 325 1570 350 825 875 610 200 187 742 225 225 494 175 550 350 200 550 Cement ŝ ŝ ŝ S SX ŝ XS ŝ XS ŝ (398) (5,516) (118) 3,192 (1,439) (115) 1,551 (10) 1,123 (294) 1,620 (607) (405) (41) TOC (44) ,662 (457) 621 (564) 636 180 978

Gw-130 1992-1993

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

	I hereby acknowledge receipt of check No. 702	6041 date	a 11/12/93.
	or cash received on $11/18/93$ in the an	mount of \$ 1	430.0 <u>0</u>
	from Bloomfield Refining Company Co	SRC)	
	for BRC Class 1 Nonhazardars We	.11 GW-	-130
	Submitted by:	Date:	
	Submitted to ASD by: Kather Brown		3/93
	Received in ASD by:	Date:/	18/93
	Filing Fee \times New Facility \times Re	newal	
	Modification Other		
	Organization Code <u>521.07</u> Applica	ble FYQ 91	
	To be deposited in the Water Quality Manage	ment Fund.	
	Full Payment X or Annual Incremen		
C	Bloomfield Refining Company A Gary-Williams Energy Corporation Subsidiary Refute the street, Suite 5300 Denver, Colorado 80202 (303) 628-3800	ARST BANK EAST GRAND FORKS RAND FORKS, MINNESOTA 56721 75-1592/912	CHECK NUMBER 7026041 7026041
		DATE ISSUED	AMOUNT
	1,430.00 *********************************	11/12/93	\$***1,430.0(
THIS CHE TO THE ORDER OF	CK VOID UNLESS CASHED WITHIN 120 DAYS OF ISSUE DATE NMED-WATER QUALITY MANAGEMENT NM ENERGY, MINERALS & NATURAL RESOURCES DEPT. OIL CONSERVATION DIVISION P.O. BOX 2088 SANTA ET.	Two Signatures Requir	L ACCOUNT

NTA FE, NM 87504 #07026041# #091215927# 4681800420#

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







Amended Administrative Order SWD-528 Bloomfield Refining Company October 6, 1993 Page 2

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.





Amended Administrative Order SWD-528 Bloomfield Refining Company October 6, 1993 Page 3

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.

<u>PROVIDED FURTHER THAT</u>, 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



Administrative Order SWD-528 Bloomfield Refining Company August 23, 1993 Page 2

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. Administrative Order SWD-528 Bloomfield Refining Company August 23, 1993 Page 3

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.

<u>PROVIDED FURTHER THAT</u>, 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 93 JAN 26 AM 9 07

OL CONSER: ON DIVISION

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

BLOOMFIELD REFINERY PROPOSED INJECTION WELL RE: 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.





Ms. Kathy Brown January 21, 1993 Page two

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



RECEIVED

JAN 11 1992

OIL CONSERVATION DNV. SANTA FE

Ms. Kathy Brown New Mexico Oil Conservation Division P. O. Box 2088 Land Office Building Santa Fe, New Mexico 87504



JAN 1 1 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:

January 6, 1993

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. <u>Chemical Analysis of Injection Fluids</u>: Bloomfield Refining Company agrees to do all analyses of injection fluids in accordance with OCD requirements.
- 2. <u>Oily-Water Pond Sampling</u>: 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. <u>Quarterly Reporting</u>: BRC agrees to provide quarterly reports as per your requirements.
- 4. <u>Monthly Reporting</u>: BRC agrees to provide monthly reports in accordance with OCD Rule 1120 which requires monthly submittal of Form C-120-A.

Ms. Kathy Brown January 6, 1993 Page 2

- 5. <u>Area of Review</u>: 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. <u>Injection Pressure</u>: 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. <u>Spill Containment</u>: 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. <u>Chemical Analysis of Disposal Zone</u>: Tierra will submit a copy of the referenced chemical analysis.
- 9. <u>Plugging Bond</u>: 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. <u>Pond 1 and Pond 2</u>: 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. <u>Clay-Lined Ponds & Spray Irrigation Area</u>: 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. <u>South & North Oily Water Ponds</u>: 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.



Ms. Kathy Brown January 6, 1993 Page 3

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,

Comb Howing

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 nonhazardous. 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)

<u>DATE</u>	API	SOWP	NOWPW	_NOWPE
4-26-90	9.16	6.62	3.03	2.27
	aeration progra			
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
Effec	tive 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
	ional aerators p	out in service.		
	tive date of F03		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
	lled additional	aerator in NOW	D-F	0.0015
7-30-92			-	<0.0002
9-08-92	_	_	_	<0.0002
10-14-92	_	_	_	<0.0002
11-13-92	-	_	-	<0.0002
12-11-92	_	_	-	0.022
x0 II 90				0.022

Ċ.

SUMMARY OF TOXICITY CHARACTERISTIC RESULTS

7-30-92

						NORTH OILY		NORTH
				REGULATORY		WATER POND	EVAPORATION	
		PARAMETER	UNITS	LIMITS	LIMITS	DISCHARGE	POND	POND
		ARSENIC	mg/2	5.0	0.1	<0.1	<0.1	<0.1
		BARIUM	male	100.0	0.5	0.5	0.5	0,5
		CADMIUM	mgle	1.0	0.005	KO.005	50,005	10.005
		CHROMIUM	male	5.0	0.01	0.01	<0.01	<0.01
-		LEAD	agle	5.0	0.2	K0.2	$\sqrt{9.2}$	<0.2
		MERCURY	mg/2	0.2	0.001	20.001	Ka.201	50.001
		SELENIUM	mgle	1.0	0.1	<0.1	<0.1	0.1
		SILVER	male	5.0	0.01	<0.01	10,01	<0.01
	1,1-	DICHLORDETHENE	mgle	0.7	0.02	ND	ND	NO
		DICHLOROETHANE	mg/l	0,5	0.02	NP	ND	ND .
	10 1	BUTANONE	mgle	200.0	0.1	ND	ND	NO
		BENZENE	male	0.5	0.02	MD	ND	ND
		CARBON TETRACHLORIDE		0.5	0.02	ND	ND	ND
		CHLOROBENZENE	mall	100.0	0.02	ND	ND	ND
		CHLOROFORM	mall	6.0	0.02	ND	NO	NO
		TETRACHLOROETHENE	male	0.7	0.02	ND	MD	ND
		TRICHLOROETHENE	male	0,5	0.02	ND	ND	NO
		VINYL CHLORIDE	male	0.2	0.02	ND	ND	ND
			0					
	14	DICHLOROBENTERE	mg/e	7.5	0.02	NO.	ND	ND
		HEXACHLOROETHANE	mg/e	3.0	0.02	ND	ND	ND
		110000-12-15	male	2.0		ND		ND
	HEY	ACHLORO-13-BITADIENE TRICHLORO PHENOL	male	0.5	0.02	ND	ND	MD
2	46-	TRICHLOROPHENDL	male	2.0	0.02	ND	ND	MO
-7 2	4.5-	TRICHLORD PHENOL	mg/e	400.0	0.02	ND	ND	ND
		DNITROTOLUENE	mgle	0.12	0.02	ND	MD	Molt
		HEXA CHLORO BENZENE		0.13	0.02	NO	WP	NO
	1 1	PENTA CHLORO PHENOL	male	100.0	0.02	ND	MD	ND
		o-CRESOL	mg/e mg/e	100.0	0.02	ND	NP	MD
		n\$P-CRESOL	mg/l	200.0	0.02	ND	MD	NO
		PYRIDINE	mg/L	5.0	0.2	ND	ND	No
	+	IN NINE						
	+			DT DETECT	ED AT ST	ATEN DET	CTION 4	mit.
	+							

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_____

ч,

TCLP REFERENCE LIST:

1.0	Date of Samp	oling:	30 July 199	92	
	Date of Labor	ratory Receipt:	31 July 199)2	
	Date of TCLF	PExtraction:	4 August 1	992	
2.0	Quality Contro	ol Parameters:			
	Holding Time	s Maintained:	X	Yes	No
	Method Blank	c Data:	X	Yes	No
	Matrix Spike	Data:	X	Yes	No
	Data Qualifie	rs:	X	Yes	No
		• •	Present in Blank ected, Sample De	-	sable;
3.0	Analyte Inforr	nation:			
	Parameter:	CAS #:		Detection Level (mg/L)	Method
	A	7440.00.0	5.0	0.4	00404

	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:				

TOXICITY CHARACTERISTIC LEACHING PROCEDURE HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPAN	IY	
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:	HCI	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.

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	Retention		
Identification	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.

Reviewed

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)
			<u> </u>
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.

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

	Retention		
Parameter	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.

Analyst

Reviewed

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
7			

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:

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:	HCI	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.

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	Retention		
Identification	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.

Anal

Reviewed

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

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(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.

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

	Retention		
Parameter	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	%
	34
2-Fluorophenol Phenol-d6	34
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.

Reviewed

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.

Reviewed by

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:	НСІ	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	0.7
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.

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	Retention		
Identification	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	%	<u> </u>
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.

Reviewed

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)
i dialifetei	<u>(iiig/c)</u>	(()(g/E)	(mg/=/
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.

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

Perometer	Retention Time(min.)	Concentration	Upita
Parameter		GOILGENTIATION	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.

Reviewed

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

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	Detection Limit (mg/L)	Regulatory Limit (mg/L)
raidilietei	(mg/L)	(119/2)	(my/u)
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.

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	Retention		
Identification	Time (min)	Concentration	Units
Toluene	17.15	0.02	mg/L
Xylene(total)	19.80,20.26	0.9	mg/L mg/L mg/L
Xylene(total) 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.

Reviewed

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

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(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.

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

	Retention		
Parameter	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.

Analyst

Reviewed

1633 Terra Avenue 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:

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.

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

Concentration	Units
0.14	mg/L
0.06	mg/L
0.25	mg/L
0.1	mg/L
0.07	mg/L

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.

Reviewed

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

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(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.

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	В923350	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

	Retention		
Parameter	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.

Reviewed

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:	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.

Reviewed by:

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.

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	Retention	0	
Identification	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.

Reviewed

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			

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	{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.

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

Hetention	
INGIGICUL	
Parameter Time(min.) Concentration Uni	

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.

Reviewed

Analyst

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:	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.

Reviewed by

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.

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	R				
Identifica		me (min)			

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.

Reviewed

910 Technology Boulevard, Suite B Bozeman, Montana 59715

QUALITY ASSURANCE / QUALITY CONTROL

910 Technology Boulevard, Suite B Bozeman, Montana 59715

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.

910 Technology Boulevard, Suite B Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMP	PANY	
Sample ID:	Method Blank	Date Reported:	08/21/92
Laboratory ID:	Q217A	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/05/92

Т									R																	
			tic																	tic						

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.

DM luy lið Analyst

Reviewed

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		

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(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.

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 Betention	
Identification Time (min) Concentration	
Identification line (min) Concentration	

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.

Reviewed

TOXICITY CHARACTERISTIC LEACHING PROCEDURE HSL SEMI-VOLATILE COMPOUNDS METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPAN	IY	
Sample ID:	TCLP Method Blank	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	ТМВ - 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

ND	0.02	mg/L
ND	0.02	mg/L
ND	0.2	mg/L
	ND ND ND ND ND ND ND ND ND ND ND	ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02 ND 0.02

ND - Compound not detected at stated Detection Limit.

* - Compounds coelute by GCMS.

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:	ТМВ - 217	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Parameter Time(min) Concentration	

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.

Reviewed

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

· · · · · · · · · · · · · · · · · · ·		
······································		
***************************************	·····	

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.

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

Betention	000000000000000000000000000000000000000
The condition	
Parameter Time(min) Concentration	nite
i diumeter concentuate	

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.

Analyst

Reviewed

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:

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

Spike Sample Matrix Spike	
Added Concentration Concentration	

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.

Reviewed

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.

Reviewed

1633 Terra Avenue Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL CONCENTRATIONS Quality Control/Matrix Spike

Bloomfield Refining
1 NOWPE Discharge
B923346/5658
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:

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

	Analytical Result	Detection Limit	Regulatory Limit
Parameter	(mg/L)	(mg/L)	(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.

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

	Retention		
Parameter	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

1633 Terra Avenue Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL CONCENTRATIONS Quality Control/Duplicate Analysis

Client:Bloomfield RefiningSample ID:1 NOWPE DischargeLab ID:B923346/5658Date: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:

	•			•							 							
													Time	Time	1030	Time		34
													Date	Date	1/3/192	Date		05934
	ANALYSES / PARAMETERS	Remarks	TCLP Medder TCLP									7	•		Ч	(e)		3304 Longmire Drive 3304 Longmire Drive 1845 College Station, TX 77845 1945 Telephone (409) 774-4999
F CUSTODY RECORD			No. of Containe BUA 7CLP 7CLP			<i>დ</i> ,	0 f)						Received by: (Signature) スクら	Received by: (Signature)	- the ran	Received by Moorslory: (Signature)	lnc.	□ Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945
DDY RECC		-									X		Received 7, DS	Received	100/10	Received	ttories,	Nvd. Suite B ta 59715 386-8450
		No.	Matrix	U		,e					/		Time 11 C.C		1030	Time	ain Laboratories,	Elevent B10 Technology PNd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450
	Project Location	Sustody Tape No.	•	w poto		S/w	+1	-		AE.			Date	Date	26/191	Date		
CHAIN O	Project Loc	Chain of Custody $\dot{N} U M$	Lab N đ mber	8923346	B923348	B923349	B923351	B923352									Inter-Mount	Earnington, NM 87401 Telephone (505) 326-4737
			Time	0000	000		889	Ì										Sircle iing 82716 77) 682-8945
	w lev		Date	CROCEO 1									()					T 1714 Philtips Circle Gillette, Wyoming 82716 Telephone (307) 682-8945
Laboratories, Inc.	Client/Project Name TML - Fareni niter	Sampler: (Signature)	Sample No./ Identification		3 Coch Ever Port	MOUND-E'	3 Mostin Euro Par	C.	./				Relinquished by: (Signature)	Relinquished by: (Signature)	CAN2	Relinquished by: (Signature)		1633 Terra Avenue 1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945

		•			•																			
																			Time	00:91	Time	Time		10379
		4	rks ·															/	Date	8/5/2	Date	Date		10
		ANALYSES / PARAMETERS	Aemarks													/	/		•					College Station, TX 77845 College Station, TX 77845 Telephone (409) 774-4999
0	L	ANALYS		LCLP											/				re)	54	(9)	Received by laboratory: (Signature)		☐ Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945
CORE		1 / 1	13 13	No. of Containe		2	4	7	4	4									Received by: (Signature)	R	Received by: (Signature)	y laboratory	Inc.	Telephone (
oy re(7 Sheridan	378										N						Received t		Received t	Received t	ories,	rd. Suite B 159715 16-8450
JOTSU			ape No. (.0, (, ☆ /0.3.7 \$	Matrix	ater	Water	Water	これの	nder	Sluder			R/						Time	00:91	Time	Time	Itain Laboratories,	X 910 Technology Bhd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450
OF CI	Project Location	BUZCMAN	-	•	Ъ.	•	- Wo	S/u	Slug	Sli				•					Date	8/5/92	Date	Date	intain L	
OO.CHAIN OF CUSTODY RECORD	Project	150	Chain of Custody Tape No. と-イールトー (. 0, (Lab Number	3346			349	350	351													Inter-Moun	☐ 2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737
6	1 CO.		ঠ থ্	Lab N	13923	13923347	892 3348	18923349	8923350	18923351													Int	
<i>.</i>	Refini	nator]	Time	08:30		\rightarrow	09115		→									•	45				Circle ning 82716 07) 682-8945
0	inffeld	-tarmington	(rent	05 Date	26/4/8			_	_	\rightarrow									•	feli				Telephone (307) 682-8945
I – 6	ame 13/04	_1	(ture)		35														(Signature)	ingen	(Signature)	(Signature)		
Inter-Mountain Laboratories, Inc.)ec	T PIN	Sampler: (Signature)	Sample No./ Identification															Relinquished by: (Signature)	D.R. Lingen	Relinquished by: (Signature)	Relinquished by: (Signature)		☐ 1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945
. –	Cllen	<u>></u>	Sam								'								Relin	Š	Relinc	Relin		1633 Sher Teler

ļ

ł

			•	•	Ì											Time	Ime		10378
		tks -													Date \$\r/\$	Date	Date		10
	ANALYSES / PARAMETERS	Remarks										A	/		•				□ 3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-4999
	SES / I		·								 /			-					3304 L College Teleph
	ANALY														5		gnature)		X 77845 776-8945
RD		+W	d721	7												nature)	Received by laboratory: (Signature)		☐ Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945
Ö	-	13	No. of Containe	λ						\square				 	ay: (sig	by: (Sigr	by labor	luc.	
у RE	Sheridan														A N (Amarka): An newleneu	Received by: (Signature)	Received	ories,	d. Suite B 59715 6-8450
of custody record	× 5%		Matrix	* *				\mathbf{N}	/				-	1	16:00	Time	Time	ntain Laboratories,	K 910 Technology Blvd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450
DCU	Location 2 CM Q 1	Chain of Custody Tape No. $Co \subset \not\approx 10379$	1	Extract			P	Ý						╞	2		+	ain La	910 Tech 910 Tech Bozeman Telephon
Ö Z	Project Location	ustody [03	•				X								5/2	Date	Date	ounte	1
CHAIN	Pro	COC #	Lab Number	20			$\left \right $											Inter-Mou	☐ 2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737
0	han	50	Lab N	Black								i						II	2506 We 2506 We Telephon
	JMI T		Time	08:30		T													e 82716 82-8945
	Tai 1	4	Date	0		1							_	 -	1 Th				T14 Phillips Circle Gillette, Wyoming 82716 Telephone (307) 682-8945
	·	Client	Da	23/4/8											en le	A (1714 Ph Gillette, Telephoi
1	Clientifroject Name Bluomfield Ref. via Farmine		ło./ tion	01	Y									Relinguished by: (Signature)	L.Y.		Relinquished by: (Signature)		9 82801 72-8945
Inter-Mourtain Laboratories, Inc.	ClientiProject Name 18/00mfic/4 ×	Sampler: (Signature)	Sample No./ Identification	1 1	Λ									hed by: (Ń	hed by: (hed by: (Telephone (307) 672-8945
• { Ĕ <u></u>	Cilentif 13/vom	Sample	0 D	Blank	/									Relinquis	L.X.	Relinqui	Relinquis		1633 Ter Sheridan Telephor

	-					4			t and				<u> </u>			 						
			-963					 			лар Л						Пп	0	Time	Tme		102
	•	ķs						х. Х.	•	•	1	•		v			Date	1351	Date	Date		`
	ANALYSES / PARAMETERS	Remarks				~			•	•	•								* ु नीहरो	N State State		Drive TX 77845 774-4999
	PARA	S.V.C	2/0/21		2	5						, 				 -	£					☐ 3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-4999
	SES /	Ston	dral	0	0	Ó			-		· ·							C				Telep
	NALY	571174	10701	-	R I	-	, × 1	-		e 								Y		nature)		77845 76-8945
SD	4	tre	7 2 721	-	1	1	1						-				ature)	مر ع من بد	ature)	tory: (Sig		Callege Station, TX 77845 Telephone (409) 776-8945
CO			Vo. of No. of		4	4	к	З	3							 	by: (Sign		by: (Sign	by labora	Inc.	Route 3, College 3, Telephor
CHAIN OF CUSTODY RECORD															•		Received by: (Signature)	× Q	Received by: (Signature)	Received by laboratory: (Signature)	ories,	4. Suite B 59715 -8450
STOD	/ww/	4	Matrix				. 11							•			Time	3:55 P	Time .	Time	Inter-Mountain Laboratories,	Detection (100) Technology Blvd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450
CC	ocation MF1ELD	Chain of Custody Tape No.	Σ	WATER	WATER	WATER	NDGE	SUDGE	SUDGE	-											in La	910 Tech Bozeman Telephon
Р ПО		stody T		Ĵ	2	13	R	Ŋ	R								Date	7/30/92	Ó Dáte	Date	unta	et 01 -4737
I AIN	Project I BLDC	n of Cu	nber																	· .	r-Mo	Aain Stre NM 874(505) 326
Ц С	کر ۲	J	Lab Number			ŕ															Inte	Z 2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737
	REFINING COMPANY		Time	9:00 9	9130a	10:wa	1:40a	9:30a	Biva													2716 2-8945
	NG.	5	Date]										 		1				☐ 1714 Phillips Circle Gillette, Wyoming 8 Telephone (307) 68
	FINI-	101	Da .	6730	7.30	1-30		7-30.92	02-10								•	Vier				Telephoi
			o 2	1 NOUPE 19901972-92	290711 EWP POUD 7-3092	3NDRHENPPAND 7-30-92	1	2-SOLTH EURPOND	JUDRIH EUAP RONDT-20.92	-	1						Ignature)	they a	lgnature)	Ignature)		82801 2-8945
Inter-Mountain Laboratories, Inc.	Ject Nai	er: (Signatu	Sample No./ Identification	WDE J	ITH EUN	RTHEN	INDUP-E	TH EUN	SH EN	_						 	sd by:(S	1 ye	ed by: (S	ed by: (S		Avenue Nyoming (307) 672
Labora Labora	Client/Project Name \mathcal{B} LODMF1ELD	Sampler: (Signature)	Sai Ider	an/	L'S	ane	av I	22	N. N. N.							- -	Relinquished by: (Signature)	CHA	Relinquished by: (Signature)	Relinquished by: (Signature)		1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945
l	0 ~	ທ															Ľ.		82	ж		

. . . .

8

STATE OF NEW MEXICO

THE STATE IN THE STATE

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088

STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87504

(505) 827-5800



ANITA LOCKWOOD CABINET SECRETARY

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. <u>Chemical Analysis of Injection Fluids</u>: 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 ClassI-BRC = HazWaste Meeting, Coby APT Seperator - a processing unit when remove the solids it's waste. - Waters going through only subject. to TCLP (ie Benzene). = It solids carry over then the fluid. would be considered hazard what TCCP. Proposal - Test API waters and to determine hon hazardous. If it is nonhazardous t then notes comingles with menexempt streams, then is still non-haz even if benzene > 10 ppm -011/Water Ponds are May '94 - Hazardous waste treatment unit (aereators) Test at oily water pond this is where the orthogo has waste determination is made. Weekly for & months & then monthly after for TC organics. If see problem then back to weekly TCLP except posticides/herbicides). Maybe drop certain constituents if ND for 3 months. HAZ WASTE: Currently, monthly testing of sump is required by ED (Hazikad Sureau) on For BTEX.

ffidavit of Publication

No.<u>1</u>4094 E OF NEW MEXICO. ty of Eddy: ary D. Scott _being duly , 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. Publication 23rd scribed and sworn to before me this dav ___19__92_ October Um 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 OL 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, Dis-trict Manager, 2198 East Bloomfield Highway, Far-mington, New Mexico 87401, has submitted a discharge plan application for their Farmington Service Facility lo-cated 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 separaprior 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/1 to 900 mg/1. The discharge plan addresses how spills, leaks, and other accidental discharges to the sur-face 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 Su-pervisor, 4044 Penbrook, Odessa, Texas: 79762, has submitted a discharge plan applica-tion for their Hat Mesa Comressor Station located in the SW/4 SE/4, Section 4, Townhip 21 South, Range 32 East, NMPM, Les 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/1. The discharge plan ad-dresses how spills, leaks, and other accidental discharges to the surface will be managed. (GW-129) - Gas Company of New Mexico, Sam Mohler, Compressor Operations Super-visor, P.O. Box 1899, Bloomfield New Mexico 87413, has submitted a discharge plan ap-plication 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. Approxi-4 mately 15 gallons per day of waste water will be stored in a fiberglass tank prior to dis-posal at an OCD approved off site disposal facility. Groundwater most likely to be af-fected by an accidental dis-charge is at a depth of approxi-mately 252 feet with a total dissolved solids concentration of approximately 1500 mg/1.

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, co 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/1. The total dis-solved solids concentration of the formation fluids is approximately 25,000 mg/1. The dis-charge 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 dis-charge 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 concen tration of approximately 200 mg/1. PA West Hist

Any interested person may ob-

tain further information from

the Oil Conservation Division

and may submit written com-

ments 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 publica-

tion of this notice during

which comments may be sub-

mitted to him and public hear-

ing 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 deter-

mines there is significant pub-

<u>- 8 e - 9 e</u>

lic 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 sub-

GIVEN under 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

STATE OF NEW MEXICO OIL CONSERVATION DIVISION 9-William J.LeMay WILLIAM J. LEMAY, Director

S E A L Published in the Artesia Daily Press, Artesia, N.M. October 9, 1992.

Legal 14094

AFFIDAVIT OF PUBLICATION

No. 30140

april 2, 1996

STATE OF NEW MEXICO, County of San Juan:

<u>CHRISTINE HILL</u> being duly sworn, says: "That she is the <u>NATIONAL AD MANAGER</u> 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 <u>ONE</u> 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

Dan I sin

1993

. . . .

Subscribed and sworn to before me this ______ day of ______OCTOBER _____, 1992

Sunny Beck Notary Public, San Juan County,

My Comm expires: JULY 3,

New Mexico

COPY OF PUBLICATI

10 NOTICE OF PELICATION STATE OF NW MEXICO ENERGY, MINERALS AND NATURL RESOURCES DEPARTMENT OIL CONSERVAION DIVISION 17 Notice is hereby given that pursuant ti New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been sub-mitted 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: 1.7 (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 1.5 1.84 (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, 51 -H 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 opth of approximately 15 feet with a total dissolved solids **8**6 4 concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and c her accidental discharges to the surface will be managed. 9 (GW-128) - GPM (Jas Corporation, Vincent B. Bernard Safety and Environmental Suj ervisor, 4044 Penbroek, Control Statety and submitted a discharge plan application for their Hat Mesa Compressor Statuon locaties in 1:16 SW/4 SE4, 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 allected by an accidental discharge is a depth of approximately 1500 mg/l. The discharge plan addresse how, spills, leaks, and other al:cidental discharges to the surface will be managed. (GW-129) - Gas C ompany of New Mexico, Sam Mohler, Compressor Operations Super isor, 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, Sar Juan County, New Mexico. Approximately 15 gallons per day of waste wate: 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 disolved solids concentration of approximately 1500 and A. mg/l. The discharge plan addresses how enter 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 well located in the NW/4 SW/4, Section 26, Township 29 North, Range 11 West, NMPM, Sari Juan County, New Mexico. Up to 2380 barrels (100,000 West, NMPM, Sam Juan County, New Mexico. Up to 2380 barreis (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 so ds concentration of the waste is approximately 15,600 mg/l. The total dissolve I solids concentration of the formation fluids is approximately The total dissolve I solids concentration of the formation fluids is approximately 25,000 mg/l. the *d* ischarge plan addresses construction, operation and contingency plan n the event of accidental spills, leaks and other unauthorized discharges to the ground surface. Ground water most likely to be affected and is a water zone directly cause by seepage from Hammond Ditch. The ditch water h as a total dissolved solids concentration of approximately 200 mg/l. 1.44 200 mg/l. Any interested person may obtain further information from the Oil Conservation rision and may submit written comments to the Director of 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 upplication may be viewed at the above address tretween 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any prop: sed 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 disa; prove the proposed plan based on information available. If a pub-lic 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. Divisi New Mexico, on this 30th day of September, 1992. STATE OF NEW MEXICO OIL CONSERVATION DIVISION WILLIAM J. LEMAY, Director ; SEAL Legal No 3014.) published in the Farmington Daily Times Farmington, New Mexico on Friday, Cictober 9, 1992. STATE OF NEXICO County of Bernatillo



... 1992.

Thomas J. Smithson being duly sworn declares and says that he **Statistical Advertising** 8 57 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.....

Koman

Ą

PRICE.

SS

publications on

Bernadette

\$51.71

Smithaou

12-18-93

CLA-22-A (R-12/92)

Statement to come at end of month. C81873 ACCOUNT NUMBER

sed top steel tank prior to disposal an OCD approved of site disposal sillsy. Group an accidential discharge is a depth of approximately 15 feet a subst of dissolved solds comportantially 1500 mg/ The disa langeroximately 1500 mg/ the disa lang

3W-129) GPM Gas Corporation, incent B. Bernard, Safey and Eninormental Supervisor, 4044 Pentronock Odesas, Farce 79782, has ubmitsed a discharge pien application of their Har Mess Compressor / attorn tocated in the SW/4 SE/4, / recion 4, Towrenib p2 1 South, Range I 2 East, NMPM, Lea County, New Arcico. Approved the Mess Compressor er day of waste water with a total issolved solitics concentration of apmozimately 1500 mg/l is stored in a chocated posteal leakity, coundwament attacks is and leakity for an increase leaking horis to disposal at and disposal leakity, coundwament attacks is and leakity for an excitation of approminated solitics concentration of approminated solitics concentration of approminated solitics concentration of approminated solitics concentration of apmontal devises of the we split, leakity, and there accidental discharges to the

Inface will be managed while a company of New (Exico, Sam Mohler, Compressor) perations Supervisor, PO Box 1899. Ioomfield, New Mexico 87413. has junited a discharge plan application toortis Crouch Meas Compressor 2000 and the NE/4. NE/4. Next, NE/4. Next, NE/4. Next, NE/4. Next, NE/4. Next, New Mexico. Approximately 15 galions per day of waste water will be stored in a fiberglass tank prior to disposal at an CCD approved off ska disposal facility. Groundwater most fibery 282 fact with a bata disposal facility. Device the stored off ska disposal facility. Croundwater most fiberglass tank prior to disposal at an CCD approved off ska disposal facility. Croundwater most fiberglass fact with a bata dispoved fiber with a bata dispoved fiber with a bata dispoved provident fiber officients be solid concentration of approximately 1500 mg/l. The discharge plan addresses how splis, leaks and other

(iii be managed GW-130) Bloomleid Refining Comany, David Roderick, Refinery Manuger, PO Box 159, Bloomfield, New ; Mexico 87413, has submitted a distharge plan application to construct harge plan application to construct

nazardous) descense as, Townhe NW/4 SW4, Section 28, Townhet NW 4 SW4, Section 28, Townhet NPM, San Juan County, New Mextoo. Up to 2380 barrels (100,000 pations) per day of non-hazardous pations) per day of non-hazardous pations) per day of non-hazardous pations) per day of non-hazardous pations) per day of non-hazardous pations) per day of non-hazardous pations of the day of non-hazardous pations of the day of non-hazardous pations of the day of non-hazardous patients of the day of the day patients of the day of the day of the patient of the day of the

The veste is approximate, 15 soo mgn. The total dissovid 15 soo concentration of the formation faith is approximately 25 ook org. The source of the source of the source of the source of the source of the source of the the well provides a contingency planties and other accelerate splits, leaks and other dissource of the source of the

> 50 mg/ Any interested person may obtain unter information from the Oil and Conservation Division and may subconservation Division at the oil the Oil control of the Oil Conservation Division at the address ghen above. The discharge plan application may be viewed at the above address between \$:00 a.m. day. Prior to ruling on any proposed discharge plan or far modification. Divlector of the Oil Conservation Oil this after the date of publication the days after the date of publication the bib authit date to him and public this after the date of publication bib this after the date of publication bib bib authit date to him and public heating shill set for the reasons the hearing should be heat if the original to hearing should be interested.

> > determines universe of the determines of the determines of the searing is held, the interest will approve or disapprove Director will approve or disapprove the proposed pan based on information available, the director will approve or lead, the director will approve or disapprove how methods and the hearing formation submitted at the hearing information submitted at the hearing Geven under the Seath New Mexico. Oil conservation Commission at Sarta Fe, New Mexico, on this 30th star Fe, New Mexico, on this 30th Start Fe, New Mexico. STATE OF INEW MEXICO Oil CONSERVATION DIVISION Oil CONSERVATION DIVISION

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 event of accidental in the 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 a total dissolved solids concentration water has 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

S, E A L

TIERRA ENVOONMENTAL COMPANY, INCORPORATED

OIL CONSERVE JN DIVISION RECEIVED

'92 SEP 25 PM 9 21

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,

uillige. . lob.

Phillip C. Nobis Vice President

cc: D. Foust OCD Aztec Files National*

SUMMARY OF ANALYTICAL RESULTS OF WATER IN NORTH DOUBLE LINED POND 8-20-92

PAGE 1 OF 2

;

			REGULATORY	DETECTION	NDLP
	PARAMETER	WITS		HMITS	RESULTS
	BENZENE	PP b	500.	0.5	ND
	TOLLIENE			0.5	ND
<u> </u>	ETHYL BENZENE	PPD		0.5	NO
		- PPD			ND
<u> </u>	M. P-XYLENE O-XYLENE	ppo		1.0	ND
1		- PPb		7.0	
<u> </u> 	TOTAL DISSOLVED SOLIDS	mg/e			13600.
	TOTAL SUSFENDED SOLDS	mg/2			26.
i	FLUOPIDE	myle			1.38
1	SULFIDE AS H2S	mgle			30.5
-	TOTAL NITRATE & NITRITE	mall		0.02	<0,02
ŀ	TOTAL KJELDAHL NITROGEN	mg/l mg/l mg/l			0,13
ŀ	AMMONIA	malle			7.13
Ì	TOTAL CYANIDE	mall		0.01	<0.01
İ	PHENOLS	mail		0.01	<0.01
	CHLORIDE	male			5890.
1	SULFATE	mall			1740.
		113/2-			
	TOTAL DISSOLVED METALS				
İ	SILVER	mall		0.01	ND
ļ	ARSENIC	mg/e		0.005	ND
1	CADMIUM	male		0,002	ND
Ì	AHROMILAND	mg/l		0.02	0.05
I	COPPER			0.01	
	IRON	mall		0.05	0.16
Î	MANGANESE	male		0.02	0.28
Ī	LEAD	male		0.02	ND
	COPPER IPON MANGANESE AEAO SELENIUM ZINC ALUMINUM DOCO	ng/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l m		0.01 0.05 0.02 0.02 0.02	0.00
Ì	ZINC	mall		0.01	ND 0.1
ſ	ALUMINUM	mall		0.1	0.1
	BORON	mall			1.6
	BARIUM	mall		0.5	
	BORON BARIUM COBALT MOLYBDENUM NICKEL	m5/l		0.01	ND
T	MOLYBDENUM	mall		0.02	0,02
ſ	NICKEL	nt/e		0.01	0.0
Ì					
		ND=1	IOT DEPECTED	AT DEREC	TON LIMI

National*

45-604 Eye-Ease∜ 45-704 20/20 Buff Made in USA

SUMMARY OF ANALY TICAL RESULTS OF WATER IN NORTH DOUBLE NED POND 8-2092

PAGE 2 OF 2

			REGULATORY	DETECTION	NDLP
	PARAMETER	UNITS	LIMITS	WMITS	RESULTS
T	TCLP METALS				
T	ARSENIC	male	5.0	0.2	ND
Ţ	BARIUM	mare	100.0	0.5	ND
	CADMINM	ngle	1.0	0.05	ND
	CHROMIUM	mall	5.0	0.05	ND
	LEAD	mgle	5.0	0.1	ND
1	MERCUPY	male	0.2	0.005	ND
1	SELENIUM	mgle	1.0	0.2	ND
	SILVER	ngle	5.0	0.1	ND
1					
1	TCLP VOLATILE ORGANICS				
Ť	BENZENE	maje	0.5	0.005	ND
	CARBON TETRA CHLORIDE	mil	0.5	0.005	NO
1	CHILGROBENZENE	mgle	100.	0.005	ND
Ť	CHLOROFORM	mg/l	6.0	0.005	NO
	1,2-DICHLORDETTHANE	nale	0.5	0.005	ND
Ì	I, I-DICHLORDETHYLENE	ngle	0.7	0.005	ND
	METHYLETHYL KETONE	mgle	200	0,005	ND
1	TETRACHLOROETHMENE	mgle	0.7	0.005	ND
	TRICHROLDETHYLENE	mg/l	0,5	0.005	ND
T	VINA CHLORIDE	male	0.2	0.005	ND
	TCLP SEMIVOLATILE ORGANICS				
	O-CRESOL	mole	200	0.100	ND
	M.P-CRESOL	mg/l	200.	0,100	ND
	1, 4 -DICHLORDBENZENE	myle	7,5	0.100	ND
	2.4-DINITROTOLUENE		0,13	0.100	ND
	HELACHLOROBENZENE	ng/e ng/e	0.13	0,100	ND
	HEXA HORD-13 BUTADIENE	ang/e		0.100	ND
	HEXACHLORO-1,38UTADIENE HEXACHLOROETHANE	mall	0,5	0.100	NO
	NITROBENZENE	mg/l	2.0	0.100	ND
	PENTACHIOROPHENOL	mg/l	100.	0.100	ND
	PYRIDINE	mall	5.0	0,100	AD
	2,4,5-TRICHLORDAHENOL	mg/l mg/l	400.	0,100	ND
	2,4,6-TRICHOROPHENDL	mg/e	2.0	0,100	ND
Ţ	METHOD BOID HALDGENAFED VOLATTLES	ngle		0.5-5.0	ND
T		ND=NO	T DETECTED	AT DETECTI	ON NMI



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, <u>Purge and Trap</u>, and EPA Method 8020, <u>Aromatic Volatile Hydrocarbons</u>, 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 <u>Analysis of Water and Waste</u>, 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



BTEX Volatile Aromatic Hydrocarbons

2506 West Main Street Farmington, New Mexico 87401 Tel. (505) 326-4737

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.

mille

Review Balle



2506 West Main Street Search 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

	Concentration	Detection Limit
Analyte	(ug/L)	(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:

<u>Surrogate</u>	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.

Analyst

Ala Balla



2506 West Main Street Search 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:	<u>Surrogate</u>	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.

Menni Boka

Iliana Ballin Review



2506 West Main Street Search 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,HCI	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.

<u>Surrogate</u>	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.

milole Analyst

Carlos Balla Review

2506 W. Main Street Farmington, New Mexico 87401

۰.

	Bloomfield Refinery	DATE REPORTED:	09/14/92
SITE:	NDLP 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
•	

Chloride	mg/L 5890	meq/L 166
Sulfate	1740	36.3

2506 W. Main Street Farmington, New Mexico 87401

CLIENT:	Bloomfield NDLP	Refinery	DATE REPOR	RTED:	09/14/92
SITE:	1500		DATE RECEI		08/20/92
LAB NO:	F9513		DATE COLLEC	CTED:	08/20/92
Trace Me	tals by AA (Dissolved	Concentration), r	ng/L	

Iface metarb of mi (proporte	a concentration	/
	Analytical	
	Result:	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 Detection Result: Limit: Aluminum (Al)..... 0.1 <0.1 <0.01 Boron (B)..... 1.61 Barium (Ba).... Cobalt (Co).... <0.5 ND <0.01 ND Molybdenum (Mo)..... <0.02 0.02 Nickel (Ni)..... 0.01 <0.01

ND - Analyte "not detected" at the stated detection limit.

Wanda Orso

۰.

Water Lab Supervisor

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,

gginbotham Mary Higginbotham

Project Manager

BRC1669

3304 Longmire College Station, Texas 77845

METHOD 8010 HALOGENATED VOLATILE ORGANICS

Client: Project Name: Project Location: NDLP Sample ID: Sample Number: 9513/C921669 Sample Matrix: Preservative: Condition:

Bloomfield Refinery NA NDLP Water Cool Intact

08/28/92
08/20/92
08/22/92
08/27/92

	a	Dec. No. 11-M.C. (I)
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
Chioroform	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.

3304 Longmire College Station, Texas 77845

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.

Vein Wardenff

₹eview

3304 Longmire College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX DUPLICATE METHOD 8010 - HALOGENATED VOLATILE ORGANICS

Sample Number: Sample Matrix: Preservative: Condition: C921669 Duplicate Water Cool Intact

Date Sampled:	08/20/92
Date Received:	08/22/92
Date Analyzed:	08/27/92

	Sample Result	Duplicate Result	
Analyte	(ug/L)	(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

3304 Longmire College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX DUPLICATE METHOD 8010 - HALOGENATED VOLATILE ORGANICS Page 2

Sample Number: Sample Matrix: Preservative: Condition: C921669 Duplicate Water Cool Intact

Date Sampled:08/2Date Received:08/2Date Analyzed:08/2

08/20/92 08/22/92 08/27/92

Quality Control:

Surrogate 1-Chloro-2-Fluorobenzene Bromochloromethane Percent Recovery 93% 97% Acceptance Limits 75-125% 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.

Vadm

QUALITY CONTROL REPORT - MATRIX SPIKE METHOD 8010 - HALOGENATED VOLATILE ORGANICS

3304 Longmire College Station, Texas 77845

Sample Number: Sample Matrix: Preservative: Condition: C921671 Spike Soil Warm Intact Date Sampled:08/24/92Date Received:08/25/92Date Analyzed:08/28/92

۰.

	Spike Added	Sample Result	Spike Result	Percent	Acceptance
Analyte	(ug/Kg)	(ug/Kg)	(ug/Kg)	Recovery	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.

3304 Longmire College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX SPIKE METHOD 8010 - HALOGENATED VOLATILE ORGANICS Page 2

Quality Control:

Surrogate 1-Chloro-2-Fluorobenzene Bromochloromethane Percent Recovery 86% 109% Acceptance Limits 75-125% 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.

yin Warduff

Review

QUALITY CONTROL REPORT - METHOD BLANK METHOD 8010 - HALOGENATED VOLATILE OFGANICS

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.

3304 Longmire College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK METHOD 8010 - HALOGENATED VOLATILE ORGANICS Page 2

Percent Recovery

85%

101%

Sample Number: MB0827V1 Sample Matrix:

Water

Date Analyzed:

Acceptance Limits

75-125%

75-125%

08/27/92

Quality Control: Surrogate 1-Chloro-2-Fluorobenzene Bromochloromethane

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.

J. Wardy Analyst

EPA Method 8270 SEMIVOLATILE ORGANIC COMPOUNDS <u>METHOD BLANK ANALYSIS</u>

Client: Project Name: Sample ID: Laboratory ID: Sample Matrix: Bloomfield Refinery NDLP Method Blank MB548 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

	Concentration	Detection Limit
Analyte	(ug/L)	(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

3304 Longmire College Station, Texas 77845

Page 2

EPA Method 8270 SEMIVOLATILE ORGANIC COMPOUNDS (cont) <u>METHOD BLANK ANALYSIS</u>

Client:

Bloomfield Refinery

Project Name: Sample ID: Laboratory ID: NDLP Method Blank MB548

Report Date:09/09/92Date Sampled:N/ADate Analyzed:09/08/92

	Concentration	Detection Limit
Analyte	(ug/L)	(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

Page 3

EPA Method 8270

SEMIVOLATILE HYDROCARBONS ADDITIONAL DETECTED COMPOUNDS

Bloomfield Refinery Client: NDLP **Project Name:** 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 compo	unds detected at report	able levels

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

		Soil
Surrogate	Percent Recovery	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.

meloop Review



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:

Air



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:

Air

Water



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:

Air

Water



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

Air

Water

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:

With Swan

TOXICITY CHARACTERISTIC LEACHING PROCEDURE VOLATILE ORGANIC COMPOUNDS

۲.,

Client:	BLOOMFIELD REFINERY		
Project Name:	NDLP	Report Date:	09/01/92
Sample ID:	NDLP	Date Sampled:	08/20/92
Laboratory ID:	9513 / C921669	Date Received:	08/22/92
Sample Matrix:	Water	TCLP Extraction:	09/01/92
Condition:	Cool, Intact	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%

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:09/01/92Date Sampled:08/20/92Date 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.

e Long Analyst

<u>Ulande M lug</u> Review

TOXICITY CHARACTERISTIC LEACHING PROCEDURE VOLATILE ORGANIC COMPOUNDS MATRIX SPIKE ANALYSIS

Client:
Project Name:
Sample ID:
Laboratory ID:
Sample Matrix:
Condition:

BLOOMFIELD REFINERY NDLP Matrix Spike C921669 SPK Water Cool, Intact

 Report Date:
 09/01/92

 Date Sampled:
 08/20/92

 Date Received:
 08/22/92

 TCLP Extracted:
 09/01/92

 Date Analyzed:
 09/01/92

Spiked Sample	Sample	Spike	Spike	Percent
Concentration	Concentration	Recovered	Added	Recovery
0.094	ND	0.094	0.100	94%
0.092	ND	0.092	0.100	92%
0.092	ND	0.092	0.100	92%
0.082	ND	· 0.082	0.100	82%
0.087	ND	0.087	0.100	87%
0.093	ND	0.093	0.100	93%
0.125	ND	0.125	0.100	125%
0.094	ND	0.094	0.100	94%
0.090	ND	0.090	0.100	90%
0.051	ND	0.051	0.100	51%
	Concentration 0.094 0.092 0.092 0.082 0.087 0.093 0.125 0.094 0.090	Concentration Concentration 0.094 ND 0.092 ND 0.092 ND 0.092 ND 0.082 ND 0.083 ND 0.093 ND 0.125 ND 0.094 ND 0.093 ND	ConcentrationRecovered0.094ND0.0940.092ND0.0920.092ND0.0920.092ND0.0920.082ND0.0820.087ND0.0870.093ND0.0930.125ND0.1250.094ND0.0940.090ND0.090	ConcentrationRecoveredAdded0.094ND0.0940.1000.092ND0.0920.1000.092ND0.0920.1000.092ND0.0920.1000.082ND0.0820.1000.087ND0.0870.1000.093ND0.0930.1000.125ND0.1250.1000.094ND0.0940.1000.090ND0.0900.100

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

<u>Ulende Mlan</u> Review

Client:

TOXICITY CHARACTERISTIC LEACHING PROCEDURE VOLATILE ORGANIC COMPOUNDS <u>METHOD BLANK ANALYSIS</u>

۰.

BLOOMFIELD REFINERY

Project Name:	NDLP	Report Date:	09/01/92
Sample ID:	TCLP Method Blank	Date Sampled:	NA
Laboratory ID:	TMB 0901F	Date Received:	NA
Sample Matrix:		TCLP Extraction:	09/01/92
Condition:	NA	Date Analyzed:	09/01/92
		-	

Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
ND	0.005	0.5
ND ND	0.005	0.5 100
ND ND	0.005 0.005	6.0 0.5
ND ND	0.005 0.005	0.7 200
ND ND	0.005 0.005	0.7 0.5
ND	0.005	0.2 NE
ND	0.005	NE
	(mg/L) ND ND ND ND ND ND ND ND ND ND ND ND ND	(mg/L)(mg/L)ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005ND0.005

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%

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:09/01/92Date Sampled:NADate 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.

nad

<u>Ulonde M log</u> Review

3304 Longmire College Station, Texas 77845

EPA Method 8240 VOLATILE ORGANIC COMPOUNDS METHOD BLANK ANALYSIS

Client: Project Name: Sample ID: Laboratory ID: Sample Matrix: Condition:

BLOOMFIELD REFINERY

NDLP Method Blank MB 0901 Water NA Report Date:09/01/92Date Sampled:NADate Received:NADate Extracted:09/01/92Date Analyzed:09/01/92

	Concentration	Detection Limit
Analyte	(ug/L)	(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

Page 2

EPA Method 8240

VOLATILE HYDROCARBONS

METHOD BLANK ANALYSIS

ADDITIONAL DETECTED COMPOUNDS

Client: Project Name: Sample ID: Laboratory ID BLOOMFIELD REFINERY NDLP Method Blank MB 0901

Report Date:09/01/92Date Sampled:NADate Analyzed:09/01/92

Tentative	Retention Time	Concentration
Identification	(Minutes)	(ug/L)
None	e detected at reportable le	evels.

* - 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.

Cope Analyst

Ulmde Miles Review

TOXICITY CHARACTERISTIC LEACHING PROCEDURE SEMIVOLATILE ORGANIC COMPOUNDS

Client: Bloo Project Location: NDLP

Bloomfield Refinery

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:

 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)	
0				
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%

TOXICITY CHARACTERISTIC LEACHING PROCEDURE SEMIVOLATILE ORGANIC COMPOUNDS

Client:	Bloomfield Refinery
Project Name:	NDLP
Sample ID:	NDLP
Laboratory ID:	9513/ C921669

 Report Date:
 09/09/92

 Date Sampled:
 08/20/92

 Date Analyzed:
 09/08/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
Non	e detected at reportable l	evels

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

Higginbotha m

ancelor Review

TOXICITY CHARACTERISTIC LEACHING PROCEDURE SEMIVOLATILE ORGANIC COMPOUNDS <u>MATRIX SPIKE ANALYSIS</u>

Client: Bloomfield Refinery

Sample ID:TCLP Matrix SpikeLaboratory ID:BS537Sample 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

	Concentration	Spike Added	Percent
Analyte	(mg/L)	(mg/L)	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 - Trichiorophenol	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%

ance Looper Review

Man Higginbothen Analyst

3304 Longmire College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE SEMIVOLATILE ORGANIC COMPOUNDS METHOD BLANK ANALYSIS

Bloomfield Refinery

Project Name: NDLP Sample ID: Laboratory ID: TMB825

Client:

TCLP Method Blank 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	Detection Limit	Regulatory		
	(mg/L)	(mg/L)	Limit (mg/L)		
o - Cresol	ND	0.010	200		
m,p - Cresol	ND	0.010	200		
1,4 - Dichlorobenzene 2,4 - Dinitrotoluene	ND	0.010	7.5 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%					

		rks								-		Date Time	5000 RES		Date Time	-	05234
	ANALYSES / PARAMETERS	E/C Remarks	offer lefter										B				Drive 3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-499
CORD	D D ANALYS	ere Berg Berj Berj Berj Berj	No. of Containe <i>Vol , Se</i> <i>See</i>	Ь					·			Received by: (Signature)	ON CINES	Received by: (Signature)	Received by laboratory: (Signature)	Inc.	☐ Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945
OF CUSTODY RECORD	E	e No.	Matrix	Ê					-			ر ا	LISSS PLONM	}	Time Received b	Laboratories,	☐ 910 Technology Blvd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450
CHAIN OF O	Project Location	Chain of Custody Tape No.	Lab Number	A A						•		Date	16-02-3	Date	Date	Inter-Mountain Laboratories,	2506 West Main Street 910 Farmington, NM 87401 Boz Telephone (505) 326-4737 Tel
·	e ji nerk		/ Date Time La	1500 1500									lm				1714 Phillips Circle 2506 Gillette, Wyoming 82716 Fam Telephone (307) 682-8945 Tele
Inder-Mountain Laboratories, inc.	Client/ProjectName	Sampler: (Signature)	Sample No./ Identification	N010				/			$\overline{\vee}$	Relinquished by: (Signature)	UDNOP/I AN UN	Relinquished by: (Signature)	Relinquished by: (Signature)		Telephone (307) 672-8945 Telepho

<u>August 19, 1992</u> Roger Anderson = OCD Kathy Brown - OCD - Phillip Nobis - James Gumey Abandon 2 unlined ponds Use 2 lined ponds frier to injection. 8010/8020 8240+ ICAP for fluids anguarterly General Chem, Hg, AS, quarterly basis Phiesing land based on cost of phissing (EPA) Closure Plan - phis top to bottom Willget a permit to dvill through the Aztec office and a permit to inject through David Catanach and a discharge plan modification through the Environmental Bureaus Submit 5 (opres (1-Aztre, 2-David, 2-45)

Can get permit to inject prior to drilling.

TIERRA EN COMPANY, INCORPORATED

August 18, 1992

DRAFT #1

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. Noto.

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

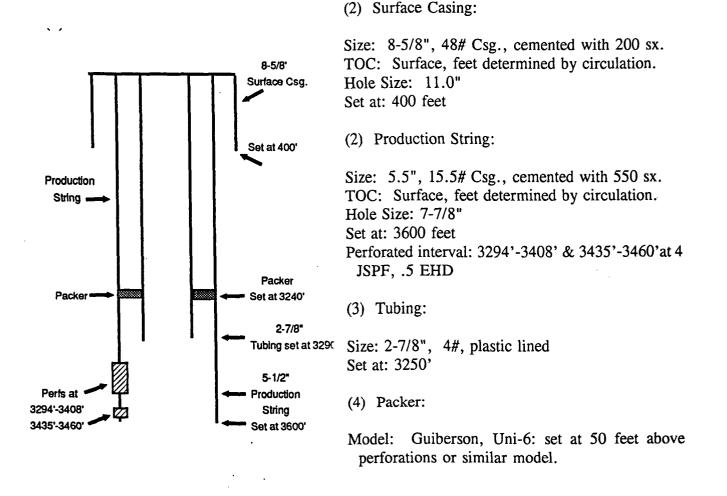
III. WELL DATA

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



- 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'

 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)

1F26 29N11W Basin Dakota Amoco Production Sullivan Ga	
1F26 29N11WOtero ChacraAmoco ProductionDavis Gas1F26 29N11WBlanco MesaverdeAmoco ProductionDavis Gas3K26 29N11WArmenta GallupMeridian OilCalvin1M26 29N11WBasin DakotaMeridian OilCalvin9N26 29N11WOtero ChacraMeridian OilCongress1H 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1I 27 29N11WOtero ChacraAmoco ProductionDavis Gas1A 29N11WOtero ChacraMeridian OilSummit16A34 29N11WArmenta GallupMeridian OilCongress	Com J Com J Com F Com F Com G

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	<u>Depth</u>	<u>Thickness</u>
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	<u>Depth</u>	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 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 RO11W 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/FT6086-6242 GROSS 6149-6187 6086-6105 PERF 6218-6242 SWFR 6086-6242 156000 GALS 420000 LBS SAND FBRKP: TP: 100 CP: 612 SICP: SITP: CAOF: 1684 MCFD FORMATION TOPS: (Source, Names, Depths, Shows) LOG 6040JAM 360 604FRLD 560 604PCCF 1620 604CLFH 3230 604MENF 3325 603GLLP 5210 604PNLK 3950 603MNCS 4180 603GRNR 6030 602DKOT 6065 CORE DESCRIPTIONS: FORMATION TESTS: **PRODUCTION TESTS:** LOG SURVEYS: # IL # # EL #

è.

#	GR	#	#	NE
#	DNC	#		

OTHER WELL INFO:

DEVIATION DATA:

Meas.	Drift	Meas.	Drift	Meas.	Drift
Depth	Angle	Depth	Angle	Depth	Angle
832 2810 4315 5822	000.50 001.00 001.20 002.00	1304 3305 4818 6326	000.50 001.00 001.50 002.20	2338 3809 5319	000.70 001.20 001.70

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

1

#

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 RO11W SEC26 Spot: NW SE NW FOOTAGES: 1480FNL 1450FWL CNGRS T-R-SEC /FULL SEC Log Td: Oper Elev: 5460KB 5447GR RIG HT: 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 a 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 PERF JET 604CHCR 2/FT2631-2772 GROSS 2631-2670 2734-2772 PERF 127000 GALS 191000 LBS SAND FBRKP: 2631-2772 SFFR RATE: B/MIN ADDTV: NTGN STAGES: 1691 SCF/BBL TP: 82 CP: 360 SICP: SITP: CAOF: MCFD NARRATIVE: FRACT W/20#, 2%KCL, 20/40 SD IPF 749MCFD CUT % /64CK HRS 604MVRD PERF 2/FT3970-4030 GROSS 3970-4002 4008-4030 PERF SGFR 3970-4030 94500 GALS 135000 LBS SAND FBRKP: RATE: 52B/MINADDTV: 1000 PSI STAGES: 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)

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

149

FULL WELL REPORT FOR FAR WEST RESOURCES API Nbr: 30045256120000 State: NMEX County: SAN JUAN Meridn Code: 21 Meridian: NEW MEXICO 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 RO11W SEC26 Spot: SE NE SW 2209FWL CNGRS T-R-SEC /FULL SEC FOOTAGES: 1722FSL 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 Longitude: 107.96165 Source: USGS NAD27 CASING: ∦SX ∦SX 9 5/8 @ 314 W/ 5155 W/ 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 5295-5870 PERF 16/IT GROSS PERF 5295-5618 5673-5870 5673-5870 ACID 1200 GALS FBRKP: RATE: B/MIN ADDTV: STAGES: 15% HCL 5673-5870 SFFR 138677 GALS 85000 LBS SAND FBRKP: 5295-5618 2500 GALS ACID FBRKP: RATE: B/MIN STAGES: 15% HCL ADDTV: 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:**

154

\$

153

Ň

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 Code: 010000 Field: BLOOMFIELD T029N RO11W 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 Comp Date: 04 15 1981 Hole Dir: VERTICAL 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 Tools: ROTARY RIG Nbr: 56 Contr: AZTEC **INITIAL POTENTIAL TESTS:** IPF 1122MCFD CUT % /64CK 3HRS 604CHCR 2746-2869 PERF GROSS 2750-2750 PERF 2746-2746 2748-2748 2753-2753 2849-2849 PERF 2756-2756 2840-2840 2846-2846 2851-2851 2865-2865 2867-2867 2869-2869 PERF ACID 2746-2869 500 GALS FBRKP: RATE: B/MIN ADDTV: HCL 7 1/2% STAGES: 2746-2869 47500 GALS 60000 LBS SAND FBRKP: SFFR RATE: 20B/MINADDTV: 20/40 SD STAGES: SICP: 922 TP: CP: 83 CAOF: 1135 MCFD SITP: ISP: 1600 ATP: 3800 FPCAOF: MCFD 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 GR		# #		#	DNC
OTHER WELL I	NFO:					
DRILLING TYPE DEPTH: DEPTH,WT: 29 DEVIATION DA	60 8					
Mea Dep		Drift Angle	Meas. Depth	Drift Angle	Meas. Depth	Drift Angle
	20 50	000.30 000.70	775	000.50	1335	001.50
		*** Pro	posed Bot	tom Hole	Location	* * *

····

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

#

#####

λ.

1

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 159 API Nbr: 30045120030000 State: NMEX County: SAN JUAN Meridian: NEW MEXICO Meridn Code: 21 Prov Code: 202 Province: SAN JUAN BASIN **Oper: SOUTHERN UNION PROD** Oper Code: 081740 Lease: CALVIN Well: 1 Lease Code: Field: BASIN Field Code: 003000 T029N RO11W SEC26 Spot: SW SW 1150FWL CNGRS T-R-SEC /FULL SEC FOOTAGES: 1190FSL RIG HT: Oper Elev: 5588DF Log Td: Form@TD: 602DKOT Other Depths: DRLR 6450 WSTD PBTD 6414 OLDTD Spud Date: 10 24 1962 Comp Date: 12 02 1962 Status: GAS Hole Dir: VERTICAL 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/FT6176-6348 GROSS PERF 6176-6176 6184-6184 6196-6196 6210-6210 6204-6204 6211-6211 PERF 6258-6258 6262-6262 6272-6272 6284-6284 PERF 6268-6268 6275-6275 6289-6289 6295-6295 PERF 6336-6336 6339-6339 PERF 6342-6342 6345-6345 6348-6348 6176-6348 FBRKP: SDFR SICP: 1934 CAOF: MCFD TP: CP: SITP: FORMATION TOPS: (Source, Names, Depths, Shows) LOG 604PCCF 1750 603GLLP 5315 602DK0T 6175 604CLFH 3320 604PNLK 4100 603GRNR 6070 603GRRS 6134 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 @ 300SX 300 W/ 5 1/2 @ 6386 W/ #SX TUBING INFO: 1 1/4" @ 2808 Contr: ARAPAHOE Tools: ROTARY **RIG Nbr: INITIAL POTENTIAL TESTS:** IPF CUT % 2472MCFD 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/FT6163-6170 GROSS 602DKOT PERF 2/FT6224-6262 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/MINADDTV: 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

I

FULL WELL REPORT FOR FAR WEST RESOURCES API Nbr: 30045078250000 State: NMEX County: SAN JUAN Meridn Code: 21 Meridian: NEW MEXICO Province: SAN JUAN BASIN Oper: PAN AMERICAN PETROLEUM Prov Code: 202 Oper Code: 065005 Lease Code: 796 Lease: DAVIS GAS UNIT-F Well: 1 Field: BASIN Field Code: 003000 T029N RO11W SEC27 Spot: SW NE SE 1190FEL CNGRS T-R-SEC /FULL SEC FOOTAGES: 1850FSL Oper Elev: 5565KB 5554GR RIG HT: Log Td: 6365 Form@TD: 602DKOT Other Depths: DRLR 6365 WSTD 6332 OLDTD PBTD 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 RIG Nbr: Tools: ROTARY **INITIAL POTENTIAL TESTS:** IPF 4490MCFD CUT % 48/64CK 3HRS 602DKOT PERF 6/FT 6215-6240 GROSS 6215-6219 6236-6240 PERF 6227-6229 40000 GALS 6215-6240 40000 LBS SAND FBRKP: 1500 SWFR RATE: 39B/MINADDTV: **TREAT PRESS 2500** STAGES: TP: 407 SITP: SICP: 2089 CAOF: 5083 MCFD CP: 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 6227-6229 6236-6240 PERF 6215-6219 6215-6240 40000 GALS 40000 LBS SAND FBRKP: 1500 SWFR RATE: 39B/MINADDTV: STAGES: TREAT PRESS 2500

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 RO11W SEC27 Spot: SW NE SE 1135FEL CNGRS T-R-SEC /FULL SEC FOOTAGES: 1805FSL Oper Elev: 5554GR RIG HT: Log Td: Form@TD: 604CHCR Other Depths: DRLR 2951 WSTD 2890 OLDTD PBTD Proj Depth: 2950 Permit: 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 RIG Nbr: Tools: ROTARY **INITIAL POTENTIAL TESTS:** IPF 3570MCFD 48/64CK CUT % 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 604PCCF 1688 604FRLD 1510 604CHCR 2350 CORE DESCRIPTIONS: FORMATION TESTS: **PRODUCTION TESTS:** LOG SURVEYS: DNC # # # NE # "# IL OTHER WELL INFO:

Petroleum Information Corporation

<i>i</i>		
API Nbr: 30045256570000 Meridian: NEW MEXICO Province: SAN JUAN BASIN Oper: UNION TEXAS PET Lease: CONGRESS Field: UNNAMED	State: NMEX Well: 16	County: SAN JUAN Meridn Code: 21 Prov Code: 202 Oper Code: 091214 Lease Code: Field Code: 099999
TO29N RO11W SEC34 FOOTAGES: 660FNL 660FEL	CNGRS T-R-SEC /FULL SEC	Spot: C NE NE
Óper Elev: 5609KB 5595GR	RIG HT:	Log Td: 6183 Form@TD: 603GLLP
Other Depths: DRLR 6200 Permit:	WSTD PBTD 6160 Proj Depth: 6200	OLDTD Proj Form: 603GLLP
Status: OIL Hole Dir: VERTICAL Numeric Class: INL-6 FNL-1 Alpha Class: INL-D FNL-DO Prod Form: 603GLLP		Spud Date: 05 07 1983 Comp Date: 07 04 1983
Latitude: 36.68788	Source: USGS NAD27	Longitude: 107.97139
CASING: 9 5/8 @ 306 7 @ 5200	W/ #SX W/ #SX	
LINER: 4 1/2" #	5016- 6200 W/ #	SX
Contr: ARAPAHOE DRLG	Tools: ROTARY	RIG Nbr: 10
INITIAL POTENTIAL TESTS: IPP 20BOPD 262MC 603GLLP PERF PERF 5328-5688 ACID 6086-6148 RATE: B/MIN ADDTV: ACFR 6086-6148 RATE: B/MIN ADDTV: ACID 5764-5916 RATE: B/MIN ADDTV: SFFR 5764-5916 ACID 5328-5688 RATE: B/MIN ADDTV: TP: 40 CP: 139 GTY: 42.0 GOR: 13100 NARRATIVE: PERFD 5328-5688 W/25 IT	FD 3BW CUT % / 5764-5916 6086-614 10000 GALS FBRKP: STAGES: 15% HCL 13000 GALS FBRKP: STAGES: 20% HCL 4000 GALS FBRKP: STAGES: 15% HCL 82960 GALS 70000 LBS S 3000 GALS FBRKP: STAGES: 15% HCL SITP: SICP: COND: B/MMCF W/24 IT, 5764-5916 W/16 IT	CAOF: MCFD
FORMATION TOPS: (Source,Nam	es,Depths,Shows)	
LOG 6040JAM 520 604KRLD 720 604PCCF 1750 604LWIS 1810 604CLFH 3330 604PNLK 4080	604FRLD 1450 604CHCR 2340	

603GLLP 5318

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

LOG SURVEYS:

DNC #### # NEC # ILD 05194-06182 ILDL GR 00308-05151 ILDL OTHER WELL INFO: TIME.SINCE.CIRC 3 TIME.SINCE.CIRC 4 F @ 5152 BHT: 122 LOG: ILDL RUN: 1 F @ 6183 BHT: 156 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 ***

202

####

FULL WELL REPORT FOR FAR WEST RESOURCES 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 Well: 5 Lease: CONGRESS Lease Code: 803 Field: BASIN Field Code: 003000 T029N RO11W Spot: SW NE SEC34 1570FEL CNGRS T-R-SEC /FULL SEC FOOTAGES: 2510FNL 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 Spud Date: 09 05 1962

Corporation

Petroleum Information

Status: GAS Hole Dir: VERTICAL Numeric Class: INL-6 FNL-2 Alpha Class: INL-D FNL-DG Prod Form: 602DKOT

Latitude: 36.68279

CASING:

8 5/8 @ 285 W/ 200SX 4 1/2 @ 6462 W/ 610SX

TUBING INFO: 2" @ 6275

Contr: ASPEN DRLG

Tools: ROTARY

Source: USGS NAD27

RIG Nbr:

Comp Date: 10 18 1962

Longitude: 107.97451

INITIAL POTENTIAL TESTS:				
IPF 6306MCFD		CUT %	48/64CK	3HR S
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/MINADDTV:	STAGES:	TREAT PRESS	2200	
SWFR 6250-6286	64000 GALS	60000 LBS SAND	FBRKP: 1200	
RATE: 49B/MINADDTV:	STAGES:	TREAT 2600-	2000	
SWFR 6171-6204	27500 GALS	25000 LBS SAND	FBRKP: 800	
RATE: 40B/MINADDTV:	STAGES:	TREAT 3100-	2 400	
TP: 522 CP: 1213	SITP: 2016	SICP: 2024	CAOF: 8844 N	ICFD

FORMATION TOPS: (Source, Names, Depths, Shows)

LOG

500					
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 API Nbr: 30045078120000 State: NMEX County: SAN JUAN Meridn Code: 21 Meridian: NEW MEXICO Prov Code: 202 Province: SAN JUAN BASIN 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 OLDTD WSTD PBTD 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 OBO OMCFD CUT % /64CK HRS 604PCCF OPENHOLE 1727-1790 XPLO 1727-1790 140 OTS FBRKP: 1732-1790 XPLO 78 QTS FBRKP:

OTHER WELL INFO:

*** Proposed Bottom Hole Location *** *** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

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.

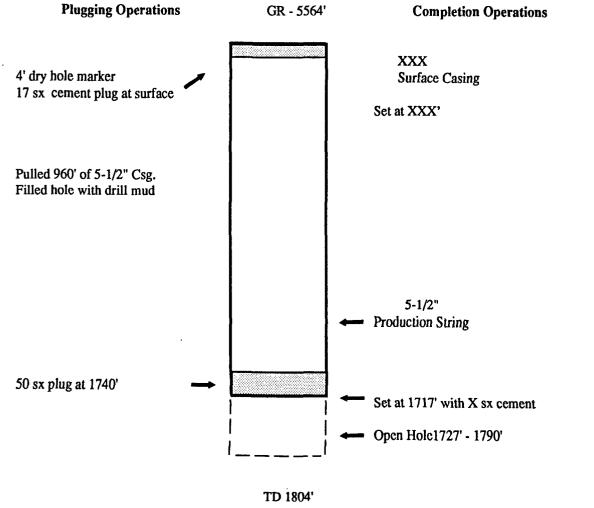
Indicate Nature of Report by Checking Below

REPORT ON BEGINNING	1 1						1
DRILLING OPERATIONS		REPORT ON RES OF CASING SHU			REPORT ON REPAIRING W	VELL	
REPORT ON RESULT OF PLUGGING WELL	X	REPORT ON REC OPERATION	COMPLETION		REPORT ON (Other)		
		Me	rch, 17,	1953	Aet	ec, N	ew Mexico
		(Da	le)		,		(Place)
Following is a report on the w		•			,	. ".	
Umbarger Truste	b	· · · · · · · · · · · · · · · · · · ·	Umbar	ger Tr	uatee Dav	/18 #1	••••••
(Company o F. B. Umbarger (Contra	· Operator)		14/-11 N	L	(Lease)	.,/	27
(Contra 29N 11W T, R, NMPM.,	Poo	Led Unit	, wen No 	, Ser	Juan		County
The Dates of this work were as folow	3/1	?/33 to 3/28	/53	i i			
			· •				
Notice of intention to do the work (was) (was i	not) submitted on For	m C-102 on	(Cros	s out incorrect word	15)	, 19
We run 2" tubing to Pictured Cliff Sand of 5½" casing, fill 5½" casing was remov	a dep s which ing the red we	h would fill 9 hole with used 17 sac	and poure all oper drilling ks of cen	d 80) a holea mu d aa	acks of c . Then v we came	ve pul up.	led 960' After
We run 2" tubing to Pictured Cliff Sand of 55" casing, fill 55" casing was remov setting 4" Marker as I, hereby, request f	a dep 3 which Ing the 7ed we 3 req ui	th of 1740 [†] h would fill b hole with used 17 sec ired by law.	and poure all oper dfilling ks of cen	ad 50) s holes mu d as ment, f	acks of e . Then we came 'illing th	ve pul up.	led 960' After
We run 2" tubing to Pictured Cliff Sand of 54" casing, fill 54" casing was remov setting 4" Marker as	a dep 3 which Ing the 7ed we 3 req ui	th of 1740 [†] h would fill b hole with used 17 sec ired by law.	and poure all oper dfilling ks of cen	ad 50) s holes mu d as ment, f	acks of e . Then we came 'illing th	ve pul up.	led 960' After
We run 2" tubing to Pictured Cliff Sand of 54" casing, fill 54" casing was remov setting 4" Marker as	a dep s which ing the yed we s requi	th of 1740 [‡] h would fill b hole with used 17 sac ired by law, he Bond on t	and poure all oper dfilling ks of cen	ed 50 s holes mu d as nent, f	acks of e . Then we came illing the ased.	ve pul up.	led 960 After and
We run 2" tubing to Pictured Cliff Sand of 52" casing, fill 52" casing was remove setting 4" Marker and T, hereby, request for Witnessed by F. B. Umb	a dep s which ing the yed we s requi	th of 1740 h would fill b hole with used 17 sac ired by law. he Bond on t	and poure all oper dfilling ks of cen this job t	ed 50; s holes mud as nent, f be rele	information give	re pul up. ne top	led 960 After and
We run 2" tubing to Pictured Cliff Sand of 52" casing, fill: 52" casing was remove setting 4" Marker and T, hereby, request for Witnessed by F. B. Umb (Nan Approved:	a dep s which ing the yed we s requi	th of 1740 h would fill b hole with used 17 sac ired by law. he Bond on t	and pours all oper dilling ks of cen his job t mbarger ((Company)	ed 50; s holes mud as nent, f be rele	information give	re pul up. ne top	led 960 After and

(VI.) D&A Plugged Well Schematic

Well: Davis Pooled No. 1

Operator: Umbarger F B Trustee Location: 1127 29N11W; San Juan County, NM Date Completed: 03-15-53 Date D&A: 03-25-53 Pool: Dry hole (Pictured Cliffs)



"Well completed in lower Pictured Cliffs"

API Nbr: 30045077760000 State: NMEX County: SAN JUAN Meridn Code: 21 Meridian: NEW MEXICO Prov Code: 202 Province: SAN JUAN BASIN **Oper: BIG CHIEF WESTERN** Oper Code: 099999 Well: 1 Lease Code: 4570 Lease: DAVIS Field: FULCHER KUTZ Field Code: 028000 Spot: NE SW SW T029N R011W SEC26 Oper Elev: 5590DF RIG HT: Log Td: Form@TD: 604PCCF OLDTD Other Depths: DRLR 1870 PBTD WSTD Permit: Proj Depth: Proj Form: 604PCCF Spud Date: 04 18 1950 Comp Date: 10 25 1950 Status: D&A Hole Dir: VERTICAL 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 Tools: ROTARY **RIG Nbr:** Contr: **INITIAL POTENTIAL TESTS:** FORMATION TOPS: (Source, Names, Depths, Shows) DLR 604PCCF 1750 CORE DESCRIPTIONS: FORMATION TESTS: **PRODUCTION TESTS: OBO** CUT % /64CK HRS PTF 1762-1827 604PCCF OPENHOLE FBRKP: XPLO 1762-1827 320 OTS OTHER WELL INFO: *** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

		NEW MEXI	CO OIL	CONSERV	ATION C	OMMISSI	ИС		FORM C-103 (Rev 3-55)
-		MISCEL	LANEO	US REPO	RTS ON	WELLS			(Kav 3-33)
	(Su	bmit to approp	oriate Distr	ict Office a	sperCom	mission Ru	le 1106)		
ame of Company Big Chief We	stern	and Al (Greer	Addr	ess		<u></u>		
case Davis			Well No. 1	Unit Lette	r Section 26	Township 29 No	rth	Rang 11	West
ate Work Performed See Delow	Р	ool Fulche	er-Kutz	: PC		County San Ju	an Cou	nty	
		THIS IS	S A REPOR	T OF: (Chec			· · · · · · · · · · · · · · · · · · ·		
Beginning Drilling Op Beging	erations	J	asing Test a emedial Worl	and Cement Jo k	ob [Other (E	xplain):		
11-11-58- 1	744 been to sh Pumpe pumpe	and recover shot by a ot pipe of d in 35 a d in 10 a	vered s some ot off. sks cem sks cem	ame at her com lent on lent in	that p pany a top of top of	oint. t 300°b nub at 9 5/8"	Pipe ha ut the 744 [†] surface	ad pr y had e pip	eviously
	* ur	y ho le ma	arker,	leaving	44 a.b	ove gro	und le	0, 1	
	= ur		Position	· .		O VO gro Company	una lev		
	+ UI	FILL IN BE	Position LOW FOR	REMEDIAL	WORK RE	Company			
itnessed by	TD		Position LOW FOR	REMEDIAL GINAL WELL	WORK RE	Company	'LY	011.0	mpletion Date
itnessed by F Elev.	T D		Position LOW FOR ORIC	REMEDIAL Ginal Well D	WORK RE	Company PORTS ON Producing	LY Interval	011.0	_
f Elev. ubing Diameter	T D	FILL IN BE	Position LOW FOR ORIC	REMEDIAL Ginal Well D	WORK RE DATA	Company PORTS ON Producing	LY Interval		_
/itnessed by F Elev. ubing Diameter erforated Interval(s)	T D	FILL IN BE	Position LOW FOR ORIC	REMEDIAL GINAL WELL D Oil St	WORK RE DATA	Company PORTS ON Producing ter	LY Interval		_
/itnessed by F Elev, ubing Diameter erforated Interval(s)	T D	FILL IN BE	Position LOW FOR ORIC PBT	REMEDIAL GINAL WELL D Oil St	WORK RE DATA ring Diame	Company PORTS ON Producing ter	LY Interval		_
/itnessed by F Elev, ubing Diameter erforated Interval(s)	T D	FILL IN BE	Position LOW FOR ORIC PBT RESUL	REMEDIAL GINAL WELL D Oil St Produ	WORK RE DATA ring Diame cing Forma RKOVER Water P	Company PORTS ON Producing ter	LY Interval		th
/itnessed by F Elev. ubing Diameter erforated Interval(s) pen Hole Interval Tast Date of	T D	FILL IN BE ubing Depth Oil Production	Position LOW FOR ORIC PBT RESUL	REMEDIAL GINAL WELL D Oil St Produ LTS OF WOF	WORK RE DATA ring Diame cing Forma RKOVER Water P	Company PORTS ON Producing ter tion(s) roduction	Interval Oil St		th Gas Well Potentia
Test Date of Test After	T D	FILL IN BE ubing Depth Oil Production	Position LOW FOR ORIC PBT RESUL	REMEDIAL GINAL WELL D Oil St Produ LTS OF WOF	WORK RE DATA ring Diame cing Forma RKOVER Water P	Company PORTS ON Producing ter tion(s) roduction	Interval Oil St		th Gas Well Potentia
Vitnessed by PF Elev. Ubing Diameter Perforated Interval(s) Ppen Hole Interval Test Date of Test Date of Test Before Workover After Workover	T D	FILL IN BE ubing Depth Oil Production	Position LOW FOR ORIC PBT RESUL	REMEDIAL GINAL WELL D Oil St Produ LTS OF WOF Production IC FP D	WORK RE DATA ring Diame cing Forma RKOVER Water P B S S S S S S S S S S S S S S S S S S	Company PORTS ON Producing ter tion(s) roduction PD	ILY Interval Oil St GO Cubic fee	Cc ring Dep	th Gas Well Potentia
Vitnessed by F Elev. ubing Diameter erforated Interval(s) pen Hole Interval Test Date of Test Before Workover After Workover OIL CONS pproved by	TD	FILL IN BE ubing Depth Oil Production BPD	Position LOW FOR ORIC PBT RESUL n Gas M	REMEDIAL GINAL WELL D Oil St Produ LTS OF WOF Production IC FP D	WORK RE DATA ring Diame cing Forma RKOVER Water P B water P B reby certiff he best of	Company PORTS ON Producing ter tion(s) roduction PD	ILY Interval Oil St GO Cubic fee formation gi e.	Cc ring Dep R t/Bbl	th Gas Well Potentia MCFPD ze is true and compl
Vitnessed by PF Elev. Ubing Diameter Perforated Interval(s) Ppen Hole Interval Test Date of Test Date of Test Before Workover After Workover	T D T ERVATIO	FILL IN BE ubing Depth Oil Production BPD	Position LOW FOR ORIC PBT RESUL n Gas M	REMEDIAL GINAL WELL D Oil St Production 1 C F P D	WORK RE DATA ring Diame cing Forma KOVER Water P B reby certif he best of e OU	Company PORTS ON Producing ter tion(s) roduction PD	ILY Interval Oil St GO Cubic fee formation gi e.	Cc ring Dep R t/Bbl	th Gas Well Potentis MCFPD

- ---

(Form C-102) (Revised 7/1/82)

Pool

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

Al Greer SW SW (Company or Operator) 26			avis V'	Well Noin	(Unit)	
Following is a Notice of 1	Intention to do cert		ow at the	Big Chief Western a	nd	
Gentlemen:						
				(Date)		
OIL CONSERVATION CON Santa Fe, New Mexico	IMISSION	Aztec, Ne	w Mexico	5 November	19 58	
Notice of Intention to Gun Perforate		otice of Intention Other)		Notice of Intention (Other)		
Notice of Intention to Squeeze	, <u> </u>	OTICE OF INTENTION O Acidize		Notice of Intention to Shoot (Nitro)		
NOTICE OF INTENTION TO PLUG WELL		NOTICE OF INTENTION TO PLUO BACK		Notice of Intention to Set Liner		
Notice of Intention to Change Plans		OTICE OF INTENTION TO EMPORARILY ABANDON WE	LL	NOTICE OF INTENTION TO DRILL DEEPER		

.....County FULL DETAILS OF PROPOSED PLAN OF WORK

NMPM

(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. 52" csg was set at 1758 and cemented with 120 sks. Intend to set 50' cement plug across csg shoe and cut and pull $5\frac{1}{2}$ " csg. 50' cement plug will be set across top of 5¹/₂" 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. Locat: Location will be leveled.

Βv

Approved.. Except as follows:

Approved

(40-acre Subdivision) San Juan

NOV 1 8 1958

Position

OIL CONSERVATION COMMISSION Original Signed Emery C. Arnold

Supervisor Dist. # 3 Title

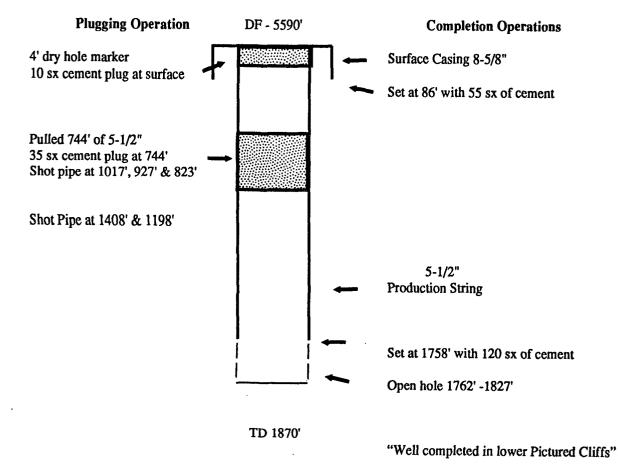
Name Addres

Send Communications regarding well to:

(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)



PI Petroleum Information Corporation

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 RO11W SEC27 Spot: NW SE NE 1120FEL CNGRS T-R-SEC /FULL SEC FOOTAGES: 1450FNL 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 RIG Nbr: Contr: Tools: ROTARY **INITIAL POTENTIAL TESTS:** FORMATION TOPS: (Source, Names, Depths, Shows) LOG 604FMNG 793 604PCCF 1710 CORE DESCRIPTIONS: FORMATION TESTS: **PRODUCTION TESTS:** CUT % /64CK PTS OBO OMCFD HRS 604FMNG PERF 1463-1483 SWFR 1463-1483 FBRKP: **OTHER WELL INFO:** *** Proposed Bottom Hole Location *** *** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

164

ģ.



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		REPORT ON RESULT OF TEST	REPORT ON
DRILLING OPERATIONS		OF CASING SHUT-OFF	REPAIRING WELL
REPORT ON RESULT	*	REPORT ON RECOMPLETION	REPORT ON
OF PLUGGING WELL		OPERATION	(Other)

August 25, 1985 Aztes, New Mexico

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)	11 80	bargor-Truston (Lease)	
F. B. Unbarger	, Well No	in the	of Sec. 27 ,
т. 29-N R. 11-W., NMPM.,	Pool,	San Juan	County.
The Dates of this work were as folows:	nd August 19,	1955	
Notice of intention to do the work (was) (was Age submitted on For	m C-102 on	Res Rt incorrect words)	
and approval of the proposed plan (was) (was pot) obtained.		· · · ·	
DETAILED ACCOUNT OF WORK	DONE AND RESUL	IS OBTAINED	

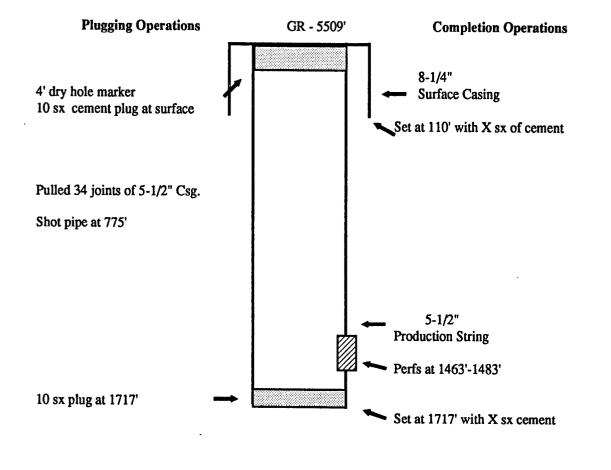
Shot off 775' of 52" casing, pulling 54 joints. Plugged well with 20 pamark sacks of coment, 10 in the bottom and 10 in the top. Left 4' marker, 6' high.

It is here Witnessed by	by requested that th enght Basin	• bond on this with cleased. RILLIN () AUG 2 5 1955 OIL CON. COM. DIST. 3 Return 1 Gas Corp. Bald-Supt.
Approved: OIL CONSERV	TION COMMISSION FC-JJ	I hereby certify that the information given above is true and complete to the best of my knowledge. Name M. Mannung Position
PETROLEUM ENGINEER [DIST. NO. 3 AUG 2 9 195 (Date)	

(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

			STA	,					,
				WELL RECO	ORD				
				GENERAL IN					
) Owner of		Atter	R. C.	- THONER	Box 14	Owne	er's Well No	/	
City and S	State B (6	aress	140		<u></u>				
ell was drilled	under Permit	No. <u>5</u> 7	5- 1974	(and is located	in the:			
a	_ ¼ ¼	· ¼	¼ of Se	ction	_ Township	JIN Ra	nge/	N	N.M.P.M
b, Tract	No	of Map No.		of the					
c. Lot No	<u> </u>	of Block No	4	of the.	South	side Add	if Lion		
				Co					
d. X= the		_ feet, Y=	· · · · · ·	feet, N.M	M. Coordinate S	System			Zone i Grani
		Den's	Datil	Sac Co.		_ License No			
								J	
		-				Cable			
levation of lar	nd surface or _			at well	l is	_ ft. Total depti	h of well	47	<u>Z</u> ft
ompleted well	lis 🖾 sl	hallow 🗖 a	rtesian.	J	Depth to water	upon completio	n of well	//	fi
		Sec	tion 2. PRIN	CIPAL WATER	R-BEARING ST	RATA			
Depth From	in Feet To	Thickness in Feet		Description of V	Water-Bearing F	ormation			Yield minute)
'	29'		<u> </u>	JARC LUMO	, some	blue Clay	/2	6	<u>pm</u>
		<u> </u>							
						<u> </u>			
		<u> </u>			<u> </u>				<u>,</u>
				n 3. RECORD	OF CASING	r			
Diameter	Pounds per foot	Threads per in.	Depth Top	in Feet Bottom	Length (feet)	Type of Sh	loe	Perfo om	rations To
(inches)		arsided	• • • • • • • • • • • • • • • • • • •		30'			ד'	31'
	1000	QU Y 1 V 1 V	····	├ ────┤				<u> </u>	1
<i>4</i> ″]_ }			1	1	.	1	1 .1-1
	18.97 Sel. 40	Puc	30	47'	.7'		<u>ot</u>	<u>. </u>	47'
<i>4</i> ″					.7'		o£	, <u>'</u>	<i>47'</i>
<i>4"</i> <i>5</i> "	Sel. 40	Secti	on 4. RECO	RD OF MUDDI	ING AND CEM				<i>47'</i>
<i>4"</i> <i>5</i> "					ING AND CEM abic Feet Cement		and of Placen		<i>47'</i>
4" 5" Depth	<u>Sc.L.</u> 40 in Feet	Secti	on 4. RECO		ubic Feet	Meth	nod of Placem	nent	<i>47'</i>
4" 5" Depth	<u>Sc.L.</u> 40 in Feet	Secti	on 4. RECO		ubic Feet	Mett	nod of Placem	nent D	<i>47'</i>
4" 5" Depth	<u>Sc.L.</u> 40 in Feet	Secti	on 4. RECO		ubic Feet	Meth 	and of Placen	nent D	<i>4</i> 7′
<i>۴"</i> ۶ " Depth	<u>Sc.L.</u> 40 in Feet	Secti	on 4. RECO		ubic Feet	Meth PL& CO CC F	and of Placen	nent D	#2'
<i>۴"</i> ۶ " Depth	<u>Sc.L.</u> 40 in Feet	Secti	on 4. RECO Sac of M		abic Feet Cement	ALBOOCH	and of Placen	nent D	<u><u></u></u>
۲۰ ۲۰ ۲۰ ۲۰ ۲۰ ۲۰ ۲۰ ۲۰ ۲۰ ۲۰	<u>Sel</u> . 40 in Feet To	Secti Hole Diameter	on 4. RECO Sac of M Section	RD OF MUDDI ks Cu ud of	abic Feet Cement	ALBUQUERUUSI - N. M.	and of Placen	nent	
Contractions of the second sec	<u>Set</u> <u>40</u>	Secti Hole Diameter	on 4. RECO Sac of M Section	RD OF MUDDI ks Cu ud of	IG RECORD	ALBOOCH	and of Placen	nent	ubic Feet
Change Contr Address	<u>Sel</u> . <u>40</u> in Feet To actor ged	Secti Hole Diameter	on 4. RECO Sac of M Section	RD OF MUDDI ks Cu ud of	IG RECORD	Mett ALLEUOOUE F. M. M. Depth in Depth in	A A C C C C C C C C C C C C C C C C C C	nent	ubic Feet
<u>6</u> " <u>5</u> " <u>Depth</u> From Plugging Contr Address "lugging Metho Date Well Plug	<u>Sel</u> . <u>40</u> in Feet To actor ged	Secti Hole Diameter	on 4. RECO Sac of M Section	RD OF MUDDI ks Cu ud of	Abic Feet F Cement IG RECORD 1 2 3	Mett ALLEUOOUE F. M. M. Depth in Depth in	A A C C C C C C C C C C C C C C C C C C	nent	ubic Feet
Contraction of the second seco	<u>Sel</u> . <u>40</u> in Feet To actor ged	Secti Hole Diameter	on 4. RECO Sac of M Section gineer Repres	RD OF MUDDI ks Cu ud of on 5. PLUGGIN	Abic Feet Cement IG RECORD 1 2 3 4	Mett	A A C C C C C C C C C C C C C C C C C C	nent	ubic Feet
Contraction of the second seco	<u>Sel</u> . <u>40</u> in Feet To actor ged	Secti Hole Diameter	on 4. RECO Sac of M Section gineer Repres	RD OF MUDDI ks Cu ud of on 5. PLUGGIN	Abic Feet F Cement IG RECORD 1 2 3	Mett	A A C C C C C C C C C C C C C C C C C C	nent	ubic Feet

ر

REMARKS AND ADDITIONAL INFORMATION	Section 7.		
			1
· · · · · · · · · · · · · · · · · · ·			
			ļ
	-		1
			<u> </u>
	_		
			1
	_		
······································	_		ļ
			+
	· · · · · · · · · · · · · · · · · · ·		<u> </u>
,,, _,, _			
	_		<u> .</u>
	-		1
		·····	
۰. ۰	_		
· · · · · · · · · · · · · · · · · · ·			
אותג כודין.	,3/	, <i>L</i> ħ	,5E
Brown Sand	,12	,50	,0
	in Feet	•ToT	From
Color and Type of Material Encountered	Thickness		l uidəd

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.

Diller

INSTRUCTION S: This form should be executed in triplicate, preferably the state as completely and sccurately as possible when any well is 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.

STATE LIGINEER OFFICE



WELL RECORD

			Section 1	. GENERAL I	NFORMATION		,		
(A) Owner of	well <u>wal</u>	ter N. V	Mampler			Owner's We	il No		
Street or City and	Post Office Ad	dress <u>Bo</u> :	K-2336 Bloomfic	ld. N.Me	X.				
				•	_ and is located	in the:			
							1 1.7		
						29N. Range 1		N.M.P.N	
						·····			
c. Lot N Subdi	o 14 (vision, recorded	of Block No l in <u>San</u>	 Juan	of the	Bloomfie	ld Southside	Additi	lon	
d. X=		feet. Y=		feet. N	M. Coordinate S	System	· · · · · · · · · · · · · · · · · · ·	Zone i	
the								0	
B) Drilling C	Contractor	(H_N_H/GM		and a summer		_ License NoWD=	717		
address						······································			
	-								
						CableTool s			
levation of la	nd surface or			at we	II is 5300	_ ft. Total depth of w	ell <u>34</u>	f1	
'ompleted wel	ilis 🔀 sh	nailow 🗖	artesian.		Depth to water	upon completion of w	ell1	2f	
		Se	ction 2. PRIN	CIPAL WATE	R-BEARING ST	RATA			
Depth	in Feet	Thicknes	1	Description of	Water-Bearing F	ormation	Estimated		
From	To	in Feet		· · · · · · · · · · · · · · · · · · ·			(gallons per minut		
24	34	10	ាំង	terBeari	ng Sand&	Gavel	15		
		-							
					I		i		
	1	J				<u> </u>			
Diameter	Pounds	Threads		in Feet	Length		Perf	orations	
(inches)	per foot	per in.	Тор	Bottom	(feet)	Type of Shoe	From	To	
6	.189		0	34	34	Drive Shoe	2.:	34	
							1		
							n		
	ш Ц	Sect		.L	I				
Depth	in Ret	L Sect	tion 4. RECO		UNG AND CEM				
From	To a	Diameter	of M		f Cement	Method of	Placement		
	A 8	, C U F							
	~ 10	5				: : : : : : : : : : : : : : : : : : :			
		BUDUE				וד וס			
						<u> </u>	G		
	8		Secti	on 5. PLUGGII	NG RECORD		•		
	ractor								
Address Plugging Meth					No.	Depth in Feet Top Bo		Cubic Feet of Cement	
Date Well Plug Plugging appro	-								
աբթուց գրիւ		C	nino- D			·			
		State En	igineer Repre	sentative					
Date Received	7/3/78		FOR USI	OF STATE E	NGINEER ONL	Y.			
Mate Received				Quad	I	FWL	F	si	

Don.

Use

File No._____RG-696

San Juan Co.

Location No.

29N.11W.22 430

	1		
	+		
	·		<u> </u>
· ·	1		
· · · · · · · · · · · · · · · · · · ·		<u> </u>	
	· · · ·		· · · · · · · · · · · · · · · · · · ·
	<u> </u>		
	ĺ		
			1
	<u> </u>		1
		<u> </u>	+
· · · · · · · · · · · · · · · · · · ·			
· · · · · · · · · · · · · · · · · · ·			
· ·			
	1		
	<u></u>		
			<u> </u>
	L		<u></u>
	_		
	01	24	- 54
erebuldes Boulders		10	0
	təəA ni	oT	moif
Color and Type of Material Frequencered	Thickness		Depth in
3 . '' 6' FOC ('E HOFE			я
			л

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 4630 Ī 77

ł

INSTRUCTIONS: This form should be executed in triplicate, preferably type filen, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accutately as possible when any well is

ł





Section 1	. GENERAL	INFORMATION
-----------	-----------	-------------

						FORMATIO	N		
(A) Owner o Street or City and	f well <u>Mar</u> Post Office Ade State <u>Bloom</u>	tin and dress 309 field, N	Olaire 9 S. John 1.M. 874	Gilber nson 13	kt		Owner	's Well No	
Well was drille	d under Permit l	No. <u>SJ-2</u>	2138			and is locate	ed in the:		
a. <u>NE</u>	_ ¼ <u>SE</u> ¼	¼	¼ of Sec	tion <u>2</u> 2	2	Township	_29N Ran	ge <u>11W</u>	N.M.P.M.
b. Tract	No	_ of Map No.		0	f the				
	lo. <u>6</u> ivision, recorded						er, No.2	<u> </u>	
d. X=		. feet, Y=		fee	et, N.I	M. Coordinat	e System		Zone in Grant.
(B) Drilling	Contractor <u>C</u>	<u>hivers I</u>	Drilling	Co.			License No	WD-809	
•	P.O. Box								
Address									
Drilling Began	6-24-87	Com	pleted <u>6-</u>	25-87		. Type tools	Cabletool	Size of hol	ein.
Elevation of la	nd surface or	·	<u> </u>		t well	is	ft. Total depth	of well4	0'ft.
Completed we	llis 🏷 sh	allow 🗔 a	artesian.		1	Depth to wat	er upon completion	of well_7	ft.
Depth	in Feet	Thickness	tion 2. PRING					Estimate	d Yield
From	То	in Feet		Description	n of V	Vater-Bearing	Formation		er minute)
34	39	5	Ri	ver Ro	ock	9		7gr	m
							<u> </u>		
	1	·					••,,,,		
L									
	· · · · · · · · · · · · · · · · · · ·	·			ORD	OF CASING		<u> </u>	
Diameter (inches)	Pounds per foot	Threads per in.	Depth Top	in Feet Botto		Length (feet)	Type of Sho	e Pe From	rforations To
9 "	15 lbs.	welded	0	. 40		40	standerd	35	39
				•					
L		l		L				I	I
Depth	in Feet	Hole	ion 4. RECOI	T		bic Feet			
From	То	Diameter	of Mi	-		Cement	Metho	d of Placemen	t

8|80C|T | | STATE ENGINEER Þ Section 5. PLUGGING RECORD 00 Plugging Contractor Deptit in Eet Cubic Feet of Cement No. Plugging Method . 13 Тор Date Well Plugged 1 Plugging approved by: 2 State Engineer Representative ÷-||₩--3 4

Date Received 10-11-88

FOR USE OF STATE ENGINEER ONLY

_____ FWL _____ FSL__ Quad _ Use STM Location No. 29N. 111. 22. 420 89-2138 File No.__

			Secret 6. LOG OF HOLE
	in Feet	Thickness in Feet	Color and Type of Material Encountered
<u> </u>	<u>To</u> 3	3	Top Soil
3	9	6	Brown clay
9	33	24	Quick sand
33	39	6	River Rocks
	40	1.	Grey Shale
<u> </u>			
·			
<u> </u>			
			· · · · · · · · · · · · · · · · · · ·
		<u> </u>	
· · · · · · · · · · · · · · · · · · ·			

Section 7. REMARKS AND ADDITIONAL INFORMATION

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

-

2/2 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.

			Фте	ENGINEER	OFFICE			Revis	ed June 19
	: • • • •		w	ELL RECO	DRD			, and a second s	
			Section 1. C	GENERAL IN	FORMATI	ON			
) Owner of	well CALL	<u>oll w.</u>	Woo	ten			- Owner's W	/ell No	
Street or City and	Post Office Ad StateB	dress <u>Bo</u> , Loo M Fiel	(1841 d , NM	. 87	413			·.	
	l under Permit								
	.) <u>NE</u> %	-			-				N.M.P.
	No								
Subdi	vision, recorded	1 in		C	ounty.	•			
d. X≖ the	<u>`</u>	_ feet, Y≖		feet, N.	M. Coordina	ate System		······	Zone Grai
) Drilling (Contractor	Bob	SAVA	qe		Licens	e No	0-847	1
	PO Bo				•				
•	<u>oct-20</u> .						~		
evation of la	nd surface or _	-							
ompleted wel	ll is the si	hallow 🗖 a	rtesian.		Depth to wa	ater upon co	mpletion of	well <u>186</u>	
Depth	in Feet	Thickness	tion 2. PRINCI					Estimated	
From	To	in Feet		scription of		-		(gallons per minute)	
125	2.85	60	WAT	er s	Nd	Benta	wite	10	
					<u> </u>				·······
			Section	3. RECORD	OF CASIN	<u> </u>			
Diameter (inches)	Pounds per foot	Threads	Depth ir Top	Bottom	Length (feet)	Ту	e of Shoe	Perfo From	To
7	21	webed		Byttem	39		Ne		
4	PVC				306	^	IONE	266	306
· • •			ion 4. RECOR			CEMENTING	S 0) J	
· · · ·	in Feet To	Hole Diameter	Sacks of Mu		ubic Feet f Cement	LBL LBL		f Placement	
		1						5	
Depth								<u>.</u>	
Depth						1		-	
Depth								, ¹	
Depth						UUE. N. 7		n .	
Depth			Section	S. PLUGGI	NG RECOR	N. MEX		n .	-
Depth From	ractor		Section	S. PLUGGI		2 m D		n	ubic Fee
Depth From	iod	••••••••••				2 m D			
Depth From	nod	••••••••••	Section			2. 5 0. 7 0. 70			
Depth From	nod					2 3 m m x D			
Depth From	nod				м И	2 3 m m x D			Cubic Fee of Cement
Depth From	nod	State En	gincer Represed	ntative DF STATE E	NI NI NGINEER C				of Cemen

(San Anan)

			Section 6. LOG OF HOLE
Depth From	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
1+9	225	176	Gray Shale + clay
225	285	60	WATER SAN'S Mixed with Bentwite
285	305	20	Gray Shale + Clay
· · · · · · · · · · · · · · · · · · ·			
	•		
·····			
<u> </u>			
····			
	3		
<u></u>			
	•	Section	7. REMARKS AND ADDITIONAL INFORMATION

UNUSUAL FORMATION BECAUSE WAter SAND was mixed with Bentonite and the water taste very Bitter

.

.

· . .

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

Be Saray

ł

ABCHORS: This terms about to be a construction of the probability of the transformed of the ded to be up to probability of the terms of terms of

Stree or Post Office AddressR2, #1 _ Box _ 246 City and StateAttoo H, Mostlero G ell was drilled under Femir No S, J 740 a & # _ # _ # _ # _ # _ # _ # of Section 27	ate Receive		/78		Quad		FWL	FSL	
Section 1. GENERAL INFORMATION 1) Owner of well 2dd H, BBown Street of Paol (Re. Address RW, #1 = Box. 248 City and State - Astes - N. Markooy ell was drilled under Fermit No B, J. 700 a By M By M, By M, M M O Section 27 - State of Name of Map No. of Map No. c. Lot No. of Map No. of Map No. c. Lot No. of Map No. d. Xe feet, Y= (Internation, recorded in Barn Barna County d. Xe - feet, Y= (Internation, recorded in Barna Di Duiling Contractor John Configure Alters Br. #1 Box 2600 B Astes N. Mex. milling Bana July 10 Type Loologabia Size of holy theration of had surface or at well is at well is # stallow Section 2. FRINCIPAL WATER-HEARING STRATA Kept in Feet Description of Water-Bearing Formation Jo 10 Jo 10 Section 3. RECORD OF CASING Section 3. PLUGGING RI CORD Section 5. PLUG	Date Receive	a _ 7/13	/78						
Section 1. GENERAL INFORMATION O"BQI "ALL INFORMATION O"BQI "ALL INFORMATION Street or Fourished State Asteo H, Heardow Street or Fourished State Asteo H, Heardow Asteo H, Heardow O"BQI "ALL INFORMATION BOL The State Asteo H, Heardow Asteo H, Heardow Asteo H, Heardow Asteo H, Heardow Interview of Block No of the				FOR USE	OF STATE EN	IGINEER ONL	.Υ		
Section 1. GENERAL INFORMATION Owner of well <u>Lidd II.</u> , <u>BRown</u> Street or Post Office Address <u>NP</u> , <u>#1</u> Box 24(8) City and State <u>Asteo N, Mextaloo</u> , ell was drilled under Permit No. <u>S, J.</u> , <u>700</u> and is located in the: a. <u>BW</u> <u>% <u>SW</u> <u>% <u>HW</u> <u>%</u> <u>W</u> of Section <u>27</u> Town<u>B</u><u>B</u><u>O</u><u>N</u>, <u>Range <u>41</u> <u>W</u>, <u>MN</u> <u>ND</u>, b. Tract No of Map No of the County. c. Lot No of Block No (ret, NM. Coordinate System Z, the the <u>SM</u> <u>Asteo B. Asteo H. Mox.</u> c. Lot No of Block No (ret, NM. Coordinate System Z, the the <u>SM</u> <u>County</u> <u>County</u>. c. Lot No fret, Y (ret, NM. Coordinate System Z, the the <u>SM</u> <u>County</u> <u>County</u> <u>County</u>. c. License N <u>SM</u> <u>County</u> <u>Cou</u></u></u></u>									
Section 1. GENERAL INFORMATION O'Bid 2 ¹ Bit -		-	State Er	igineer Renree	entative				
Section 1. GENERAL INFORMATION) Owner of well <u>Lidd II, BRown</u> Owner of well <u>Lidd II, BRown</u> Owner of well <u>Lidd II, BRown</u> Street or Pool fice Address - RP, #1 Box 21/8 Owner of well <u>Lidd II, BRown</u> Owner of Well <u>Lidd II, BRown</u> Street or Pool fice Address - RP, #1 Box 21/8 San Jacob - Reg. #1 Box 21/8 San Jacob - Reg. #1 Box 21/8 ell was drilled under Permit No.By, J., 700 and is located in the: a. BW - W BW - W BW - W of Section 27 Townbgg, N. Range - 41 W. NA b. Tract No of Block No of the			·····		······································		<u>├ ×-</u>	й	
Section 1. GENERAL INFORMATION OWERT OF WERE ALL INFORMATION OWERT OF ALL INFORMATION OWERT OF ALL INFORMATION OWERT OF ALL INFORMATION <	lugging Meth	hod					Top 😤 B	oftom of	Cement
Section 1. GENERAL INFORMATION •) Ower of well Edd II, BROWN Street or Fost Office AddressR?_#L Box_2 g8 City and StateAstoo II, Jestisloo,								3.	thic Feet
Section 1. GENERAL INFORMATION OWERI DIAL OWERI OF AddressR2_#1 Box_2 g OWERI ALSO Construction of the					n 5. PLUGGIN	G RECORD	· · · ·	6	
Section 1. GENERAL INFORMATION Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Overaid Will, No. #1 Section 2. GENERAL INFORMATION Section 2. GENERAL INFORMATION Section 2. GENERAL INFORMATION Section 2. GENERAL INFORMATION Section 3. GENERAL INFORMATION Section 3. RECORD OF CASING Diameter Pounds Threads Depth in Feet Hole Section 4. RECORD OF CASING Section 4. RECORD OF MUDDING: AND CEMENTING Section 4. RECORD OF MUDDING: A		1	1		<u>l</u>	L_	a sta	:	
Section 1. GENERAL INFORMATION OVERGENERAL INFORMATION Site or Post Office Address FR2: #1 Box 24,8 COVERGENERATION OVERGENERATION OVERGENERATION OVERGENERATION Site of Post Office Address Covered and set occurs and is located in the: a SW 4 SW - M - M of Section 27 Townshipp Na Range 11 W. NM NM Bit of No Contractor 20 Map No. of the Subdivision, recorded in Ban Jaun Contractor John C. Harg18 License NSM D. 721; diatao Size of hole Size of hole Size of hole Size of hole Poth in Feet The Size of hole Size of hole Size of hole Size of hole <							Bua		
Section 1. GENERAL INFORMATION O'BRIGHTLON Stret or Fost Office Address Stret No. O'BRICK No. Of Block No. Stret NM. Coordinate System Stret NM. Coordinate System Stret of No. Stret NM. Coordinate System Stret NM. Coordinate System Stret NM. Coordinate System Stret of No. Office Constractor Office Constractor Output: Stret NM. Coordinate System Stret NM. Stret NM. Coordinate System Output: St							AL		
Section 1. GENERAL INFORMATION Section 1. GENERAL INFORMATION Site of well Edd. II. BROWN Site of Sol Office Address Site of Sol Office Address Site of Sol Office Address Owndd Will, No			·					<u></u>	
Section 1. GENERAL INFORMATION Section 1. GENERAL INFORMATION Street or Post Office Address	From	- 10	Dameter	OI MI		cement			
Section 1. GENERAL INFORMATION Section 1. GENERAL INFORMATION Size of a Book Address Size of or Post Office Address Size of or Sol Office Address Size of or Sol Office Address Size of or Sol Office Address Size of or Sol Office Address Size of or Sol Office Address Size of Permit No. S. J. 700 and is located in the: a. SW a. Switch address Ownshipp N.M. Address Colspan="2">Size of Address Address Colspan= B Azteo N. Mex. To in Feet Drilling Contractor Joint C. Hargis License Not address Azteo N. Mex. Type tools Cable Size of hole Size of hole <t< td=""><td></td><td></td><td>Hole</td><td>Sack</td><td>s Cu</td><td>bic Feet</td><td></td><td>of Placement</td><td></td></t<>			Hole	Sack	s Cu	bic Feet		of Placement	
Section 1. GENERAL INFORMATION Owned of Well Lidd II, BRown Street or Post Office Address Fig. #1 Box 21,8 City and State Agtor N. Wertoo, City and State Agtor N. Wertoo, and is located in the: a.gtor N. Wertoo, and is located in the: a.gtor N. Wertoo, A gtor N. Wertoo, of Map No. County. d. Aster No. Subdivision, recorded in San Jaun County. d. X= the			Sect	tion 4. RECO	RD OF MUDDI	NG-AND CEM	ENTING		_
Section 1. GENERAL INFORMATION Owned of Well Lidd II, BRown Street or Post Office Address Fig. #1 Box 21,8 City and State Agtor N. Wertoo, City and State Agtor N. Wertoo, and is located in the: a.gtor N. Wertoo, and is located in the: a.gtor N. Wertoo, A gtor N. Wertoo, of Map No. County. d. Aster No. Subdivision, recorded in San Jaun County. d. X= the									
Section 1. GENERAL INFORMATION Owner of well <u>Lide II, BRown</u> Street or Post Office Address <u>RP2 #1 Box 2lg8</u> City and State <u>Astoo Netion 2000</u> and is located in the: a. <u>BR0 M. Mox - #1 - Street or Post Office Address RP3 #1 Box 2lg8</u> City and State <u>Astoo Netion 2000</u> and is located in the: a. <u>BW</u> 4 <u>SW</u> 4. <u>NW</u> 4. <u>M</u> of Section 27 Townshipo N. Nonshipo N. Nonshipo N. Range <u>11 W.</u> N. b. Tract No. of Map No. of Map No. County. b. Tract No. of Map No. County. d. X= County. county. d. X= Section 2. Flarg1s License No. Office On To To To To To To To County. d. X= Completed July 10 Type tools Cables Size of holo </td <td></td> <td></td> <td>ļļ</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			ļļ						
Section 1. GENERAL INFORMATION Owned of Will Lide II.g. BRown Street or Post Office Address Rife #1 Box 2148 City and State			MOTO	U	20	20		eken non	9
Section 1. GENERAL INFORMATION Owned of Will Will, No		<u> </u>						From	То
Section 1. GENERAL INFORMATION Owner of well Lidd II, BRomm Street or Post Office Address N. #1 Box 21/8 City and State Astoo N. Wox1000 and is located in the: a. Street or Post Office Address N. #1 Box 21/8 City and State Astoo N. Wox1000 and is located in the: a. Street or Post Office Address Astoo N. Wox1000 and is located in the: a. Street or Post Office Address Astoo N. May No					in Feet	Length	Type of Shoe		ations
Section 1. GENERAL INFORMATION OWDMICH IL, BROWN Street or Post Office Address RP #1 Box 248 City and State Aztoo N. Waxloop ell was drilled under Permit No. 8. #1 Box 248 City and State Aztoo N. Waxloop and is located in the: a. BW 4 BW 4 BW 4 BW 4 Colspan="2">Street or Post Office Address Age 14 Wo and is located in the: a. BW 4 BW 4 BW 4 SW 4 OF Section 27 Townshipp No. of the Colspan= 14 Wo N. N. b. Tract No. of Map No. of the Colspan= 6 Street of Map No. of the Subdivision, recorded in San Jaun County. d. K. Contractor John C. Rarg1s License NogM D. 724 ddress RT. #1 Box 260%= B Aztoo N. Mox. rithing Began July 9 Completed July				Section	n 3. RECORD (OF CASING			
Section 1. GENERAL INFORMATION OWDMICH IL, BROWN Street or Post Office Address RP #1 Box 248 City and State Aztoo N. Waxloop ell was drilled under Permit No. 8. #1 Box 248 City and State Aztoo N. Waxloop and is located in the: a. BW 4 BW 4 BW 4 BW 4 Colspan="2">Street or Post Office Address Age 14 Wo and is located in the: a. BW 4 BW 4 BW 4 SW 4 OF Section 27 Townshipp No. of the Colspan= 14 Wo N. N. b. Tract No. of Map No. of the Colspan= 6 Street of Map No. of the Subdivision, recorded in San Jaun County. d. K. Contractor John C. Rarg1s License NogM D. 724 ddress RT. #1 Box 260%= B Aztoo N. Mox. rithing Began July 9 Completed July									
Section 1. GENERAL INFORMATION Owner of well Edd II., BRown Owner of well Edd II., BRown Street or Post Office Address R2, #1 Box 2148 Owner of well Edd II., BRown Owner of Post Office Address Rays Owner of Well Edd II. Owner of Well Eddress Rays Attempting Eddress Owner of Map No. of the County. Cou						·			
Section 1. GENERAL INFORMATION Owner of well Edd II., BRown Owner of well Edd II., BRown Street or Post Office Address RIP, #1 Box 2148 City and State Aztoo N. Woxioop and is located in the: a. #1 Box 2148 City and State Aztoo N. Woxioop and is located in the: a. #1 Box 200 and is located in the: a. BW % BW % of Section 27 TownshipO_N. N.N. b. Tract No. of Map No. of the c. Lot No. of Block No. Ounty. c. Lot No. of Block No. County. d. X= feet, Y= feet, N.M. Coordinate System Zo the Contractor John C. Harg18 Aztoo N. Mox. Completed July 10 Type tools Cable Size of holp evation of land surface or			· · · · ·						
Section 1. GENERAL INFORMATION CONDICION CONDI	10	20	10	Bou	ldors & E	and			
Section 1. GENERAL INFORMATION Section 1. GENERAL INFORMATION Owner of well Lide II. BRown Street or Post Office Address Reference Address Street or Post Office Address Reference Address Street or Post Office Address Reference Address Reference Address Reference Address Reference Street or Post Office Address Reference Address Reference Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Reference Street or Post Office Address Street or Post Office A	1.1019	10			••••••••••••••••••••••••••••••••••••••				
Section I. GENERAL INFORMATION OWBLAWBLNO. #1 OwblawBLNO. #1 Street or Post Office Address <u>R12. #1 Box 248</u> City and State <u>Astoo N.Mexicos</u> and is located in the: a. <u>8W</u> 4 <u>SW</u> 4 <u>SW</u> 4 <u>SW</u> 4 of Section <u>27</u> Townships <u>N</u> . Range <u>11 W</u> . N.N. b. Tract No of Map No of the c. Lot No of Block No of the c. Lot No of Block No of the subdivision, recorded in <u>San Jaun</u> County. d. X= feet, Y= feet, N.M. Coordinate System Za the feet, Y= feet, N.M. Coordinate System Za the County. d. X= feet, Y= feet, N.M. Coordinate System Za the County. d. X= feet, Y= feet, N.M. Coordinate System Za the County. d. San July 9 Completed July 10 Type tools Cable Size of holy evation of I and surface or at well is ft. Total depth of well <u>20</u> pupleted well is shallow artesian Depth to water upon completion of well <u>7</u>				s L	Description of W	ater-Bearing F	ormation		
Section 1. GENERAL INFORMATION Ow Did Will No. #1 Street or Post Office Address <u>R? #1 Box 248</u> City and State <u>Aztoo N. Mox1005</u> and is located in the: a. <u>SW</u> 4 <u>SW</u> 4 <u>NW</u> 4 <u>M</u> 4 of Section <u>27</u> Township <u>9 N</u> . Range <u>11 W</u> . N.N. b. Tract No of Map No of the c. Lot No of Block No of the subdivision, recorded in <u>Sun Jaun</u> County. d. X= feet, Y= feet, N.M. Coordinate System County. d. X= feet, Y= feet, N.M. Coordinate System County. d. Drilling Contractor John C. Rarg1B License No Size of holo the Completed July 10 Type tools Cable Size of holo evation of land surface or at well is ft. Total depth of well <u>20</u>		<u>_</u>	Sec	ction 2. PRIN	CIPAL WATER	-BEARING ST	RATA		
Section 1. GENERAL INFORMATION OWENDER CONTROL OF The Control of the Subdivision, recorded in Sen Jaun County.	mpleted we	ellis ⊑ <mark>77</mark> e	shallow 🗖	artesian.	1	Depth to water	upon completion of	well 7	I
Section 1. GENERAL INFORMATION OWENDER CONTROL OF The Control of the Subdivision, recorded in Sen Jaun County.	evation of la	and surface or _			at well	is	_ ft. Total depth of	well_ <u>20</u>	1
Section 1. GENERAL INFORMATION OWENDER INFORMATION OWENDER IN C. #1				-					
Section 1. GENERAL INFORMATION OWERIGHTIC.) Owner of well <u>Lidd II. BRown</u> Street or Post Office Address <u>Rig. #1 Box 248</u> City and State <u>Astoo N. Maxloo</u> ell was drilled under Permit No. Sy J. 700 and is located in the: a. <u>SW</u> 4 <u>SW</u> 4 <u>NW</u> 4 <u>M</u> 4 of Section 27 Township N. Range <u>11 W. N. N. B. Tract No.</u> of Map No. of the <u>11 W. Subdivision, recorded in <u>Sgn Jaun</u> County. c. Lot No. <u></u></u>								0	
Section 1. GENERAL INFORMATION Owred Colspan="2"				-				। त्म	
Section 1. GENERAL INFORMATION Control of the subdivision, recorded in <u>San Jaun</u> feet, N.M. Coordinate System 24	Drilling	Contractor	hn C. Fr	17071 a			_ License No		
Section 1. GENERAL INFORMATION C. C. Lot No of Block No of the									
Section 1. GENERAL INFORMATION Section 1. GENERAL INFORMATION White Correction of the Owner of the							System		7.000
Section 1. GENERAL INFORMATION N) Owner of well <u>Ldd_II_BRown</u> Street or Post Office Address <u>RV_ #1 Box_248</u> City and State <u>Aztoo N.Mox1005</u> Well was drilled under Permit No. <u>S_J_ 700</u> and is located in the: a. <u>SW</u> ¹ / ₂ <u>SW</u> ¹ / ₂ <u>NW</u> ¹ / ₂ <u>%</u> of Section <u>27</u> Township <u>N.</u> Range <u>11 W.</u> N.N b. Tract No of Map No of the									
Section 1. GENERAL INFORMATION N) Owner of well <u>Ldd II. BRown</u> Street or Post Office Address <u>RU. #1 Box 248</u> City and State <u>Aztoo N. Mox100</u> /ell was drilled under Permit No.SyJ. 700 and is located in the: a. <u>SW</u> 4 <u>SW</u> 4 <u>NW</u> 4 4 of Section 27 Township N. Range _11 - W. N.N.									··· ·· . • · · · •
Section 1. GENERAL INFORMATION A) Owner of well <u>Ldd II. BRown</u> Street or Post Office Address <u>RV. #1 Box 248</u> City and State <u>Aztoo N. Hoxioo</u> well was drilled under Permit No. S. J. 700 and is located in the:					-	-			
Section 1. GENERAL INFORMATION N) Owner of well <u>Ldd II. BRown</u> Street or Post Office Address <u>RV. #1 Box 248</u> City and State <u>Aztoo N. Mox100</u>	•					-		44 W	NMP
Section 1. GENERAL INFORMATION Owner of well <u>Ltd. II. BRown</u> Street or Post Office Address <u>R'2. #1 Box 21.8</u> Ow <u>Brid</u> Will, No. <u>#1</u>				-		and is located	in the:		
Section 1. GENERAL INFORMATION	Street of	r Post Office Ad	ddressR	- #1 Bo	к 248				
STATE SUBJECT OFFICE WELL RECORD SATISFIC STATE STATE STATE STATE Section 1. GENERAL INFORMATION	() Owner a	of well <u>Rdd I</u>	I. BRown					γ <u>-</u> 1 1 Νο#1	
STATE SINEER OFFICE STATE THE TANK OFFICE				Section 1.	GENERAL IN	FORMATION	ALL PERMIT	FFIC	
STATE SINEER OFFICE STATE		•		,	WELL RECO	RD S_A	The Flight		0.00
A F Revised 1				STAT	re Ny Jineer	OFFICE ST.	F_{II}^{i}	1 17 1.31	
■ 「「「「」」「「」」「「」」」「「」」」「「」」」」」							12 Ja 13 Du	ForRevise	a 1 97

KEMARKS AND ADDITIONAL INFORMATION			
·			
			·····
·			
and the second se	5 . get		
	-		
· · · · · · · · · · · · · · · · · · ·			
	 		
	┼		
	<u></u>		
Boulders Sant & Gravel Brown	50	50	0
			()55
	<u>├</u>		
	ļļ.		
Color and Type of Material Bincountered	1997 ni	oT	From
headencould leisate trib any The scient	Thickness	h in Feet	IqsQ

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.

. .

.

Drifter Junjo are fear 3

•

Constant Constan

INSTRUCTION: This form should be executed in triplicate, preferably the fitten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and acutately as possible when any well is difficult transformed with the form scheme is a new conditioner of the State Engineer. All sections, except Section 5, shall be answered as completely and acutately as possible when any well is difficult transformed with the sections.