

**GW - \_\_\_\_001\_\_**

**LANDFILLS**

## Chavez, Carl J, EMNRD

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**From:** Cobrain, Dave, NMENV  
**Sent:** Wednesday, November 18, 2009 9:50 AM  
**To:** Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV  
**Cc:** VonGonten, Glenn, EMNRD; Kieling, John, NMENV  
**Subject:** RE: Western Refining SW- Bloomfield Refinery (GW-001) - Active Landfill Waste Stream Sampling

Carl,

The TCLP results that we received indicate that the waste is not hazardous, although the PQLs being listed as the actual D-listing limits for everything but mercury are not reporting levels that we would consider to be acceptable if this action wasn't a preliminary characterization and was being conducted as part of cleanup under their Order. The waste doesn't meet our cleanup levels but it's not hazardous waste based on these reported results.

Dave

Main HWB Phone: 505-476-6000  
Direct Office Phone: 505-476-6055  
Fax: 505-476-6030 or 505-476-6060

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, November 18, 2009 9:20 AM  
**To:** Monzeglio, Hope, NMENV  
**Cc:** Cobrain, Dave, NMENV; VonGonten, Glenn, EMNRD  
**Subject:** RE: Western Refining SW- Bloomfield Refinery (GW-001) - Active Landfill Waste Stream Sampling

Hope and Dave:

Based on the OCD's preliminary review of maximum concentration for toxicity characteristics of the analytical data for FCC and Precipitator Fines, it does not appear that they are characteristically hazardous (ignitability, corrosivity & reactivity); however, arsenic and selenium may be at hazardous concentrations? I notice that Selenium MDL is 24 mg/kg and shows a "ND", which when divided by 20 to estimate the TCLP in mg/L units, it exceeds 1 mg/L. Arsenic appears to exceed outright.

The WQCC parameters that may be exceeded based on dividing the mg/kg by 20 to obtain an estimated leachate concentration in mg/L are:

Alumium, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Nickel, Selenium, Silver, Zine, and Phenol.

Let us know what you think? Thanks.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Tuesday, November 17, 2009 4:15 PM



**To:** Chavez, Carl J, EMNRD  
**Cc:** Cobrain, Dave, NMENV  
**Subject:** FW: Bloomfield Refinery - Active Landfill Waste Stream Sampling

FYI, here are the analytical results for the FCC fines and precipitate fines

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**From:** Hurtado, Cindy [mailto:Cindy.Hurtado@wnr.com]  
**Sent:** Tuesday, November 17, 2009 1:35 PM  
**To:** Monzeglio, Hope, NMENV; Schmaltz, Randy  
**Cc:** Krakow, Bob; Robinson, Kelly  
**Subject:** Bloomfield Refinery - Active Landfill Waste Stream Sampling

Good Afternoon Hope,

Please find attached the analytical results of samples from Bloomfield Refinery's FCC Fines and Precipitator Fines as requested at the October 20, 2009 meeting with OCD and NMED in OCD's Santa Fe office as well as the subsequent October 27, 2009 letter (*Waste Stream Sampling at the Active Landfill*) from NMED. Please contact Randy Schmaltz if you have questions.

Thanks,  
Cindy

Cindy Hurtado  
Environmental Coordinator  
Western Refining Southwest, Inc. - Bloomfield Refinery  
[cindy.hurtado@wnr.com](mailto:cindy.hurtado@wnr.com)  
505-632-4161

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## COVER LETTER

Tuesday, November 10, 2009

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Waste Streams 10-22-09

Order No.: 0910440

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 10/23/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", written over a horizontal line.

Andy Freeman, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 10-Nov-09

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** FCC fines**Lab Order:** 0910440**Collection Date:** 10/22/2009 10:40:00 AM**Project:** Waste Streams 10-22-09**Date Received:** 10/23/2009**Lab ID:** 0910440-01**Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 7471: MERCURY</b>						Analyst: SNV
Mercury	ND	0.033		mg/Kg	1	11/3/2009 3:27:05 PM
<b>MERCURY, TCLP</b>						Analyst: IC
Mercury	ND	0.020		mg/L	1	10/29/2009 2:45:02 PM
<b>EPA METHOD 6010B: SOIL METALS</b>						Analyst: RAGS
Aluminum	70000	5700		mg/Kg	2000	11/3/2009 7:08:02 PM
Antimony	ND	48		mg/Kg	20	10/30/2009 4:36:42 PM
Arsenic	220	48		mg/Kg	20	10/30/2009 4:36:42 PM
Barium	400	1.9		mg/Kg	20	10/30/2009 4:36:42 PM
Beryllium	ND	2.9		mg/Kg	20	10/30/2009 4:36:42 PM
Cadmium	ND	1.9		mg/Kg	20	10/30/2009 4:36:42 PM
Calcium	1700	480		mg/Kg	20	10/30/2009 4:36:42 PM
Chromium	26	5.7		mg/Kg	20	10/30/2009 4:36:42 PM
Cobalt	ND	2.9		mg/Kg	10	11/3/2009 6:47:18 PM
Copper	62	5.7		mg/Kg	20	10/30/2009 4:36:42 PM
Iron	14000	950		mg/Kg	1000	11/4/2009 11:16:38 AM
Lead	46	4.8		mg/Kg	20	10/30/2009 4:36:42 PM
Magnesium	8000	480		mg/Kg	20	10/30/2009 4:36:42 PM
Manganese	78	1.9		mg/Kg	20	10/30/2009 4:36:42 PM
Nickel	120	9.5		mg/Kg	20	10/30/2009 4:36:42 PM
Potassium	ND	950		mg/Kg	20	10/30/2009 4:36:42 PM
Selenium	ND	24		mg/Kg	10	11/3/2009 6:47:18 PM
Silver	ND	4.8		mg/Kg	20	10/30/2009 4:36:42 PM
Sodium	3300	480		mg/Kg	20	10/30/2009 4:36:42 PM
Thallium	ND	48		mg/Kg	20	10/30/2009 4:36:42 PM
Vanadium	540	48		mg/Kg	20	10/30/2009 4:36:42 PM
Zinc	1700	120		mg/Kg	50	10/30/2009 4:49:41 PM
<b>EPA METHOD 6010B: TCLP METALS</b>						Analyst: RAGS
Arsenic	ND	5.0		mg/L	1	10/29/2009 10:41:11 AM
Barium	ND	100		mg/L	1	10/29/2009 10:41:11 AM
Cadmium	ND	1.0		mg/L	1	10/29/2009 10:41:11 AM
Chromium	ND	5.0		mg/L	1	10/29/2009 10:41:11 AM
Lead	ND	5.0		mg/L	1	10/29/2009 10:41:11 AM
Selenium	ND	1.0		mg/L	1	10/29/2009 10:41:11 AM
Silver	ND	5.0		mg/L	1	10/29/2009 10:41:11 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Acenaphthylene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Aniline	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 10-Nov-09

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0910440  
Project: Waste Streams 10-22-09  
Lab ID: 0910440-01

Client Sample ID: FCC fines  
Collection Date: 10/22/2009 10:40:00 AM  
Date Received: 10/23/2009  
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Azobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Benz(a)anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Benzoic acid	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
Benzyl alcohol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Carbazole	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
4-Chloroaniline	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
2-Chlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Chrysene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
Di-n-octyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Dibenzofuran	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
Diethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Dimethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/3/2009 4:06:55 PM
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/3/2009 4:06:55 PM
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	11/3/2009 4:06:55 PM
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
Fluoranthene	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
Fluorene	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
Hexachlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Hexachlorobutadiene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 10-Nov-09

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0910440  
Project: Waste Streams 10-22-09  
Lab ID: 0910440-01

Client Sample ID: FCC fines  
Collection Date: 10/22/2009 10:40:00 AM  
Date Received: 10/23/2009  
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Hexachloroethane	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Indeno(1,2,3-cd)pyrene	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
Isophorone	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
2-Methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
3+4-Methylphenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Naphthalene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
2-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
3-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
4-Nitroaniline	ND	0.25		mg/Kg	1	11/3/2009 4:06:55 PM
Nitrobenzene	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
2-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
4-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Pentachlorophenol	ND	0.40		mg/Kg	1	11/3/2009 4:06:55 PM
Phenanthrene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Phenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Pyrene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Pyridine	ND	0.50		mg/Kg	1	11/3/2009 4:06:55 PM
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:06:55 PM
Surr: 2,4,6-Tribromophenol	126	35.5-141		%REC	1	11/3/2009 4:06:55 PM
Surr: 2-Fluorobiphenyl	74.5	30.4-128		%REC	1	11/3/2009 4:06:55 PM
Surr: 2-Fluorophenol	73.4	28.1-129		%REC	1	11/3/2009 4:06:55 PM
Surr: 4-Terphenyl-d14	63.1	34.6-151		%REC	1	11/3/2009 4:06:55 PM
Surr: Nitrobenzene-d5	75.6	26.5-122		%REC	1	11/3/2009 4:06:55 PM
Surr: Phenol-d5	75.6	37.6-118		%REC	1	11/3/2009 4:06:55 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 10-Nov-09

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0910440  
**Project:** Waste Streams 10-22-09  
**Lab ID:** 0910440-02

**Client Sample ID:** Precip fines  
**Collection Date:** 10/22/2009 10:30:00 AM  
**Date Received:** 10/23/2009  
**Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 7471: MERCURY</b>						Analyst: SNV
Mercury	ND	0.033		mg/Kg	1	11/3/2009 3:52:51 PM
<b>MERCURY, TCLP</b>						Analyst: IC
Mercury	ND	0.020		mg/L	1	10/29/2009 2:46:50 PM
<b>EPA METHOD 6010B: SOIL METALS</b>						Analyst: RAGS
Aluminum	76000	15000		mg/Kg	5000	10/30/2009 5:20:26 PM
Antimony	ND	49		mg/Kg	20	10/30/2009 4:22:01 PM
Arsenic	200	49		mg/Kg	20	10/30/2009 4:22:01 PM
Barium	260	2.0		mg/Kg	20	10/30/2009 4:22:01 PM
Beryllium	ND	2.9		mg/Kg	20	10/30/2009 4:22:01 PM
Cadmium	ND	2.0		mg/Kg	20	10/30/2009 4:22:01 PM
Calcium	6600	490		mg/Kg	20	10/30/2009 4:22:01 PM
Chromium	48	5.9		mg/Kg	20	10/30/2009 4:22:01 PM
Cobalt	6.1	5.9		mg/Kg	20	11/3/2009 7:16:26 PM
Copper	120	5.9		mg/Kg	20	10/30/2009 4:22:01 PM
Iron	36000	980		mg/Kg	1000	11/4/2009 11:25:49 AM
Lead	30	4.9		mg/Kg	20	10/30/2009 4:22:01 PM
Magnesium	43000	490		mg/Kg	20	10/30/2009 4:22:01 PM
Manganese	180	2.0		mg/Kg	20	10/30/2009 4:22:01 PM
Nickel	220	9.8		mg/Kg	20	10/30/2009 4:22:01 PM
Potassium	ND	980		mg/Kg	20	10/30/2009 4:22:01 PM
Selenium	ND	49		mg/Kg	20	11/3/2009 7:16:26 PM
Silver	ND	4.9		mg/Kg	20	10/30/2009 4:22:01 PM
Sodium	2600	490		mg/Kg	20	10/30/2009 4:22:01 PM
Thallium	ND	49		mg/Kg	20	10/30/2009 4:22:01 PM
Vanadium	2400	240		mg/Kg	100	10/30/2009 5:06:03 PM
Zinc	1700	240		mg/Kg	100	10/30/2009 5:06:03 PM
<b>EPA METHOD 6010B: TCLP METALS</b>						Analyst: RAGS
Arsenic	ND	5.0		mg/L	10	10/29/2009 11:52:05 AM
Barium	ND	100		mg/L	10	10/29/2009 11:52:05 AM
Cadmium	ND	1.0		mg/L	10	10/29/2009 11:52:05 AM
Chromium	ND	5.0		mg/L	10	10/29/2009 11:52:05 AM
Lead	ND	5.0		mg/L	10	10/29/2009 11:52:05 AM
Selenium	ND	1.0		mg/L	10	10/29/2009 11:52:05 AM
Silver	ND	5.0		mg/L	10	10/29/2009 11:52:05 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Acenaphthylene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Aniline	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 10-Nov-09

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0910440  
Project: Waste Streams 10-22-09  
Lab ID: 0910440-02

Client Sample ID: Precip fines  
Collection Date: 10/22/2009 10:30:00 AM  
Date Received: 10/23/2009  
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Azobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Benz(a)anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Benzoic acid	0.58	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
Benzyl alcohol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Carbazole	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
4-Chloroaniline	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
2-Chlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Chrysene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
Di-n-octyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Dibenzofuran	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
Diethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Dimethyl phthalate	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/3/2009 4:36:56 PM
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/3/2009 4:36:56 PM
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	11/3/2009 4:36:56 PM
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
Fluoranthene	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
Fluorene	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
Hexachlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Hexachlorobutadiene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 10-Nov-09

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0910440  
**Project:** Waste Streams 10-22-09  
**Lab ID:** 0910440-02

**Client Sample ID:** Precip fines  
**Collection Date:** 10/22/2009 10:30:00 AM  
**Date Received:** 10/23/2009  
**Matrix:** SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Hexachloroethane	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Indeno(1,2,3-cd)pyrene	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
Isophorone	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
2-Methylphenol	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
3+4-Methylphenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Naphthalene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
2-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
3-Nitroaniline	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
4-Nitroaniline	ND	0.25		mg/Kg	1	11/3/2009 4:36:56 PM
Nitrobenzene	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
2-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
4-Nitrophenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Pentachlorophenol	ND	0.40		mg/Kg	1	11/3/2009 4:36:56 PM
Phenanthrene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Phenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Pyrene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Pyridine	ND	0.50		mg/Kg	1	11/3/2009 4:36:56 PM
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	11/3/2009 4:36:56 PM
Surr: 2,4,6-Tribromophenol	81.3	35.5-141		%REC	1	11/3/2009 4:36:56 PM
Surr: 2-Fluorobiphenyl	59.1	30.4-128		%REC	1	11/3/2009 4:36:56 PM
Surr: 2-Fluorophenol	58.0	28.1-129		%REC	1	11/3/2009 4:36:56 PM
Surr: 4-Terphenyl-d14	48.1	34.6-151		%REC	1	11/3/2009 4:36:56 PM
Surr: Nitrobenzene-d5	60.1	26.5-122		%REC	1	11/3/2009 4:36:56 PM
Surr: Phenol-d5	60.5	37.6-118		%REC	1	11/3/2009 4:36:56 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit





### LABORATORY ANALYTICAL REPORT

Client: Hall Environmental  
Project: 0910440  
Lab ID: B09102074-001  
Client Sample ID: 0910440-01B, FCC Fines

Report Date: 10/30/09  
Collection Date: 10/22/09 10:40  
Date Received: 10/27/09  
Matrix: Solid

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>IGNITABILITY</b>							
Flash Point: (Ignitability)	>200	°F		30		SW1010M	10/28/09 15:30 / jh
<b>CORROSIVITY</b>							
pH of Soil and Waste	6.54	s.u.		0.10		SW9045D	10/30/09 12:00 / jh
<b>REACTIVITY</b>							
Cyanide, Reactive	ND	mg/kg		0.05	250	SW846 Ch 7	10/28/09 11:38 / kjp
Sulfide, Reactive	ND	mg/kg		20	500	SW846 Ch 7	10/28/09 08:00 / pwc

Report Definitions: RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



ENERGY LABORATORIES, INC. \* 1120 S 27th St \* PO Box 30916 \* Billings, MT 59107-0916  
\* 406.252.6325 \* FAX 406.252.6069

### LABORATORY ANALYTICAL REPORT

Client: Hall Environmental  
Project: 0910440  
Lab ID: B09102074-002  
Client Sample ID: 0910440-02B, Precip Fines

Report Date: 10/30/09  
Collection Date: 10/22/09 10:30  
Date Received: 10/27/09  
Matrix: Solid

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>IGNITABILITY</b>							
Flash Point (Ignitability)	>200	°F		30		SW1010M	10/28/09 15:30 / jh
<b>CORROSIVITY</b>							
pH of Soil and Waste	4.10	s.u.		0.10		SW9045D	10/30/09 12:00 / jh
<b>REACTIVITY</b>							
Cyanide, Reactive	ND	mg/kg		0.05	250	SW846 Ch 7	10/28/09 11:40 / kjp
Sulfide, Reactive	ND	mg/kg		20	500	SW846 Ch 7	10/28/09 08:00 / pwc

Report Definitions: RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## QA/QC Summary Report

Client: Hall Environmental  
Project: 0910440

Report Date: 10/30/09  
Work Order: B09102074

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW1010M Batch: R138167									
Sample ID: LCS-R138167	Laboratory Control Sample				Run: PENSKY MARTEN CLOSED C				10/28/09 15:30
Flash Point (Ignitability)	89.8	°F	30	100	98	102			
Method: SW846.CH 7 Batch: 42322									
Sample ID: MB-42322	Method Blank				Run: AUTOAN201-B_091028A				10/28/09 11:44
Cyanide, Reactive	ND	mg/kg	0.05						
Method: SW846.Ch 7 Batch: R138131									
Sample ID: MB-R138131	Method Blank				Run: MISC-HZW_091028C				10/28/09 08:00
Sulfide, Reactive	ND	mg/kg	10						
Sample ID: LCS-R138131	Laboratory Control Sample				Run: MISC-HZW_091028C				10/28/09 08:00
Sulfide, Reactive	30	mg/kg	20	104	50	150			
Method: SW9045D Analytical Run: PH METER_091030B									
Sample ID: ICV	Initial Calibration Verification Standard								10/30/09 12:00
pH of Soil and Waste	4.02	s.u.	0.10	100	98	102			
Method: SW9045D Batch: R138279									
Sample ID: B09102330-001ADUP	Sample Duplicate				Run: PH METER_091030B				10/30/09 12:00
pH of Soil and Waste	7.00	s.u.	0.10				0.7	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Waste Streams 10-22-09

Work Order: 0910440

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-20469

MBLK

Batch ID: 20469 Analysis Date: 11/3/2009 11:51:27 AM

Acenaphthene	ND	mg/Kg	0.20
Acenaphthylene	ND	mg/Kg	0.20
Aniline	ND	mg/Kg	0.20
Anthracene	ND	mg/Kg	0.20
Azobenzene	ND	mg/Kg	0.20
Benz(a)anthracene	ND	mg/Kg	0.20
Benzo(a)pyrene	ND	mg/Kg	0.20
Benzo(b)fluoranthene	ND	mg/Kg	0.20
Benzo(g,h,i)perylene	ND	mg/Kg	0.50
Benzo(k)fluoranthene	ND	mg/Kg	0.20
Benzoic acid	ND	mg/Kg	0.50
Benzyl alcohol	ND	mg/Kg	0.20
Bis(2-chloroethoxy)methane	ND	mg/Kg	0.20
Bis(2-chloroethyl)ether	ND	mg/Kg	0.20
Bis(2-chloroisopropyl)ether	ND	mg/Kg	0.20
Bis(2-ethylhexyl)phthalate	ND	mg/Kg	0.50
4-Bromophenyl phenyl ether	ND	mg/Kg	0.20
Butyl benzyl phthalate	ND	mg/Kg	0.20
Carbazole	ND	mg/Kg	0.20
4-Chloro-3-methylphenol	ND	mg/Kg	0.50
4-Chloroaniline	ND	mg/Kg	0.50
2-Chloronaphthalene	ND	mg/Kg	0.25
2-Chlorophenol	ND	mg/Kg	0.20
4-Chlorophenyl phenyl ether	ND	mg/Kg	0.20
Chrysene	ND	mg/Kg	0.20
Di-n-butyl phthalate	ND	mg/Kg	0.50
Di-n-octyl phthalate	ND	mg/Kg	0.20
Dibenz(a,h)anthracene	ND	mg/Kg	0.20
Dibenzofuran	ND	mg/Kg	0.20
1,2-Dichlorobenzene	ND	mg/Kg	0.20
1,3-Dichlorobenzene	ND	mg/Kg	0.20
1,4-Dichlorobenzene	ND	mg/Kg	0.20
3,3'-Dichlorobenzidine	ND	mg/Kg	0.25
Diethyl phthalate	ND	mg/Kg	0.20
Dimethyl phthalate	ND	mg/Kg	0.20
2,4-Dichlorophenol	ND	mg/Kg	0.40
2,4-Dimethylphenol	ND	mg/Kg	0.30
4,6-Dinitro-2-methylphenol	ND	mg/Kg	0.50
2,4-Dinitrophenol	ND	mg/Kg	0.40
2,4-Dinitrotoluene	ND	mg/Kg	0.50
2,6-Dinitrotoluene	ND	mg/Kg	0.50
Fluoranthene	ND	mg/Kg	0.25
Fluorene	ND	mg/Kg	0.50
Hexachlorobenzene	ND	mg/Kg	0.20

## Qualifiers:

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

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Waste Streams 10-22-09

Work Order: 0910440

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-20469		MBLK		Batch ID: 20469	Analysis Date: 11/3/2009 11:51:27 AM
Hexachlorobutadiene	ND	mg/Kg	0.20		
Hexachlorocyclopentadiene	ND	mg/Kg	0.20		
Hexachloroethane	ND	mg/Kg	0.20		
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.25		
Isophorone	ND	mg/Kg	0.50		
2-Methylnaphthalene	ND	mg/Kg	0.25		
2-Methylphenol	ND	mg/Kg	0.50		
3+4-Methylphenol	ND	mg/Kg	0.20		
N-Nitrosodi-n-propylamine	ND	mg/Kg	0.20		
N-Nitrosodiphenylamine	ND	mg/Kg	0.20		
Naphthalene	ND	mg/Kg	0.20		
2-Nitroaniline	ND	mg/Kg	0.20		
3-Nitroaniline	ND	mg/Kg	0.20		
4-Nitroaniline	ND	mg/Kg	0.25		
Nitrobenzene	ND	mg/Kg	0.50		
2-Nitrophenol	ND	mg/Kg	0.20		
4-Nitrophenol	ND	mg/Kg	0.20		
Pentachlorophenol	ND	mg/Kg	0.40		
Phenanthrene	ND	mg/Kg	0.20		
Phenol	ND	mg/Kg	0.20		
Pyrene	ND	mg/Kg	0.20		
Pyridine	ND	mg/Kg	0.50		
1,2,4-Trichlorobenzene	ND	mg/Kg	0.20		
2,4,5-Trichlorophenol	ND	mg/Kg	0.20		
2,4,6-Trichlorophenol	ND	mg/Kg	0.20		

Sample ID: lcs-20469		LCS				Batch ID: 20469		Analysis Date: 11/3/2009 1:07:17 PM	
Acenaphthene	1.200	mg/Kg	0.20	1.67	0	71.8	42.5	90	
4-Chloro-3-methylphenol	2.642	mg/Kg	0.50	3.33	0	79.3	39.6	101	
2-Chlorophenol	2.403	mg/Kg	0.20	3.33	0	72.2	40.1	96.7	
1,4-Dichlorobenzene	1.191	mg/Kg	0.20	1.67	0	71.3	34.6	95.3	
2,4-Dinitrotoluene	1.453	mg/Kg	0.50	1.67	0	87.0	37.1	101	
N-Nitrosodi-n-propylamine	1.181	mg/Kg	0.20	1.67	0	70.7	33.3	103	
4-Nitrophenol	2.636	mg/Kg	0.20	3.33	0	79.2	32.7	125	
Pentachlorophenol	2.670	mg/Kg	0.40	3.33	0	80.2	35.5	99.3	
Phenol	2.348	mg/Kg	0.20	3.33	0	70.5	35.5	104	
Pyrene	1.061	mg/Kg	0.20	1.67	0	63.5	34.4	90.6	
1,2,4-Trichlorobenzene	1.217	mg/Kg	0.20	1.67	0	72.9	38.5	95	

Method: EPA Method 7471: Mercury

Sample ID: MB-20496	MBLK				Batch ID: 20496	Analysis Date: 11/3/2009 3:04:25 PM
Mercury	ND	mg/Kg	0.033			
Sample ID: LCS-20496	LCS				Batch ID: 20496	Analysis Date: 11/3/2009 3:06:08 PM
Mercury	0.1678	mg/Kg	0.033	0.167	0	101 80 120

## Qualifiers:

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

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Waste Streams 10-22-09

Work Order: 0910440

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: MERCURY, TCLP											
Sample ID: MB-20461		MBLK									
Mercury	ND	mg/L	0.020								
Sample ID: Fluid #1 Check #305		MBLK									
Mercury	ND	mg/L	0.020								
Sample ID: LCS-20461		LCS									
Mercury	ND	mg/L	0.020	0.005	0	102	80	120			

## Qualifiers:

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

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Waste Streams 10-22-09

Work Order: 0910440

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 6010B: Soil Metals

Sample ID: MB-20468

MBLK

Batch ID: 20468 Analysis Date: 10/30/2009 2:08:46 PM

Aluminum	ND	mg/Kg	3.0
Antimony	ND	mg/Kg	2.5
Arsenic	ND	mg/Kg	2.5
Barium	ND	mg/Kg	0.10
Beryllium	ND	mg/Kg	0.15
Cadmium	ND	mg/Kg	0.10
Calcium	ND	mg/Kg	25
Chromium	ND	mg/Kg	0.30
Copper	ND	mg/Kg	0.30
Lead	ND	mg/Kg	0.25
Magnesium	ND	mg/Kg	25
Manganese	ND	mg/Kg	0.10
Nickel	ND	mg/Kg	0.50
Potassium	ND	mg/Kg	50
Silver	ND	mg/Kg	0.25
Sodium	ND	mg/Kg	25
Thallium	ND	mg/Kg	2.5
Vanadium	ND	mg/Kg	2.5
Zinc	ND	mg/Kg	2.5

Sample ID: MB-20468

MBLK

Batch ID: 20468 Analysis Date: 11/3/2009 6:13:36 PM

Aluminum	ND	mg/Kg	3.0
Cobalt	ND	mg/Kg	0.30
Iron	ND	mg/Kg	1.0
Selenium	ND	mg/Kg	2.5

Sample ID: LCS-20468

LCS

Batch ID: 20468 Analysis Date: 10/30/2009 2:11:37 PM

Aluminum	26.23	mg/Kg	3.0	25	0.3656	103	80	120
Antimony	23.69	mg/Kg	2.5	25	0	94.8	80	120
Arsenic	24.52	mg/Kg	2.5	25	0	98.1	80	120
Barium	23.57	mg/Kg	0.10	25	0	94.3	80	120
Beryllium	25.32	mg/Kg	0.15	25	0	101	80	120
Cadmium	24.22	mg/Kg	0.10	25	0	96.9	80	120
Calcium	2425	mg/Kg	25	2500	0	97.0	80	120
Chromium	24.17	mg/Kg	0.30	25	0	96.7	80	120
Copper	24.71	mg/Kg	0.30	25	0.1135	98.4	80	120
Lead	23.50	mg/Kg	0.25	25	0	94.0	80	120
Magnesium	2438	mg/Kg	25	2500	0	97.5	80	120
Manganese	23.54	mg/Kg	0.10	25	0.0257	94.1	80	120
Nickel	23.27	mg/Kg	0.50	25	0.0574	92.8	80	120
Potassium	2509	mg/Kg	50	2500	0	100	80	120
Silver	24.63	mg/Kg	0.25	25	0.0974	98.1	80	120
Sodium	2576	mg/Kg	25	2500	0	103	80	120
Thallium	23.63	mg/Kg	2.5	25	0	94.5	80	120
Vanadium	24.95	mg/Kg	2.5	25	0	99.8	80	120
Zinc	23.41	mg/Kg	2.5	25	0	93.7	80	120

## Qualifiers:

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

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Waste Streams 10-22-09

Work Order: 0910440

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 6010B: Soil Metals

Sample ID: LCS-20468

LCS

Batch ID: 20468

Analysis Date: 11/3/2009 6:16:26 PM

Aluminum	27.49	mg/Kg	3.0	25	0.6762	107	80	120			
Cobalt	23.33	mg/Kg	0.30	25	0	93.3	80	120			
Iron	25.80	mg/Kg	1.0	25	0	103	80	120			
Selenium	23.91	mg/Kg	2.5	25	0	95.7	80	120			

Method: EPA Method 6010B: TCLP Metals

Sample ID: MB-20451

MBLK

Batch ID: 20451

Analysis Date: 10/29/2009 9:54:41 AM

Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								

Sample ID: LCS-20451

LCS

Batch ID: 20451

Analysis Date: 10/29/2009 9:59:31 AM

Arsenic	ND	mg/L	5.0	0.5	0	106	80	120			
Barium	ND	mg/L	100	0.5	0.0013	99.4	80	120			
Cadmium	ND	mg/L	1.0	0.5	0	105	80	120			
Chromium	ND	mg/L	5.0	0.5	0	99.1	80	120			
Lead	ND	mg/L	5.0	0.5	0	98.1	80	120			
Selenium	ND	mg/L	1.0	0.5	0	109	80	120			
Silver	ND	mg/L	5.0	0.5	0.0018	106	80	120			

## Qualifiers:

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



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/23/2009

Work Order Number 0910440

Received by: JB

Checklist completed by:

Signature

10/23/09  
Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☒

No ☐

N/A ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☒

Yes ☐

No ☐

Number of preserved  
bottles checked for  
pH:

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

<2 >12 unless noted  
below.

Container/Temp Blank temperature?

14.1°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

# Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

☐ Other

☐ EDD (Type) \_\_\_\_\_

Project Manager:

Sampler: Cindy

Container Type and #

Preservative Type

Sample Temperature

HEAL No.

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Waste Streams

10-22-09

Project #:

Analysis Request											
BTEX + MTBE + TMB's (8021)											
BTEX + MTBE + TPH (Gas only)											
TPH Method 8015B (Gas/Diesel)											
TPH (Method 418.1)											
EDB (Method 504.1)											
8310 (PNA or PAH)											
RCRA 8 Metals											
TCAP Metals											
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )											
8081 Pesticides / 8082 PCB's											
8260B (VOA)											
8270 (Semi-VOA)											
Spec Totals											
Trace Metals (Analyte List)											
R, C, I											
Air Bubbles (Y or N)											

Remarks:

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: MPB Date: 10-23-09 Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

## Chavez, Carl J, EMNRD

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**Subject:** Western Refining SW- Bloomfield Refinery (GW-001) Landfill Closure & DP Renewal Meeting  
**Location:** Cancellation of Telephone Conference Call- WRSW will call Carl Chavez & Hope Monzeglio Offices for meeting

**Start:** Thu 11/12/2009 10:30 AM  
**End:** Thu 11/12/2009 12:00 PM

**Recurrence:** (none)

**Meeting Status:** Meeting organizer

**Organizer:** Chavez, Carl J, EMNRD  
**Required Attendees:** Schmaltz, Randy; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Chavez, Carl J, EMNRD; Macquesten, Gail, EMNRD; Jones, Brad A., EMNRD; Hains, Allen

CANCELLATION OF MEETING DUE TO RECENT NEWS OF BLOOMFIELD REFINERY CLOSURE. WILL WORK TO RESCHEDULE FACE-TO-FACE MEETING AFTER THANKSGIVING AND BEFORE CHRISTMAS W/ AGENDA PUT TOGETHER BY ALL PARTIES TO ADDRESS ISSUES AFTER WRSW KNOWS MORE ABOUT THE CLOSURE..... WRSW will provide an update in the next 2-weeks based on events and more knowledge about where things are going at the refinery.

PLEASE THINK ABOUT ANY ISSUES THAT WILL NEED TO BE DISCUSSED BASED ON POSSIBLE OR CLOSURE OF FACILITY OR RECREATION INTO BIOFUELS OR SOME OTHER FUNCTION.....? THANK YOU.

### LANDFILL CLOSURE FOLLOW-UP AGENDA from 10/20/2009 MEETING IN SANTA FE

1:30 p.m. Landfill Issues Meeting Introductions

#### Western Refining Southwest- Bloomfield Refinery Discharge Permit (GW-001)

- Announcement of proposal to work with the agencies to close out the landfills- discussion of how it could be done with any issues.... (concerns about compliance with EPA Order; immediately stop disposal in SWMU 16 & characterize waste (mixed?) in landfill- follow up by agencies; alternative waste mgt. of FCCU & sulfur waste disposal at nearby in-state and out-of-state landfills in progress; remedy for landfill waste at facility in progress with safety evaluation; removal preferred to alternative remedy; closure deadlines & permit language; closure under RCRA vs. OCD WQCC Standards; ..... ) **Agencies discuss letter under development to address the above issues.....**
- References to refinery September 21, 2009 Letter "Draft OCD Discharge Permit Comments" (from Mr. Todd R. Doyle to Mr. Carl Chavez)

#### NMED- Hazardous Waste Bureau SWMUs 8, 9 and 16 Status of RCRA SWMU Investigations

- Group 2 Report- inactive landfill & landfill pond (SWMUs 8 & 9) currently under NMED review
- Group 4 Work Plan- active landfill (SWMU 16) tentative date for receipt of final work plan & completion of RCRA investigation

#### Oil Conservation Division

- Status of Discharge Permit Renewal- pending follow-up correspondence from agencies based on issues for resolution during 10/20/09 meeting
- Discharge Permit Renewal- Landfill Closure Language Review of Applicable Section(s) (same as above)

- Chronology of Events- basis for requesting closure of landfills in draft discharge permit renewal Supporting information (hand-out)
- Regulations (hand-out)

Open dialogue and discussion between parties on OCD landfill closure request

- Refinery Issues- issues listed above to be addressed in agency follow-up correspondence from meeting; UIC Class I Disposal Well issues & how it relates to post OCD 2009 facility inspection evaporation pond leak detection problem;
- OCD Issues- H2S Contingency Plan included in permit must address OCD H2S regulations; & OCD August 2009 facility post inspection items need to be addressed- resend inspection items to refinery, since they were never received

Path Forward?

- Post meeting telephone conference call ~ 2 weeks to discuss forthcoming agency correspondence and resolution of issues from above meeting
- Stop disposing wastes into SWMU 16
- Start characterizing waste & refinery has green light to begin removing waste from landfill(s) and disposing at OCD permitted facilities and/or facilities approved by the OCD
- Is there consensus or agreement?

Miscellaneous

2:30 p.m.

END

## Chavez, Carl J, EMNRD

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, November 03, 2009 11:36 AM  
**To:** 'Hurtado, Cindy'; Monzeglio, Hope, NMENV; Schmaltz, Randy  
**Cc:** Krakow, Bob; Robinson, Kelly; Jones, Brad A., EMNRD; VonGonten, Glenn, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV  
**Subject:** RE: Sulfur Disposal - Bloomfield Refinery

Cindy:

Good morning. The OCD recalls that this testing involves new elemental sulfur waste generated and disposal at a nearby solid waste disposal facility.

The OCD has reviewed your profile sheet with attachments (see below). The OCD has the following comments and/or requirements:

- 1) The Waste Management waste stream profile and or waste description should be changed to indicate "Contaminated ferrous sulfate or elemental sulfur" (19.15.35.8(C)(3)(h) NMAC), since the analytical data show residual levels of BTEX, TPH and some elevated general concentrations (nitrate, sulfate) with some RCRA metals detected below regulatory limits, but confirmed to be present in the waste stream.
- 2) WRSW will need to develop and propose language addressing the frequency of testing of the contaminated elemental sulfur waste stream to ensure it is non-hazardous, but not too frequently to avoid hampering WRSW's ability or efforts to properly dispose of the contaminated sulfur waste. In addition, the disposal facility may require its own regiment of analytical testing to ensure compliance with its solid waste permit. In the interim, OCD may approve disposal on case- by-case basis with analytical data due to elemental sulfur contamination.
- 3) In the interim related to Item 2 above, OCD may approve disposal on case- by-case basis with analytical data due to elemental sulfur contamination.
- 4) Note that the receiving must know the correct waste description per item 1 above in order to determine whether the waste may be approved for disposal at its facility.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

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**From:** Hurtado, Cindy [mailto:Cindy.Hurtado@wnr.com]  
**Sent:** Friday, October 30, 2009 10:20 AM  
**To:** Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Schmaltz, Randy  
**Cc:** Krakow, Bob; Robinson, Kelly  
**Subject:** Sulfur Disposal - Bloomfield Refinery

Good Morning,

Please find attached the profile sheet, 2007 analytical, and 2009 analytical for Bloomfield Refinery's sulfur waste stream which was provided to Waste Management for the purpose of using San Juan County Landfill for sulfur disposal. Both OCD and NMED have stated the sulfur is oil-field exempt due to regulation 19.15.35.8 C(1)(i). However, the analytical may indicate that Bloomfield Refinery's sulfur waste may be more applicable to regulation 19.15.35 C(3)(h). Therefore, Bloomfield Refinery and Waste Management will need the agencies approval to dispose of the sulfur waste at San Juan County Landfill. Please review the attached documents. Contact me if more information is needed.

Thanks,  
Cindy

Cindy Hurtado  
Environmental Coordinator  
Western Refining Southwest, Inc. - Bloomfield Refinery  
[cindy.hurtado@wnr.com](mailto:cindy.hurtado@wnr.com)  
505-632-4161

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**Chavez, Carl J, EMNRD**

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**From:** Hurtado, Cindy [Cindy.Hurtado@wnr.com]  
**Sent:** Friday, October 30, 2009 10:20 AM  
**To:** Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV; Schmaltz, Randy  
**Cc:** Krakow, Bob; Robinson, Kelly  
**Subject:** Sulfur Disposal - Bloomfield Refinery  
**Attachments:** Sulfur - WM Profile and E & P.pdf; Sulfur Analysis - 2007 - Envirotech.pdf; Sulfur Analysis - 2009 - Hall.pdf

Good Morning,

Please find attached the profile sheet, 2007 analytical, and 2009 analytical for Bloomfield Refinery's sulfur waste stream which was provided to Waste Management for the purpose of using San Juan County Landfill for sulfur disposal. Both OCD and NMED have stated the sulfur is oil-field exempt due to regulation 19.15.35.8 C(1)(i). However, the analytical may indicate that Bloomfield Refinery's sulfur waste may be more applicable to regulation 19.15.35 C(3)(h). Therefore, Bloomfield Refinery and Waste Management will need the agencies approval to dispose of the sulfur waste at San Juan County Landfill. Please review the attached documents. Contact me if more information is needed.

Thanks,  
Cindy

Cindy Hurtado  
Environmental Coordinator  
Western Refining Southwest, Inc. - Bloomfield Refinery  
[cindy.hurtado@wnr.com](mailto:cindy.hurtado@wnr.com)  
505-632-4161

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# Generator's Nonhazardous Waste Profile Sheet



Requested Disposal Facility \_\_\_\_\_ Profile Number \_\_\_\_\_

☐ Renewal for Profile Number \_\_\_\_\_ Waste Approval Expiration Date \_\_\_\_\_

## A. Waste Generator Facility Information (must reflect location of waste generation/origin)

- Generator Name: Western Refining Southwest, Inc. - Bloomfield Refinery
- Site Address: #50 Road 4990
- City/ZIP: Bloomfield 87413
- State: New Mexico
- County: San Juan
- Contact Name/Title: Cindy Hurtado Environmental Coordinator
- Email Address: \_\_\_\_\_
- Phone: 505-632-4141
- FAX: 505-632-3911
- NAICS Code: \_\_\_\_\_
- Generator USEPA ID #: NMD089416416
- State ID# (if applicable): \_\_\_\_\_

## B. Customer Information ☒ same as above

P. O. Number: \_\_\_\_\_

- Customer Name: \_\_\_\_\_
- Billing Address: \_\_\_\_\_
- City, State and ZIP: \_\_\_\_\_
- Contact Name: \_\_\_\_\_
- Contact Email: \_\_\_\_\_
- Phone: \_\_\_\_\_ FAX: \_\_\_\_\_
- Transporter Name: \_\_\_\_\_
- Transporter ID # (if appl.): \_\_\_\_\_
- Transporter Address: \_\_\_\_\_
- City, State and ZIP: \_\_\_\_\_

## C. Waste Stream Information

### 1. DESCRIPTION

a. Common Waste Name: sulfur

State Waste Code(s): \_\_\_\_\_

b. Describe Process Generating Waste or Source of Contamination:

Sulfur is generated in our Sulferox Unit. This unit converts H<sub>2</sub>S in our fuel gas into elemental sulfur in the solid form.

c. Typical Color(s): yellow

d. Strong Odor? ☐ Yes ☒ No Describe: \_\_\_\_\_

e. Physical State at 70°F: ☒ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: \_\_\_\_\_

f. Layers? ☒ Single layer ☐ Multi-layer ☐ NA

g. Water Reactive? ☐ Yes ☐ No If Yes, Describe: \_\_\_\_\_

h. Free Liquid Range (%): \_\_\_\_\_ to \_\_\_\_\_ ☒ NA(solid)

i. pH Range: ☐ ≤2 ☐ 2.1-12.4 ☐ ≥12.5 ☒ NA(solid) Actual: \_\_\_\_\_

j. Liquid Flash Point: ☐ < 140°F ☐ ≥ 140°F ☒ NA(solid) Actual: \_\_\_\_\_

k. Flammable Solid: ☐ Yes ☒ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents (Total Composition Must be > 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. <u>Sulfur</u>	<u>0</u>	<u>%</u>	<u>90</u>	<u>%</u>
2. <u>WATER</u>	<u>0</u>	<u>%</u>	<u>13</u>	<u>%</u>
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____

### 2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☐ One Time Event ☐ Base ☒ Repeat Event

b. Estimated Annual Quantity: 600 ☒ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): \_\_\_\_\_

c. Shipping Frequency: 50 tons Units per ☒ Month ☐ Quarter ☐ Year ☐ One Time ☐ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☒ No

e. USDOT Shipping Description (if applicable): \_\_\_\_\_

### 3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Avoid Accumulation of DUSTS in enclosed Areas





## Generator's Nonhazardous Waste Profile Sheet

### D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☒ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☒ No
  - ☐ Delisted Hazardous Waste
  - ☐ Excluded Wastes Under 40 CFR 261.4
  - ☐ Treated Hazardous Waste Debris
  - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☒ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☒ No
  - a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
  - b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☒ No
  - a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☒ No
7. Does the waste contain asbestos? ☐ Yes ☒ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGG)? ☐ Yes ☒ No  
If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☒ No

### E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply: Sulfur - RCI, TCLP Metals, BTEX - Envirotech LAB - 6 pages
  - ☒ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested:  
Sulfur - TPH, Total Metals, Gen Chem - Hall Environmental LAB - 10 pages # Pages: \_\_\_\_\_
  - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested).  
Attachment #: \_\_\_\_\_
  - ☒ Additional information necessary to characterize the profiled waste has been attached (other than analytical).  
Indicate the number of attached pages: 1 NMAC 19.15.35.BC(1)(i)
  - ☐ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
  - ☐ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: Cindy Hurtado

Title: Environmental Coordinator

Company Name: WRSI - Bloomfield Refinery

Name (Print): Cindy Hurtado

Date: 10-22-09

### FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation

Approval Decision: ☐ Approved ☐ Not Approved

☐ Non-hazardous solidification ☐ Other: \_\_\_\_\_

Waste Approval Expiration Date: \_\_\_\_\_

Management Facility Precautions, Special Handling Procedures or Limitation on approval: \_\_\_\_\_

☐ Shall not contain free liquid

☐ Shipment must be scheduled into disposal facility

☐ Approval Number must accompany each shipment

☐ Waste Manifest must accompany load

WM Authorization Name / Title: \_\_\_\_\_

Date: \_\_\_\_\_

State Authorization (if Required): \_\_\_\_\_

Date: \_\_\_\_\_

Before the division grants authorization, the applicant for the authorization shall provide copies of test results to the division and to the solid waste facility where it will dispose of the waste.

(4) Simplified procedure for holders of discharge plans. Holders of an approved discharge plan may amend the discharge plan to provide for disposal of waste listed in Paragraph (2) of Subsection D of 19.15.35.8 NMAC and, as applicable, Paragraph (3) of Subsection D of 19.15.35.8 NMAC. If the division approves the amendment to the discharge plan, the holder may dispose of wastes listed in Paragraphs (2) and (3) of Subsection D of 19.15.35.8 NMAC at a solid waste facility without obtaining the division's prior written authorization.

C. The following provisions apply to the types of waste described below as specified.

(1) The person disposing of the waste does not have to test the following waste before disposal:

- (a) barrels, drums, five-gallon buckets or one-gallon containers so long as they are empty and EPA-clean;
- (b) uncontaminated brush and vegetation arising from clearing operations;
- (c) uncontaminated concrete;
- (d) uncontaminated construction debris;
- (e) non-friable asbestos and asbestos contaminated waste material, so long as the disposal complies with applicable federal regulations and state rules for non-friable asbestos materials and so long as the facility operator removes the asbestos from steel pipes and boilers and, if applicable, recycles the steel;
- (f) detergent buckets, so long as the buckets are completely empty;
- (g) fiberglass tanks so long as the tank is empty, cut up or shredded and EPA clean;
- (h) grease buckets, so long as empty and EPA clean;
- (i) uncontaminated ferrous sulfate or elemental sulfur so long as recovery and sale as a raw material is not possible;
- (j) metal plate and metal cable;
- (k) office trash;
- (l) paper and paper bags, so long as the paper bags are empty;
- (m) plastic pit liners, so long as the person cleans them well;
- (n) soiled rags or gloves, which if wet pass the paint filter test prior to disposal; or
- (o) uncontaminated wood pallets.

(2) The person disposing of the waste shall test the following wastes for the substances indicated prior to disposal:

- (a) activated alumina for TPH and BTEX;
  - (b) activated carbon for TPH and BTEX;
  - (c) amine filters, which the facility operator air-dries for at least 48 hours before testing, for BTEX;
  - (d) friable asbestos and asbestos-contaminated waste material, which the facility operator removes asbestos from steel pipes and boilers and, if applicable, recycles the steel before disposal, where the disposal otherwise complies with applicable federal regulations and state rules for friable asbestos materials pursuant to NESHAP;
  - (e) cooling tower filters, which the facility operator drains and then air-dries for at least 48 hours before testing, for TCLP/chromium;
  - (f) dehydration filter media, which the facility operator drains and then air-dries for at least 48 hours before testing, for TPH and BTEX;
  - (g) gas condensate filters, which the facility operator drains and then air-dries for at least 48 hours before testing, for BTEX;
  - (h) glycol filters, which the facility operator drains and then air-dries for at least 48 hours before testing, for BTEX;
  - (i) iron sponge, which the facility operator oxidizes completely, for ignitability testing;
  - (j) junked pipes, valves and metal pipe for NORM;
  - (k) molecular sieves, which the facility operator cools in a non-hydrocarbon inert atmosphere and hydrates in ambient air for at least 24 hours before testing, for TPH and BTEX;
  - (l) pipe scale and other deposits removed from pipeline and equipment for TPH, TCLP/metals and NORM;
  - (m) produced water filters, which the facility operator drains and then air-dries for at least 48 hours before testing, for corrosivity;
  - (n) sandblasting sand for TCLP/metals or, if the division requires, TCLP/total metals; or
  - (o) waste oil filters, which the facility operator drains thoroughly of oil at least 24 hours before testing and recycles the oil and metal parts, for TCLP/metals.
- (3) A person may dispose of the following wastes on a case-by-case basis with the division's approval:
- (a) sulfur contaminated soil;
  - (b) catalysts;
  - (c) contaminated soil other than petroleum contaminated soil;
  - (d) petroleum contaminated soil in the event of a director-declared emergency;
  - (e) contaminated concrete;

**EXPLORATION AND PRODUCTION WASTES - EXEMPT / NON-EXEMPT CHECKLIST**

Generator Name: Western Refining Southwest, Inc. Bloomfield Refinery Profile Number: \_\_\_\_\_

Generator Signature: Cindy Hurtado Date: 10-22-09

**INSTRUCTIONS: Check all boxes that apply to your waste.**

**Exempt E&P Wastes:**

- ☐ Produced Water
- ☐ Drilling Fluids
- ☐ Drill Cuttings
- ☐ Rig wash
- ☐ Drilling fluids and cuttings from offshore operations disposed of onshore
- ☐ Geothermal production fluids
- ☐ Hydrogen sulfide abatement wastes from geothermal energy production
- ☐ Well completion, treatment, and stimulation fluids
- ☐ Basic sediment, water, and other tank bottoms from storage facilities that hold product and exempt waste.
- ☐ Accumulated materials such as hydrocarbons, solids, sands, and emulsion from production separators, fluid treating vessels, and production impoundments
- ☐ Pit sludges and contaminated bottoms from storage or disposal of exempt wastes.
- ☐ Gas plant dehydration wastes, including glycol-based compounds, glycol filters, and filter media, backwash, and molecular sieves.
- ☐ Workover Wastes
- ☒ Gas plant sweetening wastes for sulfur removal, including amines, amine filters, amine filter media, backwash, precipitated amine sludge, iron sponge, and hydrogen sulfide scrubber liquid and sludge
- ☐ Spent filters, filter media, and backwash (assuming the filter itself is not hazardous and the residue in it is from an exempt waste stream).
- ☐ Pipe scale, hydrocarbon solids, hydrocarbon solids, hydrates, and other deposits removed from piping and equipment prior to transportation
- ☐ Produced sand
- ☐ Packing fluids
- ☐ Hydrocarbon-bearing soil
- ☐ Pigging wastes from gathering lines
- ☐ Wastes from subsurface gas storage and retrieval, except for the non-exempt wastes listed below
- ☐ Constituents removed from produced water before it is injected or otherwise disposed of
- ☐ Liquid hydrocarbons removed from the production stream by not from oil refining
- ☐ Gases from the production stream, such as hydrogen sulfide and carbon dioxide, and volatilized hydrocarbons
- ☐ Materials ejected from a producing well during blowdown
- ☐ Waste crude oil from primary field operations
- ☐ Light organics volatilized from exempt wastes in reserve pits, impoundments, or production equipment

**Non-Exempt Wastes**

- ☐ Unused fracturing fluids or acids
- ☐ Gas plant cooling tower cleaning wastes
- ☐ Painting wastes
- ☐ Oil and gas service company wastes such as empty drums, drum rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids
- ☐ Vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste
- ☐ Refinery wastes
- ☐ Liquid and solid wastes generated by crude oil and tank bottom reclaimers<sup>1</sup>
- ☐ Used equipment lubricating oil
- ☐ Waste compressor oil, filters and blowdown
- ☐ Used hydraulic fluids
- ☐ Waste in transportation pipeline related pits
- ☐ Caustic or acid cleaners
- ☐ Boiler cleaning wastes
- ☐ Boiler refractory bricks
- ☐ Boiler scrubber fluids, sludge's, and ash
- ☐ Incinerator ash
- ☐ Laboratory wastes
- ☐ Pesticide wastes
- ☐ Radioactive tracer wastes
- ☐ Drums, insulation, and miscellaneous solids

<sup>1</sup>Although non-E&P wastes generated from crude oil and tank bottom reclamation operations (e.g., waste equipment cleaning solvent) are non-exempt, residuals derived from exempt wastes (e.g., produced water separated from tank bottoms) are exempt. For a further discussion, see the Federal Register notice, "Clarification of the Regulatory Determination for Waste from the Exploration, Development, and Production of Crude Oil, Natural Gas and Geothermal Energy," March 22, 1993, Federal Register Volume 58, Pages 15284 to 15287.

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Giant Refinery - Bloomfield	Project #:	96012-009
Sample ID:	Sulfur	Date Reported:	05-30-07
Lab ID#:	41710	Date Sampled:	05-29-07
Sample Matrix:	Solid	Date Received:	05-29-07
Preservative:	Cool	Date Analyzed:	05-30-07
Condition:	Cool and Intact	Chain of Custody:	2712

Parameter	Result
-----------	--------

IGNITABILITY: **Negative**

CORROSIVITY: **Negative** pH = 6.37

REACTIVITY: **Negative**

### RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
-----------	---------------------------

IGNITABILITY: Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.  
(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

CORROSIVITY: Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.  
(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY: Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23.  
(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference: 40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments:

Christine M. Walters  
Analyst

Devin P. O'Brien  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Giant Refinery - Bloomfield	Project #:	96012-009
Sample ID:	Sulfur	Date Reported:	05-30-07
Laboratory Number:	41710	Date Sampled:	05-29-07
Chain of Custody:	2712	Date Received:	05-29-07
Sample Matrix:	Solid	Date Analyzed:	05-30-07
Preservative:	Cool	Date Extracted:	05-30-07
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	21.5 1.1 ppb	1.8
Toluene	112 5.6 ppb	1.7
Ethylbenzene	11.2 0.56 ppb	1.5
p,m-Xylene	86.9 4.35 ppb	2.2
o-Xylene	26.5 1.32 ppb	1.0
Total BTEX	258 12.9 ppb	

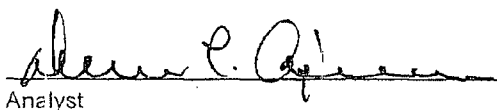
ND - Parameter not detected at the stated detection limit.

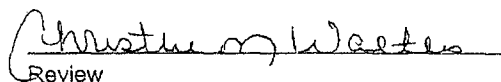
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	99.0 %
	1,4-difluorobenzene	99.0 %
	Bromochlorobenzene	99.0 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments:

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Giant Refinery - Bloomfield	Project #:	96012-009
Sample ID:	Sulfur	Date Reported:	05-31-07
Laboratory Number:	41710	Date Sampled:	05-29-07
Chain of Custody:	2712	Date Received:	05-29-07
Sample Matrix:	TCLP Extract	Date Analyzed:	05-31-07
Preservative:	N/A	Date Extracted:	05-30-07
Condition:	Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.024	0.001	5.0
Barium	0.260	0.001	100
Cadmium	ND	0.001	1.0
Chromium	0.295	0.001	5.0
Lead	0.013	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

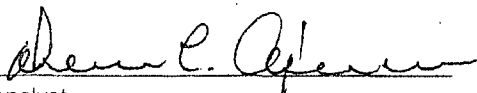
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

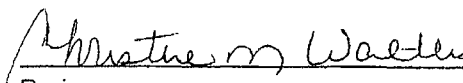
Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments:

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	05-30-BTEX QA/QC	Date Reported:	05-30-07
Laboratory Number:	41705	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	05-30-07
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range	0 - 15%		
Benzene	2.6410E+007	2.6463E+007	0.2%	ND	0.2
Toluene	2.4410E+007	2.4459E+007	0.2%	ND	0.2
Ethylbenzene	2.0204E+007	2.0246E+007	0.2%	ND	0.2
p,m-Xylene	4.3445E+007	4.3532E+007	0.2%	ND	0.2
o-Xylene	1.8062E+007	1.8098E+007	0.2%	ND	0.1


Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	10.7	10.7	0.0%	0 - 30%	1.8
Toluene	121	120	0.8%	0 - 30%	1.7
Ethylbenzene	429	428	0.2%	0 - 30%	1.5
p,m-Xylene	1,920	1,910	0.5%	0 - 30%	2.2
o-Xylene	347	346	0.3%	0 - 30%	1.0

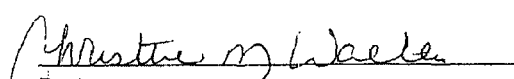
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	10.7	50.0	60.6	99.8%	39 - 150
Toluene	121	50.0	170	99.6%	46 - 148
Ethylbenzene	429	50.0	478	99.8%	32 - 160
p,m-Xylene	1,920	100	2,010	99.5%	46 - 148
o-Xylene	347	50.0	396	99.8%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.  
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for Samples 41705, 41707 - 41712.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	N/A	Project #:	N/A
Sample ID:	05-31-TCM QA/QC	Date Reported:	05-31-07
Laboratory Number:	41710	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	05-31-07
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% Difference	Acceptance Range
Arsenic	ND	ND	0.001	0.024	0.024	0.0%	0% - 30%
Barium	ND	ND	0.001	0.260	0.256	1.5%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.295	0.291	1.4%	0% - 30%
Lead	ND	ND	0.001	0.013	0.013	0.0%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.500	0.024	0.523	99.8%	80% - 120%
Barium	0.500	0.260	0.758	99.7%	80% - 120%
Cadmium	0.500	ND	0.499	99.8%	80% - 120%
Chromium	0.500	0.295	0.794	99.9%	80% - 120%
Lead	0.500	0.013	0.513	100.0%	80% - 120%
Mercury	0.500	ND	0.497	99.4%	80% - 120%
Selenium	0.500	ND	0.499	99.8%	80% - 120%
Silver	0.500	ND	0.498	99.6%	80% - 120%


ND - Parameter not detected at the stated detection limit.

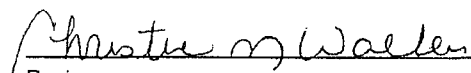
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission, SW-846, USEPA, December 1996.

Comments: QA/QC for Samples 41710 - 41711, 41704

  
Analyst

  
Review



## 2712

an reproduction 578-129



## COVER LETTER

Wednesday, September 23, 2009

Kelly Robinson  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (602) 908-6617  
FAX (505) 632-3911  
RE: Landfill

Order No.: 0909289

Dear Kelly Robinson:

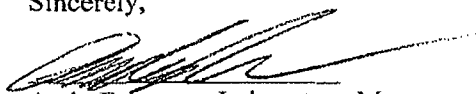
Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 9/16/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites.

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

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

Sincerely,



Andy Freeman, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109  
505.345.3975 ■ Fax 505.345.4107  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

**Hall Environmental Analysis Laboratory, Inc.**

**Date:** 23-Sep-09

**CLIENT:** Western Refining Southwest, Inc.

**Project:** Landfill

**Lab Order:** 0909289

**CASE NARRATIVE**

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-09

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0909289  
 Project: Landfill  
 Lab ID: 0909289-03

Client Sample ID: Sulfur  
 Collection Date: 9/15/2009 10:20:00 AM  
 Date Received: 9/16/2009  
 Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE ORGANICS</b>						Analyst: SCC
Diesel Range Organics (DRO)	250	100		mg/Kg	10	9/21/2009 12:51:28 PM
Motor Oil Range Organics (MRO)	510	500		mg/Kg	10	9/21/2009 12:51:28 PM
Surr: DNOP	0	81.7-135	S	%REC	10	9/21/2009 12:51:28 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	100		mg/Kg	10	9/22/2009 12:51:32 PM
Surr: BFB	92.3	65.9-118		%REC	10	9/22/2009 12:51:32 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: TAF
Chloride	ND	30		mg/Kg	100	9/22/2009 9:01:31 AM
Nitrogen, Nitrite (As N)	7.2	6.0		mg/Kg	20	9/22/2009 8:26:41 AM
Nitrogen, Nitrate (As N)	3700	30		mg/Kg	100	9/22/2009 9:01:31 AM
Sulfate	260	30		mg/Kg	20	9/22/2009 8:26:41 AM

185 ug/L  
 13 ug/L

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

Page 3 of 3



# ENVIRONMENTAL SCIENCE CORP.

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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

September 22, 2009

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 17, 2009  
Description : 0909289

Sample ID : SULFUR

Collected By :  
Collection Date : 09/15/09 10:20

ESC Sample # : L422546-03

Site ID :

Project # : 0909289

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	1.3	0.25	mg/kg	9012B	09/21/09	1
Mercury	BDL	0.020	mg/kg	7471	09/18/09	1
Antimony	BDL	1.0	mg/kg	6010B	09/19/09	1
Arsenic	BDL	1.0	mg/kg	6010B	09/19/09	1
Barium	BDL	0.25	mg/kg	6010B	09/19/09	1
Beryllium	BDL	0.10	mg/kg	6010B	09/19/09	1
Cadmium	BDL	0.25	mg/kg	6010B	09/19/09	1
Calcium	32.	25.	mg/kg	6010B	09/19/09	1
Chromium	2.2	0.50	mg/kg	6010B	09/19/09	1
Cobalt	BDL	0.50	mg/kg	6010B	09/19/09	1
Iron	4000	5.0	mg/kg	6010B	09/19/09	1
Lead	BDL	0.25	mg/kg	6010B	09/19/09	1
Magnesium	8.6	5.0	mg/kg	6010B	09/19/09	1
Manganese	7.6	0.50	mg/kg	6010B	09/19/09	1
Nickel	1.1	1.0	mg/kg	6010B	09/19/09	1
Potassium	BDL	25.	mg/kg	6010B	09/19/09	1
Selenium	3.7	1.0	mg/kg	6010B	09/19/09	1
Silver	BDL	0.50	mg/kg	6010B	09/19/09	1
Sodium	9900	25.	mg/kg	6010B	09/19/09	1
Vanadium	BDL	0.50	mg/kg	6010B	09/19/09	1
Zinc	BDL	1.5	mg/kg	6010B	09/19/09	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/22/09 07:45 Printed: 09/22/09 07:45



# ENVIRONMENTAL SCIENCE CORP.

Hall Environmental Analysis Laboratory  
Anne Thorne  
4901 Hawkins NE

Albuquerque, NM 87109

## Quality Assurance Report Level II

L422546

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September 22, 2009

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Antimony	< 1	mg/kg			WG441413	09/20/09 17:08
Barium	< .25	mg/kg			WG441413	09/20/09 17:08
Beryllium	< .1	mg/kg			WG441413	09/20/09 17:08
Calcium	< 25	mg/kg			WG441413	09/20/09 17:08
Chromium	< .5	mg/kg			WG441413	09/20/09 17:08
Iron	< 5	mg/kg			WG441413	09/20/09 17:08
Lead	< .25	mg/kg			WG441413	09/20/09 17:08
Manganese	< .5	mg/kg			WG441413	09/20/09 17:08
Nickel	< 1	mg/kg			WG441413	09/20/09 17:08
Selenium	< 1	mg/kg			WG441413	09/20/09 17:08
Silver	< .5	mg/kg			WG441413	09/20/09 17:08
Vanadium	< .5	mg/kg			WG441413	09/20/09 17:08
Zinc	< 1.5	mg/kg			WG441413	09/20/09 17:08
Cyanide	< .25	mg/kg			WG441463	09/21/09 13:47

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Antimony	mg/kg	0.00	0.420	NA	20	L422437-02	WG441413
Beryllium	mg/kg	0.381	0.387	1.56	20	L422437-02	WG441413
Cadmium	mg/kg	0.00	0.110	NA	20	L422437-02	WG441413
Chromium	mg/kg	9.61	9.30	3.28	20	L422437-02	WG441413
Cobalt	mg/kg	2.85	2.83	0.704	20	L422437-02	WG441413
Lead	mg/kg	4.36	4.50	3.16	20	L422437-02	WG441413
Magnesium	mg/kg	3380	3390	0.295	20	L422437-02	WG441413
Nickel	mg/kg	6.96	6.89	1.01	20	L422437-02	WG441413
Potassium	mg/kg	1700	1670	1.78	20	L422437-02	WG441413
Silver	mg/kg	0.00	0.00	0.00	20	L422437-02	WG441413
Sodium	mg/kg	114.	112.	1.77	20	L422437-02	WG441413
Zinc	mg/kg	18.1	18.7	3.26	20	L422437-02	WG441413
Arsenic	mg/kg	0.00	0.00	0.00	20	L422437-02	WG441413
Cyanide	mg/kg	0.00	0.00	0.00	20	L422397-10	WG441463
Cyanide	mg/kg	0.00	0.00	0.00	20	L422375-20	WG441463

\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Hall Environmental Analysis Laboratory  
Anne Thorne  
4901 Hawkins NE

## Quality Assurance Report Level II

Albuquerque, NM 87109

L422546

September 22, 2009

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Antimony	mg/kg	85.1	37.1	43.6	1.2-242.1	WG441413
Barium	mg/kg	420	406	96.7	78.8-121.4	WG441413
Beryllium	mg/kg	69.3	65.6	94.7	79.8-120.1	WG441413
Cadmium	mg/kg	9540	9150	95.9	78.2-121.6	WG441413
Calcium	mg/kg	168	163	97.0	80.4-120.2	WG441413
Chromium	mg/kg	18100	17400	96.1	50.7-149.7	WG441413
Iron	mg/kg	113	106	93.8	77.3-122.1	WG441413
Lead	mg/kg	441	424	96.1	78.9-120.9	WG441413
Manganese	mg/kg	74.1	76.6	103	78.8-121.2	WG441413
Nickel	mg/kg	176	178	101	75.6-125.0	WG441413
Selenium	mg/kg	115	109	94.8	66-133.9	WG441413
Silver	mg/kg	86	85.7	99.7	72.0-127.9	WG441413
Vanadium	mg/kg	437	411	94.1	78.5-121.7	WG441413
Zinc	mg/kg	60.6	58.0	95.7	50-150	WG441463
Cyanide	mg/kg					

Analyte	Units	Result	Ref	% Rec	Limit	RPO	Limit	Batch
Cyanide	mg/kg	61.2	55.3	101	50-150	10.1	20	WG441892

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Antimony	mg/kg	20.4	0.420	50	40.0*	75-125	L422437-02	WG441413
Beryllium	mg/kg	48.2	0.387	50	95.6	75-125	L422437-02	WG441413
Cadmium	mg/kg	48.1	0.110	50	96.0	75-125	L422437-02	WG441413
Chromium	mg/kg	58.7	9.30	50	98.8	75-125	L422437-02	WG441413
Cobalt	mg/kg	51.5	2.83	50	97.3	75-125	L422437-02	WG441413
Lead	mg/kg	52.6	4.50	50	96.2	75-125	L422437-02	WG441413
Magnesium	mg/kg	3930	3390	500	108	75-125	L422437-02	WG441413
Nickel	mg/kg	55.2	6.89	50	96.6	75-125	L422437-02	WG441413
Potassium	mg/kg	2230	1670	500	112	75-125	L422437-02	WG441413
Silver	mg/kg	46.5	0.00	50	93.0	75-125	L422437-02	WG441413
Sodium	mg/kg	584	112	500	94.4	75-125	L422437-02	WG441413
Vanadium	mg/kg							

\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



# ENVIRONMENTAL SCIENCE CORP.

Hall Environmental Analysis Laboratory  
Anne Thorne  
4901 Hawkins NE  
Albuquerque, NM 87109

## Quality Assurance Report Level II L422546

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1-800-767-5859  
Fax (615) 758-5859  
Tax I.D. 62-0814289  
Est. 1970

September 22, 2009

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Arsenic	mg/kg	44.2	0.00	10	88.4	75-125	L422437-02	WG441413
Analyte	Units	MSD	Ref	% Rec	Limit	RPD	Limit Ref Samp	Batch
Antimony	mg/kg	22.6	20.4	44.36*	75-125	10.2 20	L422437-02	WG441413
Beryllium	mg/kg	49.6	48.2	98.4	75-125	2.86 20	L422437-02	WG441413
Cadmium	mg/kg	49.3	48.1	98.4	75-125	2.46 20	L422437-02	WG441413
Chromium	mg/kg	60.3	59.7	102.	75-125	2.63 20	L422437-02	WG441413
Cobalt	mg/kg	52.8	51.3	99.9	75-125	2.49 20	L422437-02	WG441413
Lead	mg/kg	54.1	52.6	99.2	75-125	2.81 20	L422437-02	WG441413
Magnesium	mg/kg	3840	3930	90.0	75-125	2.32 20	L422437-02	WG441413
Nickel	mg/kg	56.6	55.2	99.4	75-125	2.50 20	L422437-02	WG441413
Potassium	mg/kg	2240	2230	114.	75-125	0.447 20	L422437-02	WG441413
Silver	mg/kg	48.0	46.5	96.0	75-125	3.17 20	L422437-02	WG441413
Sodium	mg/kg	603.	584.	98.2	75-125	3.20 20	L422437-02	WG441413
Zinc	mg/kg	64.3	63.5	91.2	75-125	1.25 20	L422437-02	WG441413
Arsenic	mg/kg	45.5	44.2	91.0	75-125	2.90 20	L422437-02	WG441413
Cyanide	mg/kg	3.29	3.57	98.8	80-120	6.16 20	L422397-02	WG441463

### Batch number / Run number / Sample number cross reference

WG441392: R907249: L422546-01 02 03  
WG441413: R907948: L422546-01 02 03  
WG441463: R909068: L422546-01 02  
WG441892: R909608: L422546-03

- \* Calculations are performed prior to rounding of reported values.
  - \* Performance of this Analyte is outside of established criteria.
- For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Landfill

Work Order: 0909289

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	--------	---------	------	----------	-----------	------	----------	------

Method: EPA Method 300.0: Anions

Sample ID: MB-20142

MBLK

Batch ID: 20142 Analysis Date: 9/21/2009 9:13:59 AM

Chloride ND mg/Kg 0.30  
 Nitrogen, Nitrite (As N) ND mg/Kg 0.30  
 Nitrogen, Nitrate (As N) ND mg/Kg 0.30  
 Sulfate ND mg/Kg 1.5

Sample ID: LCS-20142

LCS

Batch ID: 20142 Analysis Date: 9/21/2009 9:31:24 AM

Chloride 14.83 mg/Kg 0.30 15 0 98.8 90 110  
 Nitrogen, Nitrite (As N) 3.024 mg/Kg 0.30 3 0 101 90 110  
 Nitrogen, Nitrate (As N) 7.380 mg/Kg 0.30 7.5 0 98.1 90 110  
 Sulfate 29.81 mg/Kg 1.5 30 0 99.4 90 110

Method: EPA Method 8015B: Diesel Range Organics

Sample ID: MB-20134

MBLK

Batch ID: 20134 Analysis Date: 9/19/2009 2:31:17 PM

Diesel Range Organics (DRO) ND mg/Kg 10  
 Motor Oil Range Organics (MRO) ND mg/Kg 50

Sample ID: LCS-20134

LCS

Batch ID: 20134 Analysis Date: 9/19/2009 3:06:59 PM

Diesel Range Organics (DRO) 40.59 mg/Kg 10 50 0 81.2 64.6 116

Sample ID: LCSD-20134

LCSD

Batch ID: 20134 Analysis Date: 9/19/2009 3:42:40 PM

Diesel Range Organics (DRO) 38.26 mg/Kg 10 50 0 78.5 64.6 116 5.93 17.4

Method: EPA Method 8015B: Gasoline Range

Sample ID: MB-20127

MBLK

Batch ID: 20127 Analysis Date: 9/22/2009 7:54:13 PM

Gasoline Range Organics (GRO) ND mg/Kg 5.0

Sample ID: LCS-20127

LCS

Batch ID: 20127 Analysis Date: 9/22/2009 8:24:36 PM

Gasoline Range Organics (GRO) 27.02 mg/Kg 5.0 25 2.88 96.6 64.4 133

Sample ID: LCSD-20127

LCSD

Batch ID: 20127 Analysis Date: 9/22/2009 8:54:58 PM

Gasoline Range Organics (GRO) 29.85 mg/Kg 5.0 25 2.98 107 69.5 133 17.2 11.6 R

## Qualifiers:

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

Page 1

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

9/16/2009

Work Order Number 0909289

Received by:

ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Number of preserved  
bottles checked for  
pH:

<2 >12 unless noted  
below.

Container/Temp Blank temperature?

4.8°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# Chain-of-Custody Record

Turn-Around Time:

Client: Western Refining

☐ Standard dash ASAP

Mailing Address: Bloomfield Refinery

Project Name:

Bloomfield Refinery

Landfill

Phone #: (505) 632-1166

Project #:

email or Fax#: Kelly.Robinson@wnt.com

Project Manager:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Kelly Robinson

Date Time Matrix Sample Request ID

Container Type and # Preservative Type

040928

BTEX + MTBE + TMB's (8021)  
BTEX + MTBE + TPH (Gas only)  
TPH Method 8015B (Gas/Diesel)  
TPH (Method 418.1) DR 620 MTD  
EDB (Method 504.1)  
8310 (PNA or PAH)  
RCRA 8 Metals  
Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
8081 Pesticides / 8082 PCB's  
8260B (VOA)  
8270 (Semi-VOA)  
Metals \*  
Gen Chemistry \*  
Air Bubbles (Y or N)

9/15/99 945 Soil Precipitator Fines  
9/15/99 1000 Spent FCC Catalyst  
9/15/99 1020 ↓ Sulfur

(2) Boz Novu  
(2) Boz Novu  
(2) Boz Novu

1  
2  
3

Date: 9/15/99 Time: 1500 Relinquished by: Kelly Robinson

Received by: [Signature] Date: 9/15/99 Time: 1607

Remarks: See attached analytical list.  
Do TPH analysis is enough sample for me.



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request



BILL RICHARDSON  
Governor

DIANE DENISH  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RON CURRY  
Secretary

JON GOLDSTEIN  
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 27, 2009

Mr. Randy Schmaltz  
Environmental Manager  
Western Refining, Bloomfield Refinery  
P.O. Box 159  
Bloomfield, New Mexico 87413

**RE: WASTE STREAM SAMPLING AT THE ACTIVE LANDFILL  
WESTERN REFINING SOUTHWEST INC., BLOOMFIELD REFINERY  
EPA ID# NMD089416416  
HWB-GRCB-09-001**

Dear Mr. Schmaltz:

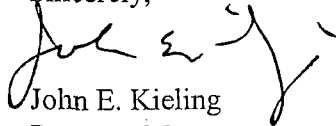
On October 20, 2009, the New Mexico Environment Department (NMED), the Oil Conservation Division (OCD), and Western Refining Southwest Inc., Bloomfield Refinery's (Western) met at the offices of OCD to discuss the OCD Discharge Permit and landfills at the facility. Based on discussions in the meeting, Western must sample the following waste streams that enter the Active Landfill (Solid Waste Management Unit No. 16): the FCC fines and the precipitator fines must be sampled and analyzed for total semi-volatile organic compounds (SVOCs), total Target Analyte List (TAL) Metals, toxicity characteristic leaching procedure (TCLP) RCRA 8 metals, ignitability, corrosivity, and reactivity. The sulfur waste stream may be characterized based on process knowledge.

The waste streams must be sampled by October 31, 2009. The final analytical laboratory reports must be submitted to NMED and OCD within five business days of receipt from the analytical laboratory.

Mr. Schmaltz  
October 27, 2009  
Page 2 of 2

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,



John E. Kielling  
Program Manager  
Permits Management Program  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
H. Monzeglio, NMED HWB  
C. Chavez, OCD  
A. Hains, Western El Paso  
File: GRCB 2009 and Reading  
HWB-GRCB-09-001

## Chavez, Carl J, EMNRD

---

**Subject:** Bloomfield Refinery Landfill Closure Issues (gw-001) in OCD Discharge Permit Renwal Meeting  
**Location:** OCD Conference Rm. 3rd Floor Wendell Chino Building 1220 South St. Francis Drive, Santa Fe, NM 87505 (505) 476-3440  
**Start:** Tue 10/20/2009 1:30 PM  
**End:** Tue 10/20/2009 4:00 PM  
**Recurrence:** (none)  
**Meeting Status:** Meeting organizer  
**Organizer:** Chavez, Carl J, EMNRD  
**Required Attendees:** Schmaltz, Randy; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Fesmire, Mark, EMNRD; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Chavez, Carl J, EMNRD; Macquesten, Gail, EMNRD  
**Resources:** Jones, Brad A., EMNRD

Attendee signatures from meeting. Please contact me if you have questions. Thank you.



Landfills Meeting  
10-20-2009 ...

### Meeting Agenda:

Please provide feedback on meeting topics below ASAP. Thanks.

### LANDFILL CLOSURE ISSUES MEETING

- 1:30 p.m. Landfill Issues Meeting Introduction and Sign-in
- 1:40 p.m. Western Refining Southwest- Bloomfield Refinery Discharge Permit (GW-001)  
History of Landfills at Facility  
Discussion of Refinery September 21, 2009 Draft OCD Discharge Permit Comments Letter (Mr. Todd R. Doyle to Mr. Carl Chavez)  
Presentation of applications, public notice, documents and/or information that support the above letter
- 2:15 p.m. NMED- Hazardous Waste Bureau SWMUs 8, 9 and 16 Status of RCRA Investigations  
Group 2 Report- inactive landfill & landfill pond (SWMUs 8 & 9) & any observations  
Group 4 Work Plan- active landfill (SWMU 16) tentative date for completion of investigation
- 2:30 p.m. Oil Conservation Division  
Status of Discharge Permit Renewal  
Discharge Permit Renewal- Landfill Closure Language Review of Applicable Section(s)  
Chronology of Events- basis for requesting closure of landfills in draft discharge permit renewal  
Supporting information  
Regulations
- 3:15 p.m. \*\*\*\*Break\*\*\*\*Break\*\*\*\*Break\*\*\*\*Break

3:30 p.m. Open dialogue and discussion between parties on OCD landfill closure request  
Refinery Issues  
OCD Issues

3:45 p.m. Path Forward?  
Based on resolution of issues raised before, during and possibly after meeting

4:00 p.m. END

10/20/2009  
BLOOMFIELD REFINERY Landfill Mtg (6W-001)

Name	Co.	ph#	e-mail
Carl Chavez	OCD	505 476-3490	Carl.j.Chavez@state.nm.us
Bar Jones	OCD	505 476-3487	bar.a.jones@state.nm.us
Allen S. Hains	Western	915 534-1983	allen.hains@wnr.com
Randy Schmaltz	WESTERN	(505) 632-4171	randy.Schmaltz@wnr.com
Sharon Shaheen	Western/MEA	505 986-2678	sshahen@montand.com
Cindy Hurtado	Western	505-632-4161	Cindy.hurtado@wnr.com
DANIEL SANCHEZ	OCD	505-476-3493	daniel.sanchez@state.nm.us
Gail MacQuesten	OCD	505 476 3451	gail.macquesten@state.nm.us
Kelly Robinson	Western	505-632-4166	Kelly.robinson@wnr.com
Dave Cobrain	NMED	505-476-6055	dave.cobrain@state.nm.us
Hope Monzeglio	NMED	505 476-6046	hope.monzeglio@state.nm.us
CLEW VON GARTEN	OCD	476-3488	CLEW.VONGARTEN



Western Refining Southwest-  
Bloomfield Refinery (GW-001)  
**Disposal or Landfills and/or Land Applications**  
**Chronology of Events (10-20-2009)**  
By: Carl Chavez (OCD)

**General Status of Landfills at the Facility**

**NMED:**

NMED- HWB is currently reviewing the inactive landfill (RCRA SWMU 8) Group 2 Investigation Report. The landfill pond (RCRA SWMU 9) was almost closed out by the EPA; however, NMED-HWB recently required another boring at the pond location and is awaiting receipt of results by January 10, 2010. The active landfill (SWMU 16) work plan was recently reviewed by the HWB and is expecting a completed work plan by January 10, 2010. NMED-HWB will review the Group 4 investigation report sometime in the spring.

**OCD:**

The permittee is currently disputing the OCD requirements for closure of the inactive and active landfills (especially RCRA SWMU 16- active landfill FCCU catalyst fines & Sulfur disposal) at the facility, which has culminated in this October 20, 2009 meeting with Attorney representation between the permittee and the Agencies (OCD and NMED). Consequently, the landfill issues are preventing the discharge permit renewal and public notice process from moving forward until a path forward is determined.

**Inactive Landfill:**

- OCD issued its first discharge plan at the facility in 1978 (no provision for an unlined landfill as it pre-dated RCRA Hazardous and Solid Waste Regulations).
  - No record of request for approval to construct or use an unlined landfill (inactive landfill) for waste (solid or hazardous) disposal sometime in 1980
- Unlined inactive landfill (RCRA SWMU 8) never permitted or approved by the EPA or OCD
  - OCD had no hazardous waste jurisdiction.
  - Didn't officially recognize until after EPA notified in 1980 by operator that facility was a RCRA Hazardous Waste TSD Facility.
  - RCRA C&E ensued and corrective actions undertaken to remove listed hazardous waste from unlined and unpermitted Hazardous Waste Landfill.

- Landfill pond (RCRA SWMU-9) was almost closed under RCRA by EPA in January or February of 1994 (NMED 1999, GRCB 2003) and no longer exists.
  - Unlined, low-lying natural depression from blockage of existing arroyo during construction of Hammond Ditch.
  - Located east of Fire Training Area and northeast of MW-8 to collect water from Hammond Ditch, storm water drainage from the surrounding area, and other fluids from landfill.
  - Discharge plan application (1984) included plans for disposal of FCC Catalyst in the inactive landfill on refinery property.
  - OCD DP approval letter of June 7, 1984, included Item 3 condition: "Any movement of hazardous waste will be reported to the appropriate office of the Environmental Improvement Division (EID)."
  - EID memo of May 15, 1985 to State Engineer stated, "Plateau, Inc. had illegally treated, stored, and/or disposed of hazardous waste as an unpermitted TSD Facility." EPA issued Compliance Order to investigate and remediate hazardous waste contaminated (D008, K051...) soils at the inactive landfill and landfill pond locations.
  - In 1985, 13 surface soil samples collected for closure and waste was removed and low-lying area filled in with no protective cover and graded to existing contours of surrounding arroyo.
  - NMED recently required another boring with analytical data and is awaiting the analytical result on or before January 10, 2010.

## **OCD Observations:**

### **Inactive Landfill**

Landfill and pond were never permitted by EPA. Consequently, the RCRA SWMU Investigation process is currently in progress under the authority of the NMED- HWB.

The OCD regards landfill to be a large unlined pit located near a major riverine wetland the San Juan River. Since there appears to be soil contamination remaining and ground water monitoring has demonstrated contamination is present beneath the landfill area, OCD is obligated to ensure full compliance with ground water abatement and/or remediation or corrective action provisions of the WQCC Regulations.

The OCD had sought in the discharge permit renewals (2000 and 2005) to officially close out the landfill.

The closure plan was required by August 15, 2000 to demonstrate how San Juan Refining Company planned to close the landfill in order that public health or the environment will not be adversely impacted in the foreseeable future.

OCD records indicate that the operator did not comply with the above discharge permit requirements.

### **Active Landfill**

Landfill was never permitted by EPA. Consequently, the RCRA SWMU Investigation process is currently in progress under the authority of the NMED- HWB.

OCD became aware of the intent to dispose of non-hazardous wastes (FCC Fines 50 tons (one-ton hopper per week) along with 180 tons of sulfur (10 tons/week) to stockpile and sell as fertilizer) in the active landfill (RCRA SWMU 16) east of the fire training area in the permittee's 1999 discharge permit renewal application.

OCD responded by including provision 20 (Active Landfill) into the discharge permit renewal (Issued April 19, 2000), which required a closure plan or operating plan by August 15, 2000

OCD became officially aware of active landfill operations during an OCD March 2000 inspection where landfill photos were taken at the facility.

OCD regards any discharges of oilfield waste directly onto the ground to be in violation of WQCC regulations under the discharge permit at a minimum.

During the next discharge permit renewal (Issued August 12, 2005), the OCD again included similar provision as mentioned above, but was to be submitted by December 1, 2005. OCD records indicate that the operator did not comply with the above discharge permit requirements.

On February 22, 2008, OCD again placed the Refinery on notice that it would be seeking closure of the landfills in an e-mail communiqué responding to a "Modification Request" to the permit in 2007, when the OCD instructed the permittee to hold off on the "Modification," since the discharge permit renewal period would be coming soon.

There was no indication from the Refinery subsequent to the OCD communiqué above that it disagreed until the OCD met with the Refinery to conduct a refinery inspection and discuss the draft discharge permit renewal on August 31, 2009 (Expiration date: June 7, 2009).

Subsequently, the permittee submitted a letter dated September 21, 2009 to the OCD officially indicating in essence that the OCD had permitted the landfill under Rule 711 (Surface Waste

Management Facilities), which became effective in 1988. The OCD has no record of an application or request under former Rule 711 and/or as a "Major Modification" to the discharge permit requesting the construction of a landfill at the facility nor is there any OCD approval document for such a facility. The OCD acknowledges receipt of the aforementioned "Major Modification" to the discharge permit in 2007, which included general provisions for the disposal of FCC and sulfur wastes in a facility landfill similar to the 1999 and 2004 applications, but the operator never complied with the previous discharge permit requirements nor did it ever provide a Rule 711 Application or "Major Modification" (2007) request to satisfy OCD surface waste management landfill construction, design, operation, financial assurance and/or public notice requirements for a landfill to be built at the facility.

The above is true even today as the permittee continues to submit in its 2009 discharge permit application a generic application without details (design, construction, operation, financial assurance, public notice, etc.) on the landfill, but references a landfill for disposal of FCCU catalyst fines and Sulfur wastes, which has been and is currently in violation of WQCC Regulations.

\*\*\*\*\*

### **Landfill Chronology of Events**

**1978** (Original DP approved June 5, 1978):

Plateau, Inc. DP approval June 5, 1978 expired June 5, 1983. Versions of the "Updated DP" for Plateau were received beginning in February 1982. Public notice of DP renewal issued May 10, 1983.

**1982:**

Plateau, Inc. Letter dated June 2, 1982: Company advised by counsel that DP is not required by the WQCC Regulations, but submitted DP (3/9/1982) in good faith while intending to follow up on their protest of having to submit this discharge permit.

**1983:**

EMNRD Letter dated April 13, 1983 requesting clarification DP above as submittal of a new DP or update to the present plan (GWR-1).

Plateau, Inc. Letter dated April 18, 1983 written to clarify that the DP was submitted to update the present DP (GWR-1). "This Plan will also become our "New Discharge Plan" with additions and/or revisions formulated by your Environmental Work Group and our Environmental Work Group, as agreed upon in our meeting of April 4, 1983.

OCD Technical Review (31 pages) of Updated DP dated June 30, 1983 (Oscar Simpson) sent to Plateau, Inc.

Hauser Laboratory analytical data results for FCCU catalyst fines dated July 27, 1983 indicate exceedences of the WQCC Standards in ground water for Arsenic, Cadmium, Chromium, Lead, and Nickel.

EMNRD Letter dated August 5, 1983 indicating that the responsibility for the processing and approval of submitted DPs has been assumed by the Environmental Improvement Division (EID) of the New Mexico Health and Environment Department. In order to facilitate the continued processing of the proposed DP, an extension until September 9, 1983 was granted. Any requests for further extension should be addressed to the Water Pollution Control Bureau of the EID (Joe Ramey, Director).

Letter from Plateau Counsel (Bruce Garber- Attorney at Law) dated August 26, 1983 to Joe Ramey requests an extension of DP until March 9, 1984 due to complex technical and legal issues.

EID Memo dated August 29, 1983 from Water Pollution Control Bureau (Charles Nylander, Chief) summarizing the above.

Letter from Plateau Counsel (Bruce Garber- Attorney at Law) dated September 28, 1983 to Joe Ramey requests an extension of DP until April 1, 1984 due to complex technical and legal issues.

EID Memo dated October 7, 1983 from Water Pollution Control Bureau (Charles Nylander, Chief) Conclusions and Recommendations on Plateau, Inc. DP submittals. In summary, "Plateau has provided insufficient info. to assess WQ impacts of its overall operations. EID could not recommend approval of the plan until concerns presented in March 8, 1983 OCD letter was addressed in some detail. Plateau could not demonstrate that its discharge would not cause GW quality standards To be exceeded at a place of present or foreseeable future use.

EMNRD Letter dated October 14, 1983 allowing an extension until April 1, 1984, in which to receive approval of your DP and to continue to discharge pursuant to your existing DP. This extension was granted contingent upon the following conditions: 1) Cease all surface application disposal operations in connection w/ its refinery operations; 2) Before Nov. 14, 1983, discuss DP items and define the parts of DP which need expansion or modification; 3) On or before Dec. 12, 1983, Establish a schedule for resolution of outstanding DP issues; and 4) At least every 30 days between the date of this extension and April 1, 1984, Plateau, Inc. shall give a written report of its activities during the preceding 30 days related to the DP. The letter requests acceptance of the conditions (Joe Ramey, Director).

## 1984:

In a March 24, 1984 Letter from American Ground Water Consultants, Inc. to Plateau, Inc. , attaching its discharge plan for the Plateau, Inc. Refinery. The attached report was written to update the previous discharge plan dated September 30, 1977 as is required at five-year intervals. The discharge plan included a section on "Land applications", which acknowledged that it was one of 6 sources of waste water discharge. The operator claims there is no natural ground water present and that it is not possible for percolation to take place vertically downward and the vertical hydrogeologic gradient is upward. Reference is mainly to the 10 acre spray irrigation area or sprinkle system used during warmer months.

American Ground Water Consultants, Inc. April 11, 1984 Letter to Plateau, Inc. referencing discharge permit issues in a meeting with the OCD Item 8: Describe Solid Waste Handling and Disposal Procedures- The only solid wastes handled at the refinery are spent FCC catalyst and spent caustic. The spent FCC catalyst is land-filled on refinery property and the spent caustic is transported off site.

DP renewal approval on June 7, 1984 by Joe Ramy with restrictions. Item 3 states, "Any movement of hazardous waste will be reported to the appropriate office of the Environmental Improvement Division." This approval is also referenced in the OCD Letter dated April 19, 2000- Roger Anderson.

## 1985:

EPA Administrative Order Requiring Submission and Implementation of Proposal for Monitoring, Testing, Analysis and Reporting Docket No. RCRA-3013-00-185 signed March 29, 1985

EPA Compliance Order and Notice of Opportunity for Hearing Docket No. RCRA VI-501-H E.P.A I.D. No. NMD089416416 dated March 29, 1985 sent out by EPA. Item 5 indicates BRC was an owner and operator of a hazardous waste management facility used for the treatment, storage, and disposal of hazardous waste in accordance with the definitions of these terms under Section 1004 of RCRA, 42 U.S.C. §6903, and 40 CFR §260.10 and NMSA 74-4-3 and Section 102.A.. of HWMR-2..... Item 18 reactive hazardous waste was located near the API separator, in the Landfill Pond (LFP).....Item 38 following clean-out of SWOP and NOWP in November 1982, Plateau removed API separator sludge (K051) and contaminated soils from the ponds and disposed of them in an on-site landfill. Approximately 8 dump truck loads of haz. Waste sludge was deposited in a dry pit east of the refinery and covered. During the 1984 inspection by Complainant, samples were taken of the landfill. Subsequent analysis by Complainant demonstrated that these sludges were also reactive ha. Waste (D003) as defined 40

CFR 261.23 and 201.8.4 of HWMR-2. This action by Respondent-Plateau constituted the addition of a process (process code D80) at its facility for TSD of haz. waste..... Item 45 BRC failed to prevent the unknowing entry of persons or livestock onto the active portion of its facility..... Item 59 on or about the dates of the 1984 inspection, Plateau's closure plan did not include a description of the steps needed to decontaminate facility equipment, an estimate of the expected year of closure and a schedule for partial or final closure, and the total time required to close the facility. It also did not address the containers, tank, landfill, or landfill pond. Item 60..... Item 62 on or about the dates of the 1984 inspection, Plateau had no post closure plan for its haz. waste disposal landfill (D80). Item 63 Plateau violated 40 CFR 265.118 and Section 206.C.2.h of HWMR-2, by failing to have a written post-closure plan for its haz. waste disposal landfill. Item 72 ...failing to submit a financial assurance to Complainant for closure cases of Plateau's facility. Item 74 to date, Plateau has failed to submit a financial assurance to Compliance for post-closure case of specifically the landfill....

EPA Exhibit A Site Investigation- General Scope of Work signed April 1, 1985.

An EID Memo from Richard Holland, Director EID dated May 15, 1985, contained a chronology of recent events sent to Office of State Engineer included a section entitled, "Hazardous Waste Management, EPA and EID" with the following information: In 1980, Plateau notified EPA that they were a TSD facility for Mgt. of Hazardous Waste. This meant they were subject to regulation under RCRA, including GW monitoring. Later, Plateau informed EPA that they were in fact a generator only (i.e., not a TSD), in which case they are not subject to GW monitoring. Also, in case they were a TSD, Plateau submitted documents supporting their contention that they should have a waiver of GW monitoring requirements. In Oct. 1983, NM received Interim Authorization to administer the RCRA program via HWM Regulations (HWMR-2). In March 1984, EID denied Plateau's right to a waiver and required that they install GW monitoring. Plateau responded that they were not a TSD and no subject to GW monitoring requirements. As EPA was planning to take enforcement action, EID decided to defer further action until EPA's issues were resolved. Later in march of 1984, EPA and EID conducted a joint inspection (EPA lead) at the refinery. A large number of samples were taken by EPA. The purpose of sampling was to determine whether any TSD Units at the refinery contained Hazardous Waste. Units that might be hazardous waste management units (and thus subject to GW monitoring requirement) include the oily water ponds, the surface evap. ponds, the spray irrigation area, and the landfill. In January 1985, EID received Final Authorization from EPA.

EMNRD Memo dated May 17, 1985, contained a chronology of recent events sent to OSE "Item 7" states, "EPA issued its orders on March 29 and April 1. The §3008 order addressed alleged hazardous waste violations (including off-site waste shipment), and the §3013 directed that a work plan for additional hydrologic investigations be submitted within 30 days. Item 9 states, EID received the work plan on April 25 (David Boyer OCD).

EPA Letter dated July 5, 1985 "Revisions to "A Work plan for Monitoring, Testing, Analysis, and Reporting at the Bloomfield Refinery submitted per Administrative Order.....

EPA Partial Consent Agreement and Final Order signed September 27, 1985.

EPA Consent Agreement and Final Order signed November 26, 1985.

EPA Exhibit A Compliance Order and Notice of Opportunity for Hearing signed November 28, 1985.

EPA Letter dated December 12, 1985 enclosed copies of Consent Agreements and Final Orders with attachments, dated September 27, 1985, and November 26, 1985 resolving EPA's claims in the above reference case against Plateau, Inc.

**1986** (EPA Closure Plan submitted under Consent Agreement for landfill and pond):

Final Closure Plan for the API Wastewater Ponds, Landfill and Landfill Pond at the Bloomfield Refinery dated July 1986. In accordance with the consent agreement with EPA and NMEID Bloomfield Refining Company will close the API wastewater ponds, landfill, and landfill pond. This closure plan outlines the steps which will be undertaken to adequately close these facilities. Following approval of this plan by the NMEID, the operator will initiate closure activities within 30 days and complete closure within a 6 month time frame. Upon completion of closure, the operator will submit to the NMEID Director certification that the facilities have been closed out in accordance with this plan.

**1988:**

EMNRD letter dated Feb. 24, 1988, reminding the operator of the upcoming DP expiration date of June 7, 1989. In a series of issues identified to be covered in an approved DP, OCD states in Item 1: "Land application area. Discontinuance of this method of effluent disposal will be required unless ponding, seepage, and nitrate and high total dissolved solids (TDS) leaching will be eliminated." In Item 2: "You have issued a press release that the refinery will be expanded in 1988. If you intend to make any changes in disposal method or volume of effluents, these changes must be approved by the OCD."

New Mexico Health & Environment (NMHE) Inspection Report from November 3, 1987 indicated that there were 23 TSD issues at the facility that had not been corrected from the 11/21/86 NOV. API Separator Sludge was disposed in the landfill. Because the soil contamination resulted from contact with sludge derived from an API separator, regulatory agencies have contended that the facility is a TSD because of listed hazardous waste has been



disposed of on company property. In order to settle the above, the operator offered to remove land filled-material, and dispose of it as a hazardous waste.

**1989:**

January 30, 1989 Letter from David Boyer (OCD) to Bloomfield Refinery indicating that on June 7, 1984, the discharge plan was approved by OCD and will expire on June 7, 1989. The OCD also reminds the operator of the upcoming expiration date and mentions if operator no longer has discharges and discharge plan renewal is not needed, to notify the OCD.

The March 1989 discharge plan renewal application was received by OCD on March 7, 1989, which included Section VI Effluent Disposal A3 Land Application.

EMNRD Letter from David Boyer dated May 8, 1989 to the Refinery Manager indicating the OCD was in receipt of the discharge plan application on March 7, 1989. Also, that the OCD conducted an inspection with sampling at the facility in April 1989. In Item 13C of the letter, it is stated, "It was mentioned during the inspection that BRC was considering the use of the area at the landfill pond east of the fire fighting area as a solid waste disposal area. Prior to use of this area for disposal, a plan must be submitted to the OCD for approval. The plan will include the placement of a least ten feet of clean fill above the high water level, the types of wastes to be disposed of, the fencing of the disposal area to preclude unauthorized dumping and the commitment that no liquids will be disposed of in the area."

July 12, 1989 Letter from Bloomfield Refining Company regarding a recent inspection, Item 13C, indicates that operator "will follow the proper permitting procedure for any future landfill sites."

DP renewal approval on Nov. 2, 1989 (OCD Letter April 19, 2000- Roger Anderson).

EMNRD Letter dated Nov. 2, 1989 approving renewal of DP that will expire on June 7, 1989. The renewal application dated March 6, 1989 and materials dated May 26, July 12, August 3, and September 5, 1989 and submitted as supplements to the renewal application. Page 2 of the letter indicates that this DP approval is for a period of 2.5 years to give operator time to evaluate the effectiveness of the new lined ponds and determine if additional lined capacity is required. The renewal of this DP on Dec. 7, 1991, will address only the evaluation of any wastewater transfer, holding, storage or disposal that is not double-lined and equipped with leak detection including land application of effluent, and any concern that is mandated by Legislative, OCC, or WQCC Rules changes prior to that date (William Lemay).

**1990:**

EMNRD Letter from David Boyer dated December 11, 1990 to Bloomfield Refining Company indicating on November 2, 1989, the ground water discharge plan was renewed and will expire on December 7, 1991. The approval states, "If your facility continues to have effluent or leachate discharges and you wish to continue discharging, please submit your application for renewal of plan approval as quickly as possible. The renewal of this plan on December 7, 1991 will address only the evaluation of any wastewater transfer, holding, storage or disposal that is no double-lined and equipped with leak detection including land application of effluent, and any concern that is mandated by Legislative, OCDD or WQCC Rules changes prior to that date." "If you no longer have such discharges and discharge plan renewal is not needed, please notify this office."

**1992:**

DP approved Feb. 4, 1992 (OCD DP Renewal Letter April 19, 2000- Roger Anderson)...

EPA Letter dated April 8, 1992 enclosure copies of Administrative Order on Consent (Order) for the Bloomfield Refinery Company (BRC).

EPA Letter dated December 31, 1992 with attached copies of final RCRA §3008(h) Administrative Order on Consent (Order) for BRC. The effective date of the Order is December 31, 1992. This Order is submitted pursuant to the authority vested in the Administrator of the US EPA by 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) as further amended by the Haz. and Solid Waste Amendments of 1984, 42 USC 6928(h) [Administrative Order on Consent US EPA Docket No. VI-303-H signed December 21, 1992.

EMNRD Letter dated Nov. 12, 1993, indicates that the original GW DP was dated June 7, 1984 was last renewed on Feb. 4, 1992. The current approval will expire on June 6, 1994. The letter states that if operator continues to have potential or actual effluent or leachate discharges and wish to continue operation, they must renew their DP.

**1994:**

Bloomfield Refining Company Letter dated March 23, 1994 submits application for renewal with filing fee. DP renewal approval on May 24, 1994 with expiration date of June 7, 1999 (OCD Letter April 19, 2000- Roger Anderson).

EMNRD Letter dated April 12, 1994, a reminder that their DP will expire on June 6, 1994. A DP application must be received by March 23, 1994. Some requests for additional information

based on a review of the application and the March 23, 1994 inspection of the facility was included in the letter. The OCD required all underground oily water drain lines be pressure tested at least 1x/5yrs. OCD requires all single-lined sumps and/or oil/water separators to be inspected at least annually. During the inspection, several areas were noted to have hydrocarbon staining, in particular, around the diesel fuel tank filler area. Submit info. and commitment to expedite final review of the application and approval of the DP renewal (Robert Myers II).

EMNRD Letter dated May 24, 1994 approved the DP with conditions. The conditions were: 1) Fee payment; 2) Oil/water separator; 3) Underground oily water pressure testing; 4) Oily water ponds; 5) Evaporation pond closure; 6) Spills; 7) In-house diesel sales facility; and 8) Drum storage. The DP will expire on June 7, 1999.

#### **1996:**

January 29, 1996 "Attachment to the Discharge Plan GW-001 Approval" was signed on February 22, 1996 by the Refinery Manager and does not mention landfills or land applications.

OCD approved change of ownership on January 29, 1996 and approved modification on November 19, 1996 (OCD Letter April 19, 2000- Roger Anderson).

#### **1999:**

Operator letter to the OCD dated February 8, 1999 includes a discharge plan renewal application. The application includes Section 6.3 FCC Fines 50 tons (one one ton hopper per week) to onsite landfill east of fire training area along with 180 tons of sulfur (10 tons/week) to onsite stockpile-sell as fertilizer. Note: No application for Active Landfill was received by OCD.....

#### **2000:**

A March 30, 2000 OCD facility inspection Item 8 (onsite/offsite waste disposal and storage practices) provision requiring Giant to sample waste going into landfill for WQCC constituents (see Picture 27 New active landfill and 28 Old inactive landfill w/ MW-8 in background). Also, a map with estimated boundary of inactive landfill and OCD hand sketch of location of active landfill.

**2000 (Note: First time OCD DP references "Active" and "Inactive Landfills" w/ request for Closure Plans):**

EMNRD Letter with attached DP approval letter dated April 19, 2000 with an expiration date of June 7, 2004. Never received.....

**2004:**

**2005 (OCD DP references "Active" and "Inactive Landfills" w/ request for Closure Plans):**

EMNRD Letter with attached DP approval letter dated August 12, 2005 with an expiration date of June 7, 2009. Never received.....

**2007:**

Refinery submitted 2007 Request for Modification to the OCD discharge permit. OCD responded via e-mail dated February 22, 2008 to hold off until the discharge permit renewal in June of 2009. The OCD also put the Refinery on notice of its intent to close the landfill at the facility in the permit renewal and was discouraged from using the landfill for waste disposal at the facility. The Refinery never responded to this e-mail with issues or concerns until the August 31, 2009 discharge permit renewal meeting and inspection conducted at the refinery by the OCD.

**2009:**

The Refinery submitted its application for renewal of the OCD discharge permit on February 23, 2009. The permit expired on June 7, 2009. The OCD was working on the renewal before the January 26, 2009 reorganization of the Environmental Bureau issued by Bureau Chief Wayne Price and approved by the OCD Director. Consequently, the OCD was delayed in the discharge permit application process, but is once again moving forward with the discharge permit renewal process. Subsequent to some kind of resolution of the landfill matter from the OCD's August 31, 2009 facility inspection and discharge permit meeting, OCD hope to issue a draft permit and begin the public notice process.



# New Mexico Energy, Minerals and Natural Resources Department

**Bill Richardson**  
Governor

Joanna Prukop  
Cabinet Secretary

Mark Fesmire  
Division Director  
Oil Conservation Division



October 1, 2009

**CERTIFIED MAIL**  
**RETURN RECEIPT NO: 3929 6115**

Mr. Randy Schmaltz  
Refinery Manager  
Western Refining Southwest- Bloomfield Refinery  
P.O. Box 159  
Bloomfield, New Mexico 87413

RE: DRAFT Discharge Permit Renewal (GW-001) Bloomfield Refinery  
NW/4 NE/4, S/2 NW/4, and the N/2 NE/4 SE/4 of Section 27; and the S/2 NW/4, N/2  
NW/4 SW/4, 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

Dear Mr. Schmaltz:

Pursuant to Water Quality Control Commission (WQCC) Regulations 20.6.2.3104 - 20.6.2.3114 NMAC, the Oil Conservation Division (OCD) hereby approves the discharge permit for the Western Refining Southwest- Bloomfield Refinery contingent upon the conditions specified in the enclosed Attachment to the Discharge Permit. Enclosed are two copies of the conditions of approval. Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 45 days of receipt of this letter including permit fees.

Please be advised that approval of this permit does not relieve the owner/operator of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does approval of the permit relieve the owner/operator of its responsibility to comply with any other applicable governmental authority's rules and regulations.

*The final permit should be issued in approximately 45 days.* If you have any questions, please contact Carl Chavez of my staff at (505-476-3490) or E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge permit review.

Sincerely,



WESTERN REFINING SOUTHWEST, INC.  
BLOOMFIELD REFINERY

GW-001  
October 1, 2009

Glenn von Gonten  
Acting Environmental Bureau Chief

GvG/cc  
Attachments-1

xc: OCD District Office

**ATTACHMENT TO THE DISCHARGE PERMIT  
WESTERN REFINING SOUTHWEST- BLOOMFIELD REFINERY (GW-001)  
DISCHARGE PERMIT APPROVAL CONDITIONS**

**September 22, 2009**

**Please remit a check for \$8,400.00 made payable to Water Quality Management Fund:**

**Water Quality Management Fund  
C/o: Oil Conservation Division  
1220 S. Saint Francis Drive  
Santa Fe, New Mexico 87505**

- 1. Payment of Discharge Plan Fees:** All discharge permits are subject to WQCC Regulations. Every billable facility that submits a discharge permit application shall be assessed a filing fee of \$100.00, plus a renewal flat fee (*see* WQCC Regulation 20.6.2.3114 NMAC). The Oil Conservation Division ("OCD") has received the required \$100.00 filing fee.
- 2. Permit Expiration, Renewal Conditions and Penalties:** Pursuant to WQCC Regulations (20.6.2.3109.H.4 NMAC), this permit is valid for a period of five years. **The permit will expire on June 7, 2014** and an application for renewal shall be submitted no later than 120 days before that expiration date. Pursuant to WQCC Regulation 20.6.2.3106.F NMAC, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit shall not expire until the application for renewal has been approved or disapproved. *Expired permits are a violation of the Water Quality Act {Chapter 74, Article 6, and NMSA 1978} and civil penalties may be assessed accordingly.*
- 3. Permit Terms and Conditions:** Pursuant to WQCC Regulation 20.6.2.3104 NMAC, when a permit has been issued, the owner/operator must ensure that all discharges shall be consistent with the terms and conditions of the permit. In addition, all facilities shall abide by the applicable rules and regulations administered by the OCD pursuant to the Oil and Gas Act, Sections 70-2-1 through 70-2-38 NMSA 1978.
- 4. Owner/Operator Commitments:** The owner/operator shall abide by all commitments submitted in its February 23, 2009, discharge plan renewal application, including attachments and subsequent amendments and these conditions for approval. Permit applications that reference previously approved plans under the former "Giant Refining" company name on file with the division shall be incorporated in this permit and the owner/operator shall abide by all previous commitments of such plans and these conditions for approval.
- 5. Modifications:** WQCC Regulations 20.6.2.3107.C and 20.6.2.3109 NMAC address possible future modifications of a permit. The owner/operator shall notify the OCD of any facility expansion, production increase or process modification that would result in any significant modification in the discharge, or potential of discharge, of water contaminants. The Division Director may require a permit modification if any water quality standard specified at

that inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only, must be permitted by the New Mexico Environment Department (NMED) unless the sanitary effluent is treated by the facility waste water treatment system, then sanitary effluent would be regulated by the OCD.

**15. Housekeeping:** The owner/operator shall inspect all systems designed for spill collection/prevention and leak detection at least monthly to ensure proper operation and to prevent over topping or system failure. All spill collection and/or secondary containment devices shall be emptied of fluids within 72 hours of discovery. The owner/operator shall maintain all records of inspection at the facility and available for OCD inspection.

**16. Spill Reporting:** The owner/operator shall report all unauthorized discharges, spills, leaks and releases and conduct corrective action pursuant to WQCC Regulation 20.6.2, 1203.NMAC, OCD Part 29 (19.15.29 NMAC), and/or OCD Part 30 (19.15.30 NMAC). The owner/operator shall notify both the OCD Aztec District Office and the Santa Fe Office within 24 hours and file an initial OCD C-141 Form and a final C-141 with a written report within 15 working days. All fires regardless of how small or the duration shall be reported on a C-141 Form to the OCD identifying the unit or location where the fire occurred, its suspected cause, injuries, etc. and corrective action(s) taken to ensure public health and safety are properly tracked and addressed.

**17. OCD Inspections:** The OCD may place additional requirements on the facility and modify the permit conditions as needed based on OCD inspections, the threat to public health and the environment.

**A. Treatment System Monitoring:** An adequate number of flow meters shall be located at all influent lines into the treatment system and other key locations to help monitor the treatment system process and capacity at the facility. The flow meters shall be monitored weekly or as often as needed to determine the average and maximum wastewater treatment capacity based on pollutant loading under variable flow rate conditions at the facility.

**B. Evaporation Ponds:** Evaporation Ponds shall be inspected a minimum of three times per week and after any major storm event or malfunction of the treatment system. Weekly records shall be maintained for all flow rates from all flow meters, fluid levels, freeboard, seepage, flow channels, pipes, valves, and dike integrity.

**1. North and South Double-Lined Waste Water Evaporation Ponds** shall maintain a minimum freeboard of 3 feet to prevent over-topping of wastewater. Any repairs or modifications to the pond liners and/or leak detection systems must receive prior OCD approval, except under emergency conditions. Any exceedance of the freeboard or any leaks or releases shall be reported pursuant to Section 16 (Spill Reporting). The operator shall also maintain an Action Plan with a system design diagram with leak detection system(s) that will confirm leakage or system failure, and list corrective actions for remedying any discharge(s) from the ponds in order to protect public health and the environment. A copy of the Action Plan shall



be submitted to the OCD within 3 months of permit issuance. OCD shall be notified within 24 hours any time the plan is implemented.

**2. North and South Aeration Lagoons** shall maintain a minimum freeboard of 3 feet to prevent over-topping of oily wastewater. Any repairs or modifications to the aeration lagoon liners and/or leak detection systems must receive prior OCD approval, except under emergency conditions. Any exceedance of the freeboard or any leaks or releases shall be reported pursuant to Section 16 (Spill Reporting). The operator shall also maintain an Action Plan with a system design diagram with leak detection system(s) that will confirm leakage or system failure, and list corrective actions for remedying any discharge(s) from the ponds in order to protect public health and the environment. A copy of the Action Plan shall be submitted to the OCD within 3 months of permit issuance. OCD shall be notified within 24 hours any time the plan is implemented.

**3.** Associated leak detection systems for the above shall be inspected for fluids monthly and/or more frequently as specified under an OCD approved Action Plans. Records shall be maintained to include quantity and column thickness of fluid measured, presence of phase separated hydrocarbons, date of inspection, and name of inspector. Any fluids detected in the leak detection systems must be addressed through the Action Plan. Any confirmed leakage to the environment must be reported to the OCD Environmental Bureau in Santa Fe and the Aztec District Office in accordance with Sections 17(B)(1)(2) above.

**C. Evaporation Pond(s) Water Quality and Quantity Monitoring:** Surface water shall be observed, sampled and analyzed in accordance with Section 20 (FWGWMP) below.

**D. Temporary storage ponds:** Any temporary ponds that were previously approved shall be identified and the Owner/operator shall submit a closure plan for OCD approval within 6 months of permit issuance.

**E. Temporary Landfarms:** A closure plan for any temporary landfarm(s) or land treatment area(s) shall be submitted to the OCD within 6 months of permit issuance.

**F. Landfills:** A closure plan addressing all facility landfill(s) (active or inactive) at the facility shall be submitted to the OCD within 9 months of permit issuance. The active and inactive landfills at the facility are currently being investigated under RCRA SWMUs 8 and 16. This investigation information will help the operator with the final closure within 12 months of permit issuance or a date approved by the agencies. *Landfill disposal at these facilities is prohibited on the date of permit issuance may require treatment and/or disposal at an OCD permitted or approved facility.*

**G. Emergency River Contingency Plan:** An emergency river contingency plan with corrective action steps shall be developed submitted to OCD within 3 months of permit issuance with annual environmental response training of appropriate refinery emergency

**A. Annual Ground Water Report:** An annual ground water report shall be submitted to the agencies by April 15<sup>th</sup> of each year. The annual ground water report shall contain information for all recovery and monitoring systems, such as, but not limited to; all on and off-site recovery and monitoring wells, Hammond ditch French drain system, including all outfalls, the new barrier wall recovery and monitoring wells, the river terrace recovery, remediation and monitoring wells and any other wells required to be monitored under the FWGMP in Section 20 above. The annual ground water report may be combined with the Annual Report (see Section 22) shall address at minimum the following:

1. A description of the monitoring and remediation activities, which occurred during the year including any conclusions and recommendations.
2. Summary tables listing laboratory analytic results of all water quality sampling for each monitoring point and plots of concentration vs. time for contaminants of concern from each monitoring point. Any WQCC constituent found to exceed the groundwater standard shall be highlighted and noted in the annual report. Copies of the most recent year's laboratory analytical data sheets shall also be submitted.
3. An annual water table (piezometric) or potentiometric elevation map using the water table elevation of the ground water in all refinery monitor wells. A corrected water table elevation shall be determined for all wells containing phase-separated hydrocarbons. This map shall show well locations, pertinent site features, and the direction and magnitude of the hydraulic gradient.
4. Plots of water table elevation vs. time for each ground water monitoring point.
5. An annual phase-separated hydrocarbon or product thickness map to the nearest one-one hundredth (0.01) of a foot based on the thickness of free-product or phase separated hydrocarbons on ground water in all refinery recovery wells. This map shall include isopleths or isoconcentration contour lines for toxic contaminants of concern.
6. The estimated volume of phase-separated hydrocarbons or product recovered in the recovery wells during each quarter and the total volume recovered to date.
7. Electronic filing: The owner/operator may file this report in an acceptable electronic format; however, in addition, a hard copy must be submitted to the agencies.

**B. Additional Requirements:**

1. Upon permit issuance, no wastes shall be disposed within any landfills at the facility, since they are considered solid waste that will need to be removed. A

closure plan for landfills at the facility shall be submitted within 9 months of permit issuance for agency approval. Any on-site landfill shall be properly closed with the agencies within 12 months of permit issuance or by a date approved by the agencies. The active landfill has been used to dispose of fluid catalytic cracking unit (FCCU) catalyst (alumina silica based) and sulfur byproducts, while the inactive landfill was used to dispose K052 (API separator sludge) waste, and as a stockpiling location for excavated contaminated soils. In April 1991, the operator petitioned EPA for a delisting determination on the inactive landfill, which was granted by EPA. The operator later obtained permission from OCD to use soils from the inactive landfill for fill in a low-lying area near the naphtha loading rack. The actual date of the inactive landfill closure is unclear. (GTI 1993, GTI 1994a, NMED 1999, BR 2001, GRCB 2003).

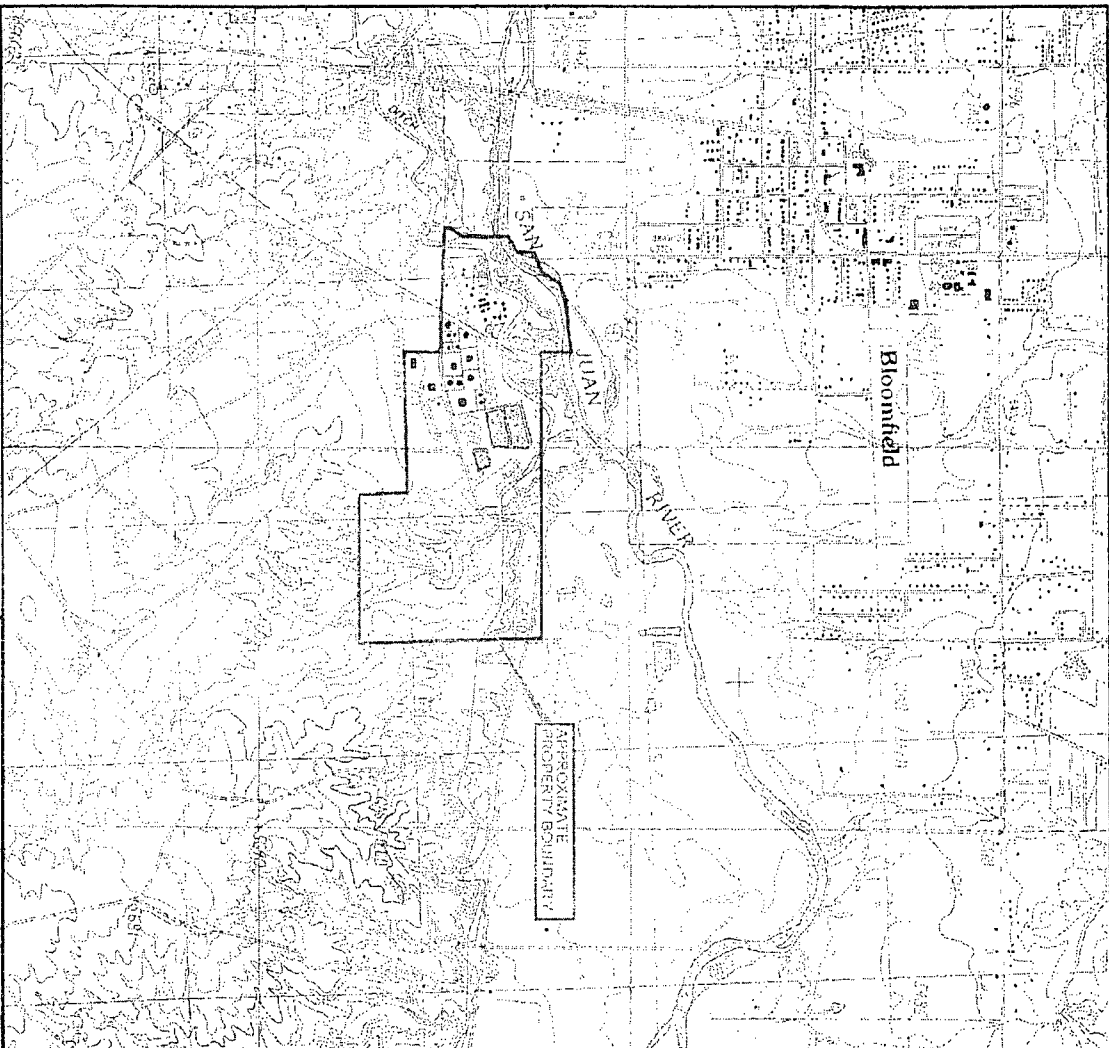
2. The operator has and/or is currently investigating the landfill inactive and active landfills under RCRA, which will assist the operator in developing a final closure plan that will meet the deadline listed above.
3. Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan: If concentrations of H<sub>2</sub>S at the facility may exceed 100 ppm as specified in 19.15.11.12 et seq. NMAC, a H<sub>2</sub>S Contingency Plan per 19.15.11.9 et seq. NMAC shall be submitted within 3 months of permit issuance.
4. Owner/operator shall notify the OCD Santa Fe and the local district offices at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples. For large facilities, *i.e.*, refineries, an annual notification will suffice.
5. Owner/operator shall notify the OCD within 72 hours of the discovery of phase-separated hydrocarbons or the exceedance of WQCC Standards in any down gradient monitor well where separate-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards during the preceding monitoring event.

**22. Annual Report:** On an annual basis due by April 15th, the Operator shall submit a formal Annual Report to the agencies summarizing the past year's activities. The Annual Report may be combined with the Annual Ground Water Monitoring Report (Section 21A) and shall address at a minimum the following:

- A. A summary of all major refinery activities or events.
- B. Results of all sampling and monitoring events.
- C. Summary of all waste and wastewater disposed of, sold, or treated on-site, including a refinery wastewater balance sheet with a mass balance of the evaporation pond rates.

## State of NM Regulations

- 1) WQCC Regulations (20.6.2 NMAC- *Effective Date: 12/1/1995* & 20.6.4 NMAC- *Effective Date: 10/12/2000*) (*Note: Post-dates inactive landfill and landfill pond use date in 1980*)
- 2) Former OCD Rule 711 (Surface Waste Management Facilities- *Effective Date: 1988*) (*Note: Post-dates inactive landfill and landfill pond use date in 1980 and pre-dates active landfill used date in 2000*)
- 3) OCD Part 36 (Surface Waste Management Facilities- *Effective Date: 2/14/2007*) (*Note: Post dates active landfill use date in 2000*)

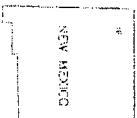


Map Source: USGS 7.5 Min Quad Sheet BLOOMFIELD, NM, 1953.



0 1000  
SCALE IN FEET

OVERLAP LOCATION



**Western Refining**

WESTERN REFINING SOUTHWEST

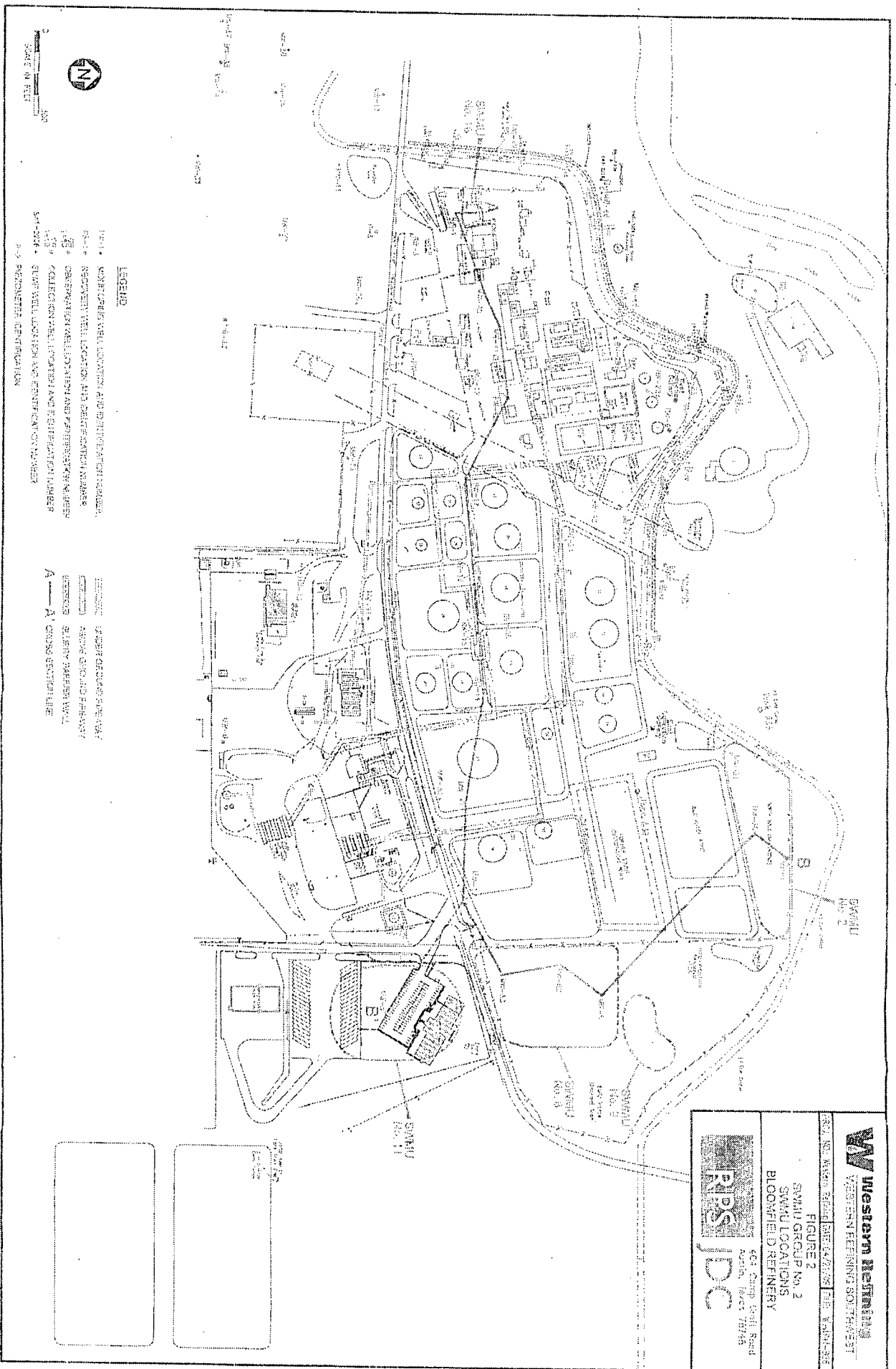
PROJ NO: Western Refining DATE: 8/19/08 FILE: Western-425

FIGURE 1

SITE LOCATION MAP  
BLOOMFIELD REFINERY



404 Camp Creek Road  
Amarillo, Texas 79745



1" = 100' SCALE  
 1" = 100' SCALE  
 1" = 100' SCALE

1" = 100' SCALE  
 1" = 100' SCALE  
 1" = 100' SCALE

1" = 100' SCALE  
 1" = 100' SCALE  
 1" = 100' SCALE

WESTERN REFINING

FIGURE 2

SWMU GROUP No. 2

SWMU LOCATIONS

BROOMFIELD REFINERY

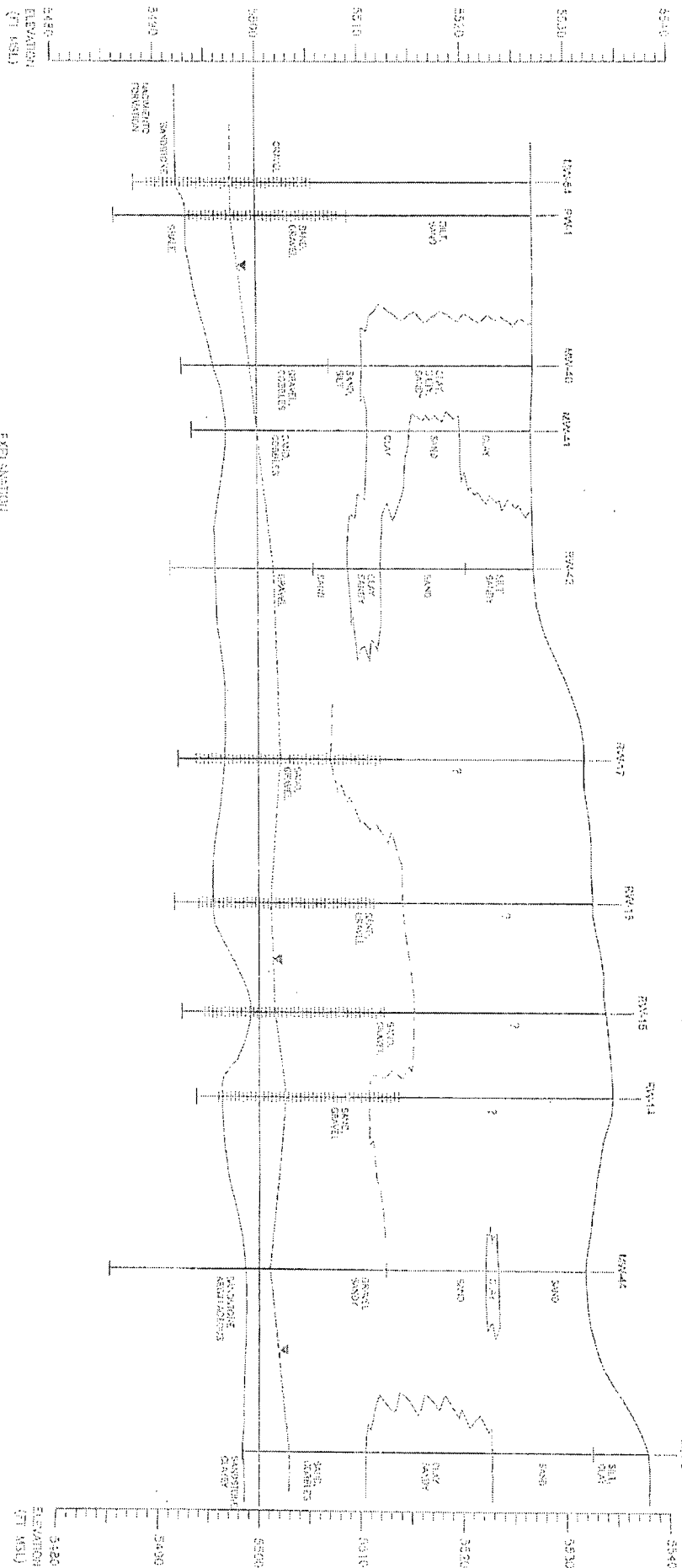
401 Camp Hill Road

Acadia, Texas 76745

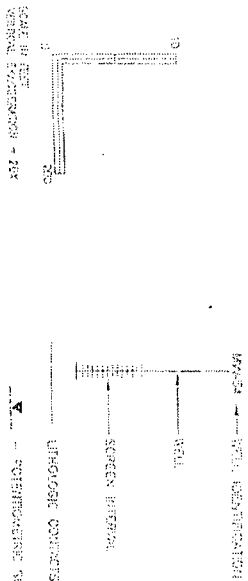
RPS JDC


WEST  
A

EAST  
A




EXPLANATION





**Western Petroleum**  
WESTERN PETROLEUM COMPANY  
BLOOMFIELD REFINERY

FIGURE 3  
CROSS SECTION A-A'  
WEST TO EAST  
BLOOMFIELD REFINERY

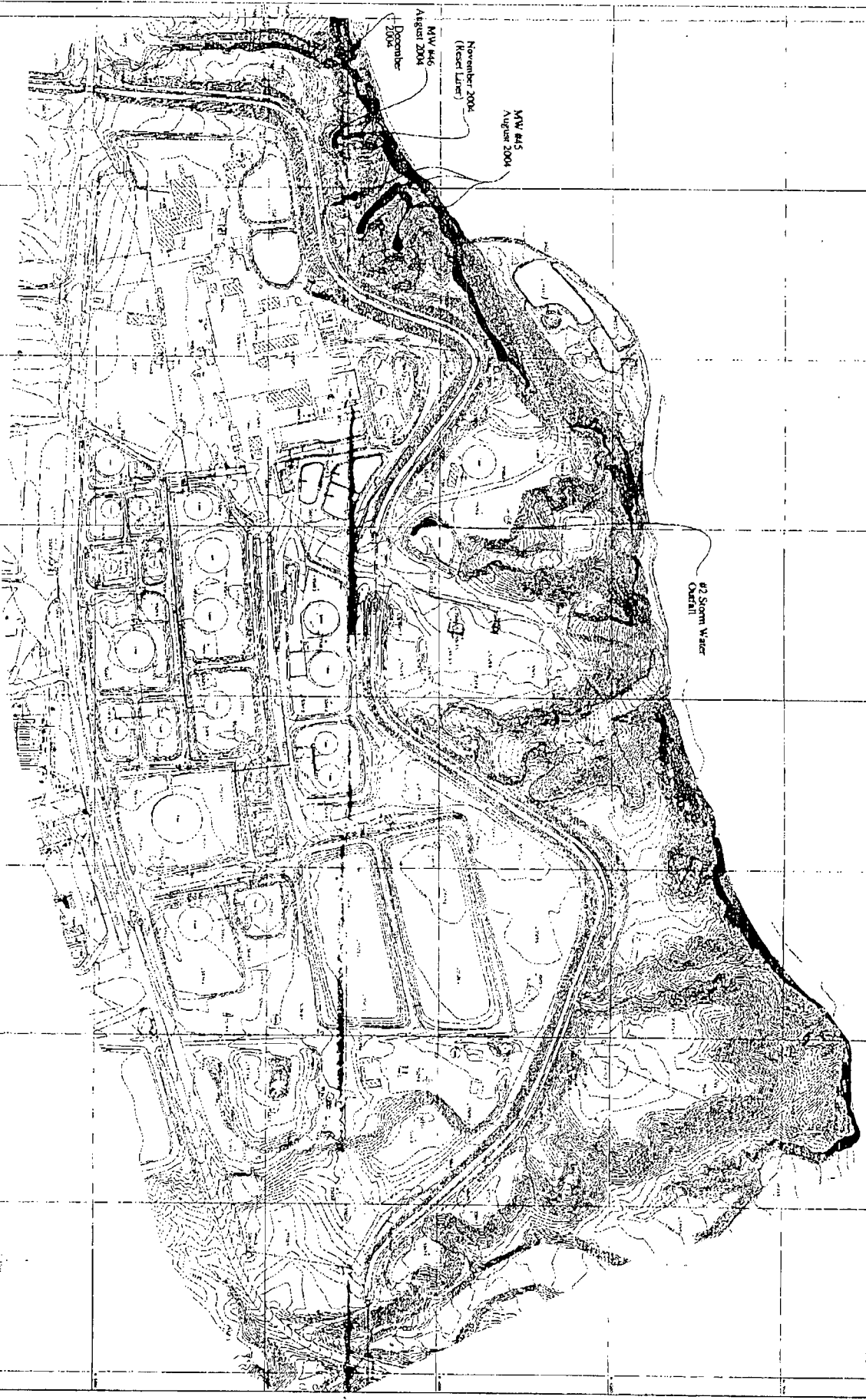


NPS JDC

400 Camp Creek Road  
Bloomfield, NM 87401

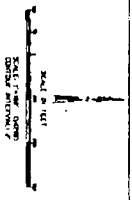






NOTES:  
1. This map was prepared from aerial photography taken in 1964.  
2. The map is not a true representation of the actual terrain.  
3. The map is not a true representation of the actual terrain.  
4. The map is not a true representation of the actual terrain.  
5. The map is not a true representation of the actual terrain.

Legend:  
Topographic features:  
Base map:  
Giant Refinery:  
Bloomfield, New Mexico



TOPOGRAPHIC/PLANIMETRIC  
BASE MAP  
OF THE  
GIANT REFINERY  
IN THE VICINITY OF  
BLOOMFIELD, NEW MEXICO

E-000-900-024



BLOOMFIELD REFINERY

WNR  
LISTED  
NYSE

FedEx Overnight Priority #: 8577 6554 5029

September 21, 2009

Carl Chavez  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Re: Draft Discharge Permit (GW-001)  
Western Refining Southwest, Inc.-Bloomfield Refinery

Dear Mr. Chavez:

Western Refining Southwest, Inc.- Bloomfield Refinery (Western) appreciates the opportunity to comment on the "Draft" Discharge Permit (GW-001) and has prepared the following comments.

**Condition 17. F.**

**F. Landfills:** *A closure plan addressing all facility landfill(s) (active or inactive) at the facility shall be submitted to the OCD within 9 months of permit issuance. The active and inactive landfills at the facility are currently being investigated under RCRA SWMUs 8 and 16. This investigation information will help the operator with the final closure within 12 months of permit issuance or a date approved by the agencies. Landfill disposal at these facilities is prohibited on the date of permit issuance may require treatment and/or disposal at an OCD permitted or approved facility.*

**Comment:** Western believes that the conditions in the draft Discharge Permit addressing the active landfill are not allowed by the New Mexico Water Quality Act ("WQA"), Sections 74-6-1 through 74-6-17 NMSA 1978. These conditions concerning the active landfill in Sections 17.F and 21.B.1 of the draft Discharge Permit (1) prohibit waste disposal beginning on the date of permit issuance; (2) require a closure plan to be submitted to OCD within 9 months of permit issuance; and (3) require closure within one year of permit issuance.

Western understands that OCD justifies these conditions by relying on OCD's Surface Waste Management Facilities ("SWMF") regulations at 19.15.16 NMAC, adopted under the authority of the New Mexico Oil and Gas Act ("OGA"), Sections 70-2-1 through 70-2-38 NMSA 1978. Further, Western understands that OCD relies on the specific provision of the SWMF regulations, 19.15.36.13.B(1) NMAC, prohibiting a SWMF from locating within 200 feet of a watercourse as justification for the conditions in the draft

Discharge Permit addressing the active landfill. Western believes there are at least three reasons why these conditions are unlawful, as summarized below.

First, the conditions violate Section 74-6-12.G of the WQA, which states as follows: "The Water Quality Act does not apply to any activity or condition subject to the authority of the oil conservation commission pursuant to provisions of the Oil and Gas Act..." Because the siting requirement is part of the SWMF regulations, adopted under the OGA, OCD is not allowed to apply that requirement in a discharge permit issued under the authority of the WQA.

Second, 2009 amendments to the WQA have clarified that OCD, as a "constituent agency", must demonstrate that a permit condition is necessary. "The constituent agency has the burden of showing that each condition is reasonable and necessary to ensure compliance with the Water Quality Act and applicable regulations, considering site-specific conditions." Section 74-6-5.D of the WQA. Western's Discharge Permit (GW-001) has allowed the active landfill to operate for many years. If OCD now wishes to prohibit operation of the landfill, OCD has the burden of showing that the prohibition is reasonable and necessary under the WQA. It does not appear that such a showing has been made.

Third, even if OCD applied the SWMF regulations under the OGA, instead of the discharge permit regulations under the WQA, the siting requirements in 19.15.36.13 NMAC still would not apply to the active landfill. The transitional provisions of the SWMF regulations, 19.15.36.20 NMAC, state that SWMFs operating pursuant to an OCD permit prior to the effective date of the SWMF regulations (February 14, 2007) may continue to operate in accordance with such permit (in this case, GW-001). Some operational, waste acceptance and closure requirements provided in 19.15.36 NMAC may apply. 19.15.36.20 NMAC. However, the transitional provisions of the SWMF regulations do not include siting requirements as applicable. The inapplicability of the siting requirements in the SWMF regulations to Western's active landfill is understandable, since the site of the landfill was selected long before OCD adopted the SWMF regulations.

**Condition 21. B. 1.**

1. *Upon permit issuance, no wastes shall be disposed within any landfills at the facility, since they may likely need to be removed anyway. A closure plan for landfills at the facility shall be submitted within 9 months of permit issuance for agency approval. Any on-site landfill shall be properly closed with the agencies within one year of permit issuance or by a date approved by the agencies. The active landfill has been used to dispose of K172 fluid catalytic cracking unit (FCCU) catalyst and sulfur byproducts, while the inactive landfill was used to dispose K052 (API separator sludge) waste, and as a stockpiling location for excavated contaminated soils. In April 1991, the operator petitioned EPA for a delisting determination on the inactive landfill, which was granted by EPA. The operator later obtained permission from OCD to use soils from the inactive*

*landfill for fill in a low-lying area near the naphtha loading rack. The actual date of the inactive landfill closure is unclear.*

**Comment:** This condition mistakenly states that K172 and K052 wastes are being mismanaged by the refinery, and implies that the refinery is willingly disposing of listed wastes in disregard of Federal (RCRA) Regulations. The listed waste designation K172 is for Spent Hydrotreating catalysts (metal based) and does not apply to Fluid catalytic cracking catalysts (alumina silica based). Fluid catalytic cracking catalyst is not a listed waste.

The listed waste designation K052 is for Tank bottoms (leaded) from petroleum refining industry. The Bloomfield Refinery petitioned the EPA for a delisting of the above mentioned soils that were accumulated during the 1982 retrofit of the aeration ponds done by Plateau. The EPA granted this petition, delisting this soil. The Bloomfield refinery went through the proper channels and secured the delisting of this soil prior to disposal. With the delisting of this soil, the implication that Bloomfield disposed of a listed waste is inaccurate.

Western requests that Condition 21. B. 1. be removed entirely, or the implication that the refinery mismanaged listed wastes be corrected.

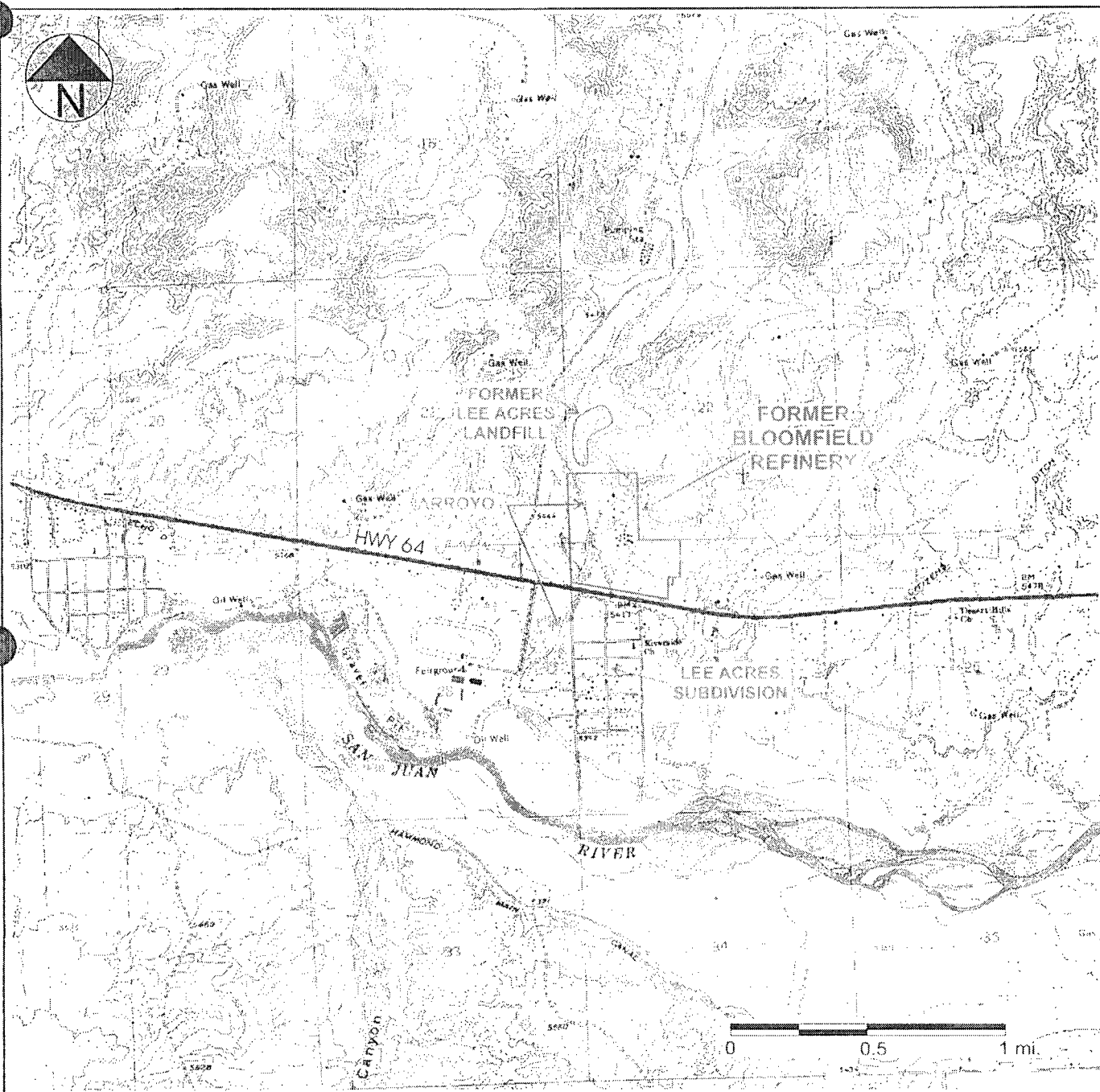
If you have questions or would like to discuss these comments further, please contact Randy Schmaltz at (505) 632-4171.


Sincerely,



Todd R. Doyle  
Refinery Manager  
Bloomfield Refinery

cc: Randy Schmaltz – Western Refining-Bloomfield Refinery



 <p>Lodestar Services, Inc. PO Box 4465 Durango, CO 81302</p>	<p>GIANT BLOOMFIELD FORMER REFINERY SAN JUAN COUNTY, NEW MEXICO TOPOGRAPHIC MAP (USGS 1:100,000 Scale Horn Canyon, New Mexico Topographic Map)</p>	<p>PROJECT: FORMER REFINERY ANNUAL REPORT DRAWN BY: ALA REVISED: 03/16/09</p>	<p>FIGURE 1</p>
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**Annual Data Report  
Former Giant Bloomfield Refinery**

RECEIVED

2009 APR 17 AM 10 15

**March 2009**

**Prepared For**



**Western Refining, Inc.  
111 CR 4990  
Bloomfield, New Mexico**

 **Lodestar Services, Incorporated**  
PO Box 4465, Durango, CO 81302 Office (970) 946-1093



## Western Refining

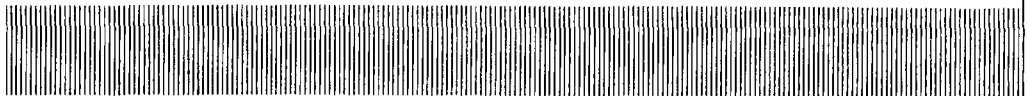
Bloomfield Refinery • #50 Road 4990 • Bloomfield, NM 87413

# Facility-Wide Groundwater Monitoring Plan

(Revised May 2008)

December 2007

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2008 JUN 9 PM 1 53

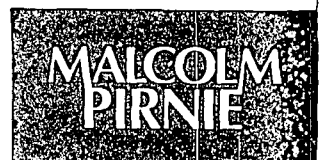


Report Prepared By:

### Malcolm Pirnie, Inc.

4646 E Van Buren  
Suite 400  
Phoenix, AZ 85008  
602.241.1770

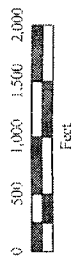
5127-004



# Legend

- Seep
- Injection Well
- Site Well
- Discharge Location
- Site

Note:  
Site map revised May 2008  
(NMED, 2008)



**WALCOLM  
PIRNE**

4445 E. Van Buren St.,  
Suite 400  
Phoenix, AZ 85008

## Site Plan

Bloomfield Refinery  
Facility-Wide Groundwater  
Monitoring Plan

December 2007

Figure 2

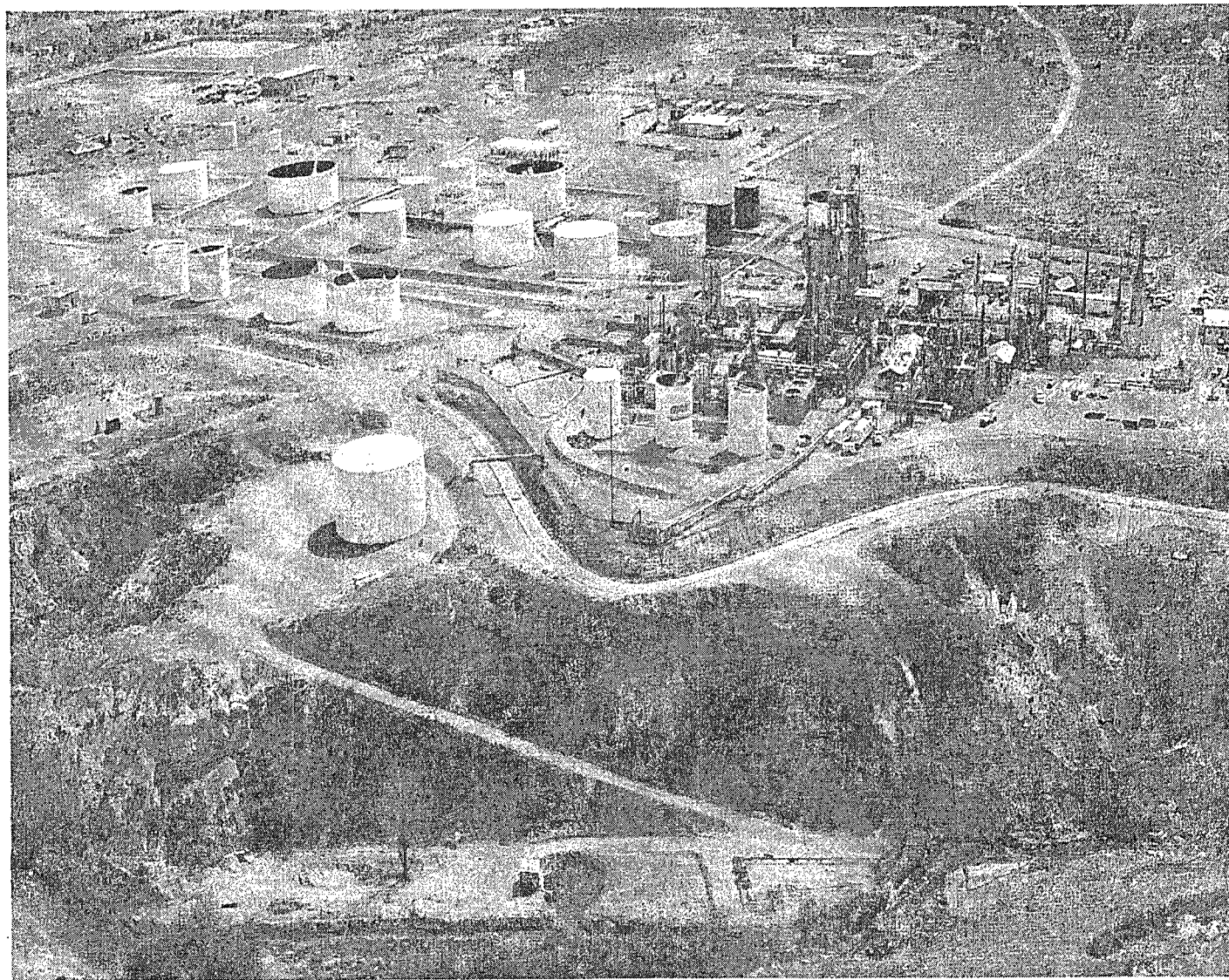




**Table 3**  
**Facility-Wide Monitoring Program**  
**Bloomfield Refinery - Western Refining Company**

Well ID	Sampling Frequency	VOCs (EPA Method 8260)	VOCs - Target List (EPA Method 8260)	SVOCs (EPA Method 8270)	TPH - Diesel Range Organics (DRO) (EPA Method 8015B)	TPH - Gasoline Range Organics (GRO) (EPA Method 8015B)	Dissolved Metals (EPA Method 8017/27/270)	Total Recoverable Metals - Target List (EPA Method 8017/270)	Total Dissolved Solids (TDS) (EPA Method 8017/270)	Specific Conductance (EPA Method 120.1 or Field Measurement)	Carbon Dioxide (EPA Method 310.1)	Alkalinity (EPA Method 310.1)	Anions (EPA Method 300.0)
<b>REFINERY COMPLEX</b>													
<b>Background Wells</b>													
MW-3	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-5	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-6	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
<b>Refinery Wells</b>													
RW-1	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-4	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-8	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
RW-9	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-15	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-18	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-20	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-21	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-23	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-28	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-29	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-30	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-31	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-40	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-42	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
RW-43	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-44	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
<b>Cross-Gradient Wells</b>													
MW-1	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-13	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-26	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-27	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-31	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-32	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-33	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
<b>Downgradient Wells</b>													
MW-11	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-12	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-34	Semi-Annually Annually	X			X	X	Not Sampled		X	X	X	X	X
MW-35	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-37	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
MW-38	Semi-Annually Annually	X	X		X	X	X	X	X	X	X	X	X
<b>NORTH BARRIER WALL</b>													
<b>Collection Wells</b>													
CW 0+60	Semi-Annually		X		X	X							
CW 25+05	Semi-Annually		X		X	X							
<b>Observation Wells</b>													
OW 0+60	Semi-Annually		X		X	X							
OW 1+50	Semi-Annually		X		X	X							
OW 3+85	Semi-Annually		X		X	X							
OW 5+50	Semi-Annually		X		X	X							
OW 6+70	Semi-Annually		X		X	X							
OW 8+10	Semi-Annually		X		X	X							
OW 11+15	Semi-Annually		X		X	X							
OW 14+10	Semi-Annually		X		X	X							
OW 16+60	Semi-Annually		X		X	X							
OW 19+50	Semi-Annually		X		X	X							
OW 22+00	Semi-Annually		X		X	X							
OW 23+10	Semi-Annually		X		X	X							
OW 23+90	Semi-Annually		X		X	X							
OW 25+70	Semi-Annually		X		X	X							

# **2006 GROUNDWATER REMEDIATION AND MONITORING ANNUAL REPORT**



**SAN JUAN REFINING COMPANY  
GIANT - BLOOMFIELD REFINERY  
SUBMITTED: APRIL 2007**

# TABLE OF NEW MEXICO AND THE U. S. EPA'S GROUNDWATER STANDARDS

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
General Properties				
non-aqueous phase liquid (NAPL)	NP			
petroleum				
floating product	NP			
undesirable odor ( a )	NP			
pH (units) ( a )	6 - 9	6.5 - 8.5		
total dissolved solids (TDS) ( a )	1000	500		
turbidity		n		
Biological Contaminants				
giardia lamblia	n	Zero		
legionella	n	Zero		
total coliform	<5%+	Zero		
viruses	n	Zero		
Inorganic Contaminants				
aluminum	5.0 ( i )	0.05 - 0.2 ( a )		
ammonia				30
antimony		0.006	0.006	
arsenic	0.1	0.05	0.05	
asbestos-fibers/liter (longer than 10 um)		7 million	7 million	
barium	1.0	2	2	
beryllium		0.004	0.004	
boron	0.75 ( i )			0.06
bromate		0.01 ( p )	Zero ( p )	
cadmium	0.01	0.005	0.005	
chlorate				0.01

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA BA (ppm)
chloride ( a )	250	250		0.01
chlorine				1
chlorine dioxide				0.08
chlorite		1.0 ( p )	0.08 ( p )	
chromium	0.05	0.1	0.1	
cobalt ( i )	0.05			
copper		1.3 ( al )	1.3	
cyanide	0.2	0.2	0.2	
fluoride	1.6	4.0		
fluoride ( a )		2		
iron ( a )	1.0	0.5		
lead	0.05	0.015 ( al )	Zero	
manganese ( a )	0.2	0.05		
mercury	0.002	0.002	0.002	
molybdenum	1.0 ( i )			0.05
nickel	0.2 ( i )	0.1	0.1	
nitrate - N	10	10	10	
nitrite - N		1	1	
nitrate + nitrite ( as N )		10	10	
selenium	0.05	0.05	0.05	
silver	0.05	0.05	0.05	
silver ( a )		0.1		
sodium				20
strontium				17
sulfate	600 ( a )	250 ( a ) / 400 ( p )	400	
thallium		0.002	0.0005	
vanadium				0.02
zinc ( a )	10.0	5		
Radioactive Contaminants				
Gross alpha (pCi/L) *		15	Zero	
Gross beta & photon emitters (mrem/yr) **		4	Zero	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
radium 226 (pCi/L)		20 (p)	Zero	
radium 228 (pCi/L)		20 (p)	Zero	
radium 226 + 228 (pCi/L)	30	5	Zero	
radon 222 (pCi/L)		300 (p)	Zero	
uranium	5	0.02 (p)	Zero	
Benzenes				
benzene	0.01	0.005	Zero	
Alkyl Benzenes				
methylbenzene (toluene)	0.75	1 (p) / 0.04 (a)	1	
ethylbenzene	0.75	0.7 (p) / 0.03 (a)	0.7	
dimethyl benzene isomers (xylenes)	0.62	10 (p) / 0.02 (a)	10	
vinylbenzene (styrene)		0.1	0.1	
trimethyl benzene isomers				
propyl benzene isomers				
butyl benzene isomers				
Chlorinated Benzenes				
chlorobenzene	tox	0.1	0.1	
o-dichlorobenzene	tox	0.6	0.6	
m-dichlorobenzene	tox			
p-dichlorobenzene	tox	0.075 (p) / 0.005 (a)	0.075	
1,2,4-trichlorobenzene		0.07	0.07	
1,3,5-trichlorobenzene				0.04
1,2,4,5-tetrachlorobenzene	tox			
pentachlorobenzene	tox			
hexachlorobenzene	tox	0.001	Zero	
Toluenes				
o-chlorotoluene				0.1
p-chlorotoluene				0.1
2,4-dinitrotoluene (2,4-DNT)	tox			

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
2,4,6-trinitrotoluene (TNT)				0.002
isopropyltoluene				
Nitrogenated Benzene:				
aminobenzene (aniline)				
nitrobenzene	tox			
1,3-dinitrobenzene				0.001
Phenols (hydroxybenzenes)	0.005 (a)			
phenol (carbolic acid)	tox			4
2-chlorophenol				0.04
2,4-dichlorophenol	tox			0.02
2,4-dinitro-o-cresol	tox			
2,4-dimethylphenol				
2-methylphenol				
4-methylphenol				
2-nitrophenol				
dinitrophenols	tox			
2,4,5-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			
pentachlorophenol	tox	0.001 (p) / 0.03 (a)	Zero	
p-cresol				
Polycyclics				
acenaphthene				
anthracene	tox			
benz(a)anthracene		0.0001 (p)	Zero	
benzo(a)pyrene	0.0007	0.0002	Zero	
benzo(b)fluoranthene		0.0002 (p)	Zero	
benzo(k)fluoranthene	tox	0.0002 (p)	Zero	
chrysene		0.0002 (p)	Zero	
dibenz(a)anthracene		0.0003 (p)	Zero	
diphenylhydrazine	tox			

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
fluoranthene	tox			
fluorene	tox			
indeno(1,2,3-c,d)pyrene		0.0004 (p)	Zero	
naphthalene	tox			0.5
naphthalenes ****	0.03			
phenanthrene	tox			
polychlorinated biphenyls (PCBs)	0.001			
PCBs as decachlorobiphenyl		0.0005	Zero	
pyrene	tox			
Methanes				
chloromethane (methyl chloride)	tox			0.003
dichloromethane (methylene chloride)	0.1	0.005	Zero	
trichloromethane (chloroform)	0.1		Zero (p)	
tetrachloromethane (carbon tetrachloride)	0.01	0.005	Zero	
bromomethane (methyl bromide)	tox			0.01
bromochloromethane				0.09
bromodichloromethane	tox		Zero (p)	
chlorodibromomethane			Zero (p)	0.1
tribromomethane (bromoform)	tox		Zero (p)	
trihalomethanes (THMs) ***		0.1/0.08 (p)	Zero	
fluorotrichloromethane (Freon 11)	tox			2
dichlorodifluoromethane (Freon 12)	tox			1
Ethanes				
1,2-dibromoethane (ethylene dibromide, EDB)	0.0001	0.00005	Zero	
1,1-dichloroethane	0.025			
1,2-dichloroethane (ethylene dichloride, EDC)	0.01	0.005	Zero	
1,1,1-trichloroethane (TCA)	0.06	0.2	0.2	
1,1,2-trichloroethane	0.01	0.005	0.003	
1,1,1,2-tetrachloroethane				0.07

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
1,1,2,2-tetrachloroethane	0.01			
hexachloroethane	tox			
Ethenes (Ethylenes)				
chloroethane (vinyl chloride)	0.001	0.002	Zero	
1,1-dichloroethene	0.005	0.007	0.007	
cis-1,2-dichloroethene	tox	0.07	0.07	
trans-1,2-dichloroethene	tox	0.1	0.1	
trichloroethene (TCE)	0.1	0.005	Zero	
tetrachloroethene (perchloroethylene, PCE)	0.02	0.005	Zero	
Propanes & Propenes				
1,2-dichloropropane (propylene dichloride, PDC)		0.005	Zero	
1,2,3-trichloropropane				0.04
1,2-dibromo-3-chloropropane (DBCP)		0.0002	Zero	
dichloropropenes	tox			
1,3-dichloropropene	tox			0.01
Aldehydes, Ethers, Furans, & Ketones				
acetone				
bis (2-chloroethyl) ether	tox			
bis (2-chloroisopropyl) ether	tox			0.3
bis (chloromethyl) ether	tox			
dibenzofuran				
p-dioxane (diethylene dioxide)				0.568
formaldehyde (methanal)				1
isophorone	tox			0.1
methyl ethyl ketone (MEK, 2-butanone)				0.1
methyl tertiary butyl ether (MTBE)	0.1 (a)			0.04
tetrahydrofuran				



PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
Nitrosamines				
N-nitrosodiethylamine	tox			
N-nitrosodimethylamine (NDMA)	tox			
N-nitrosodibutylamine	tox			
N-nitrosodiphenylamine	tox			
N-nitrosopyrrolidine	tox			
Phthalate Esters				
dibutyl phthalate	tox			
di-2-ethylhexyl phthalate	tox	0.006	Zero	
diethyl phthalate	tox			
dimethyl phthalate	tox			
Explosives				
dinitrophenols	tox			
2,4-dinitrotoluene (2,4-DNT)	tox			
hexahydro-1,3,5-trinitro-s-triazine (RDX)				0.002
HMX				0.4
nitroglycerin (glycerol trinitrate)				0.005
nitroguanidine				0.7
2,4,6-trinitrotoluene (TNT)				0.002
Other Organics				
acrolein	tox			
acrylamide		n	Zero	
acrylonitrile	tox			0.004
benzidine	tox			
chloral hydrate		n (p)	0.04 (p)	
chloramine				0.5

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
dibromoacetonitrile				0.02
dichloroacetic acid				0.005
dichloroacetonitrile				0.006
dichlorobenzidine	tox			
di(2-ethylhexyl)adipate		0.4	0.4	
diisopropyl methylphosphonate				0.6
epichlorohydrin (1-chlor-2,3-epoxypropane)		n	Zero	
ethylene glycol (1,2-ethanediol)				7
Haloacetic Acids ****		0.05 (p)		
dichloroacetic acid			Zero (p)	
trichloroacetic acid			0.5 (p)	
hexachlorobutadiene	tox			0.001
hexachlorocyclopentadiene	tox	0.05 (p) / 0.008 (a)	0.05	
n-hexane				4.0
Other Pesticides				
acifluorfen				0.1
alachlor		0.002	Zero	
aldicarb		0.003 (p)	0.001	
aldicarb sulfone		0.002 (p)	0.001	
aldicarb sulfoxide		0.004 (p)	0.001	
aldrin	tox			0.001
ametryn				0.06
ammonium sulfamate				2
arsenal (imazapyr)				
atrazine		0.003	0.003	
baygon				0.003
bentazon				0.02
bromacil				0.09
butylate				0.35
carbaryl				0.7
carbofuran		0.04	0.04	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
carboxin				0.7
chloramben				0.1
chlordan	tox	0.002	Zero	
chlorothalonil				0.5
chlorpyrifos				0.02
cyanazine				0.01
2,4-D (2,4-dichlorophenoxyacetic acid)		0.07	0.07	
dacthal				4
dalapon		0.2	0.2	
DDT (dichloro diphenyl trichloroethane)	tox			
4,4'-DDD				
4,4'-DDE				
diazinon				0.0006
dicamba				0.2
dieldrin	tox			0.002
dimethrin				2
dinoseb		0.007	0.007	
dioxin		0.00000005	Zero	
diphenamid				0.2
diquat		0.02	0.02	
disulfoton				0.0003
diuron				0.01
endosulfan	tox			
endothal		0.1	0.1	
endrin	tox	0.002	0.002	
ethylene thiourea				0.001
fenamiphos				0.002
fluometuron				0.09
fonofos				0.01
glyphosate		0.7	0.7	
heptachlor	tox	0.0004	Zero	
heptachlor epoxide		0.0002	Zero	
hexazinone				0.2
lindane (gamma-BHC)	tox	0.0002	0.0002	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
alpha-BHC	tox			
beta-BHC	tox			
delta-BHC				
malathion				0.2
maleic hydrazide				4
methomyl				0.2
methoxychlor		0.04	0.04	
methyl chlorophenoxyacetic acid (MCPA)				0.011
methyl parathion				0.002
metolachlor				0.1
metribuzin				0.2
oxamyl (vydate)		0.2	0.2	
paraquat				0.03
picloram		0.5	0.5	
prometon				0.1
pronamide				0.03
propachlor				0.09
propazine				0.01
propham				0.1
simazine		0.004	0.004	
2,4,5-T (2,4,5-trichlorophenoxyacetic acid)				0.07
tebuthiuron				0.5
terbacil				0.09
terbufos				0.0009
toxaphene	tox	0.003	Zero	
2,4,5-TP (silvex)		0.05	0.05	
trifluralin				0.005

#### Abbreviations

- al Action Level that, if exceeded, requires water treatment
- BHC benzene hexachloride, also called hexachlorocyclohexane
- DDD 1,1'-(2,2-dichloroethyldene) -bis/4-chlorobenzene

DDT 1,1'-(2,2-dichloroethenylidene)-bis(4-chlorobenzene)

HA Health Advisory

HNX octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

MCL Maximum Contaminant Level

MCLG Maximum Contaminant Level Goal

mg/L milligrams per liter

mrem/yr millirem per year

mrem/ede/yr dose committed over a 50-year period to a "reference man" from an annual intake rate of 2 liters drinking water per day

MTBE methyl tertiary butyl ether, a synonym for 2-methoxy-2-methyl propane (the standard includes other ether-based gasoline additives)

NP the contaminant shall Not be Present

pCi/L picocuries per liter

tox a numerical standard has not been established, but the contaminant is listed in a narrative standard of "toxic pollutant" defined in WQCC regulations

2,4,5-TP 2,4,5-trichlorophenoxpropionic acid

T Treatment Technique that public water system operators must adhere to instead of a numerical standard

um micrometer

U.S. EPA United States Environmental Protection Agency

WQCC New Mexico Water Quality Control Commission

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#### Footnotes

\* The proposed standard excludes radon 222, radium 226 and uranium activity

\*\* This standard excludes radium 228 activity. Units for the existing standard are mrem/yr.

U.S. EPA has proposed to change the units to mrem ede/yr.

\*\*\* The "THMs" standard applies to the sum of chloroform, dichlorobromomethane, dibromochloromethane, and bromoform.

\*\*\*\* This standard applies to the sum of naphthalene and monomethylnaphthalene isomers.

\*\*\*\*\* This standard applies to the sum of mono-, di-, and trichloroacetic acids, and mono- and dibromoacetic acids.

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#### Use and Applicability of Standards

All New Mexico standards are adopted by the WQCC except for the MTBE and petroleum (floating product and undesirable odor) standards, which are adopted by the New Mexico Environmental Improvement Board.

U.S. EPA's MCLGs are set at levels that would result in no known or anticipated adverse health effects with an adequate margin of safety. MCLGs do not take treatment costs into consideration and are not enforceable. Health-based proposed MCLs and final enforceable MCLs are set as close to MCLGs as feasible with use of best technology, treatment techniques and other means.

U.S. EPA's HAs serve as informal technical guidance to assist Federal, State and Local officials responsible for protecting public health when emergency spills or contamination situations occur. They are not to be construed as legally enforceable Federal standards and are subject to change as new information becomes available. All HAs listed are for lifetime exposures except for p-dioxane (10 day) and n-hexane (7 year).

## **Summary**

### **Compliance Monitoring**

#### **Groundwater Monitoring**

2006 semi-annual monitoring occurred in April. Samples were collected from all wells with the exception of wells that contained separate phase hydrocarbon or wells that were dry or did not contain enough water to pull a sample. Annual sampling started the week of August 15, 2006. Giant followed NMED guidelines from the Corrective Measures Study and Corrective Measures Implementation letter dated January 6, 2003. In conjunction, OCD guidance was followed per the Site Investigation and Abatement plan letter dated December 30, 2002. The August 11, 2006 letter from NMED (Notification to August 15, 2006 Annual GW Sampling event) included additional sampling requirements which Giant complied with.

#### **Well Elevation**

Well elevations on all monitoring wells, recovery wells, collection wells, and observation wells were also measured during the 2006 sampling events. Separate phase hydrocarbon was detected in MW #4, RW #1, RW #15, and RW #22 in April but not in August. Separate phase hydrocarbon was detected in MW #20, MW #21, MW #25, MW #40, MW #41, MW #45, MW #47, RW #2, RW #9, RW #17, RW #18, RW #19, RW #23, RW #28, RW #42, and RW #43 in both April and August.

#### **BTEX**

MW #1, MW #3, MW #7, MW #8, MW #12, MW #13, MW #27, MW #29, MW #32, MW #33, MW #35, MW #36, MW #37, MW #38, MW #44, East Outfall #2, and East Outfall #3 did not exceed the WQCC BTEX standards. MW #11 and MW #26 were over the benzene standard of 0.01 ppm in April and August 2006. MW #34 topped the benzene standard in August 2006. RW #16 surpassed the benzene standard in April 2006. MW #30, MW #31, RW #3, RW #14 exceeded the WQCC BTEX standards in April 2006. RW #15 exceeded the WQCC BTEX standards in August 2006. MW #39 surpassed benzene (0.01 ppm), ethylbenzene (0.75 ppm, and xylene (0.62 ppm) standards in April 2006.

#### **General Chemistry**

WQCC TDS standard (1000 ppm) was exceeded by MW #8, MW #11, MW #13, MW #26, MW #27, MW #32, MW #33, MW #34, MW #35, MW #35, MW #37, MW #38, and MW #15. The sulfate standard (600 ppm) was surpassed by MW #8, MW #13, MW #27, MW #32, and MW #33. The chloride standard (250 ppm) was topped by MW #8, MW #13, MW #26, MW #32, MW #33, MW #37, and RW #15.

### **Dissolved Metals**

The wells detected to have iron (1.00 ppm) and manganese (0.20 ppm) above the WQCC standard are MW #11, MW #26, MW #27, MW #34, MW #35, MW #37, MW #38 and RW #15. MW #12, MW #13, MW #36 exceeded the manganese standard. MW #26, RW #15 surpassed the barium (1.00 ppm) standard.

### **Total Metals (RCRA 8)**

Barium exceeded the MCL in MW #26.

## **North Boundary Barrier Wall**

### **Groundwater Monitoring**

At the request of NMED, initial groundwater samples from all Observation and Collection Wells that do not contain separate phase hydrocarbon were taken in May 2005 to establish a baseline. The subsequent sampling schedule of the wells associated with the North Boundary Barrier Wall coincided with the same schedule as the facility-wide compliance program. Sampling occurred in August 2005, April 2006, and again in August 2006. Following NMED directives, the wells were sampled for BTEX/MTBE (8021B), DRO (8015B), and field measurements of conductivity, pH, and temperature. Also following NMED directives, collection wells were not sampled in August 2006


### **Well Elevation**

Well elevations on all monitoring wells, recovery wells, collection wells, and observation wells were also measured during the April and August 2006 sampling events. Groundwater elevation maps were produced using the data gathered at that time even though the North Boundary Barrier Wall wells are measured on a bimonthly schedule. OW 1+50, OW 3+85, OW 16+60, and CW 8+45 had separate phase hydrocarbon present in both April and August. Separate phase hydrocarbon was detected in OW 5+50 and OW 19+50 in August.

### **Water Analysis**

OW 0+60 was over the benzene (0.01 ppm ) and xylene (0.62 ppm) WQCC standards in April and August 2006. OW 11+15, OW 23+10, MW #11, and MW #39 exceeded the benzene standard in April and August 2006. MW #39 also exceeded the ethylbenzene (0.75 ppm) and xylene standards in April and August 2006. OW 5+50 and OW 23+90 topped the benzene standard in April 2006. All of the collection wells with the exception of CW 25+95 exceeded the benzene standard in April 2006. CW 14+10 surpassed the ethylbenzene limit in April 2006. CW 16+60 and CW 19+50 were over the ethylbenzene and xylene standards in April 2006. All the wells associated with the North Boundary Barrier Wall that were analyzed for Total Dissolved Solids exceeded the WQCC TDS standard (1000 ppm) in April 2006.





## **Remedial Action and Conclusions**

### **North Boundary Barrier Wall**

Groundwater elevation maps indicate that the wall is performing as intended by capturing the water along the south side of the wall. Inspections of the draws north of the barrier wall indicate where seepage of fuel hydrocarbon impacted water was present has been reduced or eliminated.


Future remedial action will consist of continuing to remove fluids from the observation and collection wells as well as maximizing recovery systems within the facility. In addition, fluid monitoring will continue on a bimonthly schedule. The location of separate phase hydrocarbon in all wells along Hammond Ditch will be assessed and trends in detection, absence, SPH thickness, and fluid build up on both sides of the barrier will be assessed.

### **River Terrace Investigation**

The system was put on-line in January 2006. Monitoring and remedial actions are following the Voluntary Measures Bioventing Monitoring Plan that has been approved by NMED.

Monitoring results and conclusions will be presented in the River Terrace Bioventing Project Annual Report due in January 2008.

### **Future Remedial Actions**



Future monitoring and remedial action will be addressed in an updated monitoring plan that will be submitted to the agencies for approval. The updated plan will attempt to incorporate all the current projects and remediation systems that are situated at Giant – Bloomfield Refinery.

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## Water Quality Field Measurements

DATE	RW/MW	DEPTH TO LIQUID (ft)	Depth to Product	WELL DEPTH	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)	D.O (mg/L)	ORP
Aug-06	MW #1	17.35	NPP	21.56	952	7.03	64	0.9	223
Apr-06		17.23	NPP	21.56	815	6.84	56	NR	NR
Aug-05		17.98	NPP	21.56	986	7.02	63	9.2	106
Aug-06	MW #3	36.36	NPP	36.75	NS	NS	NS	NS	NS
Apr-06		36.19	NPP	36.75	7212	7.02	65	NR	NR
Aug-05		36.44	NPP	36.75	7685	6.98	67	NS	-44
Aug-06	MW #4	26.85	NPP	30.48	NS	NS	NS	NS	NS
Apr-06		26.79	26.78	30.48	SPH	SPH	SPH	SPH	SPH
Aug-05		27.4	27.17	30.48	SPH	SPH	SPH	SPH	SPH
Aug-06	MW #5	NWP	NPP	37.2	NS	NS	NS	NS	NS
Apr-06		NWP	NPP	37.2	NS	NS	NS	NS	NS
Aug-05		NWP	NPP	37.2	NS	NS	NS	NS	NS
Aug-06	MW #6	NWP	NPP	47.92	NS	NS	NS	NS	NS
Apr-06		NWP	NPP	47.92	NS	NS	NS	NS	NS
Aug-05		NWP	NPP	47.92	NS	NS	NS	NS	NS
Aug-06	MW #7	27.14	NPP	62.61	NS	NS	NS	NS	NS
Apr-06		27.8	NPP	62.61	8497	7.04	64	NR	NR
Aug-05		27.8	NPP	62.61	NR	NR	NR	NR	NR
Aug-06	MW #8	31.79	NPP	35.93	2966	7.04	61	0.5	231
Apr-06		31.56	NPP	35.93	2791	6.97	58	NR	NR
Aug-05		32.82	NPP	35.93	2730	6.91	59	7.3	114
Aug-06	MW #11	10.57	NPP	22.94	2066	6.91	66	1.4	253
Apr-06		11.76	NPP	22.94	2084	7.03	68	>13.0	-55
Aug-05		11.09	NPP	22.94	1768	6.68	53	NR	NR
Aug-06	MW #12	10.07	NPP	14.98	875	7.01	65	0.37	158
Apr-06		9.68	NPP	14.98	1049	6.86	49	NR	NR
Aug-05		12.35	NPP	14.98	4291	6.90	65	12.4	94
Aug-06	MW #13	40.19	NPP	52.89	3993	6.93	62	0.56	246
Apr-06		40.09	NPP	52.89	4108	7.06	63	NR	NR
Aug-05		40.4	NPP	52.89	4113	6.94	63	6.2	166
Aug-06	MW #20	20.86	20.74	27.13	SPH	SPH	SPH	SPH	SPH
Apr-06		20.76	20.69	27.13	SPH	SPH	SPH	SPH	SPH
Aug-05		21.12	20.88	27.13	SPH	SPH	SPH	SPH	SPH

SPH = Well Contains Separate Phase Hydrocarbon - No Sample

NS = Well is Dry or not Enough to Sample - No Sample

NM = Not Measured - Not a Well

NR = Not Required to Sample

NWP = No Water Present

NPP = No Product Present

# ORGANICS

## Groundwater Analysis

EPA Method: 8260B August 2005 & 2006 EPA Method 8260B												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCG: 20 NMAG 6/23/03
Benzene	Aug-06	<0.001	NS	NR	<0.001	0.24	<0.001	<0.001	NR	0.33	<0.001	0.001
	Apr-06	<0.001	<0.001	<0.001	<0.001	3.2	0.001	<0.001	NR	0.29	0.0058	
	Aug-05	0.0011	<0.001	NR	<0.001	4.2	<0.001	<0.001	NR	0.89	<0.001	
	Apr-05	0.0013	<0.0005	<0.0005	0.00053	0.4	<0.0005	<0.0005	0.13	1.3	<0.0005	
Toluene	Aug-06	<0.001	NS	NR	<0.001	<0.001	<0.001	<0.001	NR	<0.002	<0.001	0.75
	Apr-06	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	NR	0.073	<0.001	
	Aug-05	<0.001	<0.001	NR	<0.001	<0.05	<0.001	<0.001	NR	<0.01	<0.001	
	Apr-05	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.0005	<0.0005	<0.0025	<0.02	<0.0005	
EthylBen	Aug-06	<0.001	NS	NR	<0.001	0.012	<0.001	<0.001	NR	0.48	<0.001	0.75
	Apr-06	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	NR	0.3	<0.001	
	Aug-05	<0.001	<0.001	NR	<0.001	0.11	<0.001	<0.001	NR	0.47	<0.001	
	Apr-05	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.0005	<0.0005	0.025	0.44	<0.0005	
Xylene	Aug-06	<0.003	NS	NR	<0.003	0.045	<0.003	<0.003	NR	<0.06	<0.003	0.62
	Apr-06	<0.003	<0.003	<0.003	<0.003	0.23	<0.003	<0.003	NR	<0.060	0.0042	
	Aug-05	<0.001	<0.001	NR	<0.001	0.5	0.0085	<0.001	NR	0.25	<0.001	
	Apr-05	0.0011	<0.0005	0.00067	0.0008	0.28	0.00072	<0.0005	0.028	0.45	0.001	
MTBE	Aug-06	<0.0015	NS	NR	<0.0015	0.033	<0.015	0.007	NR	0.038	<0.0015	
	Apr-06	<0.0025	<0.0025	<0.0025	<0.0025	<0.120	<0.025	0.01	NR	<0.005	<0.0025	
	Aug-05	<0.001	<0.001	NR	<0.001	<0.05	<0.001	0.015	NR	<0.01	<0.001	
	Apr-05	<0.0025	<0.0025	<0.0025	<0.0025	<0.1	0.0025	0.014	0.041	<0.1	<0.0025	

NR = Not Required to Sample  
NS = Well is Dry or Not Enough Water to Sample- No Sample

# GENERAL CHEMISTRY

## Groundwater Analysis

EPA Method 300.0												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	WQCC 20 NMAG 6.2:3:103	
Fluoride	Aug-06	0.65	NS	NR	0.67	0.1	0.36	0.12	NR	0.36	1.6	
	Aug-05	0.68	0.33	NR	0.79	0.56	0.43	0.15	NR	0.42		
	Aug-04	0.63	NS	0.75	0.64	0.41	0.52	0.2	0.18	0.29		
	Aug-03	0.58	0.17	NR	0.66	0.44	0.32	0.19	NR	0.39		
Chloride	Aug-06	17	NS	NR	300	82	19	310	NR	410	250	
	Aug-05	31	1200	NR	260	85	100	320	NR	290		
	Aug-04	29	NS	25	250	97	130	330	420	230		
	Aug-03	33	1400	NR	260	150	130	510	NR	160		
Nitrite	Aug-06	1.2	NS	NR	26	<1.0	<0.10	8.3	NR	<0.50		
	Aug-05	<0.10	<0.50	NR	<0.50	<0.10	<0.10	0.23	NR	<0.50		
	Aug-04	<0.10	NS	<0.10	NR	NR	NR	1.6	<0.10	<0.10		
	Aug-03	<0.10	NR	NR	<0.10	<0.10	<0.10	<0.10	NR	<0.10		
Bromide	Aug-06	<0.50	NS	NR	1.5	1	<0.50	3.7	NR	5.2		
	Aug-05	<0.50	4.5	NR	<2.5	1.4	0.75	4.6	NR	4.5		
	Aug-04	0.14	NS	0.14	1.2	0.97	0.78	4.3	3.4	4.2		
	Aug-03	0.32	22	NR	5	5.3	3.7	13	NR	2.9		
Nitrogen	Aug-06	NR	NS	NR	NR	<0.10	<0.10	NR	NR	NR	10	
	Aug-05	2.1	42	NR	27	<0.10	<0.10	6.1	NR	<0.10		
	Aug-04	1.9	NS	<0.10	NR	NR	NR	6.6	<0.10	<0.10		
	Aug-03	1.6	41	NR	14	<0.10	<0.10	12	NR	<0.10		
P	Aug-06	<0.50	NS	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50		
	Aug-05	<0.50	<0.50	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50		
	Aug-04	<0.50	NS	<0.50	<0.50	<0.50	NR	<0.50	<0.50	<0.50		
	Aug-03	<0.50	<0.50	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50		
Sulfate	Aug-06	190	NS	NR	980	19	140	3100	NR	0.68	600	
	Aug-05	190	2300	NR	740	20	2400	1000	NR	<0.50		
	Aug-04	220	NS	5100	920	13	680	950	1400	<0.50		
	Aug-03	200	1900	NR	950	4.2	3100	840	NR	1.00		

NR = Not Required to Sample

NA = Not Analyzed

NS = Well is Dry or Not Enough Water to Sample- No Sample

NW = New Well After August 2004

# GENERAL CHEMISTRY

## Groundwater Analysis

mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	WQCC 20 NMAG 6.2.3.103
TDS	Aug-06	640	NS	NR	2200	1400	560	3000	NR	1700	1000
	Aug-05	650	6200	NR	2000	1500	4000	3000	NR	1600	
	Aug-04	650	NS	7400	2100	1500	1600	2800	3400	1600	
	Aug-03	610	5700	NR	2100	1100	5500	3100	NR	1400	
E.C. (umhos/cm)	Aug-06	940	NS	NR	3200	2200	890	4300	NR	2900	
	Aug-05	980	8300	NR	2900	2200	4600	4600	NR	2700	
	Aug-04	870	NS	7800	2600	2100	1900	3400	4000	2200	
	Aug-03	820	8500	NR	2900	2500	6600	5000	NR	1900	
D.O.	Aug-06	0.93	NS	NR	0.47	1.36	0.37	0.56	NR	0.16	
	Aug-05	9.2	NS	NR	7.3	>13.0	12.4	6.2	NR	7.4	
	Aug-04	5.4	NS	2.8	2.9	13.8	9.3	5	4	7.5	
	Aug-03	6.5	6.5	NR	7.1	5.6	5.3	5.6	NR	4.9	
O.R.P.	Aug-06	223	NS	NR	231	253	158	246	NR	224	
	Aug-05	106	-44	NR	114	-55	94	166	NR	-29	
	Aug-04	-532	-11	84	142	-36	151	158	-43	-33	
	Aug-03	105	105	NR	176	-5.3	81	86	NR	-63	
CO2	Aug-06	240	NS	NR	200	1100	260	910	NR	990	
	Aug-05	300	680	NR	260	1100	310	1000	NR	1000	
	Aug-04	220	NS	98	210	330	970	860	600	910	
	Aug-03	240	NR	NR	220	1300	310	1000	NR	1300	
Alk	Aug-06	270	NS	NR	210	1100	290	960	NR	960	
	Aug-05	300	680	NR	260	1100	310	1000	NR	1000	
	Aug-04	240	NS	110	230	390	1100	950	670	1000	
	Aug-03	262	NR	NR	208	1120	319	917	NR	1090	

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

NA = Not Analyzed

NW = New Well After August 2004

# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010C												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20 NM/AC 6.2.3103
Arsenic	Aug-06	<0.02	NS	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02	0.10
	Aug-05	<0.02	<0.02	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02	
	Aug-04	<0.02	NS	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
	Aug-03	<0.02	<0.02	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02	
Barium	Aug-06	0.023	NS	NR	0.018	0.69	0.04	0.025	NR	2.2	0.038	1.00
	Aug-05	0.022	0.018	NR	0.021	0.73	0.07	0.028	NR	1.9	0.063	
	Aug-04	0.025	NS	0.0097	0.021	0.47	0.06	0.022	0.028	1.8	0.083	
	Aug-03	0.46	0.3	NR	0.36	1.2	0.12	0.33	NR	2.3	0.52	
Cadmium	Aug-06	<0.002	NS	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	0.01
	Aug-05	<0.002	<0.002	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	
	Aug-04	<0.002	NS	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
	Aug-03	<0.002	<0.002	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	
Calcium	Aug-06	74	NS	NR	230	100	73	250	NR	10	360	
	Aug-05	68	480	NR	230	96	370	240	NR	92	290	
	Aug-04	67	NS	300	210	100	130	210	450	75	170	
	Aug-03	61	490	NR	200	120	420	270	NR	91	210	
Cr	Aug-06	<0.006	NS	NR	<0.006	<0.006	0.0078	<0.006	NR	<0.006	<0.006	0.05
	Aug-05	<0.006	<0.006	NR	<0.006	<0.006	0.022	<0.006	NR	<0.006	<0.006	
	Aug-04	<0.006	NS	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
	Aug-03	<0.006	<0.006	NR	<0.006	<0.006	0.0066	<0.006	NR	0.0089	<0.006	
Copper	Aug-06	<0.006	NS	NR	<0.006	<0.006	<0.006	0.0063	NR	<0.006	<0.006	1.00
	Aug-05	<0.006	<0.006	NR	<0.006	<0.006	<0.006	<0.006	NR	<0.006	<0.006	
	Aug-04	<0.006	NS	<0.006	<0.006	0.021	<0.006	<0.006	<0.006	<0.006	<0.006	
	Aug-03	<0.006	<0.006	NR	<0.006	<0.006	<0.006	0.0096	NR	<0.006	<0.006	

NR = Not Required to Sample

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NW = New Well After August 2004

# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010C												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20 NMAG 6:2:3:03
Iron	Aug-06	<0.02	NS	NR	0.033	9.3	0.069	<0.02	NR	6.8	7.4	1.00
	Aug-05	0.14	0.047	NR	0.078	7.6	0.55	<0.02	NR	6.3	3.4	
	Aug-04	0.27	NS	0.081	0.059	6.9	0.044	0.046	2.9	5.1	0.15	
	Aug-03	<0.005	0.27	NR	0.044	7.6	0.024	0.04	NR	5	0.44	
Lead	Aug-06	<0.005	NS	NR	<0.005	<0.005	<0.005	0.0078	NR	<0.005	<0.005	0.05
	Aug-05	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
	Aug-04	<0.005	NS	<0.005	<0.005	0.022	<0.005	<0.005	<0.005	0.0056	<0.005	
	Aug-03	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
Mg	Aug-06	18	NS	NR	35	22	14	82	NR	38	52	
	Aug-05	18	130	NR	37	22	97	85	NR	32	45	
	Aug-04	18	NS	31	35	23	NR	80	97	27	26	
	Aug-03	16	140	NR	38	25	130	110	NR	32	34	
Mn	Aug-06	0.09	NS	NR	0.42	1.8	0.3	1.1	NR	3.1	8	0.20
	Aug-05	0.14	0.43	NR	0.65	1.6	0.64	1.1	NR	2.8	2.7	
	Aug-04	0.13	NS	0.28	0.57	1.7	0.55	0.58	1.4	2	0.94	
	Aug-03	0.08	0.58	NR	0.68	2	1.8	1.1	NR	2.4	1.4	
K	Aug-06	2.4	NS	NR	3.2	1.4	1.1	3.6	NR	3	3.7	
	Aug-05	2.7	7.6	NR	3.1	1.7	2.8	3.8	NR	2.8	3.4	
	Aug-04	2.1	NS	8.1	3	1.5	1.5	3.6	6.8	2.6	206	
	Aug-03	2.6	10	NR	4	2.3	4.3	5.3	NR	4.2	4	
Se	Aug-06	<0.05	NS	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	0.05
	Aug-05	<0.05	<0.05	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	
	Aug-04	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Aug-03	0.043	0.024	NR	0.09	0.15	0.084	0.16	NR	0.1	0.13	

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# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010C												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20-NWAC 6.2.3.103
Silver	Aug-06	<0.005	NS	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	0.05
	Aug-05	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
	Aug-04	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
	Aug-03	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
Sodium	Aug-06	120	NS	NR	380	390	100	620	NR	450	440	
	Aug-05	140	1300	NR	360	380	560	570	NR	430	430	
	Aug-04	110	NS	1100	360	390	320	610	600	440	390	
	Aug-03	150	1100	NR	350	420	960	680	NR	430	420	
Uranium	Aug-06	<0.1	NS	NR	<0.1	<0.1	<0.1	<0.10	NR	<0.1	<0.1	5.00
	Aug-05	<0.1	<0.1	NR	<0.1	<0.1	<0.1	<0.1	NR	<0.1	<0.1	
	Aug-04	<0.1	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
	Aug-03	<0.1	<0.1	NR	<0.1	<0.1	<0.1	<0.1	NR	<0.1	<0.1	
Zinc	Aug-06	0.047	NS	NR	0.044	0.051	0.036	0.061	NR	0.048	0.005	10.00
	Aug-05	<0.005	0.018	NR	0.014	0.014	0.022	0.0088	NR	0.17	0.0066	
	Aug-04	0.021	NS	0.0096	0.022	63	0.035	0.021	0.028	0.013	0.011	
	Aug-03	0.12	0.094	NR	0.13	0.18	0.088	0.09	NR	0.19	0.037	

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# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470, Mercury													40CFR141.62
mg/L	Date Sampled	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	MCL	
Arsenic	Aug-06	<0.020	NS	NR	<0.020	<0.02	<0.02	<0.02	NR	<0.02	<0.02	0.01	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.02	NS	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Barium	Aug-06	0.023	NS	NR	0.018	0.69	0.04	0.025	NR	2.2	0.038	2	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	0.052	NS	<0.002	0.071	0.54	0.19	0.028	0.029	2	0.13		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Cadmium	Aug-06	<0.0020	NS	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	0.005	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.002	NS	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Cr	Aug-06	<0.0060	NS	NR	<0.006	<0.006	0.0078	<0.006	NR	<0.006	<0.006	0.1	
	Aug-05	<0.006	0.016	NR	0.33	<0.006	4.1	0.012	NR	<0.006	<0.006		
	Aug-04	<0.006	NS	<0.006	1.9	<0.006	0.11	0.085	<0.006	<0.006	0.019		
	Aug-03	0.013	0.029	NR	0.72	0.011	0.51	0.45	NR	0.017	0.014		
Lead	Aug-06	<0.0050	NS	NR	<0.005	<0.005	<0.005	0.0078	NR	<0.005	<0.005	0.015	
	Aug-05	<0.005	<0.005	NR	<0.005	0.011	0.21	<0.005	NR	<0.005	<0.005		
	Aug-04	<0.005	NS	<0.005	<0.005	0.027	0.18	<0.005	<0.005	<0.005	<0.005		
	Aug-03	<0.005	0.022	NR	<0.005	0.02	0.16	<0.005	NR	0.0084	<0.005		
Se	Aug-06	<0.050	NS	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	0.05	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		

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# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470, Mercury														40CFR141.62
mg/L	Date Sampled	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	MCL		
Silver	Aug-06	<0.0050	NS	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005			
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR			
	Aug-04	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR			
Mercury	Aug-06	<0.0002	NS	NR	<0.0002	<0.0002	<0.0002	<0.0002	NR	<0.0002	<0.0002	0.002		
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR			
	Aug-04	<0.0002	NS	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002			
	Aug-03	<0.0002	<0.0002	NR	<0.0002	0.00026	<0.0002	<0.0002	NR	<0.0002	<0.0002			

# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470, Mercury													40CFR141.62
mg/L	Date Sampled	MW #29	MW #30	MW #31	MW #32	MW #33	MW #34	MW #35	MW #36	MW #37	MW #38	MCL	
Arsenic	Aug-06	NR	NR	NR	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	<0.02	0.01	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Barium	Aug-06	NR	NR	NR	0.032	0.017	0.44	0.71	0.16	0.3	0.093	2	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	0.039	0.24	0.35	0.049	0.038	0.94	1.2	2.6	1.3	0.74		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		

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# RIVER ANALYSIS - 2006

## Organics

	mg/L	DATE Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	WQCC 20 NMAC 6.2.3103
							0.01
EPA Method 8021B	Benzene	10/23/06	<0.001	<0.001	<0.001	<0.001	0.01
		07/18/06	<0.001	<0.001	<0.001	<0.001	
		04/14/06	<0.001	<0.001	<0.001	<0.001	
		01/06/06	<0.0005	<0.0005	<0.0005	<0.0005	
	Toluene	10/23/06	<0.001	<0.001	<0.001	<0.001	0.75
		07/18/06	<0.001	<0.001	<0.001	<0.001	
		04/14/06	<0.001	<0.001	<0.001	<0.001	
		01/06/06	<0.0005	<0.0005	<0.0005	<0.0005	
	EthylBen	10/23/06	<0.001	<0.001	<0.001	<0.001	0.75
		07/18/06	<0.001	<0.001	<0.001	<0.001	
		04/14/06	<0.001	<0.001	<0.001	<0.001	
		01/06/06	<0.0005	<0.0005	<0.0005	<0.0005	
	Xylene	10/23/06	<0.003	<0.003	<0.003	<0.003	0.62
		07/18/06	<0.003	<0.003	<0.003	<0.003	
		04/14/06	<0.003	<0.003	<0.003	<0.003	
		01/06/06	<0.0005	<0.0005	<0.0005	<0.0005	
EPA Method 8015B	MTBE	10/23/06	<0.0015	<0.0015	<0.0015	<0.0015	
		07/18/06	<0.0025	<0.0025	<0.0025	<0.0025	
		04/14/06	<0.0025	<0.0025	<0.0025	<0.0025	
		01/06/06	<0.0025	<0.0025	<0.0025	<0.0025	
	DRO	10/23/06	<1.0	<1.0	<1.0	<1.0	
		07/18/06	<1.0	<1.0	<1.0	<1.0	
		04/14/06	<1.0	<1.0	<1.0	<1.0	
		01/06/06	<1.0	<1.0	<1.0	<1.0	
	MRO	10/23/06	<5.0	<5.0	<5.0	<5.0	
		07/18/06	<5.0	<5.0	<5.0	<5.0	
		04/14/06	<5.0	<5.0	<5.0	<5.0	
		01/06/06	<5.0	<5.0	<5.0	<5.0	
	GRO	10/23/06	<0.050	<0.050	<0.050	<0.050	
		07/18/06	<0.050	<0.050	<0.050	<0.050	
		04/14/06	<0.050	<0.050	<0.050	<0.050	
		01/06/06	<0.050	<0.050	<0.050	<0.050	

# RIVER ANALYSIS - 2006

## TOTAL METALS

EPA Method 6010, EPA Method 7470: Mercury						40CFR141.62
mg/L	DATE Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Down stream of Refinery	MCL
Arsenic	10/23/06	<0.020	<0.020	<0.020	<0.020	0.01
	07/18/06	<0.020	<0.020	<0.020	<0.020	
	04/14/06	<0.020	<0.020	<0.020	<0.020	
	01/06/06	<0.0020	<0.0020	<0.020	<0.020	
Barium	10/23/06	0.062	0.061	0.056	0.062	2
	07/18/06	0.078	0.081	0.076	0.076	
	04/14/06	0.069	0.068	0.070	0.068	
	01/06/06	0.064	0.063	0.063	0.063	
Cadmium	10/23/06	<0.0020	<0.0020	<0.0020	<0.0020	0.005
	07/18/06	<0.0020	<0.0020	<0.0020	<0.0020	
	04/14/06	<0.0020	<0.0020	<0.0020	<0.0020	
	01/06/06	<0.0020	<0.0020	<0.0020	<0.0020	
Cr	10/23/06	<0.0060	<0.0060	<0.0060	<0.0060	0.1
	07/18/06	<0.0060	<0.0060	<0.0060	<0.0060	
	04/14/06	<0.0060	<0.0060	<0.0060	<0.0060	
	01/06/06	<0.0060	<0.0060	<0.0060	<0.0060	
Lead	10/23/06	<0.0050	<0.0050	<0.0050	<0.0050	0.015
	07/18/06	<0.0050	<0.0050	<0.0050	<0.0050	
	04/14/06	<0.0050	<0.0050	<0.0050	<0.0050	
	01/06/06	<0.0050	<0.0050	<0.0050	<0.0050	
Se	10/23/06	<0.050	<0.050	<0.050	<0.050	0.05
	07/18/06	<0.050	<0.050	<0.050	<0.050	
	04/14/06	<0.050	<0.050	<0.050	<0.050	
	01/06/06	<0.050	<0.050	<0.050	<0.050	
Silver	10/23/06	<0.0050	<0.0050	<0.0050	<0.0050	
	07/18/06	<0.0050	<0.0050	<0.0050	<0.0050	
	04/14/06	<0.0050	<0.0050	<0.0050	<0.0050	
	01/06/06	<0.0050	<0.0050	<0.0050	<0.0050	
Mercury	10/23/06	<0.00020	<0.00020	<0.00020	<0.00020	0.002
	07/18/06	<0.00020	<0.00020	<0.00020	0.00078	
	04/14/06	<0.00020	<0.00020	<0.00020	<0.00020	
	01/06/06	<0.00020	<0.00020	<0.00020	<0.00020	

# RIVER ANALYSIS - 2006

## DISSOLVED METALS

EPA Method 6010C							WQCC
mg/L	DATE Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery		20 NMAG 6/23/03
Arsenic	10/23/06	<0.020	<0.020	<0.020	<0.020		
	07/18/06	<0.020	<0.020	<0.020	<0.020		
	04/14/06	<0.020	<0.020	<0.020	<0.020		
	01/06/06	<0.020	<0.020	<0.020	<0.020		
Barium	10/23/06	0.062	0.061	0.056	0.062		
	07/18/06	0.063	0.064	0.065	0.065		
	04/14/06	0.061	0.061	0.061	0.06		
	01/06/06	0.060	0.060	0.061	0.058		
Cadmium	10/23/06	<0.0020	<0.0020	<0.0020	<0.0020		
	07/18/06	<0.0020	<0.0020	<0.0020	<0.0020		
	04/14/06	<0.0020	<0.0020	<0.0020	<0.0020		
	01/06/06	<0.0020	<0.0020	<0.0020	<0.0020		
Calcium	10/23/06	33	33	34	42		
	07/18/06	30	30	32	31		
	04/14/06	37	37	36	43		
	01/06/06	36	35	35	40		
Cr	10/23/06	<0.0060	<0.0060	<0.0060	<0.0060		
	07/18/06	<0.0060	<0.0060	<0.0060	<0.0060		
	04/14/06	<0.0060	<0.0060	<0.0060	<0.0060		
	01/06/06	<0.0060	<0.0060	<0.0060	<0.0060		
Copper	10/23/06	<0.0060	<0.0060	<0.0060	<0.0060		
	07/18/06	<0.0060	<0.0060	<0.0060	<0.0060		
	04/14/06	<0.0060	<0.0060	<0.0060	<0.0060		
	01/06/06	<0.0060	<0.0060	<0.0060	<0.0060		
Iron	10/23/06	0.075	0.14	0.12	0.11		
	07/18/06	0.021	<0.020	<0.020	<0.020		
	04/14/06	0.023	0.025	<0.020	0.037		
	01/06/06	<0.020	0.025	<0.020	0.03		

EPA Method 6010C							WQCC
mg/L	DATE Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery		20 NMAG 6/23/03
Lead	10/23/06	<0.0050	<0.0050	<0.0050	<0.0050		
	07/18/06	<0.0050	<0.0050	<0.0050	<0.0050		
	04/14/06	<0.0050	<0.0050	<0.0050	<0.0050		
	01/06/06	<0.0050	<0.0050	<0.0050	<0.0050		
Mg	10/23/06	5.3	5.4	5.7	6.4		
	07/18/06	5.2	5.2	5.5	5.3		
	04/14/06	6.2	6.2	6.1	6.9		
	01/06/06	6.2	6.1	6.1	6.7		
Mn	10/23/06	0.013	0.016	0.019	0.078		
	07/18/06	0.011	0.011	0.01	0.017		
	04/14/06	0.071	0.071	0.074	0.14		
	01/06/06	0.021	0.022	0.022	0.07		
K	10/23/06	1.6	1.7	1.7	2.1		
	07/18/06	1.6	1.4	1.5	1.4		
	04/14/06	1.8	1.8	1.8	1.9		
	01/06/06	<0.050	1.90	1.90	2.00		
Se	10/23/06	<0.050	<0.050	<0.050	<0.050		
	07/18/06	<0.050	<0.050	<0.050	<0.050		
	04/14/06	<0.050	<0.050	<0.050	<0.050		
	01/06/06	<0.050	<0.050	<0.050	<0.050		
Silver	10/23/06	<0.0050	<0.0050	<0.0050	<0.0050		
	07/18/06	<0.0050	<0.0050	<0.0050	<0.0050		
	04/14/06	<0.0050	<0.0050	<0.0050	<0.0050		
	01/06/06	<0.0050	<0.0050	<0.0050	<0.0050		
Sodium	10/23/06	20	21	25	30		
	07/18/06	15	15	15	15		
	04/14/06	28	28	28	36		
	01/06/06	20	20	20	27		

# RIVER ANALYSIS - 2006

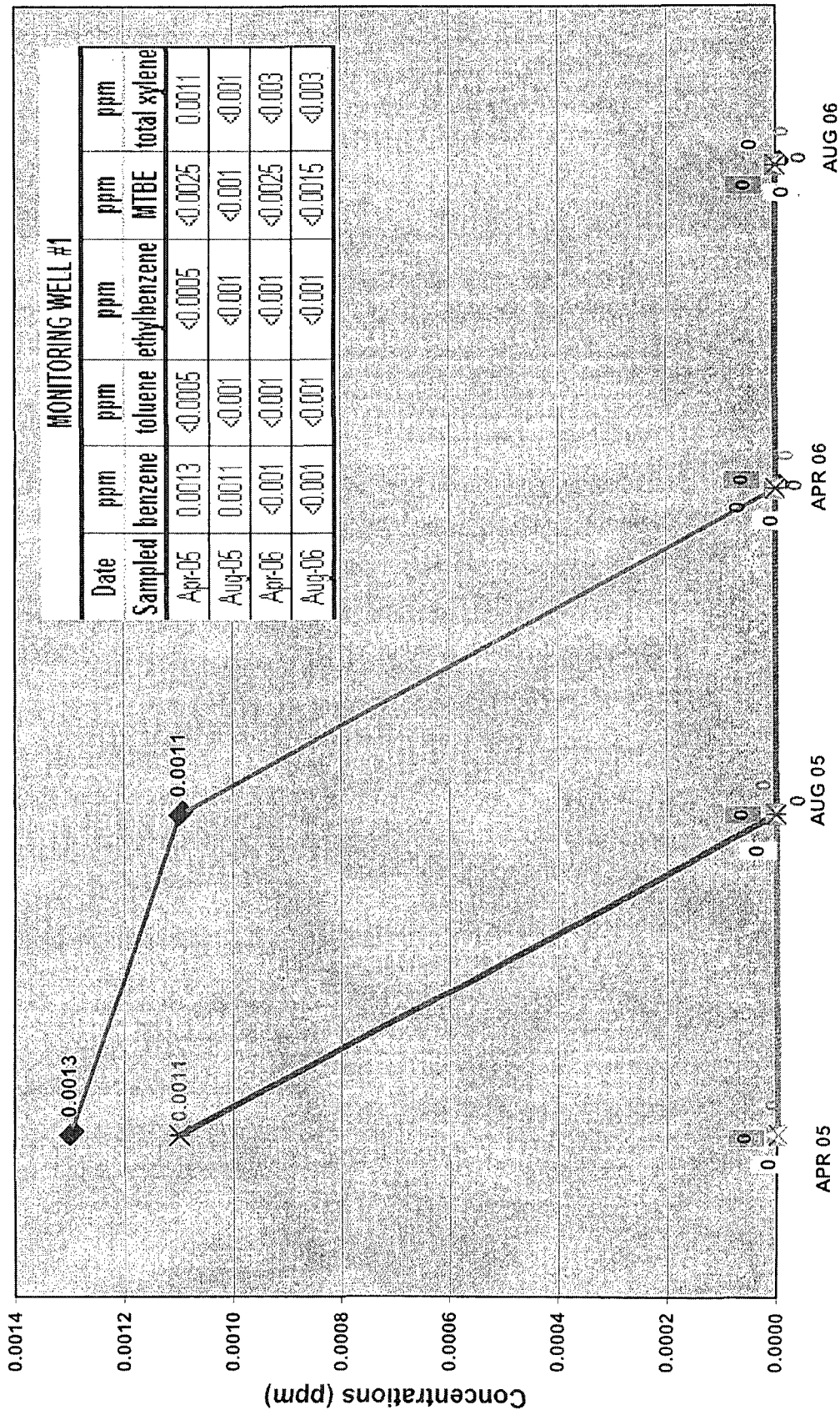
## DISSOLVED METALS

EPA Method 6010C							WQCC
mg/L	DATE Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery		201 NMAC 6.2.3.103
Uranium	10/23/06	<0.10	<0.10	<0.10	<0.10		
	07/18/06	<0.10	<0.10	<0.10	<0.10		
	04/14/06	<0.10	<0.10	<0.10	<0.10		
	01/06/06	<0.10	<0.10	<0.10	<0.10		
Zinc	10/23/06	0.026	0.031	0.022	0.032		
	07/18/06	0.16	0.11	0.089	0.14		
	04/14/06	0.046	0.42	0.062	0.024		
	01/06/06	0.067	0.11	0.12	0.056		








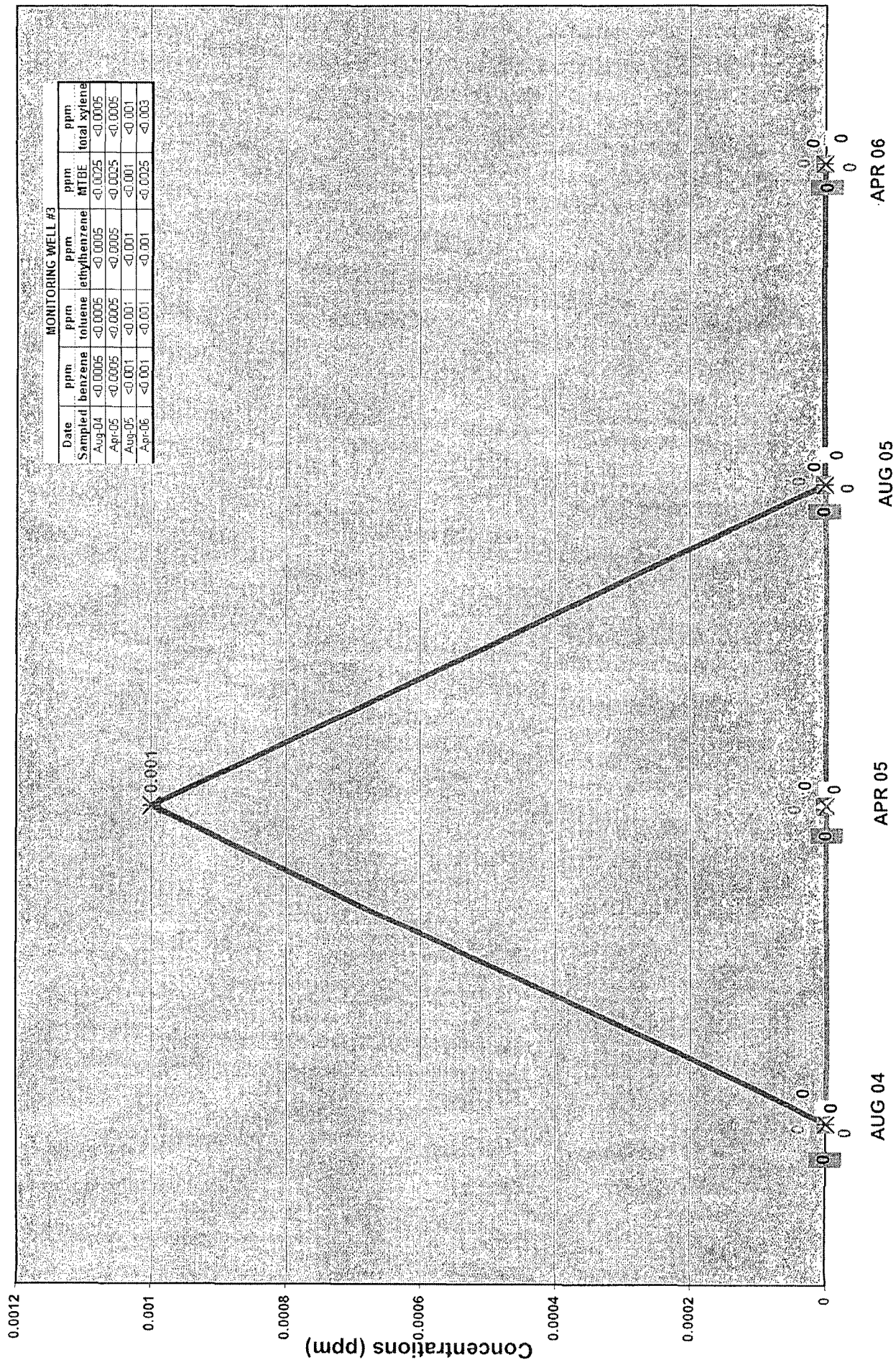


# Monitoring Well #1



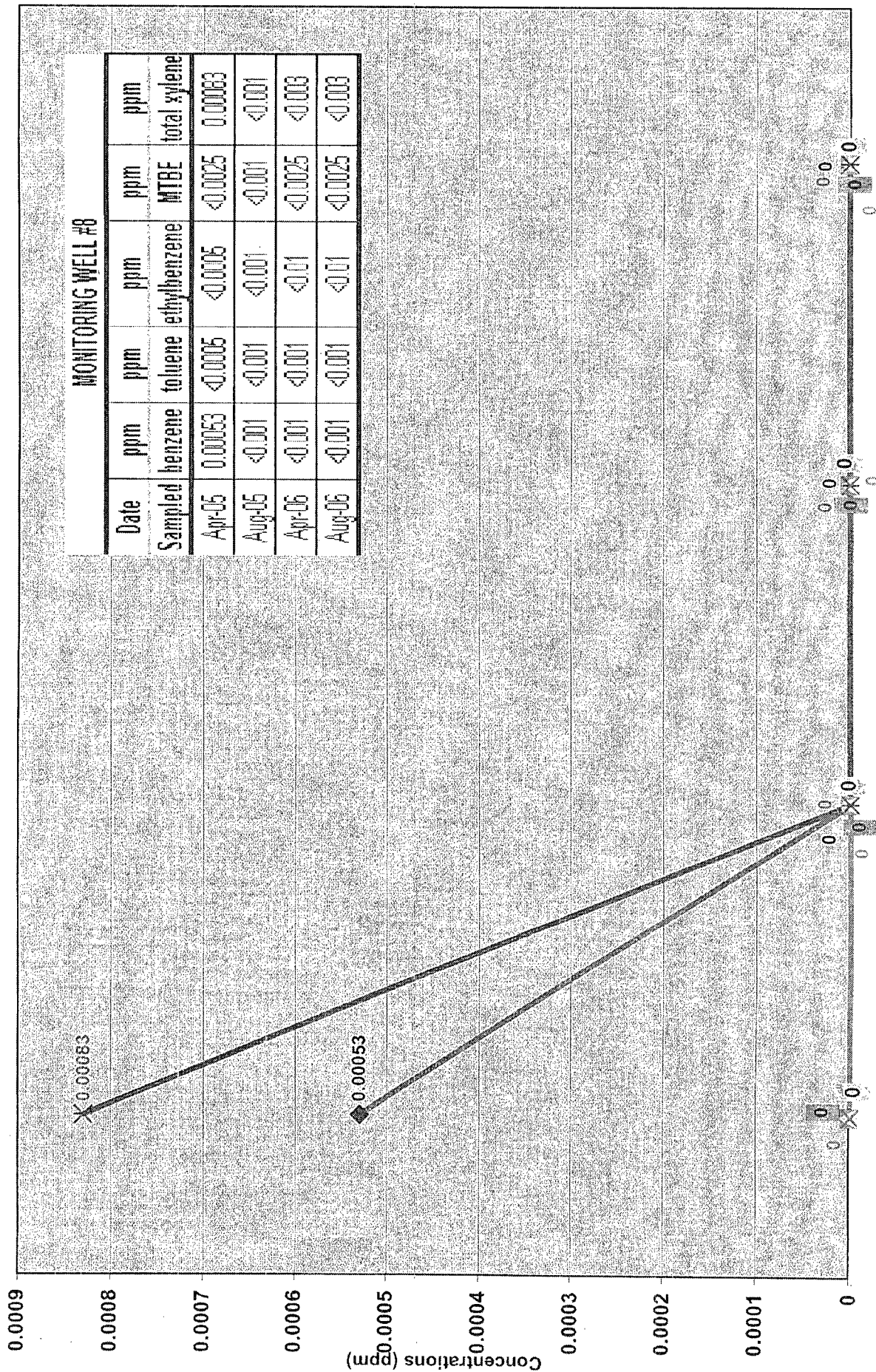
# Monitoring Well #3

 Benzene
  Toluene
  Ethylbenzene
  MTBE
  Total Xylene



# Monitoring Well #8

◆ Benzene
◆ Toluene
◆ Ethylbenzene
◆ MTBE
◆ Total Xylene



APR 05 AUG 05 APR 06 AUG 06



## COVER LETTER

Thursday, September 14, 2006

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Annual Sampling 2006

Order No.: 0608317

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 5 sample(s) on 8/25/2006 for the analyses presented in the following report.

This report is an addendum to the report dated September 14, 2006. The metal results for MW#8 have been updated. Please don't hesitate to contact us for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager



## Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
 Lab Order: 0608317  
 Project: Annual Sampling 2006  
 Lab ID: 0608317-01

Client Sample ID: MW#8  
 Collection Date: 8/23/2006 1:00:00 PM  
 Date Received: 8/25/2006  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: TES
Fluoride	0.67	0.10		mg/L	1	8/26/2006 1:07:01 PM
Chloride	300	1.0		mg/L	10	9/9/2006 2:03:13 AM
Bromide	1.5	0.50		mg/L	1	8/26/2006 1:07:01 PM
Nitrate (As N)+Nitrite (As N)	26	0.50		mg/L	5	8/26/2006 2:16:39 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/26/2006 1:07:01 PM
Sulfate	980	10		mg/L	20	9/12/2006 8:52:35 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	9/19/2006
<b>EPA METHOD 6010: DISSOLVED METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/22/2006 9:41:31 AM
Barium	0.018	0.0020		mg/L	1	9/22/2006 9:41:31 AM
Cadmium	ND	0.0020		mg/L	1	9/22/2006 9:41:31 AM
Calcium	230	10		mg/L	10	9/22/2006 9:54:39 AM
Chromium	ND	0.0060		mg/L	1	9/22/2006 9:41:31 AM
Copper	ND	0.0060		mg/L	1	9/22/2006 9:41:31 AM
Iron	0.033	0.020		mg/L	1	9/22/2006 9:41:31 AM
Lead	ND	0.0050		mg/L	1	9/22/2006 9:41:31 AM
Magnesium	35	1.0		mg/L	1	9/22/2006 9:41:31 AM
Manganese	0.42	0.0020		mg/L	1	9/22/2006 9:41:31 AM
Potassium	3.2	1.0		mg/L	1	9/22/2006 9:41:31 AM
Selenium	ND	0.050		mg/L	1	9/22/2006 9:41:31 AM
Silver	ND	0.0050		mg/L	1	9/22/2006 9:41:31 AM
Sodium	380	10		mg/L	10	9/22/2006 9:54:39 AM
Uranium	ND	0.10		mg/L	1	9/21/2006 4:17:31 PM
Zinc	0.044	0.0050		mg/L	1	9/22/2006 9:41:31 AM
<b>EPA 6010: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Chromium	2.9	0.060		mg/L	10	9/22/2006 9:45:43 AM
Lead	ND	0.0050		mg/L	1	9/22/2006 9:01:05 AM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: SMP
Benzene	ND	1.0		µg/L	1	8/28/2006
Toluene	ND	1.0		µg/L	1	8/28/2006
Ethylbenzene	ND	1.0		µg/L	1	8/28/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/28/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2006

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
 Lab Order: 0608317  
 Project: Annual Sampling 2006  
 Lab ID: 0608317-01

Client Sample ID: MW#8  
 Collection Date: 8/23/2006 1:00:00 PM  
 Date Received: 8/25/2006  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: SMP
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2006
Naphthalene	ND	2.0		µg/L	1	8/28/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2006
Acetone	ND	10		µg/L	1	8/28/2006
Bromobenzene	ND	1.0		µg/L	1	8/28/2006
Bromochloromethane	ND	1.0		µg/L	1	8/28/2006
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2006
Bromoform	ND	1.0		µg/L	1	8/28/2006
Bromomethane	ND	2.0		µg/L	1	8/28/2006
2-Butanone	ND	10		µg/L	1	8/28/2006
Carbon disulfide	ND	10		µg/L	1	8/28/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	8/28/2006
Chlorobenzene	ND	1.0		µg/L	1	8/28/2006
Chloroethane	ND	2.0		µg/L	1	8/28/2006
Chloroform	ND	1.0		µg/L	1	8/28/2006
Chloromethane	ND	1.0		µg/L	1	8/28/2006
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2006
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2006
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2006
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2006
Dibromomethane	ND	2.0		µg/L	1	8/28/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	8/28/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	8/28/2006
2-Hexanone	ND	10		µg/L	1	8/28/2006
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2006

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
 Lab Order: 0608317  
 Project: Annual Sampling 2006  
 Lab ID: 0608317-01

Client Sample ID: MW#8  
 Collection Date: 8/23/2006 1:00:00 PM  
 Date Received: 8/25/2006  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: SMP
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2006
Methylene Chloride	ND	3.0		µg/L	1	8/28/2006
n-Butylbenzene	ND	1.0		µg/L	1	8/28/2006
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2006
sec-Butylbenzene	ND	2.0		µg/L	1	8/28/2006
Styrene	ND	1.5		µg/L	1	8/28/2006
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2006
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2006
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2006
Vinyl chloride	ND	1.0		µg/L	1	8/28/2006
Xylenes, Total	ND	3.0		µg/L	1	8/28/2006
Surr: 1,2-Dichloroethane-d4	99.6	69.9-130		%REC	1	8/28/2006
Surr: 4-Bromofluorobenzene	86.3	75-139		%REC	1	8/28/2006
Surr: Dibromofluoromethane	87.5	57.3-135		%REC	1	8/28/2006
Surr: Toluene-d8	84.3	81.9-122		%REC	1	8/28/2006
<b>EPA METHOD 310.1: ALKALINITY</b>						Analyst: CMC
Alkalinity, Total (As CaCO3)	210	2.0		mg/L CaCO3	1	8/30/2006
Carbonate	ND	2.0		mg/L CaCO3	1	8/30/2006
Bicarbonate	210	2.0		mg/L CaCO3	1	8/30/2006
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: CMC
Total Carbon Dioxide	200	1.0		mg CO2/L	1	8/30/2006
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: CMC
Specific Conductance	3200	0.010		µmhos/cm	1	8/29/2006
<b>EPA METHOD 160.1: TDS</b>						Analyst: KS

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 26-Sep-06

**CLIENT:** San Juan Refining  
**Lab Order:** 0608317  
**Project:** Annual Sampling 2006  
**Lab ID:** 0608317-01

**Client Sample ID:** MW#8  
**Collection Date:** 8/23/2006 1:00:00 PM  
**Date Received:** 8/25/2006  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 160.1: TDS</b>						
Total Dissolved Solids	2200	20		mg/L	1	8/29/2006

Analyst: KS

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
 Lab Order: 0608317  
 Project: Annual Sampling 2006  
 Lab ID: 0608317-02

Client Sample ID: MW#1  
 Collection Date: 8/23/2006 1:45:00 PM  
 Date Received: 8/25/2006  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						
						Analyst: TES
Fluoride	0.65	0.10		mg/L	1	8/26/2006 1:24:25 PM
Chloride	17	0.10		mg/L	1	8/26/2006 1:24:25 PM
Bromide	ND	0.50		mg/L	1	8/26/2006 1:24:25 PM
Nitrate (As N)+Nitrite (As N)	1.2	0.50		mg/L	5	8/26/2006 2:34:03 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/26/2006 1:24:25 PM
Sulfate	190	5.0		mg/L	10	9/9/2006 2:20:37 AM
<b>EPA METHOD 7470: MERCURY</b>						
						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	9/5/2006
<b>EPA METHOD 6010: DISSOLVED METALS</b>						
						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	9/11/2006 6:11:03 PM
Barium	0.023	0.0020		mg/L	1	9/11/2006 12:28:02 PM
Cadmium	ND	0.0020		mg/L	1	9/11/2006 12:28:02 PM
Calcium	74	1.0		mg/L	1	9/11/2006 12:28:02 PM
Chromium	ND	0.0060		mg/L	1	9/11/2006 12:28:02 PM
Copper	ND	0.0060		mg/L	1	9/11/2006 12:28:02 PM
Iron	ND	0.020		mg/L	1	9/11/2006 12:28:02 PM
Lead	ND	0.0050		mg/L	1	9/11/2006 12:28:02 PM
Magnesium	18	1.0		mg/L	1	9/11/2006 12:28:02 PM
Manganese	0.090	0.0020		mg/L	1	9/11/2006 12:28:02 PM
Potassium	2.4	1.0		mg/L	1	9/11/2006 12:28:02 PM
Selenium	ND	0.050		mg/L	1	9/11/2006 12:28:02 PM
Silver	ND	0.0050		mg/L	1	9/11/2006 12:28:02 PM
Sodium	120	5.0		mg/L	5	9/11/2006 2:29:10 PM
Uranium	ND	0.10		mg/L	1	9/11/2006 6:11:03 PM
Zinc	0.047	0.0050		mg/L	1	9/11/2006 12:28:02 PM
<b>EPA 6010: TOTAL RECOVERABLE METALS</b>						
						Analyst: NMO
Chromium	ND	0.0060		mg/L	1	9/6/2006 12:23:31 PM
Lead	ND	0.0050		mg/L	1	9/6/2006 12:23:31 PM
<b>EPA METHOD 8260B: VOLATILES</b>						
						Analyst: SMP
Benzene	ND	1.0		µg/L	1	8/28/2006
Toluene	ND	1.0		µg/L	1	8/28/2006
Ethylbenzene	ND	1.0		µg/L	1	8/28/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/28/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2006

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
Lab Order: 0608317  
Project: Annual Sampling 2006  
Lab ID: 0608317-02

Client Sample ID: MW#1  
Collection Date: 8/23/2006 1:45:00 PM  
Date Received: 8/25/2006  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: SMP
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2006
Naphthalene	ND	2.0		µg/L	1	8/28/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2006
Acetone	ND	10		µg/L	1	8/28/2006
Bromobenzene	ND	1.0		µg/L	1	8/28/2006
Bromochloromethane	ND	1.0		µg/L	1	8/28/2006
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2006
Bromoform	ND	1.0		µg/L	1	8/28/2006
Bromomethane	ND	2.0		µg/L	1	8/28/2006
2-Butanone	ND	10		µg/L	1	8/28/2006
Carbon disulfide	ND	10		µg/L	1	8/28/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	8/28/2006
Chlorobenzene	ND	1.0		µg/L	1	8/28/2006
Chloroethane	ND	2.0		µg/L	1	8/28/2006
Chloroform	ND	1.0		µg/L	1	8/28/2006
Chloromethane	ND	1.0		µg/L	1	8/28/2006
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2006
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2006
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2006
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2006
Dibromomethane	ND	2.0		µg/L	1	8/28/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	8/28/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	8/28/2006
2-Hexanone	ND	10		µg/L	1	8/28/2006
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2006

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 26-Sep-06

CLIENT: San Juan Refining  
 Lab Order: 0608317  
 Project: Annual Sampling 2006  
 Lab ID: 0608317-02

Client Sample ID: MW#1  
 Collection Date: 8/23/2006 1:45:00 PM  
 Date Received: 8/25/2006  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: SMP
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2006
Methylene Chloride	ND	3.0		µg/L	1	8/28/2006
n-Butylbenzene	ND	1.0		µg/L	1	8/28/2006
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2006
sec-Butylbenzene	ND	2.0		µg/L	1	8/28/2006
Styrene	ND	1.5		µg/L	1	8/28/2006
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2006
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2006
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2006
Vinyl chloride	ND	1.0		µg/L	1	8/28/2006
Xylenes, Total	ND	3.0		µg/L	1	8/28/2006
Surr: 1,2-Dichloroethane-d4	98.2	69.9-130		%REC	1	8/28/2006
Surr: 4-Bromofluorobenzene	92.6	75-139		%REC	1	8/28/2006
Surr: Dibromofluoromethane	86.1	57.3-135		%REC	1	8/28/2006
Surr: Toluene-d8	86.0	81.9-122		%REC	1	8/28/2006
<b>EPA METHOD 310.1: ALKALINITY</b>						Analyst: CMC
Alkalinity, Total (As CaCO3)	270	2.0		mg/L CaCO3	1	8/30/2006
Carbonate	ND	2.0		mg/L CaCO3	1	8/30/2006
Bicarbonate	270	2.0		mg/L CaCO3	1	8/30/2006
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: CMC
Total Carbon Dioxide	240	1.0		mg CO2/L	1	8/30/2006
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: CMC
Specific Conductance	940	0.010		µmhos/cm	1	8/29/2006
<b>EPA METHOD 160.1: TDS</b>						Analyst: KS

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 26-Sep-06

**CLIENT:** San Juan Refining  
**Lab Order:** 0608317  
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**Lab ID:** 0608317-02

**Client Sample ID:** MW#1  
**Collection Date:** 8/23/2006 1:45:00 PM  
**Date Received:** 8/25/2006  
**Matrix:** AQUEOUS

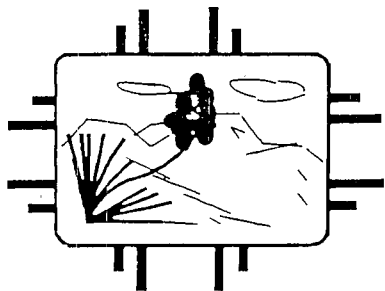
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 160.1: TDS</b>						
Total Dissolved Solids	640	20		mg/L	1	8/29/2006

Analyst: KS

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit



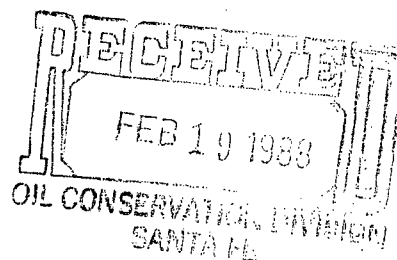
NEW MEXICO  
HEALTH AND ENVIRONMENT  
DEPARTMENT

Post Office Box 968  
Santa Fe, New Mexico 87504-0968

GARREY CARUTHERS  
Governor

LARRY GORDON  
Secretary

CARLA L. MUTH  
Deputy Secretary



January 12, 1988

**INSPECTION REPORT  
BLOOMFIELD REFINING COMPANY  
NOVEMBER 3, 1987**

BY: Mike Sanders and John Gould

The inspectors arrived at 8:26 A.M., on November 3rd, met Chris Hawley (Environmental Engineer) and Richard Traylor, (Refinery Manager) and conducted a pre-inspection interview. The following information is derived from file reviews, the on-site inspection and information provided by the facility representatives.

On August 13, 1986, a CEI was conducted at BRC by James Henderson of NMEID. This inspection resulted in a NOV (11/21/86) listing 28 violations of the NMHWMR. Of these 28 violations:

- 2 concerned training of personnel,
- 2 concerned caustic (NaOH) storage tank,
- 23 concerned issues relating to TSD status of facility, and
- 1 concerned submittal of new Part A when ownership changed from Plateau to Bloomfield Refining Company.

BRC responded to this NOV in a lengthy response through their legal counsel Gardere & Wynne dated 12/23/86. In this response, BRC again categorically denied TSD status and the allegations in the NOV. However, during this most recent inspection it was determined that the non-TSD related issues had been addressed at the facility. General refinery training procedures as described to the inspectors were determined to be adequate in regard to hazardous waste handling procedures at the facility. The two violations covering the caustic tank were:

- 1) Failure to have formal closure plan, and
- 2) Failure to submit such plan to EID

The tank has been cleaned and the waste properly manifested and shipped to a disposal facility. Although such closure without an approved closure plan is a violation of the regulations, the fact remains that closure has been completed, and was verified as satisfactory by the inspectors. Although technically a violation, the issue is considered moot at this point.

No revised Part "A" notifying change in ownership from Plateau to BRC (1984) was located in the file. Since this is a TSD requirement, BRC probably never renotified, as this would in a sense be admitting TSD status.

As stated above, BRC had to-date not corrected any of the TSD related violations cited in the 11/21/86 NOV. The inspectors therefore felt that it would be pointless to complete another TSD checklist when nothing had changed since the Henderson inspection. A meeting of NMEID and EPA personnel has been scheduled for the week of January 25-29, 1988, and will include an on-site inspection at BRC and completion of the TSD checklist. It is anticipated that during this meeting the process of resolving the TSD/Generator controversy can begin.

The TSD status of BRC is based on what has been considered to be a HW landfill on the facility property. The material in the landfill was derived from the process of installing polyethylene liners in the North Oily Water Pond and the South Oily Water Pond at the direction of the New Mexico Oil Conservation Division (OCD). When liners were installed, the sludge in the bottom of the ponds was believed to have contained at least some API separator sludge which is a listed HW, and was handled and disposed of as such. According to BRC, only visibly contaminated soil underlying the sludge (not sludge itself) was removed to a landfill on BRC property after testing showed that the material was not E.P. Toxic for lead or chromium. This information has not been substantiated by EID inspectors. Because the soil contamination resulted from contact with sludge derived from an API separator regulatory agencies have contended that BRC is a TSD because a listed hazardous waste has been disposed of on company property. However, BRC contends that because the disposed material is not actual API separator sludge, and since it displayed no hazardous waste characteristics at the time of disposal, it is not a hazardous waste and may be legally disposed of on-site, and does not result in TSD status.

In order to settle this issue Bloomfield Refinery Company has offered to remove landfilled-material, and dispose of it as a hazardous waste.

Another environmental concern is the contamination the shallow perched alluvial aquifer beneath the complex, as a result of Refinery operations, which contains hazardous constituents. The NMOCD is requiring remedial action to clean up this aquifer. In addition to complying with WQCC regulations in regard to this cleanup, RCRA regulations must also be satisfied. In case of regulatory overlap, those regulations considered most stringent would take precedence. BRC management has expressed willingness to begin cleanup activities when it becomes clear that such a program will fulfill all applicable and pertinent regulations.

On January 26, 1988, a follow-up visit to Bloomfield was conducted by John Gould and Mike Sanders, of EID, and Guy Tidmore of EPA. Also present at the meeting were Frank Chavez, Jami Bailey and Dave Boyer of OCD, as well as Chris Hawley, Mike Macy and Richard Traylor of Bloomfield Refining.

During the meeting a TSD checklist was completed and discussed. In addition, a plant tour was conducted, including a visit to Hammond Ditch where numerous seeps of what appeared to be hydrocarbons were noted.

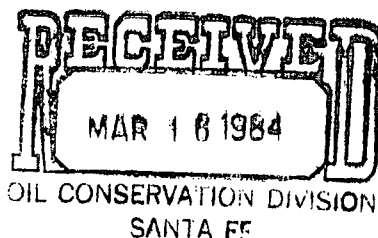
I have been informed that EPA has determined that Bloomfield is a TSD facility and that violations discovered during the recent inspection will be addressed through a 3008H to be issued by EPA. The violations will be discussed with Guy Tidmore and will include the fact that Bloomfield did not submit a new Part A following the purchase of the facility from Plateau.

200 WEST MARCY, SUITE 129  
SANTA FE, NEW MEXICO 87504

**BRUCE S. GARBER**

ATTORNEY AT LAW

P.O. BOX 8933  
(505) 983-3233



March 14, 1984

Mr. Joe Ramey, Director  
Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501

Re: Plateau, Inc. Discharge Plan

Dear Mr. Ramey,

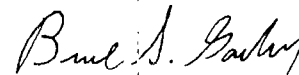
This letter is Plateau's status report in compliance with condition No. 4 of your October 14, 1983, letter.

Since the February 14, 1983 status report, Plateau and its consultants have completed field measurements of the elevation of the contact of the Nacimiento Formation with the above-lying formations and of the levels of the water perched above the Nacimiento in the vicinity of the refinery. This information is currently being compiled to be included in the discharge plan.

Plateau has also obtained laboratory analysis results for water samples which will be included in the discharge plan to establish background water quality for the twenty-seven constituents listed in my January 19, 1984, letter to you.

We intend to submit the updated discharge plan to you no later than March 23, 1984. Thank you for your continuing cooperation.

Sincerely,

  
Bruce S. Garber

BSG/dm

cc: L.S. Woodside  
D.J. Stockham  
G.S. Smith



- File Copy Do Not Remove -

**DISCHARGE PLAN FOR PLATEAU  
REFINERY AT BLOOMFIELD;  
NEW MEXICO**

**SUBMITTED TO  
PLATEAU INC.  
ALBUQUERQUE, NEW MEXICO**

**SUBMITTED BY  
AMERICAN GROUND WATER  
CONSULTANTS, INC.  
ALBUQUERQUE, NEW MEXICO**

**MARCH 1984**

**AMERICAN  
GROUND WATER  
CONSULTANTS, INC.**

2300 CANDELARIA ROAD, N.E.  
ALBUQUERQUE, NEW MEXICO 87107  
TELE: (505) 345-9505 CABLE: HYDROCONSULT  
TELEX: 66-0422 TELECOPIER: (505) 247-0155

March 24, 1984

Mr. Robert Dixon, Vice President  
Plateau, Inc.  
4775 Indian School Road, NE  
Albuquerque, New Mexico 87110

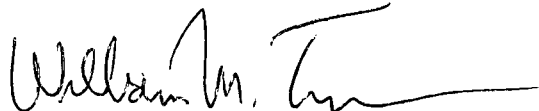
Dear Mr. Dixon:

American Ground Water Consultants is pleased to present herewith our report entitled: Discharge Plan for a Refinery Operated by Plateau, Inc. near Bloomfield, New Mexico.

The present report is submitted to update the previous discharge plan dated September 30, 1977 as is required at five-year intervals.

Respectfully submitted,

AMERICAN GROUND WATER CONSULTANTS, INC.



Dr. William M. Turner  
President

## SUMMARY

It is now more than five years since the approval of Plateau's original discharge plan and as required by regulations of the New Mexico Water Quality Control Commission (NMWQCC), a new discharge plan is required. Some of the changes which have occurred at the refinery since approval of the first discharge plan include:

1. Slight increase in the amount of waste-water discharge by the plant.

2. Construction of surface-water retention facilities in an arroyo north of the refinery.

3. Application of excess waste-water from the evaporation ponds to a land disposal site and the eventual use of this water for irrigation.

4. Detection of a small amount of seepage from the solar evaporation ponds.

5. Lining of ponds adjacent to the API separator with a 100-mil high density polyethylene liner and installation of a leak detection system

To reduce waste-discharge, a program of recycling water in the refinery has been implemented such that total average waste-water discharge is about 50 gallons per minute. This water is sent first to the API separator and adjacent ponds and then to the solar evaporation ponds. Excess water from the solar evaporation ponds will be used for irrigation of natural vegetation on company property.

The ponds which receive effluent from the API separator have been lined to preclude the possibility of any seepage of water into the subsurface.

Any excess irrigation water applied to the irrigated area are retained by low berms which are constructed at necessary locations around the irrigated area. These berms also serve to retain rainfall runoff from the irrigation area.

Any seepage of water from the evaporation ponds or from the irrigated area will drain to the north on the subcrop surface of the Nacimiento Formation and will emerge as seeps at the cliff face north of the refinery or in southward trending arroyos north of the Hammond Ditch.

A depression in the Nacimiento subcrop surface should serve as a master drain for nearly all shallow artificial ground water beneath the refinery property.

There is no naturally occurring ground water in the vicinity of the refinery which could be potentially contaminated by waste-water seepage from refinery waste-water handling facilities and any seepage from these facilities will not cause any violation of the NMCCD regulations

Monitoring methods required by the original discharge plan have served their usefulness and are not now providing any new information. Plateau has implemented a new monitoring methodology and has constructed six new monitoring wells drilled into the Nacimiento Formation from which water level and water quality information may be obtained.

## APPROVABILITY

A discharge plan is required if there is a waste-water discharge which may cause contamination of ground water within an aquifer. In the strictest sense, no aquifer can reasonably be defined as existing beneath the Plateau refinery which is subject to contamination. An aquifer must be able to provide water to wells in usable quantities. At the Plateau property, water exists in some places within a shallow cobble bed which overlies the thick impermeable Nacimiento Formation. An aquifer does not reasonably exist because:

1. The water in the cobble bed is derived from the Hammond Ditch and does not occur within the cobble bed at an elevation above the water level in the Hammond Ditch. Therefore, it is difficult to explore for the water.

2. The cobble bed is thin and the saturated zone is of variable thickness varying from about 15 feet thick at the Hammond Ditch to nothing where the bottom of the cobble bed is at an elevation above the level of water in the Hammond Ditch.

3. The saturated thickness within this zone of bank storage fluctuates widely between summer and winter. When water flows in the ditch, the water level in the cobble bed will be at its highest. In the non-irrigation season, there is no water flow in the ditch and the water within the cobble bed drains.

4. Because of the thin character of the saturated zone, where it occurs, pumping of any well will cause a cone of depression to develop which will further decrease the saturated thickness.

5. If the well is inefficient, as most wells are, the pumping water level within the well may drop to the pump intakes.

6. Any water taken from the cobble bed will induce increased leakage from the Hammond Ditch. Without the legal right to take this water, wells in the area will not be approved for withdrawal of water from the cobble bed.

It is concluded that exploration for the water in the cobble bed is difficult, the cobble bed is an unreliable source because of problems of saturated thickness and well construction, and the water may not be legally taken. Therefore, a discharge plan should not be required.

Without waiving any rights to object to the discharge plan requirements, Plateau submits this discharge plan. Even if the shallow water overlying the Nacimiento Formation is "ground water" under the regulations, this discharge plan should be approved because it is in compliance with the requirements of the regulations of the New Mexico Water Quality Control Commission. Specifically, the portions of the plan and the plan itself should be approved for the following reasons.

#### 1. RAW WATER HOLDING PONDS

The raw-water ponds contain only water diverted from the San Juan River. No industrial waste, industrial by-product, or other possible water contaminants are added to the water in these ponds prior to withdrawal for use in the refinery. The only additive to this water is a polyquaternary ammonium salt which is used to flocculate suspended solids. This additive is BETZ 1190 for which Betz has obtained approval of potability from the EPA for concentrations of the additive up to 25 ppm. At Plateau, the additive is used at concentrations not exceeding 25 parts per million and this additive is not covered by the WQCC standards of either sections 1-101(UU) or 3-103. Any leakage of water from these ponds is exempt from the requirements of the discharge plan under WQCC Regulation 3-105A, which exempts "effluent or leachate which conforms to all the listed numerical standards of Section 3-103 and has a total nitrogen concentration of 12 mg/l or less, and does not contain any toxic pollutant." Samples of water from the San Juan River both upstream and downstream of the refinery collected and analysed by the U.S. Environmental Protection Agency (EPA) indicate that uncontaminated river water in the raw-water ponds falls within this exemption. Table 1 contains analyses of water carried out by the EPA.

Even if the exemption is found not to apply, the discharge qualifies for approval under WQCC Regulation 3-109D which allows the discharge of the "weight of water contaminants in water diverted ... provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted." There is no aquifer receiving the seepage from the raw-water ponds because there is no naturally occurring ground water lying on the Nacimiento Formation in the vicinity of the refinery. Even should an interpretation of the regulations hold that there is an aquifer receiving the leakage from the raw-water ponds, the quality of the artificial ground water is no better than that of the San Juan River from whence the raw-water holding pond leakage is derived.

Therefore, the raw-water ponds are exempt from the requirements of the discharge plan or, at the very least, must be approved by the Director.

## 2. API SEPARATOR AND LINED ADJACENT PONDS

The API separator and adjacent ponds are approvable under WQCC Regulations 3-109(C)(3)(b) and (c). Those subsections require approval of discharge plans for discharges to surface impoundments which seep less than 0.5 acre-feet of water per acre per year and, where there are adequate monitoring provisions. The API separator is constructed of steel-reinforced concrete and leakage is less than 0.5 acre-feet per acre per year. The manufacturer's specifications for the 100-mil high density polyethylene pond lining material indicate that seepage will be less than 0.5 acre-feet per acre per year unless the integrity of the liner is breached. The leak detection system constructed at the adjacent ponds has already demonstrated its effectiveness in monitoring for tears and other leaks in the liner. Additionally, Plateau has committed itself to repair any leaks. Therefore, the discharge to the API separator and adjacent ponds should be approved.

## 3. SOLAR EVAPORATION PONDS AND LAND APPLICATION AREA

Both the solar evaporation ponds and the land application area are subject to some leakage and percolation of refinery waste water. The subsurface flow pattern of the seepage along the subcrop surface of the Nacimiento Formation is the same from both locations. Monitoring wells, already installed by Plateau, down dip from the evaporation ponds and land application area will be monitored periodically to ensure that the allowable contaminant concentrations are not exceeded. Any significant indication from the monitoring program that applicable concentration levels will be exceeded will trigger implementation of contingency plans. The contingency plans will define the extent of contamination and address any problems with appropriate remedial and preventative measures to ensure that applicable limits of WQCC regulations are not exceeded at a place of ground-water withdrawal for present or reasonably foreseeable future use. The discharge plan for the evaporation ponds and land application area comply with the requirements of WQCC Regulation 3-109 and should be approved.

#### 4. NEGLIGIBLE IMPACT ON SAN JUAN RIVER

Section 3-109(G)(2) of the WQCC Regulations prohibits the approval of discharge plans for discharges "that will cause any stream standard to be violated." The only body of water protected by the WQCC Stream Standards in the vicinity of the proposed discharge locations is the San Juan River. Water quality analyses of samples taken from the San Juan River upstream of the refinery are substantially identical to analyses of water from the San Juan River downstream of the refinery. The samples analysed were collected at a time when discharge from the refinery was substantially as proposed in this discharge plan. There is no demonstrable or reasonable measureable impact on the San Juan River water quality from the proposed operations of the refinery. Neither set of river water samples collected and analysed by the EPA exceeds applicable WQCC Stream Standards. Therefore, impact on the San Juan River is not an impediment to discharge plan approval.

#### 5. ACCIDENTAL SPILLS OR LEAKS

Plateau, by following the provisions of the "Contingency Plan and Emergency Procedures" document, will minimize the release of potential water contaminants by providing effective detection and clean-up of accidental spills of hydrocarbon substances or other refinery chemicals. The impact of such releases on ground-water quality will, therefore, be negligible. Because the "Contingency Plan and Emergency Procedures" document has been incorporated by reference in the discharge plan, the discharge plan effectively protects any artificial ground-water from accidental spills and leaks and any such discharges under the plan are approvable under WQCC Regulation 3-109 because they will not result in contamination of ground water.

#### 6. SURFACE RUNOFF

Surface runoff from natural precipitation in the refinery area is not a source of discharge of any significant amount of potential ground-water contaminants. First, there is not a realistic possibility of flooding and overtopping of waste-water holding ponds or storage tank berms which contain some potential water contaminants. Second, there will not be any significant amount of contaminant material present in other refinery locations where runoff may occur, because the "Contingency Plan and Emergency Procedures" document will be implemented and spills in or near drainage paths will be cleaned up. Natural surface drainage, therefore, will not be a significant source of potential ground-water contamination and should not be an impediment to discharge plan approval.



Additionally, rainwater leachate is exempt in almost all cases under WQCC Regulations 3-105(H) and (I).

#### SUMMARY

Any and all discharges from the Bloomfield refinery owned by Plateau, Inc. described in this discharge plan are in compliance with the WQCC Regulations and should be approved. This discharge plan will be amended or modified if required for compliance with any applicable Federal, State, or local requirements, rules, regulations, orders, or statutes.

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2	Topographic map of Plateau refinery at Bloomfield.....In pocket

## LIST OF ATTACHMENTS

### Attachment

- 1 Description of refinery process
- 2 Lithologic logs and construction details for monitoring wells
- 3 Data for flood potential analysis
- 4 Pond liner specifications
- 5 Contingency plan and emergency procedures



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

October 14, 1983

TONY ANAYA  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

RECEIVED

JAN 10 1984

Mr. Lee S. Woodside,  
Vice President  
Plateau Inc.  
P. O. Box 26251  
Albuquerque, New Mexico 87125

GROUND WATER/HAZARDOUS WASTE  
BUREAU

Dear Mr. Woodside:

We have received a request from Mr. Bruce Garber, as attorney for Plateau, Inc., requesting an extension of time within which to receive approval of a discharge plan for the refinery operated by your company in Bloomfield, New Mexico. Subsequent to this request, we have met with Mr. Garber and discussed the discharge plan situation.

Since our last discharge plan was approved, some operational changes have occurred but the only major "new" discharge is the surface application of waste water which has been accomplished through spray irrigation. The Water Quality Control Commission Regulations, under which we are reviewing your discharge plan, limits our authority to grant extension of time for discharge plan approval for such new discharges. Therefore it will not be possible to allow the extension you request for this discharge.

In order to allow your staff and the staff of the Division time to review and modify your discharge plan and good cause appearing to exist, an extension of time will be necessary.

Therefore, you are hereby granted an extension of time until April 1, 1984, in which to receive approval of your discharge plan and to continue to discharge pursuant to your existing discharge plan. This extension is granted contingent upon the following conditions:

- 1) Plateau, Inc. will cease all surface application disposal operations in connection with its refinery operations at Bloomfield, New Mexico.

October 14, 1983

- 2) Before November 14, 1983, representatives of Plateau, Inc. shall meet with representatives of the Division to discuss the discharge plan submitted by Plateau and define the parts of that plan which need expansion or modification.
- 3) On or before December 12, 1983, representatives of Plateau Inc. shall, in cooperation with Division personnel, establish a schedule for resolution of outstanding discharge plan issues.
- 4) At least every thirty (30) days between the date of this extension and April 1, 1984, Plateau, Inc. shall give a written report to the Division of its activities during the preceding thirty (30) days related to the discharge plan.

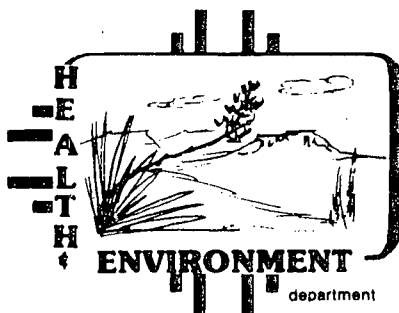
I would appreciate receiving your acceptance of these conditions at your earliest convenience.

Thank you for your help with this matter. The Division staff looks forward to working with you to resolve all outstanding issues in an appropriate manner.

Sincerely,

JOE D. RAMEY,  
Director

JDR/WPP/dr



**STATE OF NEW MEXICO**

**ENVIRONMENTAL IMPROVEMENT DIVISION**  
P.O. Box 968, Santa Fe, New Mexico 87504-0968  
(505) 984-0020

Steven Asher, Director

TONEY ANAYA  
GOVERNOR

ROBERT McNEILL  
SECRETARY

ROBERT L. LOVATO, M.A.P.A.  
DEPUTY SECRETARY

JOSEPH F. JOHNSON  
DEPUTY SECRETARY

MEMORANDUM

TO: ANTHONY DRYPOLCHER, ACTING CHIEF, GROUND WATER AND HAZARDOUS  
WASTE BUREAU

THROUGH: MAXINE GOAD, PROGRAM MANAGER, GROUND WATER SECTION

FROM: BRUCE GALLAHER, GEOHYDROLOGIST, SURVEILLANCE SECTION

SUBJECT: DISCHARGE PLAN FOR PLATEAU INC.'s BLOOMFIELD REFINERY

DATE: OCTOBER 7, 1983

On September 19, 1983 I was requested by Charles Nylander to assist the Oil Conservation Division in their review of the Plateau plan by performing the following tasks:

- A. Reconiter the hydrogeochemical conditions in and about the refinery area; and
- B. Overview Plateau's ground water discharge plan and OCD's initial review of the plan, and comment on the conceptual attributes and deficiencies of both documents.

This memorandum summarizes my impressions. Given the time limitations, it is recognized that this evaluation must be preliminary in nature and general in scope.

**CONCLUSIONS AND RECOMMENDATIONS:**

1. Based on a field review of on-site conditions and available data, there remains little doubt that the refinery operations have significantly degraded ground water quality within the plant confines. However, the extent of contamination can not be determined with available information.
2. While it is likely that most of the contamination occurred before the effective date of the NMWQCC regulations for discharge onto or below the surface of the ground (mid-1977) any attempt to quantify that proportion would be speculative. Present-day discharges of contaminants to ground water exist throughout the plant site in many forms including drainage of tank bottom water within un-lined berms, seepage from the solar evaporation ponds, and leakage from the newly-lined oily water separation ponds. Owing to the apparent inability to distinguish

between such "old" and "new" discharges, Plateau should be obligated to consider them all the same within the discharge plan.

3. A major deficiency in the discharge plan is the lack of any substantive site-specific information regarding the occurrence and quality of ground water near the refinery.
4. Overall, I concur with the hydrogeochemical aspects of OCD's review of the discharge plan (March 8, 1983 letter from Joe D. Ramey, OCD to Bob Perry, Plateau; July 6, 1983 letter from Joe D. Ramey, OCD to Dwight J. Stockham, Plateau). The March 8 transmittal, in particular, succinctly identifies the major problem areas. To the negative, OCD's stated remedies to those problems seem somewhat inappropriate. Although it is true that most of the suggested data should be collected (e.g. hydraulic properties of the earth materials), it should not be mandated that they be collected, as the tone of the OCD review comments imply. Plateau's consultants should have the leeway to determine which specific information is needed to address general deficiencies identified through review.
5. Given the toxic nature and quantities of waste generated at the refinery, Plateau must take a much broader look at its operations. Rather than focusing on the two solar evaporation ponds, equal importance has to be placed on the other sources within the refinery. Additionally, Plateau should abandon its contention that ground water in the area is not protected under the New Mexico Water Quality Control Commission Regulations because it is attributed to leakage from the Hammond Ditch, a man-made structure. Irregardless of the source of ground water at the site, ground water must be protected at any place of present or foreseeable future use. Plateau must also consider the effects of its discharge off-site where "natural" ground water unquestionably is present.

In summary, Plateau has provided insufficient information which could be used for assessing the water quality impacts of its overall operations. Much needed basic information is missing which describes the occurrence and quality of ground water in the area. I could not recommend approval of the plan until the concerns presented in the March 8, 1983 OCD letter are addressed in some detail.

Fundamental questions have yet to be addressed: "Which direction(s) is the ground water moving?" "How fast is the ground water moving?" "Which contaminants have entered the ground water system and at what concentrations?" A significant amount of basic hydrogeologic data collection remains. In my opinion, without on-site drilling and standard quantitative characterization of the saturated earth materials, Plateau cannot demonstrate that its discharge will not cause ground-water quality standards to be exceeded at a place of present or foreseeable future use.



**BRUCE S. GARBER**

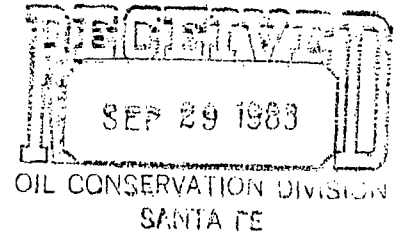
ATTORNEY AT LAW

200 WEST MARCY, SUITE 129  
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933  
(505) 983-3233

28 September 1983

Joe Ramey, Director  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501



Re: Plateau, Inc. Discharge Plan

Dear Mr. Ramey:

As I indicated in my September 12, 1983 letter to you and in conversations with both you and Mr. Nylander of the EID, a revision of the OCD's June 30, 1983 comments on Plateau's discharge plan by the technical staff in charge of reviewing and making recommendations on that application is of utmost importance and a prerequisite to negotiation of a schedule for Plateau's submission of additional information necessary for an approved discharge plan. While both Mr. Nylander and you have recognized the serious difficulties with the June 30, 1983 comments, the State has yet to provide a document which clarifies the confusion generated by those comments and specifies the additional information considered necessary by the State for discharge approval.

Mr. Nylander scheduled a meeting with me for the morning of September 21, 1983. The stated purpose of that meeting was to provide the Company with sufficient detailed technical comments to enable the Company to prepare a proposed schedule for completing the discharge plan approval process. At that meeting I was presented with a memorandum from David Boyer to Mr. Nylander dated August 29, 1983. This memorandum reflects only a preliminary review of the June 30, 1983 comments. It does not contain any detailed technical analysis of the discharge plan nor does it give any clear guidance to the Company on what further submittals are necessary.

Mr. Nylander did not attend the meeting he scheduled with me. Rather, Maxine Goad, David Boyer and Oscar Simpson, attended the meeting. Ms. Goad was familiar with neither Plateau's discharge plan nor the June 30, 1983 comments and was unable to respond to questions on any technical issues. Mr. Boyer was at the meeting but indicated prior to the meeting that he would not be involved with this project in the

Joe Ramey, Director  
Page 2  
28 September 1983

future due to the press of other responsibilities. Mr. Simpson, a primary author of the June 30, 1983 comments, insisted that his prior comments were still fully valid, despite clear indications otherwise from both Mr. Nylander and you. Bruce Gallaher and Pat Longmeyer were not present at the meeting, however, Ms. Goad stated that they were the individuals responsible for the EID technical review of the discharge plan at this time. Neither Mr. Gallaher nor Mr. Longmeyer had prepared any written comments on the discharge plan for the Company.

Both Ms. Goad and Mr. Boyer said that they did not have sufficient time to properly handle this discharge plan review prior to the October 17, deadline under which Plateau is now faced. My recollection of the discussion at the September 13, 1983 Water Quality Control Commission meeting is that neither OCD nor the EID has sufficient staff at this time to conduct the discharge plan review for Plateau or other refineries.

Plateau submitted its application for a renewed discharge plan on June 2, 1982, over one year before the discharge plan expired. The Company has responded to all technical comments in a timely manner until the June 30, 1983 comments. Those comments were not responded to because State officials agreed that there were numerous misstatements and incorrect assumptions contained in those comments. Under the circumstances Plateau cannot be faulted for the delays in the processing of the discharge plan it has submitted. Plateau should not be penalized for the State Agencies' staffing difficulties.

Therefore, I hereby request that Plateau be granted an extension to discharge under its previously approved discharge plan until April 1, 1984. This extension will allow sufficient time for the OCD or the EID, to approach the State Legislature for additional funding for staffing and for the Water Quality Control Commission to determine at its March 13, 1984 meeting which agency it feels should administer the Commission's ground water regulations for oil refineries. As you know the Commission has postponed that discussion until its March, 1984 meeting.

I can assure you that Plateau will not stand idly by during the time of this extension. Rather, the Company will continue to pursue a vigorous program of environmental monitoring and pollution control at its

Joe Ramey, Director  
Page 3  
28 September 1983

Bloomfield, New Mexico facility. Thank you for your cooperation in this matter.

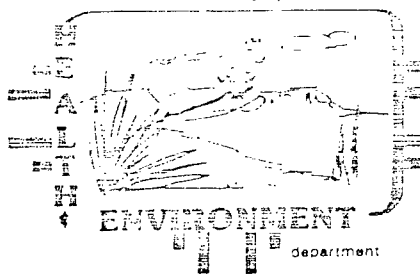
Sincerely,



Bruce S. Garber

BSG/ea

cc: Lee S. Woodside  
Dwight J. Stockham  
Gregory S. Smith  
Charles Nylander  
Louis W. Rose



STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT DIVISION  
P.O. Box 968, Santa Fe, New Mexico 87504-0968  
(505) 984-0020

Steven Asher, Director

TONY ANAYA  
GOVERNOR

ROBERT McNEILL  
SECRETARY

ROBERT L. LOVATO, M.A.P.A.  
DEPUTY SECRETARY

JOSEPH F. JOHNSON  
DEPUTY SECRETARY

M E M O R A N D U M

TO: Charles Nylander, Chief, Water Pollution Control Bureau

THROUGH: Maxine S. Goad, Program Manager, Ground Water Section, WPCB *MSG*

FROM: David G. Boyer, Water Resource Specialist, Ground Water Section *DGB*

SUBJ: Plateau Refinery - Current Issues

DATE: August 29, 1983

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As requested by you, I have reviewed the readily available information on Plateau Refinery and offer the following regulatory and technical comments.

Regulatory and Procedural Issues

1. On April 29, 1977 Plateau notified OCD (letter from Dr. William Turner, American Ground Water Consultants (AGWC) representing Plateau to Joe D. Ramey OCD) that Plateau planned "to make a new contaminant discharge and to alter the character or location of an existing discharge from their refinery." See attached letter.
2. In a letter dated May 13, 1977, from Ramey to Mr. William Hagler, vice President Plateau, Plateau was notified a discharge plan was "required of the Plateau Refinery".
3. Plateau Refinery discharge plan submitted by Turner of AGWC on September 30, 1977.
4. Public notice of Plateau discharge plan issued by OCD on April 20, 1978.
5. Plateau discharge plan approval June 5, 1978 expired June 5, 1983.
6. Versions of the "Updated Discharge Plan" for Plateau were received beginning in February, 1982. Public notice of Plateau renewal issued May 10, 1983.

7. Letter to Plateau from Ramey dated July 6, 1983, transmitting 32 pages of Oscar Simpson's technical comments of June 30, 1983 on Plateau's "Updated Discharge Plan." Ramey's letter also refers to additional correspondence to Plateau dated March 8, 1983 from Ramey, and from Mr. Lee S. Woodside, Vice-President, Plateau, dated April 18, 1983.
8. July 29, 1983 letter to Ramey of OCD from Lee S. Woodside of Plateau requesting "maximum extension on our present Discharge Plan so that Plateau can properly complete its review" of Simpson's comments.
9. Letter from Ramey dated August 5, 1983 to Plateau granting an extension until September 9, 1983, and referring further comments on discharge plan or requests for further extension of time to EID for action.
10. August 26, 1983, letter from Bruce S. Garber, Attorney at Law now representing Plateau, to Ramey requesting an extension of time for good cause" to continue to discharge under its current discharge plan. Plateau requests an extension until March 9, 1984, citing "complex technical and legal issues which we expect will require significant further attention of both State and Company experts."

#### Technical Issues

1. Initial review of Oscar Simpson's comments of June 30, 1983 to Plateau indicates that immediate legal attention should be directed to the assertion by Plateau and their AGWC consultants that there is no "natural" or ground water to protect. This is listed by Simpson as a major point of disagreement by AGWC. This assertion is made by AGWC even though the refinery sits on a bluff above the San Juan River and at least 25 oil seeps (p. 29) from past or present Plateau practices have been identified by OCD and leak into Hammond (Irrigation) Ditch, valley fill and/or the San Juan River. Simpson's review (pages 6-21) includes convincing documentary evidence that ground water exists in the area of the plant and that discharges from Plateau have moved, and continue to have the potential to move, directly or indirectly into ground water.
2. In addition to the dispute over ground water occurrence, Simpson in his review identified the following subjects for comment, or as needing further information: Flooding potential, seepage, water chemistry, monitoring, water supply and discharge (including to land application of hydrocarbon effluents), arroyo catchment plan, hydrocarbon discharge to Hammond Ditch, contingency plans, and OCD's request for additional information (other than in those categories listed above). It appears to me that much, if not all, of the technical material listed here in item #2 is necessary to complete technical review as required under WQCC Regulations.

3. Mr. Simpson, on page 4 of his comments (attached) requests detailed information on the refinery process, additives and concentrations, and all other applicable substances used in the refinery. I expect some of these would be considered "Trade Secrets" by Plateau. Although we certainly may request the information if necessary, I would question the need for all this very specific data, since we know the type of effluents generated by oil refineries and their general characteristics. We must, however, have specific information on the location, quantity and water quality characteristics of each effluent discharge at the plant (eg. ponds, land application, sludge pits, etc.)

#### Summary & Recommendations

1. Although Mr. Simpson's 6/30/83 comments and request for additional information may be sometimes overly long and occasionally repetitious, and in one instance (#3 above) possibly unnecessary, he has on the whole identified many serious and complex technical deficiencies with the current discharge plan. He is to be commended for his detailed review.
2. Mr. Garber is correct in his statement of August 26, 1983, that the discharge plan involves complex technical and legal issues. I concur with Mr. Garber's conclusion that time is needed to address these issues. There are several options that can be taken by the OCD (as the currently delegated constituent agency) and/or the WQCC.
  - A. Since Plateau was an existing discharger, at least in part, prior to 1977, the Director (OCD's in this case) can grant an extension of time pursuant to WQCC Section 3-106.A. for "good cause" for those discharges existing before June, 1977. Given the complex issues listed above I think Plateau can make a case for "good cause" to have an extension until March, 1984. Such an extension should have conditions such as recognition by Plateau of the need for a discharge plan, timely submittal of requested information, etc. I personally do not like the approach of time extension under 3-106 since it has proved difficult in the past to enforce conditions. Also, any discharges starting after June 1977 would come under Section 3-106.B. and would only be eligible for 120 days time extension (through October 3, 1983). Most of this extension has already been used up.
  - B. An "Assurance of Discontinuance" would to me be preferable to a long extension of time since, as part of the assurance, certain conditions are negotiated, and deadlines stipulated as was done with

Page 4

MEMORANDUM - Charles Nylander

August 29, 1983

Climax. Having the WQCC review and approve an assurance brings the whole process into the public spotlight, and produces a more enforceable document which is better than just a long extension given by OCD or EID. If the assurance can be negotiated by September 13, 1983, only a short 8 day extension is needed. If, as likely, the issue will not be completed in a week, an extension until the October 11, 1983, WQCC meeting will be needed. However, this would be slightly past the October 3, 1983, deadline in 2.A. above.

3. If EID is to be involved with this discharge plan, an attorney for our EID staff should work with OCD's lawyer and EID technical staff to quickly resolve Plateau's and AGWC's contention that no discharge plan is necessary.

MSG:DGB:jba

200 WEST MARCY, SUITE 129  
SANTA FE, NEW MEXICO 87504

BRUCE S. GARBER

ATTORNEY AT LAW

86

P.O. BOX 8933  
(505) 983-3233

26 August 1983

Mr. Joe Ramey  
Director  
Oil Conservation Division  
Energy and Minerals Department  
State Land Office Building  
P. O. Box 2088  
Santa Fe, New Mexico 87503

Dear Mr. Ramey:

I am writing on behalf of Plateau, Inc., concerning Plateau's Updated Discharge Plan which was submitted to the OCD for review under the Water Quality Control Commission's ground water regulations. At the present time, Plateau is under a September 9, 1983 deadline for the approval of its Updated Discharge Plan.

Plateau received technical comments from your office on July 22, 1983. As you know, the review process for those comments and for the renewed discharge plan involves complex technical and legal issues which we expect will require significant further attention of both the State and Company experts. This situation is complicated by the uncertainty over whether OCD or EID will be responsible for the remainder of the Discharge Plan Review Process for Plateau's Plan.

Therefore, we believe that good cause exists for granting Plateau an extension of time within which to discharge under its current Discharge Plan. Plateau accordingly hereby requests that it be granted such an extension until March 9, 1984.

Sincerely,

*Bruce S. Garber*

Bruce S. Garber

BSG:ea

cc: Steven Asher  
Charles Nylander  
Lee S. Woodside  
Bob D. Dixon  
Gary A. Masson  
Gregory S. Smith  
Dwight J. Stockham





STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

August 5, 1983

TONEY ANAYA  
GOVERNOR

POST OFFICE BOX 206  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

CERTIFIED - RETURN  
RECEIPT REQUESTED

Plateau, Inc.  
P. O. Box 26251  
Albuquerque, New Mexico 87125-6251

Attention: Mr. Lee S. Woodside  
Vice President

Dear Mr. Woodside:

We have received your letter of July 29, 1983, requesting extension of time to get approval of a discharge plan for your Plateau Refinery.

Responsibility for the processing and approval of these discharge plans has been assumed by the Environmental Improvement Division of the New Mexico Health and Environment Department. In order to facilitate the continued processing of the proposed discharge plan, you are hereby granted an extension until September 9, 1983.

Any additional communication relating to this discharge plan, or any requests for further extension, should be addressed to the Water Pollution Control Bureau of the EID.

Sincerely,

JOE D. RAMEY,  
Director

JDR/dr

BRUCE S. GARBER

ATTORNEY AT LAW

200 WEST MARCY, SUITE 129  
SANTA FE, NEW MEXICO 87504

P.O. BOX 8933  
(505) 983-3233

26 August 1983

Mr. Joe Ramey  
Director  
Oil Conservation Division  
Energy and Minerals Department  
State Land Office Building  
P. O. Box 2088  
Santa Fe, New Mexico 87503

RECEIVED

AUG 29 1983

EID: WATER  
POLLUTION CONTROL

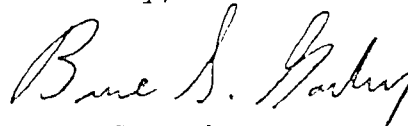
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Therefore, we believe that good cause exists for granting Plateau an extension of time within which to discharge under its current Discharge Plan. Plateau accordingly hereby requests that it be granted such an extension until March 9, 1984.

Sincerely,



Bruce S. Garber

BSG:ea

cc: Steven Asher  
Charles Nylander  
Lee S. Woodside  
Bob D. Dixon  
Gary A. Masson  
Gregory S. Smith  
Dwight J. Stockham

RECEIVED  
AUG 26 P.M.  
WATER POLLUTION  
CONTROL



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONY ANAYA  
GOVERNOR

April 25, 1983

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

M E M O R A N D U M

TO: JOE D. RAMEY, DIRECTOR

FROM: OSCAR SIMPSON, WATER RESOURCE SPECIALIST *OAS*

SUBJECT: PERMISSION REQUEST FOR JEFF EDMISTER, DISTRICT III GEOLOGIST,  
TO ATTEND ON MAY 3, 1983, A JOINT MEETING IN SANTA FE BETWEEN  
THE EPA, EID AND THE OCD TO DISCUSS ILLEGAL HAZARDOUS WASTE  
DISPOSAL BY PLATEAU REFINERY

On May 3, 1983, at the Environmental Improvement Division office in Santa Fe, a joint meeting will be held between the Environmental Protection Agency (EPA), Criminal Investigation Branch, the Environmental Improvement Division (EID), Hazardous Waste Division, and the Oil Conservation Division (OCD).

The reason for the meeting is to discuss Plateau Inc.'s illegal removal, transport and disposal of hazardous waste, (API Separator sludge), from its Bloomfield Refinery in New Mexico.

API Separator sludge is automatically considered a hazardous waste substance. Any removal, transport and disposal of this sludge without EPA's approval is a serious violation. Plateau removed API Separator sludge from its API sludge ponds, buried part of the waste east of the refinery and transported a large portion across the state line to an unauthorized disposal site in Vernal, Utah. Every aspect of the sludge removal was illegally done in direct violation of EPA's Hazardous Waste Regulations.

I will not be able to attend this upcoming meeting. I will be in southeast New Mexico making discharge plan related inspections of El Paso Natural Gas Company's plant facilities (Jal No. 4, Eunice and Monument).

Since I will not be able to attend the meeting and Jeff has first-hand experience on the subject, I would like permission for Jeff to attend this meeting.

This meeting may also have some direct effects on Plateau's discharge plan. This will also give Mr. Edminster some valuable experience in hazardous waste regulation and disposal of such wastes which could aide him in future inspections of plant facilities and generators of such wastes in District III.

cc: Paul Biderman - Secretary  
Frank Chavez - District III Supervisor  
Jeff Edminster- District III Geologist



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

*March*  
~~APRIL~~ 8, 1983

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Plateau, Inc.  
7575 Indian School Rd. NE  
Albuquerque, NM 87110

Attention: Mr. Bob Perry  
Executive Vice President

Re: Discharge Plan Review  
Plateau Inc. Refinery,  
Bloomfield, New Mexico

Dear Mr. Perry:

Following receipt of Mr. Gregory Smith's letter dated September 8, 1982, Mr. Oscar Simpson of this office proceeded with review of the subject discharge plan.

There are five major problem areas with the plan. These have been briefly summarized and are attached hereto. Additionally, we are very concerned with the operation of the current spray irrigation process and may withdraw our approval thereof.

After you and other concerned parties have had an opportunity to review this letter, we believe that a meeting to discuss these issues will be beneficial. Please contact me so that this meeting can be set up as early as possible, preferably within the next two weeks.

Sincerely,

JOE D. RAMEY  
Division Director

JDR/dp

Enc.

SUMMARY OF THE MAJOR PROBLEMS  
WITH THE PLATEAU, INC. REFINERY DISCHARGE PLAN

(1) The plan does not address the catchment of all fluids which may be discharged within the refinery area.

The plan should provide impermeable catchment of fluids which may be drained onto or which may leak or spill onto the surface within the refinery area and the drainage of these fluids to impermeable storage. This part of the plan should cover the refinery proper, and all appurtenances such as the loading areas, wash down areas, and crude and product storage areas.

Provision should be made for capturing runoff from the area resulting from rainfall and the movement of such fluids to the impermeable storage. In the alternative, Plateau may demonstrate that such runoff will not contain contaminants above the levels provided in the regulations including toxic pollutants.

If there should be any facilities or areas not covered by the catchment and drain system, the quality, quantity, and flow characteristics of any discharge therefrom must be defined. Any areas where refinery wastes or pit solids may have been buried should be described and their potential for leaching evaluated.

(2) The quantity, quality and flow characteristics of discharges from the refinery have not been adequately defined.

The effluent from the API separator must be characterized utilizing a technique which accounts for differing outputs over a sufficient period of time to yield results representative of a typical month of operation. Sampling must also be done in conformance with Section 3-107 B., 1 through 3 of the WQCC regulations.

The sampling technique to be used should be briefly described and receive prior approval from Mr. Simpson. This will assure that the data will be acceptable.

Any other discharge should be characterized in the same manner.

(3) The plan does not provide for impermeable storage of discharged fluids which contain contaminants in excess of

the standards set out in WQCC regulations or which contain toxic pollutants as described therein.

At this time, we believe that all plant discharges should go to such impermeable storage. However, fluids which do not exceed the standards or which do not contain toxic pollutants may be disposed of in some other manner. We would require that any such other disposal not aggravate the current situation which is causing seeps around the refinery site.

The plan must also discuss the proper disposal of any solids or semi-solids which may accumulate in the impermeable storage facilities or elsewhere in the refinery area.

(4) The plan does not properly address the existence of ground water in the area or set up any system of water quality monitoring.

Our investigations have shown there to be ground water in the area of the refinery site. Plateau must determine the location of water wells and springs on or immediately offsetting the refinery area and supply data as to the source of such water and its quality. Again, the sampling technique should be cleared with Mr. Simpson to avoid future conflict over the process or the data. Further, Mr. Simpson will be happy to share the results of his investigation of water wells and sources in this area.

The discharge plan must propose a monitoring plan that will assure that contaminants and toxic pollutants are not moving off the refinery site undetected. Such a plan must address ground water monitoring and monitoring of the Hammond ditch and the San Juan River.

(5) The plan does not adequately or completely address Section 3-107 A, items 1 through 10 of the regulations. Further, the contingency plan covered under Section 3-107 A-10, must address storm runoff and its effect on the catchment and drain system, the impermeable storage, etc.



TONEY ANAYA  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

FEB 25, 1983

65

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

MEMORANDUM

TO: JOE D. RAMEY, DIRECTOR

FROM: OSCAR SIMPSON

SUBJECT: FEBRUARY 24, 1983 MEETING BETWEEN PAUL BIDERMAN, SECRETARY OF  
ENERGY & MINERALS & OSCAR SIMPSON

On February 24, 1983 at 9:30 A.M. an informal meeting was held between Paul Biderman and myself to discuss Plateau Refinery's amended discharge plan. A summary of the items discussed were as follows:

1. Plateaus' updated discharge plan
2. My report and recommendations on Plateaus' updated Discharge Plan
3. The memo of February 18, 1983, from Dick Stamets to Joe D. Ramey
4. Based on the above 3 items is the Oil Conservation Division Taking appropriate action or should other courses be taken and to what extent.
5. The need of the Oil Conservation Division to take a stronger position on ground water protection.
  - a) expanding R-3221 state wide
  - b) updating pit standards
  - c) disposal problems with tank bottoms
  - d) discharge plans
  - e) need to investigate the potential problem for ground water contamination unregulated injection well pressure.
  - f) hydrostatic test discharges from oil & gas transmission lines



HYDRO SCIENCE ENGINEERS, INC.

~~225 IDAHO~~

~~LA MISSION PLAZA, SUITE 7~~

LAS CRUCES, NM 88005

(505) 526-3147

2856 Glass Road

October 29, 1982

Mr. Oscar A. Simpson III  
Water Resource Specialist  
Oil Conservation Division  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, NM 87501

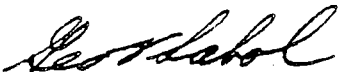
Dear Mr. Simpson:

Enclosed is response to your inquiries and review of "Updated Discharge Plan for a Refinery Operated by Plateau, Inc., near Bloomfield, New Mexico" by American Ground Water Consultants, Inc.

We are returning the reports and supplemental material to you as you requested.

If you have need for additional assistance please contact either myself or a member of our staff.

Sincerely yours,



George V. Sabol  
President and Chief Engineer

GVS/js

1. Can OCD Request A Discharge Plan?

Yes, Part 3-101A, Water Quality Control Regulations, states "The purpose of these regulations controlling discharges onto or below the surface of the ground is ..... to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards."

The groundwater flow (seeps) into the alluvium of the San Juan River appears to meet this regulation. In addition, a discharge plan is required under 3-104 "unless otherwise provided by these regulations, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into groundwater ....." The alluvium of the San Juan River does indeed contain groundwater which is receiving an effluent indirectly from the seeps.

This should be confirmed by the New Mexico Oil Conservation Divisions Legal Department.

2. Page 16 of the report uses a Schoeller diagram.

The diagram can be used to prove common sources of water but it can not be used to disprove that they are from the same source. Chemical changes and blending occurs that tend to modify the character of the water that would cause the diagram to be inappropriate.

3. The ditch water will blend with the seep effluent causing a reduction in constituent concentration of the effluent water. However, the volume of the seep would have to be substantial to cause significant degradation of the ditch water. For example, what would the concentration be in the ditch water if the seep water contains 4000 mg/l Total Dissolved Solids (TDS)?

$$C_{\text{Final Ditch TDS Conc.}} = \frac{\left( \begin{array}{c} C_{\text{TDS}} \\ \text{Conc of Seep} \end{array} \right) \left( \begin{array}{c} Q_{\text{Flow or}} \\ \text{Seep} \end{array} \right) + \left( \begin{array}{c} C_{\text{Initial}} \\ \text{TDS conc.} \\ \text{of Ditch} \end{array} \right) \left( \begin{array}{c} Q_{\text{Initial}} \\ \text{Flow of} \\ \text{Ditch} \end{array} \right)}{Q_{\text{Seep}} + Q_{\text{Ditch}}}$$

$$C_{\text{Final Ditch TDS Conc.}} = \frac{(4000 \text{ mg/l}) (5 \text{ gpm}) + (200 \text{ mg/l}) (250 \text{ gpm})}{5 \text{ gpm} + 250 \text{ gpm}}$$

$$= 275 \text{ mg/l or a 38\% increase in solids}$$

However, the regulations may allow degradation of the water to 500 mg/l as TDS. The above values are assumed for explanation purposes. More data on flow rates in the ditch is required.

4. The suggested constituents to be monitored are:

COD, TOC, Total Suspended Solids,  
oil and grease, phenolic compounds,  
ammonia, sulfide and total chromium.

These constituents are recommended for routine analysis by the U.S. Environmental Protection Agency in their report entitled Petroleum Refining, Point Source Category, EPA - 440/1-74-014-a, April 1974. Each major source of discharge should be characterized using these parameters such as the Fluid Catalytic Cracking (FCC), Desalter, Fractionation, and API separator. The efficiency of the Separator should be determined using the test "Susceptability to separation". If the test indicates little or no separation the unit could be followed using air flotation, clarifiers or filters before discharge to a pond. After such treatment the quality of water may be improved to the point where some wastewater could be discharged to the ground without significant environmental impact.

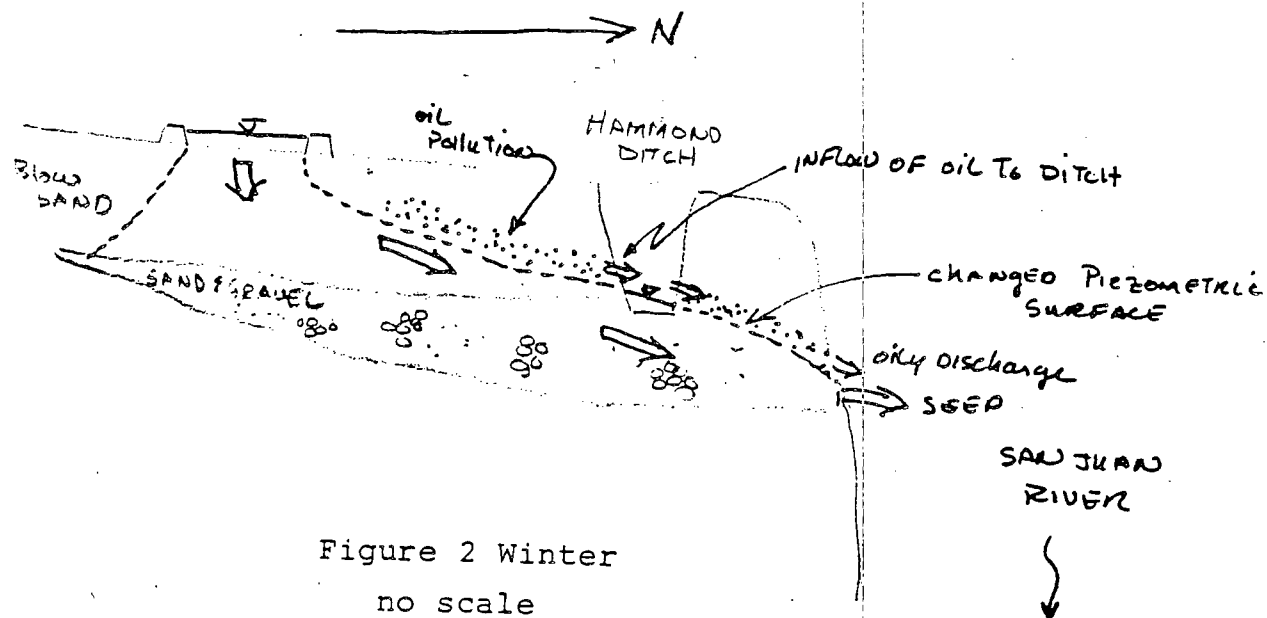
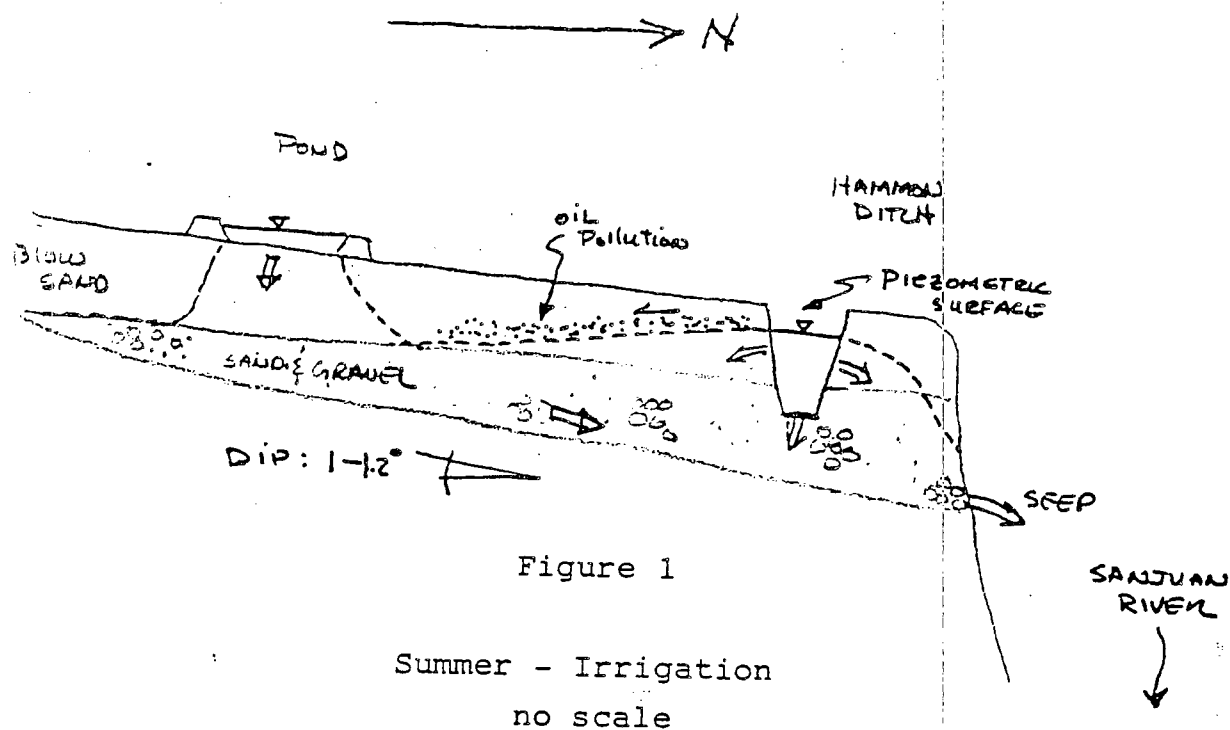
5. Data on area wells should be obtained from the New Mexico State Engineer's Office. The State Engineer maintains records on the location and beneficial use of ground water for each section of land in New Mexico's declared basins.

6. Although the oil and gas processing industry has an exemption under the Resource Conservation and Recovery Act (RCRA) there is a separate regulation (super fund) on old pits, such as API and tank bottom sludges, that should be addressed for hazardous wastes. In addition, polychlorinated biphenyl (PCB) is regulated separately. Information on these items should also be obtained. Particular emphasis should be placed on heavy metals and toxic organics in sludges.

7. Under the Clean Water Act Section 311, discharges of oil and hazardous substances requires owners and operators to establish a Spill Prevention Control and Countermeasures Plan to prevent accidental discharges of such substances into navigable water, such as the San Juan River. Plateau should have the plan available for review which may answer most of the questions related to surface runoff problem. However, such a plan was not provided to NMOCD for review. Surface drainage should be delineated on the aerial photo indicating the ultimate discharge point of stormwater runoff.

8. The area of heavily polluted soils containing oil (inspissated oil) will continually recharge the Hammond Ditch. This area should be treated to intercept the oils for disposal. The oil is lighter than water hence will be present on the piezometric surface. This does aid in capture of the oil if it is moving toward the ditch. Figure 1 indicates that during the summer irrigation season the oil on the surface should flow to the south because the piezometric surface should dip in that direction due to heavy recharge to the aquifer by the ditch. Then as the irrigation season ends the ditch no longer recharges the aquifer and the piezometric surface reverses allowing the oil to flow northward into the ditch and likely beyond to seeps in the cliff.

The oil can be captured using the method shown in Figure 3. The existing monitor wells may be useful in design of such a clean up operation. The problem with removal wells is the requirement for constant pumping and a place to dispose of the wastestream. Using the ditch method it is possible to hold the oil until the plant manager is ready to remove the oil scum.



The reason for changing water quality is due to the seasonal change in the piezometric surface in the Plateau refinery area. A flow net for seepage could be constructed for each season showing the rate of movement of oils to the ditch.

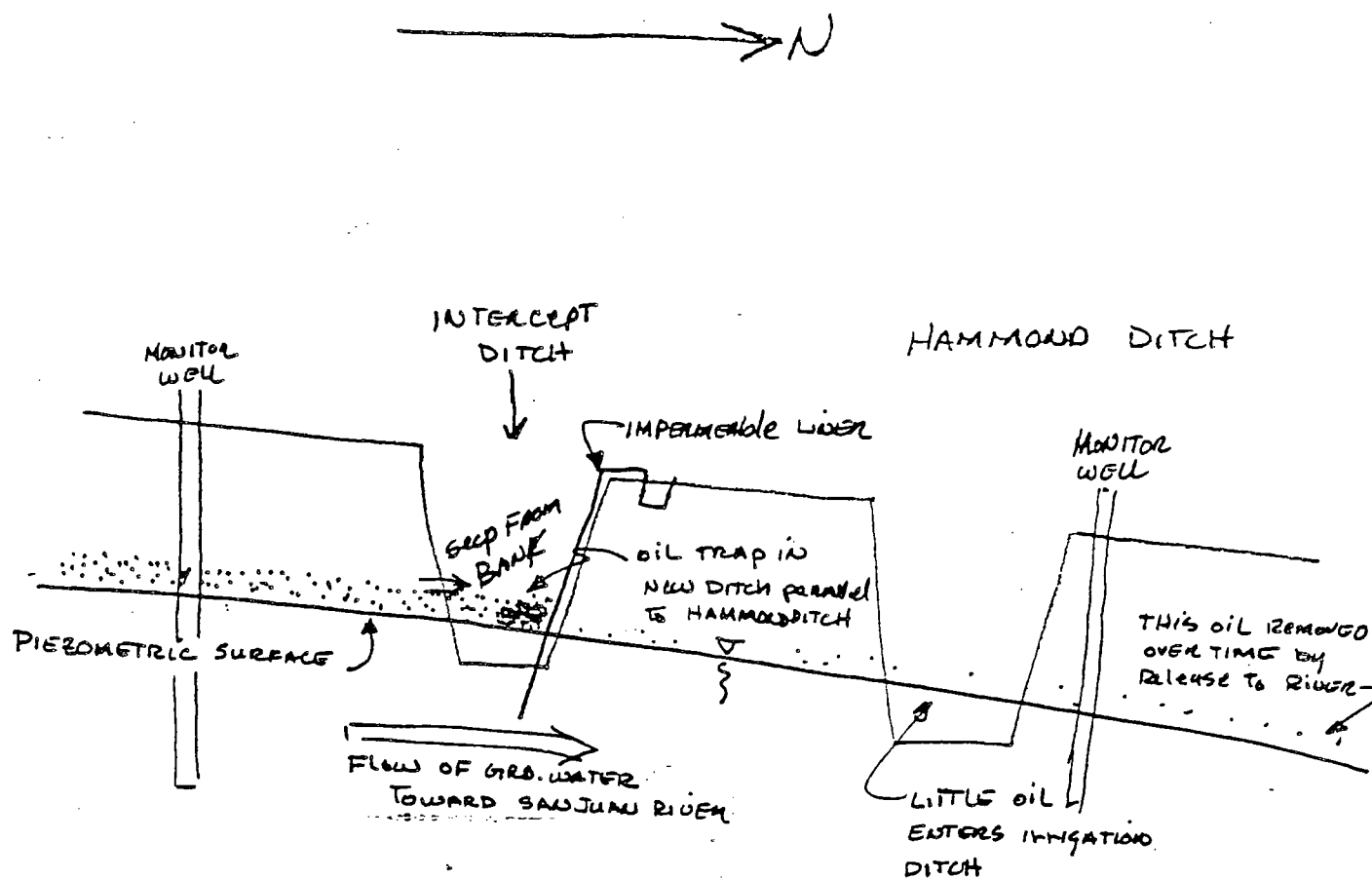


Figure 3

The oil on top of the water would be trapped behind the impermeable liner for later collection and disposal. Depth of oil and water must be determined before design and construction of intercept ditch.

9. In the Farmington area the amount of evapotranspiration that can be expected is about 2.5 gallons per minute per acre, i.e. if the waste stream is 80 gpm, about  $\left(\frac{80}{2.5}\right)$  32 acres of ponds will be required for disposal. Also, water with high total dissolved solids has a reduced rate of evaporation causing the factor to be further reduced by 5 percent. At present there are 8 acres of ponds and about 15 acres (?) of irrigation for a total of 23 acres. The difference in surface area indicates that 22.5 gpm must be infiltrating the subsurface. Looking at the aerial photos some of this surface area is not available to allow evaporation due to the presence of oil on the ponds. The rate of infiltration is very likely higher than 22.5 gpm and could be as high as 40 gpm. Flow measurements and percolation test may indicate a more exact value.

10. Land disposal of wastewater is a reasonable method for disposal if the water quality is satisfactory for the soils and vegetation. In Plateau's report the total dissolved solids were measured at 2400 mg/l (assume conductivity of 2.4 mmhos/cm) and "high" sodium adsorption ratio. Water in the range of .7 to 2.2 mmhos/cm are widely used for irrigation, and satisfactory crop growth is obtained under good management and favorable drainage conditions, but saline conditions will develop if leaching and drainage are inadequate. Waters in excess of 2.2 mmhos/cm can be used only when the water is used copiously and the subsoil drainage is good. Therefore, a leaching requirement is necessary to maintain the disposal field in satisfactory condition. That is, an excess amount of water must be used to cause the salts, and in this case other pollutants, to migrate downward which in effect maintains the existing polluted condition of the aquifer.



11. The flow data appears to be approximated in the plateau report. The methods used to determine flow data should be submitted in accordance with 3-107.A.5. Flow data is essential to evaluate the sampling conducted within the plant. Each process has a unique character that will determine its best treatment methods and in some cases not treatment. The characterization should include a flow proportional-time weighted composite sampling as required under 2-101.A. The method of preparing an adequate waste survey is detailed in the U.S. Environmental Protection Agency's Handbook for Monitoring Industrial Wastewater, August 1973.

The problems associated with grab samples from ponds are numerous. The sample may be the "best" or "worst" case due to rainfall, inflow of unknown contaminants, and oxidation - reduction reactions of wastes with time. The wastewater recharging the subsurface should be determined at the end-of-the-pipe prior to flowing into a pond. The presence of cobalt, lead, chromium and benzene should be a serious concern to the health and welfare of New Mexico's residents. Proper sampling should identify the source of these contaminants and provide the basis for treatment.

12. The contamination in the ground water cannot be economically removed at this time. The only action that seems appropriate is to reduce or eliminate further loading of the aquifer with polluted wastewater. The recharge of the aquifer by the Hammond Ditch will eventually flush the pollutants into the San Juan River, which may take several decades to accomplish. The introduction of waste oils to the ditch can be reduced using the method described in item 8 above which appears to be a major concern with downstream users of the ditch water.

13. The potential pollutants noted in the analyses are likely from the following processes:

Fluid Catalytic Cracking (FCC)

Largest source of sour and phenolic wastes are steam strippers and accumulations on fractionators. The regeneration of spent catalyst may produce CO, an air pollutant. The suggested parameters to monitor include: oil, sulfides, phenols, cyanids, ammonia, alkalinity, COD, TOC.

Desalter

The suggested parameters to monitor include: emulsified and free oil, ammonia, phenol, sulfides, suspended solids, COD, TOD, chlorides, and temperature (200°F).

Crude Oil Fractionation

Wastewater generally comes from three sources:

- (1) water drawn off from overhead accumulators prior to recirculation or transfer of hydrocarbons to other fractionators.
- (2) discharge from oil sampling lines.
- (3) very stable oil emulsions formed in the barometric condensers used to create the reduced pressures in the vacuum distillation units.

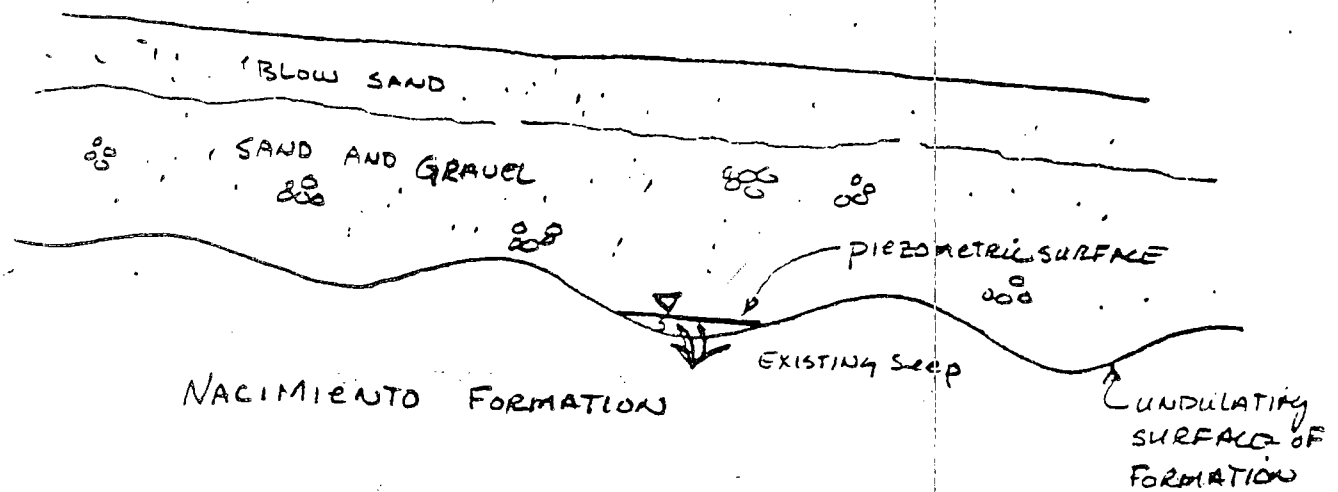
The parameters to monitor are the same as above.

14. Important facts to remember when evaluating API separators:

- (1) the separator will not separate substances in solution,
- (2) removal is temperature dependent (high temperature reduces removal efficiency),
- (3) removal is dependent upon the density and size of oil globules, and
- (4) removal is also dependent upon the character of suspended solids.

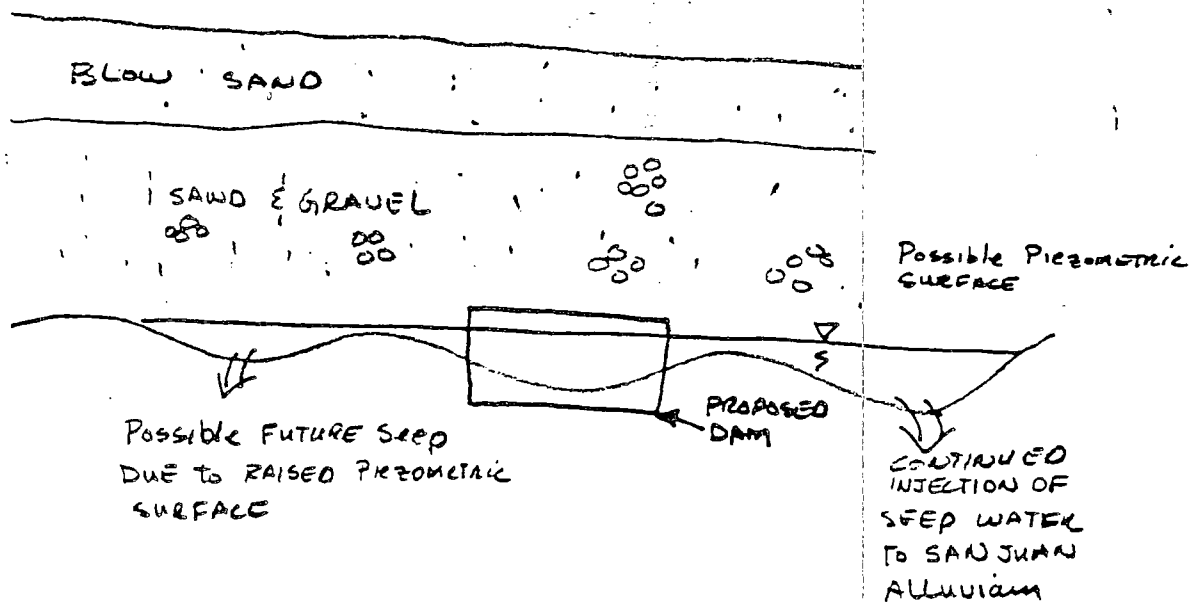
A test is available to determine efficiency of API separators called "susceptibility to separation." This test will also determine the amount of sludge produced for disposal. Normally an API separator is followed with a clarifier, filter, or air flotation process to remove those constituents that passed through the separator.

15. The proposal to recycle the wastewater from the seeps does not eliminate the chance for further pollution of the San Juan River alluvium. According to the Plateau report the Nacimiento formation is undulating as seen in the exposed section of the Cliff. Therefore, once a dam is placed at a seep the water level will rise and may seek an outlet requiring less hydraulic head. Figure 4 shows the potential for continued injection into the river aquifer which essentially will continue the existing situation. According to the Plateau plan these new seeps would also have a dam built. It does not seem to be a reasonable scheme for protection of the groundwater. In addition, according to the literature the Nacimiento formation does have layers of sand that can transmit water at high flow rates. The information provided does not exclude the possibility that wastewater is recharging such layers in the formation.



Existing Condition of Seep at  
the Interface of the Nacimientto  
Formation and Sand and Gravel

Figure 4a



Possible Condition of Seep at  
the Interface of the Nacimientto  
Formation and Sand and Gravel  
Due to Raising the Piezometric  
Surface

Figure 4b

9-82 59

# Refinery Accused of Seepage

SANTA FE (AP) — A state official contends that a Bloomfield refinery, Plateau Inc., is allowing oil-contaminated water to escape into the San Juan River, but a refinery officer says that's not so.

Plateau has said the plant does have some seepage, but Vice President Bob Perry insists that none of it is reaching the river.

Perry said Plateau has

tried to work with the state on the matter, but, "We feel like we're being picked on."

The controversy arose when Plateau asked the state to amend its existing water discharge plan for the Bloomfield refinery, located on the south side of the San Juan River.

Perry said Plateau wanted to change its plan to allow the refinery to use some waste water to irrigate open fields nearby. At the same time, the firm outlined a plan for recapturing waste water which escapes the plant and seeps out along the bluff where the refinery is located.

"We do have seeps, but the plan states how they will be recovered," Perry said. "Nothing is reaching the river nor will it ever."

He estimated the seepage at about 50,000 gallons a week.

State Oil Conservation Division chief Joe Ramey said a series of unexplained seeps were discovered by his staff when a review began of the refinery's plans.

Ramey said he has not yet received the results of tests

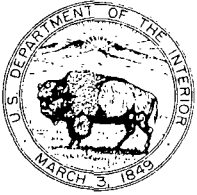
on samples taken from the area, but that at least one area reeked of oil. He also said that Plateau has not consented to submitting its own samples of the refinery wastes.

Perry said the state has changed its demands and placed very few of them in writing. "They're being very picky. They want everything (in the plan) to be just perfect," he said.

Ramey said, "Maybe we've been more thorough than we need to be, but we can't say that until we find where the seeps are coming from. The indications are they're coming from the refinery."

Perry said Plateau will challenge the agency's jurisdiction over the plant. He said that since surface water is involved, Ramey's division has no jurisdiction. Ramey's office is charged with policing oil operations that might affect underground water supplies.

Ramey has said he will ask the state Water Quality Control Commission to levy a fine against Plateau.

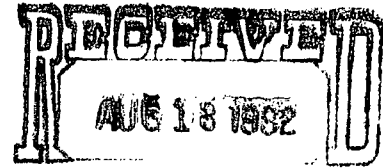


# United States Department of the Interior

BUREAU OF RECLAMATION  
UPPER COLORADO REGIONAL OFFICE  
P.O. BOX 11568  
SALT LAKE CITY, UTAH 84147

IN REPLY  
REFER TO: UC-440  
840.

AUG 11 1982



Mr. Joe Ramey  
Director  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This letter is in reference to a July 20, 1982, telephone conversation with Mr. Oscar Simpson of your staff and Tom Scoville of this office regarding the sale of Navajo Reservoir water to Plateau, Inc. at Bloomfield, New Mexico.

It is our understanding that there may be serious environmental problems surrounding Plateau, Inc.'s current operating practices. The State has therefore initiated an investigation to assess the impacts of oil seeps from Plateau's refinery on the San Juan River and the Hammond Ditch. We also understand that Plateau, Inc. is aware of the problems and the State's concern, and is planning to perform work that will control the above problem. This work was discussed in the company's proposed discharge plan. We share concern over Plateau's apparent refinery waste discharges into the Hammond Canal and San Juan River. In addition, we concur that Plateau should be required to correct the problem within a specific time period.

We have a responsibility under the National Environmental Policy Act of 1969 (NEPA) to assess the impacts of the proposed sale of water to Plateau, Inc. We would appreciate your informing us of the State's specific requirements that Plateau, Inc. must comply with. We would also appreciate receiving your time schedule for defining and implementing these requirements. We need this information to document all conditions that will be included in any proposed water sales contract between Plateau, Inc. and the Department of the Interior.

We have given Plateau, Inc. a 90-day extension on their request for renewing their present water sales contract. This was done to allow the State as well as the Bureau, time to develop the necessary documentation and plan for correcting the apparent pollution problem. The 90-day extension expires on October 12, 1982, at which time we must either enter into a longer term contract with Plateau, Inc. or cancel their water contract for the oil refinery.

Sincerely yours,

*F. Phillip Sharpe*  
for Clifford I. Barrett  
Regional Director

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

COLORADO RIVER STORAGE PROJECT

NAVAJO UNIT

INTERIM CONTRACT BETWEEN THE UNITED STATES AND  
PLATEAU, INCORPORATED  
FOR FURNISHING WATER

1           THIS CONTRACT, made this 12th day of July 1982,  
2           pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388),  
3           and acts amendatory thereof or supplementary thereto, and particularly  
4           pursuant to the Colorado River Storage Project Act approved April 11, 1956  
5           (70 Stat. 105), between THE UNITED STATES OF AMERICA, hereinafter referred to  
6           as the United States, represented by the officer executing this contract, his  
7           duly appointed successor or his duly authorized representative, hereinafter  
8           referred to as the Contracting Officer, and Plateau, Incorporated, a corpora-  
9           tion organized under the laws of the State of New Mexico, with its executive  
10          offices at Farmington, New Mexico, hereinafter referred to as the Contractor,

11           WITNESSETH:

12           WHEREAS, the following statements are made in explanation:

13                   (a) The United States has constructed Navajo Dam and Reservoir  
14           as a unit of the Colorado River Storage Project, for the furnishing of water  
15           for irrigation, municipal, industrial and other beneficial uses.

16                   (b) The Contractor is in need of a water supply for industrial  
17           use in the area for use at their petroleum refinery facilities located near  
18           Bloomfield, New Mexico, and water is available on a temporary basis to supply  
19           the Contractor from Navajo Reservoir.

1 NOW, THEREFORE, in consideration of the mutual and dependent  
2 covenants herein contained, the parties hereto agree as follows:

3 TERM OF CONTRACT

4 1. This contract shall be effective for 3 months.

5 WATER DELIVERY

6 2. The United States grants the Contractor the right, during the  
7 term of this contract, to have delivered from Navajo Reservoir, as hereinafter  
8 provided not to exceed 70 acre-feet of water at such times as best suits its  
9 needs and the Contractor shall pay for the water as provided in Article 4.

10 FOR INDUSTRIAL USE ONLY

11 3. The water sold hereunder shall be used by the Contractor  
12 only for industrial use. The Contractor shall prepare and furnish such  
13 reports on water use and related data as required by the Contracting Officer.

14 RATE AND METHOD OF PAYMENT FOR WATER

15 4. The Contractor shall annually pay in advance for the quantity  
16 of water which it has contracted to take and pay for, whether or not it  
17 actually takes and uses such water. The rate of \$40 per acre-foot, plus  
18 \$1 per acre-foot for operation and maintenance charges as follows is payable  
19 by the Contractor for water service.

20		First Annual Payment
21	Water Contracted	(Based on \$41.00)
22	(acre-feet)	per acre-foot
23	<u>70</u>	<u>\$2,870</u>

24 MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION

25 5. (a) The water to be furnished to the Contractor will be  
26 measured by facilities of the United States at the outlet works of Navajo  
27 Reservoir. The Contractor shall suffer all distribution and administration  
28 losses from the point of such delivery to the place of use. The Contractor  
29 agrees to provide a measuring device, which is acceptable to the Contracting



1 Officer, at or near the Contractor's point of diversion, to measure the  
2 quantity of water delivered and diverted under this contract. The Contractor  
3 is responsible for making arrangements with the State of New Mexico and  
4 others needed for the transportation and diversion of such water. The  
5 Contractor shall pay any charges from the New Mexico State Engineer's Office  
6 for the distribution, handling, or administration of this water.

7 (b) The United States shall not be responsible for the  
8 control, carriage, handling, use, disposal, or distribution of water taken  
9 by the Contractor hereunder, and the Contractor shall hold the United States  
10 harmless on account of damage or claim of damage of any nature whatsoever,  
11 including property damage, personal injury or death arising out of or  
12 connected with the control, carriage, handling, use, disposal, or distribu-  
13 tion of such water by the Contractor.

14 (c) This contract and all water taken pursuant thereto shall  
15 be subject to and controlled by the Colorado River Compact dated November 24,  
16 1922, and proclaimed by the President of the United States, June 25, 1929,  
17 the Boulder Canyon Project Act approved December 21, 1928, the Boulder  
18 Canyon Project Adjustment Act of July 19, 1940, the Upper Colorado River  
19 Basin Compact dated October 11, 1948, the Mexican Water Treaty of February 3,  
20 1944, and the Colorado River Basin Project Act of September 30, 1968, Public  
21 Law 90-537. In the event water available to the Contractor is required to  
22 be curtailed under and by reason of the provisions of the foregoing acts,  
23 including the reaching of maximum use of water allotted to the State of  
24 New Mexico, no liability shall attach to the United States for such curtail-  
25 ment, and the Contractor agrees to reduction of the amount of water taken  
26 hereunder as the Secretary determines necessary to comply with the provisions  
27 of said acts.

1                    UNITED STATES NOT LIABLE FOR WATER SHORTAGE - ADJUSTMENTS

2                    6. On account of drought, errors in operation, or other causes,  
3 there may occur at times, a shortage during any year in the quantity of  
4 water available to the Contractor by the United States pursuant to this  
5 contract through and by means of the project, and in no event shall any  
6 liability accrue against the United States or any of its officers, agents,  
7 or employees for any damage direct or indirect, arising therefrom. In  
8 any year in which there may occur such a shortage, the United States reserves  
9 the right to apportion the available water supply among the Contractor and  
10 others entitled, under existing and future contracts, to receive water from  
11 the same project water supply all in a manner to be prescribed by the  
12 Contracting Officer.

13                    NOTICES

14                    7. Any notice, demand, or request authorized or required by this  
15 contract shall be deemed to have been given, on behalf of the Contractor  
16 when mailed, postage prepaid, or delivered to the Regional Director, Upper  
17 Colorado Region, Bureau of Reclamation, P.O. Box 11568, 125 South State  
18 State, Salt Lake City, Utah 84147, and on behalf of the United States, when  
19 mailed, postage prepaid, or delivered, to the Plateau, Incorporated, P.O.  
20 Box 108, Farmington, New Mexico 87401. The designation of the addressee or  
21 the address may be changed by notice given in the same manner as provided in  
22 this article for other notices.

23                    STANDARD CONTRACT ARTICLES

24                    8. The standard contract articles applicable to this contract  
25 are listed below. The full text of these standard articles is attached as  
26 Exhibit A and is hereby made a part of this contract.

- 27                    A. Contingent Upon Appropriation or Allotment of Funds  
28                    B. Officials Not To Benefit  
29                    C. Assignment Limited - Successor's and Assigns Obligated  
30                    D. Books, Records, and Reports  
31                    E. Rules, Regulations, and Determinations

- 1 F. Quality of Water  
2 G. Water and Air Pollution Control  
3 H. Equal Opportunity  
4 I. Title XI, Civil Rights Act of 1964

5 IN WITNESS WHEREOF, the parties hereto have signed their names  
6 the day and year first above written.

THE UNITED STATES OF AMERICA

(seal)

*[Faint circular seal impression]*  
*[Signature]*

By:

*[Signature: F. Phillip Sharp]*  
Regional Director  
Bureau of Reclamation

ATTEST:

PLATEAU, INCORPORATED

By:

*[Signature]*

EXHIBIT A

A. CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS

The expenditure or advance of any money or the performance of any work by the United States hereunder which may require appropriation of money by the Congress or the allotment of funds shall be contingent upon such appropriation or allotment being made. The failure of the Congress to appropriate funds or the absence of any allotment of funds shall not relieve the Contractor from any obligations under this contract. No liability shall accrue to the United States in case such funds are not appropriated or allotted.

B. OFFICIALS NOT TO BENEFIT

1. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise herefrom. This restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

2. No official of the Contractor shall receive any benefit that may arise by reason of this contract other than as a water user within the project and in the same manner as other water users within the project.

C. ASSIGNMENT LIMITED - SUCCESSORS AND ASSIGNS OBLIGATED

The provisions of this contract shall apply to and bind the successors and assigns of the parties hereto, but no assignment or transfer of this contract or any part or interest therein shall be valid until approved by the Contracting Officer.

D. BOOKS, RECORDS, AND REPORTS

The Contractor shall establish and maintain accounts and other books and records pertaining to its financial transactions, water use, and to other matters as the Contracting Officer may require. Reports thereon shall be furnished to the Contracting Officer in such form and on such date or dates as he may require. Subject to applicable Federal laws and regulations, each party shall have the right during office hours to examine and make copies of each other's books and records relating to matters covered by this contract.

E. RULES, REGULATIONS, AND DETERMINATIONS

(a) The Contracting Officer shall have the right to make, after an opportunity has been offered to the Contractor for consultation, rules, and regulations consistent with the provisions of this contract, the laws of the United States and the State of New Mexico, to add or to modify them as may be deemed proper and necessary to carry out this contract, and to supply necessary details of its administration which are not covered by express provisions of this contract. The Contractor shall observe such rules and regulations.

(b) Where the terms of this contract provide for action to be based upon the opinion or determination of either party to this contract, whether or not stated to be conclusive, said terms shall not be construed as permitting

1 such action to be predicated upon arbitrary, capricious, or unreasonable  
2 opinions or determinations. In the event that the Contractor questions any  
3 factual determination made by the Contracting Officer, the findings as to  
4 the facts shall be made by the Secretary only after consultation with the  
5 Contractor and shall be conclusive upon the parties.

6 F. QUALITY OF WATER

7 The operation and maintenance of project facilities shall be performed in such  
8 manner as is practicable to maintain the quality of raw water made available  
9 through such facilities at the highest level reasonably attainable as deter-  
10 mined by the Contracting Officer. The United States does not warrant the  
11 quality of water and is under no obligation to construct or furnish water  
12 treatment facilities to maintain or better the quality of water.

13 G. WATER AND AIR POLLUTION CONTROL

14 The Contractor, in carrying out this contract, shall comply with all applicable  
15 water and air pollution laws and regulations of the United States and the  
16 State of New Mexico and shall obtain all required permits or licenses from the  
17 appropriate Federal, State, or local authorities.

18 H. EQUAL OPPORTUNITY

19 During the performance of this contract, the Contractor agrees as follows:

20 1. The Contractor will not discriminate against any employee or  
21 applicant for employment because of race, color, religion, sex, or national  
22 origin. The Contractor will take affirmative action to ensure that applicants  
23 are employed, and that employees are treated during employment, without  
24 regard to their race, color, religion, sex, or national origin. Such  
25 action shall include, but not be limited to, the following: Employment,  
26 upgrading, demotion, or transfer; recruitment or recruitment advertising;  
27 layoff or termination; rates of pay or other forms of compensation; and  
28 selection for training, including apprenticeship. The Contractor agrees to  
29 post in conspicuous places, available to employees and applicants for  
30 employment, notices to be provided by the Contracting Officer setting  
31 forth the provisions of this nondiscrimination clause.

32 2. The Contractor will, in all solicitations or advertisements for  
33 employees placed by or on behalf of the Contractor, state that all qualified  
34 applicants will receive consideration for employment without discrimination  
35 because of race, color, religion, sex, or national origin.

36 3. The Contractor will send to each labor union or representative of  
37 workers, with which it has a collective bargaining agreement or other  
38 contract or understanding, a notice, to be provided by the Contracting  
39 Officer, advising the said labor union or workers' representative of the  
40 Contractor's commitments under Section 202 of Executive Order 11246 of  
41 September 24, 1965, and shall post copies of the notice in conspicuous  
42 places available to employees and applicants for employment.

43 4. The Contractor will comply with all provisions of Executive  
44 Order No. 11246 of September 24, 1965, as amended, and of the rules,  
45 regulations, and relevant orders of the Secretary of Labor.

1        5. The Contractor will furnish all information and reports required  
2 by said amended Executive Order and by the rules, regulations, and orders of  
3 the Secretary of Labor, or pursuant thereto, and will permit access to its  
4 books, records, and accounts by the Contracting Officer and the Secretary of  
5 Labor for purposes of investigation to ascertain compliance with such rules,  
6 regulations, and orders.

7        6. In the event of the Contractor's noncompliance with the nondiscrim-  
8 ination clauses of this contract or with any of the said rules, regulations,  
9 or orders, this contract may be canceled, terminated, or suspended, in whole  
10 or in part and the Contractor may be declared ineligible for future Government  
11 contracts in accordance with procedures authorized in said amended Executive  
12 Order, and such other sanctions may be imposed and remedies invoked as  
13 provided in said Executive Order, or by rule, regulation, or order of the  
14 Secretary of Labor, or as otherwise provided by law.

15        7. The Contractor will include the provisions of paragraphs (1)  
16 through (7) in every subcontract or purchase order unless exempted by the  
17 rules regulations, or orders of the Secretary of Labor issued pursuant to  
18 Section 204 of said amended Executive Order, so that such provisions will be  
19 binding upon each subcontractor or vendor. The Contractor will take such  
20 action with respect to any subcontract or purchase order as may be directed  
21 by the Secretary of Labor as a means of enforcing such provisions, including  
22 sanctions for noncompliance: Provided, however, That in the event a  
23 Contractor becomes involved in, or is threatened with, litigation with a  
24 subcontractor or vendor as a result of such direction, the Contractor may  
25 request the United States to enter into such litigation to protect the  
26 interests of the United States.

27                    I. TITLE VI, CIVIL RIGHTS ACT OF 1964

28        1. The Contractor agrees that it will comply with Title VI of the Civil  
29 Rights Act of July 2, 1964 (78 Stat. 241) and all requirements imposed by or  
30 pursuant to the Department of the Interior Regulation (43 CFR 17) issued pur-  
31 suant to that title, to the end that, in accordance with Title VI of that Act  
32 and the Regulation, no person in the United States shall, on the ground of  
33 race, color, or national origin be excluded from participation in, be denied  
34 the benefits of, or be otherwise subjected to discrimination under any program  
35 or activity for which the Contractor receives financial assistance from the  
36 United States and hereby gives assurance that it will immediately take any  
37 measures to effectuate this agreement.

38        2. If any real property or structure thereon is provided or improved  
39 with the aid of Federal financial assistance extended to the Contractor by  
40 the United States, this assurance obligates the Contractor, or in the  
41 case of any transfer of such property, any transferee for the period during  
42 which the real property or structure is used for a purpose involving the  
43 provision of similar services or benefits. If any personal property is so  
44 provided, this assurance obligates the Contractor for the period during  
45 which it retains ownership or possession of the property. In all other  
46 cases, this assurance obligates the Contractor for the period during which  
47 the Federal financial assistance is extended to it by the United States.

48        3. This assurance is given in consideration of and for the purpose of  
49 obtaining any and all Federal grants, loans, contracts, property, discounts,

1 or other Federal financial assistance extended after the date hereof to the  
2 Contractor by the United States, including installment payments after such  
3 date on account of arrangements for Federal financial assistance which were  
4 approved before such date. The Contractor recognizes and agrees that such  
5 Federal financial assistance will be extended in reliance on the representa-  
6 tions and agreements made in this assurance, and that the United States shall  
7 reserve the right to seek judicial enforcement of this assurance. This  
8 assurance is binding on the Contractor, its successors, transferees, and  
9 assignees.

# Refinery Seepage Stirs Dispute

By NOLAN HESTER  
Journal Staff Writer

7/25/82

The state and a Bloomfield refinery are locked in a dispute over whether the firm is letting an estimated 50,000 gallons a week of oil-contaminated water escape into the San Juan River.

Oil Conservation Division chief Joe Ramey has threatened to press for fines against Plateau Inc. for refusing to cooperate with his staff.

While Plateau officials admit that the plant does have some seepage, vice president Bob Perry insisted that none of it is reaching the river.

Perry added that the firm has tried to work with the state on the matter, but said, "We feel like we're being picked on."

Both sides agree that the clash started earlier this year when Plateau asked the state to amend its existing water discharge permit for the Bloomfield refinery, which stands on a bluff on the San Juan River's south side. Ramey's office is charged with policing oil operations that might affect

underground water supplies.

Perry said Plateau wanted to change its plan to allow the refinery to use some waste water to irrigate open fields nearby. At the same time, the firm outlined a plan for recapturing waste water which escapes the plant and seeps out along the bluff.

"We do have seeps but the plan states how they will be recovered," Perry said. "Nothing is reaching the river nor will it ever." He estimated the seepage rate is about five to six gallons a minute, or the equivalent of 50,000 gallons a week.

Ramey said his staff discovered a series of unexplained seeps when it began to review the refinery's plans. That prompted still more questions about the adequacy of the plant's original discharge plan.

Ramey said he was especially concerned about oil-based wastes from the refinery which are seeping into a nearby irrigation ditch from which some residents fill their cisterns.

While Ramey has not yet received the results of tests on samples taken

from the area, he said at least one area reeked of oil. Ramey added that Plateau has not consented to submitting its own samples of the refinery wastes.

Perry complained that the state has continually changed its demands and placed few of them in writing. "They're being very picky. They want everything (in the plan) to be just perfect," he said.

Ramey offered a rebuttal, explaining, "Maybe we've been more thorough than we need to be, but we can't say that until we find where the seeps are coming from. The indications are they're coming from the refinery."

Though Plateau is going along with Ramey's requests for now, Perry said the firm ultimately will challenge the agency's jurisdiction over the plant. Perry argued that since only surface water seems to be involved, Ramey's division has no jurisdiction.

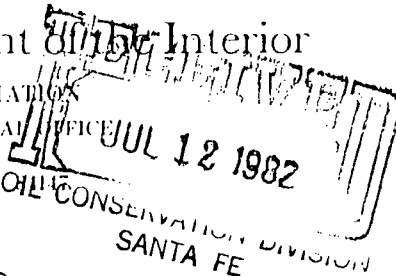
Ramey said he will ask the state Water Quality Control Commission to back him up on the matter by levying a fine against Plateau.





United States Department of the Interior

BUREAU OF RECLAMATION  
UPPER COLORADO REGIONAL OFFICE  
P.O. BOX 11568  
SALT LAKE CITY, UTAH 84111



IN REPLY  
REFER TO UC-440  
832.

*Mailed* → JUL 8 1982

Mr. Dwight J. Stockham  
Associate Environmental Engineer  
Plateau Inc.  
P.O. Box 26251  
Albuquerque, New Mexico 87125

Dear Mr. Stockham:

This letter responds to your requests dated April 13, 1982, and May 11, 1982, for water service from Navajo Reservoir, Colorado River Storage Project, New Mexico.

We have reviewed your immediate 2 year contract request for consistency with the National Environmental Policy Act of 1969. These reviews are required of Federal agencies prior to decision making on resource allocation. Essentially, we assess the environmental impacts likely to occur or which presently occur from using water resources. A "categorical exclusion checklist form" is enclosed which illustrates our methods of evaluating environmental impacts for this type of water service.

While assessing environmental impacts associated with Plateau's operation, we discovered that significant water quality problems may be occurring. We understand that the State of New Mexico, Oil Conservation Division, has required you to submit a "Discharge Plan" to satisfy these apparent environmental problems. Under articles 7 and 9 of your existing contract and article 8, parts F and G, of the enclosed contract, we are concerned about these water quality issues and believe they must be resolved.

Given these circumstances, we prefer to renew your contract for 3 months and schedule an on-site inspection with your company, the State of New Mexico, and ourselves to identify the problem. We will consider a 1 year contract if we can resolve the existing environmental problems to conform with the State of New Mexico's and the Secretary's regulations and requirements.

Please have an authorized official of your company execute both copies of the contract and return them to us along with full payment for the water. We will then execute the contracts on behalf of the United States and return one fully executed copy to you.

Your 8 year contract term request presents a problem since your actual water service needs appear to be of a longer term. Long term contracts for water

service from Navajo Reservoir must be approved in Congress. In your response please inform us of the longest term you would request water service. We prefer to fill your long term needs with a long term contract rather than with interim measures. In addition, long term water use will require a more detailed NEPA compliance.

We will contact you for a date to meet with you and the State of New Mexico on these issues. We recommend a date between now and July 21, 1982. Please contact Ms. Deborah Linke, Chief, Repayments Staff, at (801) 524-5435 if you have any questions.

Sincerely yours,

For F. Phillip Sharpe  
Clifford I. Barrett  
Regional Director

Enclosure

cc: Mr. Steve Reynolds  
State Engineer  
Water Resources Division  
Bataan Memorial Building, Room 101  
Santa Fe, New Mexico 87503

✓ Mr. Oscar Simpson  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Hammond Conservancy District  
P.O. Box 517  
Bloomfield, New Mexico 87413

# AMERICAN GROUND WATER CONSULTANTS, INC.

2300 CANDELARIA ROAD, N.E.  
ALBUQUERQUE, NEW MEXICO 87107  
TELE: (505) 345-9505 CABLE: HYDROCONSULT  
TELEX: 66-0422 TELECOPIER: (505) 247-0155

March 9, 1982

Mr. Robert Perry, Vice President  
Plateau, Inc.  
4775 Indian School Road, NE  
Albuquerque, New Mexico 87110

Dear Mr. Perry:

American Ground Water Consultants is pleased to present herewith our report entitled: Updated Discharge Plan for a Refinery Operated by Plateau, Inc. near Bloomfield, New Mexico.

It is our opinion that based upon:

1. regulations of the New Mexico Water Quality Control Commission,
2. existing and planned waste-water handling plans which will capture any waste water before leaving the refinery property, and
3. the absence of natural ground water in the vicinity of the refinery

that no discharge plan is required under existing regulations.

The present report is submitted to update the previous discharge plan dated September 30, 1977.

Respectfully submitted,

AMERICAN GROUND WATER CONSULTANTS, INC.

*W. M. Turner*  
Dr. William M. Turner  
President

*COVER SHEET  
FOR FINAL DRAFT  
BLACK BINDER*

**Chavez, Carl J, EMNRD**

---

**From:** Schmaltz, Randy [Randy.Schmaltz@wnr.com]  
**Sent:** Wednesday, September 30, 2009 10:51 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Bloomfield 1984 DP info  
**Attachments:** OCD-1984 DP coments-clarifications.pdf; OCD-1984 DP cover letter.pdf; OCD-1984 DP approval.pdf

Carl,

I have included a scan of the 1984 Discharge Plan binder & cover letter that has submitted in March of 1984. I could not scan the whole plan (it was too big and too old), and it didn't mention the landfill. The landfill appears in section 8. of the comment and clarification letter (also scanned) .

I have also included the OCD Discharge plan approval letter signed by Joe D. Ramey on June 7, 1984.

These are the earliest dated documents I have found regarding the landfill so far, but I'm still looking. If I find anything else I'll share what I find.

Thanks

Randy Schmaltz  
Western Refining Southwest, Inc.  
Bloomfield Refinery

Main (505) 632-8013  
Direct (505) 632-4171  
email: [randy.schmaltz@wnr.com](mailto:randy.schmaltz@wnr.com)

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**AMERICAN  
GROUND WATER  
CONSULTANTS, INC.**

2300 CANDELARIA ROAD, N.E.  
ALBUQUERQUE, NEW MEXICO 87107  
TELE: (505) 245-9505 CABLE: HYDROCONSULT  
TELEX: 66-0422 TELECOPIER: (505) 247-0155

843-7305

March 24, 1984

Mr. Robert Dixon, Vice President  
Plateau, Inc.  
4775 Indian School Road, NE  
Albuquerque, New Mexico 87110

Dear Mr. Dixon:

American Ground Water Consultants is pleased to present herewith our report entitled: Discharge Plan for a Refinery Operated by Plateau, Inc. near Bloomfield, New Mexico.

The present report is submitted to update the previous discharge plan dated September 30, 1977 as is required at five-year intervals.

Respectfully submitted,

AMERICAN GROUND WATER CONSULTANTS, INC.



Dr. William M. Turner  
President

**DISCHARGE PLAN FOR PLATEAU  
REFINERY AT BLOOMFIELD,  
NEW MEXICO**

**SUBMITTED TO  
PLATEAU INC.  
ALBUQUERQUE, NEW MEXICO**

**SUBMITTED BY  
AMERICAN GROUND WATER  
CONSULTANTS, INC.  
ALBUQUERQUE, NEW MEXICO**

**MARCH 1984**

**AMERICAN  
GROUND WATER  
CONSULTANTS, INC.**

2300 CANDELARIA ROAD, N.E.  
ALBUQUERQUE, NEW MEXICO 87107  
TELE: (505) 345-9505 CABLE: HYDROCONSULT  
TELEX: 66-0422 TELECOPIER: (505) 247-0155

April 11, 1984

RECEIVED

118

Mr. R.G. Dixon  
Plateau, Inc.  
P.O. Box 26251  
Albuquerque, NM 87115

P.W. LISCOM

Dear Mr. Dixon:

It is our understanding that in your meeting with the New Mexico Oil Conservation Division on March 27, 1984, several matters regarding the Plateau discharge plan require further elucidation. These are dealt with hereunder.

1. Discharge of Hammond Ditch Leakage

All leakage from the Hammond Ditch which takes place through the bed of the Hammond Ditch as the Hammond Ditch traverses Plateau property discharges along the contact between the cobble bed of Quaternary age and the underlying Nacimiento Formation of Tertiary age, where this contact is exposed at the surface east, north, and west of the refinery property. This is demonstrated in several ways.

The first method relies on inspection of water flow directions shown on Plate 1 in the discharge plan. Ground water flows downhill under the influence of gravity. Ground water levels were measured in monitoring wells and observation holes on the same day and water-level elevations were determined and the data contoured. The water flows perpendicular to the water-level contours. Two major flow lines: one east of the refinery and one west of the refinery are shown. These flow lines converge on the depression in the Nacimiento subcrop surface and then trend to the northwest towards the cliff northwest of the refinery where the water discharges. Water north of the ditch also flows southward to the depression. Indeed some of the water north of the Hammond Ditch emerges as small seeps in the numerous intermittent valleys which exist in the area.

The second method relies upon a water budget of the area in which the rate of water outflow is calculated and compared with observed outflow.

The Plateau refinery is located between the Hammond Ditch on the north, the 5502-foot water-level contour on the south and between the flow lines on the east and west sides of the property all of which are shown on Plate 1. This is an area of

The San Juan River is underlain by a thin zone of alluvium. This alluvium north of the San Juan River contains ground water which is derived from the San Juan River. The San Juan River is a line source of recharge to the alluvium north of the river. As such, ground-water flow theory dictates that water must move from the river into the alluvium. This flow is a barrier to any ground-water flow from alluvium on the south side of the river to alluvium on the north side of the river. Only if there were a stronger source of ground-water recharge to the alluvium south of the river than the San Juan River could ground water move in the subsurface to the alluvium north of the river. This is not the case, the San Juan River is the master source of recharge in the area.

Finally, in the event water is pumped from wells in alluvium north of the river, this pumpage will only induce inflow from the river as it is the master source of recharge. Pumpage south of the river could not induce ground water to flow from the alluvium south of the river to the well north of the river for the same reason given previously.

7. Rework Last Paragraph of Page 16 of Discharge Plan.

There is no ground water south of the refinery in the cobble bed as indicated by the absence of shallow water in monitoring well p-6. Hence no ground-water flow enters the refinery property from this direction.

8. Describe Solid Waste Handling and Disposal Procedures.

The only solid wastes handled at the refinery are spent FCC catalyst and spent caustic. The spent FCC catalyst is land-filled on refinery property and the spent caustic is transported off site.

9. Describe Hazardous Waste Handling and Disposal Procedures.

The API separator is cleaned out approximately every five (5) years. When the API separator is cleaned out, the sludge is transported via a certified transporter to an EPA certified hazardous-waste disposal facility. When leaded tanks are eventually cleaned out, the leaded tank bottoms will also be transported to an EPA certified disposal facility. All hazardous waste that is shipped off-site will be properly manifested and handled according to EPA regulations.

10. Provide EPA Sampling Results Upstream and Downstream of the Refinery for the San Juan River and Hammond Ditch.





STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

June 7, 1984

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Mr. Bruce Garber  
Box 8933  
Santa Fe, New Mexico 87504

Re: Plateau Bloomfield Refinery  
Discharge Plan  
Approval - GRW-1-A

Dear Mr. Garber:

The updated discharge plan submitted pursuant to Water Quality Control Commission Regulations for the controlled discharge of waste water and associated fluids from the above referenced refinery located in Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico, is hereby approved with the following restrictions:

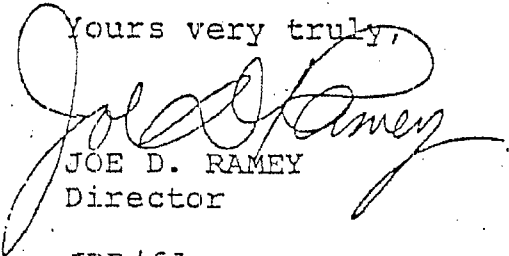
1. Monitor wells P1 and P4 shall be sampled during August, November, February, and May during the first year under the updated plan and thereafter in November and May. Samples shall be analyzed for those constituents listed in Section 3-103 A, B, and C of the Water Quality Control Commission Regulations.
2. Any leaks or spills of five barrels or more will be reported indicating the cause, repair and cleanup details.
3. Any movement of hazardous waste will be reported to the appropriate office of the Environmental Improvement Division.
4. Plateau shall immediately contact the Dallas office of the United States Environmental Protection Agency to determine if an NPDES permit is required.

Page 2  
Letter to Bruce Garber  
June 7, 1984

5. Plateau shall immediately install a meter and sampling loop on the discharge line and report monthly to the Oil Conservation Division the amount of effluent discharged to the solar evaporation pits.

The updated discharge plan was submitted as required under Section 3-109 G-4 and is approved on June 7, 1984, and is in effect for five years.

Yours very truly,



JOE D. RAMEY  
Director

JDR/fd

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 6

1992 DEC 31 AM 9:19  
RECEIVED  
EPA REGION VI  
NEW YORK, NY

IN THE MATTER OF:

Bloomfield Refining Company  
P.O. Box 159  
Bloomfield, New Mexico

EPA I.D. NO. NMD089416416

RESPONDENT

ADMINISTRATIVE  
ORDER ON CONSENT

U.S. EPA DOCKET NO.  
VI-303-H

PROCEEDING UNDER SECTION  
3008(h) OF THE RESOURCE  
CONSERVATION AND RECOVERY  
ACT, AS AMENDED, 42  
U.S.C. SECTION 6928(h).

I. JURISDICTION

This Administrative Order on Consent (Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, (RCRA), and further amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(h). The authority to issue this Administrative Order has been delegated to the Regional Administrator by EPA Delegation Nos. 8-31 and 8-32, dated April 16, 1985, and further delegated to the Director of the Hazardous Waste Management Division, Region 6 (Director).

This Order is issued to Bloomfield Refining Company, a Delaware Corporation (Respondent), owner/operator at the facility located at #50 County Road 4990, Bloomfield, New Mexico (Facility). Respondent admits EPA's jurisdiction to issue this Order and to enforce its terms. Further, Respondent will not contest EPA's jurisdiction to: compel compliance with this Order in any subsequent enforcement proceedings, either administrative or judicial; require Respondent's full or interim compliance with the terms of this Order; or impose sanctions for noncompliance with this Order.

By consenting to this Order and by complying with its provisions, Respondent does not admit the truth of any fact or legal finding or determination asserted herein, other than those necessary to establish jurisdiction as described in the previous paragraphs. Neither this Order nor any part thereof shall constitute any evidence, admission, or adjudication of any wrongdoing, misconduct, liability, responsibility, or estoppel on the part of Respondent, or any director, officer, employee, or affiliate thereof, except as evidence for purposes of enforcement of this Order. Respondent reserves all rights to contest any subsequent Order or judicial proceeding associated with implementation of corrective measures.

II. PARTIES BOUND

1. This Order shall apply to and bind Respondent, its officers, directors, employees, agents, trustees, receivers, successors, assigns, and all other persons, including, but not limited to, firms, corporations, subsidiaries, contractors, consultants acting under or on behalf of Respondent, and within the scope of their employment.

2. No change in ownership, corporate, or partnership status relating to the facility will in any way alter the status or responsibility of the Respondent under this Order. Respondent will be responsible for and liable for any failure to carry out all activities required of the Respondent by the express terms and conditions of this Order, irrespective of its use of employees, agents or consultants to perform any such tasks.
3. Each undersigned representative of the parties to this Order certifies that he or she is fully authorized to enter into the terms and conditions of this Order.
4. Respondent shall provide a copy of this Order to all primary contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order within seven (7) calendar days of the effective date of this Order or date of such retention of services and shall condition all such contracts on compliance with the terms of this Order.
5. Respondent shall give notice of this Order to any successors in interest prior to transfer of ownership or operation of the facility and shall notify EPA no later than thirty (30) days prior to such transfer. In its discretion, EPA may shorten the advance notification period provided herein.
6. Any documents transferring ownership and/or operations of the Facility from Respondent to a successor-in-interest shall include written notice of this Order; however, Respondent shall, no less than fifteen (15) days prior to transfer of ownership or operation of the Facility, provide written notice of this Order to its successor-in-interest, and written notice of said transfer of ownership and/or operation to EPA.
7. Respondent agrees to undertake all actions required by the terms and conditions of this Order including any portions of this Order incorporated by reference. Respondent explicitly waives its rights to request a hearing on this matter and consents to the issuance of this Order without hearing pursuant to § 3008(b) of RCRA and as an Order issued pursuant to § 3008(h) of RCRA.

### III. STATEMENT OF PURPOSE

In entering into this Order, the mutual objectives of EPA and Respondent are: (1) to perform Interim Measures (IM) at the facility to mitigate potential threats to human health or the environment; (2) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release(s) of hazardous waste or hazardous constituents at or from the facility; and (3) to perform a Corrective Measure Study (CMS) to identify and evaluate alternatives for corrective action(s) to prevent or mitigate any migration of release(s) of hazardous wastes or hazardous constituents at or from the facility, and to collect any other information necessary to support the selection of corrective measures at the facility.

### IV. FINDINGS OF FACT

1. Respondent is Bloomfield Refining Company, #50 County Road 4990, Bloomfield, New Mexico, 87413, and is a person as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15). Bloomfield Refining Company is a Delaware Corporation and is a wholly-owned subsidiary of Gary-Williams Energy Corporation, Inc.
2. The facility is located off of Sullivan Road (County Road 4990), Bloomfield, San Juan County, New Mexico, at 36 degrees, 41 minutes and 50 seconds latitude and 107 degrees, 58 minutes, and 20 seconds longitude. This location is less than one mile south of Bloomfield, New Mexico, off Highway 44.

3. Plateau, Inc., the former owner of the facility, operated hazardous waste management units at the facility after November 19, 1980. Plateau, Inc. is located at 334 Madison Avenue, Morristown, New Jersey, 07960. Plateau, Inc., is a wholly-owned subsidiary of Suburban Propane Gas Corporation, a New Jersey corporation.
4. On or about October 31, 1984, Suburban Propane Gas Corporation sold the facility to Respondent.
5. Section 3010(a) of RCRA, 42 U.S.C. § 6930(a), requires any person generating or transporting any listed or characteristic hazardous waste, or owning or operating a facility for treatment, storage or disposal of such substance, to file with the EPA a notification stating the location and general description of such activity or the listed or characteristic hazardous wastes handled by such persons.
6. Pursuant to Section 3010(a) of RCRA, 42 U.S.C. § 6930(a), on August 18, 1980, Plateau, Inc., notified EPA of its hazardous waste activity. In this notification, Plateau, Inc., identified itself as a generator, treater, storer and/or disposer of hazardous waste at the facility.
7. Section 3005(e) of RCRA, 42 U.S.C. § 6925(e), provides that any person who complies with the provisions of Section 3005(e) shall be treated as having been issued a permit. Such a facility shall be considered to be under interim status, and shall be required to meet all applicable requirements of RCRA.
8. In its RCRA Part A permit application (permit application) dated November 19, 1980, Plateau, Inc., notified the Administrator of EPA and the New Mexico Environmental Improvement Division (NMEID), that it was engaged in the generation and storage at the facility of hazardous wastes identified and listed in 40 CFR Part 261 and used surface impoundments for the treatment, storage, or disposal (process code S04) of hazardous wastes at the facility. Plateau also noted on the application that the surface impoundments may have received hazardous materials in the past, but the contents have not been adequately characterized.
9. The facility, comprised of 287 acres, consists of petroleum refining operations having five (5) RCRA-regulated hazardous waste management units which received the following hazardous wastes or hazardous waste constituents as identified in the facility's permit application:
  - a) hazardous wastes from specific sources identified at 40 CFR § 261.32;
    - i) K049 - Slop oil emulsion solids from the petroleum refining industry,
    - ii) K050 - Heat exchanger bundle cleaning sludge from the petroleum refining industry,
    - iii) K051 - API separator sludge from the petroleum refining industry,
    - iv) K052 - Tank bottoms (lead) from the petroleum refining industry.
10. During May and June, 1983, EPA personnel conducted inspections that revealed significant seepage of ground water from the contact of the cobble bed and the Nacimiento formation at the face of the bluff above the San Juan River.
11. Analysis of samples of these seeps taken during a May, 1984, inspection showed elevated levels of organic and inorganic contamination (Attachment I - Table I) released from the facility to the San Juan River.

12. On July 15, 1982, May 10, 1983, June 7-8, 1983, March 19-23, 1984, and May 4, 1984 EPA conducted Compliance Evaluation Inspections (CEIs) to assess the facility's compliance with the RCRA Hazardous Waste Management regulations.
13. The May 10, 1983, inspection was conducted to also assess potential adverse environmental impacts, including endangerment to human health, welfare, or the environment pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. § 9601 et seq.
14. According to an EPA RCRA Facility Assessment Evaluation (RFA) conducted June 27, 1987, the facility has thirteen (13) Solid Waste Management Units (SWMUs), five (5) of which are considered to be RCRA-regulated SWMUs and are listed below:
  - a) South Oily Water Pond (SOWP) (immediately downstream of the API separator);
  - b) North Oily Water Pond (NOWP) (immediately downstream of the SOWP);
  - c) Evaporation Ponds (2);
  - d) Landfill; and
  - e) Landfill Runoff Ponds.
15. The RCRA § 3013 42 U.S.C. § 6934, Final report was submitted by Respondent on or about February 8, 1987. The presence of hydrocarbon-contaminated groundwater was observed at monitoring wells MW#4, MW#9, and MW#10 documenting a release to the groundwater from the facility. The sampling results are listed in Attachment I, Table II.
16. Attachment I, Table III lists the chemicals found in the groundwater at the facility and the health-based classification based on the weight of evidence for these chemicals.
17. On September 12-14, 1989, a Comprehensive Ground Water Monitoring Evaluation (CME) by the EPA was conducted at the facility. The CME was conducted to assess the facility's compliance with RCRA ground water monitoring requirements found at 40 CFR § 265.90 et seq. According to the CME report, the following was noted:
  - a) The NOWP and SOWP have only one (1) downgradient well in place; and
  - b) The landfill and landfill pond have only one (1) downgradient well in place. These areas are separate units and are required to be monitored separately.
18. During the September 1989 CME, samples were taken of the monitoring wells at the facility. The sample results are listed in Attachment I, Table IV.
19. The Toxicity Characteristic Rule was effective on September 25, 1990, and is codified at 40 CFR Part 261.24, establishing regulatory levels for 25 organic chemicals in addition to the eight metals and six pesticides on the existing list of constituents which exhibit the characteristic of toxicity and are regulated under RCRA.
20. On September 25, 1990, Respondent submitted an Amended Notification of Regulated Waste Activity and a Part A Application to EPA identifying itself as a treater, storer or disposer of hazardous waste.

21. In the Part A Application, Respondent identified the SOWP and NOWP as Hazardous Waste Aeration Impoundments (Aeration Impoundments).
22. In the Part A Application, Respondent identified the Aeration Impoundments as units regulated under the TC Rule specifically for benzene concentrations (D018).
23. This Order is based upon the Administrative Record compiled by EPA, which is available for public examination at the Region 6 offices, 1445 Ross Avenue, Dallas, Texas, during normal business hours, Monday through Friday.
24. Based on the release of hazardous waste or hazardous waste constituents into the environment from Respondent's facility, the actions ordered below are necessary to protect human health or the environment.

#### V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set out above, and the administrative record, the Director has determined that:

1. Respondent is the operator/owner of the facility, as that term is defined at 40 CFR § 260.10;
2. The location at Bloomfield, New Mexico, where Respondent is doing business, is a "facility" as that term is defined at 40 CFR § 260.10;
3. Respondent is a person defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15);
4. The facility is authorized to operate under interim status pursuant to Section 3005(e) of RCRA, 42 U.S.C. § 6925(e);
5. There have been releases of hazardous wastes or hazardous waste constituents into the environment from the facility as defined by § 3001 of RCRA, 42 U.S.C. § 6921.
6. The interim measures and comprehensive corrective actions (actions) required by this Order are consistent with RCRA and are necessary to protect human health and the environment.

#### VI. WORK TO BE PERFORMED

Based on the foregoing, it is hereby ORDERED that Respondent shall perform, undertake, continue to take, and complete each of the following actions to the satisfaction of EPA and in accordance with the terms, procedures and schedules set forth in Attachment II - Corrective Action Plan (CAP) in the manner and by the dates specified below. The dates specified below and those in the CAP shall coincide. If there is a conflict of dates, the dates presented in the CAP shall be utilized.

1. INTERIM MEASURES (IM)
  - a) No later than forty-five (45) days after the effective date of this Order, Respondent shall submit an approvable draft Interim Measures Workplan (IM Workplan) for EPA review and approval. The IM Workplan shall be prepared in accordance with the CAP. No later than thirty (30) days after receipt of EPA's comments on the Draft IM Workplan, Respondent shall submit a Final IM Workplan to EPA for review and EPA's approval addressing EPA's comments. Upon EPA approval of the Final IM Workplan, Respondent shall undertake, or continue to take, the interim measures in accordance with the IM Workplan and concurrently with the RCRA Facility Investigation.

- b) The IM Workplan shall ensure that the Interim Measures are designed to mitigate current or potential threat(s) to human health and/or to the environment, and are consistent with, and integrated into, any long term solution at the facility. The IM Workplan shall document the procedures to be used by the Respondent for the implementation of Interim Measures and shall include, but not be limited to, the objectives, design, construction, operation, monitoring and maintenance requirements, and detailed schedules for the Interim Measures.
- c) In the event Respondent identifies a current or potential threat to human health and/or the environment, the Respondent shall immediately notify EPA orally and in writing within five (5) days of such identification, summarizing the immediacy and magnitude of the potential threat to human health and/or the environment. Within thirty (30) days of notifying EPA, the Respondent shall submit to EPA an IM Workplan for approval that identifies Interim Measures which mitigate this threat and are consistent with and integrated into any long term remedy at the Facility.

## 2. RCRA FACILITY INVESTIGATION

- a) Within ninety (90) days of the effective date of this Order, Respondent shall submit to EPA an approvable Draft Workplan for a RCRA Facility Investigation (RFI). The Draft RFI Workplan is subject to approval by EPA and shall be performed in a manner consistent with the RFI Scope of Work contained in the CAP. No later than thirty (30) days after receipt of EPA's comments on the Draft RFI Workplan, Respondent shall submit a Final RFI Workplan to EPA for review and EPA's approval addressing all of EPA's comments to the satisfaction of EPA. Upon approval of the Final RFI Workplan, Respondent shall implement the Workplan. The RFI Workplan shall be developed in accordance with, at a minimum, RCRA, its implementing regulations, and EPA guidance documents, including: Interim Final RCRA Facility Investigation Guidance (EPA 530/SW-89-031, 4 vols.); RCRA Ground Water Monitoring Technical Enforcement Guidance document (OSWER Directive Number 9951.1); Test Methods for Evaluating Solid Waste, SW 846 (2nd Edition); and any other documents determined by EPA to be relevant during the course of this action.
- b) The RFI Workplan shall be designed to define the presence, magnitude, extent, direction, and rate of movement of any hazardous wastes or hazardous waste constituents within and beyond the facility boundary. The Respondent shall conduct those investigations necessary to:
  - i) characterize the source(s) of contamination;
  - ii) characterize the potential pathways of contaminant migration;
  - iii) define the degree and extent of contamination;
  - iv) identify actual or potential receptors; and
  - v) support the development of alternatives from which a Corrective Measure will be selected by EPA.

A specific schedule for implementation of all activities shall be included in the RFI Workplan. In accordance with the provisions of Attachment II herein, the RFI workplan shall include: (1) a Project Management Plan; (2) a Data Collection Quality Assurance Plan; (3) a Data Management Plan; (4) a Health and Safety Plan; and (5) a Community Relations Plan.



- c) Within 365 days of the approval of the RFI Workplan, Respondent shall submit to EPA an approvable Draft RFI Report. The RFI Report is subject to approval by EPA and shall be performed in a manner consistent with the requirements contained in Attachment II. No later than thirty (30) days after receipt of EPA's comments on the Draft RFI Report, Respondent shall submit a Final RFI Report to EPA for review and EPA's approval addressing all of EPA's comments to the satisfaction of EPA.

### 3. CORRECTIVE MEASURES STUDY

- a) Upon completion of the RCRA Facility Investigation, Respondent shall undertake and complete a Corrective Measure Study (CMS) in accordance with the CMS Scope of Work in Attachment II and in accordance with EPA guidance documents determined to be relevant during the course of this action.
- b) Respondent shall submit a Draft CMS Report to EPA within sixty (60) calendar days of approval of the Final RFI Report. The CMS Report shall include, but not be limited to the following:
  - i) identification and development of the corrective measures alternatives;
  - ii) evaluation of the corrective measure alternatives;
  - iii) justification and recommendation of the corrective measure(s).

EPA shall review the draft CMS Report and provide comments to Respondent. No later than thirty (30) days after receipt of EPA's comments on the Draft CMS Report, Respondent shall submit a Final CMS Report to EPA for review and EPA's approval addressing all of EPA's comments.

### 4. CORRECTIVE MEASURES IMPLEMENTATION

Upon EPA's selection of the corrective measure, if Respondent has complied with the terms of this Consent Order, EPA shall provide a sixty (60) day period for negotiation of an administrative order on consent, a judicial consent decree, a RCRA Permit, or modification of a RCRA Permit, for implementation of the selected corrective measure. If agreement is not reached during this period, EPA reserves all rights it has to implement the corrective measure or other remedial response and to take any other appropriate actions under RCRA, CERCLA, or any other available legal authority, including issuance of a unilateral administrative order directing Respondent to implement the corrective measure.

### 5. SUBMISSIONS/AGENCY APPROVAL/ADDITIONAL WORK

- a) Within thirty (30) calendar days of approval or modification by EPA of any Workplan(s) or Report(s), Respondent shall commence work and implement the tasks required by the Workplan(s) or Report(s) submitted pursuant to the Scope(s) of Work contained in Attachment II, in accordance with the standards, specifications and schedule stated in the Workplan(s) or Report(s), as approved or modified by EPA.
- b) Beginning with the month following the effective date of this Order, Respondent shall provide EPA with progress reports every month, due on the tenth (10) day of the following month. On a quarterly basis, the progress reports shall include the results of all sampling and testing performed under this Order. The progress reports shall conform to requirements in relevant Scopes of Work contained in Attachment II.

- c) EPA's Project Manager designated pursuant to Section VII of this Order will review all draft and final reports or workplans and notify Respondent in writing of EPA's approval or disapproval of the report or workplan or any part thereof. EPA will specify in writing any modifications necessary for approval of the subject document. Within thirty (30) days of receipt of EPA's disapproval of any report or workplan, Respondent shall address the deficiencies and submit a revised report. If Respondent believes an extension of time is necessary for a deliverable, Respondent shall submit such written request to EPA. EPA shall determine if such extension request is warranted and will either grant or deny the request. EPA shall approve, disapprove, or modify the revised submittal. EPA-approved reports and workplans shall be deemed incorporated into and part of this Order.
- d) Three (3) copies of all documents, including Plans, Reports, and other correspondence to be submitted pursuant to this Order shall be hand-delivered or sent by certified mail, return receipt requested, or the equivalent including express mail service, to the EPA Project Manager. An additional one (1) copy shall be sent to the New Mexico Environment Department (NMED). Documents shall be deemed submitted on the date of mailing, or, if delivered by hand, on the date of delivery. For purposes of the United States Postal Service, the date of mailing shall be determined by the postmark. For express mail services, the date of mailing shall be the date of delivery to the express mail carrier, as evidenced by a completed express mail receipt form, which shall bear the date the document is delivered to the express mail service. If any hand delivery serviced utilized does not record its date of delivery, then the Respondent shall include with the document a statement certifying the date on which the document was delivered.
- e) All work performed pursuant to this Order shall be under the direction and supervision of a professional engineer, scientist, or geologist with expertise in hazardous waste site cleanup. The Respondent shall notify EPA in writing of the name, title, and qualifications of the engineer or geologist, and of any contractors or subcontractors and their personnel to be used in carrying out the terms of this Order thirty (30) calendar days after the effective date of this Order, or date of retention. If EPA objects to the qualifications of the engineer, geologist, or scientist, EPA shall notify Respondent within thirty (30) calendar after receipt of Respondent's notification pursuant to this section.
- f) EPA may determine that certain tasks and deliverables, including investigatory work or engineering evaluation, are necessary in addition to the tasks and deliverables included in the Workplans. When new information indicates that such additional work is necessary, EPA will request, in writing, that Respondent perform the additional work and shall specify the basis and reasons for EPA's determination that the additional work is necessary. Within thirty (30) calendar days after the receipt of such request, Respondent may request a meeting with EPA to discuss the additional work. Thereafter, Respondent shall perform such additional IM, RFI, or CMS work EPA has requested according to an EPA-approved Workplan or Schedule. All additional work performed by Respondent under this paragraph shall be performed in a manner consistent with this Order.
- g) EPA acknowledges that Respondent is currently conducting remedial actions at the facility under the jurisdiction of New Mexico State Agencies. EPA will coordinate with relevant State Agencies, as appropriate, during the pendency of this Order.

## VII. PROJECT MANAGER

1. Within ten (10) days of the effective date of this Order, EPA and Respondent shall each designate a Project Manager. Each Project Manager shall be responsible for overseeing the implementation

of this Order. The EPA Project Manager will be EPA's designated representative at the facility. All communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the Project Manager.

2. The Parties shall provide at least five (5) days written notice prior to changing Project Managers. If either Project Manager shall be temporarily unavailable, an acting Project Manager shall be designated.
3. If EPA determines that activities in compliance or noncompliance with this Order have caused or may cause a release of hazardous waste, hazardous constituents or is a threat to human health, or environment, or that Respondent is not capable of undertaking any studies or corrective measure ordered, EPA may order Respondent to stop further implementation of this Order for such period of time as EPA determines may be needed to abate any such releases or threats and/or to undertake any action which EPA determines is necessary to abate such releases or threats. The stop work order shall be issued to Respondent's Project Manager by EPA and shall include an explanation as to why the stop work order was required. Failure to comply with EPA's stop work order shall result in a penalty of \$25,000 per day of continued non-compliance with EPA's stop work order pursuant to RCRA Section 3008(h)(2), 42 U.S.C. § 6928(h)(2).
4. In the event the EPA Project Manager suspends the work or any other activity at the facility, the EPA Project Manager has the authority to and shall extend affected schedules under this Order for a period of time equal to that of the suspension of the work plus reasonable additional time for resumption of activities. If the delay pursuant to this Section is caused by Respondent or its contractor's noncompliance with this Order, then any extension of the compliance deadlines shall be at EPA's sole discretion. Any extensions in the schedules set out in this Order or in its attachments must be made by EPA in writing.
5. The absence of the EPA Project Manager from the facility shall not be cause for the stoppage or delay of work.

#### VIII. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. The Respondent shall submit to EPA the results of all sampling and tests or other data generated by its employees and/or consultants required by the implementation of this Order.
2. Respondent shall submit these results in progress reports as described in Attachment II and paragraph VI.5 of this Order.
3. EPA will make available to the Respondent the results of sampling and/or tests or other data similarly generated by EPA.
4. Respondent will specify the name and address of the laboratory to be used for sample analysis. EPA reserves the right to conduct a performance and QA/QC audit of the above-specified laboratory before, during, or after sample analysis. If the audit reveals deficiencies in lab performance or QA/QC, re-sampling and analysis may be required.
5. At the request of EPA, the Respondent shall allow split or duplicate samples to be collected by EPA, and/or its authorized representatives, of any samples collected by the Respondent as required by the implementation of this Order. The Respondent shall notify EPA not less than fourteen (14) days in advance of any well installation or sample collection activity. In the event EPA conducts any additional sampling, Respondent will be offered the opportunity to split samples with EPA.

## IX. REPORTING AND PUBLIC ACCESS TO DOCUMENTS AND SAMPLING

1. Respondent may assert a claim of confidentiality for information submitted concerning its production methods and processes if the information qualifies for exemption from the Freedom of Information Act, as provided for in 5 U.S.C. § 522(b)(4). Respondent may also assert a claim of confidentiality for documents used to determine financial assurance that are submitted to EPA. Analytical data generated pursuant to this Order shall not be claimed as confidential. Confidentiality claims shall be submitted to EPA in accordance with the procedures outlined in 40 CFR § 2.203(b), and must include a written statement explaining how the information claimed to be confidential meets the criteria for use in confidentiality determinations found in 40 CFR § 2.208. If EPA approves the claim, the Agency will afford the information confidential status, as specified in Subpart B of 40 CFR Part 2. Respondent shall have the opportunity to review photographs and videotapes collected by EPA during inspections in order to have the opportunity to claim confidentiality. Respondent has five (5) business days after receipt of said photographs and/or videotapes to assert a claim of confidentiality following the provisions of this paragraph. If Respondent disagrees with a confidentiality determination by EPA, Respondent shall follow the procedures in 40 CFR Part 2. Information determined not confidential may be made available to the public without further notice to Respondent. If Respondent makes no claim of confidentiality for information submitted pursuant to this Order, EPA will make the information available to the public without further notice to Respondent.
2. Any reports, plans, specifications, schedules and attachments required by this Order shall be incorporated into this Order upon approval by EPA. Any noncompliance with such EPA approved plans, reports, specifications, schedules, and attachments shall be construed as a violation of the terms of this Order subject to stipulated penalties outlined in Section XVII of this Order. Oral advice or approvals given by EPA representatives will not relieve Respondent of its obligation to obtain any formal, written approvals required by this Order.

## X. PUBLIC COMMENT AND PARTICIPATION

1. Upon approval by EPA of a CMS Final Report, EPA shall make both the RFI Final Report and the CMS Final Report and a summary of EPA's proposed corrective measure(s) and EPA's justification for proposing selection of the corrective measure(s) available to the public for review and comment for a period of at least thirty (30) calendar days.
2. Following the public review and comment period, EPA shall notify Respondent of the corrective measure(s) selected by EPA. If the corrective measure(s) recommended in the CMS Final Report is (are) not the corrective measure(s) selected by EPA after consideration of public comments, EPA shall inform Respondent in writing of the reasons for such decision, and the Respondent shall modify the RFI/CMS based upon public comment if directed to do so by the EPA. The selection and supporting documentation shall be attached to and incorporated as part of this Order. The implementation of the selected corrective measure(s) shall be in accordance with Section VI.4 of this Order.
3. The Administrative Record supporting the selection of the corrective measure(s) will be available for public review at EPA Region 6 in Dallas, Texas during normal business hours.

## XI. FACILITY ACCESS AND RECORD RETENTION

1. EPA, and/or any EPA authorized-representative(s) are authorized, allowed, and permitted pursuant to Section 3007(a) of RCRA, 42 U.S.C. § 6927(a) to enter and freely move about all property at the

facility at all reasonable times for the purposes of enforcing the requirements of this Order, including:

- a) interviewing site personnel and contractors; inspecting non-privileged records, operating logs, and contracts related to this Order;
  - b) reviewing the progress of Respondent in carrying out the terms of this Order;
  - c) conducting such tests as EPA deems necessary;
  - d) using a camera, video camcorder, sound recorder, or other documentary type equipment; and
  - e) verifying the reports and data submitted to EPA by the Respondent.
2. In the event of inspections to be performed in the oversight of this Order by non-EPA personnel, EPA will provide advance notice to Respondent of the identity of the EPA-authorized representatives.
  3. The Respondent shall permit EPA to inspect and copy all non-privileged documents, and other writings, including all sampling and monitoring data, in any way pertaining to work undertaken pursuant to this Order. All parties with access to the facility pursuant to this paragraph shall comply with applicable health and safety requirements found in 29 CFR Part 1910. Upon gaining entrance to the facility, EPA and/or its designated representatives, in non-emergency situations, will undergo a brief orientation meeting on the facility safety rules. EPA will follow Respondent's health and safety procedures to the greatest extent possible.
  4. To the extent Respondent is required to gain access to areas adjacent to the facility in order to comply with this Order and where those areas are presently owned by parties other than those bound by this Order, the Respondent shall obtain, or will use its best efforts to obtain, site access agreements from the present owners no later than thirty (30) calendar days after EPA approval of the specific workplan which requires access to that property. Best efforts shall include, at a minimum, a certified letter from Respondent to owners requesting access agreements to permit Respondent, EPA, and their authorized representatives to access such property, but not be limited to, requiring Respondent to pay reasonable rental costs and compensation for losses sustained by the owner or occupant of the property. Access agreements shall provide reasonable access to Respondent, its Contractor(s), the United States, EPA, the State, and its representatives, including contractors. In the event that site access agreements are not obtained within thirty (30) calendar days, the Respondent shall notify EPA immediately regarding both the lack of, and efforts to obtain, such agreements.
  5. Nothing in this subsection is intended to limit, affect or otherwise constrain EPA's rights of access to property pursuant to applicable law.
  6. In addition, all data, information, and records created as a requirement of this Order shall be made available to EPA upon request. All employees of Respondent and all persons, including contractors who engage in activity under this Order, shall be available to and shall cooperate with the EPA.
  7. Respondent shall preserve all data, documents, records and information required in the implementation and completion of this Order for six (6) years after termination of the Order. At the end of this six year period and before any such document or information is destroyed, Respondent shall notify EPA that such non-privileged documents and information are available to

EPA for inspection, and upon request, shall provide the original or copies of such documents and information to EPA. In addition, Respondent shall provide documents and information retained under this section at any time before expiration of the six year period at the written request of EPA.

## XII. FINANCIAL ASSURANCE

1. Within (10) business days of the effective date of this Order, Respondent shall demonstrate its ability to complete the Work and to pay all claims that arise from the performance of the Work through the submission of financial information sufficient to demonstrate to Plaintiff's satisfaction that Respondent has adequate net assets to complete the Work to make it unnecessary to require additional financial assurances. Should such submittal demonstrate that Respondent's total shareholder equity is not less than \$12,500,000.00, such submittal shall be deemed sufficient to demonstrate to Plaintiff's satisfaction that Respondent has adequate net assets to complete the Work to make it unnecessary to require additional assurances. Respondent shall thereafter submit independent audited financial statements containing such information annually on September 30. In the event that Shareholder's equity is less than \$12,500,000.00, Respondent shall, within thirty (30) days of receipt of notice of Plaintiff's determination, obtain and present to EPA for approval one of the following: (a) performance bond; (b) irrevocable standby letter of credit or (c) guarantee by a third party in an amount not to exceed the estimated cost of the remaining Work. Respondent's inability to demonstrate financial ability to complete the Work shall not excuse non-performance of the terms and conditions of this Order or any term thereof.
2. Within thirty (30) days of Respondent's receipt of a notice from EPA that Respondent's financial assurance measures are inadequate, Respondent shall establish an irrevocable standby letter of credit or shall otherwise provide (per 40 CFR § 265.142) additional financial assurances according to the terms provided in said notice. Such additional financial assurance measures shall be available to EPA to perform such terms or conditions established pursuant to the Order, provided that prior to drawing upon any such assurance measure, EPA shall notify the Respondent in writing of its alleged failure to perform the requirements of this Order and provide Respondent with a reasonable time period of not less than fifteen (15) calendar days within which to remedy the alleged nonperformance.
3. This Order in no way negates Respondent's obligation to establish and/or maintain financial assurances for closure and post-closure care under 40 CFR §§ 265.143, and 265.145.

## XIII. DISPUTE RESOLUTION

1. The Parties to this Order shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution can not be achieved informally within ten (10) business days, the procedures of this section shall be implemented to resolve a dispute.
2. Except as provided in paragraph 4 of this Section, if Respondent disagrees, in whole or in part, with any EPA disapproval or modification or other decision or directive made by EPA pursuant to this Order, Respondent shall notify EPA in writing of its objections and the basis therefore within fourteen (14) calendar days of receipt of EPA's disapproval, decision, or directive. Said notice shall set forth the specific points of the dispute, the position Respondent is maintaining should be adopted as consistent with the requirements of this Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. Within ten (10) business days of EPA's receipt of such written notice, EPA shall provide to Respondent its decision on the pending dispute. The time periods established in this paragraph may be extended by mutual agreement of the parties in writing.

3. EPA's decision pursuant to paragraph two (2) of this Section shall be binding upon both parties to this Order, unless Respondent within ten (10) calendar days notifies EPA in writing of its continued objection(s) and requests the Hazardous Waste Management Division Director for Region 6, or his designee, to convene an informal conference for the purpose of discussing Respondent's objections and the reasons for EPA's determination. The Hazardous Waste Management Division Director shall issue a written decision within ten (10) calendar days from the date of the informal conference. The failure to invoke these Dispute Resolution procedures shall constitute a waiver of the right to contest a specific requirement of this Order. The time periods established in this paragraph may be extended by mutual agreement of the parties in writing.
4. If Respondent disputes an EPA determination requiring Respondent to perform additional work, as per Section VI.5 of this Order, Respondent shall have thirty (30) days from receipt of EPA's written determination to notify EPA in writing of its objections and may request the director to request an informal conference for the purposes of discussing Respondent's objections and the reasons for EPA's determinations. After this informal conference, the Director shall state, in writing, his decision regarding the issues in dispute. Such decision shall be implemented immediately by Respondent. If Respondent does not request an informal conference to discuss its objections to EPA's request for additional work, Respondent must perform the additional work requirements as directed by EPA.
5. In any dispute, Respondent shall have the burden of proving that EPA's position is incorrect.
6. The existence of a dispute as defined herein, and EPA's consideration of such matters as placed into dispute, shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Order, except to the extent that the Respondent's position is upheld in the dispute resolution process or any subsequent judicial proceedings.
7. During the pendency of the dispute resolution process, stipulated penalties, with respect to the disputed matter, and interest shall accrue, but payment of stipulated penalties shall be stayed pending resolution of the dispute. Stipulated penalties shall be calculated for each day of noncompliance with this Order beginning with the first day of noncompliance and including the period which the Dispute Resolution procedures were ongoing. If, however, the dispute is ultimately resolved in Respondent's favor, no stipulated penalties on the disputed issue or any directly related issue shall be due.
8. Unless otherwise specifically set forth herein, the failure to provide expressly for dispute resolution in any section of this Order is not intended and shall not bar Respondent from invoking this Section as to any dispute under this Order.

#### XIV. REIMBURSEMENT OF OVERSIGHT COSTS

Oversight costs are those costs incurred by the United States for EPA salary, travel, equipment, analysis, and contractor costs related to the facility. Respondent agrees to pay EPA for oversight costs associated with the implementation and execution of this Order, unless otherwise prohibited by law, in the following manner:

1. At the end of each six (6) month period beginning from the effective date of this Order, EPA will submit to Respondent a tabulation and an explanation of all oversight costs incurred with respect to this Order by EPA during the previous six (6) month period.
2. Payments to EPA for all EPA oversight costs, up to a maximum of \$75,000 per 12 month period, shall be made by money order, certified check, or cashier's check payable to the Treasurer of the United States within thirty (30) days of receipt of EPA's tabulation and shall be submitted to the following address:

Regional Hearing Clerk (6C)  
U.S. EPA, Region 6  
P.O. Box 360582M  
Pittsburgh, PA 15251

3. Document No. VI-303-H should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following:

Section Chief  
Technical Section, (6H-CX)  
RCRA Enforcement Branch  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

Section Chief, (6C-WA)  
Office of Regional Counsel  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

4. If EPA does not receive payment within thirty (30) days of the Respondent's receipt of the tabulation of oversight costs, interest will accrue on the amount due from the due date at the current annual rate prescribed and published by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717, in the Federal Register and the Treasury Fiscal Requirements Annual Bulletin per annum through the date of payment.
5. If the payment is overdue, EPA will also impose a late-payment handling charge of \$15.00, with an additional delinquent notice charge of \$15.00 for each subsequent 30-day period over which an unpaid balance remains. A penalty of 6% per annum on any unpaid principal amount not paid within ninety (90) or more days of Respondent's receipt of the tabulation of oversight costs.

#### XV. RESERVATION OF RIGHTS

1. EPA expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation the assessment of penalties under Section 3008(h)(2) of RCRA, and 42 U.S.C. § 6928(h)(2). The Order shall not be construed as a waiver or limitation of any rights, remedies, powers, and/or authorities which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law enforcement authority of the United States.
2. This Order shall not be construed to effect or limit the rights or responsibilities of any Federal, State, a local agency or authority pursuant to any other statutory provision, nor shall the entry of this Order and Respondent's consent to comply herewith, limit or otherwise preclude the EPA from taking additional enforcement actions pursuant to RCRA § 3008(h), 42 U.S.C. § 6928(h), CERCLA § 106 42 U.S.C. § 9606, or any other available legal authority, should the EPA determine that such actions are warranted. Nor shall this Order be construed to affect or limit in any way the obligation of the Respondent to comply with all Federal, State and local laws and regulations governing the activities required by this Order. This Order shall not be construed as a ruling or determination of any issue related to any Federal, State or local permit whether required in order to implement this Order or required in order to continue or alter operations of the facility (including but not limited



to construction, operation or closure permits required under RCRA) and the Respondent shall remain subject to all such permitting requirements. Nothing in this Order is intended to release or waive any claim, cause of action, demand or defense in law or equity that any party to this Agreement may have against any person(s) or entity not a party to this Agreement.

3. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Order and to request that Respondent perform tasks in addition to those stated in the Corrective Action Plan portion of this Order.
4. Notwithstanding any other provision of this Order, the Respondent shall remain responsible for obtaining any Federal, State, or local permit for any activity at the facility including those necessary for the performance of the work and for the operation or closure of the facility.

#### XVI. SUBSEQUENT MODIFICATION OF THE FINAL ORDER

1. This Order may be amended by mutual agreement of EPA and the Respondent. Any such amendments shall be in writing, shall be first signed by the Respondent, and shall be effective and incorporated into the Order on the date that such amendments are signed by EPA. In the event that a mutual agreement of the parties to modify this Order is not reached, such disagreement shall be the subject to the dispute resolution procedures in Section XIII of this Order.
2. Any reports, plans, specifications, schedules, and attachments required by this Order are, upon written approval by EPA, incorporated into this Order, unless expressly stated otherwise in EPA's approval notice. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, and attachments shall be considered a violation of this Order and shall subject Respondent to the stipulated penalty provisions included in Section XVII of this Order.
3. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other written documents submitted by Respondent will be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Order.

#### XVII. STIPULATED PENALTIES

1. Unless there has been a written modification of a schedule by EPA, or the force majeure provisions of this Order are invoked, in the event Respondent fails to meet any scheduled requirement set forth in this Order, Respondent agrees to pay a Stipulated Penalty as follows:

<u>Period of Failure to Comply</u>	<u>Penalty Per Violation Per Day</u>
1st day through 30th day	\$ 1,000.00
31th day through 90th day	\$ 2,500.00
91th day and beyond	\$10,000.00

2. Stipulated penalties under this Section shall be paid within thirty (30) calendar days after Respondent's receipt of written notification of noncompliance from EPA. Such stipulated penalties shall be paid by money order, certified check, or cashier's check made payable to the "Treasurer of the United States" and mailed to:

Regional Hearing Clerk (6C)  
U.S. EPA, Region 6  
P.O. Box 360582M  
Pittsburgh, PA, 15251

3. Document No. VI-303-H should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following:

Section Chief  
Technical Section, (6H-CX)  
RCRA Enforcement Branch  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

Section Chief, (6C-WA)  
Office of Regional Counsel  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

4. Respondent may dispute EPA's right to the stated amount of penalties by invoking the dispute resolution procedures under Section XIII of this Order. If Respondent does not prevail upon resolution of the dispute, EPA shall collect all penalties which accrued prior to and during the period of dispute. If Respondent prevails upon resolution of the dispute, no penalties shall be payable.
5. If EPA does not receive payment within thirty (30) days of the due date, interest will accrue on the amount due from the due date at the current annual rate prescribed and published by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717, in the Federal Register and the Treasury Fiscal Requirements Annual Bulletin per annum through the date of payment.
6. If the payment is overdue, EPA will also impose a late-payment handling charge of \$15.00, with an additional delinquent notice charge of \$15.00 for each subsequent 30-day period over which an unpaid balance remains. A penalty of 6% per annum on any unpaid penalty amount not paid within ninety (90) or more days of Respondent's receipt of the notification of non-compliance.
7. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Order.

#### XVIII. EPA APPROVALS/DISAPPROVALS

All decisions, determinations and approvals required to be made by EPA under this Order must be in writing signed by the Project Manager. If the EPA does not approve any plan, report or other item required to be submitted to EPA for its approval pursuant to this Order, the Respondent shall address any deficiencies as directed by the EPA and resubmit the plan, report or other item within the time period specified in this Order for EPA's approval. Wherever in this Order approval is required, approval from EPA's Project Manager shall suffice for purposes of securing final approval.

#### XIX. PARTICIPATION IN COMMUNITY RELATIONS ACTIVITIES

Respondent shall be given notice of and shall participate in public meetings, as appropriate, which may be held or sponsored by EPA to explain activities at or concerning the facility, including the findings of the RFI and CMS. In addition, Respondent shall provide all support reasonably requested of them by EPA in carrying out the EPA approved Community Relations Plan. Before issuing a press release to the news media, with reference to any of the work required by this Order, both Parties shall attempt to provide advance notice to the appropriate Project Manager.

#### XX. TERMINATION AND SATISFACTION

The provisions of this Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order, including any additional tasks determined by EPA to be required pursuant to this Order, but not including the record preservation provision of paragraph XI., or other such continuing obligations, have been satisfactorily completed. EPA's determination under this section shall not be unreasonably withheld and should not be made later than ninety (90) days following any petition for termination submitted by Respondent. The provisions of this Order shall be deemed superseded if both parties agree that the requirements of the Order have been incorporated into a RCRA Permit or other Order in accordance Section XXVII of this Order.

#### XXI. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify, save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or their agents, independent contractors, receivers, trustees, and assignees in carrying out activities required by this Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts.

#### XXII. QUALITY ASSURANCE

Throughout all sample collections and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, which shall be part of proposed and approved plans. In addition, Respondent shall:

1. Follow all relevant EPA guidance for sampling and analysis unless determined by EPA not to be applicable;
2. Notify EPA and NMED not less than seven (7) days in advance of any field sampling or installation activity;
3. Inform the EPA Project Manager in advance which laboratories will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis;
4. Ensure that laboratories used by Respondent for analyses perform such analyses according to EPA methods (SW-846, 2nd Edition or as superseded) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all protocols to be used for analyses to EPA for approval no later than thirty (30) days prior to the commencement of analyses and shall not implement such protocols until receipt of EPA approval; and

5. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analysis of a reasonable number of known samples provided by EPA to demonstrate the quality of the analytical data.

#### XXIII. FORCE MAJEURE

1. Respondent shall perform all the requirements of this Order according to the time limits set unless this performance is prevented or delayed by events which constitute a force majeure.
2. For the purposes of this Order, a force majeure is defined as any event arising from causes beyond the control of Respondent including its consultants and contractors, which could not have been prevented or mitigated through the exercise of due diligence, that delays or prevents the performance of any obligation under this Order. Such events do not include increased costs of performance, economic hardship, changed economic circumstances, normal precipitation events, or failure to submit timely and complete applications for Federal, State, or local permits. Any failure to obtain necessary governmental permits and approvals necessary to accomplish work in this Order shall be treated in the same manner as force majeure events pursuant to this Order, provided that Respondent has submitted timely and complete applications to obtain such permits and approvals and has cooperated with the issuing Agency and urged the issuance of the permit or the granting of approval.
3. Respondent has the burden of proving that any delay is or will be caused by events reasonably beyond its control.
4. In the event of a force majeure, the time for performance of the activity delayed by the force majeure shall be extended for the period of the delay attributable to the force majeure plus reasonable additional time for resumption of activities. The time for performance of any activity dependent on the delayed activity shall be similarly extended, except to the extent that the dependent activity can be implemented in a shorter time. EPA shall determine whether subsequent requirements are to be delayed and the time period granted for any delay. Respondent shall adopt all reasonable measure to avoid or minimize any delay caused by a force majeure.
5. In the event of a force majeure, Respondent shall immediately notify EPA by telephone within two (2) working days after Respondent becomes aware of the event and shall within seven (7) days of the oral notification, notify EPA in writing of the cause and anticipated length of the delay. The notification shall also state the measures taken and/or to be taken to prevent or minimize the delay, and the time table by which Respondent intends to implement the delayed activity. Failure of Respondent to comply with the force majeure notice requirements will be deemed a forfeiture of its right to force majeure.

#### XXIV. NO FINAL AGENCY ACTION

Notwithstanding any other provisions of this Order, no action or decision by EPA, including without limitation decisions of the Director of the Hazardous Waste Management Division or the Regional Administrator, pursuant to this Order shall constitute final agency action giving rise to any rights to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with the mandate(s) of this Order.

## XXV. PENALTY PROVISIONS

Failure or refusal to carry out the terms of this Order in a manner deemed satisfactory to EPA subjects Respondent to a civil penalty in an amount not to exceed \$25,000 for each day of non-compliance with this Order in accordance with Section 3008(h) of RCRA, 42 U.S.C. § 6928(h).

## XXVI. STATEMENT OF SEVERABILITY

If any provision or authority of this Order, or the application of this Order to any party or circumstances, is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Order shall not be effected thereby.

## XXVII. SURVIVABILITY/PERMIT INTEGRATION

1. Subsequent to the issuance of this Order, a RCRA permit may be issued to the facility incorporating the requirements of this Order by reference. The parties to the Order agree that all approved corrective action investigations associated with this Order shall satisfy, and be incorporated into, any subsequent RCRA permit terms and conditions imposed at the facility and Respondent will not be required to re-perform or expand upon such activities except as may be necessitated by changes in law and/or regulations, discovery of conditions not previously identified, or work insufficiently performed by Respondent or its contractors.
2. Any requirements of this Order shall not terminate upon the issuance of a RCRA permit unless (i) all Order requirements of the Corrective Action Plan (Attachment II) are expressly replaced by the requirements in the permit or (ii) all provisions of this Order have been fully complied with to EPA's Satisfaction as per Section XX of this Order, or any combination of (i) and (ii).

## XXVIII. EFFECTIVE DATE

The effective date of this Order shall be the date on which it is signed by the EPA and EPA shall notify Respondent by telephone on such date that this Order has been signed. Because this Order was entered with the consent of both parties, Respondent waives its right to request a public hearing pursuant to Section 3008(b) of RCRA, 42 U.S.C. § 6928(b).

### IT IS SO AGREED AND ORDERED:

Date: 12-21-92

By: 

(Facility Representative and Title)  
David J. Younggren, Sr. Vice President

Date: 12-31-92

By: 

Allyn M. Davis, Director  
Hazardous Waste Management Division  
U.S. Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL PROTECTION  
AGENCY

Complainant,

v.

PLATEAU, INC.  
SUBURBAN PROPANE GAS CORP.  
BLOOMFIELD REFINING CO., INC.  
GARY ENERGY CORP.

Respondents.

DOCKET NO. RCRA VI-501-H

CONSENT AGREEMENT AND FINAL ORDER

PRELIMINARY STATEMENT

1. This proceeding for the assessment of a civil penalty was instituted pursuant to Section 3008 of the Resource Conservation and Recovery Act of 1976, as amended (hereinafter called "RCRA"), 42 U.S.C. §6928. This proceeding was instituted by the issuance of a Compliance Order and Notice of Opportunity for Hearing (hereinafter called "Compliance Order"), served upon Bloomfield Refining Co., Inc. (hereinafter called "BRC") and Gary Energy Corp. (hereinafter called "Gary"), and the other above named Respondents, by Complainant, Director, Air and Waste Management Division, of the United States Environmental Protection Agency (hereinafter "EPA"), on or about March 29, 1985, by certified mail, return receipt requested, charging that Respondents violated Subtitle C of RCRA, Sections 3002, 3004, 3005, and 3010, 42 U.S.C. §§6922, 6924, 6925, and 6930 and the regulations promulgated thereunder at Title 40 of the Code of Federal Regulations (40 CFR), and the New Mexico Statutes Annotated, Chapter 74, Article 4, hereinafter referred to as NMSA-74-4, and the

regulations promulgated thereunder at Environmental Improvement Board Hazardous Waste Management Regulations Amendment 2 (HWMR-2). The issues in this proceeding between EPA and Respondents Plateau, Inc. and Suburban Propane Gas Corporation were resolved by the issuance of a Partial Consent Agreement and Final Order dated September 27, 1985. This Consent Agreement and Final Order resolves all remaining issues in this proceeding between EPA and Respondents BRC and Gary. The term "Respondents" as used herein-after within refers collectively to Respondents BRC and Gary, unless specifically denoted otherwise.

2. This Consent Agreement and Final Order (hereinafter called "Consent Order") is entered into without the taking of any testimony and without the adjudication of any issue of law or fact in this action.

3. This Consent Order constitutes a full and complete settlement between Respondents and the Complainant of the civil violation of Subtitle C of RCRA charged against Respondents in this proceeding based upon the facts which were or should have been known. It shall have no effect as to any proceeding which might be, or has been, initiated under Sections 3008(h) or 3013 of RCRA.

4. For purposes of this proceeding only, Respondents admit the jurisdictional allegations of the Compliance Order; however, Respondents neither admit nor deny specific factual allegations contained in the Compliance Order or this consent order.

Respondents deny that their actions with respect to the Bloomfield Refinery constitute violation of any requirement of Subtitle C of RCRA; and Respondents do not concur with the conclusions of law set forth below, as well as those contained in the Compliance Order.

5. For purposes of this proceeding only, Respondents hereby expressly waive their right to receive an administrative hearing on any issue of law or fact set forth herein.

6. Respondents consent to the issuance of the Order herein- after recited and consent to the assessment of the stated civil penalty in the amount set out in the Order below.

#### FINDINGS OF FACT/CONCLUSIONS OF LAW

1. In 1963, Plateau, Inc., a New Mexico Corporation with business headquarters in Albuquerque, New Mexico, purchased a petroleum refinery located east of Sullivan Road, Bloomfield, San Juan County, New Mexico and owned and/or operated said facility continuously until on or about October 31, 1984. From on or about November 19, 1980, to October 31, 1984, Plateau, Inc. owned and/or operated a hazardous waste management facility at said location.

2. Gary Energy Corporation is a Colorado corporation with business headquarters at 115 Inverness Drive, East, Englewood, Colorado, 80112, and is a wholly owned subsidiary of Gary Williams Oil Producer, Inc. Bloomfield Refining Company, Inc., is a



Colorado corporation with business headquarters at 115 Inverness Drive, East, Englewood, Colorado, 80112, and is a wholly owned subsidiary of Gary Energy Corporation. On or about October 31, 1984, Respondents purchased the aforementioned Bloomfield, New Mexico, petroleum refinery from Plateau, Inc. and currently own and/or operate said business. Since on or about October 31, 1984, Respondents have owned and/or operated a hazardous waste management facility at said location.

3. Respondents are persons as defined in Section 1004(15) of RCRA, 42 U.S.C. §6903(15), and 40 CFR §260.10, and as defined in NMSA-74-4-3.J. and Section 102.A.70. of HWMR-2.

4. Respondents are "generators" and "owners" and "operators" of a "hazardous waste management facility" used for the "treatment, storage, and disposal" of "hazardous waste" in accordance with the definitions of these terms under Section 1004 of RCRA, 42 U.S.C. §6903, and 40 CFR §260.10 and NMSA 74-4-3 and Section 102.A. of HWMR-2.

5. The EPA regulations at 40 CFR §§261, 262, 264, 265, and 270, and the corresponding EPA authorized New Mexico regulations at Sections 201, 202, 203, 204, 206, and 302 of HWMR-2, were established pursuant to Subtitle C, Sections 3001, 3002, 3004, 3005, 3006, and 3010 of RCRA, 42 U.S.C. §§ 6921, 6922, 6924, 6925, 6926, 6930, and are requirements of Subtitle C of RCRA, 42 U.S.C. §6921 et seq. A violation of any of the EPA, or EPA authorized New Mexico regulations, is a violation of Subtitle C of RCRA.

6. Pursuant to Section 3010 of RCRA, 42 U.S.C. §6930, Plateau, Inc. notified EPA of hazardous waste activity at its facility located east of Sullivan Road, Bloomfield, New Mexico, on August 18, 1980. In its notification, Plateau, Inc. identified itself as a generator and a treater, storer, and disposer of hazardous waste. In accordance with Section 3005 of RCRA, 42 U.S.C. §6925, Plateau, Inc. submitted Part A of its RCRA permit application for the Bloomfield Refinery facility, which was received on November 19, 1980. On or about April 16, 1982, Plateau, Inc., filed an amended RCRA notification of hazardous waste activity in which it claimed to be only a generator of hazardous waste, and not a treater, storer, or disposer of hazardous waste.

7. 40 CFR §270.72(d) and Section 302.C.3.d. of HWMR-2, require that changes in the ownership or operational control of a facility may be made if the new owner or operator submits a revised RCRA Part A permit application no later than 90 days prior to the scheduled change. All other interim status duties are transferred effective immediately upon the date of the change of ownership of the facility.

8. On or about October 31, 1984, Suburban Propane Gas Corporation sold the Plateau, Inc., Bloomfield, Refinery facility at Bloomfield, New Mexico, to Respondents. To date, no revised RCRA Part A permit application has been received from Respondents by Complainant.

9. Therefore, Respondents have violated 40 CFR §270.72(d) and Section 302.C.3.d. of HWMR-2, by failing to submit a revised RCRA Part A permit application no later than ninety (90) days prior to a change in facility ownership.

ORDER

1. Pursuant to the authority of Section 3008 of RCRA, 42 U.S.C. §6928, and upon consideration of the above Findings of Fact and Conclusions of Law, the nature, circumstances, extent, and gravity of Respondents' violations, or Respondents' ability to pay, of Respondents' good faith efforts to comply or lack thereof, of Respondents' history of compliance or lack thereof, and Respondents' degree of willfullness and/or negligence, and after consideration of the record herein, it is ORDERED that Respondents BRC and Gary of Englewood, Colorado, respectively, pay a civil penalty in the amount of FIVE THOUSAND SEVEN HUNDRED DOLLARS (\$5,700), the penalty to be paid within thirty (30) days of execution of this Consent Agreement and Final Order. Said penalty is to be paid by cashier's or certified check made payable to the Treasurer, United States of America and forwarded to:

U.S. EPA - Region VI  
(Regional Hearing Clerk)  
P.O. Box 360582M  
Pittsburgh, Pennsylvania 15351

2. It is further ORDERED that Respondent shall immediately comply with the following requirements with respect to the Bloomfield, New Mexico, Refinery facility which is the subject of this Consent Order:

A. Respondent shall not store any hazardous waste on site, including its transportation terminal, except to the extent that such storage is authorized for up to ninety (90) days pursuant to 40 CFR Part 262 and corresponding New Mexico regulations at HWMR-2. Respondent shall not treat or dispose of any hazardous waste on site, including its transportation terminal.

B. Respondents shall not introduce any 1,1,1-trichloroethane, or any other hazardous waste listed at 40 CFR Part 261, Subpart D, into its Bloomfield Refinery sewer system.

C. Respondents shall insure that API Separator Sludge (Waste Code K051) is not "re-suspended and carried over" from the Bloomfield Refinery API Separator, as described in the Memorandum of the Director, Office of Solid Waste, U.S. EPA, dated December 7, 1984, attached hereto as Exhibit A. In order to effect this requirement, Respondents shall clean out the facility's API Separator not less frequently than every two years, or whenever the API Separator Sludge level reaches a height of 2.5 feet above the base of the API Separator, whichever occurs first. Any sludge removed from the API Separator will be properly manifested and handled as a hazardous waste. This procedure will be documented in the facility's operating record.

D. Respondents shall discharge only wastewater from the Slop Oil tank to the API Separator without oily emulsion solids, and shall document its efforts as performed, to insure the same in the facility operating record. Any slop oils in the

tank shall be returned to the refinery process and commingled with normal process streams; and any slop oil emulsion solids removed from the tank will be properly handled as hazardous waste, including manifesting if taken off-site.

E. Respondents shall, with respect to the spent caustic tank: (1) remove its contents in less than ninety (90) days on a continuing basis; (2) comply with the standards established under 40 CFR §262.34, and its New Mexico equivalent regulations at HWMR-2, for on-site hazardous waste storage up to ninety (90) days; and (3) perform alterations to the pipe between the caustic tank and facility wastewater system to insure that no discharge of caustic can occur. Respondents shall promptly repair any leaks that should occur in the caustic tank or caustic tank piping and shall install a containment dike around the base of the caustic tank. When removed from the spent caustic tank, material shall be properly handled as a hazardous waste. This may include transportation off-site for legitimate recycling, provided that the material is properly manifested as a hazardous waste, if required, and all other applicable regulatory requirements are met, including documentation in the facility operating record.

F. All materials removed from the south oily water pond (SOWP) and the north oily water pond (NOWP) prior to NMEID approval of the closure plan required by paragraph 3 below, including NMEID approval of the certification by a registered professional engineer of the removal of all hazardous waste from SOWP and NOWP, shall be properly handled as hazardous waste.

In the event that materials from SOWP or NOWP are removed after NMEID approval of the closure plan, or materials are removed from the north evaporation pond (NEP), or the south evaporation pond (SEP), at any time, Respondents shall comply with the approved closure plan and shall analyze such material prior to any removal to determine whether said material is a hazardous waste in accordance with Subpart C of 40 CFR Part 261 and its New Mexico equivalent regulations at HWMR-2, including specifically, with respect to the characteristic of "reactivity", whether such removal, or subsequent handling, may result in the generation of toxic gases in sufficient quantities to present a danger to human health or the environment. Said reactivity analysis shall be conducted in accordance with the method set forth in the July 12, 1985, memorandum addressed from Eileen Claussen, Director of the Characterization and Assessment Division, U. S. EPA, to Solid Waste Branch Chiefs, Regions I to X, U. S. EPA, entitled: "Interim Thresholds for Toxic Gas Generation Reactivity (§261.23(a)(5))". In the event such material would be characterized as hazardous waste following the guidelines of said memo after such analysis, or meet the definition of any other hazardous waste characteristic, Respondents shall properly handle such material as hazardous waste. Respondents shall also comply with 40 CFR 262.11 and the equivalent New Mexico regulations at HWMR-2, and other requirements, when and where applicable.

3. It is further ordered that Respondents shall immediately commence all activities specified in "A Sampling and Closure Proposal for the API Wastewater Ponds, Landfill, and Landfill Pond at the Bloomfield Refinery" by Engineering Science, Inc., Austin, Texas, dated September 1985, and attached hereto as Exhibit B. The analysis specified on page 5 and 6 of Exhibit B shall include the test for EP toxicity for metals. Further, Respondents shall remove all materials from the NOWP and SOWP, properly handling such materials as hazardous waste, prior to the conduct of any sampling as specified in Exhibit B. Following the conduct of these activities, Respondent shall submit copies of all analytical results and analysis or reporting required under Exhibit B to EPA and NMEID, as received. Respondent shall perform such reasonable additional activities as may be requested by EPA or NMEID, based upon a review of the analytical results/analysis required by Exhibit B, and submit such information to EPA/NMEID for review. Following accomplishment of the activities required by Exhibit B, Respondent shall submit its closure plan, along with proof of financial assurance for closure, to the Director, NMEID, with a copy to EPA no later than November 23, 1985. In addition to the requirements of Exhibit B, as revised or modified, and other pertinent requirements, including, but not limited to, certification by a registered professional engineer of the removal of all hazardous waste from NOWP and SOWP, in accordance with the closure performance standard of 40 CFR §265.111 and its New Mexico equivalent regulation at HWMR-2, Respondent's closure plan shall

require commencement of implementation within thirty (30) days of final NMEID approval and shall incorporate the provisions of subparagraphs (2.A.) through (2.F.) above.

Dated: 11-22-85

  
Name

VICE PRESIDENT  
Title

Bloomfield Refining Company, Inc.


Dated: 11-22-85

  
Name


President  
Title

Gary Energy Corporation

Dated: 11/26/85

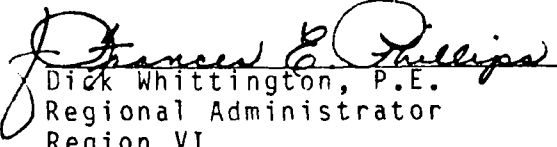
  
Allyn M. Davis, Director  
Hazardous Waste Management  
Division  
Region VI,  
United States Environmental  
Protection Agency

Dated: 11/26/85

  
Paul Seals, Regional Counsel  
Region VI,  
United States Environmental  
Protection Agency



It is so ORDERED. This Order shall become effective immediately.

  
Dick Whittington, P.E.  
Regional Administrator  
Region VI  
United States  
Environmental Protection Agency

Dated this 26<sup>th</sup> day of November 1985,  
at Dallas, Texas.

Table IV  
Concentrations in ppb

Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Barium	210	39			1540	39
Chromium	116	1110				
Lead					252	
Mercury	0.6					
# Unknown ABNs	0	3	2	13	15	1
bis-(2-Ethylhexal) phthalate		38				
Phenol					46	
2-Methylphenol					81	
4-Methylphenol					43	
2,4-Dimethylphenol					16	
Napthalene					91	
2-Methyl napthalene					33	
# Unknown VOA				10	10	
2-butanone						
Ethyl Benzene				1660	352	

Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Benzene				8200	23800	
Toluene				8040	8820	
O-xylene				1800	1970	
m/p-xylene				12100	10900	



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

**RECEIVED**

JAN - 5 1993

**D. RODERICK**

December 31, 1992

Mr. David Roderick, Refinery Manager  
Bloomfield Refining Company  
P. O. Box 159  
Bloomfield, New Mexico 87413

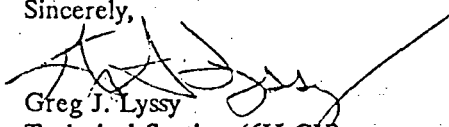
RE: Bloomfield Refining Company, Inc.  
EPA ID# NMD089416416

Dear Mr. Roderick:

Enclosed please find three (3) copies of the final RCRA § 3008(h) Administrative Order on Consent (Order) for Bloomfield Refinery Company (BRC). The effective date of the Order is December 31, 1992. This Order is submitted pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by § 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) as further amended by the Hazardous and Solid Waste Amendments of 1984, 42 USC § 6928(h).

If you have any questions, or if your technical consultants have any questions, please do not hesitate to call me at (214) 655-8317.

Sincerely,

  
Greg J. Lyssy  
Technical Section (6H-CX)  
RCRA Enforcement Branch  
Hazardous Waste Management Division

Enclosures

cc: Joe Guida, Guida & Associates  
Kathleen Sisneros, New Mexico Environment Department  
Benito Garcia, New Mexico Environment Department  
Ed Horst New Mexico Environment Department

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 6

RECEIVED  
1992 DEC 31 AM 9:19  
REGIONAL ADMINISTRATOR  
EPA REGION VI

IN THE MATTER OF:

Bloomfield Refining Company  
P.O. Box 159  
Bloomfield, New Mexico

EPA I.D. NO. NMD089416416

RESPONDENT

ADMINISTRATIVE  
ORDER ON CONSENT

U.S. EPA DOCKET NO.  
VI-303-H

PROCEEDING UNDER SECTION  
3008(h) OF THE RESOURCE  
CONSERVATION AND RECOVERY  
ACT, AS AMENDED, 42  
U.S.C. SECTION 6928(h).

I. JURISDICTION

This Administrative Order on Consent (Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, (RCRA), and further amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(h). The authority to issue this Administrative Order has been delegated to the Regional Administrator by EPA Delegation Nos. 8-31 and 8-32, dated April 16, 1985, and further delegated to the Director of the Hazardous Waste Management Division, Region 6 (Director).

This Order is issued to Bloomfield Refining Company, a Delaware Corporation (Respondent), owner/operator at the facility located at #50 County Road 4990, Bloomfield, New Mexico (Facility). Respondent admits EPA's jurisdiction to issue this Order and to enforce its terms. Further, Respondent will not contest EPA's jurisdiction to: compel compliance with this Order in any subsequent enforcement proceedings, either administrative or judicial; require Respondent's full or interim compliance with the terms of this Order; or impose sanctions for noncompliance with this Order.

By consenting to this Order and by complying with its provisions, Respondent does not admit the truth of any fact or legal finding or determination asserted herein, other than those necessary to establish jurisdiction as described in the previous paragraphs. Neither this Order nor any part thereof shall constitute any evidence, admission, or adjudication of any wrongdoing, misconduct, liability, responsibility, or estoppel on the part of Respondent, or any director, officer, employee, or affiliate thereof, except as evidence for purposes of enforcement of this Order. Respondent reserves all rights to contest any subsequent Order or judicial proceeding associated with implementation of corrective measures.

II. PARTIES BOUND

1. This Order shall apply to and bind Respondent, its officers, directors, employees, agents, trustees, receivers, successors, assigns, and all other persons, including, but not limited to, firms, corporations, subsidiaries, contractors, consultants acting under or on behalf of Respondent, and within the scope of their employment.

2. No change in ownership, corporate, or partnership status relating to the facility will in any way alter the status or responsibility of the Respondent under this Order. Respondent will be responsible for and liable for any failure to carry out all activities required of the Respondent by the express terms and conditions of this Order, irrespective of its use of employees, agents or consultants to perform any such tasks.
3. Each undersigned representative of the parties to this Order certifies that he or she is fully authorized to enter into the terms and conditions of this Order.
4. Respondent shall provide a copy of this Order to all primary contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order within seven (7) calendar days of the effective date of this Order or date of such retention of services and shall condition all such contracts on compliance with the terms of this Order.
5. Respondent shall give notice of this Order to any successors in interest prior to transfer of ownership or operation of the facility and shall notify EPA no later than thirty (30) days prior to such transfer. In its discretion, EPA may shorten the advance notification period provided herein.
6. Any documents transferring ownership and/or operations of the Facility from Respondent to a successor-in-interest shall include written notice of this Order; however, Respondent shall, no less than fifteen (15) days prior to transfer of ownership or operation of the Facility, provide written notice of this Order to its successor-in-interest, and written notice of said transfer of ownership and/or operation to EPA.
7. Respondent agrees to undertake all actions required by the terms and conditions of this Order including any portions of this Order incorporated by reference. Respondent explicitly waives its rights to request a hearing on this matter and consents to the issuance of this Order without hearing pursuant to § 3008(b) of RCRA and as an Order issued pursuant to § 3008(h) of RCRA.

### III. STATEMENT OF PURPOSE

In entering into this Order, the mutual objectives of EPA and Respondent are: (1) to perform Interim Measures (IM) at the facility to mitigate potential threats to human health or the environment; (2) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release(s) of hazardous waste or hazardous constituents at or from the facility; and (3) to perform a Corrective Measure Study (CMS) to identify and evaluate alternatives for corrective action(s) to prevent or mitigate any migration of release(s) of hazardous wastes or hazardous constituents at or from the facility, and to collect any other information necessary to support the selection of corrective measures at the facility.

### IV. FINDINGS OF FACT

1. Respondent is Bloomfield Refining Company, #50 County Road 4990, Bloomfield, New Mexico, 87413, and is a person as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15). Bloomfield Refining Company is a Delaware Corporation and is a wholly-owned subsidiary of Gary-Williams Energy Corporation, Inc.
2. The facility is located off of Sullivan Road (County Road 4990), Bloomfield, San Juan County, New Mexico, at 36 degrees, 41 minutes and 50 seconds latitude and 107 degrees, 58 minutes, and 20 seconds longitude. This location is less than one mile south of Bloomfield, New Mexico, off Highway 44.

3. Plateau, Inc., the former owner of the facility, operated hazardous waste management units at the facility after November 19, 1980. Plateau, Inc. is located at 334 Madison Avenue, Morristown, New Jersey, 07960. Plateau, Inc., is a wholly-owned subsidiary of Suburban Propane Gas Corporation, a New Jersey corporation.
4. On or about October 31, 1984, Suburban Propane Gas Corporation sold the facility to Respondent.
5. Section 3010(a) of RCRA, 42 U.S.C. § 6930(a), requires any person generating or transporting any listed or characteristic hazardous waste, or owning or operating a facility for treatment, storage or disposal of such substance, to file with the EPA a notification stating the location and general description of such activity or the listed or characteristic hazardous wastes handled by such persons.
6. Pursuant to Section 3010(a) of RCRA, 42 U.S.C. § 6930(a), on August 18, 1980, Plateau, Inc., notified EPA of its hazardous waste activity. In this notification, Plateau, Inc., identified itself as a generator, treater, storer and/or disposer of hazardous waste at the facility.
7. Section 3005(e) of RCRA, 42 U.S.C. § 6925(e), provides that any person who complies with the provisions of Section 3005(e) shall be treated as having been issued a permit. Such a facility shall be considered to be under interim status, and shall be required to meet all applicable requirements of RCRA.
8. In its RCRA Part A permit application (permit application) dated November 19, 1980, Plateau, Inc., notified the Administrator of EPA and the New Mexico Environmental Improvement Division (NMEID), that it was engaged in the generation and storage at the facility of hazardous wastes identified and listed in 40 CFR Part 261 and used surface impoundments for the treatment, storage, or disposal (process code S04) of hazardous wastes at the facility. Plateau also noted on the application that the surface impoundments may have received hazardous materials in the past, but the contents have not been adequately characterized.
9. The facility, comprised of 287 acres, consists of petroleum refining operations having five (5) RCRA-regulated hazardous waste management units which received the following hazardous wastes or hazardous waste constituents as identified in the facility's permit application:
  - a) hazardous wastes from specific sources identified at 40 CFR § 261.32;
    - i) K049 - Slop oil emulsion solids from the petroleum refining industry,
    - ii) K050 - Heat exchanger bundle cleaning sludge from the petroleum refining industry,
    - iii) K051 - API separator sludge from the petroleum refining industry,
    - iv) K052 - Tank bottoms (leaded) from the petroleum refining industry.
10. During May and June, 1983, EPA personnel conducted inspections that revealed significant seepage of ground water from the contact of the cobble bed and the Nacimiento formation at the face of the bluff above the San Juan River.
11. Analysis of samples of these seeps taken during a May, 1984, inspection showed elevated levels of organic and inorganic contamination (Attachment I - Table I) released from the facility to the San Juan River.

12. On July 15, 1982, May 10, 1983, June 7-8, 1983, March 19-23, 1984, and May 4, 1984 EPA conducted Compliance Evaluation Inspections (CEIs) to assess the facility's compliance with the RCRA Hazardous Waste Management regulations.
13. The May 10, 1983, inspection was conducted to also assess potential adverse environmental impacts, including endangerment to human health, welfare, or the environment pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. § 9601 et seq.
14. According to an EPA RCRA Facility Assessment Evaluation (RFA) conducted June 27, 1987, the facility has thirteen (13) Solid Waste Management Units (SWMUs), five (5) of which are considered to be RCRA-regulated SWMUs and are listed below:
  - a) South Oily Water Pond (SOWP) (immediately downstream of the API separator);
  - b) North Oily Water Pond (NOWP) (immediately downstream of the SOWP);
  - c) Evaporation Ponds (2);
  - d) Landfill; and
  - e) Landfill Runoff Ponds.
15. The RCRA § 3013 42 U.S.C. § 6934, Final report was submitted by Respondent on or about February 8, 1987. The presence of hydrocarbon-contaminated groundwater was observed at monitoring wells MW#4, MW#9, and MW#10 documenting a release to the groundwater from the facility. The sampling results are listed in Attachment I, Table II.
16. Attachment I, Table III lists the chemicals found in the groundwater at the facility and the health-based classification based on the weight of evidence for these chemicals.
17. On September 12-14, 1989, a Comprehensive Ground Water Monitoring Evaluation (CME) by the EPA was conducted at the facility. The CME was conducted to assess the facility's compliance with RCRA ground water monitoring requirements found at 40 CFR § 265.90 et seq. According to the CME report, the following was noted:
  - a) The NOWP and SOWP have only one (1) downgradient well in place; and
  - b) The landfill and landfill pond have only one (1) downgradient well in place. These areas are separate units and are required to be monitored separately.
18. During the September 1989 CME, samples were taken of the monitoring wells at the facility. The sample results are listed in Attachment I, Table IV.
19. The Toxicity Characteristic Rule was effective on September 25, 1990, and is codified at 40 CFR Part 261.24, establishing regulatory levels for 25 organic chemicals in addition to the eight metals and six pesticides on the existing list of constituents which exhibit the characteristic of toxicity and are regulated under RCRA.
20. On September 25, 1990, Respondent submitted an Amended Notification of Regulated Waste Activity and a Part A Application to EPA identifying itself as a treater, storer or disposer of hazardous waste.



21. In the Part A Application, Respondent identified the SOWP and NOWP as Hazardous Waste Aeration Impoundments (Aeration Impoundments).
22. In the Part A Application, Respondent identified the Aeration Impoundments as units regulated under the TC Rule specifically for benzene concentrations (D018).
23. This Order is based upon the Administrative Record compiled by EPA, which is available for public examination at the Region 6 offices, 1445 Ross Avenue, Dallas, Texas, during normal business hours, Monday through Friday.
24. Based on the release of hazardous waste or hazardous waste constituents into the environment from Respondent's facility, the actions ordered below are necessary to protect human health or the environment.

#### V. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set out above, and the administrative record, the Director has determined that:

1. Respondent is the operator/owner of the facility, as that term is defined at 40 CFR § 260.10;
2. The location at Bloomfield, New Mexico, where Respondent is doing business, is a "facility" as that term is defined at 40 CFR § 260.10;
3. Respondent is a person defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15);
4. The facility is authorized to operate under interim status pursuant to Section 3005(e) of RCRA, 42 U.S.C. § 6925(e);
5. There have been releases of hazardous wastes or hazardous waste constituents into the environment from the facility as defined by § 3001 of RCRA, 42 U.S.C. § 6921.
6. The interim measures and comprehensive corrective actions (actions) required by this Order are consistent with RCRA and are necessary to protect human health and the environment.

#### VI. WORK TO BE PERFORMED

Based on the foregoing, it is hereby ORDERED that Respondent shall perform, undertake, continue to take, and complete each of the following actions to the satisfaction of EPA and in accordance with the terms, procedures and schedules set forth in Attachment II - Corrective Action Plan (CAP) in the manner and by the dates specified below. The dates specified below and those in the CAP shall coincide. If there is a conflict of dates, the dates presented in the CAP shall be utilized.

##### 1. INTERIM MEASURES (IM)

- a) No later than forty-five (45) days after the effective date of this Order, Respondent shall submit an approvable draft Interim Measures Workplan (IM Workplan) for EPA review and approval. The IM Workplan shall be prepared in accordance with the CAP. No later than thirty (30) days after receipt of EPA's comments on the Draft IM Workplan, Respondent shall submit a Final IM Workplan to EPA for review and EPA's approval addressing EPA's comments. Upon EPA approval of the Final IM Workplan, Respondent shall undertake, or continue to take, the interim measures in accordance with the IM Workplan and concurrently with the RCRA Facility Investigation.

- b) The IM Workplan shall ensure that the Interim Measures are designed to mitigate current or potential threat(s) to human health and/or to the environment, and are consistent with, and integrated into, any long term solution at the facility. The IM Workplan shall document the procedures to be used by the Respondent for the implementation of Interim Measures and shall include, but not be limited to, the objectives, design, construction, operation, monitoring and maintenance requirements, and detailed schedules for the Interim Measures.
- c) In the event Respondent identifies a current or potential threat to human health and/or the environment, the Respondent shall immediately notify EPA orally and in writing within five (5) days of such identification, summarizing the immediacy and magnitude of the potential threat to human health and/or the environment. Within thirty (30) days of notifying EPA, the Respondent shall submit to EPA an IM Workplan for approval that identifies Interim Measures which mitigate this threat and are consistent with and integrated into any long term remedy at the Facility.

## 2. RCRA FACILITY INVESTIGATION

- a) Within ninety (90) days of the effective date of this Order, Respondent shall submit to EPA an approvable Draft Workplan for a RCRA Facility Investigation (RFI). The Draft RFI Workplan is subject to approval by EPA and shall be performed in a manner consistent with the RFI Scope of Work contained in the CAP. No later than thirty (30) days after receipt of EPA's comments on the Draft RFI Workplan, Respondent shall submit a Final RFI Workplan to EPA for review and EPA's approval addressing all of EPA's comments to the satisfaction of EPA. Upon approval of the Final RFI Workplan, Respondent shall implement the Workplan. The RFI Workplan shall be developed in accordance with, at a minimum, RCRA, its implementing regulations, and EPA guidance documents, including: Interim Final RCRA Facility Investigation Guidance (EPA 530/SW-89-031, 4 vols.); RCRA Ground Water Monitoring Technical Enforcement Guidance document (OSWER Directive Number 9951.1); Test Methods for Evaluating Solid Waste, SW 846 (2nd Edition); and any other documents determined by EPA to be relevant during the course of this action.
- b) The RFI Workplan shall be designed to define the presence, magnitude, extent, direction, and rate of movement of any hazardous wastes or hazardous waste constituents within and beyond the facility boundary. The Respondent shall conduct those investigations necessary to:
  - i) characterize the source(s) of contamination;
  - ii) characterize the potential pathways of contaminant migration;
  - iii) define the degree and extent of contamination;
  - iv) identify actual or potential receptors; and
  - v) support the development of alternatives from which a Corrective Measure will be selected by EPA.

A specific schedule for implementation of all activities shall be included in the RFI Workplan. In accordance with the provisions of Attachment II herein, the RFI workplan shall include: (1) a Project Management Plan; (2) a Data Collection Quality Assurance Plan; (3) a Data Management Plan; (4) a Health and Safety Plan; and (5) a Community Relations Plan.

- c) Within 365 days of the approval of the RFI Workplan, Respondent shall submit to EPA an approvable Draft RFI Report. The RFI Report is subject to approval by EPA and shall be performed in a manner consistent with the requirements contained in Attachment II. No later than thirty (30) days after receipt of EPA's comments on the Draft RFI Report, Respondent shall submit a Final RFI Report to EPA for review and EPA's approval addressing all of EPA's comments to the satisfaction of EPA.

### 3. CORRECTIVE MEASURES STUDY

- a) Upon completion of the RCRA Facility Investigation, Respondent shall undertake and complete a Corrective Measure Study (CMS) in accordance with the CMS Scope of Work in Attachment II and in accordance with EPA guidance documents determined to be relevant during the course of this action.
- b) Respondent shall submit a Draft CMS Report to EPA within sixty (60) calendar days of approval of the Final RFI Report. The CMS Report shall include, but not be limited to the following:
  - i) identification and development of the corrective measures alternatives;
  - ii) evaluation of the corrective measure alternatives;
  - iii) justification and recommendation of the corrective measure(s).

EPA shall review the draft CMS Report and provide comments to Respondent. No later than thirty (30) days after receipt of EPA's comments on the Draft CMS Report, Respondent shall submit a Final CMS Report to EPA for review and EPA's approval addressing all of EPA's comments.

### 4. CORRECTIVE MEASURES IMPLEMENTATION

Upon EPA's selection of the corrective measure, if Respondent has complied with the terms of this Consent Order, EPA shall provide a sixty (60) day period for negotiation of an administrative order on consent, a judicial consent decree, a RCRA Permit, or modification of a RCRA Permit, for implementation of the selected corrective measure. If agreement is not reached during this period, EPA reserves all rights it has to implement the corrective measure or other remedial response and to take any other appropriate actions under RCRA, CERCLA, or any other available legal authority, including issuance of a unilateral administrative order directing Respondent to implement the corrective measure.

### 5. SUBMISSIONS/AGENCY APPROVAL/ADDITIONAL WORK

- a) Within thirty (30) calendar days of approval or modification by EPA of any Workplan(s) or Report(s), Respondent shall commence work and implement the tasks required by the Workplan(s) or Report(s) submitted pursuant to the Scope(s) of Work contained in Attachment II, in accordance with the standards, specifications and schedule stated in the Workplan(s) or Report(s), as approved or modified by EPA.
- b) Beginning with the month following the effective date of this Order, Respondent shall provide EPA with progress reports every month, due on the tenth (10) day of the following month. On a quarterly basis, the progress reports shall include the results of all sampling and testing performed under this Order. The progress reports shall conform to requirements in relevant Scopes of Work contained in Attachment II.

- c) EPA's Project Manager designated pursuant to Section VII of this Order will review all draft and final reports or workplans and notify Respondent in writing of EPA's approval or disapproval of the report or workplan or any part thereof. EPA will specify in writing any modifications necessary for approval of the subject document. Within thirty (30) days of receipt of EPA's disapproval of any report or workplan, Respondent shall address the deficiencies and submit a revised report. If Respondent believes an extension of time is necessary for a deliverable, Respondent shall submit such written request to EPA. EPA shall determine if such extension request is warranted and will either grant or deny the request. EPA shall approve, disapprove, or modify the revised submittal. EPA-approved reports and workplans shall be deemed incorporated into and part of this Order.
- d) Three (3) copies of all documents, including Plans, Reports, and other correspondence to be submitted pursuant to this Order shall be hand-delivered or sent by certified mail, return receipt requested, or the equivalent including express mail service, to the EPA Project Manager. An additional one (1) copy shall be sent to the New Mexico Environment Department (NMED). Documents shall be deemed submitted on the date of mailing, or, if delivered by hand, on the date of delivery. For purposes of the United States Postal Service, the date of mailing shall be determined by the postmark. For express mail services, the date of mailing shall be the date of delivery to the express mail carrier, as evidenced by a completed express mail receipt form, which shall bear the date the document is delivered to the express mail service. If any hand delivery serviced utilized does not record its date of delivery, then the Respondent shall include with the document a statement certifying the date on which the document was delivered.
- e) All work performed pursuant to this Order shall be under the direction and supervision of a professional engineer, scientist, or geologist with expertise in hazardous waste site cleanup. The Respondent shall notify EPA in writing of the name, title, and qualifications of the engineer or geologist, and of any contractors or subcontractors and their personnel to be used in carrying out the terms of this Order thirty (30) calendar days after the effective date of this Order, or date of retention. If EPA objects to the qualifications of the engineer, geologist, or scientist, EPA shall notify Respondent within thirty (30) calendar after receipt of Respondent's notification pursuant to this section.
- f) EPA may determine that certain tasks and deliverables, including investigatory work or engineering evaluation, are necessary in addition to the tasks and deliverables included in the Workplans. When new information indicates that such additional work is necessary, EPA will request, in writing, that Respondent perform the additional work and shall specify the basis and reasons for EPA's determination that the additional work is necessary. Within thirty (30) calendar days after the receipt of such request, Respondent may request a meeting with EPA to discuss the additional work. Thereafter, Respondent shall perform such additional IM, RFI, or CMS work EPA has requested according to an EPA-approved Workplan or Schedule. All additional work performed by Respondent under this paragraph shall be performed in a manner consistent with this Order.
- g) EPA acknowledges that Respondent is currently conducting remedial actions at the facility under the jurisdiction of New Mexico State Agencies. EPA will coordinate with relevant State Agencies, as appropriate, during the pendency of this Order.

#### VII. PROJECT MANAGER

1. Within ten (10) days of the effective date of this Order, EPA and Respondent shall each designate a Project Manager. Each Project Manager shall be responsible for overseeing the implementation

of this Order. The EPA Project Manager will be EPA's designated representative at the facility. All communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the Project Manager.

2. The Parties shall provide at least five (5) days written notice prior to changing Project Managers. If either Project Manager shall be temporarily unavailable, an acting Project Manager shall be designated.
3. If EPA determines that activities in compliance or noncompliance with this Order have caused or may cause a release of hazardous waste, hazardous constituents or is a threat to human health, or environment, or that Respondent is not capable of undertaking any studies or corrective measure ordered, EPA may order Respondent to stop further implementation of this Order for such period of time as EPA determines may be needed to abate any such releases or threats and/or to undertake any action which EPA determines is necessary to abate such releases or threats. The stop work order shall be issued to Respondent's Project Manager by EPA and shall include an explanation as to why the stop work order was required. Failure to comply with EPA's stop work order shall result in a penalty of \$25,000 per day of continued non-compliance with EPA's stop work order pursuant to RCRA Section 3008(h)(2), 42 U.S.C. § 6928(h)(2).
4. In the event the EPA Project Manager suspends the work or any other activity at the facility, the EPA Project Manager has the authority to and shall extend affected schedules under this Order for a period of time equal to that of the suspension of the work plus reasonable additional time for resumption of activities. If the delay pursuant to this Section is caused by Respondent or its contractor's noncompliance with this Order, then any extension of the compliance deadlines shall be at EPA's sole discretion. Any extensions in the schedules set out in this Order or in its attachments must be made by EPA in writing.
5. The absence of the EPA Project Manager from the facility shall not be cause for the stoppage or delay of work.

#### VIII. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. The Respondent shall submit to EPA the results of all sampling and tests or other data generated by its employees and/or consultants required by the implementation of this Order.
2. Respondent shall submit these results in progress reports as described in Attachment II and paragraph VI.5 of this Order.
3. EPA will make available to the Respondent the results of sampling and/or tests or other data similarly generated by EPA.
4. Respondent will specify the name and address of the laboratory to be used for sample analysis. EPA reserves the right to conduct a performance and QA/QC audit of the above-specified laboratory before, during, or after sample analysis. If the audit reveals deficiencies in lab performance or QA/QC, re-sampling and analysis may be required.
5. At the request of EPA, the Respondent shall allow split or duplicate samples to be collected by EPA, and/or its authorized representatives, of any samples collected by the Respondent as required by the implementation of this Order. The Respondent shall notify EPA not less than fourteen (14) days in advance of any well installation or sample collection activity. In the event EPA conducts any additional sampling, Respondent will be offered the opportunity to split samples with EPA.

## IX. REPORTING AND PUBLIC ACCESS TO DOCUMENTS AND SAMPLING

1. Respondent may assert a claim of confidentiality for information submitted concerning its production methods and processes if the information qualifies for exemption from the Freedom of Information Act, as provided for in 5 U.S.C. § 522(b)(4). Respondent may also assert a claim of confidentiality for documents used to determine financial assurance that are submitted to EPA. Analytical data generated pursuant to this Order shall not be claimed as confidential. Confidentiality claims shall be submitted to EPA in accordance with the procedures outlined in 40 CFR § 2.203(b), and must include a written statement explaining how the information claimed to be confidential meets the criteria for use in confidentiality determinations found in 40 CFR § 2.208. If EPA approves the claim, the Agency will afford the information confidential status, as specified in Subpart B of 40 CFR Part 2. Respondent shall have the opportunity to review photographs and videotapes collected by EPA during inspections in order to have the opportunity to claim confidentiality. Respondent has five (5) business days after receipt of said photographs and/or videotapes to assert a claim of confidentiality following the provisions of this paragraph. If Respondent disagrees with a confidentiality determination by EPA, Respondent shall follow the procedures in 40 CFR Part 2. Information determined not confidential may be made available to the public without further notice to Respondent. If Respondent makes no claim of confidentiality for information submitted pursuant to this Order, EPA will make the information available to the public without further notice to Respondent.
2. Any reports, plans, specifications, schedules and attachments required by this Order shall be incorporated into this Order upon approval by EPA. Any noncompliance with such EPA approved plans, reports, specifications, schedules, and attachments shall be construed as a violation of the terms of this Order subject to stipulated penalties outlined in Section XVII of this Order. Oral advice or approvals given by EPA representatives will not relieve Respondent of its obligation to obtain any formal, written approvals required by this Order.

## X. PUBLIC COMMENT AND PARTICIPATION

1. Upon approval by EPA of a CMS Final Report, EPA shall make both the RFI Final Report and the CMS Final Report and a summary of EPA's proposed corrective measure(s) and EPA's justification for proposing selection of the corrective measure(s) available to the public for review and comment for a period of at least thirty (30) calendar days.
2. Following the public review and comment period, EPA shall notify Respondent of the corrective measure(s) selected by EPA. If the corrective measure(s) recommended in the CMS Final Report is (are) not the corrective measure(s) selected by EPA after consideration of public comments, EPA shall inform Respondent in writing of the reasons for such decision, and the Respondent shall modify the RFI/CMS based upon public comment if directed to do so by the EPA. The selection and supporting documentation shall be attached to and incorporated as part of this Order. The implementation of the selected corrective measure(s) shall be in accordance with Section VI.4 of this Order.
3. The Administrative Record supporting the selection of the corrective measure(s) will be available for public review at EPA Region 6 in Dallas, Texas during normal business hours.

## XI. FACILITY ACCESS AND RECORD RETENTION

1. EPA, and/or any EPA authorized-representative(s) are authorized, allowed, and permitted pursuant to Section 3007(a) of RCRA, 42 U.S.C. § 6927(a) to enter and freely move about all property at the

facility at all reasonable times for the purposes of enforcing the requirements of this Order, including:

- a) interviewing site personnel and contractors; inspecting non-privileged records, operating logs, and contracts related to this Order;
  - b) reviewing the progress of Respondent in carrying out the terms of this Order;
  - c) conducting such tests as EPA deems necessary;
  - d) using a camera, video camcorder, sound recorder, or other documentary type equipment; and
  - e) verifying the reports and data submitted to EPA by the Respondent.
2. In the event of inspections to be performed in the oversight of this Order by non-EPA personnel, EPA will provide advance notice to Respondent of the identity of the EPA-authorized representatives.
  3. The Respondent shall permit EPA to inspect and copy all non-privileged documents, and other writings, including all sampling and monitoring data, in any way pertaining to work undertaken pursuant to this Order. All parties with access to the facility pursuant to this paragraph shall comply with applicable health and safety requirements found in 29 CFR Part 1910. Upon gaining entrance to the facility, EPA and/or its designated representatives, in non-emergency situations, will undergo a brief orientation meeting on the facility safety rules. EPA will follow Respondent's health and safety procedures to the greatest extent possible.
  4. To the extent Respondent is required to gain access to areas adjacent to the facility in order to comply with this Order and where those areas are presently owned by parties other than those bound by this Order, the Respondent shall obtain, or will use its best efforts to obtain, site access agreements from the present owners no later than thirty (30) calendar days after EPA approval of the specific workplan which requires access to that property. Best efforts shall include, at a minimum, a certified letter from Respondent to owners requesting access agreements to permit Respondent, EPA, and their authorized representatives to access such property, but not be limited to, requiring Respondent to pay reasonable rental costs and compensation for losses sustained by the owner or occupant of the property. Access agreements shall provide reasonable access to Respondent, its Contractor(s), the United States, EPA, the State, and its representatives, including contractors. In the event that site access agreements are not obtained within thirty (30) calendar days, the Respondent shall notify EPA immediately regarding both the lack of, and efforts to obtain, such agreements.
  5. Nothing in this subsection is intended to limit, affect or otherwise constrain EPA's rights of access to property pursuant to applicable law.
  6. In addition, all data, information, and records created as a requirement of this Order shall be made available to EPA upon request. All employees of Respondent and all persons, including contractors who engage in activity under this Order, shall be available to and shall cooperate with the EPA.
  7. Respondent shall preserve all data, documents, records and information required in the implementation and completion of this Order for six (6) years after termination of the Order. At the end of this six year period and before any such document or information is destroyed, Respondent shall notify EPA that such non-privileged documents and information are available to

EPA for inspection, and upon request, shall provide the original or copies of such documents and information to EPA. In addition, Respondent shall provide documents and information retained under this section at any time before expiration of the six year period at the written request of EPA.

## XII. FINANCIAL ASSURANCE

1. Within (10) business days of the effective date of this Order, Respondent shall demonstrate its ability to complete the Work and to pay all claims that arise from the performance of the Work through the submission of financial information sufficient to demonstrate to Plaintiff's satisfaction that Respondent has adequate net assets to complete the Work to make it unnecessary to require additional financial assurances. Should such submittal demonstrate that Respondent's total shareholder equity is not less than \$12,500,000.00, such submittal shall be deemed sufficient to demonstrate to Plaintiff's satisfaction that Respondent has adequate net assets to complete the Work to make it unnecessary to require additional assurances. Respondent shall thereafter submit independent audited financial statements containing such information annually on September 30. In the event that Shareholder's equity is less than \$12,500,000.00, Respondent shall, within thirty (30) days of receipt of notice of Plaintiff's determination, obtain and present to EPA for approval one of the following: (a) performance bond; (b) irrevocable standby letter of credit or (c) guarantee by a third party in an amount not to exceed the estimated cost of the remaining Work. Respondent's inability to demonstrate financial ability to complete the Work shall not excuse non-performance of the terms and conditions of this Order or any term thereof.
2. Within thirty (30) days of Respondent's receipt of a notice from EPA that Respondent's financial assurance measures are inadequate, Respondent shall establish an irrevocable standby letter of credit or shall otherwise provide (per 40 CFR § 265.142) additional financial assurances according to the terms provided in said notice. Such additional financial assurance measures shall be available to EPA to perform such terms or conditions established pursuant to the Order, provided that prior to drawing upon any such assurance measure, EPA shall notify the Respondent in writing of its alleged failure to perform the requirements of this Order and provide Respondent with a reasonable time period of not less than fifteen (15) calendar days within which to remedy the alleged nonperformance.
3. This Order in no way negates Respondent's obligation to establish and/or maintain financial assurances for closure and post-closure care under 40 CFR §§ 265.143 and 265.145.

## XIII. DISPUTE RESOLUTION

1. The Parties to this Order shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution can not be achieved informally within ten (10) business days, the procedures of this section shall be implemented to resolve a dispute.
2. Except as provided in paragraph 4 of this Section, if Respondent disagrees, in whole or in part, with any EPA disapproval or modification or other decision or directive made by EPA pursuant to this Order, Respondent shall notify EPA in writing of its objections and the basis therefore within fourteen (14) calendar days of receipt of EPA's disapproval, decision, or directive. Said notice shall set forth the specific points of the dispute, the position Respondent is maintaining should be adopted as consistent with the requirements of this Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. Within ten (10) business days of EPA's receipt of such written notice, EPA shall provide to Respondent its decision on the pending dispute. The time periods established in this paragraph may be extended by mutual agreement of the parties in writing.



3. EPA's decision pursuant to paragraph two (2) of this Section shall be binding upon both parties to this Order, unless Respondent within ten (10) calendar days notifies EPA in writing of its continued objection(s) and requests the Hazardous Waste Management Division Director for Region 6, or his designee, to convene an informal conference for the purpose of discussing Respondent's objections and the reasons for EPA's determination. The Hazardous Waste Management Division Director shall issue a written decision within ten (10) calendar days from the date of the informal conference. The failure to invoke these Dispute Resolution procedures shall constitute a waiver of the right to contest a specific requirement of this Order. The time periods established in this paragraph may be extended by mutual agreement of the parties in writing.
4. If Respondent disputes an EPA determination requiring Respondent to perform additional work, as per Section VI.5 of this Order, Respondent shall have thirty (30) days from receipt of EPA's written determination to notify EPA in writing of its objections and may request the director to request an informal conference for the purposes of discussing Respondent's objections and the reasons for EPA's determinations. After this informal conference, the Director shall state, in writing, his decision regarding the issues in dispute. Such decision shall be implemented immediately by Respondent. If Respondent does not request an informal conference to discuss its objections to EPA's request for additional work, Respondent must perform the additional work requirements as directed by EPA.
5. In any dispute, Respondent shall have the burden of proving that EPA's position is incorrect.
6. The existence of a dispute as defined herein, and EPA's consideration of such matters as placed into dispute, shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Order, except to the extent that the Respondent's position is upheld in the dispute resolution process or any subsequent judicial proceedings.
7. During the pendency of the dispute resolution process, stipulated penalties, with respect to the disputed matter, and interest shall accrue, but payment of stipulated penalties shall be stayed pending resolution of the dispute. Stipulated penalties shall be calculated for each day of noncompliance with this Order beginning with the first day of noncompliance and including the period which the Dispute Resolution procedures were ongoing. If, however, the dispute is ultimately resolved in Respondent's favor, no stipulated penalties on the disputed issue or any directly related issue shall be due.
8. Unless otherwise specifically set forth herein, the failure to provide expressly for dispute resolution in any section of this Order is not intended and shall not bar Respondent from invoking this Section as to any dispute under this Order.

#### XIV. REIMBURSEMENT OF OVERSIGHT COSTS

Oversight costs are those costs incurred by the United States for EPA salary, travel, equipment, analysis, and contractor costs related to the facility. Respondent agrees to pay EPA for oversight costs associated with the implementation and execution of this Order, unless otherwise prohibited by law, in the following manner:

1. At the end of each six (6) month period beginning from the effective date of this Order, EPA will submit to Respondent a tabulation and an explanation of all oversight costs incurred with respect to this Order by EPA during the previous six (6) month period.
2. Payments to EPA for all EPA oversight costs, up to a maximum of \$75,000 per 12 month period, shall be made by money order, certified check, or cashier's check payable to the Treasurer of the United States within thirty (30) days of receipt of EPA's tabulation and shall be submitted to the following address:

Regional Hearing Clerk (6C)  
U.S. EPA, Region 6  
P.O. Box 360582M  
Pittsburgh, PA 15251

3. Document No. VI-303-H should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following:

Section Chief  
Technical Section, (6H-CX)  
RCRA Enforcement Branch  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

Section Chief, (6C-WA)  
Office of Regional Counsel  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

4. If EPA does not receive payment within thirty (30) days of the Respondent's receipt of the tabulation of oversight costs, interest will accrue on the amount due from the due date at the current annual rate prescribed and published by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717, in the Federal Register and the Treasury Fiscal Requirements Annual Bulletin per annum through the date of payment.
5. If the payment is overdue, EPA will also impose a late-payment handling charge of \$15.00, with an additional delinquent notice charge of \$15.00 for each subsequent 30-day period over which an unpaid balance remains. A penalty of 6% per annum on any unpaid principal amount not paid within ninety (90) or more days of Respondent's receipt of the tabulation of oversight costs.

#### XV. RESERVATION OF RIGHTS

1. EPA expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation the assessment of penalties under Section 3008(h)(2) of RCRA, and 42 U.S.C. § 6928(h)(2). The Order shall not be construed as a waiver or limitation of any rights, remedies, powers, and/or authorities which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law enforcement authority of the United States.
2. This Order shall not be construed to effect or limit the rights or responsibilities of any Federal, State, a local agency or authority pursuant to any other statutory provision, nor shall the entry of this Order and Respondent's consent to comply herewith, limit or otherwise preclude the EPA from taking additional enforcement actions pursuant to RCRA § 3008(h), 42 U.S.C. § 6928(h), CERCLA § 106 42 U.S.C. § 9606, or any other available legal authority, should the EPA determine that such actions are warranted. Nor shall this Order be construed to affect or limit in any way the obligation of the Respondent to comply with all Federal, State and local laws and regulations governing the activities required by this Order. This Order shall not be construed as a ruling or determination of any issue related to any Federal, State or local permit whether required in order to implement this Order or required in order to continue or alter operations of the facility (including but not limited

to construction, operation or closure permits required under RCRA) and the Respondent shall remain subject to all such permitting requirements. Nothing in this Order is intended to release or waive any claim, cause of action, demand or defense in law or equity that any party to this Agreement may have against any person(s) or entity not a party to this Agreement.

3. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Order and to request that Respondent perform tasks in addition to those stated in the Corrective Action Plan portion of this Order.
4. Notwithstanding any other provision of this Order, the Respondent shall remain responsible for obtaining any Federal, State, or local permit for any activity at the facility including those necessary for the performance of the work and for the operation or closure of the facility.

#### XVI. SUBSEQUENT MODIFICATION OF THE FINAL ORDER

1. This Order may be amended by mutual agreement of EPA and the Respondent. Any such amendments shall be in writing, shall be first signed by the Respondent, and shall be effective and incorporated into the Order on the date that such amendments are signed by EPA. In the event that a mutual agreement of the parties to modify this Order is not reached, such disagreement shall be the subject to the dispute resolution procedures in Section XIII of this Order.
2. Any reports, plans, specifications, schedules, and attachments required by this Order are, upon written approval by EPA, incorporated into this Order, unless expressly stated otherwise in EPA's approval notice. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, and attachments shall be considered a violation of this Order and shall subject Respondent to the stipulated penalty provisions included in Section XVII of this Order.
3. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other written documents submitted by Respondent will be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Order.

#### XVII. STIPULATED PENALTIES

1. Unless there has been a written modification of a schedule by EPA, or the force majeure provisions of this Order are invoked, in the event Respondent fails to meet any scheduled requirement set forth in this Order, Respondent agrees to pay a Stipulated Penalty as follows:

<u>Period of Failure to Comply</u>	<u>Penalty Per Violation Per Day</u>
1st day through 30th day	\$ 1,000.00
31th day through 90th day	\$ 2,500.00
91th day and beyond	\$10,000.00

2. Stipulated penalties under this Section shall be paid within thirty (30) calendar days after Respondent's receipt of written notification of noncompliance from EPA. Such stipulated penalties shall be paid by money order, certified check, or cashier's check made payable to the "Treasurer of the United States" and mailed to:

Regional Hearing Clerk (6C)  
U.S. EPA, Region 6  
P.O. Box 360582M  
Pittsburgh, PA, 15251

3. Document No. VI-303-H should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following:

Section Chief  
Technical Section, (6H-CX)  
RCRA Enforcement Branch  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

Section Chief, (6C-WA)  
Office of Regional Counsel  
U.S. EPA, Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

4. Respondent may dispute EPA's right to the stated amount of penalties by invoking the dispute resolution procedures under Section XIII of this Order. If Respondent does not prevail upon resolution of the dispute, EPA shall collect all penalties which accrued prior to and during the period of dispute. If Respondent prevails upon resolution of the dispute, no penalties shall be payable.
5. If EPA does not receive payment within thirty (30) days of the due date, interest will accrue on the amount due from the due date at the current annual rate prescribed and published by the Secretary of the Treasury, pursuant to 31 U.S.C. § 3717, in the Federal Register and the Treasury Fiscal Requirements Annual Bulletin per annum through the date of payment.
6. If the payment is overdue, EPA will also impose a late-payment handling charge of \$15.00, with an additional delinquent notice charge of \$15.00 for each subsequent 30-day period over which an unpaid balance remains. A penalty of 6% per annum on any unpaid penalty amount not paid within ninety (90) or more days of Respondent's receipt of the notification of non-compliance.
7. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Order.

#### XVIII. EPA APPROVALS/DISAPPROVALS

All decisions, determinations and approvals required to be made by EPA under this Order must be in writing signed by the Project Manager. If the EPA does not approve any plan, report or other item required to be submitted to EPA for its approval pursuant to this Order, the Respondent shall address any deficiencies as directed by the EPA and resubmit the plan, report or other item within the time period specified in this Order for EPA's approval. Wherever in this Order approval is required, approval from EPA's Project Manager shall suffice for purposes of securing final approval.

#### XIX. PARTICIPATION IN COMMUNITY RELATIONS ACTIVITIES

Respondent shall be given notice of and shall participate in public meetings, as appropriate, which may be held or sponsored by EPA to explain activities at or concerning the facility, including the findings of the RFI and CMS. In addition, Respondent shall provide all support reasonably requested of them by EPA in carrying out the EPA approved Community Relations Plan. Before issuing a press release to the news media, with reference to any of the work required by this Order, both Parties shall attempt to provide advance notice to the appropriate Project Manager.

#### XX. TERMINATION AND SATISFACTION

The provisions of this Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order, including any additional tasks determined by EPA to be required pursuant to this Order, but not including the record preservation provision of paragraph XI., or other such continuing obligations, have been satisfactorily completed. EPA's determination under this section shall not be unreasonably withheld and should not be made later than ninety (90) days following any petition for termination submitted by Respondent. The provisions of this Order shall be deemed superseded if both parties agree that the requirements of the Order have been incorporated into a RCRA Permit or other Order in accordance Section XXVII of this Order.

#### XXI. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify, save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or their agents, independent contractors, receivers, trustees, and assignees in carrying out activities required by this Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts.

#### XXII. QUALITY ASSURANCE

Throughout all sample collections and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, which shall be part of proposed and approved plans. In addition, Respondent shall:

1. Follow all relevant EPA guidance for sampling and analysis unless determined by EPA not to be applicable;
2. Notify EPA and NMED not less than seven (7) days in advance of any field sampling or installation activity;
3. Inform the EPA Project Manager in advance which laboratories will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis;
4. Ensure that laboratories used by Respondent for analyses perform such analyses according to EPA methods (SW-846, 2nd Edition or as superseded) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all protocols to be used for analyses to EPA for approval no later than thirty (30) days prior to the commencement of analyses and shall not implement such protocols until receipt of EPA approval; and

5. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analysis of a reasonable number of known samples provided by EPA to demonstrate the quality of the analytical data.

### XXIII. FORCE MAJEURE

1. Respondent shall perform all the requirements of this Order according to the time limits set unless this performance is prevented or delayed by events which constitute a force majeure.
2. For the purposes of this Order, a force majeure is defined as any event arising from causes beyond the control of Respondent including its consultants and contractors, which could not have been prevented or mitigated through the exercise of due diligence, that delays or prevents the performance of any obligation under this Order. Such events do not include increased costs of performance, economic hardship, changed economic circumstances, normal precipitation events, or failure to submit timely and complete applications for Federal, State, or local permits. Any failure to obtain necessary governmental permits and approvals necessary to accomplish work in this Order shall be treated in the same manner as force majeure events pursuant to this Order, provided that Respondent has submitted timely and complete applications to obtain such permits and approvals and has cooperated with the issuing Agency and urged the issuance of the permit or the granting of approval.
3. Respondent has the burden of proving that any delay is or will be caused by events reasonably beyond its control.
4. In the event of a force majeure, the time for performance of the activity delayed by the force majeure shall be extended for the period of the delay attributable to the force majeure plus reasonable additional time for resumption of activities. The time for performance of any activity dependent on the delayed activity shall be similarly extended, except to the extent that the dependent activity can be implemented in a shorter time. EPA shall determine whether subsequent requirements are to be delayed and the time period granted for any delay. Respondent shall adopt all reasonable measure to avoid or minimize any delay caused by a force majeure.
5. In the event of a force majeure, Respondent shall immediately notify EPA by telephone within two (2) working days after Respondent becomes aware of the event and shall within seven (7) days of the oral notification, notify EPA in writing of the cause and anticipated length of the delay. The notification shall also state the measures taken and/or to be taken to prevent or minimize the delay, and the time table by which Respondent intends to implement the delayed activity. Failure of Respondent to comply with the force majeure notice requirements will be deemed a forfeiture of its right to force majeure.

### XXIV. NO FINAL AGENCY ACTION

Notwithstanding any other provisions of this Order, no action or decision by EPA, including without limitation decisions of the Director of the Hazardous Waste Management Division or the Regional Administrator, pursuant to this Order shall constitute final agency action giving rise to any rights to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with the mandate(s) of this Order.

## XXV. PENALTY PROVISIONS

Failure or refusal to carry out the terms of this Order in a manner deemed satisfactory to EPA subjects Respondent to a civil penalty in an amount not to exceed \$25,000 for each day of non-compliance with this Order in accordance with Section 3008(h) of RCRA, 42 U.S.C. § 6928(h).

## XXVI. STATEMENT OF SEVERABILITY

If any provision or authority of this Order, or the application of this Order to any party or circumstances, is held by any judicial or administrative authority to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Order shall not be effected thereby.

## XXVII. SURVIVABILITY/PERMIT INTEGRATION

1. Subsequent to the issuance of this Order, a RCRA permit may be issued to the facility incorporating the requirements of this Order by reference. The parties to the Order agree that all approved corrective action investigations associated with this Order shall satisfy, and be incorporated into, any subsequent RCRA permit terms and conditions imposed at the facility and Respondent will not be required to re-perform or expand upon such activities except as may be necessitated by changes in law and/or regulations, discovery of conditions not previously identified, or work insufficiently performed by Respondent or its contractors.
2. Any requirements of this Order shall not terminate upon the issuance of a RCRA permit unless (i) all Order requirements of the Corrective Action Plan (Attachment II) are expressly replaced by the requirements in the permit or (ii) all provisions of this Order have been fully complied with to EPA's Satisfaction as per Section XX of this Order, or any combination of (i) and (ii).

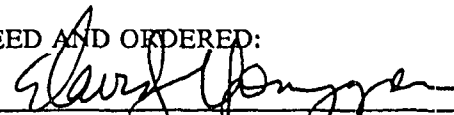
## XXVIII. EFFECTIVE DATE

The effective date of this Order shall be the date on which it is signed by the EPA and EPA shall notify Respondent by telephone on such date that this Order has been signed. Because this Order was entered with the consent of both parties, Respondent waives its right to request a public hearing pursuant to Section 3008(b) of RCRA, 42 U.S.C. § 6928(b).

IT IS SO AGREED AND ORDERED:

Date: 12-21-92

By:

  
(Facility Representative and Title)  
David J. Younggren, Sr. Vice President

Date: 12-31-92

By:

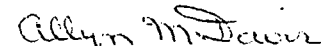
  
Allyn M. Davis, Director  
Hazardous Waste Management Division  
U.S. Environmental Protection Agency

Table IV  
Concentrations in ppb

Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Barium	210	39			1540	39
Chromium	116	1110				
Lead					252	
Mercury	0.6					
# Unknown ABNs	0	3	2	13	15	1
bis-(2-Ethylhexal) phthalate		38				
Phenol					46	
2-Methylphenol					81	
4-Methylphenol					43	
2,4-Dimethylphenol					16	
Napthalene					91	
2-Methyl napthalene					33	
# Unknown VOA				10	10	
2-butanone						
Ethyl Benzene				1660	352	



Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Benzene				8200	23800	
Toluene				8040	8820	
O-xylene				1800	1970	
m/p-xylene				12100	10900	

Table V  
Concentrations in ppb

Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Barium	210	39			1540	39
Chromium	116	1110				
Lead					252	
Mercury	0.6					
# Unknown ABNs	0	3	2	13	15	1
bis-(2-Ethylhexal) phthalate		38				
Phenol					46	
2-Methylphenol					81	
4-Methylphenol					43	
2,4-Dimethylphenol					16	
Napthalene					91	
2-Methyl napthalene					33	
# Unknown VOA				10	10	
2-butanone						
Ethyl Benzene				1660	352	
Benzene				8200	23800	

April 8, 1992 Draft Order

Compound	MW-13	MW-8	MW-7	MW-9 Free Phase	MW-9	MW-1
Arsenic					23.2	
Toluene				8040	8820	
O-xylene				1800	1970	
m/p-xylene				12100	10900	

April 8, 1992 Draft Order



Bloomfield Refining  
Company

A Gary Energy Corporation Subsidiary

September 14, 1987

Mr. William H. Taylor, Jr.  
Chief, Enforcement Section (SA-HE)  
U. S. Environmental Protection Agency  
Region VI  
1201 Elm Street  
Dallas, Texas 75270

RE: Administrative Order (AO)  
Docket No. RCRA-3013-00-185

Dear Mr. Taylor:

Enclosed are the sampling results obtained from the San Juan River during a low-flow condition on July 24, 1987. The samples were taken as stipulated in the approved work plan. We trust that the attached data submitted as an Amendment to the Final Report fulfills the requirements of the subject Administrative Order.

Again, the data submitted herewith was done in fulfillment of a unilaterally issued Administrative Order. It should not be construed, for any purpose, as an admission of liability under any governmental statute or rule or an admission of any question of law. Furthermore, given the complexity of the investigation, Bloomfield Refining Company reserves the right to further interpret or modify any statements or data contained here, if appropriate, in the future.

Sincerely,

Richard Traylor  
Refinery Manager

RT/jm

Attachment

cc: Mr. Jack Ellvinger  
New Mexico Environmental Improvement Division  
Mr. David G. Boyer  
New Mexico Oil Conservation Division

SAN JUAN RIVER  
SUMMARY OF RESULTS  
(mg/L)

7-24-87 CIA  
DAM RELEASE: 1070CES

		NOMINAL DETECTION LIMIT	HWY 44 BRIDGE NEAR SIDE	HWY 44 BRIDGE MIDDLE	HWY 44 BRIDGE FAR SIDE	UPSTREAM
1						
2	CN	0.005	0.066	0.038	0.053	0.044
3	Phenols	0.001	0.018	<0.001	0.013	0.018
4	TDS	1	238	228	248	232
5	Cl	1.0	4.96	4.96	4.96	4.46
6	SO <sub>4</sub>	1.0	64.5	75.0	64.9	62.4
7	TDC	1	5	5	6	5
8	As	0.05	<0.05	<0.05	<0.05	<0.05
9	Ba	1.0	<1.0	<1.0	<1.0	<1.0
10	Cd	0.01	<0.01	<0.01	<0.01	<0.01
11	Cr	0.05	<0.05	<0.05	<0.05	<0.05
12	Pb	0.05	0.061	0.054	<0.05	<0.05
13	Hg	0.002	<0.002	<0.002	<0.002	<0.002
14	Se	0.01	<0.01	<0.01	<0.01	<0.01
15	Ag	0.05	<0.05	<0.05	<0.05	<0.05
16						
17	Volatiles	0.001	ND	ND	ND	ND
18						
19	Acid Compounds					
20	& Base Neutrals	0.01	ND	ND	ND	ND
21						
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VI  
1201 ELM STREET  
DALLAS, TEXAS 75270

April 1, 1985

Mr. David G. Boyer  
Hydrogeologist  
P.O. Box 2088  
Land Office Building  
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Enclosed are copies of the \$3013 Administrative Order issued to Bloomfield Refining Company, Inc., Gary Energy Corporation, and the \$3008 Compliance Order issued to Plateau, Inc., Suburban Propane Gas Corporation, Bloomfield Refining Company, Inc., Gary Energy Corporation, as you requested from Bill Taylor, Chief, Enforcement Section, last week.

If I can assist you further, please call me at (214) 767-9883.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ann Banks".

Ann Banks  
Case Development Specialist

Enclosures



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VI  
1201 ELM STREET  
DALLAS, TEXAS 75270

*Copy to Laure, Penn*

*copied for PMS*

July 2, 1985

Ms. Denise Fort, Director  
Environmental Improvement Division  
New Mexico Health and Environment Department  
P.O. Box 968  
Santa Fe, New Mexico 87504

Dear Ms. Fort:

Enclosed is a current update on the status of each enforcement action EPA, Region 6 has ongoing in New Mexico. This report will be updated at the beginning of each month so as to keep you abreast of the progress of the enforcement cases.

Should you have any questions, please call me or have your staff contact William H. Taylor, Chief, Enforcement Section, Hazardous Materials Branch, at (214) 767-9730. I hope to see you soon.

Sincerely yours,

*Bill Hathaway*

William B. Hathaway, Acting Director  
Air and Waste Management Division

Enclosure

#### 4. Holloman Air Force Base

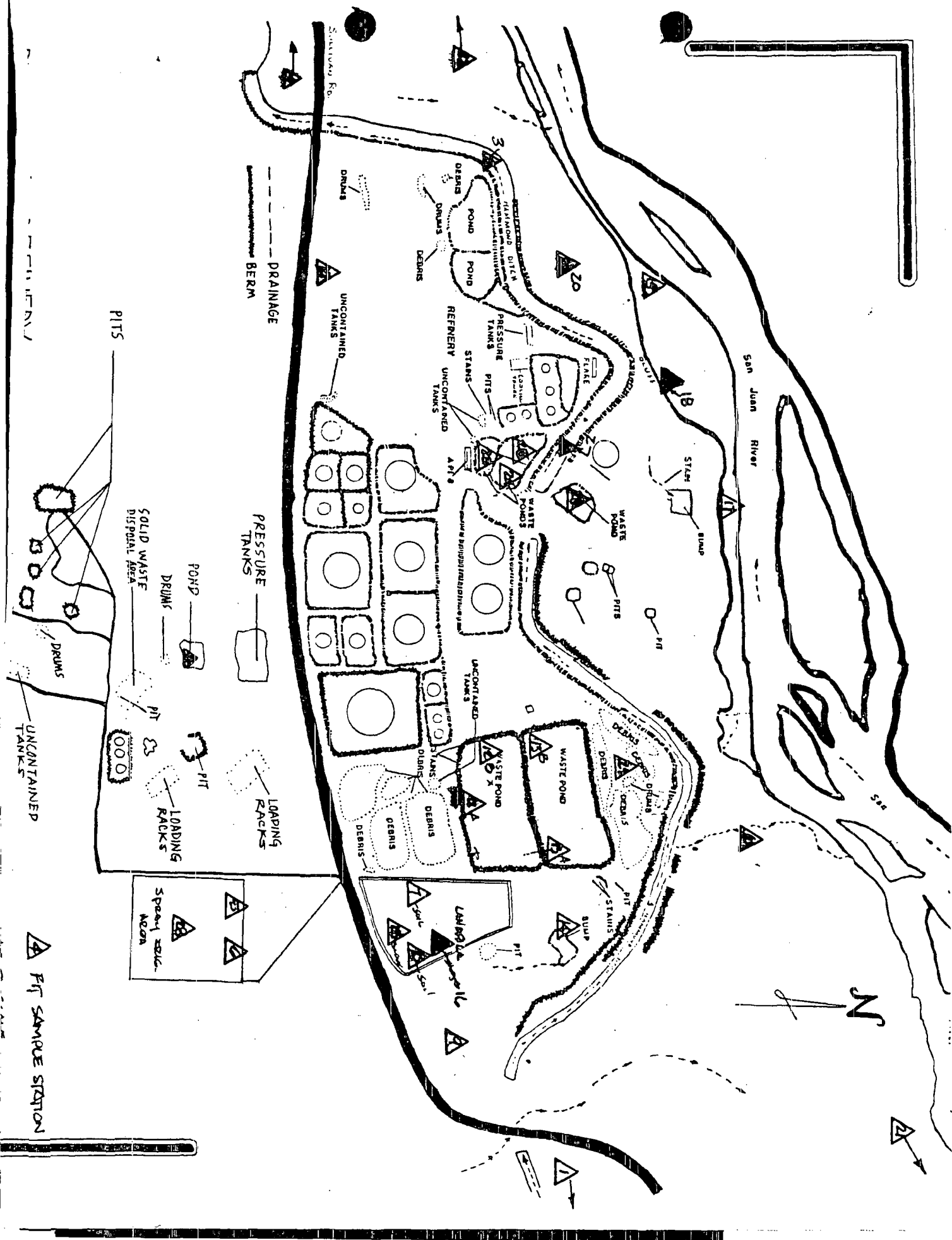
On September 25-26, 1984, a meeting was held between EPA and NMEID, to discuss enforcement actions at Holloman Air Force Base (HAFB). It was decided to give HAFB until November 15, 1984, to survey all the hazardous waste generation points and to submit a sampling protocol to EPA for approval. On November 5, 1984, HAFB submitted to EPA the sampling protocol for the sewer ponds. EPA notified the state that EPA would be proceeding with the lead enforcement action. A proposed draft Compliance Order has been prepared and the facility was given the opportunity to meet with EPA and discuss the facts. A "Facts" meeting was held April 23, 1985. The facility has corrected all the problems except the sewage lagoon but they are working on that area. The only new area of consideration that was brought out in the meeting was that the waste oil in the container storage area might not be hazardous waste. The results of the "Facts" meeting is currently being reviewed before issuing the Compliance Order to the facility.

#### 5. Plateau, Inc., NMD029416416 (RCRA Docket No. VI-501-H)

When the inspection report was submitted for review, the lab data was omitted on the landfill area and PCB content. Samples were re-run. Results of the sampling supported the issue that the facility is a treater, storer or disposer of hazardous waste. The facility was bought out by Gary Williams Energy on October 31, 1984. A draft §3008 Order was submitted to the state for review in mid-February 1985. A draft §3013 Order to determine the nature of the hydrocarbon leaks from the facility into the adjacent river was sent to Respondent on September 26, 1984. An informal meeting was held October 15, 1984, with Geary representatives to discuss elements of a groundwater study. EPA met with groundwater consultants for Geary Energy on December 27, 1984, to discuss specific groundwater problems and corrective actions necessary, as required by the §3013 Order. A draft §3008 Compliance Order was completed, reviewed by the Office of Regional Counsel and submitted to the State for comment. A fact finding meeting was held on March 19, 1985. The Compliance Order was issued to the facility on March 27, 1985. Answers to the Compliance Order were filed on May 1, 1985, by Bloomfield Refining and Gary Energy and on May 2, 1985, by Plateau and SPG. A settlement conference was held on May 24, 1985 with Plateau. The attorneys conferred by phone on June 4, 1985, to discuss the issues in the case. A settlement conference was held with representatives from Bloomfield Refinery and Gary Energy on June 17, 1985. A status letter was mailed to the Administrative Law Judge on June 19, 1985.

ENFORCEMENT SENSITIVE





*Ma...*

ASSURANCE OF DISCONTINUANCE

THIS ASSURANCE OF DISCONTINUANCE dated the 8th day of May, 1984, is made between the New Mexico Water Quality Control Commission (the "Commission") and Plateau, Inc. ("Plateau") a New Mexico Corporation.

WHEREAS, Plateau, Inc. owns and operates a refinery located at Bloomfield, New Mexico;

WHEREAS, the Director of the Oil Conservation Division (OCD) approved a discharge plan for discharges from the refinery on June 5, 1978;

WHEREAS, that approved discharge plan expired on June 5, 1983;

WHEREAS, since approval of the original discharge plan the discharge of effluent at the refinery to a land application area of approximately 10 acres on the refinery premises has become necessary and desirable for efficient operation of the refinery;

WHEREAS, Plateau submitted an updated Discharge Plan to OCD, including the land application of effluent, on June 2, 1982;

WHEREAS, Plateau has responded in a diligent and timely manner to all OCD requests for additional information in connection with the Updated Discharge Plan and;

WHEREAS, OCD has determined that the discharge to the land application area is a "new discharge" for the purposes of WQCC Reg. 3-106;

WHEREAS, the 120 days allowed in WQCC Reg. 3-106 for new discharges to discharge without an approved discharge plan have been exhausted;

WHEREAS, discharges at the refinery, other than the land application discharge have continued since June 5, 1983 pursuant to permission granted by the OCD director under WQCC Reg. 3-106;

WHEREAS, Plateau has not discharged to the land application area since October 14, 1983;

WHEREAS, if Plateau is not allowed to discharge to the land application area beginning on or about May 15, 1984, effluent storage and operational difficulties at the refinery are likely to occur and;

WHEREAS, the Commission and Plateau deem it appropriate to enter into this Assurance of Discontinuance to allow Plateau to discharge to the land application area while the discharge plan review process is completed.

Therefore it is agreed as follows:

1. MUTUAL COOPERATION: Plateau and the OCD shall mutually cooperate in accomplishing on a timely basis the completion of the discharge plan review process. Direct communication among Plateau and OCD personnel is encouraged. Plateau will continue to provide information requested by OCD pursuant to the Commission's ground water regulations in a diligent and timely manner.
2. ENFORCEMENT: The Commission shall not undertake enforcement against Plateau for discharges to the land application area, as described in the Updated Discharge Plan, occurring during the pendency of this Assurance without first giving Plateau 15 days prior written notice by the OCD Director that Plateau is in violation of the terms of this Assurance. This paragraph shall not preclude appropriate action by the Director or the Commission under section 74-6-11 N.M.S.A. 1978. Failure by Plateau to comply with any condition of this Assurance of Discontinuance shall be actionable as a violation of the Water Quality Act and of this Assurance under section 74-6-5 and 10 N.M.S.A. 1978, as applicable.

Nothing in this Assurance of Discontinuance shall relieve Plateau from the responsibility for complying with all the provisions of the Water Quality Act, the regulations promulgated thereunder or any other provision of law except as otherwise specifically provided herein.

3. NO ADMISSION: The terms, execution and any conduct in accordance herewith shall not constitute an admission or waiver of any kind by Plateau relating to matters under

4. TERM: This assurance shall remain in effect until July 1, 1984 or the date of the final approval or disapproval determination on Plateau's Updated Discharge Plan, which ever comes first; provided that the Chairman of the Commission is hereby authorized to revoke acceptance of this assurance upon receipt of information that indicates the discharge creates an unacceptable risk to the quality of water.

*Bud S. Gault*  
 PLATEAU INC.  
 APPROVED:  
 WATER QUALITY CONTROL COMMISSION  
 By *[Signature]*  
 CHAIRMAN

Linda S. Romero  
NOTARY PUBLIC

3

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION VI  
DALLAS, TEXAS

IN THE MATTER OF:

PLATEAU, INC.  
SUBURBAN PROPANE GAS CORPORATION  
BLOOMFIELD REFINING COMPANY, INC.  
GARY ENERGY CORPORATION  
Bloomfield Refinery  
Bloomfield, New Mexico  
EPA I.D. Number NMD089416416

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DOCKET NUMBER

RCRA VI-501-H

COMPLIANCE ORDER AND NOTICE  
OF OPPORTUNITY FOR HEARING

This COMPLIANCE ORDER AND NOTICE OF OPPORTUNITY FOR HEARING, hereinafter referred to as Order, is issued pursuant to Section 3008 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, (as amended), 42 U.S.C. §6928, (hereinafter referred to as RCRA).

Pursuant to Section 3008(a)(2) of RCRA, 42 U.S.C. §6928(a)(2), EPA may, after providing notice to the State, enforce the requirements of Subtitle C of RCRA in a State which has received interim authorization to carry out a hazardous waste management program under Section 3006(c) of RCRA, 42 U.S.C. §6926(c). The State of New Mexico was authorized to carry out its hazardous waste management program in lieu of the federal program. On September 30, 1983, the State of New Mexico received interim authorization to operate Phase I and Phase II A and B of the federal hazardous waste management program. On January 11, 1985, the State of New Mexico received final authorization to operate the federal hazardous waste management program. Therefore, EPA sets forth violations in accordance with applicable laws and regulations established under both the EPA and the New Mexico hazardous waste management



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI

1201 ELM STREET  
DALLAS, TEXAS 75270

MAR 29 1985

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. Kevin McIver  
Secretary and Counsel  
Plateau, Inc.  
P.O. Box 26251  
4520 Montgomery Boulevard, N.E.  
Albuquerque, New Mexico 87109

Mr. Mark J. Anton  
President  
Suburban Propane Gas Corporation  
334 Madison Avenue  
Morristown, New Jersey 07960

Mr. Ronald W. Williams  
President  
Bloomfield Refining Company, Inc.  
115 Inverness Drive, East  
Englewood, Colorado 80112-5116

Mr. Samuel Gary  
Chief Executive Officer  
Gary Energy Corporation  
4 Inverness Court, East  
Englewood, Colorado 80112-5592

Re: Compliance Order and Notice of Opportunity for Hearing  
Docket No. RCRA VI-501-H  
EPA I.D. No. NMD089416416

Gentlemen:

Enclosed herein is a Compliance Order and Notice of Opportunity for Hearing (hereinafter referred to as "Order") filed against Plateau Inc., Suburban Propane Gas Corporation, Bloomfield Refining Company, Inc., and Gary Energy Corporation, pursuant to the Resource Conservation and Recovery Act (RCRA), as amended. It is alleged in the Order that Plateau Inc., Suburban Propane Gas Corporation, Bloomfield Refining Company, Inc., and Gary Energy Corporation, failed to comply with Subtitle C of RCRA and regulations promulgated under authority of 42 U.S.C. §6901 et seq. These violations are specifically set out in the Order.

We call your attention to that part of the Order entitled "Opportunity to Request a Hearing." You are required to respond to this Order within thirty (30) days of your receipt of this Compliance Order or a Default Judgment may be entered and the proposed civil penalty may be assessed without further proceedings. In addition, you could be subject to penalties of up to TWENTY-FIVE THOUSAND DOLLARS (\$25,000) per day per violation for failure to comply with the ORDER section of the Order.

You have the right to be represented by an attorney at any stage of these proceedings. Note that each day the cited violations continue may constitute a new violation for which additional penalties can be imposed.

If you have any questions regarding this matter, please contact William Taylor, Chief, Enforcement Section, Hazardous Materials Branch, U.S. Environmental Protection Agency, Region VI, 1201 Elm Street, InterFirst Two Building, Dallas, Texas, 75270, telephone (214) 767-9730. The attorney for this case is James L. Turner and he can be reached at (214) 767-9976.

We urge your prompt attention to this matter.

Sincerely yours,

*Allyn M Davis*

Allyn M. Davis, Director  
Air and Waste Management Division

Enclosure

cc: Denise Fort, Director  
Environmental Improvement Division  
New Mexico Health and Environmental Dept.

Louis Rose, Esquire  
Environmental Improvement Division  
P. O. Box 968  
Santa Fe, NM 87504-0968

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION VI  
DALLAS, TEXAS

IN THE MATTER OF:

PLATEAU, INC.  
SUBURBAN PROPANE GAS CORPORATION  
BLOOMFIELD REFINING COMPANY, INC.  
GARY ENERGY CORPORATION  
Bloomfield Refinery  
Bloomfield, New Mexico  
EPA I.D. Number NMD089416416

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DOCKET NUMBER

RCRA VI-501-H

COMPLIANCE ORDER AND NOTICE  
OF OPPORTUNITY FOR HEARING

This COMPLIANCE ORDER AND NOTICE OF OPPORTUNITY FOR HEARING, hereinafter referred to as Order, is issued pursuant to Section 3008 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, (as amended), 42 U.S.C. §6928, (hereinafter referred to as RCRA).

Pursuant to Section 3008(a)(2) of RCRA, 42 U.S.C. §6928(a)(2), EPA may, after providing notice to the State, enforce the requirements of Subtitle C of RCRA in a State which has received interim authorization to carry out a hazardous waste management program under Section 3006(c) of RCRA, 42 U.S.C. §6926(c). The State of New Mexico was authorized to carry out its hazardous waste management program in lieu of the federal program. On September 30, 1983, the State of New Mexico received interim authorization to operate Phase I and Phase II A and B of the federal hazardous waste management program. On January 11, 1985, the State of New Mexico received final authorization to operate the federal hazardous waste management program. Therefore, EPA sets forth violations in accordance with applicable laws and regulations established under both the EPA and the New Mexico hazardous waste management



60. Therefore, Respondent-Plateau has violated 40 CFR §265.112 and Section 206.C.2. of HWMR-2, by failing to include in its closure plan, a description of the steps needed to decontaminate facility equipment, an estimate of the expected year of closure and a schedule for partial or final closure, the total time required to close the facility, and a description of the closure activities for the container storage area, storage tank, the landfill, and the landfill pond.

61. 40 CFR §265.118 and Section 206.C.2.h. of HWMR-2, require that by May 19, 1981, the owner or operator of a disposal facility must have a written post-closure plan for all hazardous waste disposal units.

62. On or about the dates of the 1984 inspection, Respondent-Plateau had no post-closure plan for its hazardous waste disposal landfill (process code D80).

63. Therefore, Respondent-Plateau has violated 40 CFR §265.118 and Section 206.C.2.h. of HWMR-2, by failing to have a written post-closure plan for its hazardous waste disposal landfill.

64. 40 CFR §265.120 and Section 206.C.2.j. of HWMR-2, require the owner of the property on which a hazardous waste disposal facility is located to record in the deed to the facility property a notification to any potential purchaser of the property that: (a) the land has been used to manage hazardous waste, and (b) its use is restricted under 40 CFR §265.117(c) and Section 206.C.2.g.(3) of HWMR-2.

65. On or about the dates of the 1984 inspection, Respondent-Plateau had no notification on the property deed that its property, specifically the landfill, had been used to dispose of hazardous waste.

66. Therefore, Respondent-Plateau has violated 40 CFR §265.120 and Section 206.C.2.j. of HWMR-2, by failing to include a notification in the property deed that the property, specifically the landfill, had been used to dispose of hazardous waste and that its use was restricted under 40 CFR §265.117(c) and Section 206.C.2.g.(3) of HWMR-2.

67. 40 CFR §270.72(d) and Section 302.C.3.d. of HWMR-2, require that changes in the ownership or operational control of a facility may be made if the new owner or operator submits a revised Part A permit application no later than 90 days prior to the scheduled change. The old owner or operator shall comply with all financial requirements at 40 CFR §265 Subpart H and Section 206.C.3. of HWMR-2, until the new owner demonstrates to Complainant that it is complying with those regulations. All other interim status duties are transferred effective immediately upon the date of the change of ownership of the facility.

68. On or about October 31, 1984, Suburban Propane Gas Corporation sold Respondent-Plateau's facility at Bloomfield, New Mexico to Respondent-BRC. To date, no revised Part A permit application has been received by Complainant. In addition, on February 13, 1985, Complainant received proof of insurance coverage for sudden accidental occurrences for Respondent-BRC's facility in Bloomfield, New Mexico. This coverage is inadequate in the following respects: (1) it demonstrates financial responsibility under Federal regulations instead of the State of New Mexico, (2) Respondent-BRC's facility's EPA identification number for which this coverage is provided is not included, and (3) the liability coverage must be in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million.

69. Therefore, Respondent-BRC has violated 40 CFR §270.72(d) and Section 302.C.3.d. of HWMR-2, by failing to submit a revised Part A permit application no later than 90 days prior to a change in facility ownership.

70. 40 CFR §§265.142-.151 except §§265.144-.147 and Sections 206.C.3.a.-.i. of HWMR-2, except Sections 206.C.3.e.-.h. of HWMR-2, require that by July 6, 1982, an owner or operator of a hazardous waste treatment, storage or disposal facility to establish financial assurance with Complainant for closure care of the facility.

71. To date, Respondent-Plateau has failed to submit a financial assurance to Complainant for closure of Respondent-Plateau's facility in Bloomfield, New Mexico.

72. Therefore, Respondent-Plateau has violated 40 CFR §§265.142-.151 except §§265.144-.147 and Sections 206.C.3.a.-.i. of HWMR-2, except Sections 206.C.3.e.-.h. of HWMR-2, by failing to submit a financial assurance to Complainant for closure care of Respondent-Plateau's facility.

73. 40 CFR §§265.144-.151 except §265.147 and Sections 206.C.3.e.-.i. of HWMR-2, except Section 206.C.3.h. of HWMR-2, require that by July 6, 1982, an owner or operator of a hazardous waste treatment, storage or disposal facility to establish financial assurance with Complainant for post-closure care of the facility.

74. To date, Respondent-Plateau has failed to submit a financial assurance to Complainant for post-closure care of Respondent-Plateau's facility, specifically the landfill, in Bloomfield, New Mexico.

75. Therefore, Respondent-Plateau has violated 40 CFR §§265.144-.151 except §265.147 and Sections 206.C.3.e.-.i. of HWMR-2, except Section 206.C.3.h. of HWMR-2, by failing to submit a financial assurance to Complainant for post-closure care of Respondent-Plateau's facility.

76. 40 CFR 264.151(j) and Section 206.D.3.j.(10) of HWMR-2, require specific wording for the Hazardous Waste Facility Certificate of Liability Insurance when such a certificate is submitted as financial assurance as

70

TABLE 4.3  
RCRA 3013  
GROUNDWATER RESULTS SUMMARY\*  
MW-3

Parameter	3/26/86	6/23/86	9/18/86	12/16/86	Nominal Detection Limits
Laboratory Analysis (mg/l)					
Cyanide		0.25	0.17	0.07	0.1
Total phenols	0.006	0.006	0.082	0.012	0.001
TOC	29	17	16	12	0.1
TDS	4,836	5,362	5,514	4,860	1
Chloride	1,500**	1,584	1,290	1,290	1
Sulfate	29.5**	1,950	2,056	2,204	1
Toluene		0.003			0.001
Xylene		0.030			0.001
Antimony				0.67	0.01
Arsenic		0.15	0.21		0.05
Cadmium	0.12	0.015		0.11	0.01
Lead	0.14	0.070	0.18		0.05
Mercury	0.004				0.002
Nickel	0.08	0.08	0.14	0.10	0.06
Selenium		0.010	0.100	0.05	0.01
Zinc		0.018	0.018	0.01	0.01
Physical Measurements					
pH, field, s.u.	7.08	7.10	7.06	7.12	
Conductivity		6900	7200	6900	
T.O.C. elevation, ft	5535.85	5535.85	5535.85	5535.85	
Depth to groundwater, ft	32.94	32.80	33.08	33.05	
Elevation of groundwater, ft	5502.91	5503.05	5502.77	5502.8	

\*Summary includes only pollutants determined to be present at concentrations greater than detection limits.

\*\*Laboratory technique error detected.

77

TABLE 4.7  
RCRA 3013  
GROUNDWATER RESULTS SUMMARY\*  
MW-8

Parameter	3/26/86	6/23/86	9/18/86	12/16/86	Nominal Detection Limits
Laboratory Analysis (mg/l)					
Cyanide				0.1	0.01
Total phenols		0.005	0.097	0.042	0.001
TOC	5	13	8	8	0.1
<u>TDS</u>	806	2,910	2,284	3,450	1
<u>Chloride</u>	160**	839.7	576	913	1
<u>Sulfate</u>	4.0**	1,500	586	1,270	1
Ethylbenzene	0.107				0.01
Antimony				0.67	0.01
Arsenic		0.072	0.03		0.05
Lead		0.055			0.05
Nickel		0.86	0.21	0.43	0.06
Selenium		0.21		0.04	0.01
Zinc		0.020	0.02	0.016	0.01
4-Nitrophenol			0.008		0.01
Physical Measurements					
pH, field, s.u.	7.86	7.26	7.47	7.44	
Conductivity		4400	4000	5000	
T.O.C. elevation, ft	5531.12	5531.12	5531.12	5531.12	
Depth to groundwater, ft	29.15	29.08	29.00	29.02	
Elevation of groundwater, ft	5501.97	5502.04	5502.12	5502.1	

\*Summary includes only pollutants determined to be present at concentrations greater than detection limits.

\*\*Laboratory technique error detected.



~~SCIENTIFIC LABORATORY DIVISION~~

ORGANIC ANALYSIS REQUEST FORM

~~Organic Section - Phone: 844-2670~~

F89156

#77-521.07-123

REPORT TO: DAVID BOYER S.L.D. No. OR-  
N.M. OIL CONSERVATION DIVISION DATE REC.  
P.O. Box 2088 PRIORITY  
Santa Fe, NM 87504-2088 PHONE(S): 827-5812

COLLECTION CITY: Bloomfield; COUNTY: San Juan

COLLECTION DATE/TIME CODE: (Year-Month-Day-Hour-Minute) 8/9/04 2:12:25

LOCATION CODE: (Township-Range-Section-Tracts) 10N06E24342

USER CODE: 82235 SUBMITTER: David Boyer CODE: 2610

SAMPLE TYPE: WATER ☐, SOIL ☐, FOOD ☐, OTHER: ☐

This form accompanies 3 Septum Vials, ☐ Glass Jugs, and/or ☐

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.  
☒ P-Ice Sample stored in an ice bath (Not Frozen).  
☐ P-AA Sample Preserved with Ascorbic Acid to remove chlorine residual.  
☒ P-HCl Sample Preserved with Hydrochloric Acid (2 drops/40 ml)

**ANALYSES REQUESTED:** Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

**PURGEABLE SCREENS**

- ☐ (753) Aliphatic Headspace (1-5 Carbons)  
☒ (754) Aromatic & Halogenated Purgeables  
☐ (765) Mass Spectrometer Purgeables  
☐ (766) Trihalomethanes  
☐ (774) SDWA VOC's I (8 Regulated +)  
☐ (775) SDWA VOC's II (EDB & DBCP)  
Other Specific Compounds or Classes

☐  
☐

**EXTRACTABLE SCREENS**

- ☐ (751) Aliphatic Hydrocarbons  
☐ (755) Base/Neutral Extractables  
☐ (758) Herbicides, Chlorophenoxy acid  
☐ (759) Herbicides, Triazines  
☐ (760) Organochlorine Pesticides  
☐ (761) Organophosphate Pesticides  
☐ (767) Polychlorinated Biphenyls (PCB's)  
☐ (764) Polynuclear Aromatic Hydrocarbons  
☐ (762) SDWA Pesticides & Herbicides

Remarks:

**FIELD DATA:**

pH= 7; Conductivity= 4100 umho/cm at 15 °C; Chlorine Residual=  mg/l

Dissolved Oxygen=  mg/l; Alkalinity=  mg/l; Flow Rate  /

Depth to water  ft.; Depth of well  ft.; Perforation Interval  -  ft.; Casing:

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Gary RRC-MW #8, No odor

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D.A. Boyer

Method of Shipment to the Lab: State Car

**CHAIN OF CUSTODY**

I certify that this sample was transferred from  to

at (location)  on  /  /  -  :  and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ OR Seals Intact: Yes ☐ No ☐

Signatures

For OCD use: Date owner notified: 9/11/04 Phone or Letter? Letter Initials: DB

All parameters

LAB. No.: OR-

**THIS PAGE FOR LABORATORY RESULTS ONLY**

## PURGABLE SCREENS

- ☐ (753) Aliphatic Headspace (1-5 Carbons)
  - ☐ (754) Aromatic & Halogenated Purgeables
  - ☐ (765) Mass Spectrometer Purgeables
  - ☐ (766) Trihalomethanes
  - ☐ (774) SDWA VOC's I (8 Regulated +)
  - ☐ (775) SDWA VOC's II (EDB & DBCP)  
Other Specific Compounds or Classes
- 

- ☐ (751) Aliphatic Hydrocarbons
- ☐ (755) Base/Neutral Extractables
- ☐ (758) Herbicides, Chlorophenoxy acid
- ☐ (759) Herbicides, Triazines
- ☐ (760) Organochlorine Pesticides
- ☐ (761) Organophosphate Pesticides
- ☐ (767) Polychlorinated Biphenyls (PCB's)
- ☐ (764) Polynuclear Aromatic Hydrocarbons
- ☐ (762) SDWA Pesticides & Herbicides

COMPOUND(S) DETECTED

CONC.  
[PPB]

COMPOUND(S) DETECTED

CONC.  
[PPB]

[illegible][illegible]

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

**CERTIFICATE OF ANALYTICAL PERSONNEL**

Seal(s) Not Sealed ☐ Intact: Yes ☐ No ☐ Seal(s) broken by: \_\_\_\_\_ date: \_\_\_\_\_

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: \_\_\_\_\_ . Analyst's signature: \_\_\_\_\_

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: \_\_\_\_\_



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

Report Date: 05/15/89

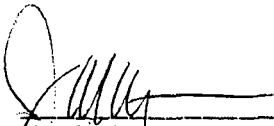
Client:	New Mexico OCD	Date Sampled:	04/27/89
Sample ID:	8904271225	Date Received:	04/28/89
Laboratory Number:	F891560	Date Extracted:	NA
Analysis Requested:	Purgeable Aromatics	Date Analyzed:	05/05/89
Sample Matrix:	Water		

Parameter	Concentration	Units
BENZENE	4.1 (0.2)	ug/l
TOLUENE	ND (0.2)	ug/l
ETHYLBENZENE	ND (0.2)	ug/l
m,p-XYLENE	ND (0.2)	ug/l
o-XYLENE	ND (0.2)	ug/l

Method: 8020 Aromatic Volatile Organics, SW-846, USEPA (1982)

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.

  
Jack M. Morgan  
Senior Organic Chemist

RECEIVED

MAY 23 1989  
OIL CONSERVATION DIV.  
SANTA FE





RECEIVED

MAY 22 1989

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

OIL CONSERVATION DIV.  
SANTA FE

Report Date: 05/09/89

Client: New Mexico OCD  
Sample ID: 8904271225  
IML Sample No: F891560  
Analysis Requested: Purgeable Halocarbons  
Sample Matrix: Water

Date Sampled: 04/27/89  
Date Received: 04/28/89  
Date Extracted: N/A  
Date Analyzed: 05/03/89

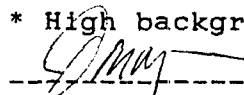
Parameter	Concentration	Units
CHLOROMETHANE	ND (1.0)	ug/l
BROMOMETHANE	ND (1.0)	ug/l
DICHLORODIFLUOROMETHANE	ND (1.0)	ug/l
VINYL CHLORIDE	ND (1.0)	ug/l
CHLOROETHANE	ND (1.0)	ug/l
METHYLENE CHLORIDE	ND (10.0) *	ug/l
TRICHLOROFLUOROMETHANE	ND (1.0)	ug/l
1,1-DICHLOROETHENE	ND (0.1)	ug/l
1,1-DICHLOROETHANE	ND (0.1)	ug/l
TRANS-1,2-DICHLOROETHENE	ND (0.1)	ug/l
CHLOROFORM	ND (0.1)	ug/l
1,2-DICHLOROETHANE	ND (0.1)	ug/l
1,1,1-TRICHLOROETHANE	ND (0.1)	ug/l
CARBON TETRACHLORIDE	ND (0.1)	ug/l
BROMODICHLOROMETHANE	ND (0.1)	ug/l
1,2-DICHLOROPROPANE	ND (0.1)	ug/l
CIS-1,3-DICHLOROPROPENE	ND (0.1)	ug/l
TRICHLOROETHENE	ND (0.1)	ug/l
DIBROMOCHLOROMETHANE	ND (0.1)	ug/l
1,1,2-TRICHLOROETHANE	ND (0.1)	ug/l
TRANS-1,3-DICHLOROPROPENE	ND (0.1)	ug/l
2-CHLOROETHYL VINYL ETHER	ND (0.1)	ug/l
BROMOFORM	ND (0.5)	ug/l
1,1,2,2-TETRACHLOROETHANE	ND (0.1)	ug/l
TETRACHLOROETHENE	ND (0.1)	ug/l
CHLOROBENZENE	ND (0.1)	ug/l
1,2-DICHLOROBENZENE	ND (0.1)	ug/l
1,3-DICHLOROBENZENE	ND (0.1)	ug/l
1,4-DICHLOROBENZENE	ND (0.1)	ug/l
CIS-1,2-DICHLOROETHENE	ND (0.1)	ug/l

Method: 601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.

\* High background in laboratory on this day.

  
-----  
Jack M. Morgan  
Senior Organic Chemist



New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106 — (505) 841-2555

859  
WNF

# GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED: 05/02/89	LAB NO: 1351	USER CODE: <input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE: 05/04/89	SITE INFORMATION: <b>GARY BRC</b>	Sample location: <b>MW-8</b>
Collection TIME: 1225		
Collected by: Person/Agency: <b>Boyer</b>	Collection site description:	

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg, PO Box 2088  
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

RECEIVED  
JUN 27 1989  
OIL CONSERVATION DIV.  
SANTA FE

## SAMPLING CONDITIONS

<input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level: <u>29.43</u>	Discharge	Sample type: <u>GRAB</u>
pH (00400): <u>7</u>	Conductivity (Uncorrected): <u>4100</u> $\mu$ mho	Water Temp. (00010): <u>15</u> °C	Conductivity at 25°C (00094): <u>        </u> $\mu$ mho	
Field comments: <u>No odor TA 34.98' purged 25 gallons</u>				

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: <u>1</u>	<input type="checkbox"/> NF: Whole sample (Non-filtered)	<input checked="" type="checkbox"/> F: Filtered in field with 0.45 $\mu$ m membrane filter	<input type="checkbox"/> A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
<input checked="" type="checkbox"/> NA: No acid added	<input type="checkbox"/> Other-specify: <u>        </u>	<input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added	<input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added

## ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From <del>NA</del> F, NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25°C (00095)	<u>5463</u> $\mu$ mho	<u>5/15</u>	<input checked="" type="checkbox"/> Calcium <u>496</u> mg/l	<u>5/10</u>
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)	<u>        </u> mg/l	<u>        </u>	<input checked="" type="checkbox"/> Potassium <u>7</u> mg/l	<u>5/11</u>
<input checked="" type="checkbox"/> Other: <u>lab pH</u>	<u>7.86</u>	<u>5/9</u>	<input checked="" type="checkbox"/> Magnesium <u>95.2</u> mg/l	<u>5/10</u>
<input type="checkbox"/> Other:	<u>        </u>	<u>        </u>	<input checked="" type="checkbox"/> Sodium <u>714</u> mg/l	<u>5/4</u>
<input type="checkbox"/> Other:	<u>        </u>	<u>        </u>	<input checked="" type="checkbox"/> Bicarbonate <u>277</u> mg/l	<u>5/9</u>
<b>A-H<sub>2</sub>SO<sub>4</sub></b>			<input checked="" type="checkbox"/> Chloride <u>1260</u> mg/l	<u>        </u>
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)	<u>        </u> mg/l	<u>        </u>	<input checked="" type="checkbox"/> Sulfate <u>1122</u> mg/l	<u>6/9</u>
<input type="checkbox"/> Ammonia-N total (00610)	<u>        </u> mg/l	<u>        </u>	<input checked="" type="checkbox"/> Total Solids <u>4240</u> mg/l	<u>5-3</u>
<input type="checkbox"/> Total Kjeldahl-N ( )	<u>        </u> mg/l	<u>        </u>	<input type="checkbox"/> <u>        </u>	<u>        </u>
<input type="checkbox"/> Chemical oxygen demand (00340)	<u>        </u> mg/l	<u>        </u>	<input type="checkbox"/> <u>        </u>	<u>        </u>
<input type="checkbox"/> Total organic carbon ( )	<u>        </u> mg/l	<u>        </u>	<input checked="" type="checkbox"/> Cation/Anion Balance <u>        </u>	<u>        </u>
<input type="checkbox"/> Other:	<u>        </u>	<u>        </u>	Analyst	Date Reported
<input type="checkbox"/> Other:	<u>        </u>	<u>        </u>	<u>        </u>	<u>6/13/89</u>
Laboratory remarks: <u>1260</u>			Reviewed by	<u>        </u>

FC  
CD USE -- Date Owner Notified          Phone or Letter?          Initials



Inter-Mountain  
Laboratories, Inc.

RECEIVED

MAY 22 1989

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

OIL CONSERVATION DIV.  
SANTA FE

\*\* Quality Assurance Report  
Matrix Duplicate Analysis

Report Date: 05/09/89

Client: New Mexico OCD  
Sample ID: 8904271225  
IML Sample No: F891560  
Analysis Requested: Purgeable Halocarbons  
Sample Matrix: Water

Date Sampled: 04/27/89  
Date Received: 04/28/89  
Date Extracted: N/A  
Date Analyzed: 05/03/89

Parameter	Concentration	Units
CHLOROMETHANE	ND (1.0)	ug/l
BROMOMETHANE	ND (1.0)	ug/l
DICHLORODIFLUOROMETHANE	ND (1.0)	ug/l
VINYL CHLORIDE	ND (1.0)	ug/l
CHLOROETHANE	ND (1.0)	ug/l
METHYLENE CHLORIDE	ND (10.0) *	ug/l
TRICHLOROFLUOROMETHANE	ND (1.0)	ug/l
1,1-DICHLOROETHENE	ND (0.1)	ug/l
1,1-DICHLOROETHANE	ND (0.1)	ug/l
TRANS-1,2-DICHLOROETHENE	ND (0.1)	ug/l
CHLOROFORM	ND (0.1)	ug/l
1,2-DICHLOROETHANE	ND (0.1)	ug/l
1,1,1-TRICHLOROETHANE	ND (0.1)	ug/l
CARBON TETRACHLORIDE	ND (0.1)	ug/l
BROMODICHLOROMETHANE	ND (0.1)	ug/l
1,2-DICHLOROPROPANE	ND (0.1)	ug/l
CIS-1,3-DICHLOROPROPENE	ND (0.1)	ug/l
TRICHLOROETHENE	ND (0.1)	ug/l
DIBROMOCHLOROMETHANE	ND (0.1)	ug/l
1,1,2-TRICHLOROETHANE	ND (0.1)	ug/l
TRANS-1,3-DICHLOROPROPENE	ND (0.1)	ug/l
2-CHLOROETHYL VINYL ETHER	ND (0.1)	ug/l
BROMOFORM	ND (0.5)	ug/l
1,1,2,2-TETRACHLOROETHANE	ND (0.1)	ug/l
TETRACHLOROETHENE	ND (0.1)	ug/l
CHLOROBENZENE	ND (0.1)	ug/l
1,2-DICHLOROBENZENE	ND (0.1)	ug/l
1,3-DICHLOROBENZENE	ND (0.1)	ug/l
1,4-DICHLOROBENZENE	ND (0.1)	ug/l
CIS-1,2-DICHLOROETHENE	ND (0.1)	ug/l

Method: 601 Purgeable Halocarbons, 40 CFR Part 136, USEPA (1984).

(Detection limit in parenthesis.)

ND - Parameter not detected at the stated detection limit.

\* High background in laboratory on this day.

-----  
Jack M. Morgan  
Senior Organic Chemist

CATIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
●	24.75	496.00	<3.0
Mg	7.82	95.20	<0.3
Na	31.06	714.00	<10.0
K	0.18	7.00	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	63.81	1312.20	
Total Dissolved Solids=			4240
Ion Balance =			100.55%

ANIONS			
ANALYTE	MEQ.	PPM	DET. LIMIT
HC03	4.54	277.00	<1.0
SO4	23.38	<u>1122.00</u>	<10.0
CL	35.54	<u>1260.00</u>	<5.0
NO3	0.00	0.00	< 0.
C03	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	63.46	2659.00	

WC No. = 8901351  
 Date out/By Q. Wu

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 JUN 27 1989  
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New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106 — (505) 841-2555

WPF  
852

GENERAL WATER CHEMISTRY  
and NITROGEN ANALYSIS

DATE RECEIVED	05/02/89	LAB NO.	WC1359	USER CODE	<input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE	89/04/27	SITE INFORMATION	Sample location	GARY BRC (MW-8)	
Collection TIME	1225		Collection site description		
Collected by — Person/Agency	Boyer	/OCD			

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg, PO Box 2088  
Santa Fe, NM 87504-2088

RECEIVED

MAY 30 1989

OIL CONSERVATION DIV.  
SANTA FE

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

<input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type
				Grab
pH (00400)	7	Conductivity (Uncorrected)	4100 µmho	Water Temp. (00010)
			15 °C	Conductivity at 25°C (00094)
				µmho
Field comments: no odor				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	<input type="checkbox"/> NF: Whole sample (Non-filtered)	<input checked="" type="checkbox"/> F: Filtered in field with 0.45 µmembrane filter	<input checked="" type="checkbox"/> A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
<input type="checkbox"/> NA: No acid added		<input type="checkbox"/> Other-specify:		<input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From	NA Sample:	Date Analyzed
<input type="checkbox"/> Conductivity (Corrected) 25°C (00095)	µmho				
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)	mg/l				
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
<b>A-H<sub>2</sub>SO<sub>4</sub></b>					
<input checked="" type="checkbox"/> Nitrate-N + Nitrate-N total (00630)	mg/l	5/15		<input type="checkbox"/> Calcium	mg/l
<input checked="" type="checkbox"/> Ammonia-N total (00610)	mg/l	5/8		<input type="checkbox"/> Potassium	mg/l
<input checked="" type="checkbox"/> Total Kjeldahl-N ( )	mg/l	5/23		<input type="checkbox"/> Magnesium	mg/l
<input type="checkbox"/> Chemical oxygen demand (00340)	mg/l			<input type="checkbox"/> Sodium	mg/l
<input type="checkbox"/> Total organic carbon ( )	mg/l			<input type="checkbox"/> Bicarbonate	mg/l
<input type="checkbox"/> Other:				<input type="checkbox"/> Chloride	mg/l
<input type="checkbox"/> Other:				<input type="checkbox"/> Sulfate	mg/l
				<input type="checkbox"/> Total Solids	mg/l
				<input type="checkbox"/> Cation/Anion Balance	
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/24/89	O. Dew

FOR OCD USE -- Date Owner Notified \_\_\_\_\_ Phone or Letter? \_\_\_\_\_ Initials \_\_\_\_\_



New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106

# HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2553

Date Received	05/02/89	Lab No	CAP 217	User Code	<input checked="" type="checkbox"/> 82235 <input type="checkbox"/> Other:			
COLLECTION DATE & TIME:				yy	mm	dd	hh	mm
				89	04	27	12	25
COLLECTED BY:				BOYER				
				COLLECTION SITE DESCRIPTION				
				GARY BRC				
				MW-8				
				OWNER:				

TO:

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg., PO Box 2088  
SANTA FE, NM 87504-2088

SITE LOCATION:

County: San Juan

Township, Range, Section, Tract: (10N06E24342)

ATTN: DAVID BOYER  
TELEPHONE: 827-5812

STATION/ WELL CODE:

LATITUDE, LONGITUDE:

## SAMPLING CONDITIONS:

<input checked="" type="checkbox"/> Bailed	<input type="checkbox"/> Pump	Water Level:	Discharge:	Sample Type:
<input type="checkbox"/> Dipped	<input type="checkbox"/> Tap			GRAB
pH(00400)	Conductivity(Uncorr.)	Water Temp.(00010)	Conductivity at 25°C	
7	4100 µmho	15 °C	(00094) µmho	

FIELD COMMENTS: no odor

## SAMPLE FIELD TREATMENT

Check proper boxes:

<input type="checkbox"/> WPN: Water Preserved w/HNO <sub>3</sub> Non-Filtered	<input checked="" type="checkbox"/> WPF: Water Preserved w/HNO <sub>3</sub> Filtered
---	--

## LAB ANALYSIS REQUESTED:

☒ ICAP Scan  
Mark box next to metal if AA is required.

## ANALYTICAL RESULTS (MG/L)

ELEMENT	ICAP VALUE	AA VALUE	ELEMENT	ICAP VALUE	AA VALUE
Aluminum	<0.1		Silicon	5.6	
Barium	<0.1		Silver	<0.1	<input type="checkbox"/>
Beryllium	<0.1		Strontium	7.9	
Boron	0.3		Tin	<0.1	
Cadmium	<0.1	<input type="checkbox"/>	Vanadium	<0.1	
Calcium	460.		Zinc	<0.1	
Chromium	<0.1	<input checked="" type="checkbox"/> 0.030	Arsenic		<input checked="" type="checkbox"/> <0.005
Cobalt	<0.05		Selenium		<input type="checkbox"/>
Copper	<0.1		Mercury		<input type="checkbox"/>
Iron	0.5				<input type="checkbox"/>
Lead	<0.1	<input checked="" type="checkbox"/> <0.005			<input type="checkbox"/>
Magnesium	87.				<input type="checkbox"/>
Manganese	5.0				<input type="checkbox"/>
Molybdenum	<0.1				<input type="checkbox"/>
Nickel	1.1				<input type="checkbox"/>

LAB COMMENTS:

Dry

For OCD Use:

Date Owner Notified:  
Phone or Letter?  
Initials:

ICAP Analyst

Date Analyzed

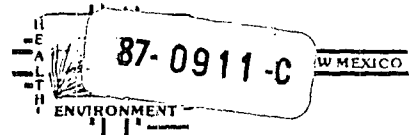
Reviewer

Date Received

754  
wpw

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE  
Albuquerque, NM 87106 841-2570



REPORT TO: David Boyer  
N.M. Oil Conservation Division  
P. O. Box 2088  
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 911 74-B  
DATE REC. 6-1-87

PRIORITY

PHONE(S): 827-5812 USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMII) 8705281155A 88

SAMPLE TYPE: WATER ☒ SOIL ☐ FOOD ☐ OTHER: CODE:

COUNTY: San Juan CITY: Bloomfield CODE:

LOCATION CODE: (Township-Range-Section-Tracts) 29N+11W+26+13- (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)  
☒ (754) Aromatic & Halogenated Purgeables  
☐ (765) Mass Spectrometer Purgeables  
☐ (766) Trihalomethanes

Other Specific Compounds or Classes

☐  
☐  
☐  
☐  
☐  
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons  
☐ (760) Organochlorine Pesticides  
☐ (755) Base/Neutral Extractables  
☐ (758) Herbicides, Chlorophenoxy acid  
☐ (759) Herbicides, Triazines  
☐ (760) Organochlorine Pesticides  
☐ (761) Organophosphate Pesticides  
☐ (767) Polychlorinated Biphenyls (PCB's)  
☐ (764) Polynuclear Aromatic Hydrocarbons  
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= 7.1 NA; Conductivity= 4340 umho/cm at 15.5°C; Chlorine Residual= mg/l

Dissolved Oxygen= mg/l; Alkalinity= mg/l; Flow Rate

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

Sampling Location, Methods and Remarks (i.e. odors, etc.)

MW-8, Gary Bloomfield Refinery. Bailed 2 well  
volumetric. No odor, clear, some sand in bailer

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): [Signature] Method of Shipment to the Lab: State Car

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.  
☒ P-Ice Sample stored in an ice bath (Not Frozen).  
☐ P-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from to

at (location) on - and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

For OCD Use: Date Owner Notified Phone or Letter? Initials

## ANALYSES PERFORMED

LAB. No.: OR- 911

## THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

## PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)  
☒ (754) Aromatic & Halogenated Purgeables  
☐ (765) Mass Spectrometer Purgeables  
☐ (766) Trihalomethanes  
 Other Specific Compounds or Classes

☐  
☐  
☐  
☐  
☐

## EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons  
☐ (760) Organochlorine Pesticides  
☐ (755) Base/Neutral Extractables  
☐ (758) Herbicides, Chlorophenoxy acid  
☐ (759) Herbicides, Triazines  
☐ (760) Organochlorine Pesticides  
☐ (761) Organophosphate Pesticides  
☐ (767) Polychlorinated Biphenyls (PCB's)  
☐ (764) Polynuclear Aromatic Hydrocarbons  
☐ (762) SDWA Pesticides & Herbicides

## ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D.		
halogenated purgeables	N.D.		
* DETECTION LIMIT *	* 1.48/L	+ DETECTION LIMIT +	+

## ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[ RESULTS IN BRACKETS ] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

## CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: \_\_\_\_\_

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 7/7/87 Analyst's signature: Henry C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: R. Meyer





New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106 — (505) 841-2555

860  
wnf

GENERAL WATER CHEMISTRY  
and NITROGEN ANALYSIS

DATE RECEIVED: 6/1/87	LAB NO. WC-1978	USER CODE <input type="checkbox"/> 59300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE: 6/1/87	SITE INFORMATION: NW-8 Garry Bloomfield Refinery	Sample location
Collection TIME: 1155		Collection site description
Collected by: Person/Agency: Kay Anderson /OCD		

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg, PO Box 2088  
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

<input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type: GRAB
pH (00400): —	Conductivity (Uncorrected): 4340 $\mu$ mho	Water Temp. (00010): 15.5 °C	Conductivity at 25 °C (00094): $\mu$ mho	
Field comments: NO HC odor or sheen				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1	<input type="checkbox"/> NF: Whole sample (Non-filtered)	<input checked="" type="checkbox"/> F: Filtered in field with 0.45 $\mu$ m membrane filter	<input type="checkbox"/> A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
<input checked="" type="checkbox"/> NA: No acid added		<input type="checkbox"/> Other-specify:	<input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added <input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From F, NA Sample:	Date Analyzed
<input checked="" type="checkbox"/> Conductivity (Corrected) 25 °C (00095)	5652 $\mu$ mho	6/19	<input checked="" type="checkbox"/> Calcium	524 mg/l 6/17
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)			<input checked="" type="checkbox"/> Potassium	4.29 mg/l 6/18
<input checked="" type="checkbox"/> Other: pH	7.30	6/2	<input checked="" type="checkbox"/> Magnesium	85 mg/l 6/17
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Sodium	598 mg/l 6/18
<input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Bicarbonate	273 mg/l 6/2
A-H <sub>2</sub> SO <sub>4</sub>			<input checked="" type="checkbox"/> Chloride	1062 mg/l 6/10
<input type="checkbox"/> Nitrate-N +, Nitrate-N total (00630)	mg/l		<input checked="" type="checkbox"/> Sulfate	1142 mg/l 6/12
<input type="checkbox"/> Ammonia-N total (00610)	mg/l		<input checked="" type="checkbox"/> Total Solids	3024 mg/l 6/14
<input type="checkbox"/> Total Kjeldahl-N ( )	mg/l		<input type="checkbox"/>	
<input type="checkbox"/> Chemical oxygen demand (00340)	mg/l		<input type="checkbox"/>	
<input type="checkbox"/> Total organic carbon ( )	mg/l		<input checked="" type="checkbox"/> Cation/Anion Balance	
<input type="checkbox"/> Other:			Analyst	Date Reported
<input type="checkbox"/> Other:				6/19/87
Reviewed by: CO				
Laboratory remarks				

FOR OCD USE -- Date Owner Notified Phone or Letter? Initials

CATIONS			DET.
ANALYTE	MEQ.	PPM	LIMIT
Ca	26.15	524.00	<3.0
Mg	6.98	85.00	<0.3
Na	26.01	598.00	<10.0
K	0.11	4.29	<0.3
Mn	0.00	0.00	
Fe	0.00	0.00	
SUMS	59.25	1211.29	
Total Dissolved Solids=			3024
Ion Balance =			101.76%

ANIONS			DET.
ANALYTE	MEQ.	PPM	LIMIT
HC03	4.47	273.00	<1.0
SO4	23.79	1142.00	<10.0
CL	29.96	1062.00	<5.0
NO3	0.00	0.00	< 0.
C03	0.00	0.00	< 1.
NH3	0.00	0.00	< 0.
PO4	0.00	0.00	< 0.
	58.22	2477.00	

WC No. = 8701978  
Date out/By 6/24/87



New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106 — (505) 841-2555

852  
wpt

# GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED: 6/1/87	LAB NO. KC-1968	USER CODE <input type="checkbox"/> 69300 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE: 6/1/87	SITE INFORMATION	Sample location: NW-2, Garry Bloomfield Refinery
Collection TIME: 11:55		Collection site description:
Collected by: Person/Agency: R. Anderson / OCD		

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg, PO Box 2088  
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

## SAMPLING CONDITIONS

<input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type: GRAB
pH (00400): —	Conductivity (Uncorrected): 4340 µmho	Water Temp. (00010): 15.5 °C	Conductivity at 25°C (00094): — µmho	
Field comments: NO HC odor on scene				

## SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1	<input type="checkbox"/> NF: Whole sample (Non-filtered)	<input checked="" type="checkbox"/> F: Filtered in field with 0.45 µm membrane filter	<input checked="" type="checkbox"/> A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
<input type="checkbox"/> NA: No acid added	<input type="checkbox"/> Other-specify:	<input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added	<input type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added

## ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	From	NA Sample:	Date Analyzed
<input type="checkbox"/> Conductivity (Corrected) 25°C (00095)	µmho				
<input type="checkbox"/> Total non-filterable residue (suspended) (00530)	mg/l				
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
<input checked="" type="checkbox"/> A-H <sub>2</sub> SO <sub>4</sub>					
<input checked="" type="checkbox"/> Nitrate-N + Nitrite-N total (00630)	mg/l	6/4			
<input checked="" type="checkbox"/> Ammonia-N total (00610)	mg/l	6/1			
<input checked="" type="checkbox"/> Total Kjeldahl-N ( )	mg/l	6/23			
<input type="checkbox"/> Chemical oxygen demand (00340)	mg/l				
<input type="checkbox"/> Total organic carbon ( )	mg/l				
<input type="checkbox"/> Other:					
<input type="checkbox"/> Other:					
			<input type="checkbox"/> Calcium	mg/l	
			<input type="checkbox"/> Potassium	mg/l	
			<input type="checkbox"/> Magnesium	mg/l	
			<input type="checkbox"/> Sodium	mg/l	
			<input type="checkbox"/> Bicarbonate	mg/l	
			<input type="checkbox"/> Chloride	mg/l	
			<input type="checkbox"/> Sulfate	mg/l	
			<input type="checkbox"/> Total Solids	mg/l	
			<input type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/> Cation/Anion Balance		
Laboratory remarks			Analyst	Date Reported: 6/23/87	Reviewed by: [Signature]

FOR OCD USE -- Date Owner Notified Phone or Letter? Initials



New Mexico Health and Environment Department  
SCIENTIFIC LABORATORY DIVISION  
700 Camino de Salud NE  
Albuquerque, NM 87106 — (505) 841-2555

# Heavy Metal

## GENERAL WATER CHEMISTRY AND NITROGEN ANALYSIS

DATE RECEIVED: 6/1/87	LAB NO: TCE-307	USER CODE: <input type="checkbox"/> 59500 <input type="checkbox"/> 59600 <input checked="" type="checkbox"/> OTHER: 82235
Collection DATE: 5/10/87	SITE INFORMATION	Sample location: MW-2, Gary Bloomfield Refinery
Collection TIME: 11:55		Collection site description:
Collected by: Person/Agency: Royce Anderson / OCD		

SEND  
FINAL  
REPORT  
TO

ENVIRONMENTAL BUREAU  
NM OIL CONSERVATION DIVISION  
State Land Office Bldg, PO Box 2088  
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

### SAMPLING CONDITIONS

<input checked="" type="checkbox"/> Bailed <input type="checkbox"/> Dipped	<input type="checkbox"/> Pump <input type="checkbox"/> Tap	Water level	Discharge	Sample type: GRAB
pH (00400): —	Conductivity (Uncorrected): 4340 µmho	Water Temp. (00010): 15.5 °C	Conductivity at 25 °C (00094): — µmho	
Field comments: NO HC odor or sheen				

### SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted: 1	<input type="checkbox"/> NF: Whole sample (Non-filtered)	<input checked="" type="checkbox"/> F: Filtered in field with 0.45 µm membrane filter	<input type="checkbox"/> A: 2 ml H <sub>2</sub> SO <sub>4</sub> /L added
<input type="checkbox"/> NA: No acid added	<input type="checkbox"/> Other-specify:	<input type="checkbox"/> A: 5ml conc. HNO <sub>3</sub> added	<input checked="" type="checkbox"/> A: 4ml fuming HNO <sub>3</sub> added

### ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	From	NA Sample:	Date Analyzed
<input type="checkbox"/> Conductivity (Corrected) 25 °C (00095) — µmho				
<input type="checkbox"/> Total non-filterable residue (suspended) (00530) — mg/l				
<input checked="" type="checkbox"/> Other: ICAP				
<input type="checkbox"/> Other:				
<input type="checkbox"/> Other:				
<b>A-H<sub>2</sub>SO<sub>4</sub></b>				
<input type="checkbox"/> Nitrate-N + Nitrate-N total (00630) — mg/l				
<input type="checkbox"/> Ammonia-N total (00610) — mg/l				
<input type="checkbox"/> Total Kjeldahl-N ( ) — mg/l				
<input type="checkbox"/> Chemical oxygen demand (00340) — mg/l				
<input type="checkbox"/> Total organic carbon ( ) — mg/l				
<input type="checkbox"/> Other:				
<input type="checkbox"/> Other:				
<input type="checkbox"/> Calcium — mg/l				
<input type="checkbox"/> Potassium — mg/l				
<input type="checkbox"/> Magnesium — mg/l				
<input type="checkbox"/> Sodium — mg/l				
<input type="checkbox"/> Bicarbonate — mg/l				
<input type="checkbox"/> Chloride — mg/l				
<input type="checkbox"/> Sulfate — mg/l				
<input type="checkbox"/> Total Solids — mg/l				
<input type="checkbox"/> Cation/Anion Balance				
Laboratory remarks: Digested		Analyst	Date Reported: 6/15/87	Reviewed by: Jim Kelly

FOR OCD USE -- Date Owner Notified \_\_\_\_\_ Phone or Letter? \_\_\_\_\_ Initials \_\_\_\_\_

## ICAP SCAN

SLD Lab No. ICP 307

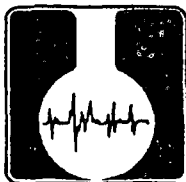
Analyst VB

Date Analyzed 6/11/87

Reviewed by: Jim Kelly

Date Reported: 06/15/87

ELEMENT	ICAP VALUE (mg/l)	AA VALUE (mg/l)
Aluminum	<0.1	
Barium	<0.1	
Beryllium	<0.1	
Boron	0.4	
Cadmium	<0.1	
Calcium	500.	
Chromium	<0.1	
Cobalt	<0.05	
Copper	<0.1	
Iron	0.5	
Lead	<0.1	
Magnesium	100.	
Manganese	6.5	
Molybdenum	<0.1	
Nickel	0.6	
Silicon	8.7	
Silver	<0.1	
Strontium	9.9	
Tin	<0.1	
Vanadium	<0.1	
Zinc	<0.1	
Arsenic		
Selenium		
Mercury		



# ASSAIGAI ANALYTICAL LABORATORIES

TO: Bloomfield Refinery  
Attn: Chris Hawley  
PO Box 159  
Bloomfield, NM 87413

DATE: 23 July 1986  
1030

SAMPLE ID: MW - 8

## ANALYTE

## ANALYTICAL RESULTS

CN	<0.01 mg/l
<del>TDS</del>	2910 mg/l
<del>Cl</del>	839.7 mg/l
<del>SO<sub>4</sub></del>	1500 mg/l
Phenols	0.005 mg/l
<del>TOC</del>	13 mg/l
Sb	<0.01 mg/l
As	0.072 mg/l
Be	<0.01 mg/l
Cd	<0.010 mg/l
Cr	<0.050 mg/l
Cu	<0.03 mg/l
Pb	0.055 mg/l
Hg	<0.002 mg/l
Ni	0.86 mg/l
Se	0.21 mg/l
Ag	<0.050 mg/l
Tl	<0.01 mg/l
Zn	0.020 mg/l
Volatiles	
Acrolein	ND
Acrylonitrile	ND
Benzene	ND
Bromoform	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromomethane	ND
Chloroethane	ND
2-Chloroethylvinyl ether	ND
Chloroform	ND
Dichlorobromomethane	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
1,2-Dichloropropane	ND
1,2-Dichloropropylene	ND
Ethylbenzene	ND

Field by CL 6/23/86

pH 7.26

Conductivity 4400

SAMPLE ID: MW - 8

ANALYTE

ANALYTICAL RESULTS

Methyl Bromide	ND
Methyl Chloride	ND
Methylene Chloride	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,2-Transdichloroethylene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Vinyl Chloride	ND

Acid Compounds

2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
4,6-Dinitro-o-cresol	ND
2,4-Dinitrophenol	ND
2-Nitrophenol	ND
4-Nitrophenol	ND
p-chloro-m-cresol	ND
pentachlorophenol	ND
Phenol	ND
2,4,6-Trichlorophenol	ND

Base Neutrals

Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzidine	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
3,4-Benzofluoranthene	ND
Benzo(g,h,i)perylene	ND
Benzo(k)fluoranthene	ND
Bis(2-chloroethoxy)methane	ND
Bis(2-chloroethyl)ether	ND
Bis(2-chloroisopropyl)ether	ND
Bis(2-ethylhexyl)phthalate	ND
4-Bromophenyl phenyl ether	ND
Butylbenzyl phthalate	ND
2-Chloronaphthalene	ND
4-Chlorophenyl phenyl ether	ND
Chrysene	ND

SAMPLE ID: MW - 8

ANALYTE

ANALYTICAL RESULTS

Dibenzo (a, h) anthracene	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3-Dichlorobenzidine	ND
Diethyl phthalate	ND
Dimethyl phthalate	ND
Din-n-butyl phthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-octyl phthalate	ND
1,2-Diphenylhydrazine	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachlorocyclopentadiene	ND
Hexachloroethane	ND
Indeno (1,2,3-cd) pyrene	ND
Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-nitrosodimethylamine	ND
N-nitrosodie-n-propylamine	ND
N-nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

ND = None Detected



TO: Bloomfield Refinery

DATE: 0502  
Page 5 of 8

*Analysis Report*  
*14 May 86*

*Sample date: 3/26/86*

ANALYTE

SAMPLE ID/ ANALYTICAL RESULTS

	MW 8	MW 9	MW 10
CN	<0.01 mg/l	<0.01 mg/l	<0.10 mg/l
Phenols	<0.001 mg/l	0.304 mg/l	0.147 mg/l
TOC	5 mg/l	143 mg/l	34 mg/l
TDS	806 mg/l	2360 mg/l	1546 mg/l
Cl	160 mg/l	149 mg/l	245 mg/l
SO 4	4.0 mg/l	13.0 mg/l	5.3 mg/l
Benzene	ND	7.4 mg/l	0.093 mg/l
Toluene	ND	6.3 mg/l	ND
Xylenes	ND	ND	ND
Ethylbenzene	0.107 mg/l	3.2 mg/l	ND
Sb	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
As	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Be	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
Cd	0.010 mg/l	0.010 mg/l	0.020 mg/l
Cr	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Cu	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l
Pb	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Hg	<0.002 mg/l	<0.002 mg/l	<0.002 mg/l
Ni	<0.06 mg/l	0.30 mg/l	0.08 mg/l
Se	<0.010 mg/l	<0.010 mg/l	<0.010 mg/l
Ag	<0.050 mg/l	<0.050 mg/l	<0.050 mg/l
Tl	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
Zn	<0.01 mg/l	0.012 mg/l	<0.01 mg/l
Acrolein	ND	ND	ND
Acrylonitrile	ND	ND	ND
Bromoform	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND
Chlorobenzene	ND	ND	ND
Chlorodibromomethane	ND	ND	ND
Chloroethane	ND	ND	ND
2-Chloroethylvinyl Ether	ND	ND	ND
Chloroform	ND	ND	ND
Dichloromethane	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND
1,3-Dichloropropylene	ND	ND	ND

TO: Bloomfield Refinery

0502

Page 6 of 8

ANALYTE

SAMPLE ID/ ANALYTICAL RESULTS

	MW 8	MW 9	MW 10
Methyl Bromide	ND	ND	ND
Methyl Chloride	ND	ND	ND
Methylene Chloride	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND
Tetrachloroethylene	ND	ND	ND
1,2-Transdichloroethylene	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND
Trichloroethylene	ND	ND	ND
Vinyl Chloride	ND	ND	ND
Acid Compounds			
2-chlorophenol	ND	ND	ND
2,4-dichlorophenol	ND	ND	ND
2,4-dimethylphenol	ND	0.160 mg/l	0.025 mg/l
4,6-dinitro-o-cresol	ND	ND	0.020 mg/l
4-dinitrophenol	ND	ND	ND
2-nitrophenol	ND	ND	ND
4-nitrophenol	ND	ND	ND
p-chloro-m-cresol	ND	ND	ND
pentachlorophenol	ND	ND	ND
Phenol	ND	0.149 mg/l	0.090 mg/l
2,4,6-trichlorophenol	ND	ND	ND
Base Neutrals			
Acenaphthene	ND	ND	ND
Acenaphthylene	ND	ND	ND
Anthracene	ND	ND	0.039 mg/l
Benzidine	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND
Benzo(a)pyrene	ND	ND	ND
3,4-benzofluoranthene	ND	ND	ND
Benzo(ghi)perylene	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
Bis(2-chloroethoxy)methane	ND	ND	ND
Bis(2-chloroethyl)ether	ND	ND	ND
Bis(2-chloroisopropyl)ether	ND	ND	ND
Bis(2-ethylhexyl)phthalate	ND	ND	ND
4-bromophenyl phenyl ether	ND	ND	ND
Butylbenzyl phthalate	ND	ND	ND
2-chloronaphthalene	ND	ND	ND
4-chlorophenyl phenyl ether	ND	ND	ND
Chrysene	ND	ND	ND

## ANALYTE

## SAMPLE ID/ ANALYTICAL RESULTS

	MW 8	MW 9	MW 10
Dibenzo (a,h) anthracene	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND
3,3-Dichlorobenzidine	ND	ND	ND
Diethyl phthalate	ND	ND	ND
Dimethyl phthalate	ND	ND	ND
Din-n-butyl phthalate	ND	ND	ND
2,4-dinitrotoluene	ND	ND	ND
2,6-dinitrotoluene	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND
1,2-diphenylhydrazine	ND	ND	ND
Fluoranthene	ND	ND	0.034 mg/l
Fluorene	ND	0.012 mg/l	0.033 mg/l
Hexachlorobenzene	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND
Hexachloroethane	ND	ND	ND
Indeno (1,2,3-cd) pyrene	ND	ND	ND
Isophorone	ND	ND	ND
Naphthalene	ND	ND	ND
Nitrobenzene	ND	ND	ND
N-nitrosodimethylamine	ND	ND	ND
N-nitrosodie-n-propylamine	ND	ND	ND
N-nitrosodiphenylamine	ND	ND	ND
Phenanthrene	ND	ND	ND
Pyrene	ND	ND	0.030 mg/l
1,2,4-trichlorobenzene	ND	ND	ND

ND = None Detected

REFERENCE: "Test Methods for Evaluating Solid Waste, Physical/ Chemical  
Methods, USEPA, SW 846, EMSL-Cincinnati, 1982.

TO: Bloomfield Refinery

0502

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NOMINAL DETECTION LIMITS

CN	0.01 mg/l
Phenols	0.001 mg/l
TOC	0.1 mg/l
TDS	1 mg/l
Cl	1.0 mg/l
SO 4	1.0 mg/l
Benzene	5 mg/l
Toluene	5 mg/l
Xylenes	5 mg/l
Ethylbenzene	5 mg/l
Sb	0.01 mg/l
As	0.050 mg/l
Be	0.01 mg/l
Cd	0.002 mg/l
Cr	0.050 mg/l
Cu	0.03 mg/l
Pb	0.001 mg/l
Hg	0.002 mg/l
Ni	0.01 mg/l
Se	0.010 mg/l
Ag	0.050 mg/l
Tl	0.01 mg/l
Zn	0.01 mg/l

Detection limits for Volatiles, Acid Compounds, and Base/Neutrals are  
all 0.001 mg/l

An invoice for services is enclosed. Thank you for contacting Assaigai  
Laboratories.

Sincerely,

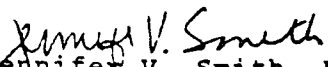
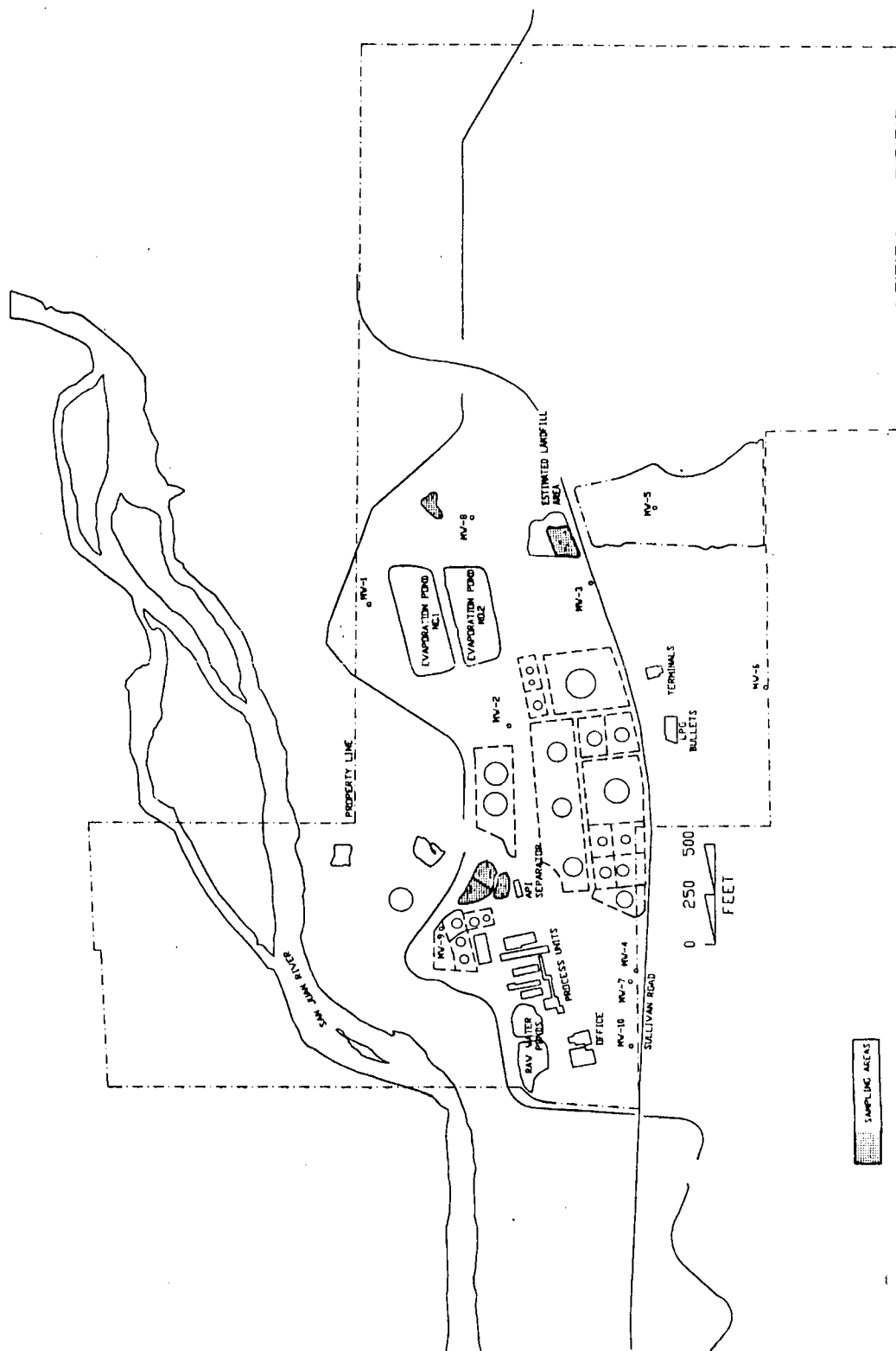
  
Jennifer V. Smith, Ph.D.  
Laboratory Director

FIGURE 1  
BLOOMFIELD REFINERY FACILITY MAP



80 MW

Assaigai Assaigai Assaigai Assaigai

[illegible]

TABLE 3.2  
WELL LOG FOR MONITORING WELL NUMBER 8

Drilling Date: February 28, 1986

<u>Depth in Feet</u>	<u>Description</u>
0-20	Light brown sandy clay, similar to that found on the ground surface
20-34	Cobbles and pebbles
34	Green-gray clay and sandstone, intermixed with small pebbles and sand. Top of Nacimiento.

Elevation of Top of Casing: 5531.12 feet

Total Depth of Casing: 34.94 feet

Description of Casing: Bottom of casing has a 2 foot stainless steel blank section for a silt trap, followed by 20 feet of 6" I.D. stainless steel screen, followed by 6" I.D. schedule 40 PVC to the surface. The screened section of the hole was sanded to within 7 feet of the surface, a bentonite seal (1/2 bucket) was added and concrete was used for a surface seal.

**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, February 22, 2008 3:47 PM  
**To:** 'Randy Schmaltz'  
**Cc:** Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV  
**Subject:** OCD Discharge Plan Application for Modification (July 2007) (GW-1)

Mr. Schmaltz:

Good afternoon. The New Mexico Oil Conservation Division (OCD) has reviewed Western Refining Southwest, Inc.'s (WRSW) letter (letter) dated January 29, 2008 regarding the above subject associated with EPA ID# NMD089416416 (HWB-GRCB-07-003). WRSW's letter indicates that it is their intent for the Facility-Wide Groundwater Monitoring Plan (FWGWMP) to be accepted by both the New Mexico Environment Department (NMED) and OCD as the prevailing document for comprehensive groundwater monitoring at the Bloomfield Refinery. The OCD regards WRSW's letter with attachments dated January 29, 2008 to the NMED as the updated version of Appendix D from the report in the paragraph below.

Previously, WRSW submitted a letter dated July 30, 2007 with a report (Report) entitled, "OCD Discharge Plan Application For Modification" (July 2007) to the OCD. The report was developed to address OCD Administrative Compliance Order (ACO) and Stipulated Final Order (SFO) No. NM-OCD 2006-100, and an EPA Administrative Order on Consent (Docket No. VI-303-H). Section 9 of the report contained proposed modifications to resolve contamination issues associated with the refinery. A FWGWMP was developed in Appendix D of the report along with Section 10 (Inspection, Maintenance & Reporting) to address state and federal requirements.

OCD comments and/or recommendations on the report and letter aforementioned are as follows:

1) The OCD will continue to work with the NMED and WRSW to complete a FWGWMP before the discharge permit renewal date in order to include it as part of the discharge permit renewal with the understanding that the OCD may modify the monitoring requirements as specified under its WQCC discharge plan or permit at any time based on inspections or additional inspection requirements. A finalized version of the FWGWMP in the form of a table (electronic file requested) will assist the OCD with the incorporation of the FWGWMP into the OCD discharge permit. According to OCD records, the existing discharge permit is set to expire on June 7, 2009.

2) The OCD notices the on-site landfill disposal provisions for Fluid Catalytic Cracking Unit (FCCU) Catalyst and Sulfur Byproducts. The OCD is aware of Discharge Permit Items #21 (Active Landfill) and 22 (In-Active Landfill), and the closure plans requested under the permit by December 1, 2005. The OCD is concerned about the proximity of the landfills to the San Juan River; the RCRA ramifications (SWMU vs. AOC) of the landfills; and will likely seek to phase out the existing active landfill at the facility during the discharge permit renewal application process. The permit is set to expire on June 7, 2009. Please prepare to discuss and plan accordingly for above.

3) The Report references "GW-130" for the facility Underground Injection Control (UIC) Class I Non-Hazardous Injection Well; however, the well is now permitted under OCD records as "UICL-9." Please refer to the UIC Class I Well permit as "UICL-9" from now on.

4) Section 10 requirements are to be completed one time within the next 5 years (OCD extended to 3/1/2013) and are as follows:

a) An electronic version of the spreadsheet is requested to assist OCD with tracking the inspections, maintenance and reporting (IMR).

b) Columns for "Inspection, Maintenance, and Repair" shall be added to the spreadsheet to track one and/or multiple items performed at the same unit at the same time. A field with "date", "ok" or "problem" (also denoted w/ an asterisk to explain at the bottom of the spreadsheet what action was conducted to correct the problem) shall be added to the spreadsheet to report the results of the IMR to the OCD. The OCD recommends that WRSW provides separate spreadsheets for different locations or units (i.e., sumps, tanks, API, etc.) for

2/22/2008



simplified review of compliance with dates, etc. of the SFO. The operator shall provide an annual report in a format that satisfies the above with the Annual Ground Water Monitoring Report.

c) A storage tank numbering system shall be implemented at the facility with tank number references in the spreadsheet to show the exact tank of concern. A numbering system for other units is recommended.

d) Pits/Ponds shall be added to the spreadsheet.

e) The dates need to be revised up through March 1, 2013 for all locations or units to undergo testing.

Only large tanks are exempted (see paragraph below) and WRSW needs to denote tanks that are exempted in the spreadsheet with the new date for the inspection.

The "OCD Tank Inspection" spreadsheet indicates a 10 year inspection frequency; however, the SFO indicates that all locations or units are required on a one time basis to be tested within 5 years of the SFO date (3/1/2006) or by March 1, 2011. Exempted from this one time testing requirement are large tanks that have been tested within the past five years or are due to be tested within the next five years under other regulatory agency rules, regulations or guidelines, or under any other standards accepted by regulatory agencies, such as API Code 653, provided that the tanks shall be identified in the spreadsheet and test dates and results provided to the OCD. WRSW may request a time extension for accomplishing requirement or recommendations, which the OCD, in its sole discretion, may grant for good cause shown by WRSW. The OCD extends the end of the one time five year date to March 1, 2013 for good cause.

In conclusion, the OCD concludes that WRSW has complied with SFO Section I.V. Compromise and Settlement (Section 18(a)(c)). WRSW shall address Item #4 above satisfy Section 18(b) of the SFO. Regarding Section 18 (c), the OCD has opted to address the modification in the discharge permit renewal process for good cause as stated in Item #1 above.

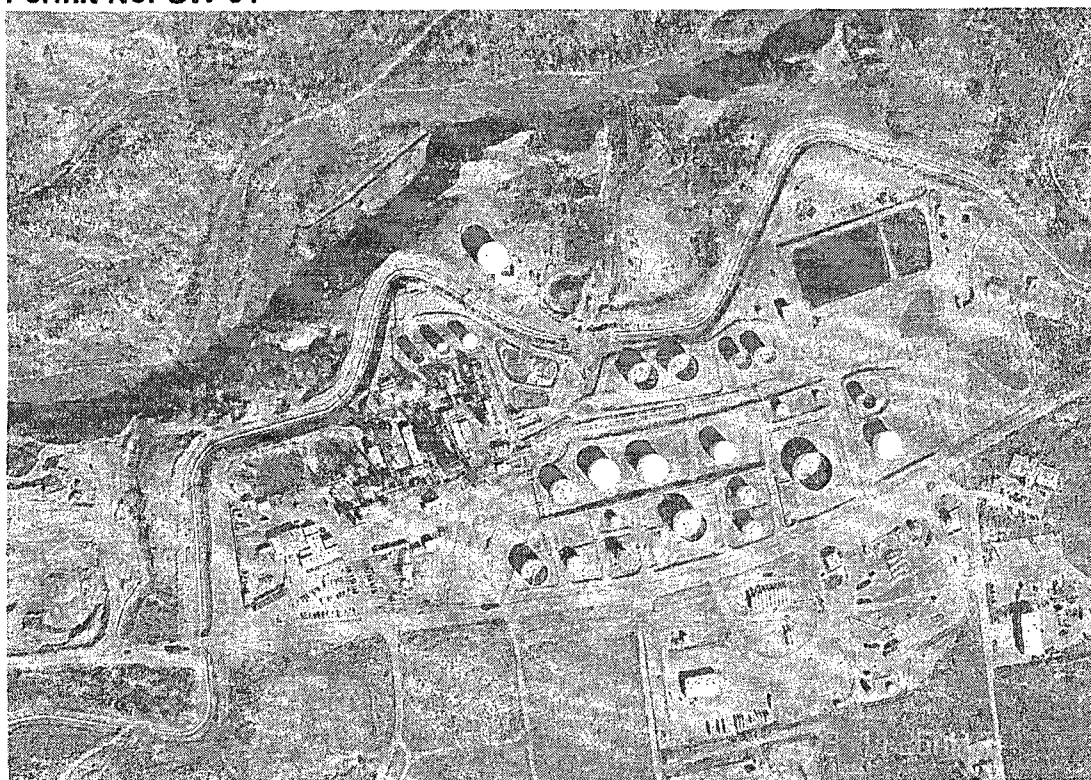
Please contact me if you have questions. Thank you.

*Note: Please be advised that NMOCD approval of this plan does not relieve Western Refining Southwest, Inc., Bloomfield Refinery of responsibility should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Western Refining Southwest, Inc., Bloomfield Refinery of responsibility for compliance with any other federal, state, or local laws and/or regulations.*

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3491  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>  
(Pollution Prevention Guidance is under "Publications")

**OCD DISCHARGE PLAN  
APPLICATION FOR MODIFICATION  
JULY 2007**

**Permit No. GW-01**



**San Juan Refining Company  
Giant - Bloomfield Refinery  
#50 Road 4990  
Bloomfield, New Mexico 87413**

**Chavez, Carl J, EMNRD**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, February 22, 2008 3:47 PM  
**To:** 'Randy Schmaltz'  
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2/22/2008

# Table of Contents

Section	Title
1.0	Type of Operation
2.0	Name of Operator or Legally Responsible Party & Local Representative
3.0	Location of the Discharge Plan Facility
4.0	Landowners
5.0	Facility Description
6.0	Materials Stored or Used at the Facility
7.0	Sources and Quantities of Effluent & Waste Solids Generated at the Facility
8.0	Description of Current Liquid & Solid Waste Collection/Storage/Disposal Procedures
9.0	Proposed Modifications
10.0	Inspection, Maintenance & Reporting (Inspection Schedule Spreadsheet)
11.0	Spill/Leak Prevention & Reporting Procedures (Contingency Plans)
12.0	Site Characteristics
13.0	Compliance Information
Appendix A	Plant Site Drawing
Appendix B	Table of Materials Used or Stored at the Facility
Appendix C	Process Unit Schematic Diagrams
Appendix D	Proposed Long-term Groundwater Monitoring Plan
Appendix E	Assessment, Remediation and Contingency Plan

# Discharge Plan Renewal Application

Section 5.0

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## Section 5.0 Facility Description

The Bloomfield Refinery receives and processes up to 18,000 barrels per day of crude oil and produces propane, butane, gasoline, kerosene, fuel oil, and residual fuel.

The refinery is located in northwestern New Mexico, approximately 1 mile south of the City of Bloomfield in San Juan County. It is further located approximately 1/2 mile east of State Route 44 on County Road 4990 (a.k.a. Sullivan Road).

The refinery is situated on an elevated terrace south of the San Juan River and the Hammond Irrigation Ditch. This terrace is approximately 100 feet above the river level and 20 feet above the irrigation ditch. The northern refinery fence line adjoins the irrigation ditch and the distance from the refinery to the river's edge varies from approximately 300 to 1,000 feet.

The main part of the refinery is located on a 45 acre site north of County Road 4990 and includes the following general areas:

- Office Area (buildings, warehouse, storage yard)
- Parking Lots & Heavy Oil Loading Station
- Process Area (refinery operations equipment)
- Wastewater Treatment Unit (WWTU)
- Tank Farm Area
- Used Equipment Laydown Area
- Firefighting Training Area
- Solid Waste Disposal Area

A refinery terminal facility, regional business office, transportation maintenance facility, and the refinery evaporation ponds are located on a 25 acre site south of County Road 4990 and includes the following general areas:

- Terminal Office & parking areas
- Crude Oil Unloading Station & Storage Tank Area
- Product Loading Station & Storage Tank Area
- High Pressure Storage Bullets Area
- Regional Office & parking area
- Transportation Maintenance Facility and truck parking areas
- Refinery Wastewater Evaporation Ponds
- Class I Injection Well (GW 130)

Crude supplies arrive by pipeline or tank trucks. The refinery incorporates various processing units that convert crude into finished products. These units are briefly described as follows:

- The crude unit separates crude oil into various fractions; including gas, naphtha, diesel, kerosene, and reduced crude.
- The reforming unit combines low octane naphtha molecules to form high octane naphtha.

# Discharge Plan Renewal Application

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- The fluidized catalytic cracking unit breaks up long-chain hydrocarbon molecules into smaller molecules, and essentially converts heavier oils into naphtha and lighter oils.
- The Ammonia Absorption Refrigeration Unit chills down hydrogen in order to recover LPG.
- The sulfur recovery unit cleans up fuel gas by converting hydrogen sulfide gas into elemental sulfur and produces a solid elemental sulfur byproduct.
- The poly unit polymerizes olefinic LPG and produces gasoline blendstock.
- The treater unit removes sulfur from LPG.
- The DHT (diesel hydrotreating) unit removes sulfur from diesel and light oils.
- The tank farm is a system of storage tanks used throughout the refinery to hold and store crude oil, intermediate feedstocks, finished products, chemicals, and water. These tanks are located above ground and range in size from 110,000 barrels to less than 1,000 barrels.

In addition to the above-mentioned processing units, various other equipment and systems support the operation of the refinery and are briefly described as follows.

Pumps, valves, and piping systems are used throughout the refinery to transfer various liquids among tankage and processing units.

Several tank truck loading racks are used at the terminals to load out finished products and receive crude oil, other feedstocks, additives, and chemicals.

A firefighting training facility is used to conduct employee firefighting training.

## Process Wastewater Treatment System

The process wastewater system is a network of curbing, paving, catch basins, and underground piping that collects rainwater and other effluent from various processing areas within the refinery and then conveys this wastewater to the API separator. In general, process wastewater is effluent that may reasonably be expected to come in contact with hydrocarbons.

The API separator is a large concrete containment structure that uses gravity and residence time to separate wastewater into three components; a sludge layer that sinks to the bottom, a scum layer that floats to the top, and a clarified effluent in the middle. The clarified effluent then flows on through a series of three lined aeration lagoons.

Each lagoon is equipped with two aerators which effectively strip dissolved gasses and light hydrocarbons from the wastewater. Effluent from the aeration lagoons flows to the evaporation ponds.

# Discharge Plan Renewal Application

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## 5. Location of discharges

Treated process and non-process wastewater is evaporated at the evaporation ponds or injected underground at the Class I injection well.

Storm water that is not contained on-site is released off-site at two outfall locations on the boundary of refinery property. Location of the outfalls and retention areas are shown on the plant site drawing in Appendix A. Storm water analysis is kept on site in the Storm Water Pollution Prevention Plan.

Sanitary sewage is treated and released at four septic fields located within the Giant property line.

The locations of the evaporation ponds, storm water outfalls, and septic fields are shown on the plant site drawing in Appendix A.

## 6. Location of storage facilities

The refinery uses warehouses, outdoor yards, and curbed pads for storage of various materials and equipment within the refinery. The locations of these storage facilities are shown on the plant site drawing in Appendix A.

## 7. Location of disposal facilities

The refinery uses an onsite landfill to dispose of sulfur, FCC fines, and FCC spent catalyst. The Sulfur Recovery Unit (SRU) generates approximately 300 tons of solid sulfur per year. The Fluidized Catalytic Cracking (FCC) unit produces 200 tons of spent catalyst per year. These materials are deposited in the landfill and covered with soil. The location of the solid waste disposal area is shown on the plant site drawing in Appendix A.

## 8. Location of processing facilities

The refinery uses various processing units and support systems as described above. The locations of these facilities are shown on the plant site drawing in Appendix A.

## Discharge Plan Renewal Application

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Giant Refining Company - Bloomfield utilizes 15 active recovery wells and the Hammond Ditch French Drain Recovery System to pump and treat hydrocarbon impacted groundwater. Giant also pumps out 14 collection wells located on the north side of Hammond Ditch. The groundwater recovered with these systems is transferred to the API Separator for treatment.

This discharge typically ranges from 9,000 to 11,000 gallons per day.

### Diesel/Kerosene Salt Dryers

Three salt wash vessels are used to remove impurities from diesel and kerosene product streams. Occasionally, the salt must be replaced and, at that time, the vessels are drained. Wastewater containing dissolved solids and trace hydrocarbons are discharged to the process sewer.

This discharge typically ranges from 800 to 1,000 gallons per event when replacing salt. This event occurs 2 - 3 times per year.

Sources of solid waste include the following. Most of these waste are generated intermittently and then removed, collected, containerized, and stored until shipped off-site for recycling or disposal.

### Fluid Catalytic Cracking Unit (FCCU) Catalyst

A metallic (alumina) catalyst is used within the FCCU to convert hydrocarbon molecules. The material is a dry, metallic solid and is non hazardous. This catalyst is periodically replaced and the spent catalyst and fines are deposited in the on-site landfill and covered with soil.

Approximately 200 to 300 tons of spent FCCU catalyst is generated every year.

### Naphtha Hydrotreating Unit (NHT) and Sulfur Guard Catalyst

There are two reactors that contain metallic catalyst in this unit. One reactor is used to convert hydrocarbon molecules and the other is used to adsorb sulfur molecules. The catalysts are periodically replaced and the spent catalyst is recycled by an off-site metal recovery service. This material is a dry, metallic solid and is shipped as a K-171 hazardous waste and as a self-heating solid.

Dump and screen procedures occur about every two years. Approximately 2 - 3 tons of spent catalyst is generated every two years.



# Discharge Plan Renewal Application

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## Reforming Unit Catalyst

A metallic (platinum) catalyst is used in the reforming unit to convert hydrocarbon molecules. This catalyst is periodically replaced and the spent catalyst is recycled by an off-site metal recovery service. This material is a dry, metallic solid and is shipped with a hazardous waste code of K-171 and as a self-heating solid.

Catalyst is changed out every ten years. However, some dump and screen procedures occur periodically. Reformer catalyst is generated on an average of 0.3 tons per year.

## Polymerization Unit

A phosphoric acid catalyst is used to convert LPG olefins into an intermediate gasoline feedstock. This catalyst is periodically replaced and disposed of at an off-site landfill. The spent catalyst is a dry solid and is non hazardous.

Approximately 40 to 60 tons of polymerization catalyst is generated every year.

## Diesel Hydrotreating Unit (DHT) Catalyst

Metallic catalyst is used in this unit to convert hydrocarbon molecules. This catalyst is a dry, metallic solid and will be shipped off as a K-171 hazardous waste. It will either be regenerated or recycled for metals.

Approximately 16 tons of DHT spent catalyst will be generated every year.

## Sulfur Byproduct

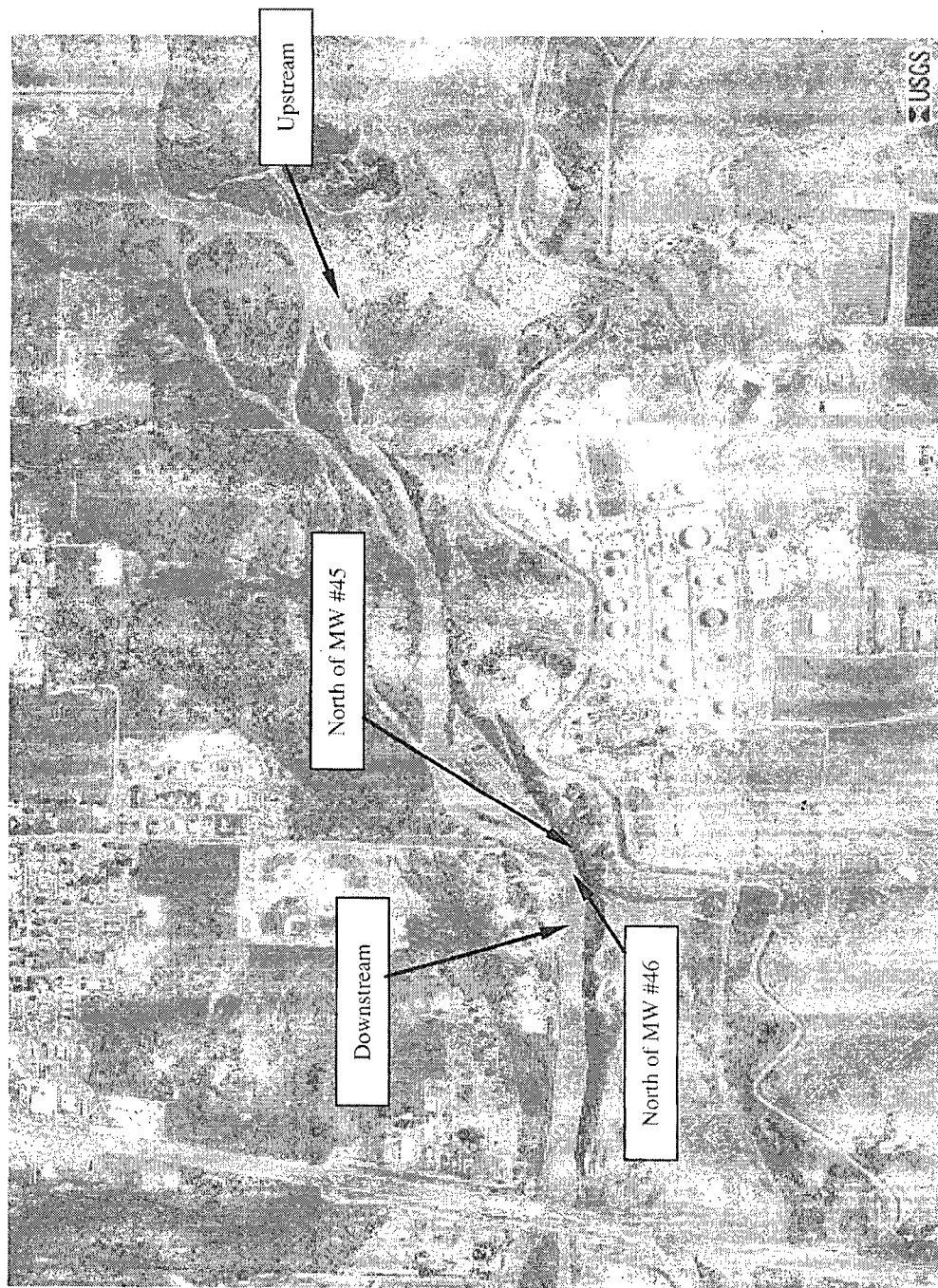
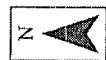
26 An elemental sulfur byproduct is regularly generated at the SRU. This solid non hazardous residue is disposed of in the on-site landfill and covered with soil.

Approximately 300 to 400 tons of sulfur byproduct is generated each year.

## Heat Exchanger Bundle Cleaning Sludge

Heat exchanger bundles are occasionally cleaned in order to restore heat transfer performance. This cleaning is conducted on a concrete curbed pad that incorporates a wastewater accumulation sump. Sediment and sludge collects in the bottom of the sump and the wastewater is removed and discharged into the process sewer.

The sludge (K-051) is removed from the sump, contained in 55 gallon drums, and disposed of at an off-site hazardous waste disposal facility. The quantity of this waste ranges from 0 to 3 tons per year



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PIRNIE**  
3646 E. Van Buren St.  
Suite 100  
Phoenix, AZ 85028

River Sampling Points  
Location Map

Bloomfield Refinery  
Facility-Wide Groundwater  
Monitoring Plan

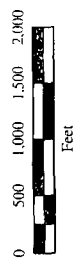
July 2007

Figure 13



# Legend

- Injection Well
- ~ Discharge Location
- ~ Site



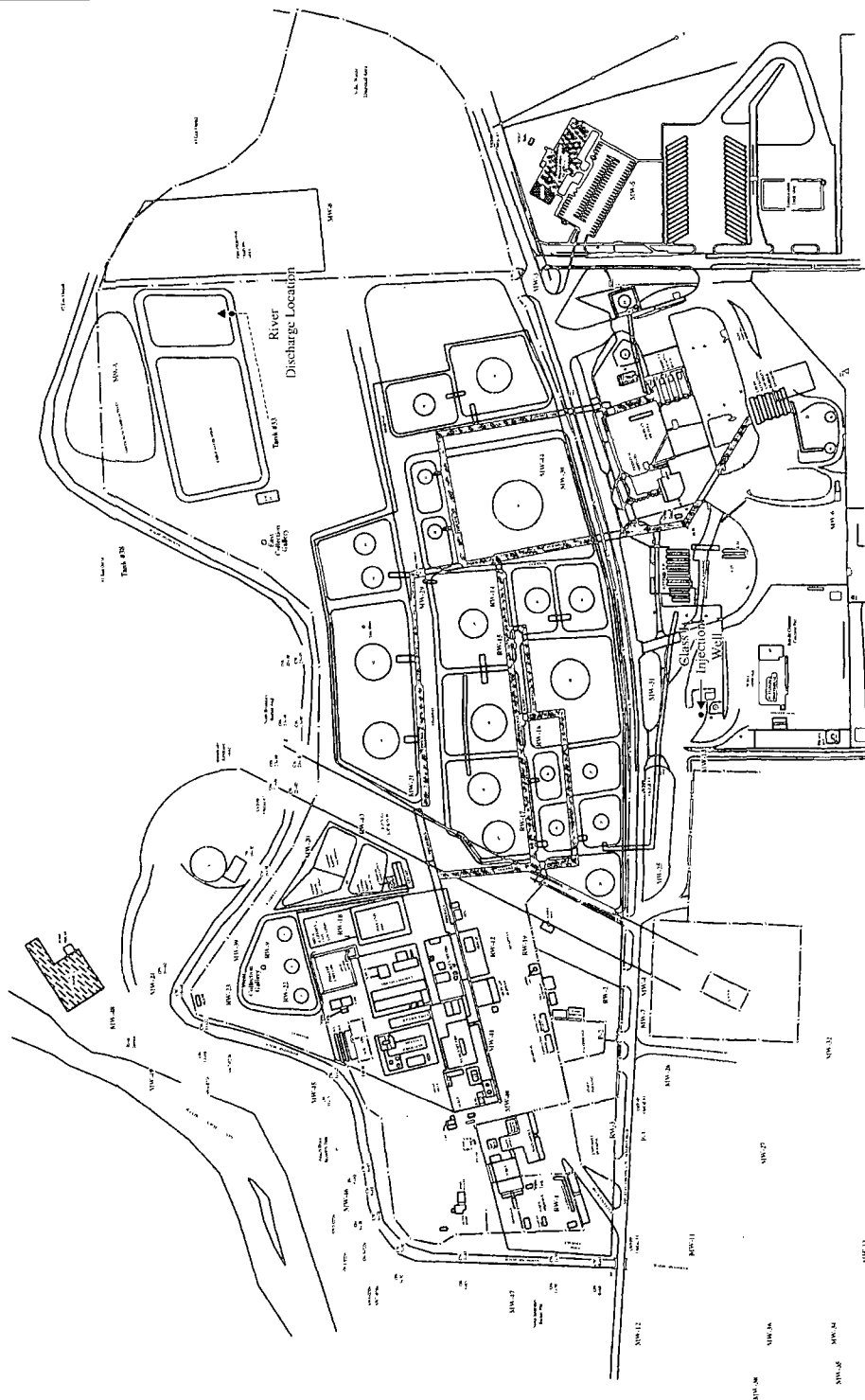
4646 E. Van Buren St.,  
Suite 400  
Phoenix, AZ 85008

## Site Plan

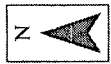
Bloomfield Refinery  
Facility-Wide Groundwater  
Monitoring Plan

July 2007

Figure 2







# Legend

- Monitoring Well
- Recovery Well
- Piezometer
- Groundwater Elevation Contours
- Site
- Well ID - Well ID
- Groundwater Elevation (ft amsl)



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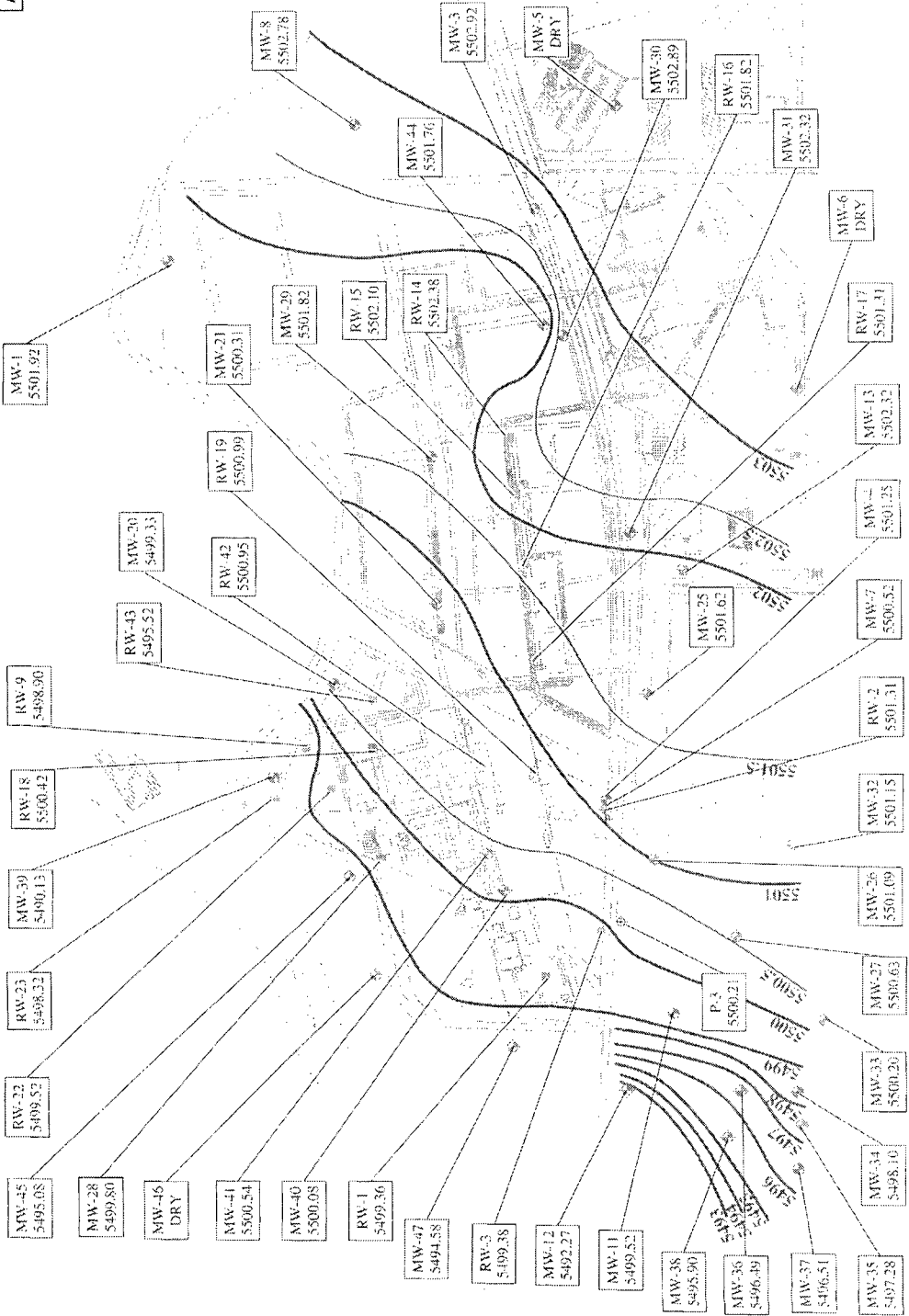
4646 E. Van Buren St.,  
Suite 400  
Phoenix, AZ 85042

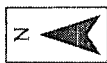
Groundwater Elevation Contours  
Spring 2007

Bloomfield Refinery  
Facility-Wide Groundwater  
Monitoring Plan

July 2007

Figure 7

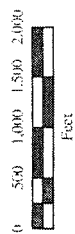




# Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Piezometer
- Collection Well
- Sump Well
- Site

MW-35 well ID



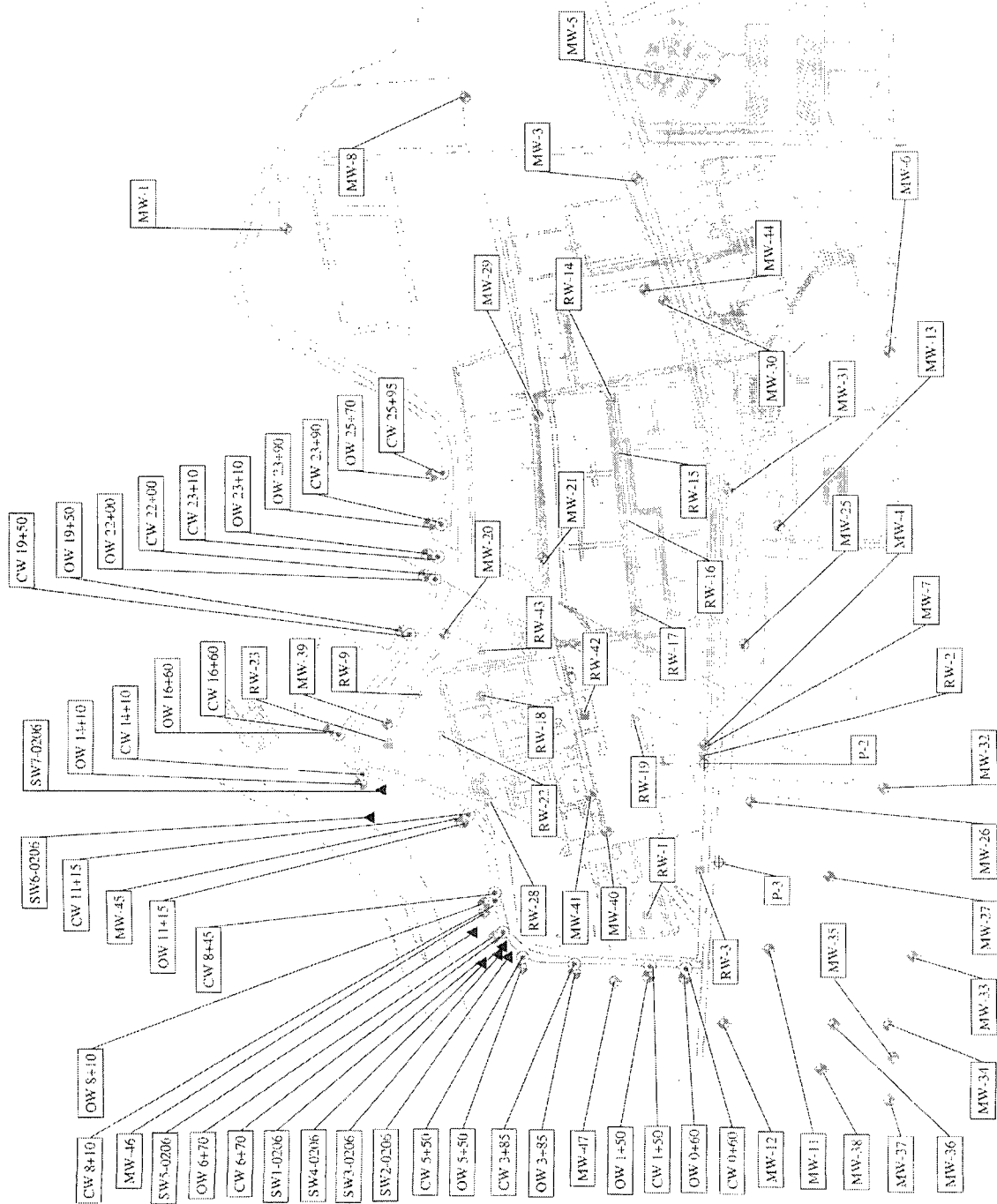
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Phoenix, AZ 85046

Refinery Complex, North Boundary  
Barrier, and San Juan River Bluff  
Well Location Map  
Bloomfield Refinery  
Facility-Wide Groundwater  
Monitoring Plan

July 2007

Figure 3



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INDEPENDENT ENVIRONMENTAL  
ENGINEERS, SCIENTISTS  
AND CONSULTANTS

**A**

**APPENDIX**



**Appendix A**  
**Volatile Organic Analytical Result Summary - Refinery Complex**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters				
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	0.75	0.75	0.62	NE
Well ID:	Date Sampled:					
MW #1	4/1/2007	<0.001	<0.001	<0.001	<0.002	<0.0025
	8/15/2006	<0.001	<0.001	<0.001	<0.003	<0.0015
	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	0.0011	<0.001	<0.001	<0.001	<0.001
	4/11/2005	0.0013	<0.0005	<0.0005	0.0011	<0.0025
	8/23/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	3/3/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001
	3/3/2003	<0.0005	0.00063	0.00065	0.0043	<0.0025
MW #3	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	<0.001	<0.001	<0.001	<0.001	<0.001
	4/11/2005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001
MW #4	4/1/2007	1.2	<0.010	0.068	0.7	<0.025
MW #7	4/1/2007	0.0015	<0.001	<0.001	<0.002	<0.0025
	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	4/11/2005	<0.0005	<0.0005	<0.0005	0.00067	<0.0025
	8/23/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
MW #8	4/1/2007	<0.001	<0.001	<0.001	<0.002	<0.0025
	8/15/2006	<0.001	<0.001	<0.001	<0.003	<0.0015
	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	<0.001	<0.001	<0.001	<0.001	<0.001
	4/11/2005	0.00053	<0.0005	<0.0005	0.0008	<0.0025
	8/23/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001
MW #11	4/1/2007	3.9	<0.010	0.038	0.16	<0.0025
	8/15/2006	0.24	<0.001	0.012	0.045	0.033
	4/5/2006	3.2	<0.005	<0.005	0.23	<0.120
	8/5/2005	4.2	<0.05	0.11	0.5	<0.05
	4/11/2005	0.4	<0.02	<0.02	0.28	<0.1
	8/23/2004	1.7	<0.02	0.064	0.015	<0.1
	8/21/2003	2.7	<0.010	0.17	0.65	0.079



**Appendix A**  
**Total Metals Analytical Result Summary - Refinery Complex**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
40 CFR 141.62 MCL (mg/L):		0.01 <sup>(1)</sup>	2.0	0.005	0.10	0.015	0.05	0.1 <sup>(2)</sup>	0.002
Well ID:	Date Sampled:								
MW #1	8/15/2006	<0.020	0.023	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.052	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #3	8/5/2005	NA	NA	NA	0.016	<0.005	NA	NA	NA
	8/21/2003	NA	NA	NA	0.029	0.022	NA	NA	<0.0002
MW #7	8/23/2004	<0.02	<0.002	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #8	8/15/2006	<0.020	0.018	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	0.33	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.071	<0.002	1.9	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.72	<0.005	NA	NA	<0.0002
MW #11	8/15/2006	<0.02	0.69	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	<0.006	0.011	NA	NA	NA
	8/23/2004	<0.02	0.54	<0.002	<0.006	0.027	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.011	0.02	NA	NA	0.00026
MW #12	8/15/2006	<0.02	0.04	<0.002	0.0078	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	4.1	0.21	NA	NA	NA
	8/23/2004	<0.02	0.19	0.003	0.11	0.18	<0.05	<0.005	0.0005
	8/21/2003	NA	NA	NA	0.51	0.16	NA	NA	<0.0002
MW #13	8/15/2006	<0.02	0.025	<0.002	<0.006	0.0078	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	0.012	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.028	<0.002	0.085	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.45	<0.005	NA	NA	<0.0002
MW #21	8/23/2004	<0.02	0.029	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #26	8/15/2006	<0.02	2.2	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	2	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.017	0.0084	NA	NA	<0.0002
MW #27	8/15/2006	<0.02	0.038	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.13	<0.002	0.019	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.014	<0.005	NA	NA	<0.0002
MW #29	8/23/2004	<0.02	0.039	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #30	8/23/2004	<0.02	0.24	<0.002	0.0073	0.011	<0.05	<0.005	0.00023
MW #31	8/23/2004	<0.02	0.35	<0.002	0.0088	<0.005	<0.05	<0.005	0.00022
MW #32	8/15/2006	<0.02	0.032	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.049	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	<0.006	<0.005	NA	NA	<0.0002
MW #33	8/15/2006	<0.02	0.017	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.038	<0.002	<0.006	0.0067	<0.05	<0.005	0.00069
	8/21/2003	NA	NA	NA	<0.006	<0.005	NA	NA	<0.0002

**Appendix A**  
**Dissolved Metals Analytical Result Summary - Refinery Complex**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery- Bloomfield, New Mexico**

		Parameters																
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)	
WQCC 20NMAC 6.2.3.103 (mg/L):		0.10	1.0	0.01	NE	0.05	1.0	1.0	0.05	NE	0.20	NE	0.05	0.05	NE	0.03 (n)	10.0	
Well ID:	Date Sampled:																	
MW #1	8/15/2006	<0.02	0.023	<0.002	74	<0.006	<0.006	<0.02	<0.005	18	0.09	2.4	<0.05	<0.005	120	<0.1	0.047	
	8/5/2005	<0.02	0.022	<0.002	68	<0.006	<0.006	0.14	<0.005	18	0.14	2.7	<0.05	<0.005	140	<0.1	<0.005	
	8/23/2004	<0.02	0.025	<0.002	67	<0.006	<0.006	0.27	<0.005	18	0.13	2.1	<0.05	<0.005	110	<0.1	0.021	
	8/15/2006	<0.02	0.46	<0.002	61	<0.006	<0.006	<0.006	<0.005	16	0.08	2.6	0.043	<0.005	150	<0.1	0.12	
MW #3	8/5/2005	<0.02	0.018	<0.002	480	<0.006	<0.006	0.047	<0.005	130	0.43	7.6	<0.05	<0.005	1300	<0.1	0.018	
	8/21/2003	<0.02	0.3	<0.002	490	<0.006	<0.006	0.27	<0.005	140	0.58	10	0.024	<0.005	1100	<0.1	0.094	
MW #7	8/23/2004	<0.02	0.0097	<0.002	300	<0.006	<0.006	0.081	<0.005	31	0.28	8.1	<0.05	<0.005	1100	<0.1	0.0096	
MW #8	8/15/2006	<0.02	0.018	<0.002	230	<0.006	<0.006	0.033	<0.005	35	0.42	3.2	<0.05	<0.005	380	<0.1	0.044	
	8/5/2005	<0.02	0.021	<0.002	230	<0.006	<0.006	0.078	<0.005	37	0.65	3.1	<0.05	<0.005	360	<0.1	0.014	
	8/23/2004	<0.02	0.021	<0.002	210	<0.006	<0.006	0.059	<0.005	35	0.57	3	<0.05	<0.005	360	<0.1	0.022	
	8/21/2003	<0.02	0.36	<0.002	200	<0.006	<0.006	0.044	<0.005	38	0.68	4	0.09	<0.005	350	<0.1	0.13	
MW #11	8/15/2006	<0.02	0.69	<0.002	100	<0.006	<0.006	9.3	<0.005	22	1.8	1.4	<0.05	<0.005	390	<0.1	0.051	
	8/5/2005	<0.02	0.73	<0.002	96	<0.006	<0.006	7.6	<0.005	22	1.6	1.7	<0.05	<0.005	380	<0.1	0.014	
	8/23/2004	<0.02	0.47	<0.002	100	<0.006	0.021	6.9	0.022	23	1.7	1.5	<0.05	<0.005	390	<0.1	63	
	8/21/2003	<0.02	1.2	<0.002	120	<0.006	<0.006	7.6	<0.005	25	2	2.3	0.15	<0.005	420	<0.1	0.18	
MW #12	8/15/2006	<0.02	0.04	<0.002	73	0.0078	<0.006	0.069	<0.005	14	0.3	1.1	<0.05	<0.005	100	<0.1	0.036	
	8/5/2005	<0.02	0.07	<0.002	370	0.022	<0.006	0.55	<0.005	97	0.64	2.8	<0.05	<0.005	560	<0.1	0.022	
	8/23/2004	<0.02	0.06	<0.002	130	<0.006	<0.006	0.044	<0.005	NA	0.55	1.5	<0.05	<0.005	320	<0.1	0.035	
	8/21/2003	<0.02	0.12	<0.002	420	0.0066	<0.006	0.024	<0.005	130	1.8	4.3	0.084	<0.005	960	<0.1	0.088	
MW #13	8/15/2006	<0.02	0.025	<0.002	250	<0.006	0.0063	<0.02	0.0078	82	1.1	3.6	<0.05	<0.005	620	<0.10	0.061	
	8/5/2005	<0.02	0.028	<0.002	240	<0.006	<0.006	<0.02	<0.005	85	1.1	3.8	<0.05	<0.005	570	<0.1	0.0088	
	8/23/2004	<0.02	0.022	<0.002	210	<0.006	<0.006	0.046	<0.005	80	0.58	3.6	<0.05	<0.005	610	<0.1	0.021	
	8/21/2003	<0.02	0.33	<0.002	270	<0.006	0.0096	0.04	<0.005	110	1.1	5.3	0.16	<0.005	680	<0.1	0.09	

**Appendix A**  
**General Chemistry Analytical Result Summary - Refinery Complex**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters										
		Fluoride (mg/L)	Chloride (mg/L)	Bromide (mg/L)	Nitrite (mg/L)	Nitrogen (mg/L)	Phosphorus (mg/L)	Sulfate (mg/L)	TDS (mg/L)	E.C. (umhos/cm)	CO <sub>2</sub> (mg/L)	Alk (mg/L)
WQCC 20NNMAC 6.2.3103 (mg/L):		1.6	250	NE	NE	10	NE	600	1000	NE	NE	NE
Well ID:	Date Sampled:											
MW #1	8/15/2006	0.65	17	<0.50	1.2	NA	<0.50	190	640	940	240	270
	8/5/2005	0.68	31	<0.50	<0.10	2.1	<0.50	190	650	980	300	300
	8/23/2004	0.63	29	0.14	<0.10	1.9	<0.50	220	650	870	220	240
	8/15/2006	0.58	33	0.32	<0.10	1.6	<0.50	200	610	820	240	262
MW #3	8/5/2005	0.33	1200	4.5	<0.50	42	<0.50	2300	6200	8300	680	680
	8/21/2003	0.17	1400	22	NA	41	<0.50	1900	5700	8500	NA	NA
MW #7	8/23/2004	0.75	25	0.14	<0.10	<0.10	<0.50	5100	7400	7800	98	110
MW #8	8/15/2006	0.67	300	1.5	26	NA	<0.50	980	2200	3200	200	210
	8/5/2005	0.79	260	<2.5	<0.50	27	<0.50	740	2000	2900	260	260
	8/23/2004	0.64	250	1.2	NA	NA	<0.50	920	2100	2600	210	230
	8/21/2003	0.66	260	5	<0.10	14	<0.50	950	2100	2900	220	208
MW #11	8/15/2006	0.1	82	1	<1.0	<0.10	<0.50	19	1400	2200	1100	1100
	8/5/2005	0.56	85	1.4	<0.10	<0.10	<0.50	20	1500	2200	1100	1100
	8/23/2004	0.41	97	0.97	NA	NA	<0.50	13	1500	2100	330	390
	8/21/2003	0.44	150	5.3	<0.10	<0.10	<0.50	4.2	1100	2500	1300	1120
MW #12	8/15/2006	0.36	19	<0.50	<0.10	<0.10	<0.50	140	560	890	260	290
	8/5/2005	0.43	100	0.75	<0.10	<0.10	<0.50	2400	4000	4600	310	310
	8/23/2004	0.52	130	0.78	NA	NA	NA	680	1600	1900	970	1100
	8/21/2003	0.32	130	3.7	<0.10	<0.10	<0.50	3100	5500	6600	310	319
MW #13	8/15/2006	0.12	310	3.7	8.3	NA	<0.50	1100	3000	4300	910	960
	8/5/2005	0.15	320	4.6	0.23	6.1	<0.50	1000	3000	4600	1000	1000
	8/23/2004	0.2	330	4.3	1.6	6.6	<0.50	950	2800	3400	860	950
	8/21/2003	0.19	510	13	<0.10	12	<0.50	840	3100	5000	1000	917
MW #21	8/23/2004	0.18	420	3.4	<0.10	<0.10	<0.50	1400	3400	4000	600	670
MW #26	8/15/2006	0.36	410	5.2	<0.50	NA	<0.50	0.68	1700	2900	990	960
	8/5/2005	0.42	290	4.5	<0.50	<0.10	<0.50	<0.50	1600	2700	1000	1000
	8/23/2004	0.29	230	4.2	<0.10	<0.10	<0.50	<0.50	1600	2200	910	1000
	8/21/2003	0.39	160	2.9	<0.10	<0.10	<0.50	1.00	1400	1900	1300	1090

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**D**

**APPENDIX**



**Appendix D**  
**Volatile Organic Compounds Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	MRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	NE	NE	NE	NE
Well ID:	Date Sampled:								
North of MW-46:	4/16/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.05
	2/8/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.05
	10/23/06	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<5.0	<0.050
	7/18/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	4/14/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	1/6/06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.050
	10/24/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	7/19/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	4/13/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	1/25/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	11/3/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	10/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	9/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	8/14/04	0.006	0.085	0.029	0.11	<0.0002	<0.1	<5.0	0.3
North of MW-45:	4/16/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.05
	2/8/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.05
	10/23/06	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<5.0	<0.050
	7/18/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	4/14/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	1/6/06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.050
	10/24/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	7/19/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	4/13/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	1/25/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	11/3/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	10/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	9/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	8/14/04	0.0097	0.061	0.022	0.081	<0.0002	<0.1	NA	0.2
Upstream of Refinery:	4/16/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.050
	2/8/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.05
	10/23/06	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<5.0	<0.050
	7/18/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	4/14/05	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	1/6/06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.050
	10/24/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	7/19/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	4/13/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	1/25/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	11/3/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	10/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	9/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	8/14/04	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.1	NA	<0.2

**Appendix D**  
**Volatile Organic Compounds Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	MRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	NE	NE	NE	NE
Well ID:	Date Sampled:								
Downstream of Refinery:	4/16/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.050
	2/8/07	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<5.0	<0.050
	10/23/06	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<5.0	<0.050
	7/18/06	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	4/14/06	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<5.0	<0.050
	1/6/06	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.050
	10/24/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	7/19/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	4/13/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	1/25/05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	11/3/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	10/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05
	9/7/04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<1.0	<5.0	<0.05

**Notes:**

mg/L = milligram per liter

MW = monitoring well

NA = not analyzed

NE = not established

MTBE = methyl tertiary butyl ether

MRO = motor oil range organics

DRO = diesel range organics

GRO = gasoline range organics

WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10,000 ug/L or less

**Appendix D**  
**Volatile Organic Analytical Result Summary - River Terrace Area**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters						
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	0.75	0.75	0.62	NE	NE	NE
Well ID:	Date Sampled:							
TP-1	2/26/2007	2	<0.1	6.3	32	<0.25	3	160
	12/4/2006	1.60	<0.100	3.20	20.00	<0.25	3.30	95.00
	9/11/2006	3.20	<0.100	3.80	20.00	<0.250	3.50	98.00
	6/17/2006	2.60	<0.250	3.30	18.00	<0.620	4.30	40.00
	3/6/2006	1.50	<0.050	4.10	30.00	<0.120	3.80	72.00
	8/5/2005	1.40	0.05	3.80	23.00	<0.050	1.90	66.00
TP-2	2/26/2007	4.3	<0.10	4.3	19	<0.25	2.1	94
	12/4/2006	1.70	<0.100	2.40	12.00	<0.250	1.50	41.00
	9/11/2006	3.30	0.27	2.80	15.00	<0.25	1.30	77.00
	6/17/2006	3.60	2.40	2.80	14.00	<0.120	4.90	42.00
	3/6/2006	6.20	1.70	0.51	5.00	<0.120	9.90	27.00
	8/5/2005	6.10	8.70	4.20	25.00	<0.05	1.10	84.00
TP-3	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	85
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	9/11/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	6/17/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	3/6/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	8/5/2005	<0.005	<0.005	<0.005	0.0012	<0.0025	<1.0	<0.05
TP-4	6/17/2006	<0.010	<0.001	<0.001	5.70	<0.025	1.1000	9.200
	8/5/2005	<0.01	<0.01	0.42	0.22	<0.05	1.1	8.2
TP-5	2/26/2007	<0.01	<0.01	1.3	18	<0.025	<1.0	85
	12/4/2006	0.069	<0.050	1.2	10	<0.120	<1.0	50
	9/11/2006	<0.01	<0.01	3.1	16	<0.025	<1.0	110
	6/17/2006	0.054	<0.001	1.6	16	<0.025	<3.0	34
	3/6/2006	0.2	<0.02	0.28	20	<0.05	<1.0	59
	8/5/2005	0.35	<0.005	3.5	21	<0.05	1.2	56
TP-6	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.28
	12/4/2006	0.006	<0.001	<0.001	<0.003	<0.0025	<1.0	0.48
	9/11/2006	0.027	<0.01	0.41	0.045	<0.025	<1.0	5.3
	6/17/2006	<0.001	<0.001	4.4	0.35	<0.025	<1.0	1.9
	3/6/2006	<0.001	<0.001	0.18	0.75	<0.025	<1.0	2.7
	8/5/2005	0.28	<0.01	2.8	7.5	<0.05	1	26
TP-8	2/26/2007	<0.01	<0.01	1.3	13	<0.025	2.1	70
	12/4/2006	0.041	<0.010	1.30	12	<0.025	1.4	79
	9/11/2006	<0.01	<0.010	0.58	1.6	<0.025	5.6	57
	6/17/2006	0.26	<0.100	0.64	6.3	<0.025	6.8	19
	3/6/2006	0.35	<0.10	1.10	10	<0.025	18	37
	8/5/2005	1.1	<0.05	3.20	25	<0.25	7.8	84

**Appendix D**  
**Volatile Organic Analytical Result Summary - River Terrace Area**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters						
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	0.75	0.75	0.62	NE	NE	NE
Well ID:	Date Sampled:							
TP-9	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	9/11/2006	<0.001	<0.001	0.001	<0.003	<0.0025	<1.0	0.72
	6/17/2006	<0.001	<0.001	0.001	<0.003	<0.0025	<1.0	<0.050
	3/6/2006	<0.001	<0.001	<0.003	<0.003	<0.0025	<1.0	0.094
	8/5/2005	<0.005	<0.001	<0.003	0.02	0.027	<1.0	1.1
TP-10	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	9/11/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	6/17/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	3/6/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	8/5/2005	<0.0005	<0.0005	<0.0005	0.0025	<0.0025	<1.0	<0.05
TP-11	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	9/11/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	6/17/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	3/6/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.05
	8/5/2005	<0.0005	<0.0005	<0.0005	0.0028	<0.0025	<1.0	<0.05
TP-12	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	9/11/2006	<0.001	<0.001	<0.001	<0.003	0.0081	<1.0	<0.050
	6/17/2006	<0.001	<0.001	<0.001	<0.003	0.0049	<1.0	<0.050
	3/6/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	8/5/2005	<0.0005	<0.0005	0.00055	0.0042	0.0028	1.00	<0.050
TP-13	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	9/11/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	6/17/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	3/6/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	8/5/2005	<0.0005	<0.0005	<0.0005	0.0037	<0.0025	<1.0	<0.050
MW-49	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.05
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	0.081
	9/11/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	0.23
	6/17/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	<0.050
	3/6/2006	<0.001	<0.001	<0.001	0.0061	<0.0025	<1.0	0.074
	8/5/2005	0.093	<0.002	0.015	0.0041	<0.002	NR	NR



**Appendix D**  
**Volatile Organic Analytical Result Summary - River Terrace Area**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters						
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	0.75	0.75	0.62	NE	NE	NE
Well ID:	Date Sampled:							
DW-1	2/26/2007	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.29
	12/4/2006	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.0	0.09
	9/11/2006	<0.005	<0.005	<0.005	<0.015	<0.012	<1.0	1.2
	6/17/2006	<0.001	<0.001	0.016	0.12	<0.0025	1.6	0.9
	3/6/2006	<0.005	<0.005	0.041	0.23	<0.012	2.2	2.8
	8/5/2005	<0.001	<0.001	<0.001	0.0031	<0.001	NA	NA

Notes:

mg/L = milligrams per liter

DW = dewatering well

TP = temporary piezometer

MW = monitoring well

NA = not analyzed

WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10.000 ug/L TDS or less.

NE = not established

MTBE = methyl tertiary butyl ether

DRO = diesel range organics

GRO = gasoline range organics

**Appendix D**  
**Total Metals Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
Well ID:	Date Sampled:	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
40 CFR 141.62 MCL (mg/L):  North of MW-46:		0.01 <sup>(1)</sup>	2.0	0.005	0.10	0.015	0.05	0.1 <sup>(2)</sup>	0.002
	4/16/07	<0.02	0.074	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	2/8/07	<0.020	0.082	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/23/06	<0.020	0.062	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	7/18/06	<0.020	0.078	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	4/14/06	<0.020	0.069	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	1/6/06	<0.0020	0.064	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/24/05	<0.02	0.083	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	7/19/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031
	4/13/05	<0.02	0.083	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	1/25/05	<0.02	0.076	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	12/7/04	<0.02	0.087	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	11/3/04	<0.02	0.088	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	10/7/04	<0.02	0.074	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	9/7/04	<0.02	0.11	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
North of MW-45:	4/16/07	<0.020	0.073	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	2/8/07	<0.020	0.079	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/23/06	<0.020	0.061	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	7/18/06	<0.020	0.081	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	4/14/06	<0.020	0.068	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	1/6/06	<0.0020	0.063	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/24/05	<0.02	0.079	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	7/19/05	<0.02	0.069	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031
	4/13/05	<0.02	0.084	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	1/25/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	12/7/04	<0.02	0.08	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	11/3/04	<0.02	0.1	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	10/7/04	<0.02	0.072	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	9/7/04	<0.020	0.11	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020

**Appendix D**  
**Total Metals Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters								
	Well ID:	Date Sampled:	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
40 CFR 141.62 MCL (mg/L):	North of MW-46:	4/16/07	<0.02	0.074	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		2/8/07	<0.020	0.082	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
		10/23/06	<0.020	0.062	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
		7/18/06	<0.020	0.078	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
		4/14/06	<0.020	0.069	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
		1/6/06	<0.0020	0.064	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
		10/24/05	<0.02	0.083	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		7/19/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031
		4/13/05	<0.02	0.083	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		1/25/05	<0.02	0.076	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		12/7/04	<0.02	0.087	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		11/3/04	<0.02	0.088	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		10/7/04	<0.02	0.074	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
		9/7/04	<0.02	0.11	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
North of MW-45:	4/16/07	<0.020	0.073	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	2/8/07	<0.020	0.079	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	10/23/06	<0.020	0.061	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	7/18/06	<0.020	0.081	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	4/14/06	<0.020	0.068	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	1/6/06	<0.0020	0.063	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	
	10/24/05	<0.02	0.079	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	7/19/05	<0.02	0.069	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031	
	4/13/05	<0.02	0.084	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	1/25/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	12/7/04	<0.02	0.08	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	11/3/04	<0.02	0.1	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	10/7/04	<0.02	0.072	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	9/7/04	<0.020	0.11	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020	

**Appendix D**  
**Total Metals Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
40 CFR 141.62 MCL (mg/L):		0.01 (1)	2.0	0.005	0.10	0.015	0.05	0.1 (2)	0.002
Well ID:	Date Sampled:								
Upstream of Refinery:	4/16/07	<0.020	0.068	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	2/8/07	<0.020	0.075	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	10/23/06	<0.020	0.056	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	7/18/06	<0.020	0.076	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	4/14/06	<0.020	0.070	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	1/6/06	<0.020	0.063	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/24/05	<0.02	0.08	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	7/19/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031
	4/13/05	<0.02	0.092	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	1/25/05	<0.02	0.077	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	12/7/04	<0.02	0.077	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	11/3/04	<0.02	0.086	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
Downstream of Refinery:	10/7/04	<0.02	0.083	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	9/7/04	<0.020	0.1	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	4/16/07	<0.020	0.085	<0.0020	<0.0060	0.01	<0.050	<0.0050	<0.00020
	2/8/07	<0.020	0.088	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/23/06	<0.020	0.062	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	7/18/06	<0.020	0.076	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	4/14/06	<0.020	0.068	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	1/6/06	<0.020	0.063	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020
	10/24/05	<0.02	0.089	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	7/19/05	<0.02	0.07	<0.002	<0.006	<0.005	<0.05	<0.005	0.00031
	4/13/05	<0.02	0.12	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	1/25/05	<0.02	0.072	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	12/7/04	<0.02	0.082	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	11/3/04	<0.02	0.088	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002

Notes:

mg/L = milligrams per liter

MW = monitoring well

NA = not analyzed

NE = not established

40 CFR 141.62 MCL = National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

(1) MCL as of 1/23/2006

(2) National secondary drinking water regulation

**Appendix D**  
**Dissolved Metals Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters																
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)	
WQCC 20NMAC 6.2.3103 (mg/L):		0.10	1.0	0.01	NE	0.05	1.0	1.0	0.05	NE	0.20	NE	0.05	0.05	NE	0.03 (n)	10.0	
Well ID:	Date Sampled:	4/16/07	<0.020	0.059	<0.002	30	<0.006	<0.006	<0.020	<0.005	5.5	0.007	1.5	<0.05	<0.005	18	<0.1	0.032
		2/8/07	<0.020	0.055	<0.002	31	<0.006	<0.006	<0.020	<0.005	5.4	0.011	1.6	<0.050	<0.005	19	<0.1	<0.053
		10/23/06	<0.020	0.062	<0.0020	33	<0.0060	<0.0060	0.075	<0.0050	5.3	0.013	1.6	<0.050	<0.0050	20	<0.10	<0.10
		7/18/06	<0.020	0.063	<0.0020	30	<0.0060	<0.0060	0.021	<0.0050	5.2	0.011	1.6	<0.050	<0.0050	15	<0.10	0.026
		4/14/06	<0.020	0.061	<0.0020	37	<0.0060	<0.0060	0.023	<0.0050	6.2	0.071	1.8	<0.050	<0.0050	28	<0.10	0.16
		1/6/06	<0.020	0.060	<0.0020	36	<0.0060	<0.0060	<0.020	<0.0050	6.2	0.021	<0.050	<0.050	<0.0050	20	<0.10	0.046
		10/24/05	<0.02	0.064	<0.002	38	<0.006	<0.006	<0.02	<0.005	6.5	0.014	1.9	<0.05	<0.005	<0.005	<0.1	0.067
		7/19/05	<0.02	0.07	<0.002	36	<0.006	<0.006	0.037	<0.005	6.7	0.021	2	<0.05	<0.005	<0.005	<0.1	0.027
		4/13/05	<0.02	0.073	<0.002	38	<0.006	<0.006	0.041	<0.005	6.5	0.008	2.1	<0.05	<0.005	<0.005	<0.1	0.045
		1/25/05	<0.02	0.064	<0.002	48	<0.006	<0.006	0.022	<0.005	8.2	0.013	2.3	<0.05	>0.005	<0.005	<0.1	0.028
North of MW#46:	12/7/04	<0.020	0.069	<0.0020	44	<0.0060	<0.0060	<0.02	<0.0050	7.7	0.01	2	<0.050	<0.0050	30	<0.10	0.012	
	11/3/04	<0.020	0.075	<0.0020	43	<0.0060	<0.0060	0.03	<0.0050	7.6	0.011	2	<0.050	<0.0050	30	<0.10	0.017	
	10/7/04	<0.020	0.063	<0.0020	46	<0.0060	NA	0.36	<0.0050	8.1	0.0084	2.2	<0.050	<0.0050	31	<0.10	NA	
	9/7/04	<0.020	0.082	<0.0020	39	<0.0060	<0.0060	0.036	<0.0050	7.5	0.004	2.1	<0.050	<0.0050	21	0.1	0.023	
	4/16/07	<0.020	0.056	<0.0020	31	<0.0060	0.006	<0.02	<0.005	5.7	0.059	1.4	0.05	<0.005	19	<0.1	0.034	
	2/8/07	<0.020	0.057	<0.0020	32	<0.0060	<0.0060	<0.02	<0.0050	5.7	0.012	1.5	<0.050	<0.005	20	<0.10	<0.097	
	10/23/06	<0.020	0.061	<0.0020	33	<0.0060	<0.0060	0.14	<0.0050	5.4	0.016	1.7	<0.050	<0.0050	21	<0.10	<0.10	
	7/18/06	<0.020	0.064	<0.0020	30	<0.0060	<0.0060	<0.020	<0.0050	5.2	0.011	1.4	<0.050	<0.0050	15	<0.10	0.031	
	4/14/06	<0.020	0.061	<0.0020	37	<0.0060	<0.0060	0.025	<0.0050	6.2	0.071	1.8	<0.050	<0.0050	28	<0.10	0.11	
	1/6/06	<0.020	0.060	<0.0020	35	<0.0060	<0.0060	0.025	<0.0050	6.1	0.022	1.90	<0.050	<0.0050	20	<0.10	0.42	
North of MW#45:	10/24/05	<0.02	0.065	<0.002	38	<0.006	<0.006	<0.02	<0.005	6.5	0.016	1.9	<0.05	<0.005	<0.005	<0.1	0.11	
	7/19/05	<0.02	0.07	<0.002	36	<0.006	<0.006	<0.2	<0.005	6.6	0.02	2	<0.05	<0.005	<0.005	<0.1	0.013	
	4/13/05	<0.02	0.075	<0.002	38	<0.006	<0.006	0.038	<0.005	6.6	0.0094	2.1	<0.05	<0.005	<0.005	<0.1	0.014	
	1/25/05	<0.02	0.065	<0.002	51	<0.006	<0.006	0.074	<0.005	8.1	0.074	2.3	<0.05	<0.005	<0.005	<0.1	0.016	
	12/7/04	<0.020	0.068	<0.0020	44	<0.0060	<0.0060	0.062	<0.0050	7.6	0.012	2	<0.050	<0.0050	30	<0.10	0.035	
	11/3/04	<0.020	0.073	<0.0020	44	<0.0060	<0.0060	<0.020	0.0071	7.8	0.017	2	<0.050	<0.0050	31	<0.10	0.011	
	10/7/04	<0.020	0.063	<0.0020	44	<0.0060	NA	0.11	<0.0050	7.8	0.0074	2.1	<0.050	<0.0050	28	<0.10	NA	
	9/7/04	<0.020	0.081	<0.0020	39	<0.0060	<0.0060	0.057	<0.0050	7.5	0.0052	2.1	<0.050	<0.0050	21	<0.10	0.023	

**Appendix D**  
**Dissolved Metals Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

Parameters																	
	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)	
WQCC 20NNMAC 6.2.3103 (mg/L):	0.10	1.0	0.01	NE	0.05	1.0	1.0	0.05	NE	0.20	NE	0.05	0.05	NE	0.03 m	10.0	
Well ID:	Date Sampled:																
Upstream of Refinery:	4/16/07	<0.020	0.057	<0.0020	31	<0.0060	<0.0060	<0.020	<0.0050	5.8	0.011	1.6	<0.050	<0.0050	21	<0.10	0.050
	2/8/07	<0.020	0.058	<0.0020	31	<0.0060	<0.0060	<0.020	<0.0050	5.5	0.012	1.7	<0.050	<0.0050	19	<0.10	0.069
	10/23/06	<0.020	0.056	<0.0020	34	<0.0060	<0.0060	0.12	<0.0050	5.7	0.019	1.7	<0.050	<0.0050	25	<0.10	0.022
	7/18/06	<0.020	0.065	<0.0020	32	<0.0060	<0.0060	<0.020	<0.0050	5.5	0.01	1.5	<0.050	<0.0050	15	<0.10	0.089
	4/14/06	<0.020	0.061	<0.0020	36	<0.0060	<0.0060	<0.020	<0.0050	6.1	0.074	1.8	<0.050	<0.0050	28	<0.10	0.062
	1/6/05	<0.020	0.061	<0.0020	35	<0.0060	<0.0060	<0.020	<0.0050	6.1	0.022	1.90	<0.050	<0.0050	20	<0.10	0.12
	10/24/05	<0.02	0.067	<0.002	37	<0.006	<0.006	0.02	<0.005	6.4	0.015	1.8	<0.05	<0.005	<0.005	<0.1	0.029
	7/19/05	<0.02	0.071	<0.002	36	<0.006	<0.006	<0.02	<0.005	6.7	0.035	2	<0.05	<0.005	<0.005	<0.1	0.029
	4/13/05	<0.02	0.073	<0.002	38	<0.006	<0.006	0.037	<0.005	6.7	0.016	2.1	<0.05	<0.005	<0.005	<0.1	0.01
	1/25/05	<0.02	0.066	<0.002	47	<0.006	<0.006	0.025	<0.005	8.1	0.016	2.3	<0.05	<0.005	<0.005	<0.1	0.028
	12/7/04	<0.020	0.068	<0.0020	43	<0.0060	<0.0060	<0.020	<0.0050	7.6	0.011	2	<0.050	<0.0050	29	<0.10	0.024
	11/3/04	<0.020	0.075	<0.0020	43	<0.0060	<0.0060	0.021	<0.0050	7.6	0.012	2.1	<0.050	<0.0050	31	<0.10	0.012
Downstream of Refinery:	10/7/04	<0.020	0.065	<0.0020	45	<0.0060	NA	0.058	<0.0050	8.1	0.0081	2.2	<0.050	<0.0050	28	<0.10	NA
	9/7/04	<0.020	0.081	<0.0020	39	<0.0060	<0.0060	0.031	<0.0050	7.5	0.0054	2.1	<0.050	0.005	20	<0.10	0.0057
	4/16/07	<0.020	0.051	<0.0020	33	<0.0060	0.0081	<0.020	<0.0050	5.8	0.015	1.6	<0.050	<0.0050	20	<0.10	0.020
	2/8/07	<0.020	0.057	<0.0020	37	<0.0060	<0.0060	<0.020	<0.0050	6	0.049	1.7	<0.050	<0.0050	24	<0.10	0.058
	10/23/06	<0.020	0.062	<0.0020	42	<0.0060	<0.0060	0.11	<0.0050	6.4	0.078	2.1	<0.050	<0.0050	30	<0.10	0.032
	7/18/06	<0.020	0.065	<0.0020	31	<0.0060	<0.0060	<0.020	<0.0050	5.3	0.017	1.4	<0.050	<0.0050	15	<0.10	0.14
	4/14/06	<0.020	0.06	<0.0020	43	<0.0060	<0.0060	0.037	<0.0050	6.9	0.14	1.9	<0.050	<0.0050	36	<0.10	0.024
	1/6/06	<0.020	0.058	<0.0020	40	<0.0060	<0.0060	0.03	<0.0050	6.7	0.07	2.00	<0.050	<0.0050	27	<0.10	0.056
	10/24/05	<0.02	0.061	<0.002	38	<0.006	<0.006	<0.02	<0.005	6.3	0.025	1.9	<0.05	<0.005	<0.005	<0.1	0.021
	7/19/05	<0.02	0.07	<0.002	39	<0.006	<0.006	<0.02	<0.005	6.9	0.034	2.1	<0.05	<0.005	<0.005	<0.1	0.015
	4/13/05	<0.02	0.074	<0.002	41	<0.006	<0.006	0.035	<0.005	6.8	0.033	2.2	<0.05	<0.005	<0.005	<0.1	0.018
	1/25/05	<0.02	0.064	<0.002	51	<0.006	<0.006	0.023	<0.005	8.5	0.042	2.3	<0.05	<0.005	<0.005	<0.1	0.048

Notes:  
mg/L = milligrams per liter  
MW = monitoring well  
NE = not established  
NA = not analyzed  
WQCC 20NMAC 6.2.3103 = New Mexico Standard for Groundwater of 10,000 µg/L or less  
(1) Standard effective as of June 1, 2007

**Appendix D**  
**General Chemistry Analytical Result Summary - River Samples**  
**Facility-Wide Groundwater Monitoring Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

Well ID:	Date Sampled:	Parameters										
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrate	Phosphorus (mg/L)	Sulfate (mg/L)	TDS (mg/L)	CO <sub>2</sub> (mg/L)	Alk (mg/L)	E.C. (umhos/cm)
WQCC 20NMAC 6.2.3103 (mg/L):	1.6	250	NE	NE	10	NE	600	1000	NE	NE	NE	NE
	4/16/07	0.2	3.1	NA	<0.5	NA	<0.2	61	200	<2.0	84	310
	2/8/07	0.13	2.9	<0.1	<0.5	<0.1	0.5	62	180	<2.0	83	280
	10/23/06	0.17	2.9	<0.10	<0.50	<0.10	<0.50	65	230	<2.0	86	320
	7/18/06	0.1	2.5	<0.10	<0.50	<0.10	<0.50	47	140	<2.0	78	270
	4/14/06	0.16	2.9	<0.10	<0.50	<0.10	<0.50	84	240	<2.0	88	360
	1/6/06	0.1	2.7	<0.10	<0.50	0.11	<0.50	62	190	<2.0	83	300
	10/24/05	0.12	3.3	<0.1	<0.5	<0.1	<0.5	67	190	<2.0	100	340
	7/19/05	0.21	3.6	<0.1	<0.5	<0.1	<0.5	73	240	<2.0	100	340
	4/13/05	0.16	4	<0.1	<0.5	<0.1	<0.5	82	260	<4.0	100	390
	1/25/05	0.16	3.9	<0.1	<0.5	<0.1	<0.5	110	280	<4.0	100	390
	10/7/04	0.19	4.4	<0.1	<0.1	0.13	<0.5	90	300	<4.0	110	370
	9/7/04	0.19	3.7	<0.1	<0.1	0.16	<0.5	74	230	<4.0	100	310
	8/14/04	0.18	2.3	0.004	<0.1	0.2	0.4	91	228	<0.1	87	402
	4/16/07	0.19	2.9	<0.5	<0.5	NA	<0.5	60	190	<2.0	84	310
	2/8/07	0.17	3	<0.1	<0.5	<0.1	<0.5	62	180	<2.0	82	280
Upstream of Refinery:	10/23/06	0.18	2.8	<0.10	<0.50	0.19	<0.50	66	220	<2.0	84	310
	7/18/06	0.11	2.4	<0.10	<0.50	<0.10	<0.50	46	150	<2.0	77	270
	4/14/06	0.16	2.9	<0.10	<0.50	<0.10	<0.50	85	240	<2.0	88	360
	1/6/06	<0.10	2.6	<0.10	<0.50	<0.10	<0.50	61	190	<2.0	81	300
	10/24/05	0.12	3.3	<0.1	<0.5	<0.1	<0.5	67	200	<2.0	100	340
	7/19/05	0.2	3.5	<0.1	<0.5	<0.1	<0.5	74	230	<2.0	97	340
	4/13/05	0.16	4	<0.1	<0.5	<0.1	<0.5	84	260	<4.0	100	390
	1/25/05	0.17	4	<0.1	<0.5	<0.1	<0.5	110	300	<4.0	10	390
	10/7/04	0.21	4.2	<0.1	<0.1	0.13	<0.5	88	260	<4.0	100	360
	9/7/04	0.22	3.7	<0.1	<0.1	0.18	<0.5	74	220	<4.0	100	310
	8/14/04	0.6	26	0.003	<0.1	0.2	0.2	89	244	<0.1	89	398
	4/16/07	0.18	3.0	<0.50	<0.50	<0.50	<0.50	64	190	<2.0	84	320
	2/8/07	1.2	2.9	<0.1	<0.5	<0.1	0.5	61	180	<2.0	81	270
	10/23/06	0.18	3.00	<0.10	<0.50	0.12	<0.50	68	230	<2.0	86	310
	7/18/06	<0.10	2.3	<0.10	<0.50	<0.10	<0.50	45	140	<2.0	78	260
	4/14/06	0.16	2.9	<0.10	<0.50	<0.10	<0.50	83	250	<2.0	89	360
1/6/06	0.11	2.4	<0.10	<0.50	<0.10	<0.50	58	180	<2.0	82	290	
10/24/05	0.1	3.3	<0.1	<0.5	<0.1	<0.5	65	200	2	110	340	
7/19/05	0.2	3.6	<0.1	<0.5	<0.1	<0.5	74	250	2	99	350	
4/13/05	0.22	4.1	<0.1	<0.5	<0.1	<0.5	88	260	<4.0	96	400	
1/25/05	0.16	3.9	<0.1	<0.5	<0.1	<0.5	110	290	<4.0	110	310	
10/7/04	0.19	4.3	<0.1	<0.1	0.16	<0.5	86	260	<4.0	102	360	
9/7/04	0.2	3.8	<0.1	<0.1	0.11	<0.5	74	220	<4.0	100	310	
8/14/04	0.45	23	0.2	<0.1	0.007	0.2	95	242	<0.1	86	391	

Appendix D  
General Chemistry Analytical Result Summary - River Samples  
Facility-Wide Groundwater Monitoring Plan  
Bloomfield Refinery - Bloomfield, New Mexico

Well ID:	Date Sampled:	Parameters										
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrate	Phosphorus (mg/L)	Sulfate (mg/L)	TDS (mg/L)	CO2 (mg/L)	Alk (mg/L)	E.C. (umhos/cm)
WQCC 20NMAC 6.2.3103		1.6	250	NE	NE	10	NE	600	1000	NE	NE	NE
Downstream of Refinery:	4/16/07	0.17	3.0	<0.50	<0.50	<0.50	<0.50	67	210	<2.0	86	330
	2/8/07	0.19	3.3	<0.1	<0.5	<0.1	<0.5	80	220	<2.0	87	330
	10/23/06	0.14	4.1	<0.10	<0.50	<0.10	<0.50	100	290	<2.0	94	410
	7/18/06	0.11	2.4	<0.10	<0.50	<0.10	<0.50	49	150	<2.0	78	280
	4/14/06	0.16	3.5	<0.10	<0.50	<0.10	<0.50	110	290	<2.0	99	430
	1/6/06	0.17	3.9	<0.10	<0.50	<0.10	<0.50	84	240	<2.0	86	370
	10/24/05	0.11	3.3	<0.1	<0.5	<0.1	<0.5	68	200	2	110	340
	7/19/05	0.22	3.6	<0.1	<0.5	<0.1	<0.5	80	250	2	99	380
	4/13/05	0.15	4.2	<0.1	<0.5	<0.1	<0.5	89	270	<4.0	100	400
	1/25/05	0.16	4.1	<0.1	<0.5	<0.1	<0.5	120	320	<4.0	110	410

Notes:

Alk = alkalinity, total  
CO<sub>2</sub> = Carbon Dioxide  
E.C. = electrical conductivity  
TDS = total dissolved solids  
umhos/cm = micro-mhos per centimeter  
mg/L = milligrams per liter  
MW = monitoring well  
NA = not analyzed  
NE = not established  
WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10,000 ug/L or less



MW-1

WELL NUMBER: 1  
DATE: 8 February 1984  
LOCATION: 29.11.27.24221

DEPTH IN FEET	DESCRIPTION
0-5	Light brown clayey sand, coarse, poorly sorted, quartzose and slightly calcareous
5-10	Yellowish gray sandy pebbles and cobbles, poorly sorted, rounded to subrounded
10-12	Yellowish gray pebbly sand, very coarse, poorly sorted, feldspathic and noncalcareous
12-22	Dark gray pebbly and sandy cobbles, some quartz pebbles, most are volcanic, subrounded cobbles and pebbles, some clay, a little water at about 18 feet
22-25	Gray-green clayey sand becoming light yellow clayey sandstone and sandy claystone

mw-3

WELL NUMBER: 3  
DATE: 8 February 1984  
LOCATION: 29.11.27.24442

DEPTH IN FEET	DESCRIPTION
0-5	Yellow brown sandy silt and clay, very calcareous, quartzose
5-10	yellow brown sand, calcareous, silty and clayey, quartzose
10-15	Yellow brown sand, silty and clayey, fine-grained, very calcareous, quartzose
15-27	Light brown clay, sandy, very calcareous, becoming pebbly with depth
27-35	Gray yellow brown cobbly sand, coarse, poorly sorted, silty and clayey, volcanic pebbles, small amount of water at about 35 feet
35-40	Gray cobbles, pebbly and sandy, coarse sand, yellow gray clayey sandstone at about 40 feet

TABLE 3.2

WELL LOG FOR MONITORING WELL NUMBER 8

Drilling Date: February 28, 1986

<u>Depth in Feet</u>	<u>Description</u>
0-20	Light brown sandy clay, similar to that found on the ground surface
20-34	Cobbles and pebbles
34	Green-gray clay and sandstone, intermixed with small pebbles and sand. Top of Nacimiento.

Elevation of Top of Casing: 5531.12 feet

Total Depth of Casing: 34.94 feet

Description of Casing: Bottom of casing has a 2 foot stainless steel blank section for a silt trap, followed by 20 feet of 6" I.D. stainless steel screen, followed by 6" I.D. schedule 40 PVC to the surface. The screened section of the hole was sanded to within 7 feet of the surface, a bentonite seal (1/2 bucket) was added and concrete was used for a surface seal.

**Assessment, Remediation and Contingency Plan**  
**Area North of the Barrier Wall (Underground Slurry Wall)**  
**February 3, 2006**

**Bloomfield Refinery, P.O. Box 159, Bloomfield, NM 87413 (the "Facility")**  
**Owner: San Juan Refining Company; Operator: Giant Industries Arizona, Inc.**  
**d/b/a Giant Refining Company (collectively, "Giant")**

This plan presents a proposed data evaluation and action plan in response to the Oil Conservation Division's (OCD's) recent request regarding the area between the North Boundary Underground Slurry Wall (the "Barrier") and the San Juan River. As part of this plan, Giant will assess whether there is a threat to the San Juan River from residual phase separated hydrocarbons or dissolved phase hydrocarbons (collectively, "PSH") in the shallow soils and in the shallow water table perched on the Nacimiento Formation north of the Barrier and, based on the results of this assessment, take appropriate remediation action. This plan is intended as a supplement to, but does not replace, the requirements of existing regulations applicable to the Facility, including the following:

- EPA Spill Prevention, Control & Countermeasures Plan (40 CFR Part 112.7)
- EPA Facility Response Plan (40 CFR parts 112.20 and 112.21)
- EPA Risk Management Program (40 CFR Part 68)
- EPA Contingency Planning Requirements (40 CFR Parts 264, 265, and 279.52)
- USCG Facility Response Plan (33 CFR Part 154)
- DOT/PHMSA Pipeline Response Plan (49 CFR Part 194)
- DOT Emergency Response Plans (49 CFR Parts 130 and 172)
- OSHA Emergency Action Plan (29 CFR 1919.38)
- NMED/OCD Emergency Response Requirements
- Stormwater Pollution Prevention Plan (40 CFR Part 126)

The purpose of this plan is as follows:

- Evaluate the performance of the Barrier.
- Thoroughly review the on-going fluid removal, collection, and monitoring program installed in connection with the Barrier (the "Collection System").
- Based on this evaluation, recommend modifications to the Collection System as necessary, and an action plan for remediation of any PSH remaining between the Barrier and the bluffs adjacent to the San Juan River.
- Have a contingency plan in place in the event of a free-flowing liquid event.

**I. Evaluate Barrier Performance and Review the Fluid Removal, Collection, and Monitoring Program**

Compile all the fluid monitoring, fluid removal, water levels, fluid thickness, and water sampling results from the collection wells, observation wells, and monitoring wells. The location of PSH in all wells will be assessed and trends in detection, absence, PSH thickness, and fluid build up on both sides of the Barrier will be assessed.

The review of this data will provide a means of evaluating the performance of the Barrier and of providing data for modification of the groundwater collection, removal, and monitoring system in order to maximize the efficiency of the system.

Compilation and review of this data has begun and is ongoing.

## **II. Recommend Modifications of the Collection System, and Recommend an Action Plan for Remediation of PSH Remaining**

A field investigation will be conducted to determine the presence of PSH fluids in the shallow soils and shallow water table north of the Barrier and to identify current seeps and soil stained along the bluff. The investigation will determine options for fluid capture and removal.

Giant has begun initial investigations and has determined that remediation efforts should include strategically placed vertical wells. These wells will serve multiple purposes. They will provide:

- A means for the collection of groundwater perched on the Nacimiento Formation, if present in sufficient quantity to allow recovery.
- Groundwater data for evaluation of the effectiveness of the Barrier.
- Information on the residual fluids for use in estimating the length of time before any remaining seepage ceases.
- Control contaminate hydrogeology by removing or lowering the water table perched on the Nacimiento Formation.

Giant will utilize sump recovery well design and construction for the new wells. Well installation will be done using hollow-stem auger methods, which allow the collection of samples, observation of material types, an indication of joint and fracture frequency in the rock, and the depth where groundwater is encountered. Giant will submit a North Barrier Wall Work Plan by February 15, 2006.

Pumping rates and the need for additional wells will be based on the local hydrogeology observed during the investigation and well installation.

### **Schedule**

Giant has been proactive and has already started these investigation activities. A six-month evaluation of the Barrier was compiled and was sent to OCD on January 5, 2006. Giant continues to scrutinize the Barrier with examination and field measurements of the collection and observation wells take semi-monthly. Giant will summarize these activities semi-annually as previously required by NMED.

### III. Contingency Plan for Free-Flowing Liquids

This plan is being implemented north of the Barrier to actively remediate groundwater contamination, prevent its uncontrolled migration to the bluff area, and eliminate the potential for overland flow from seeps along the bluff area to discharge into the San Juan River.

#### Bluff Inspections

Giant will perform weekly visual inspections and semi-weekly inspections during precipitation events along the San Juan River bluff to identify fluid seeps that may emerge. The treatment systems will be inspected and maintained weekly. If a flowing seep is identified during an inspection, Giant personnel will record the following information:

- Time and date the seep was identified.
- Location of the discharge relative to the San Juan River.
- Approximate flow rate of the seep (e.g., gallons per hour).
- Approximate size of the area impacted.
- Ambient conditions (temperature, rain, etc).
- Conditions that may affect response.

If the seep is within close proximity to, or may have already impacted the San Juan River, Giant will take the following emergency actions:

- Implement Giant's emergency response plan.
- Request outside assistance from emergency responders, if required (Giant has contracted with H<sub>2</sub>O Inc., a certified OSRO responder, for this purpose);
- Contact local authorities to limit access to the river by local residents until the hydrocarbon-impacted fluids have been contained and recovered;
- Contact New Mexico Environment Department (NMED) and OCD within 24 hours of discovery to report seep and proposed mitigation actions.

#### Mitigation Actions and Emergency Response

Actions taken by Giant to control seeps and recover hydrocarbon fluids along the bluff will depend on whether the fluids can be contained prior to reaching the San Juan River, or have reached the river. Giant will make every practicable effort to prevent hydrocarbon fluids from reaching the river.

If hydrocarbon fluids **have not reached** the San Juan River:

- Giant will maintain an appropriate number of absorbent booms and/or pillows that will be placed immediately down-slope from the location of the fluids' expression to prevent a discharge into the river.
- If the location and access allows, temporary catchments, such as earthen or sand-bag berms lined with plastic sheet liners, will be constructed to capture and

contain the fluids. The exact type of containment implemented will depend upon access to the area of the seep expression along the bluff.

- Absorbent booms or pillows will be placed along the riverbank (above the flow channel) down-slope of the seep expression as a secondary barrier to mitigate fluids from reaching the river.
- Captured fluids will be routinely removed (e.g., by pumping) from the temporary catchments. Recovered fluids will be pumped or placed in drums or other suitable containers and transported to the refinery for recycling or disposal.
- Expended absorbent devices will be replaced when necessary. Waste absorbents will be drummed and transported to the refinery for proper disposal.
- Impacted soil will be removed, and the natural appearance of the area restored to the extent possible. Depending on access to the area of concern, the impacted soil may be removed manually (e.g., hand shovels), by using equipment from the top of the bluff (e.g., drag line), or a combination thereof. Impacted soil will be placed in drums or other suitable containers for removal from the area of concern and transport to the refinery to be characterized for proper treatment and/or disposal.

If hydrocarbon fluids **have reached** the waters of the San Juan River:

- If hydrocarbon fluids have reached the waters of the San Juan River, all applicable mitigation actions detailed above for fluids that have not reached the river will continue to be taken as well as mitigation actions detailed below.
- Floating absorbent booms will be deployed at the point of entry of the fluids to the river as soon as possible after discovery of the incident. The objective will be to mitigate further discharge of fluids to the river.
- A second floating boom will be placed across the river downstream of the point of entry and downstream of the visible floating hydrocarbon plume, if such exists. The objective will be to contain any fluids already discharged to the river.
- Any free-phase hydrocarbons that collect behind the floating booms will be removed using a skimming device (e.g., skimming pump) or other suitable means. Recovered fluids will be pumped or placed in drums or other suitable containers and transported to the refinery for recycling or disposal.
- Impacted soil along the river bank will be addressed as stated above.
- Expended absorbent devices will be replaced when necessary. Waste absorbents will be drummed and transported to the refinery for proper disposal.
- River water samples will be collected in accordance with OCD and NMED's monitoring requirements.



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

Oil Conservation Division

August 12, 2005

Randy Schmaltz  
Environmental Manager  
San Juan Refining Company  
P.O. Box 159  
Bloomfield, New Mexico 87413

REC JOHNSON  
BJ SERVICES  
(281) 303-7721

Re: Discharge Permit GW-01  
Giant Bloomfield Refinery

Dear Mr. Schmaltz:

The groundwater discharge permit for the Giant Bloomfield Refinery GW-01 operated by San Juan Refining Company located in the NW/4 NE/4 and the S/2 NW/4 and the N/2 NE/4 SE/4 OF Section 27, and the S/2 NW/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, is hereby approved under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge permit was approved on June 05, 1978 and subsequently renewed on June 07, 1984, November 02, 1989, February 04, 1992, May 24, 1994, April 19, 2000 with an expiration date of June 07, 2004. OCD approved a change of ownership on January 29, 1996 and approved a modification on November 19, 1996. The discharge permit renewal application dated May 27, 2004 and amended applications dated July 15, 2005 and August 12, 2005 submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge permit is renewed pursuant to Section 3109.C. Please note Section 3109.G., which provides for possible future amendment of the permit. Please be advised that approval of this permit does not relieve San Juan Refining Company of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered non-hazardous to wildlife including migratory birds.



Mr. Randy Schmaltz  
August 12, 2005  
Page 2

Please note that Section 3104. of the regulations requires that "when a permit has been approved, discharges must be consistent with the terms and conditions of the permit." Pursuant to Section 3107.C., San Juan Refining Company is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume. Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire June 07, 2009** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge permit renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge permit facilities will be required to submit permits for, or the results of, an underground drainage testing program as a requirement for discharge permit renewal.

The discharge permit application for the Giant Bloomfield Refinery is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge permit will be assessed a fee equal to the filing fee of \$100 plus a flat fee of \$8400.00 for an oil refinery. The OCD has received the \$100.00 filing fee. The flat fee of \$8400.00 may be paid in a single payment due on the date of the discharge permit approval or in five equal installments over the expected duration of the discharge permit. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge permit approval and subsequent installments due on this date of each calendar year.

**Please make all checks payable to: Water Quality Management Fund  
C/o: Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505.**

If you have any questions, please contact Wayne Price of my staff at (505-476-3487) or E-mail WPRICE@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge review.

Sincerely,



Roger C. Anderson  
Environmental Bureau Chief  
RCA/lwp  
Attachments-1  
xc: OCD Aztec Office

20. Annual Report: On an annual basis due April 15, Giant will submit a formal report to the OCD on the past year's activities. The report will include the following at a minimum:
1. A summary of all major refinery activities or events.
  2. As required in item 19.2. above.
  3. Summary of all waste and wastewater disposed of, sold, or treated on-site, including an updated refinery wastewater flow sheet.
  4. Summary of the sump and underground wastewater lines tested.
  5. Summary of all leaks, spills and releases and corrective actions taken.
  6. Summary of discovery of new groundwater contamination. This should include recommendations for investigation and remediation.
  7. Summary of all EPA/NMED RCRA activity.
  8. Electronic filing: OCD would like to encourage Giant to file this report in an acceptable electronic format.
21. Active Landfill: San Juan Refining Company shall submit by December 01, 2005 for OCD approval an operating and closure plan for the active landfill located east of the main refinery complex.
22. In-Active Landfill: A closure plan for the in-active landfill located near monitor well #8 shall be submitted by December 01, 2005. The plan shall demonstrate how San Juan Refining Company permits to close the landfill in order that public health or the environment will not be adversely impacted in the foreseeable future.
23. Transfer of Discharge Permit: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge permit. A written commitment to comply with the terms and conditions of the previously approved discharge permit must be submitted by the purchaser and approved by the OCD prior to transfer.
24. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure permit will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

which occurred during the year including conclusions and recommendations.

- B. Summary tables listing laboratory analytic results, of all water quality sampling for each monitoring point and plots of concentration vs. time for contaminants of concern from each monitoring point. Any WQCC constituent found to exceed the groundwater standard shall be highlighted and noted in the annual report. Copies of the most recent years laboratory analytical data sheets will also be submitted.
  - C. An annual water table potentiometric elevation map using the water table elevation of the ground water in all refinery monitor wells. A corrected water table elevation shall be determined for all wells containing phase-separated hydrocarbons. This map shall show well locations, pertinent site features, and the direction and magnitude of the hydraulic gradient.
  - D. Plots of water table elevation vs. time for each ground water monitoring point.
  - E. An annual product thickness map based on the thickness of free phase product on ground water in all refinery recovery wells. This map shall include isopleth lines for products and contaminants of concern.
  - F. Estimate or measure the volume of product recovered in the recovery wells during each quarter and the total recovered to date.
- 3. Giant shall notify the OCD Santa Fe and local district office at least 2 weeks in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples. For large facilities, i.e. refineries, an annual notification will suffice.
  - 4. Giant shall notify the NMOCD within 15 days of the discovery of separated-phase hydrocarbons or the exceedance of a WQCC standard in any monitor well where separate-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards during the preceding monitoring event.



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

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

April 19, 2000

**CERTIFIED MAIL**  
**RETURN RECEIPT NO. 5051 5956**

Mr. Barry Holman  
Environmental Manager  
San Juan Refining Company  
P.O. Box 159  
Bloomfield, New Mexico 87413

Re: Discharge Plan GW-01 Renewal Application  
Giant Bloomfield Refinery

Dear Mr. Holman:

The groundwater discharge plan renewal application for the Giant Bloomfield Refinery GW-01 operated by San Juan Refining Company located in the NW/4 NE/4 and the S/2 NW/4 and the N/2 NE/4 SE/4 OF Section 27, and the S/2 NW/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, **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within ten working days of receipt of this letter.**

The original discharge plan was approved on June 05, 1978 and subsequently renewed on June 07, 1984, November 02, 1989, February 04, 1992, May 24, 1994 with an expiration date of June 07, 1999. OCD approved a change of ownership on January 29, 1996 and approved a modification on November 19, 1996. The discharge plan renewal application, including attachments, dated July 6, 1999 and supplemental information dated April 11, 2000 submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals.

The discharge plan is renewed pursuant to Section 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve San Juan Refining Company of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Mr. Barry Holman  
April 19, 2000  
Page 2

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., San Juan Refining Company is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume. Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire June 07, 2004** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 3106.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge plan facilities will be required to submit plans for, or the results of, an underground drainage testing program as a requirement for discharge plan renewal.

The discharge plan application for the Giant Bloomfield Refinery is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of \$50 plus a renewal flat fee of \$3910.00 for an oil refinery. The OCD has not received the \$3910.00 flat fee. The flat fee of \$3910.00 may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to: NMED-Water Quality Management and addressed to the OCD Santa Fe Office.

If you have any questions, please contact Wayne Price of my staff at (505-827-7155). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,



Roger C. Anderson  
Environmental Bureau Chief

RCA/lwp  
Attachment-1  
xc: OCD Aztec Office

15. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Aztec District Office.
16. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.
17. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.
18. Storm Water Plan: San Juan Refining Company will submit a storm water run-off plan for OCD approval by August 15, 2000.
19. Vadose Zone and Water Pollution: The abatement plan application dated July 05, 1999 is considered an investigation and remediation plan application submitted pursuant to the discharge plan and all future discoveries of contamination will be addressed through the discharge plan process.
20. Active Landfill: San Juan Refining Company shall submit for OCD approval a closure plan or operating plan for the active landfill located east of the main refinery complex. Please submit this plan by August 15, 2000.
21. In-Active Landfill: A closure plan for the in-active landfill located near monitor well #8 shall be submitted to OCD for approval by August 15, 2000. The plan shall demonstrate how San Juan Refining Company plans to close the landfill in order that public health or the environment will not be adversely impacted in the foreseeable future.
22. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.
23. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

Mr. Barry Holman  
April 19, 2000  
Page 6

24. Certification: San Juan Refining Company by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. San Juan Refining Company further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Conditions accepted by: San Juan Refining Company -Giant Bloomfield Refinery.

BARRY G. HOLMAN  
Company Representative- print name  
Barry G. Holman Date 5-3-00  
Company Representative- Sign

Title Environmental Manager

## Groundwater Elevation

Date	Well ID	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
8/23/2006	MW-01	5519.21	21.56	NPP	17.35	5501.86	NPP
4/13/2006		5519.21	21.56	NPP	17.23	5501.98	NPP
8/23/2006	MW-03	5539.27	36.75	NPP	36.36	5502.91	NPP
4/12/2006		5539.27	36.75	NPP	36.19	5503.08	NPP
8/16/2006	MW-04	5527.78	30.48	NPP	26.85	5500.93	NPP
4/19/2006		5527.78	30.48	26.78	26.79	5501.00	0.01
8/16/2006	MW-05	5548.56	37.2	NPP	NWP		NPP
4/13/2006		5548.56	37.2	NPP	NWP		NPP
8/16/2006	MW-06	5554.61	48	NPP	NWP		NPP
4/13/2006		5554.61	48	NPP	NWP		NPP
8/22/2006	MW-07	5527.66	62.61	NPP	27.14	5500.52	NPP
4/12/2006		5527.66	62.61	NPP	27.8	5499.86	NPP
8/23/2006	MW-08	5534.58	35.93	NPP	31.79	5502.79	NPP
4/12/2006		5534.58	35.93	NPP	31.66	5502.92	NPP
8/15/2006	MW-11	5510.31	22.94	NPP	10.57	5499.74	NPP
4/17/2006		5510.31	22.94	NPP	11.11	5499.20	NPP
8/15/2006	MW-12	5501.61	14.98	NPP	10.07	5491.54	NPP
4/5/2006		5501.61	14.98	NPP	9.68	5491.93	NPP
8/17/2006	MW-13	5542.04	52.89	NPP	40.19	5501.85	NPP
4/12/2006		5542.04	52.89	NPP	40.09	5501.95	NPP
8/21/2006	MW-20	5519.9	27.13	20.74	20.86	5499.14	0.12
4/19/2006		5519.9	27.13	20.69	20.76	5499.20	0.07
8/21/2006	MW-21	5521.99	30.38	21.84	21.9	5500.14	0.06
4/13/2006		5521.99	30.38	21.79	21.84	5500.19	0.05
8/16/2006	MW-25	5533.99	41.2	32.48	32.84	5501.44	0.36
4/20/2006		5533.99	41.2	32.42	32.67	5501.52	0.25
8/17/2006	MW-26	5517.88	25.11	NPP	17.06	5500.82	NPP
4/11/2006		5517.88	25.11	NPP	17.06	5500.82	NPP
8/17/2006	MW-27	5518.67	24.42	NPP	18.37	5500.30	NPP
4/10/2006		5518.67	24.42	NPP	18.38	5500.29	NPP

NPP = No Product Present

NWP = No Water Present



## Water Quality Field Measurements

DATE	RW/MW	DEPTH TO LIQUID (ft)	Depth to Product	WELL DEPTH	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)	D.O. (mg/L)	ORP
Aug-06	MW #1	17.35	NPP	21.56	952	7.03	64	0.9	223
Apr-06		17.23	NPP	21.56	815	6.84	56	NR	NR
Aug-05		17.98	NPP	21.56	986	7.02	63	9.2	106
Aug-06	MW #3	36.36	NPP	36.75	NS	NS	NS	NS	NS
Apr-06		36.19	NPP	36.75	7212	7.02	65	NR	NR
Aug-05		36.44	NPP	36.75	7685	6.98	67	NS	-44
Aug-06	MW #4	26.85	NPP	30.48	NS	NS	NS	NS	NS
Apr-06		26.79	26.78	30.48	SPH	SPH	SPH	SPH	SPH
Aug-05		27.4	27.17	30.48	SPH	SPH	SPH	SPH	SPH
Aug-06	MW #5	NWP	NPP	37.2	NS	NS	NS	NS	NS
Apr-06		NWP	NPP	37.2	NS	NS	NS	NS	NS
Aug-05		NWP	NPP	37.2	NS	NS	NS	NS	NS
Aug-06	MW #6	NWP	NPP	47.92	NS	NS	NS	NS	NS
Apr-06		NWP	NPP	47.92	NS	NS	NS	NS	NS
Aug-05		NWP	NPP	47.92	NS	NS	NS	NS	NS
Aug-06	MW #7	27.14	NPP	62.61	NS	NS	NS	NS	NS
Apr-06		27.8	NPP	62.61	8497	7.04	64	NR	NR
Aug-05		27.8	NPP	62.61	NR	NR	NR	NR	NR
Aug-06	MW #8	31.79	NPP	35.93	2966	7.04	61	0.5	231
Apr-06		31.56	NPP	35.93	2791	6.97	58	NR	NR
Aug-05		32.82	NPP	35.93	2730	6.91	59	7.3	114
Aug-06	MW #11	10.57	NPP	22.94	2066	6.91	66	1.4	253
Apr-06		11.76	NPP	22.94	2084	7.03	68	>13.0	-55
Aug-05		11.09	NPP	22.94	1768	6.68	53	NR	NR
Aug-06	MW #12	10.07	NPP	14.98	875	7.01	65	0.37	158
Apr-06		9.68	NPP	14.98	1049	6.86	49	NR	NR
Aug-05		12.35	NPP	14.98	4291	6.90	65	12.4	94
Aug-06	MW #13	40.19	NPP	52.89	3993	6.93	62	0.56	246
Apr-06		40.09	NPP	52.89	4108	7.06	63	NR	NR
Aug-05		40.4	NPP	52.89	4113	6.94	63	6.2	166
Aug-06	MW #20	20.86	20.74	27.13	SPH	SPH	SPH	SPH	SPH
Apr-06		20.76	20.69	27.13	SPH	SPH	SPH	SPH	SPH
Aug-05		21.12	20.88	27.13	SPH	SPH	SPH	SPH	SPH

SPH = Well Contains Separate Phase Hydrocarbon - No Sample

NS = Well is Dry or not Enough to Sample - No Sample

NM = Not Measured -- Not a Well

NR = Not Required to Sample

NWP = No Water Present

NPP = No Product Present

# ORGANICS

## Groundwater Analysis

EPA Method 8021B, August 2005 & 2006 EPA Method 8260B												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20 NMAG 623103
Benzene	Aug-06	<0.001	NS	NR	<0.001	0.24	<0.001	<0.001	NR	0.33	<0.001	0.01
	Apr-06	<0.001	<0.001	<0.001	<0.001	3.2	0.001	<0.001	NR	0.29	0.0058	
	Aug-05	0.0011	<0.001	NR	<0.001	4.2	<0.001	<0.001	NR	0.89	<0.001	
	Apr-05	0.0013	<0.0005	<0.0005	0.00053	0.4	<0.0005	<0.0005	0.13	1.3	<0.0005	
Toluene	Aug-06	<0.001	NS	NR	<0.001	<0.001	<0.001	<0.001	NR	<0.002	<0.001	0.75
	Apr-06	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	NR	0.073	<0.001	
	Aug-05	<0.001	<0.001	NR	<0.001	<0.05	<0.001	<0.001	NR	<0.01	<0.001	
	Apr-05	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.0005	<0.0005	<0.0025	<0.02	<0.0005	
EthylBen	Aug-06	<0.001	NS	NR	<0.001	0.012	<0.001	<0.001	NR	0.48	<0.001	0.75
	Apr-06	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	NR	0.3	<0.001	
	Aug-05	<0.001	<0.001	NR	<0.001	0.11	<0.001	<0.001	NR	0.47	<0.001	
	Apr-05	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.0005	<0.0005	0.025	0.44	<0.0005	
Xylene	Aug-06	<0.003	NS	NR	<0.003	0.045	<0.003	<0.003	NR	<0.06	<0.003	0.62
	Apr-06	<0.003	<0.003	<0.003	<0.003	0.23	<0.003	<0.003	NR	<0.060	0.0042	
	Aug-05	<0.001	<0.001	NR	<0.001	0.5	0.0085	<0.001	NR	0.25	<0.001	
	Apr-05	0.0011	<0.0005	0.00067	0.0008	0.28	0.00072	<0.0005	0.028	0.45	0.001	
MTBE	Aug-06	<0.0015	NS	NR	<0.0015	0.033	<0.015	0.007	NR	0.038	<0.0015	
	Apr-06	<0.0025	<0.0025	<0.0025	<0.0025	<0.120	<0.025	0.01	NR	<0.005	<0.0025	
	Aug-05	<0.001	<0.001	NR	<0.001	<0.05	<0.001	0.015	NR	<0.01	<0.001	
	Apr-05	<0.0025	<0.0025	<0.0025	<0.0025	<0.1	0.0025	0.014	0.041	<0.1	<0.0025	

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

# GENERAL CHEMISTRY

## Groundwater Analysis

EPA Method 300.0											
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	WQGG 20 NMAG 6.23103
Fluoride	Aug-06	0.65	NS	NR	0.67	0.1	0.36	0.12	NR	0.36	116
	Aug-05	0.68	0.33	NR	0.79	0.56	0.43	0.15	NR	0.42	
	Aug-04	0.63	NS	0.75	0.64	0.41	0.52	0.2	0.18	0.29	
	Aug-03	0.58	0.17	NR	0.66	0.44	0.32	0.19	NR	0.39	
Chloride	Aug-06	17	NS	NR	300	82	19	310	NR	410	250
	Aug-05	31	1200	NR	260	85	100	320	NR	290	
	Aug-04	29	NS	25	250	97	130	330	420	230	
	Aug-03	33	1400	NR	260	150	130	510	NR	160	
Nitrite	Aug-06	1.2	NS	NR	26	<1.0	<0.10	8.3	NR	<0.50	
	Aug-05	<0.10	<0.50	NR	<0.50	<0.10	<0.10	0.23	NR	<0.50	
	Aug-04	<0.10	NS	<0.10	NR	NR	NR	1.6	<0.10	<0.10	
	Aug-03	<0.10	NR	NR	<0.10	<0.10	<0.10	<0.10	NR	<0.10	
Bromide	Aug-06	<0.50	NS	NR	1.5	1	<0.50	3.7	NR	5.2	
	Aug-05	<0.50	4.5	NR	<2.5	1.4	0.75	4.6	NR	4.5	
	Aug-04	0.14	NS	0.14	1.2	0.97	0.78	4.3	3.4	4.2	
	Aug-03	0.32	22	NR	5	5.3	3.7	13	NR	2.9	
Nitrogen	Aug-06	NR	NS	NR	NR	<0.10	<0.10	NR	NR	NR	10
	Aug-05	2.1	42	NR	27	<0.10	<0.10	6.1	NR	<0.10	
	Aug-04	1.9	NS	<0.10	NR	NR	NR	6.6	<0.10	<0.10	
	Aug-03	1.6	41	NR	14	<0.10	<0.10	12	NR	<0.10	
P	Aug-06	<0.50	NS	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50	
	Aug-05	<0.50	<0.50	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50	
	Aug-04	<0.50	NS	<0.50	<0.50	<0.50	NR	<0.50	<0.50	<0.50	
	Aug-03	<0.50	<0.50	NR	<0.50	<0.50	<0.50	<0.50	NR	<0.50	
Sulfate	Aug-06	190	NS	NR	980	19	140	1100	NR	0.68	600
	Aug-05	190	2300	NR	740	20	2400	1000	NR	<0.50	
	Aug-04	220	NS	5100	920	13	680	950	1400	<0.50	
	Aug-03	200	1900	NR	950	4.2	3100	840	NR	1.00	

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

NA = Not Analyzed

NW = New Well After August 2004

# GENERAL CHEMISTRY

## Groundwater Analysis

mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	WQCG 20 NMAC 6.2.3.103
EPA 160.1	TDS	Aug-06	640	NS	NR	2200	1400	560	NR	1700	1000
		Aug-05	650	6200	NR	2000	1500	4000	NR	1600	
		Aug-04	650	NS	7400	2100	1500	1600	3400	1600	
		Aug-03	610	5700	NR	2100	1100	5500	NR	1400	
EPA 120.1	E.C.	Aug-06	940	NS	NR	3200	2200	890	NR	2900	
	(umhos/cm)	Aug-05	980	8300	NR	2900	2200	4600	NR	2700	
		Aug-04	870	NS	7800	2600	2100	1900	4000	2200	
		Aug-03	820	8500	NR	2900	2500	6600	NR	1900	
	D.O.	Aug-06	0.93	NS	NR	0.47	1.36	0.37	NR	0.16	
		Aug-05	9.2	NS	NR	7.3	>13.0	12.4	NR	7.4	
		Aug-04	5.4	NS	2.8	2.9	13.8	9.3	4	7.5	
		Aug-03	6.5	6.5	NR	7.1	5.6	5.3	NR	4.9	
O.R.P.		Aug-06	223	NS	NR	231	253	158	NR	224	
		Aug-05	106	-44	NR	114	-55	94	NR	-29	
		Aug-04	-532	-11	84	142	-36	151	-43	-33	
		Aug-03	105	105	NR	176	-5.3	81	NR	-63	
EPA 310.1	CO2	Aug-06	240	NS	NR	200	1100	260	NR	990	
		Aug-05	300	680	NR	260	1100	310	NR	1000	
		Aug-04	220	NS	98	210	330	970	600	910	
		Aug-03	240	NR	NR	220	1300	310	NR	1300	
	Alk	Aug-06	270	NS	NR	210	1100	290	NR	960	
		Aug-05	300	680	NR	260	1100	310	NR	1000	
		Aug-04	240	NS	110	230	390	1100	670	1000	
		Aug-03	262	NR	NR	208	1120	319	NR	1090	

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

NA = Not Analyzed

NW = New Well After August 2004

# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010G													
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	NMAG 6.2.3103	WQCC 20
Arsenic	Aug-06	<0.02	NS	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02	0.10	
	Aug-05	<0.02	<0.02	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02		
	Aug-04	<0.02	NS	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
	Aug-03	<0.02	<0.02	NR	<0.02	<0.02	<0.02	<0.02	NR	<0.02	<0.02		
Barium	Aug-06	0.023	NS	NR	0.018	0.69	0.04	0.025	NR	2.2	0.038	1.00	
	Aug-05	0.022	0.018	NR	0.021	0.73	0.07	0.028	NR	1.9	0.063		
	Aug-04	0.025	NS	0.0097	0.021	0.47	0.06	0.022	0.028	1.8	0.083		
	Aug-03	0.46	0.3	NR	0.36	1.2	0.12	0.33	NR	2.3	0.52		
Cadmium	Aug-06	<0.002	NS	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	0.01	
	Aug-05	<0.002	<0.002	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002		
	Aug-04	<0.002	NS	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
	Aug-03	<0.002	<0.002	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002		
Calcium	Aug-06	74	NS	NR	230	100	73	250	NR	10	360		
	Aug-05	68	480	NR	230	96	370	240	NR	92	290		
	Aug-04	67	NS	300	210	100	130	210	450	75	170		
	Aug-03	61	490	NR	200	120	420	270	NR	91	210		
Cr	Aug-06	<0.006	NS	NR	<0.006	<0.006	0.0078	<0.006	NR	<0.006	<0.006	0.05	
	Aug-05	<0.006	<0.006	NR	<0.006	<0.006	0.022	<0.006	NR	<0.006	<0.006		
	Aug-04	<0.006	NS	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006		
	Aug-03	<0.006	<0.006	NR	<0.006	<0.006	0.0066	<0.006	NR	0.0089	<0.006		
Copper	Aug-06	<0.006	NS	NR	<0.006	<0.006	<0.006	0.0063	NR	<0.006	<0.006	1.00	
	Aug-05	<0.006	<0.006	NR	<0.006	<0.006	<0.006	<0.006	NR	<0.006	<0.006		
	Aug-04	<0.006	NS	<0.006	<0.006	0.021	<0.006	<0.006	<0.006	<0.006	<0.006		
	Aug-03	<0.006	<0.006	NR	<0.006	<0.006	<0.006	0.0096	NR	<0.006	<0.006		

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

NW = New Well After August 2004

# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010C												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20 NMAC 6.23103
Iron	Aug-06	<0.02	NS	NR	0.033	9.3	0.069	<0.02	NR	6.8	7.4	1.00
	Aug-05	0.14	0.047	NR	0.078	7.6	0.55	<0.02	NR	6.3	3.4	
	Aug-04	0.27	NS	0.081	0.059	6.9	0.044	0.046	2.9	5.1	0.15	
	Aug-03	<0.005	0.27	NR	0.044	7.6	0.024	0.04	NR	5	0.44	
Lead	Aug-06	<0.005	NS	NR	<0.005	<0.005	<0.005	0.0078	NR	<0.005	<0.005	0.05
	Aug-05	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
	Aug-04	<0.005	NS	<0.005	<0.005	0.022	<0.005	<0.005	<0.005	0.0056	<0.005	
	Aug-03	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
Mg	Aug-06	18	NS	NR	35	22	14	82	NR	38	52	
	Aug-05	18	130	NR	37	22	97	85	NR	32	45	
	Aug-04	18	NS	31	35	23	NR	80	97	27	26	
	Aug-03	16	140	NR	38	25	130	110	NR	32	34	
Mn	Aug-06	0.09	NS	NR	0.42	1.8	0.3	1.1	NR	3.1	8	0.20
	Aug-05	0.14	0.43	NR	0.65	1.6	0.64	1.1	NR	2.8	2.7	
	Aug-04	0.13	NS	0.28	0.57	1.7	0.55	0.58	1.4	2	0.94	
	Aug-03	0.08	0.58	NR	0.68	2	1.8	1.1	NR	2.4	1.4	
K	Aug-06	2.4	NS	NR	3.2	1.4	1.1	3.6	NR	3	3.7	
	Aug-05	2.7	7.6	NR	3.1	1.7	2.8	3.8	NR	2.8	3.4	
	Aug-04	2.1	NS	8.1	3	1.5	1.5	3.6	6.8	2.6	206	
	Aug-03	2.6	10	NR	4	2.3	4.3	5.3	NR	4.2	4	
Se	Aug-06	<0.05	NS	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	0.05
	Aug-05	<0.05	<0.05	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	
	Aug-04	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
	Aug-03	0.043	0.024	NR	0.09	0.15	0.084	0.16	NR	0.1	0.13	

NR = Not Required to Sample

NW = New Well After August 2004

NS = Well is Dry or Not Enough Water to Sample- No Sample

# DISSOLVED METALS

## Groundwater Analysis

EPA Method 6010G												
mg/L	DATE SAMPLED	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	WQCC 20 NIMAC 6.2.3.103
Silver	Aug-06	<0.005	NS	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	0.005
	Aug-05	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
	Aug-04	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
	Aug-03	<0.005	<0.005	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005	
Sodium	Aug-06	120	NS	NR	380	390	100	620	NR	450	440	
	Aug-05	140	1300	NR	360	380	560	570	NR	430	430	
	Aug-04	110	NS	1100	360	390	320	610	600	440	390	
	Aug-03	150	1100	NR	350	420	960	680	NR	430	420	
Uranium	Aug-06	<0.1	NS	NR	<0.1	<0.1	<0.1	<0.10	NR	<0.1	<0.1	5.00
	Aug-05	<0.1	<0.1	NR	<0.1	<0.1	<0.1	<0.1	NR	<0.1	<0.1	
	Aug-04	<0.1	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
	Aug-03	<0.1	<0.1	NR	<0.1	<0.1	<0.1	<0.1	NR	<0.1	<0.1	
Zinc	Aug-06	0.047	NS	NR	0.044	0.051	0.036	0.061	NR	0.048	0.005	10.00
	Aug-05	<0.005	0.018	NR	0.014	0.014	0.022	0.0088	NR	0.17	0.0066	
	Aug-04	0.021	NS	0.0096	0.022	63	0.035	0.021	0.028	0.013	0.011	
	Aug-03	0.12	0.094	NR	0.13	0.18	0.088	0.09	NR	0.19	0.037	

NR = Not Required to Sample

NW = New Well After August 2004

NS = Well is Dry or Not Enough Water to Sample- No Sample



# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470, Mercury													40CFR141.62
mg/L	Date Sampled	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	MCL	
Arsenic	Aug-06	<0.020	NS	NR	<0.020	<0.02	<0.02	<0.02	NR	<0.02	<0.02	0.01	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.02	NS	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Barium	Aug-06	0.023	NS	NR	0.018	0.69	0.04	0.025	NR	2.2	0.038	2	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	0.052	NS	<0.002	0.071	0.54	0.19	0.028	0.029	2	0.13		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Cadmium	Aug-06	<0.0020	NS	NR	<0.002	<0.002	<0.002	<0.002	NR	<0.002	<0.002	0.005	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.002	NS	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Cr	Aug-06	<0.0060	NS	NR	<0.006	<0.006	0.0078	<0.006	NR	<0.006	<0.006	0.1	
	Aug-05	<0.006	0.016	NR	0.033	<0.006	4.1	0.012	NR	<0.006	<0.006		
	Aug-04	<0.006	NS	<0.006	1.9	<0.006	0.11	0.085	<0.006	<0.006	0.019		
	Aug-03	0.013	0.029	NR	0.72	0.011	0.51	0.45	NR	0.017	0.014		
Lead	Aug-06	<0.0050	NS	NR	<0.005	<0.005	<0.005	0.0078	NR	<0.005	<0.005	0.015	
	Aug-05	<0.005	<0.005	NR	<0.005	0.011	0.21	<0.005	NR	<0.005	<0.005		
	Aug-04	<0.005	NS	<0.005	<0.005	0.027	0.18	<0.005	<0.005	<0.005	<0.005		
	Aug-03	<0.005	0.022	NR	<0.005	0.02	0.16	<0.005	NR	0.0084	<0.005		
Se	Aug-06	<0.050	NS	NR	<0.05	<0.05	<0.05	<0.05	NR	<0.05	<0.05	0.05	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.05	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		

NW = New Well After August 2004

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample



# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470: Mercury													40CFR141.62
mg/L	Date Sampled	MW #1	MW #3	MW #7	MW #8	MW #11	MW #12	MW #13	MW #21	MW #26	MW #27	MCL	
Silver	Aug-06	<0.0050	NS	NR	<0.005	<0.005	<0.005	<0.005	NR	<0.005	<0.005		
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.005	NS	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Mercury	Aug-06	<0.0002	NS	NR	<0.0002	<0.0002	<0.0002	<0.0002	NR	<0.0002	<0.0002	0.002	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.0002	NS	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002		
	Aug-03	<0.0002	<0.0002	NR	<0.0002	0.00026	<0.0002	<0.0002	NR	<0.0002	<0.0002		

# TOTAL METALS

## Groundwater Analysis

EPA Method 6010, EPA Method 7470: Mercury													40CFR141.62
mg/L	Date Sampled	MW #29	MW #30	MW #31	MW #32	MW #33	MW #34	MW #35	MW #36	MW #37	MW #38	MCL	
Arsenic	Aug-06	NR	NR	NR	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	<0.02	0.01	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Barium	Aug-06	NR	NR	NR	0.032	0.017	0.44	0.71	0.16	0.3	0.093	2	
	Aug-05	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Aug-04	0.039	0.24	0.35	0.049	0.038	0.94	1.2	2.6	1.3	0.74		
	Aug-03	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		

NW = New Well After August 2004

NR = Not Required to Sample

NS = Well is Dry or Not Enough Water to Sample- No Sample

# Monitoring Well #3

Legend: Benzene, Toluene, Ethylbenzene, MTBE, Total Xylene

Concentrations (ppm)

0.0012

0.001

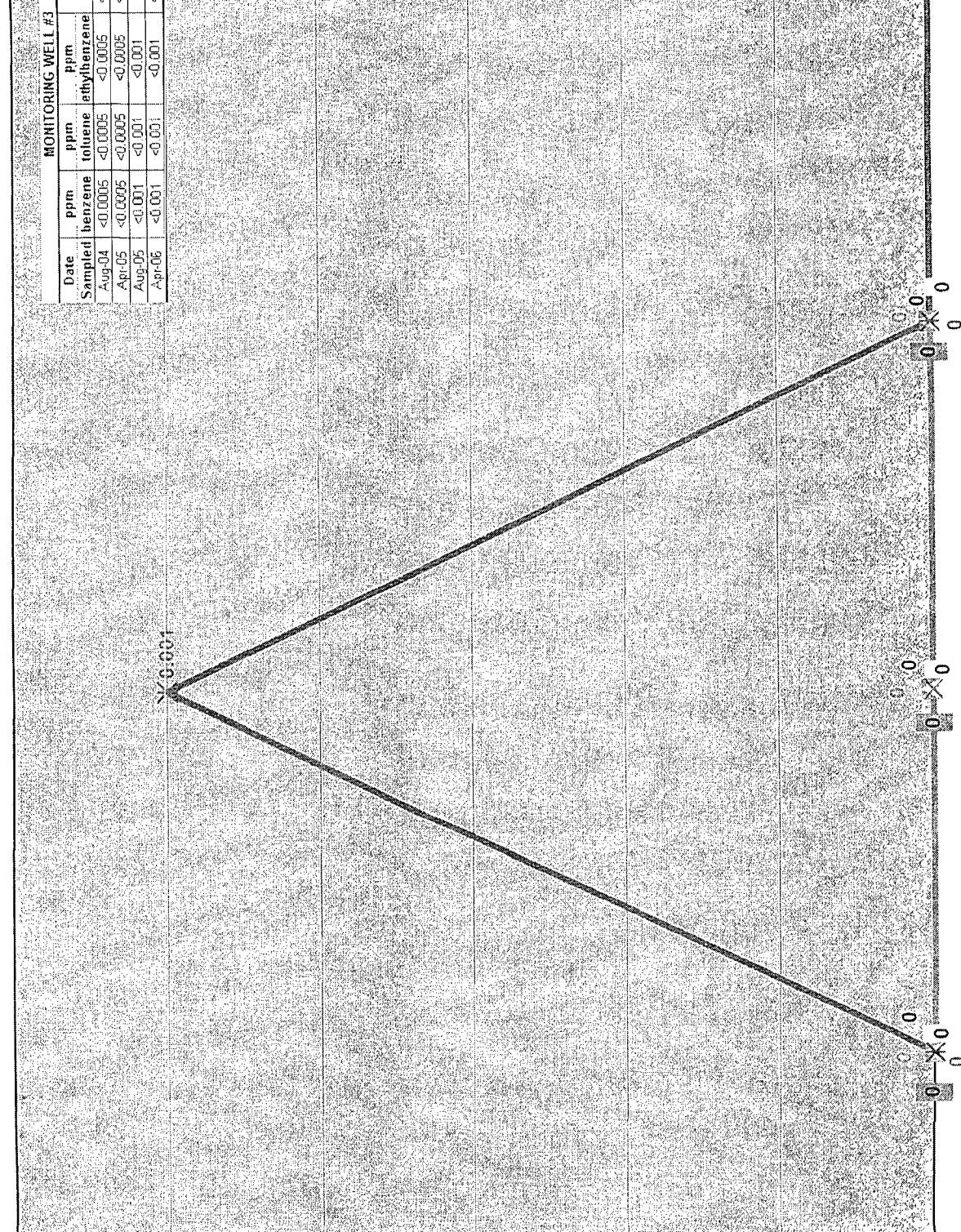
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0.0006

0.0004

0.0002

0



APR 06

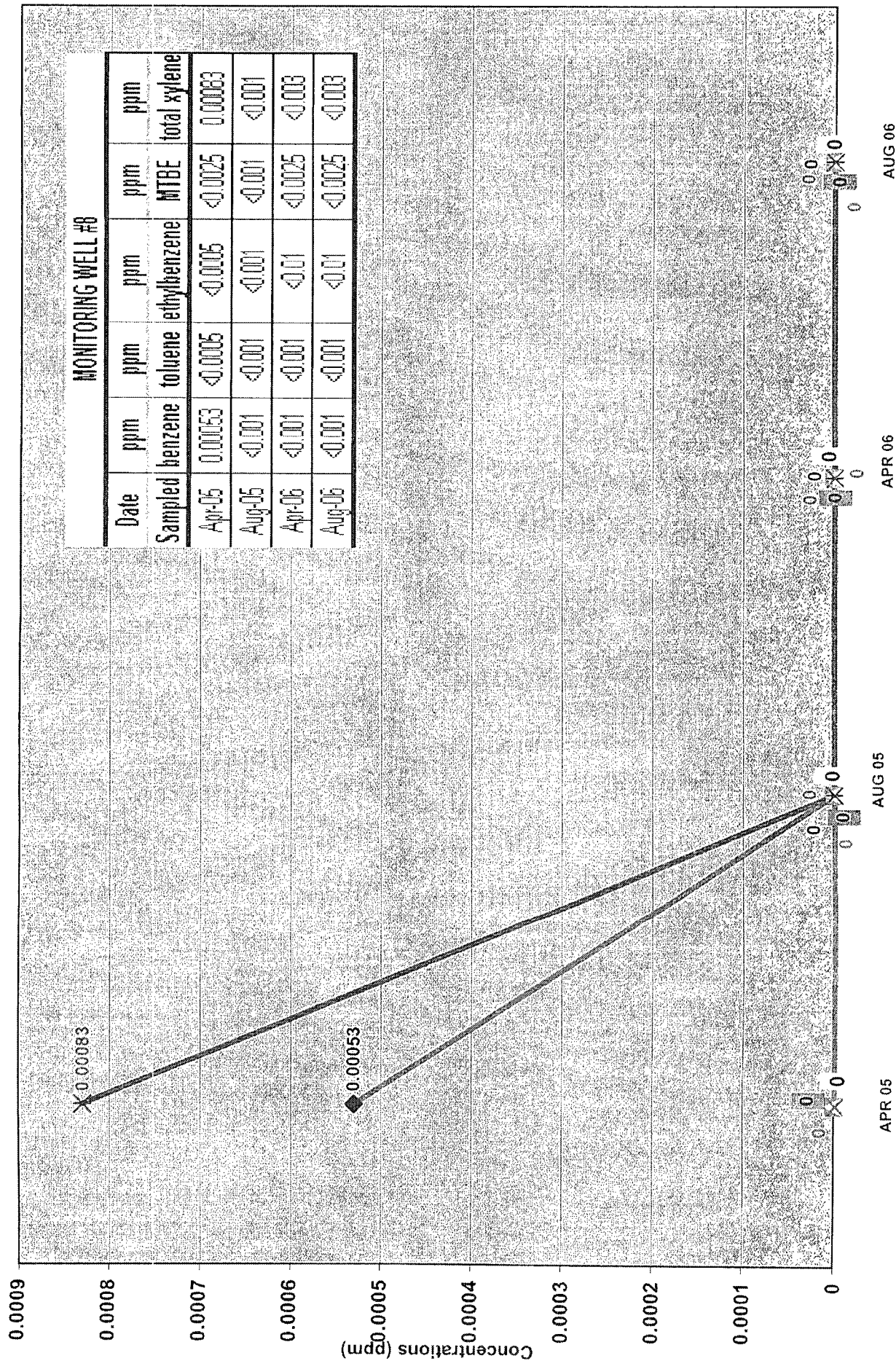
AUG 05

APR 05

AUG 04

# Monitoring Well #8

Benzene
  Toluene
  Ethylbenzene
  MTBE
  Total Xylene





BILL RICHARDSON  
Governor

DIANE DENISH  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

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RON CURRY  
Secretary

JON GOLDSTEIN  
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 3, 2009

Mr. Randy Schmaltz  
Environmental Manager  
Western Refining, Bloomfield Refinery  
P.O. Box 159  
Bloomfield, New Mexico 87413

**RE: NOTICE OF DISAPPROVAL  
INVESTIGATION WORK PLAN GROUP 4  
WESTERN REFINING SOUTHWEST, INC., BLOOMFIELD REFINERY  
EPA ID# NMD089416416  
HWB-GRCB-09-001**

Dear Mr. Schmaltz:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc., Bloomfield Refinery's (Western) *Investigation Work Plan Group 4 SWMU No. 7 Raw Water Ponds, SWMU No. 10 Fire Training Area, and SWMU No. 16 Active Landfill* (Work Plan), dated December 2008. NMED hereby issues this Notice of Disapproval (NOD). Western must address the following comments before NMED can take action on the Work Plan.

**Comment 1**

The current format of the Work Plan is difficult to follow and missing information making it hard to complete a thorough technical review. Western must revise the Work Plan as follows:

- a. Western must address each Solid Waste Management Unit (SWMU) in separate sections. Each section must include text, tables, figures, photographs, and engineering drawings (if applicable) associated with each SWMU. The text must include a Background (previous investigations), Site Conditions (surface and subsurface), Scope of Services, Investigative Methods, and Monitoring and Sampling

Program subsections. Western must refer to Section X.B (Investigation Work Plan) of the July 27, 2007 Order (Order) for the required information. The associated tables, figures, photographs, and engineering drawings (if applicable) must be separated within the individual SWMU sections with labeled tabs. For example, tab separators should be inserted and titled Section 1 and the Section must include information for a SWMU (e.g., SWMU 7), followed by tab separators within the section titled "tables," figures," etc.

- b. The Executive Summary and Section 1 (Introduction) of the current Work Plan must be included in the revised Work Plan.
- c. Sections 5 (Investigation Methods), Section 6 (Monitoring and Sampling Program), Section 7 (Schedule), and Section 8 (References) of the current Work Plan must also be included in the revised Work Plan but does not need to be included in each SWMU-specific section. Sections 5-8 must be placed after the SWMU specific sections and must be separated by a tab.

The individual sections for each SWMU should follow an identical format. This applies to all future Work Plan submittals as well. In addition, Western must incorporate the requirements in this NOD to all applicable sections. Such formatting requirements will help Western organize and clarify its presentation, and facilitate NMED's review.

#### **Comment 2**

In the Section 2 (Background) discussions for each subsection (2.1 (SWMU No. 7 Raw Water Ponds), 2.2 (SWMU No. 10 Fire Training Area), and 2.3 (SWMU No. 16 Active Landfill)), Western must provide the dates of operations of the units.

#### **Comment 3**

In Section 2.1 (SWMU No. 7 Raw Water Ponds), Western does not provide the depths of the Raw Water Ponds in the Background Section. The depth of the Raw Water Ponds is important for calculating the volume of water present within each pond and for determining how the sample collection will be conducted. Western must revise the Work Plan to include the depths of the Raw Water Ponds. If this information is unknown, Western must revise the Work Plan to identify how the depths will be determined during the investigation.

#### **Comment 4**

In Section 2.1 (SWMU No. 7 Raw Water Ponds), page 3, paragraph 1, Western states "[t]he first recorded site operations in this area were the evaporation ponds. There were two ponds of approximately 2.5 acres each. The northern pond is now the Raw Water Ponds and the southern pond was located immediately south (Figure 2)."

Mr. Schmaltz  
September 3, 2009  
Page 3 of 10

Western must revise the Work Plan to state the current acreage of Raw Water Ponds.

**Comment 5**

In Section 2.1 (SWMU No. 7 Raw Water Ponds), page 4, paragraph 3, Western states "[t]wo permanent monitoring wells and seven temporary monitoring wells were installed in October 2008, located immediately down-gradient of the Raw Water Ponds....The samples are shown on Figure 8 and the analytical results are provided in Table 1."

The names of the samples shown on Figure 8 ("2008 RFI Sample Locations" (SB2-1, SB2-2, SB2-3, SB2-4, SB2-5/MW-50, SB2-6, SB2-7 and SB2-8) do not correlate with the names provided in Table 1 (SWMU2-1, SWMU2-2, SWMU2-3, SWMU2-4, SWMU2-5/MW-50, SWMU2-6, SWMU2-7, SWMU2-8, SWMU2-9/MW-51); it is not clear if the analytical data for the permanent monitoring wells and temporary wells, are provided in Table 1. Western must revise the Work Plan to clarify this discrepancy and include the correct names of the monitoring wells and temporary wells so that the information presented in the text, figures, and tables are consistent.

**Comment 6**

In Section 2.1 (SWMU No. 7 Raw Water Ponds), page 4, paragraph 3, Western states "[t]wo permanent monitoring wells and seven temporary monitoring wells were installed in October 2008, located immediately down-gradient of the Raw Water Ponds."

In the revised Work Plan, Western must list the names of the two monitoring wells and the seven temporary wells installed in October 2008.

**Comment 7**

In Section 2.1 (SWMU No. 7 Raw Water Ponds) Western references a *Closure Plan for the Unlined Evaporation Lagoons and the Spray Evaporation Area* which was approved by the New Mexico Oil Conservation Division (OCD).

NMED did not review or approve the closure plan referenced above. Therefore, NMED will not rely on the cited data to make regulatory decisions. No revision is necessary.

**Comment 8**

In Section 2.2 (SWMU No. 10 Fire Training Area), page 6, paragraph 2, Western states "[t]his area was previously investigated during the 1993 RCRA Facility Investigation with four soil borings located in this area....All of the organic analyses were non-detect and the metals concentrations are reported to be less than the background concentrations developed during the 1993 RCRA Facility Investigation (Groundwater Technology Inc., 1994 and Groundwater Technology Inc., 1995). The analytical results for the soil samples are presented in Table 2."



Mr. Schmaltz  
September 3, 2009  
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A background study has not been completed in accordance with Section VIII.H of the Order; therefore, Western cannot compare inorganic constituents to background levels. The Groundwater Technology Inc., 1995 document is the Human Health and Ecological Risk Assessment; this document may no longer be valid, as NMED has since developed risk assessment guidance. Western must remove or qualify the reference to "background concentrations."

**Comment 9**

In Section 3.1 (Surface Conditions), page 7, Western states "[n]orth of the refinery, surface water flows in a southeasterly direction toward the San Juan River."

It is NMED's understanding that surface water at the refinery generally flows in a northerly direction towards the San Juan River. Western must clarify the surface water flow direction in the revised Work Plan and provide an explanation in the response letter.

**Comment 10**

In Section 3.1 (Surface Conditions), page 7, paragraph 3, Western states that "[t]he refinery complex is bisected by County Rd #4990 (Sullivan Road), which runs east-west. The process units, storage tanks (crude oil and liquid products), and wastewater treatment systems are located north of the county road. The crude oil and product loading racks, LPG storage tanks and loading racks... are located south of [the] county road."

Western must revise this Section of the Work Plan to include the location of SWMUs 7, 10, and 11 in reference to County Rd #4990.

**Comment 11**

The Scope of Services, Section 4.0 does not provide enough detail to complete a thorough review. Western must revise the Scope of Services Section in accordance with X.B.7 (Scope of Services) of the Order, specifically to address the statement "[a] section on the scope of activities shall briefly describe a list of all anticipated activities to be performed during the investigation..." See Comments 12 and 13 below.

**Comment 12**

In Section 4.0 (Scope of Services), Subsection 4.1 (Anticipated Activities), page 9, Western states "[p]ursuant to Section IV of the Order, a scope of services was developed to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil, sediment, and groundwater samples will be collected at the SWMU No. 7 Raw Water Ponds, SWMU No. 10 Fire Training Area, and SWMU No. 16 Active Landfill. Soil borings will be installed and samples collected as discussed in Section 5.2. The installation of a monitoring well and collection of groundwater samples is discussed in Section 5.3."

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Although Western states that soil, sediment, and groundwater samples will be collected, the Work Plan does not address the specific activities that will be conducted at each SWMU. Section 4.1 of the revised Work Plan must include a list of the anticipated activities to be conducted at each SWMU (e.g., collect six surface samples to a depth of one foot, install 5 borings to a depth of approximately ten feet below ground surface and collect a water sample at the water table if encountered, etc.). Western must refer to Section X.B (Investigation Work Plan), X.B.7 (Scope of Services) of the Order for details to be included in this revision. See also Comment 1.

**Comment 13**

In Section 4.0 (Scope of Services), Subsection 4.1 (Anticipated Activities), page 9, Western states "[soil borings will be installed and samples collected as discussed in Section 5.2. The installation of a monitoring well and collection of groundwater samples is discussed in Section 5.3."

Subsection 4.1 refers to Section 5.2 (Soil Sampling) and 5.3 (Ground Water Monitoring) as stated above. It is not clear where within these sections (5.2 and 5.3) the investigation activities (number of borings and monitoring wells) for each SWMU are presented. These sections include information for sampling activities; however, the information is not presented in a clear manner. It is therefore difficult to understand what will be conducted at each SWMU (e.g., number of soil borings, monitoring wells to be installed). Western must revise the Work Plan to briefly describe the soil sampling and groundwater monitoring activities listed in the Scope of Services. See Comment 12.

**Comment 14**

In Section 5.2 (Soil Sampling), Western states that sediment samples will be collected from the Raw Water Ponds (SWMU No. 7). The Work Plan does not contain details of how the sediment samples will be collected.

The sampling requirements for the Raw Water Ponds (SWMU No. 7) require modifications as sediment sampling is no longer needed. However, Western must consider the following if sediment sampling will be conducted in future investigations. Sediment sampling is different from soil sampling. Sediment sampling must therefore be addressed in a separate section in which the proposed sampling methods and procedures for collection of sediment samples must be described. Western must revise the Work Plan to remove all references to sediment sampling and incorporate the requirements established in Comments 15 and 16 below.



**Comment 15**

Western proposes to collect six sediment samples from the 0 to 6 inch interval at SWMU No. 7 (Raw Water Ponds).

The proposed 0-6 inch interval is not representative of the stratigraphic section beneath the Raw Water Ponds. Based on historical documents and conversations with Western, the stratigraphic section beneath the Evaporation Ponds/Raw Water Ponds (native sediments to the surface) is as follows: the Jackson Lake Terrace Deposit, four to six inches of bentonite, sediment/sludge accumulation from the interval when the Evaporation Ponds were in service, four to six more inches of bentonite and overlying sediment/silt accumulated from the San Juan River (from current service as the Raw Water Ponds). Western must revise the Work Plan to include characterization of the sediments, liners, and soils beneath the Raw Water Ponds (SWMU No. 7) from the water/sediment interface to the native soils. The Investigation Report must include a figure that depicts the thickness of each unit/layer, as well as provide the depths below the tops of the pond embankments and surrounding land surface. See Comment 16 below.

**Comment 16**

Sampling activities at SWMU No. 7 (Raw Water Ponds) are being modified because sampling has not occurred in 10 years and the previous VOC data may be invalid due to improper sampling methods (samples were composited). Additionally, the Closure Plan submitted to OCD did not describe the sampling methods and procedures, nor did it indicate if soil was removed or if any remedial activities were completed. Finally, the current Work Plan does not include proposed sampling of potentially distinct layers (e.g., liners, sludge) beneath the Raw Water Ponds, nor was any sampling proposed for the South Evaporation Pond. Western must revise the Work Plan to incorporate the following sampling activities.

- a. Instead of collecting six sediment samples, Western must advance three soil borings from within the Raw Water Ponds; two soil borings must be advanced within the western Raw Water Pond and one soil boring from within the eastern Raw Water Pond (see attached Figure 8 for the approximate locations). The borings must be continuously logged from the water/sediment interface into the underlying native soil. Samples must be collected from every discernable layer, including the native soil (e.g., sediment, bentonite, sludge, native soil). The samples must be analyzed in accordance with Section 5.8 (Chemical Analysis). Western must revise the text and figures in the Work Plan accordingly.
- b. Western must advance a boring within 25 feet of the historic discharge point where wastewater entered into the Evaporation Ponds. The boring must be continuously logged from the water/sediment interface into the native soil. Soil samples must be collected from every discernable layer, including native soil. The samples must be

analyzed in accordance with Section 5.8 (Chemical Analysis). Western must revise the text and figures in the Work Plan accordingly.

- c. Western must advance a soil boring at the location where the overflow from the north Evaporation Pond to the South Evaporation Pond occurred. The boring must be continuously logged from the water/sediment interface into the native soil. Soil samples must be collected from every discernable layer, including the native soil. The samples must be analyzed in accordance with Section 5.8 (Chemical Analysis). Western must revise the text and figures in the Work Plan accordingly.
- d. Western must advance two soil borings within the Former South Evaporation Pond. The approximate locations are identified in the attached Figure 2. The borings must be continuously logged from the surface into the underlying native soil. Soil samples must be collected from every discernable layer, including native soil. The soil samples must be analyzed for the constituents identified in Section 5.8 (Chemical Analyses). Western must revise the text and figures in the Work Plan accordingly.
- e. If groundwater is encountered beneath the former South Pond, a water sample must be collected at the water table and analyzed for the constituents identified in Section 5.8 (Chemical Analyses). Western must revise the text and figures in the Work Plan accordingly.

**Comment 17**

In reference to SWMU No. 7 (Raw Water Ponds), Western must revise the Work Plan to include the following figures:

- a. A figure that identifies the location of the historic inlet pipe that discharged wastewater to the former Evaporation Ponds, the location of the over flow pipe connecting the north evaporation pond to the south evaporation pond, and the location of the existing inlet pipe where water enters from the San Juan River.
- b. A figure that depicts the Raw Water Ponds and the Former South Evaporation Pond, and the area in the vicinity of soil boring B-6.

**Comment 18**

The historical analytical results at the former Evaporation Ponds (existing Raw Water Ponds), provided in Table 2, identified detections of thallium above the New Mexico Soil Screening Levels (soil-to-groundwater screening level). Therefore, Western must revise the Work Plan to include the analysis of thallium to Section 5.8 (Chemical Analysis).

**Comment 19**

In Section 5.2 (Soil Sampling), page 12 and 13, Western states "[a]s there are individual props located within the area where liquid fuel (e.g., diesel and gasoline) is used and there is the potential for constituents to be released to soils at known locations, a judgmental sampling design is appropriate. Four soil borings are proposed near these locations as shown on Figure 9. In addition, two soil borings will be located within the drainage ditch, which runs along the western side of the area and collects surface water runoff from the area. One of the borings will be located in the small pit on the north end of the ditch."

Western must revise the Work Plan to incorporate the following additional sampling locations at SWMU No. 10 (The Fire Training Area):

- a. Soil borings must be installed at all locations where fire is ignited and burning occurs during the fire trainings. All changes must be reflected in the text and figures in the revised Work Plan.
- b. A soil boring must be installed from all shaded areas within SWMU No. 10 and as shown in Figure 9, unless an explanation can be provided as to why sampling is unnecessary.
- c. Revise Figure 9 (SWMU No. 10 Sample Locations Map) to depict all drainage features and outfalls. In addition, the figure must identify all features in the figure (e.g., all dark spots must be labeled); it is not clear if the shadows are surface staining, actual shadows, or tangible features. This figure must also include the proposed sample locations.
- d. The soil samples collected from the soil borings must follow the sampling methods and procedures as presented in the Work Plan.

**Comment 20**

In Section 5.2 (Soil Sampling), page 13, paragraph 2, Western states "[t]he landfill area of interest was divided into quadrants, with one soil boring located near the center of each quadrant (Figure 10)."

Western addresses how the Active Landfill was divided into quadrants for soil sampling, but the quadrants are not shown in the figure. If Western continues to describe the Active Landfill area as being divided into quadrants, the quadrants must be presented in the figure or the text must be revised to remove reference to the quadrants. In addition, Western must revise the Work Plan to include the following modifications to the Active Landfill investigation:

- a. Western must install an additional soil boring in the center of the Active Landfill (see attached Figure 10 for the approximate location). Western must revise the text and figure in the Work Plan accordingly.
- b. Western must modify the chemical analysis for all soil samples collected at the Active Landfill; these changes incorporate the OCD sampling requirements. All soil samples collected from the five borings must be analyzed for the metals identified in Section 5.8 (Chemical Analysis) with the addition of aluminum, boron, copper, manganese, molybdenum, iron, and uranium. Soil samples must also be analyzed for chlorides, sulfate, fluoride, and gasoline range organics (GRO). If GRO is detected at concentrations greater than 80 parts per million (ppm), the soil samples also must be analyzed for VOCs. In addition, soil samples must be analyzed for DRO extended (motor oil range organics (MRO)), if DRO is detected at concentrations greater than 200 ppm, the soil samples must be analyzed for semi-volatile organic compounds (SVOCs). Western must revise the text in the Work Plan accordingly.
- c. If any water samples are collected, the water samples must be analyzed for the constituents identified in Section 5.8 (Chemical Analyses) in addition to the constituents identified in item b above.
- d. Western must determine the total depth of the Active Landfill.

Western must revise the text in the Work Plan to incorporate the above changes.

**Comment 21**

Western must revise the Work Plan to include a figure(s) that depicts the locations of all sampling locations referenced in Table 1.

**Comment 22**

In Figure 9, Western has a blue dot that states "Proposed Well" at the north end of SWMU No. 10. The legend also contains a blue dot that states "SB9-1 2008 RFI Sample Location".

As indicated in the figure, it is not clear if the "proposed well" was a sample location in the 2008 RFI. Western must revise Figure 9 in the revised Work Plan to clarify the difference between the blue dots or use different symbols to show the difference between the "proposed well" and the "2008 RFI sample locations."

**Comment 23**

Western does not mention the installation of a new permanent monitoring well (proposed well) until Section 5.3.2 (Groundwater Sampling), after drilling and installation of a monitoring well has already been discussed. In the revised Work Plan, Western must address the installation of

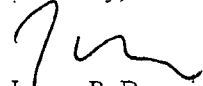
Mr. Schmaltz  
September 3, 2009  
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the monitoring well and its location in the Scope of Services Section, so it is clear that a well is going to be installed. In addition, Section 5.3 (Groundwater Monitoring) discusses monitoring wells, as if more than one monitoring well is being installed. Western must revise Section 5.3 to also make it clear that only one monitoring well will be installed and sampled as part of this investigation.

Western must address all comments contained in this NOD and submit a revised Work Plan to NMED on or before January 25, 2010. The revised Work Plan must be submitted with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, an electronic version of the revised work plan must be submitted that identifies where all changes made in redline strikeout format.

If you have any questions regarding this letter, please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB  
D. Cobrain, NMED HWB  
H. Monzeglio, NMED HWB  
C. Chavez, OCD  
A. Hains, Western El Paso  
File: GRCB 2009 and Reading  
HWB-GRCB-09-001



WESTERN REFINING SOUTHWEST

PROJ. NO. Western Refining DATE: 11/17/98 FILE: WRSR-812

FIGURE 2

SWMU GROUP No. 4

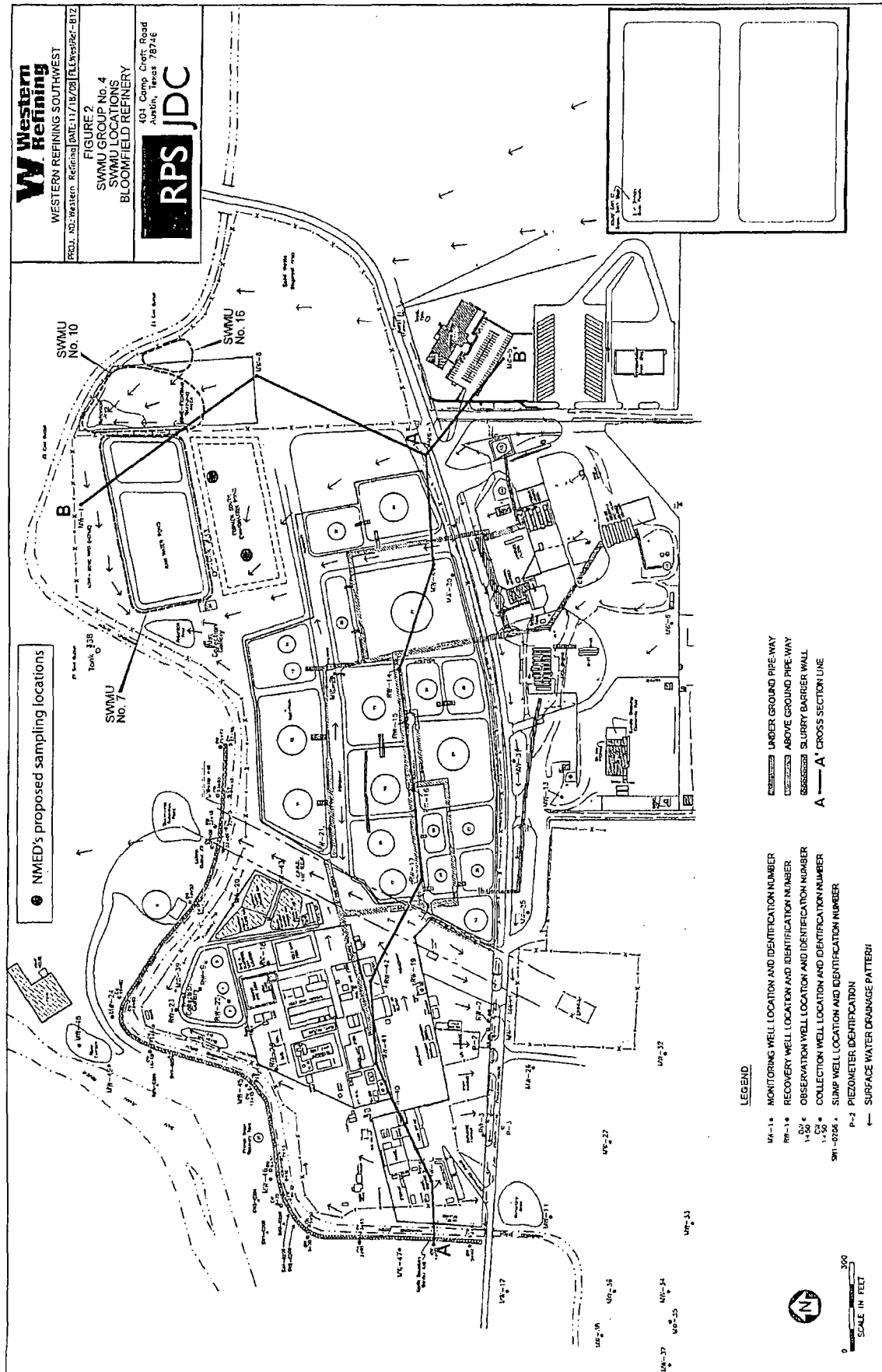
SWMU LOCATIONS

BLOOMFIELD REFINERY

101 Camp Creek Road

Alhambra, Texas 78046

RPS JDC



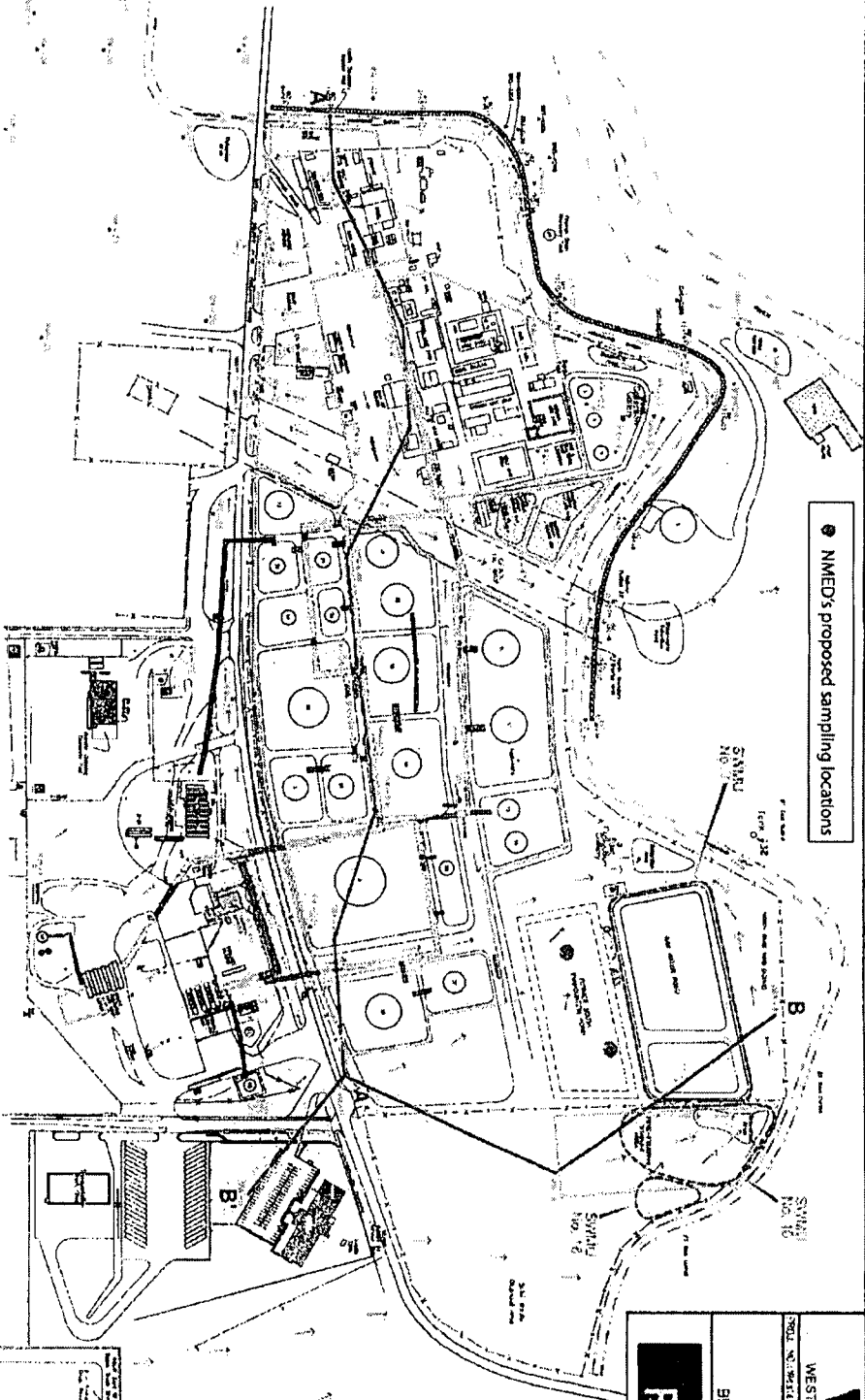
● NMED's proposed sampling locations

**W. Western**  
WESTERN REFINING SOUTH-WEST  
ROLL NO. WESTERN (2004) 011/12/21/22/23/24/25/26/27/28/29/30

FIGURE 2  
SYND GROUP No. 4  
SYND LOCATIONS  
BLOOMFIELD REFINERY

424 Camp Craft Road  
Austin, Texas 78746

**RPS JDC**



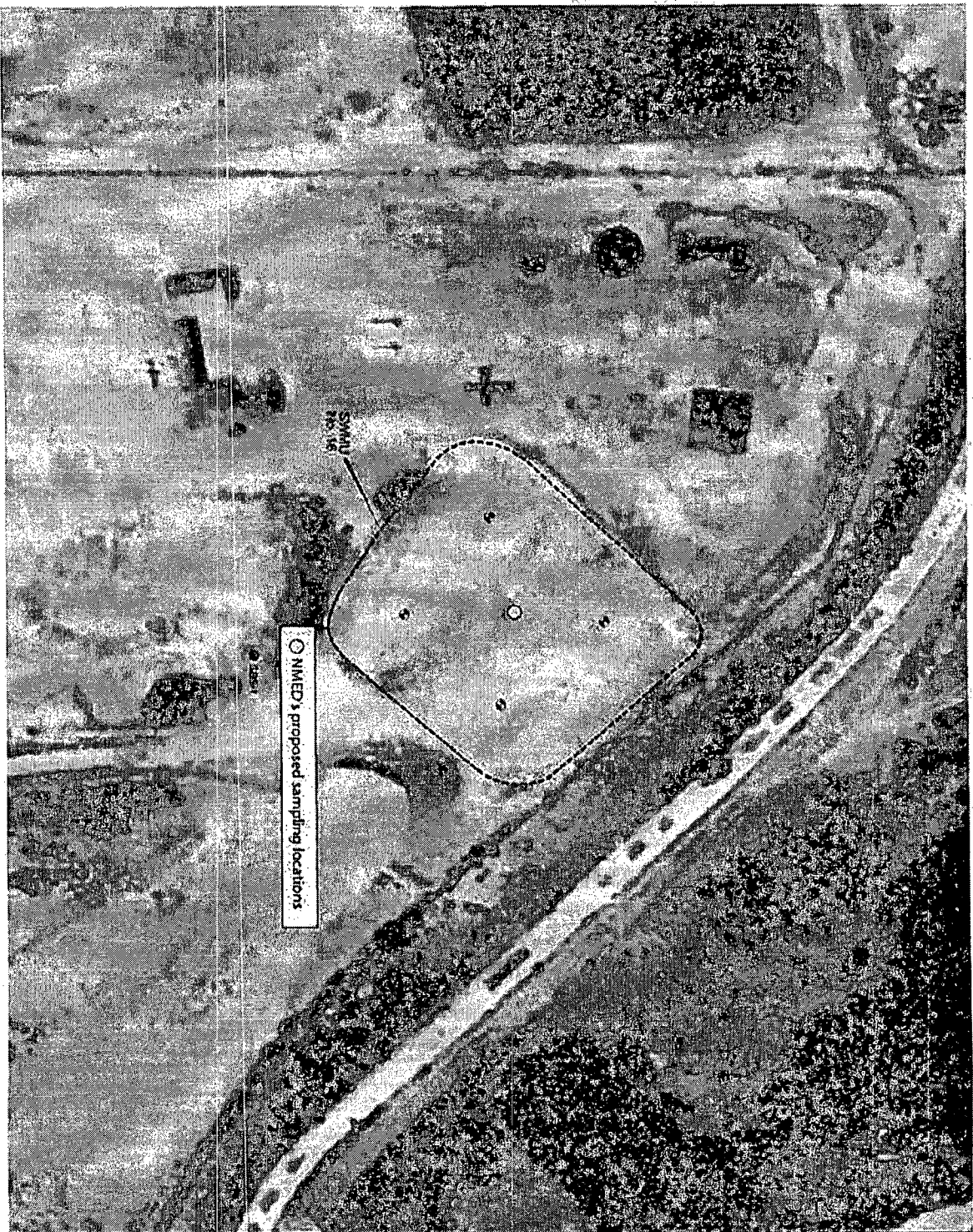
**LEGEND**

- MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER
- OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER
- COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER
- SURF WELL LOCATION AND IDENTIFICATION NUMBER
- PIEZOMETER IDENTIFICATION
- SURFACE WATER DRAINAGE PATTERN

- UNDER GROUND PIPEWAY
- ABOVE GROUND PIPEWAY
- SLURRY BARBER WALL
- A' CROSS SECTION LINE

0 300  
SCALE IN FEET





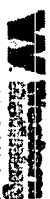
Aerial Map Source: Google Maps, 3/15/2013



0 25  
SCALE IN FEET

LEGEND

- 2003 SOI SAMPLE LOCATION
- PROPOSED SOI SENSING LOCATION



WESTERN REFINING SOUTHWEST

FILE NO. WESTERN REFINING (L&E) 11/12/CORREL-MWD-915

FIGURE 10

SWMU No. 16  
SAMPLE LOCATIONS MAP  
BLOOMFIELDED REFINERY

404 Corp Court Road  
Austin, Texas 78746







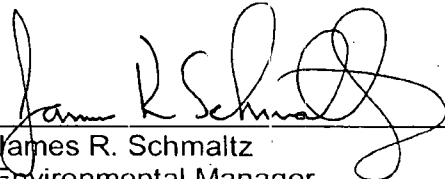
404 Camp Craft Rd., Austin, TX 78746  
Tel: (512) 347 7588 Fax: (512) 347 8243  
Internet: [www.rpsgroup.com/energy](http://www.rpsgroup.com/energy)

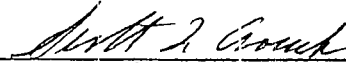
## INVESTIGATION WORK PLAN

**Group 4 (SWMU No. 7 Raw Water Ponds, SWMU No. 10 Fire  
Training Area and SWMU No. 16 Active Landfill)**

**Bloomfield Refinery  
Western Refining Southwest, Inc.  
#50 Rd 4990  
Bloomfield, New Mexico 87413**

**December 2008**

  
James R. Schmaltz  
Environmental Manager  
Western Refining Southwest, Inc.  
Bloomfield Refinery

  
Scott T. Crouch, P.G.  
Senior Consultant

RPS JDC, Inc.  
404 Camp Craft Rd.  
Austin, Texas 78746



BLOOMFIELD REFINERY

WNR  
LISTED  
NYSE

RECEIVED

2008 DEC 29 PM 12 49

Fed Ex Tracking # 7006 0810 0003 7020 7360

December 24, 2008

James Bearzi, Bureau Chief  
New Mexico Environmental Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

Re: Giant Refining Company, Bloomfield Refinery (currently known as Western Refining Southwest, Inc. – Bloomfield Refinery) Order No. HWB 07-34 (CO) Solid Waste Management Unit (SWMU) Group No. 4 Investigation Work Plan

Dear Mr. Bearzi:

Western Refining Southwest, Inc. - Bloomfield Refinery submits the referenced Investigation Work Plan pursuant to Section IV.B.4 of the July 2007 HWB Order. The Investigation Work Plan covers SWMU Group No. 4, which includes SWMU No. 7 Raw Water Ponds; SWMU No. 10 Fire Training Area; and SWMU No. 16 Active Landfill. The Investigation Work Plan was developed and formatted to meet the requirements of Section X.B of the July 2007 HWB Order.

If you have any questions or would like to discuss the Investigation Work Plan, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz  
Environmental Manager  
Western Refining Southwest, Inc.  
Bloomfield Refinery

cc: Hope Monzeglio – NMED HWB  
Wayne Price – NMOCD (w/attachment)  
Dave Cobrain – NMED HWB  
Laurie King – EPA Region 6 (w/attachment)  
Todd Doyle – Bloomfield Refinery  
Allen Hains – Western Refining El Paso

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## Executive Summary

The Bloomfield Refinery, which is located in the Four Corners Area of New Mexico, has been in operation since the late 1950s. Past inspections by State and federal environmental inspectors have identified locations where releases to the environment may have occurred. These locations are generally referred to as Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs).

Pursuant to the terms and conditions of an Order issued on July 27, 2007 by the New Mexico Environment Department (NMED) to San Juan Refining Company and Giant Industries Arizona, Inc. for the Bloomfield Refinery, this Investigation Work Plan has been prepared for the SWMUs designated as Group 4. A Class I permit modification was approved on June 10, 2008 to reflect the change in ownership of the refinery to Western Refining Southwest, Inc. The operator is now Western Refining Southwest, Inc. – Bloomfield Refinery

The planned investigation activities include collection of soil, sediment, and groundwater samples, which will be analyzed for potential site-related constituents. The specific sampling locations, sample collection procedures, and analytical methods are included. These activities are based, in part, on the results of previous site investigation activities.

SWMU Group 4 includes SWMU No. 7 Raw Water Ponds, SWMU No. 10 Fire Training Area, and SWMU No. 16 Active Landfill. The Order requires that San Juan Refining Company and Giant Industries Arizona, Inc. ("Western") determine and evaluate the presence, nature, and extent of historical releases of contaminants at the aforementioned SWMUs.

## Section 1 Introduction

The Bloomfield Refinery is located immediately south of Bloomfield, New Mexico in San Juan County (Figure 1). The physical address is #50 Road 4990, Bloomfield, New Mexico 87413. The Bloomfield Refinery is located on approximately 263 acres. Bordering the facility is a combination of federal and private properties. Public property managed by the Bureau of Land Management lies to the south. The majority of undeveloped land in the vicinity of the facility is used extensively for oil and gas production and, in some instances, grazing. U.S. Highway 44 is located approximately one-half mile west of the facility. The topography of the main portion of the site is generally flat with steep bluffs to the north where the San Juan River intersects Tertiary terrace deposits.

The Bloomfield Refinery is a crude oil refinery currently owned by Western Refining Southwest, Inc., which is a wholly owned subsidiary of Western Refining Company, and it is operated by Western Refining Southwest, Inc. – Bloomfield Refinery. The Bloomfield Refinery has an approximate refining capacity of 18,000 barrels per day. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, mercox treater, catalytic polymerization, and diesel hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG.

On July 27, 2007, the New Mexico Environment Department (NMED) issued an Order to San Juan Refining Company and Giant Industries Arizona, Inc. ("Western") requiring investigation and corrective action at the Bloomfield Refinery. This Investigation Work Plan has been prepared for the Solid Waste Management Units (SWMUs) designated as Group 4 in the Order. This includes:

- SWMU No. 7 Raw Water Ponds;
- SWMU No. 10 Fire Training Area; and
- SWMU No. 16 Active Landfill.

The location of the individual SWMUs is shown on Figure 2 and all of these SWMUs are located on the northeastern portion of the refinery property. Photographs of the three SWMUs are included in Appendix A.



The purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation activities will be conducted in accordance with Section IV of the Order.

gasoline and the other contains propane. There a number of props arranged in two rows running north-south on both sides of the area where the actual training exercises take place.

This area was previously investigated during the 1993 RCRA Facility Investigation with four soil borings located in this area. Two borings (B-7 and B-9) were placed along the west side in the drainage ditch and the other two borings (B-8 and B-10) were located along the center of the area (Figure 9). One soil sample was collected from each of the borings and analyzed for volatile and semi-volatile organic constituents, total petroleum hydrocarbons, and metals. All of the organic analyses were non-detect and the metals concentrations are reported to be less than the background concentrations developed during the 1993 RCRA Facility Investigation (Groundwater Technology Inc., 1994 and Groundwater Technology Inc., 1995). The analytical results for the soil samples are presented in Table 2.

### **2.3 SWMU No. 16 Active Landfill**

The active landfill is located immediately adjacent to the fire training area, on the east side (Figure 2). It occupies an area approximately 120 feet by 150 feet. The landfill is included as an active disposal facility in the refinery's Discharge Plan, which is reviewed and approved by the OCD. The materials disposed of in the landfill include elemental sulfur, which is produced at the sulfur recovery unit, and fines and spent catalyst from the Fluidized Catalytic Cracking (FCC) unit. The FCCU catalyst is a non-hazardous metallic (alumina) solid, which is periodically replaced.

The spent catalyst and elemental sulfur is placed in lifts and covered with clean soil. The lateral extent of the landfill is visibly obvious; however, the thickness of the material placed in the landfill is uncertain but is estimated to be 10 to 15 feet. No historical assessments have been conducted in this area as it is a permitted disposal area. There are no indications of releases from the unit and based on the physical nature of the material placed in the landfill there is little potential for a release.



## Section 3 Site Conditions

The conditions at the site, including surface and subsurface conditions that could affect the fate and transport of any contaminants, are discussed below. This information is based on recent visual observations and historical subsurface investigations.

### 3.1 Surface Conditions

Regionally, the surface topography slopes toward the floodplain of the San Juan River, which runs along the northern boundary of the refinery complex. To the south of the refinery, the drainage is to the northwest. North of the refinery, surface water flows in a southeasterly direction toward the San Juan River. The active portion of the refinery property, where the process units and storage tanks are located, is generally of low relief with an overall northwest gradient of approximately 0.02 ft/ft. The refinery sits on an alluvial floodplain terrace deposit and there is a steep bluff (approx. drop of 90 feet) at the northern boundary of the refinery where the San Juan River intersects the floodplain terrace, which marks the southern boundary of the floodplain.

There are two locally significant arroyos, one immediately east and another immediately west of the refinery, which collect most of the surface water flows in the area, thus significantly reducing surface water flows across the refinery. A minor drainage feature is located on the eastern portion of the refinery, where the Landfill Pond (SWMU No. 9) is located and there are several steep arroyos along the northern refinery boundary that primarily capture only local surface water flows and minor groundwater discharges.

The refinery complex is bisected by County Rd #4990 (Sullivan Road), which runs east-west. The process units, storage tanks (crude oil and liquid products), and wastewater treatment systems are located north of the county road. The crude oil and product loading racks, LPG storage tanks and loading racks, maintenance buildings/90-day storage area, pipeline offices, transportation truck shop, and the Class I injection well are located south of the county road. There is very little vegetation throughout these areas with most surfaces composed of concrete, asphalt, or gravel. The area between the refinery and the San Juan River does have limited vegetation on slopes that are not too steep to support vegetation.

### 3.2 Subsurface Conditions

Numerous soil borings and monitoring wells have been completed across the refinery property during previous site investigations and installation of the slurry wall, which runs along the northern and western refinery boundary. Based on the available site-specific and regional subsurface information, the site is underlain by the Quaternary Jackson Lake terrace deposits, which unconformably overlie the Tertiary Nacimiento Formation. The Jackson Lake deposits consist of fine grained sand, silt and clay that grades to coarse sand, gravel and cobble size material closer to the contact with the Nacimiento Formation. The Jackson Lake Formation is over 40 feet thick near the southeast portion of the site and generally thins to the northwest toward the San Juan River. The Nacimiento Formation is primarily composed of fine grained materials (e.g., carbonaceous mudstone/claystone with interbedded sandstones) with a reported local thickness of approximately 570 feet (Groundwater Technology Inc., 1994).

Figures 3 and 4 present cross-sections of the shallow subsurface based on borings logs from on-site monitoring well completions. The uppermost aquifer is under water table conditions and occurs within the sand and gravel deposits of the Jackson Lake Formation. The Nacimiento Formation functions as an aquitard at the site and prevents site related contaminants from migrating to deeper aquifers. The potentiometric surface as measured in April 2007 is presented as Figure 5 and shows the groundwater flowing to the northwest, toward the San Juan River.

Previous site investigations have identified and delineated impacts to groundwater from historical site operations. Figure 6 shows the distribution of SPH in the subsurface based on the apparent thickness of SPH measured in monitoring wells. Dissolved-phase impacts are depicted on Figure 7.

## Section 4 Scope of Services

### 4.1 Anticipated Activities

Pursuant to Section IV of the Order, a scope of services was developed to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil, sediment, and groundwater samples will be collected at the SWMU No. 7 Raw Water Ponds, SWMU No. 10 Fire Training Area, and SWMU No. 16 Active Landfill. Soil borings will be installed and samples collected as discussed in Section 5.2. The installation of a monitoring well and collection of groundwater samples is discussed in Section 5.3.

### 4.2 Background Information Research

Documents containing the results of previous investigations and subsequent routine groundwater monitoring data from monitoring wells were reviewed to facilitate development of this work plan. The previously collected data provides very good information on the overall subsurface conditions, including hydrogeology and contaminant distribution within groundwater on a site-wide basis. The data collected under this scope of services will supplement the existing groundwater information and provide SWMU-specific information regarding contaminant occurrence and distribution within soils, sediments and groundwater.

### 4.3 Collection and Management of Investigation Derived Waste

Drill cuttings, excess sample material and decontamination fluids, and all other investigation derived waste (IDW) associated with soil borings will be contained and characterized using methods based on the boring location, boring depth, drilling method, and type of contaminants suspected or encountered. All purged groundwater and decontamination water will be characterized prior to disposal unless it is disposed in the refinery wastewater treatment system upstream of the API Separator. An IDW management plan is included as Appendix D.

### 4.4 Surveys

The horizontal coordinates and elevation of each surface sampling location; the surface coordinates and elevation of each boring or test pit, the top of each monitoring well casing, and the ground surface at each monitoring well location, and the locations of all other pertinent structures will be determined by a registered New Mexico professional land surveyor in accordance with the State Plane Coordinate System (NMSA 1978 47-1-49-56 (Repl. Pamph. 1993)). Alternate survey methods may be proposed by the Respondents in site-specific work

as shown on Figure 9. In addition, two soil borings will be located within the drainage ditch, which runs along the western side of the area and collects surface water runoff from the area. One of the borings will be located in the small pit on the north end of the ditch.

The Active Landfill (SWMU No. 16) is located immediately adjacent to the Fire Training Area, on the east side. It occupies an area approximately 120 feet by 150 feet. The materials disposed of in the landfill include fines and spent catalyst from the FCC unit and elemental sulfur. The waste materials are spread relatively evenly across the landfill area by heavy machinery and thus there are no readily identifiable "hot spots" or obvious concentrations of waste. An evaluation of the possible use of a simple random or stratified sampling design indicates an unreasonably large sample size for such a small area in order to meet common statistical performance criteria (e.g., significance level = 5% & power = 95%). A more appropriate sampling design to locate any areas of contamination within the area of the landfill is a systematic or grid sampling design. The landfill area of interest was divided into quadrants, with one soil boring located near the center of each quadrant (Figure 10). Each boring will represent an area of approximately 4,500 square feet or one tenth of an acre. This is very conservative for a commercial/industrial facility and is less than the half-acre exposure area commonly used for residential properties (EPA, 1991 and EPA, 1996).

The soil borings at the Fire Training Area and Active Landfill will be drilled to a minimum depth of ten feet, or five feet below the deepest detected contamination or waste material, whichever is deeper. A decontaminated split-barrel sampler or continuous five-foot core barrel will be used to obtain samples during the drilling of each boring. Surface samples may be collected using decontaminated, hand-held stainless steel sampling device, shelby tube, or thin-wall sampler, or a pre-cleaned disposable sampling device. A portion of the sample will be placed in pre-cleaned, laboratory-prepared sample containers for laboratory chemical analysis. The use of an Encore® Sampler or other similar device will be used during collection of soil samples for VOC analysis. The remaining portions of the sample will be used for logging and field screening as discussed in Section 5.2.1. Sample handling and chain-of-custody procedures will be in accordance with the procedures presented below in Section 5.4.

Discrete soil samples will be collected for laboratory analyses at the following intervals:

- 0-6" (all borings);
- 18-24" (all borings);

- from the 6" interval at the top of saturation;
- the sample from each boring with the greatest apparent degree of contamination, based on field observations and field screening; and
- any additional intervals as determined based on field screening results.

Quality Assurance/Quality Control (QA/QC) samples will be collected to monitor the validity of the soil sample collection procedures as follows:

- field duplicates will be collected at a rate of 10 percent;
- equipment blanks will be collected from all sampling apparatus at a frequency of 10 percent or one per day if disposable sampling equipment is used; and
- field blanks will be collected at a frequency of one per day.

### 5.2.1 Soil Sample Field Screening and Logging

Samples obtained from the borings will be screened in the field on 2.5 foot intervals for evidence of contaminants. Field screening results will be recorded on the exploratory boring and excavation logs. Field screening results will be used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds. Additional screening for site- or release-specific characteristics such as pH or for specific compounds using field test kits may be conducted where appropriate.

Visual screening includes examination of soil samples for evidence of staining caused by petroleum-related compounds or other substances that may cause staining of natural soils such as elemental sulfur or cyanide compounds. Headspace vapor screening targets volatile organic compounds and involves placing a soil sample in a plastic sample bag or a foil sealed container allowing space for ambient air. The container will be sealed and then shaken gently to expose the soil to the air trapped in the container. The sealed container will be allowed to rest for a minimum of 5 minutes while vapors equilibrate. Vapors present within the sample bag's headspace will then be measured by inserting the probe of the instrument in a small opening in the bag or through the foil. The maximum value and the ambient air temperature will be recorded on the field boring or test pit log for each sample.

The monitoring instruments will be calibrated each day to the manufacturer's standard for instrument operation. A photo-ionization detector (PID) equipped with a 10.6 or higher electron volt (eV) lamp or a combustible gas indicator will be used for VOC field screening. Field

performed in accordance with the most recent EPA standard analytical methodologies and extraction methods.

Groundwater and soil samples will be analyzed by the following methods:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline range (C5-C10), diesel range (>C10-C28), and motor oil range (>C28-C36) organics.

Groundwater and soil samples will also be analyzed for the following metals using the indicated analytical methods.

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020

In addition, groundwater samples will also be analyzed for the following general chemistry parameters.

Analyte	Analytical Method
Total Dissolved Solids	SM-2540C
Bicarbonate	SM-2320B
Chloride	EPA method 300.0
Sulfate	EPA method 300.0
Calcium	EPA method 6010/6020
Magnesium	EPA method 6010/6020
Sodium	EPA method 6010/6020
Potassium	EPA method 6010/6020
Manganese	SW-846 method 6010/6020
Nitrate/nitrite	EPA method 300.0
Ferric/ferrous Iron	SW-846 method 6010/6020 & SM 3500Fe2+

As discussed in section 5.3.3, field measurements will be obtained for pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature.

### 5.9 Data Quality Objectives

The Data Quality Objectives (DQOs) were developed to ensure that newly collected data are of sufficient quality and quantity to address the projects goals, including Quality Assurance/Quality Control (QA/QC) issues (EPA, 2006). The project goals are established in the Order and are to determine and evaluate the presence, nature, and extent of releases of contaminants at specified SWMUs. The type of data required to meet the project goals includes chemical analyses of soil, sediment and groundwater to determine if there has been a release of contaminants at the individual SWMUs.

The quantity of data is SWMU specific and is based on the historical operations at individual locations. The quality of data that is required is consistent across locations and is specified in Section VIII.D.7.c of the Order. In general, method detection limits should be 20% or less of the applicable background levels, cleanup standards and screening levels.

Additional DQOs include precision, accuracy, representativeness, completeness, and comparability. Precision is a measurement of the reproducibility of measurements under a given set of circumstances and is commonly stated in terms of standard deviation or coefficient of variation (EPA, 1987). Precision is also specific to sampling activities and analytical performance. Sampling precision will be evaluated through the analyses of duplicate field samples and laboratory replicates will be utilized to assess laboratory precision.

Accuracy is a measurement in the bias of a measurement system and may include many sources of potential error, including the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques (EPA, 1987). An evaluation of the accuracy will be performed by reviewing the results of field/trip blanks, matrix spikes, and laboratory QC samples.

Representativeness is an expression of the degree to which the data accurately and precisely represent the true environmental conditions. Sample locations and the number of samples have been selected to ensure the data is representative of actual environmental conditions. Based on SWMU specific conditions, this may include either biased (i.e., judgmental) locations/depths or unbiased (systematic grid samples) locations, as discussed in Section 5.2 for soils and 5.3.2

for groundwater. In addition, sample collection techniques (e.g., purging of monitoring wells to collect formation water) will be utilized to help ensure representative results. An evaluation of on-going groundwater monitoring results will be performed to assess representativeness.

Completeness is defined as the percentage of measurements taken that are actually valid measurements, considering field QA and laboratory QC problems. EPA Contract Laboratory Program (CLP) data has been found to be 80-85% complete on a nationwide basis and this has been extrapolated to indicate that Level III, IV, and V analytical techniques will generate data that are approximately 80% complete (EPA, 1987). As an overall project goal, the completeness goal is 85%; however, some samples may be critical base on location or field screening results and thus a sample -by-sample evaluation will be performed to determine if the completeness goals have been obtained.

Comparability is a qualitative parameter, which expresses the confidence with which one data set can be compared to another. Industry standard sample collection techniques and routine EPA analytical methods will be utilized to help ensure data are comparable to historical and future data. Analytical results will be reported in appropriate units for comparison to historical data and cleanup levels.



## **Section 6**

# **Monitoring and Sampling Program**

### **6.1 Groundwater Monitoring**

After the initial investigation activities are completed, a second round of groundwater samples will be collected to confirm the initial groundwater analyses for samples collected at new monitoring wells. The groundwater samples will be collected no sooner than 30 days after the initial sampling event and no later than 75 days after the initial sampling event. If possible, the second sampling event will be timed to coincide with the regularly scheduled semiannual groundwater sampling events. The samples will be analyzed for the same constituents for which the first samples were analyzed.

Any subsequent sampling events will be based on the results of the first two analyses and will be approved by the NMED prior to implementation.



WESTERN REFINING SOUTHWEST

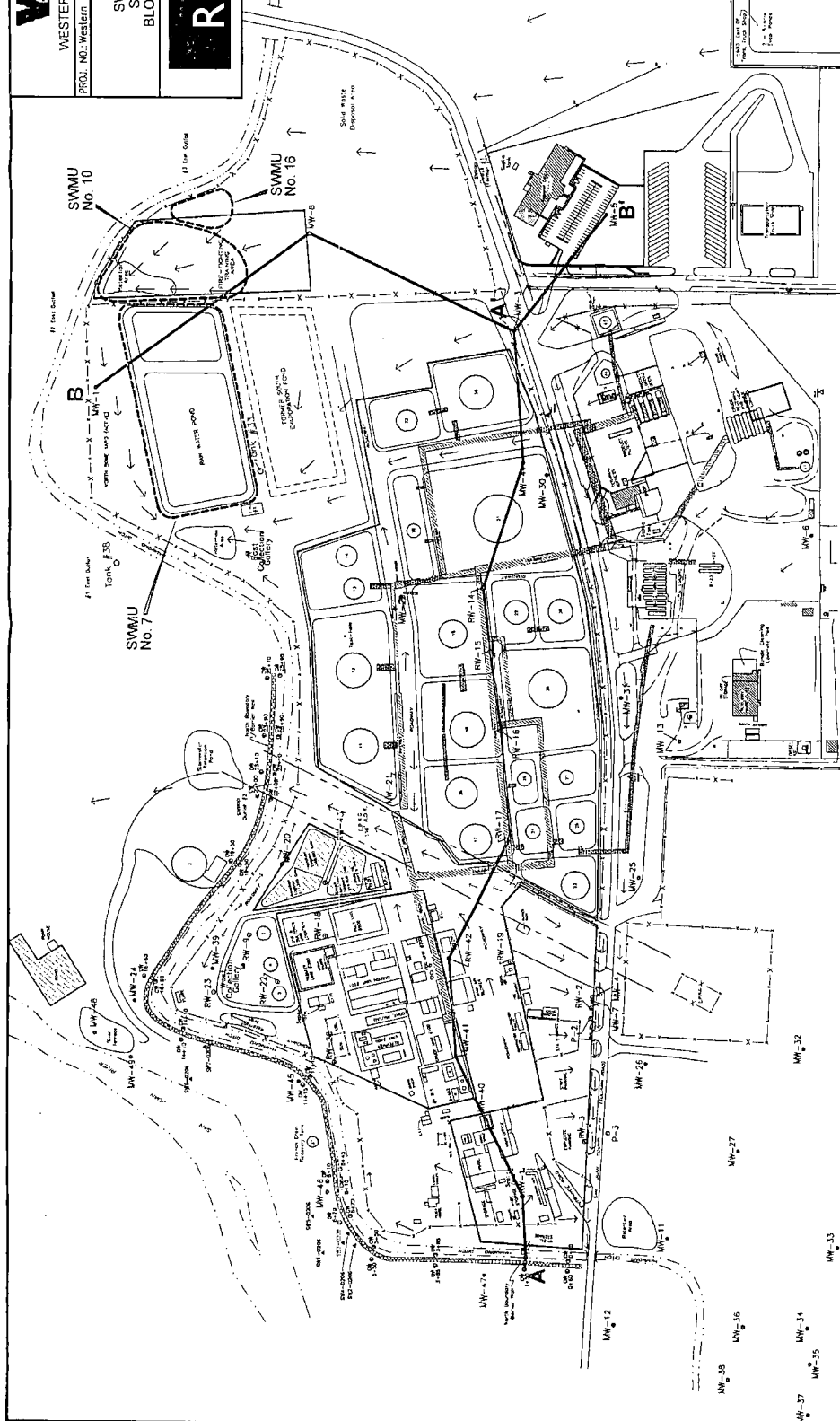
PROJ. NO. Western Refining DATE 11/17/09 FILE WEST-512

FIGURE 2

SWMU GROUP No. 4  
SWMU LOCATIONS  
BLOOMFIELD REFINERY

404 Comp Craft Road  
Austin, Texas 78746

RPS JDC



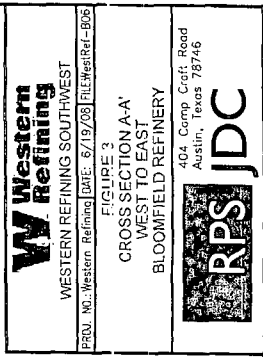
LEGEND

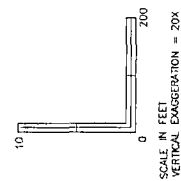
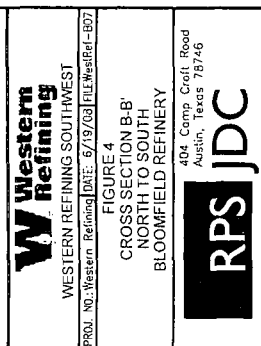
- MW-1 • MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- RW-1 • RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER
- OW-1 • OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER
- 1-50 • COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER
- 1-50 • SUMP WELL LOCATION AND IDENTIFICATION NUMBER
- SM-1-0206 • SUMP WELL LOCATION AND IDENTIFICATION NUMBER
- P-2 • PIEZOMETER IDENTIFICATION
- • SURFACE WATER DRAINAGE PATTERN

- UNDER GROUND PIPE-WAY
- ABOVE GROUND PIPE-WAY
- SLURRY BARRIER WALL
- A' CROSS SECTION LINE



0 500  
SCALE IN FEET







0 1200  
SCALE IN FEET

### Legend

- Monitoring Well
- Recovery Well
- Piezometer
- Groundwater Elevation Contours
- Site
- Well ID
- Groundwater Elevation (ft amsl)

**Western Refining**

WESTERN REFINING SOUTHWEST

PROJ. NO.: Western Refining DATE: 8/19/05 REV: Western-B08

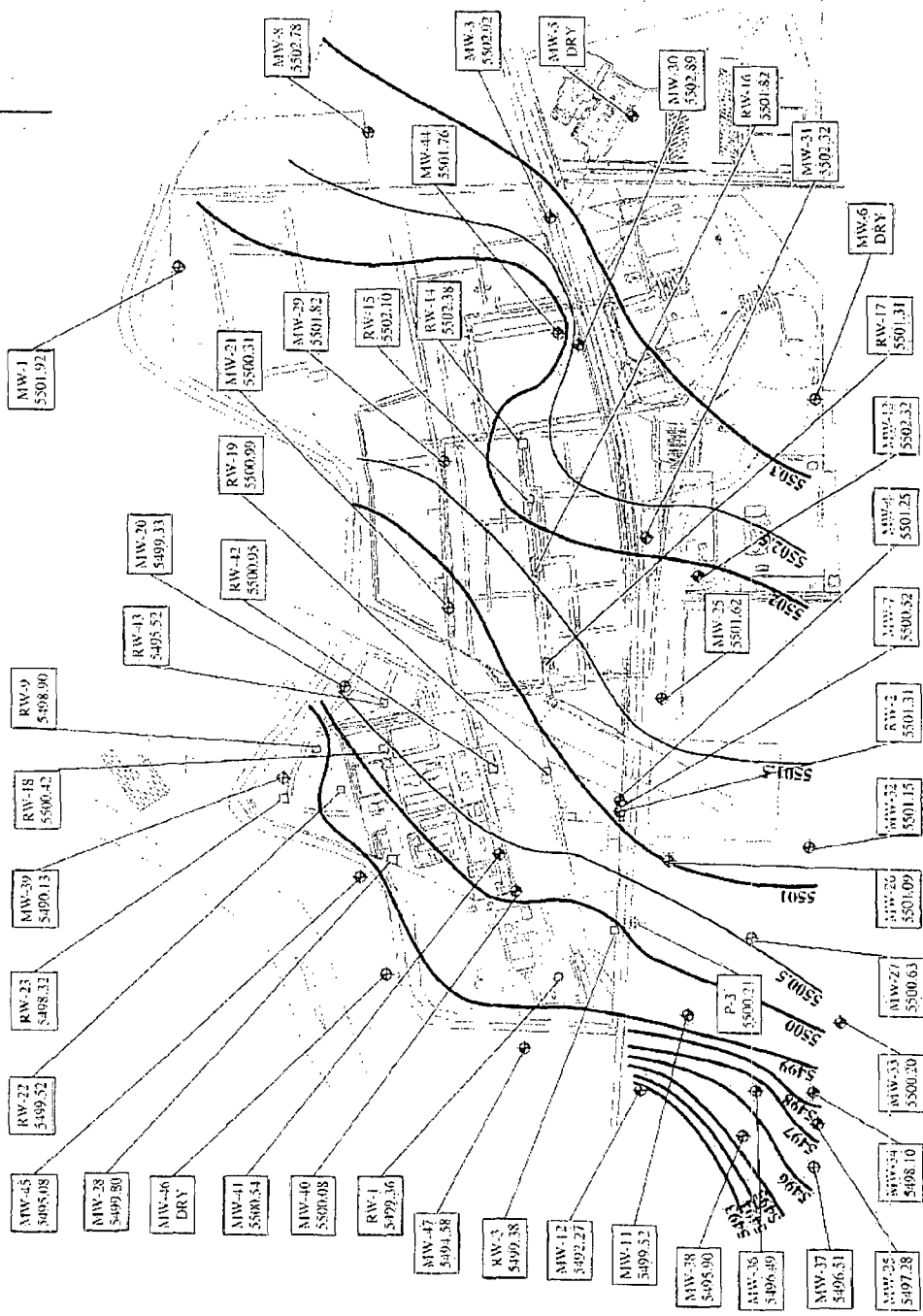
FIGURE 5

APRIL 2007

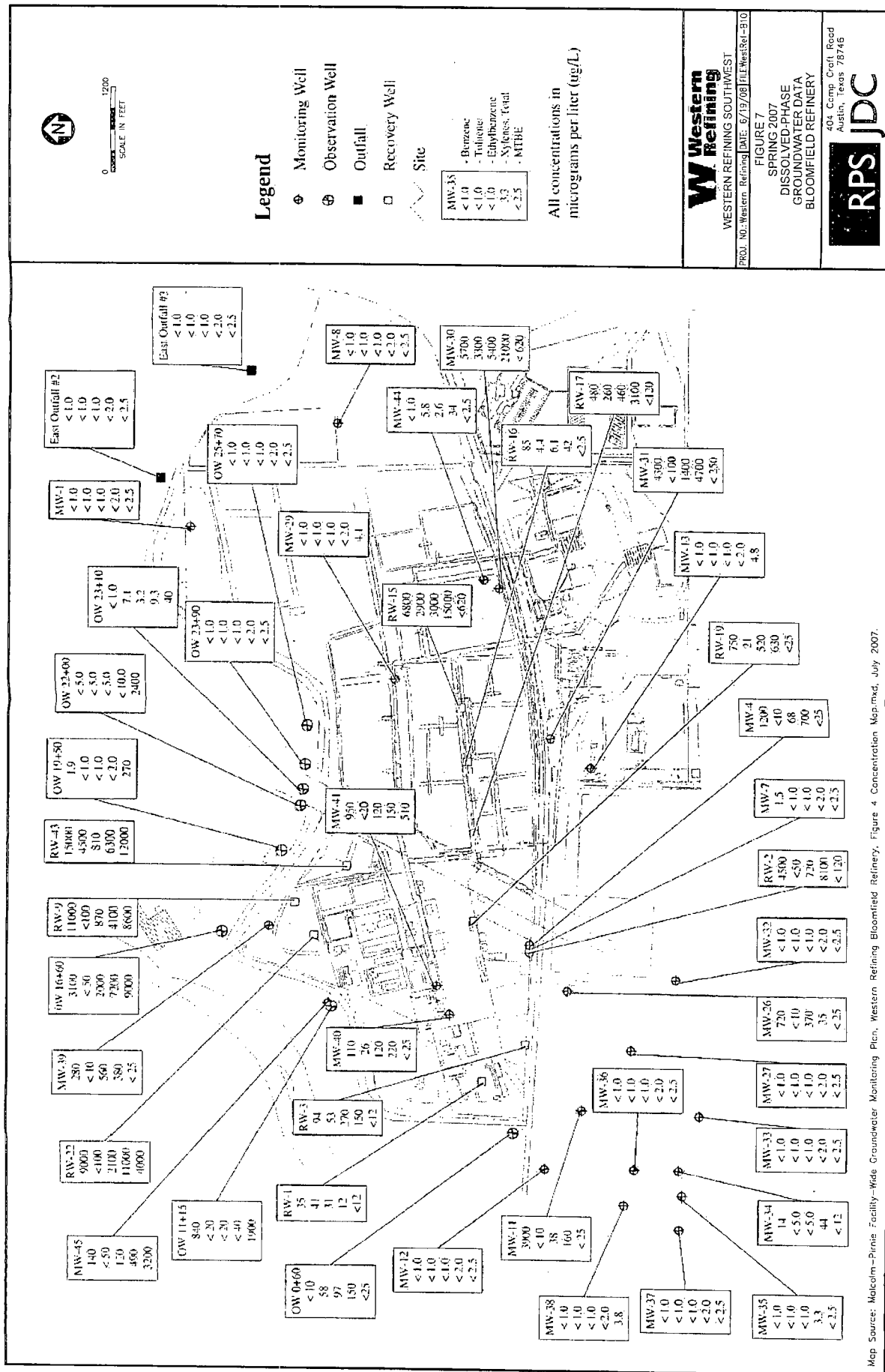
POTENTIOMETRIC SURFACE  
BLOOMFIELD REFINERY

404 Camp Craft Road  
Austin, Texas 78746

**RPS JDC**



Map Source: Molcaim-Pirnie Facility-Wide Groundwater Monitoring Plan, Western Refining Bloomfield Refinery, Figure 7 Groundwater.mxd, July 2007.





0 60  
SCALE IN FEET

LEGEND

- SB9-1 ○ 2008 RFI SAMPLE LOCATION
- ⊕ PROPOSED SOIL BORING LOCATION

**W Western Refining**

WESTERN REFINING SOUTHWEST

PROJ. NO.: Western Refining DNE11/13/08/UE: WestRef-B15

FIGURE 10

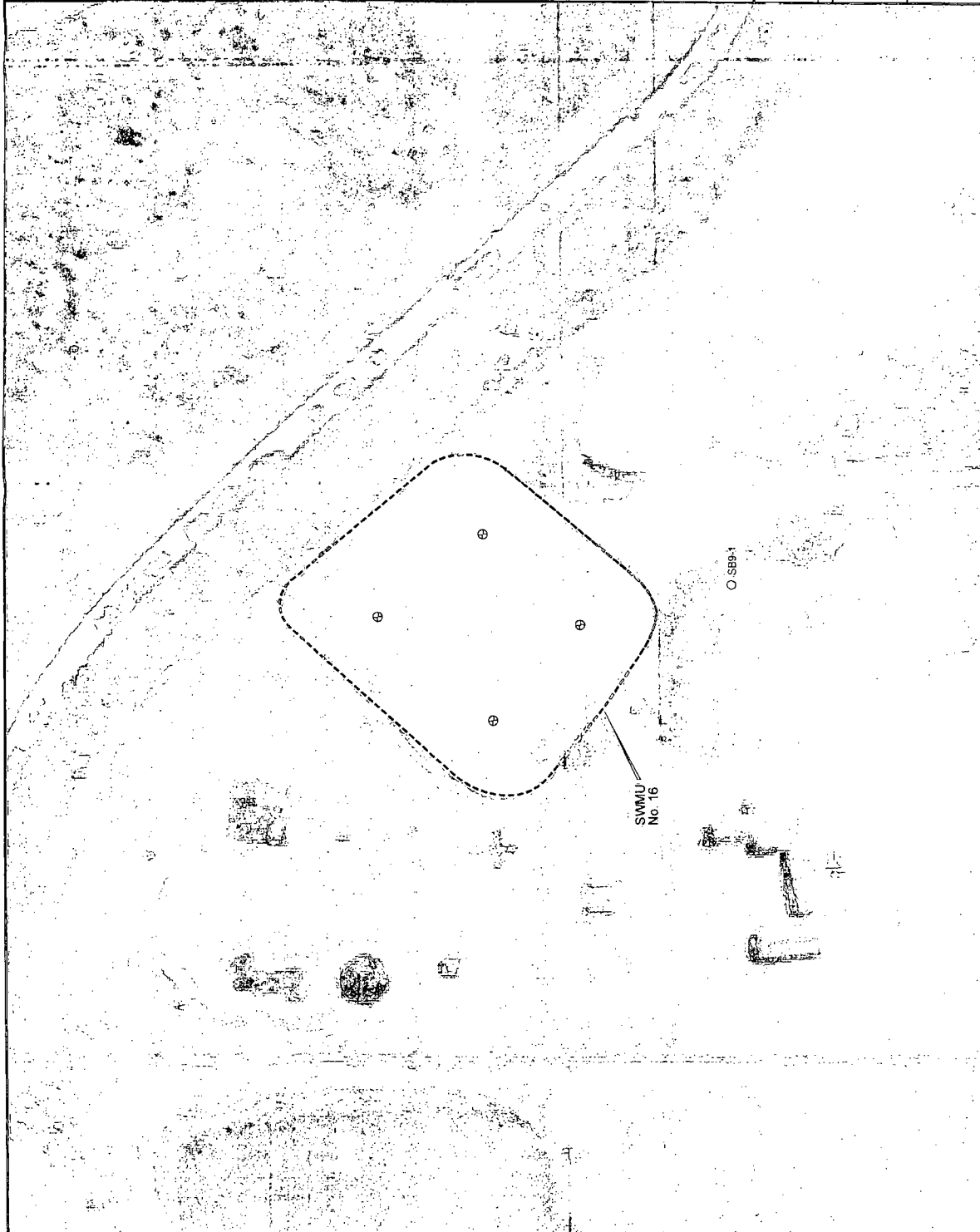
SWMU No. 16

SAMPLE LOCATIONS MAP

BLOOMFIELD REFINERY

404 Coma Cret Road  
Austin, Texas 78746

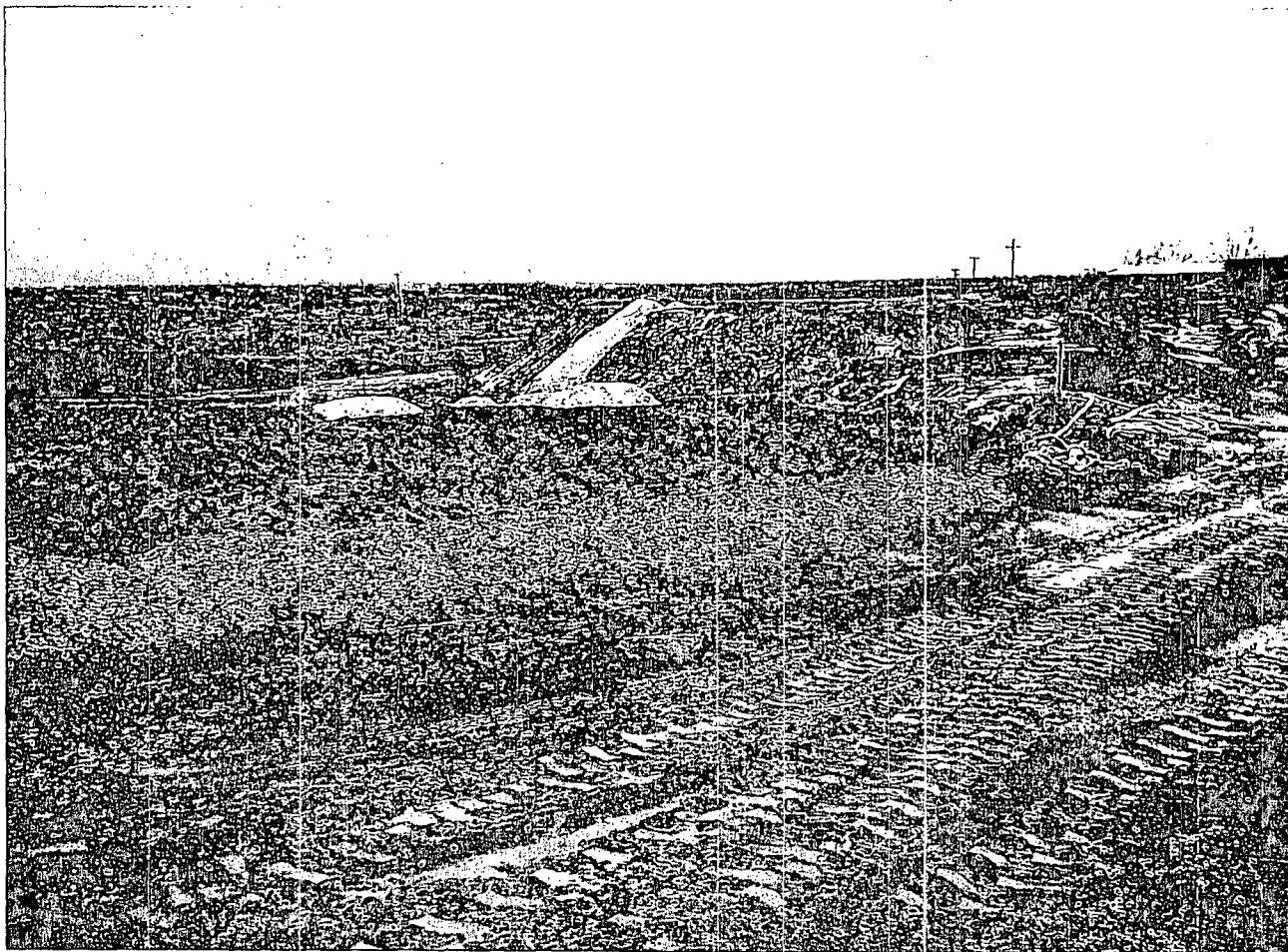
**RPS JDC**





Active Landfill (SWMU No. 16) Looking east from western side of landfill.





Active Landfill (SWMU No. 16) Looking southeast from western side of landfill.



Fed Ex Tracking # 8633 9179 3290

December 18, 2007

James Bearzi, Bureau Chief  
New Mexico Environmental Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

Re: Giant Refining Company, Bloomfield Refinery Order No. HWB 07-34 (CO)  
Solid Waste Management Unit (SWMU) Group No. 2 Investigation Work Plan

Dear Mr. Bearzi:

Giant Refining Company, Bloomfield Refinery submits the referenced Investigation Work Plan pursuant to Section IV.B.4 of the July 2007 HWB Order. The Investigation Work Plan covers SWMU Group No. 2, which includes SWMU No. 2 Drum Storage Area North Bone Yard; SWMU No. 8 Inactive Landfill; SWMU No. 9 Landfill pond; SWMU No. 11 Spray Irrigation Area; and SWMU No. 18 Warehouse Yard. The Investigation Work Plan was developed and formatted to meet the requirements of Section X.B of the July 2007 HWB Order.

If you have any questions or would like to discuss the Investigation Work Plan, please contact me at (505) 632-4171.

Sincerely,

A handwritten signature in black ink, appearing to read "James R. Schmaltz", is written over the typed name.

James R. Schmaltz  
Environmental Manager  
San Juan Refining Company  
Bloomfield Refinery

cc: Hope Monzeglio – NMED HWB  
Wayne Price – NMOCD (w/attachment)  
Dave Cobrain – NMED HWB  
Cheryl Frischkorn – NMED HWB  
Laurie King – EPA Region 6 (w/attachment)  
Todd Doyle – Bloomfield Refinery  
Allen Hains – Western Refining El Paso

operator thereof.

[7-1-81...2-1-96; 19.15.9.707 NMAC - Rn, 19 NMAC 15.1.707, 11-30-00]

#### **19.15.9.708 TRANSFER OF AUTHORITY TO INJECT**

- A. Authority to inject granted under any order of the Division is not transferable except upon approval of the Division. Approval of transfer of authority to inject may be obtained by filing Form C-104 in accordance with Rule 1104 E.
- B. The Division may require a demonstration of mechanical integrity prior to approving transfer of authority to inject.

[1-1-50...2-1-96; 19.15.9.708 NMAC - Rn, 19 NMAC 15.1.708, 11-30-00]

#### **19.15.9.709 REMOVAL OF PRODUCED WATER FROM LEASES AND FIELD FACILITIES**

- A. Transportation of any produced water by motor vehicle from any lease, central tank battery, or other facility, without an approved Form C-133 (Authorization to Move Produced Water) is prohibited.
- B. Authorization to transport produced water may be obtained by filing three copies of Form C-133 with the Director of the Division in Santa Fe.
- C. No owner or operator shall permit produced water to be removed from its leases or field facilities by motor vehicle except by a person possessing an approved Form C-133.

[1-1-50...2-1-96; 19.15.9.709 NMAC - Rn, 19 NMAC 15.1.709, 11-30-00]

#### **19.15.9.710 DISPOSITION OF TRANSPORTED PRODUCED WATER**

- A. No person, including any transporter, may dispose of produced water on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which will constitute a hazard to any fresh water supplies.
- B. Delivery of produced water to approved salt water disposal facilities, secondary recovery or pressure maintenance injection facilities, or to a drill site for use in drilling fluid will not be construed as constituting a hazard to fresh water supplies provided the produced waters are placed in tanks or other impermeable storage at such facilities.
- C. The supervisor of the appropriate district office of the Division may grant temporary exceptions to Paragraph A. above for emergency situations, for use of produced water in road construction or maintenance, or for use of produced waters for other construction purposes upon request and a proper showing by a holder of an approved Form C-133 (Authorization to Move Produced Water).
- D. Vehicular movement or disposition of produced water in any manner contrary to these rules shall be considered cause, after notice and hearing, for cancellation of Form C-133.

[2-1-82...2-1-96; 19.15.9.710 NMAC - Rn, 19 NMAC 15.1.710, 11-30-00]

#### **19.15.9.711 APPLICABLE TO SURFACE WASTE MANAGEMENT FACILITIES ONLY**

- A. A surface waste management facility is defined as any facility that receives for collection, disposal,

evaporation, remediation, reclamation, treatment or storage any produced water, drilling fluids, drill cuttings, completion fluids, contaminated soils, bottom sediment and water (BS&W), tank bottoms, waste oil or, upon written approval by the Division, other oilfield related waste. Provided, however, if (a) a facility performing these functions utilizes underground injection wells subject to regulation by the Division pursuant to the federal Safe Drinking Water Act, and does not manage oilfield wastes on the ground in pits, ponds, below grade tanks or land application units, (b) if a facility, such as a tank only facility, does not manage oilfield wastes on the ground in pits, ponds below grade tanks or land application units or (c) if a facility performing these functions is subject to Water Quality Control Commission Regulations, then the facility shall not be subject to this rule.

- (1) A commercial facility is defined as any surface waste management facility that does not meet the definition of centralized facility.
- (2) A centralized facility is defined as a surface waste management facility that accepts only waste generated in New Mexico and that:
  - (a) does not receive compensation for waste management;
  - (b) is used exclusively by one generator subject to New Mexico's "Oil and Gas Conservation Tax Act" Section 7-30-1 NMSA-1978 as amended; or
  - (c) is used by more than one generator subject to New Mexico's "Oil and Gas Conservation Tax Act" Section 7-30-1 NMSA-1978 as amended under an operating agreement and which receives wastes that are generated from two or more production units or areas or from a set of jointly owned or operated leases.
- (3) Centralized facilities exempt from permitting requirements are:
  - (a) facilities that receive wastes from a single well;
  - (b) facilities that receive less than 50 barrels of RCRA exempt liquid waste per day and have a capacity to hold 500 barrels of liquids or less or 1400 cubic yards of solids or less and when a showing can be made to the satisfaction of the Division that the facility will not harm fresh water, public health or the environment;
  - (c) emergency pits that are designed to capture fluids during an emergency upset period only and provided such fluids will be removed from the pit within twenty-four (24) hours from introduction;
  - (d) facilities that do not meet the requirements of the foregoing exemptions in Subsection A, Paragraph (3) of 19.15.9.711 NMAC, but that are shown by the facility operator to the satisfaction of the Division to not present a risk to public health and the environment.

B. Unless exempt from Section 19.15.9.711 NMAC, all commercial and centralized facilities including facilities in operation on the effective date of Section 19.15.9.711 NMAC, new facilities prior to construction and all existing facilities prior to major modification or major expansion shall be permitted by the Division in accordance with the following requirements:

- (1) Application Requirements - An application, Form C-137, for a permit for a new facility or to modify an existing facility shall be filed in DUPLICATE with the Santa Fe Office of the Division

and ONE COPY with the appropriate Division district office. The application shall comply with Division guidelines and shall include:

- (a) The names and addresses of the applicant and all principal officers of the business if different from the applicant;
- (b) A plat and topographic map showing the location of the facility in relation to governmental surveys (1/4 1/4 section, township, and range), highways or roads giving access to the facility site, watercourses, water sources, and dwellings within one (1) mile of the site;
- (c) The names and addresses of the surface owners of the real property on which the management facility is sited and surface owners of the real property of record within one (1) mile of the site;
- (d) A description of the facility with a diagram indicating location of fences and cattle guards, and detailed construction/installation diagrams of any pits, liners, dikes, piping, sprayers, and tanks on the facility;
- (e) A plan for management of approved wastes.
- (f) A contingency plan for reporting and cleanup of spills or releases;
- (g) A routine inspection and maintenance plan to ensure permit compliance;
- (h) A Hydrogen Sulfide Prevention and Contingency Plan to protect public health;
- (i) A closure plan including a cost estimate sufficient to close the facility to protect public health and the environment; said estimate to be based upon the use of equipment normally available to a third party contractor;
- (j) Geological/hydrological evidence, including depth to and quality of groundwater beneath the site, demonstrating that disposal of oilfield wastes will not adversely impact fresh water;
- (k) Proof that the notice requirements of Section 19.15.9.711 NMAC have been met;
- (l) Certification by an authorized representative of the applicant that information submitted in the application is true, accurate, and complete to the best of the applicant's knowledge.
- (m) Such other information as is necessary to demonstrate that the operation of the facility will not adversely impact public health or the environment and that the facility will be in compliance with OCD rules and orders.

(2) Notice Requirements:

- (a) Prior to public notice, the applicant shall give written notice of application to the surface owners of record within one (1) mile of the facility, the county commission where the facility is located or is proposed to be located, and the appropriate city official(s) if the facility is located or proposed to be located within city limits or within one (1) mile of the city limits. The distance requirements for notice may be extended by the Director if the Director determines the proposed facility has the potential to adversely impact public health

or the environment at a distance greater than one (1) mile. The Director may require additional notice as needed. A copy and proof of such notice will be furnished to the Division.

- (b) The applicant will issue public notice in a form approved by the Division in a newspaper of general circulation in the county in which the facility is to be located. For permit modifications, the Division may require the applicant to issue public notice and give written notice as above.
- (c) Any person seeking to comment or request a public hearing on such application must file comments or hearing requests with the Division within 30 days of the date of public notice. Requests for a public hearing must be in writing to the Director and shall set forth the reasons why a hearing should be held. A public hearing shall be held if the Director determines there is significant public interest.
- (d) The Division will distribute notice of the filing of an application for a new facility or major modifications with the next OCD and OCC hearing docket following receipt of the application.

(3) Financial Assurance Requirements:

- (a) Centralized Facilities: Upon determination by the Director that the permit can be approved, any applicant of a centralized facility shall submit acceptable financial assurance in the amount of \$25,000 per facility or a statewide "blanket" financial assurance in the amount of \$50,000 to cover all of that applicant's facilities in a form approved by the Director.
- (b) New Commercial Facilities or major expansions or major modification of Existing Facilities: Upon determination by the Director that a permit for a commercial facility to commence operation after the effective date of this rule can be approved, or upon determination by the Director that a major modification or major expansion of an existing facility can be approved, any applicant of such a commercial facility shall submit acceptable financial assurance in the amount of the closure cost estimated in Subsection B, Paragraph (1), Subparagraph (i) above of 19.15.9.711 NMAC in a form approved by the Director according to the following schedule:
  - (i) within one (1) year of commencing operations or when the facility is filled to 25% of the permitted capacity, whichever comes first, the financial assurance must be increased to 25% of the estimated closure cost;
  - (ii) within two (2) years of commencing operations or when the facility is filled to 50% of the permitted capacity, whichever comes first, the financial assurance must be increased to 50% of the estimated closure cost;
  - (iii) within three (3) years of commencing operations or when the facility is filled to 75% of the permitted capacity, whichever comes first, the financial assurance must be increased to 75% of the estimated closure cost;
  - (iv) within four (4) years of commencing operations or when the facility is filled to 100% of the permitted capacity, whichever comes first, the financial assurance must be increased to the estimated closure cost.
- (c) Existing Commercial Facilities: All permittees of commercial facilities approved for operation at the time this rule becomes effective shall have submitted financial assurance in

the amount of the closure cost estimated pursuant to Subsection B, Paragraph (1), Subparagraph (i) above of 19.15.9.711 NMAC but not less than \$25,000 nor more than \$250,000 per facility in a form approved by the Director.

- (i) within one (1) year of the effective date of Section 19.15.9.711 NMAC the financial assurance amount must be increased to 25% of the estimated closure costs or \$62,500.00, whichever is less;
    - (ii) within two (2) years of the effective date of Section 19.15.9.711 NMAC the financial assurance amounts must be increased to 50% of the estimated closure costs or \$125,000.00, whichever is less;
    - (iii) within three (3) years of the effective date of Section 19.15.9.711 NMAC the financial assurance amounts must be increased to 75% of the estimated closure costs or \$187,000.00, whichever is less;
    - (iv) within four (4) years of the effective date of Section 19.15.9.711 NMAC the financial assurance amounts must be increased to the estimated closure cost or \$250,000.00, whichever is less.
  - (d) The financial assurance required in subparagraphs (a), (b), or (c), above shall be payable to the State of New Mexico and conditioned upon compliance with statutes of the State of New Mexico and rules of the Division, and acceptable closure of the site upon cessation of operation, in accordance with Subsection B, Paragraph (1), Subparagraph (i) of 19.15.9.711 NMAC. If adequate financial assurance is posted by the applicant with a federal or state agency and the financial assurance otherwise fulfills the requirements of this rule, the Division may consider the financial assurance as satisfying the requirement of Section 19.15.9.711 NMAC. The applicant must notify the Division of any material change affecting the financial assurance within 30 days of discovery of such change.
- (4) The Director may accept the following forms of financial assurance:
- (a) Surety Bonds
    - (i) A surety bond shall be executed by the permittee and a corporate surety licensed to do business in the State.
    - (ii) Surety bonds shall be noncancellable during their terms.
  - (b) Letter of Credit - Letter of credit shall be subject to the following conditions:
    - (i) The letter may be issued only by a bank organized or authorized to do business in the United States;
    - (ii) Letters of credit shall be irrevocable for a term of not less than five (5) years. A letter of credit used as security in areas requiring continuous financial assurance coverage shall be forfeited and shall be collected by the State of New Mexico if not replaced by other suitable financial assurance or letter of credit at least 90 days before its expiration date;
    - (iii) The letter of credit shall be payable to the State of New Mexico upon demand, in part or in full, upon receipt from the Director of a notice of forfeiture.
  - (c) Cash Accounts - Cash accounts shall be subject to the following conditions:
    - (i) The Director may authorize the permittee to supplement the financial assurance

through the establishment of a cash account in one or more federally insured or equivalently protected accounts made payable upon demand to, or deposited directly with, the State of New Mexico.

- (ii) Any interest paid on a cash account shall not be retained in the account and applied to the account unless the Director has required such action as a permit requirement.
- (iii) Certificates of deposit may be substituted for a cash account with the approval of the Director.

(d) Replacement of Financial Assurances

- (i) The Director may allow a permittee to replace existing financial assurances with other financial assurances that provide equivalent coverage.
  - (ii) The Director shall not release existing financial assurances until the permittee has submitted, and the Director has approved, acceptable replacements.
- (5) A permit may be denied, revoked or additional requirements imposed by a written finding by the Director that a permittee has a history of failure to comply with Division rules and orders and state or federal environmental laws.
  - (6) The Director may, for protection of public health and the environment, impose additional requirements such as setbacks from an existing occupied structure.
  - (7) The Director may issue a permit upon a finding that an acceptable application has been filed and that the conditions of paragraphs 2 and 3 above have been met. All permits are revocable upon showing of good cause after notice and, if requested, hearing. Permits shall be reviewed a minimum of once every five (5) years for compliance with state statutes, Division rules and permit requirements and conditions.

C. Operational Requirements

- (1) All surface waste management facility permittees shall file forms C-117-A, C-118, and C-120-A as required by OCD rules.
- (2) Facilities permitted as treating plants will not accept sediment oil, tank bottoms and other miscellaneous hydrocarbons for processing unless accompanied by an approved Form C-117A or C-138.
- (3) Facilities will only accept oilfield related wastes except as provided in Subsection C, Paragraph (4), Subparagraph (c) of 19.15.9.711 NMAC below. Wastes which are determined to be RCRA Subtitle C hazardous wastes by either listing or characteristic testing will not be accepted at a permitted facility.
- (4) The permittee shall require the following documentation for accepting wastes, other than wastes returned from the wellbore in the normal course of well operations such as produced water and spent treating fluids, at commercial waste management facilities:
  - (a) Exempt Oilfield Wastes: As a condition to acceptance of the materials shipped, a generator, or his authorized agent, shall sign a certificate which represents and warrants that the wastes are: generated from oil and gas exploration and production operations; exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C regulations; and not mixed



with non-exempt wastes. The permittee shall have the option to accept on a monthly, weekly, or per load basis a load certificate in a form of its choice. While the acceptance of such exempt oilfield waste materials does not require the prior approval of the Division, both the generator and permittee shall maintain and shall make said certificates available for inspection by the Division for compliance and enforcement purposes.

- (b) Non-exempt, Non-hazardous Oilfield Wastes: Prior to acceptance, a "Request For Approval To Accept Solid Waste", OCD Form C-138, accompanied by acceptable documentation to determine that the waste is non-hazardous shall be submitted to the appropriate District office. Acceptance will be on a case-by-case basis after approval from the Division's Santa Fe office.
  - (c) Non-oilfield Wastes: Non-oilfield wastes may be accepted in an emergency if ordered by the Department of Public Safety. Prior to acceptance, a "Request To Accept Solid Waste", OCD Form C-138 accompanied by the Department of Public Safety order will be submitted to the appropriate District office and the Division's Santa Fe office.
- (5) The permittee of a commercial facility shall maintain for inspection the records for each calendar month on the generator, location, volume and type of waste, date of disposal, and hauling company that disposes of fluids or material in the facility. Records shall be maintained in appropriate books and records for a period of not less than five years, covering their operations in New Mexico.
  - (6) Disposal at a facility shall occur only when an attendant is on duty unless loads can be monitored or otherwise isolated for inspection before disposal. The facility shall be secured to prevent unauthorized disposal when no attendant is present.
  - (7) No produced water shall be received at the facility from motor vehicles unless the transporter has a valid Form C-133, Authorization to Move Produced Water, on file with the Division.
  - (8) To protect migratory birds, all tanks exceeding 16 feet in diameter, and exposed pits and ponds shall be screened, netted or covered. Upon written application by the permittee, an exception to screening, netting or covering of a facility may be granted by the district supervisor upon a showing that an alternative method will protect migratory birds or that the facility is not hazardous to migratory birds.
  - (9) All facilities will be fenced in a manner approved by the Director.
  - (10) A permit may not be transferred without the prior written approval of the Director. Until such transfer is approved by the Director and the required financial assurance is in place, the transferor's financial assurance will not be released.

D. Facility Closure

- (1) The permittee shall notify the Division thirty (30) days prior to its intent to cease accepting wastes and close the facility. The permittee shall then begin closure operations unless an extension of time is granted by the Director. If disposal operations have ceased and there has been no significant activity at the facility for six (6) months and the permittee has not responded to written notice as defined in Subsection D, Paragraph (2), Subparagraph (a) of 19.15.9.711 NMAC, then the facility shall be considered abandoned and shall be closed utilizing the financial assurance pledged to the facility. Closure shall be in accordance with the approved closure plan and any modifications or

additional requirements imposed by the Director to protect public health and the environment. At all times the permittee must maintain the facility to protect public health and the environment. Prior to release of the financial assurance covering the facility, the Division will inspect the site to determine that closure is complete.

- (2) If a permittee refuses or is unable to conduct operations at the facility in a manner that protects public health or the environment or refuses or is unable to conduct or complete the closure plan, the terms of the permit are not met, or the permittee defaults on the conditions under which the financial assurance was accepted, the Director shall take the following actions to forfeit all or part of the financial assurance:
  - (a) Send written notice by certified mail, return receipt requested, to the permittee and the surety informing them of the decision to close the facility and to forfeit all or part of the financial assurance, including the reasons for the forfeiture and the amount to be forfeited and notifying the permittee and surety that a hearing request must be made within ten (10) days of receipt of the notice.
  - (b) Advise the permittee and surety of the conditions under which the forfeiture may be avoided. Such conditions may include but are not limited to:
    - (i) An agreement by the permittee or another party to perform closure operations in accordance with the conditions of the permit, the closure plan and these Rules, and that such party has the ability to satisfy the conditions.
    - (ii) The Director may allow a surety to complete closure if the surety can demonstrate an ability to complete the closure in accordance with the approved plan. No surety liability shall be released until successful completion of closure.
  - (c) In the event forfeiture of the financial assurance is required by this rule, the Director shall proceed to collect the forfeited amount and use the funds collected from the forfeiture to complete the closure. In the event the amount forfeited is insufficient for closure, the permittee shall be liable for the deficiency. The Director may complete or authorize completion of closure and may recover from the permittee all reasonably incurred costs of closure and forfeiture in excess of the amount forfeited. In the event the amount forfeited was more than the amount necessary to complete closure and all costs of forfeiture, the excess shall be returned to the party from whom it was collected.
  - (d) Upon showing of good cause, the Director may order immediate cessation of operations of the facility when it appears that such cessation is necessary to protect public health or the environment, or to assure compliance with Division rules and orders.
  - (e) In the event the permittee cannot fulfill the conditions and obligations of the permit, the State of New Mexico, its agencies, officers, employees, agents, contractors and other entities designated by the State shall have all rights of entry into, over and upon the facility property, including all necessary and convenient rights of ingress and egress with all materials and equipment to conduct operation, termination and closure of the facility, including but not limited to the temporary storage of equipment and materials, the right to borrow or dispose of materials, and all other rights necessary for operation, termination and closure of the facility in accordance with the permit.

E. Waste management facilities in operation at the time Section 19.15.9.711 NMAC becomes effective shall:

- (1) within one (1) year after the effective date permitted facilities submit the information required in Subsection B, Paragraph (1), Subparagraphs (a, h, i and l) of 19.15.9.711 NMAC not already on file with the Division;
- (2) within one (1) year after the effective date unpermitted facilities submit the information required in Subsection B, Paragraph (1), Subparagraphs (a) through (j) and Subsection B, Paragraph (1), Subparagraph (l) of 19.15.9.711 NMAC;
- (3) comply with Subsections C and D of 19.15.9.711 NMAC unless the Director grants an exemption from a requirement in these sections based upon a demonstration by the operator that such requirement is not necessary to protect public health and the environment.

[6-6-88...2-1-96; 19.15.9.711 NMAC - Rn, 19 NMAC 15.1.711, 11-30-00]

#### **19.15.9.712. DISPOSAL OF CERTAIN NON-DOMESTIC WASTE AT SOLID WASTE FACILITIES.**

- A. General - Certain non-domestic waste arising from the exploration, development, production or storage of crude oil or natural gas, certain nondomestic waste arising from the oil field service industry, and certain non-domestic waste arising from the transportation, treatment or refinement of crude oil or natural gas, may be disposed of at a solid waste facility.
- B. Definitions - The following words and phrases have particular meanings for purposes of this section:
  - (1) "BTEX." The acronym "BTEX" in this section refers to benzene, toluene, ethelbenzene and xylene.
  - (2) "Discharge Plan." A "discharge plan" is a plan submitted and approved by the Division pursuant to NMSA 1978, Section 70-2-12(B)(22) (2000 Cum.Supp.) and rules and regulations of the Water Quality Control Commission.
  - (3) "EPA." The acronym "EPA" refers to the United States Environmental Protection Agency.
  - (4) "EPA Clean." The phrase "EPA Clean" refers to cleanliness standards established by the EPA in 40 C.F.R. Part 261, Section 261.7(b).
  - (5) "NESHAP." The acronym "NESHAP" refers to the National Emission Standards for Hazardous Air Pollutants of the EPA, 40 C.F.R. Part 61.
  - (6) "NORM." The acronym "NORM" refers to naturally occurring radioactive materials regulated by 20 NMAC 3.1, Subpart 14.
  - (7) "Section." "Section" or "this section" refers to Section 19.15.9.712.
  - (8) "Solid Waste Facility." A "solid waste facility" is a facility permitted or authorized as a solid waste facility by the New Mexico Environment Department pursuant to the Solid Waste Act, NMSA 1978, Sections 74-9-1 et seq. and rules and regulations of the Environmental Improvement Board, to accept industrial solid waste or other special waste.
  - (9) "TCLP" The acronym "TCLP" in this section refers to the testing protocol established by the EPA in 40 C.F.R. Part 261, entitled "Toxicity Characteristic Leaching Procedure" or an alternative hazardous constituent analysis approved by the Division.

**G.** Alternatives to re-vegetation. If the landowner contemplates use of the land where a cell or surface waste management facility is located for purposes inconsistent with re-vegetation, the landowner may, with division approval, implement an alternative surface treatment appropriate for the contemplated use, provided that the alternative treatment will effectively prevent erosion. If the division approves an alternative to re-vegetation, it shall not release the portion of the operator's financial assurance reserved for post-closure until the landowner has obtained necessary regulatory approvals and begun implementation of such alternative use.  
[19.15.36.18 NMAC - Rp, 19.15.9.711 NMAC, 2/14/2007; A, 12/1/08]

**19.15.36.19 EXCEPTIONS AND WAIVERS:**

**A.** In a surface waste management facility permit application, the applicant may propose alternatives to requirements of 19.15.36 NMAC, and the division may approve such alternatives if it determines that the proposed alternatives will provide equivalent protection of fresh water, public health, safety and the environment.

**B.** The division may grant exceptions to, or waivers of, or approve alternatives to requirements of 19.15.36 NMAC in an emergency without notice or hearing. The operator requesting an exception or waiver, except in an emergency, shall apply for a surface waste management facility permit modification in accordance with Subsection C of 19.15.36.8 NMAC. If the requested modification is a major modification, the operator shall provide notice of the request in accordance with 19.15.36.9 NMAC.

[19.15.36.19 NMAC - N, 2/14/2007]

**19.15.36.20 TRANSITIONAL PROVISIONS:** Existing permitted facilities. Surface waste management facilities in operation prior to the effective date of 19.15.36 NMAC pursuant to division permits or orders may continue to operate in accordance with such permits or orders, subject to the following provisions.

**A.** Existing surface waste management facilities shall comply with the operational, waste acceptance and closure requirements provided in 19.15.36 NMAC, except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility.

**B.** Major modification of an existing surface waste management facility and a new landfarm cells constructed at an existing surface waste management facility shall comply with the requirements provided in 19.15.36 NMAC.

**C.** The division shall process an application for a surface waste management facility permit filed prior to May 18, 2006 in accordance with 19.15.9.711 NMAC, and an application filed after May 18, 2006 in accordance with 19.15.36 NMAC.

[19.15.36.20 NMAC - Rp, 19.15.9.711 NMAC, 2/14/2007]

**History of 19.15.36 NMAC:**

**Pre-NMAC History:**

Material in the part was derived from that previously filed with the commission of public records - state records center and archives:

Rule 711, Commercial Surface Waste Disposal Facilities, filed 6-6-88;

Rule 711, Commercial Surface Waste Disposal Facilities, filed 10-11-89;

Rule 711, Commercial Surface Waste Disposal Facilities, filed 2-5-91;

Rule 711, Applicable to Surface Waste Management Facilities Only, filed 7-27-95;

Rule 711, Applicable to Surface Waste Management Facilities Only, filed 12-18-95.

**History of Repealed Material:**

Repeal of Section 711 of 19.15.9 NMAC, 2/14/2007.

**Other History:**

Rule 711, Applicable to Surface Waste Management Facilities Only (filed 12-18-95) renumbered and reformatted into that portion of 19 NMAC 15.I, effective 02-01-1996.

19 NMAC 15.I, Secondary or Other Enhanced Recovery, Pressure Maintenance, Salt Water Disposal, and Underground Storage (filed 01-18-96) was renumbered, reformatted and amended to 19.15.9 NMAC, effective 11-30-2000.

Section 711 of 19.15.9 NMAC was renumbered to and replaced by 19.15.36 NMAC, Surface Waste Management Facilities, effective 2/14/2007.

## Chavez, Carl J, EMNRD

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**From:** Monzeglio, Hope, NMENV  
**Sent:** Tuesday, August 25, 2009 4:10 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** landfill information at Bloomfield

Carl

Here is some information about the Inactive and Active landfills at Bloomfield.

### Inactive Landfill (Grp 2 Rpt.)

Here is a description of the Inactive Landfill from our Order which is a solid waste management unit: The Inactive Landfill (formally called the Landfill) is a low-lying area located east of the Tank Farm and south of the Fire Training Area; its dimensions are unknown. The Inactive Landfill is currently not in use. It is unlined and does not have a waterproof cover, although it has been covered with soil. In October of 1984, visually contaminated soil from the aeration ponds (classified as K051 API separator sludge) was removed and disposed of in the Inactive Landfill; it was assumed, based on testing, that the soil was not hazardous. In November 1989, approximately 2,000 cubic yards of contaminated soil was excavated and stockpiled at the landfill area. In April 1991, the refinery operators petitioned EPA for a delisting determination, which was granted by EPA. The Facility later obtained permission from OCD to use the soil as fill in a low-lying area near the Facility's naphtha loading rack. The actual date of landfill closure is unclear. (GTI 1993, GTI 1994a, NMED 1999, BR 2001, GRCB 2003).

The Inactive Landfill was investigated and the investigation results are found in the Investigation Report Group 2, dated May 2009, which OCD was cc on. I have not reviewed this Report.

### Active Landfill (Grp. 4 Rpt.)

The description of the Active Landfill from our Order, also a solid waste management unit: The Active Landfill is located east of the Fire Training Area. The Active Landfill is unlined and the dimensions and volume are unknown. The Active Landfill operation is regulated by OCD and used to dispose of fluidized catalytic cracking fines and sulfur. (NMED 2005)

This area will be investigated in accordance with an approved Work Plan by NMED. Once the investigation is complete, Bloomfield will submit an investigation report with the results.

Hope

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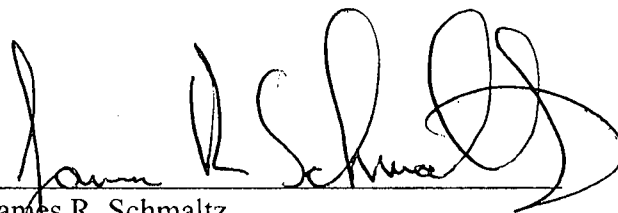
404 Camp Craft Rd., Austin, TX 78746  
Tel: (512) 347 7588 Fax: (512) 347 8243  
Internet: [www.rpsgroup.com/energy](http://www.rpsgroup.com/energy)

## **INVESTIGATION WORK PLAN**

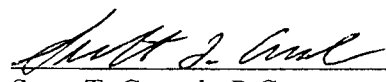
**Group 2 (SWMU No. 2 Drum Storage Area North Bone Yard, SWMU No. 8 Inactive Landfill, SWMU No. 9 Landfill Pond, SWMU No. 11 Spray Irrigation Area, and SWMU No. 18 Warehouse Yard)**

**Bloomfield Refinery  
Giant Refining Company  
#50 Rd 4990  
Bloomfield, New Mexico 87413**

**December 2007**



James R. Schmaltz  
Environmental Manager  
Giant Refining



Scott T. Crouch, P.G.  
Senior Consultant

RPS JDC, Inc.  
404 Camp Craft Road  
Austin, Texas 78746

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## Executive Summary

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The Bloomfield Refinery, which is located in the Four Corners Area of New Mexico, has been in operation since the late 1950s. Past inspections by State and federal environmental inspectors have identified locations where releases to the environment may have occurred. These locations are generally referred to as Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs).

Pursuant to the terms and conditions of an Order issued on July 27, 2007 by the New Mexico Environment Department (NMED) to San Juan Refining Company and Giant Industries Arizona, Inc. for the Bloomfield Refinery, this Investigation Work Plan has been prepared for the SWMUs designated as Group 2. This includes SWMU No. 2 Drum Storage Area North Bone Yard, SWMU No. 8 Inactive Landfill, SWMU No. 9 Landfill Pond, SWMU No. 11 Spray Irrigation Area, and SWMU No. 18 Warehouse Yard. The Order requires that San Juan Refining Company and Giant Industries Arizona, Inc. determine and evaluate the presence, nature, and extent of historical releases of contaminants at the aforementioned SWMUs.

The planned investigation activities include soil and groundwater samples, which will be collected and analyzed for potential site-related constituents. The specific sampling locations, sample collection procedures, and analytical methods are included. These activities are based, in part, on the results of previous site investigation activities. A review of historical documentation indicates that SWMU No. 9 Landfill Pond and SWMU No. 11 Spray Irrigation Area have already been closed by the NMED and thus no further action is proposed for these two areas.

# 1

## Introduction

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The Bloomfield Refinery is located immediately south of Bloomfield, New Mexico in San Juan County (Figure 1). The physical address is #50 Road 4990, Bloomfield, New Mexico 87413. The Bloomfield Refinery is located on 285 acres (0.45 square miles). Bordering the facility is a combination of federal and private properties. Public property managed by the Bureau of Land Management lies to the south. The majority of undeveloped land in the vicinity of the facility is used extensively for oil and gas production and, in some instances, grazing. U.S. Highway 44 is located approximately one-half mile west of the facility. The topography of the main portion of the site is generally flat with steep bluffs to the north where the San Juan River intersects Tertiary terrace deposits.

The Bloomfield Refinery is a crude oil refinery currently owned by the San Juan Refining Company and operated by Giant Industries Arizona, Inc., which is a wholly owned subsidiary of Western Refining Company. The Bloomfield Refinery has an approximate refining capacity of 18,000 barrels per day. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization and diesel hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG.

On July 27, 2007, the New Mexico Environment Department (NMED) issued an Order to San Juan Refining Company and Giant Industries Arizona, Inc. ("Giant") requiring investigation and corrective action at the Bloomfield Refinery. This Investigation Work Plan has been prepared for the Solid Waste Management Units (SWMUs) designated as Group 2 in the Order. This includes:

- SWMU No. 2 Drum Storage Area North Bone Yard (North Bone Yard);
- SWMU No. 8 Inactive Landfill (Landfill);
- SWMU No. 9 Landfill Pond;
- SWMU No. 11 Spray Irrigation Area; and
- SWMU No. 18 Warehouse Yard.

The location of the individual SWMUs is shown on Figure 2 and all of the SWMUs except the Warehouse Yard are located at the far eastern end of the refinery property. The Warehouse Yard, is

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located on the far western end of the property. Only two of the SWMUs (North Bone Yard and Warehouse Yard) are still actively used by Giant. The Landfill Pond and Spray Irrigation Area were previously closed by the NMED in January 1994 and August 1996, respectively. The Landfill has been inactive since 1989.

The purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation activities will be conducted in accordance with Section IV of the Order.

## 2

## Background

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This section presents background information for each of the SWMUs, including a review of historical waste management activities for each location to identify the following:

- type and characteristics of all waste and all contaminants handled in the subject SWMU;
- known and possible sources of contamination;
- history of releases; and
- known extent of contamination.

### 2.1 SWMU No. 2 Drum Storage Area North Bone Yard

The North Bone Yard (Drum Storage Area) is located to the north of the fresh water pond and south of the Hammond Ditch. It is enclosed by a fence with a single entry point at the southwest corner and is used to store various pieces of equipment, including some scrap metal that is routinely shipped off-site for recycling. In addition, some empty drums may be temporarily stored in this area (see photos in Appendix A). No waste materials are currently managed in this area.

During an inspection conducted by EPA in 1984, several drums containing solvents and oils used in the refining process were noted as being stored in this area. The drums were removed from the North Bone Yard in July 1987 and placed in a designated drum storage area in the warehouse yard located on the west side of the refinery. There has not been a report of any releases from the drums in the North Bone Yard; however, there is no record of historical soil samples from this area. Monitoring well MW-1 is located within the North Bone Yard and numerous ground water samples have been collected and analyzed. The analytical results are included in Tables 1 – 4. There is no indication of ground water impacts at SWMU No. 2 based on the ground water analyses at MW-1.

### 2.2 SWMU No. 8 Landfill

The "landfill", which has been identified as SWMU No. 8, is located to the east of the tank farm. In 1982, sludge was removed from the North and South Aeration Lagoons (known earlier as the North and South Oily Water Ponds) and disposed of in an off-site hazardous disposal facility. The underlying potentially contaminated soils, which were removed from beneath the North and South Aeration Lagoons, were placed in the landfill. The potential contaminants placed in the landfill in 1982 were formed during the secondary treatment of the refinery wastewaters and as such the types of and characteristics of the waste are well known. This includes the more prevalent types of

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hydrocarbons (e.g., BTEX and semi-volatile organics) associated with crude oil and refined petroleum products and possibly inorganic contaminants (e.g., lead and chromium) that are utilized in or are byproducts of the refining process.

This area was investigated in 1985 to support preparation of a Closure Plan for the API Wastewater Ponds, Landfill and the Landfill Pond (related documentation in Appendix B). Eight soil samples were collected from across the area of the landfill and analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX), phenolics, total chromium, and total lead. The results of these analyses are included in Table 5. As indicated, all analyses were non-detect with detection limits below the applicable action levels except for benzene, which was non-detect but had detection limits above the action level. There is no map of the actual sample locations but the area of the landfill was divided into quadrants and two samples from depths of 0-6" and 6-12" were collected from the center of each quadrant.

In 1989, approximately 2,000 yards of soil were excavated and stockpiled at one location within the landfill. This activity was taken to support closure of this area and in 1991 Bloomfield filed a petition for delisting of these stockpiled materials, which had earlier been classified as a listed hazardous waste (K051 - API separator sludge from the petroleum refining industry). The stock piled soils were sampled to support the delisting petition and the results are summarized in Table 4 of the Hazardous Waste Delisting Petition Petroleum Contaminated Soil document prepared by ERM-Rocky Mountain, Inc. in April 1991. The Environmental Protection Agency (EPA) granted the delisting petition, with an effective date of September 3, 1996. On February 25, 1998, the Oil Conservation Division approved the on-site disposal of these soils as fill material near the naphtha loading rack with the placement of clean soil as a cap.

There is no record of any other waste materials being placed in the landfill with the possible exception of minor quantities of catalyst fines and sulfur. The area is currently inactive as shown in the pictures in Appendix A. A review of the area indicates that there are no subsurface features in the area of the landfill (e.g., pipelines) that could affect contaminant migration.

### **2.3 SWMU No. 9 Landfill Pond**

The Landfill Pond is located to the northeast of SWMU No. 8 Landfill and immediately east of SWMU No. 10 Fire Training Area (Figure 2). The "pond" was created when a shallow arroyo was blocked by the construction of the Hammond Irrigation Ditch. This area was designated as a SWMU due to the fact that it is topographically lower than the landfill and EPA was concerned that stormwater flowing from the landfill could have transported contaminants to this location. Wastes

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have not historically been and are not today managed in this area. The potential contaminants that could have impacted this area are the same contaminants that were placed in the landfill (SWMU No. 8).

Seven soil samples were collected from the Landfill Pond in 1985. All of the samples were analyzed for BTEX, phenolics, total chromium, and total lead, and one of the samples was analyzed for the EPA Skinner List constituents. The results of these analyses are include on pages 7 – 16 of the Report of Analytical Results for Engineering Science Bloomfield Refining Company, which was prepared by Rocky Mountain Analytical Laboratory on May 28, 1986 (Appendix B). As indicated, all analyses were non-detect with the exception of chromium and lead, which had low concentrations below the action levels.

In 1986, a closure plan for the API Wastewater Ponds, Landfill, and Landfill Pond was completed. The closure plan documented that the existing conditions at the landfill pond were protective of human health and the environment and proposed no additional actions. The proposed closure plan was submitted for public comment from December 10, 1993 through January 9, 1994. One comment was received, which recommended that measures be taken to prevent water from ponding in the site for extended periods of time. NMED approved closure of the landfill pond on January 25, 1994 and noted that no changes were required to the proposed closure plan. The January 25, 1994 letter, a copy of which is included in Appendix B, stated the following, "No additional closure activities are required to demonstrate clean closure of the site."

#### **2.4 SWMU No. 11 Spray Irrigation Area**

The Spray Irrigation Area is located across the road south of the landfill and east of Tank 45 (Figure 2). This area covered approximately 10 acres and was irrigated through stationary sprinkler heads with refinery wastewater pumped from the north evaporation pond. A dike was located around the area to prevent runoff. The irrigation activities were conducted from 1981 through 1994, primarily during the summer months (March to October). The irrigation activities stopped in 1995 when the Class 1 injection well was put into service. No other waste management activities were conducted in this location. The potential contaminants that may have impacted this area are the same petroleum refinery wastes discussed above for SWMUs No. 8 and 9.

A closure plan entitled, Closure Plan for the Unlined Evaporation Lagoons and the Spray Evaporation Area, was completed on August 13, 1996. A copy of the closure plan is included in Appendix C.

The results of analytical testing on soil samples collected from the Spray Irrigation Area are discussed on pages 2 and 3 of the closure plan and are summarized in a table in Attachment C to the closure

# 3

## Site Conditions

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The conditions at the site, including surface and subsurface conditions that could affect the fate and transport of any contaminants, are discussed below. This information is based on recent visual observations and historical subsurface investigations.

### 3.1 Surface Conditions

Regionally, the surface topography slopes toward the floodplain of the San Juan River, which runs along the northern boundary of the refinery complex. To the south of the refinery, the drainage is to the northwest. North of the refinery, surface water flows in a southeasterly direction toward the San Juan River. The active portion of the refinery property, where the process units and storage tanks are located, is generally of low relief with an overall northwest gradient of approximately 0.02 ft/ft. The refinery sits on an alluvial floodplain terrace deposit and there is a steep bluff (approx. drop of 90 feet) at the northern boundary of the refinery where the San Juan River intersects the floodplain terrace, which marks the southern boundary of the floodplain.

There are two locally significant arroyos, one immediately east and another immediately west of the refinery, which collect most of the surface water flows in the area, thus significantly reducing surface water flows across the refinery. A minor drainage feature is located on the eastern portion of the refinery, where the Landfill Pond (SWMU No. 9) is located and there are several steep arroyos along the northern refinery boundary that primarily capture only local surface water flows and minor ground water discharges.

The refinery complex is bisected by County Rd #4990 (Sullivan Road), which runs east-west. The process units, storage tanks (crude oil and liquid products), and wastewater treatment systems are located north of the county road. The crude oil and product loading racks, LPG storage tanks and loading racks, maintenance buildings/90-day storage area, pipeline offices, transportation truck shop, and the Class I injection well are located south of the county road. There is very little vegetation throughout these areas with most surfaces composed of concrete, asphalt, or gravel. The area between the refinery and the San Juan River does have limited vegetation on slopes that are not too steep to support vegetation.



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### 3.2 Subsurface Conditions

Numerous soil borings and monitoring wells have been completed across the refinery property during previous site investigations and installation of the slurry wall, which runs along the northern and western refinery boundary. Based on the available site-specific and regional subsurface information, the site is underlain by the Quaternary Jackson Lake terrace deposits, which unconformably overlie the Tertiary Nacimiento Formation. The Jackson Lake deposits consist of fine grained sand, silt and clay that grades to coarse sand, gravel and cobble size material closer to the contact with the Nacimiento Formation. The Jackson Lake Formation is over 40 feet near thick near the southeast portion of the site and generally thins to the northwest toward the San Juan River. The Nacimiento Formation is primarily composed of fine grained materials (e.g., carbonaceous mudstone/claystone with interbedded sandstones) with a reported local thickness of approximately 570 feet (Groundwater Technology, 1994).

Figures six and seven present cross-sections of the shallow subsurface based on borings logs from on-site monitoring well completions. The uppermost aquifer is under water table conditions and occurs within the sand and gravel deposits of the Jackson Lake Formation. The Nacimiento Formation functions as an aquitard at the site and prevents site related contaminants from migrating to deeper aquifers. The potentiometric surface as measured in April 2007 is presented as Figure 5 and shows the groundwater flowing to the northwest, toward the San Juan River.

Previous site investigations have identified and delineated impacts to groundwater from historical site operations. Figure 6 shows the distribution of SPH in the subsurface based on the apparent thickness of SPH measured in monitoring wells. Dissolved-phase impacts are depicted on Figure 7.

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A judgmental design will also allow for samples to be collected immediately beneath the area where empty drums are currently stored and scrap metal is stored on a temporary basis. There are no subsurface features (e.g., pipelines or utilities) that could affect contaminant distribution. As shown on Figure 8, three soil borings will be installed beneath the area where drums were formerly stored, two borings are to be located within the area currently used for storage of empty drums and three soil borings will be installed at the area used for scrap metal storage. If there are any visible indications of releases at the surface, then soil borings will be relocated to the specific identified areas.

SWMU No. 8 was a historic landfill area and there is no current information that would support a sample design based on judgmental samples. An appropriate sampling design to locate any areas of contamination within the area of the landfill is a systematic or grid sampling design. No subsurface utilities or pipelines cross this area. The individual sample locations have been selected by laying a grid (100' by 100') over the area where the landfill is located. Each boring will represent an area of approximately 10,000 square feet or one fourth of an acre. This is very conservative for a commercial/industrial facility and is less than the half-acre exposure area commonly used for residential properties (EPA, 1991 and EPA, 1996). This spacing results in 12 locations where soil borings will be installed, as shown on Figure 9.

The location where drums were stored on the ground at SWMU No. 18, prior to construction of the paved and covered drum storage rack facility, is shown on Figure 2. Because the location of drum storage is known and this is a small area that is only approximately 50 feet long and 30 feet wide judgmental samples will be collected. One of the on-site septic drain fields is located in this area and it is possible it could affect contaminant migration but the permeable nature of soils present on-site will lessen any influence from the drain field. Four soil borings will be located within this area and individual boring locations may be adjusted based on any visual indications of releases to surface soils (Figure 10).

A decontaminated split-barrel sampler or continuous five-foot core barrel will be used to obtain samples during the drilling of each boring. Surface samples may be collected using decontaminated, hand-held stainless steel sampling device, shelby tube, or thin-wall sampler, or a pre-cleaned disposable sampling device. A portion of the sample will be placed in pre-cleaned, laboratory-prepared sample containers for laboratory chemical analysis. The use of an Encore® Sampler or other similar device will be used during collection of soil samples for VOC analysis. The remaining portions of the sample will be used for logging and field screening as discussed in Section 5.2.1. Sample handling and chain-of-custody procedures will be in accordance with the procedures presented below in Section 5.4.

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Discrete soil samples will be collected for laboratory analyses at the following intervals:

- 0-6" (all borings);
- 18-24" (all borings);
- from the 6" interval just above saturation (deep borings);
- the sample from each boring with the greatest apparent degree of contamination, based on field observations and field screening; and
- any additional intervals as determined based on field screening results.

Quality Assurance/Quality Control (QA/QC) samples will be collected to monitor the validity of the soil sample collection procedures as follows:

- field duplicates will be collected at a rate of 10 percent;
- equipment blanks will be collected from all sampling apparatus at a frequency of 10 percent or one per day if disposable sampling equipment is used; and
- field blanks will be collected at a frequency of one per day.

#### **5.2.1 Soil Sample Field Screening and Logging**

Samples obtained from the borings will be screened in the field for evidence of contaminants. Field screening results will be recorded on the exploratory boring and excavation logs. Field screening results will be used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds. Additional screening for site- or release-specific characteristics such as pH or for specific compounds using field test kits may be conducted where appropriate.

Visual screening includes examination of soil samples for evidence of staining caused by petroleum-related compounds or other substances that may cause staining of natural soils such as elemental sulfur or cyanide compounds. Headspace vapor screening targets volatile organic compounds and involves placing a soil sample in a plastic sample bag or a foil sealed container allowing space for ambient air. The container will be sealed and then shaken gently to expose the soil to the air trapped in the container. The sealed container will be allowed to rest for a minimum of 5 minutes while vapors equilibrate. Vapors present within the sample bag's headspace will then be measured by inserting the probe of the instrument in a small opening in the bag or through the foil. The maximum value and the ambient air temperature will be recorded on the field boring or test pit log for each sample.

The monitoring instruments will be calibrated each day to the manufacturer's standard for instrument operation. A photo-ionization detector (PID) equipped with a 10.6 or higher electron volt (eV) lamp or a combustible gas indicator will be used for VOC field screening. Field screening results may be site-

8. Record of samples collected with sample designations and locations specified;
9. Photographic log;
10. Field monitoring data, including health and safety monitoring;
11. Equipment used and calibration records, if appropriate;
12. List of additional data sheets and maps completed;
13. An inventory of the waste generated and the method of storage or disposal; and
14. Signature of personnel completing the field record.

## 5.8 Chemical Analyses

All samples collected for laboratory analysis will be submitted to an accredited laboratory. The laboratory will use the most recent standard EPA and industry-accepted analytical methods for target analytes as the testing methods for each medium sampled. Chemical analyses will be performed in accordance with the most recent EPA standard analytical methodologies and extraction methods.

Groundwater and soil samples will be analyzed for the following analytes using the indicated analytical methods. This list of analytes is commonly referred to as the EPA Region V Skinner List. It is a list of Appendix VIII Hazardous Constituents applicable to refinery wastes that was initially developed by EPA's Office of Solid Waste in 1985. In 1993, EPA's Office of Solid Waste updated the original list as part of the development of new EPA guidance for "Petitions to Delist Hazardous Waste." Finally, in 1997 EPA Region V's Waste Management Branch melded the 1985 and 1993 lists to establish a broader list of refinery process waste constituents.

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.3/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Benzene	SW-846 method 8260
Carbon disulfide	SW-846 method 8260
Chlorobenzene	SW-846 method 8260

Analyte	Analytical Method
Chloroform	SW-846 method 8260
1,2-Dichloroethane	SW-846 method 8260
1,1-Dichloroethane	SW-846 method 8260
1,4-Dioxane	SW-846 method 8260
Ethylbenzene	SW-846 method 8260
Ethylene dibromide	SW-846 method 8260
Methyl ethyl ketone	SW-846 method 8260
Methyl tertiary butyl ether	SW-846 method 8260/8021
Styrene	SW-846 method 8260
Toluene	SW-846 method 8260
1,1,1-Trichloroethane	SW-846 method 8260
Trichloroethene	SW-846 method 8260
Tetrachloroethene	SW-846 method 8260
Xylenes (total)	SW-846 method 8260
Acenaphthene	SW-846 method 8270
Anthracene	SW-846 method 8270
Benzo(a)anthracene	SW-846 method 8270
Benzo(b)fluoranthene	SW-846 method 8270
Benzo(k)fluoranthene	SW-846 method 8270
Benzo(a)pyrene	SW-846 method 8270
Bis(2-ethylhexyl) phthalate	SW-846 method 8270
Chrysene	SW-846 method 8270
o-Cresol	SW-846 method 8270
m-Cresol	SW-846 method 8270
p-Cresol	SW-846 method 8270
Dibenz(a,h)anthracene	SW-846 method 8270
Di-n-butyl phthalate	SW-846 method 8270
1,2-Dichlorobenzene	SW-846 method 8270
1,3-Dichlorobenzene	SW-846 method 8270
1,4-Dichlorobenzene	SW-846 method 8270
Diethyl phthalate	SW-846 method 8270
2,4 Dimethylphenol	SW-846 method 8270
Dimethyl phthalate	SW-846 method 8270
2,4 Dinitrophenol	SW-846 method 8270
Fluorene	SW-846 method 8270
Indeno(1,2,3-cd)pyrene	SW-846 method 8270
Naphthalene	SW-846 method 8270
4-Nitrophenol	SW-846 method 8270
Phenanthrene	SW-846 method 8270
Phenol	SW-846 method 8270
Pyrene	SW-846 method 8270
Pyridine	SW-846 method 8270
Quinoline	SW-846 method 8270

In addition, groundwater samples will also be analyzed for the following general chemistry parameters.

**Table 1**  
**Volatile Organic Ground Water Analytical Results Summary**  
**Group 2 Investigation Work Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters				
		Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	MTBE (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.005 <sup>(2)</sup>	0.75 <sup>(1)</sup>	0.7 <sup>(2)</sup>	0.62 <sup>(1)</sup>	0.011 <sup>(3)</sup>
Well ID:	Date Sampled:					
MW #1	4/1/2007	<0.001	<0.001	<0.001	<0.002	<0.0025
	8/15/2006	<0.001	<0.001	<0.001	<0.003	<0.0015
	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	0.0011	<0.001	<0.001	<0.001	<0.001
	4/11/2005	0.0013	<0.0005	<0.0005	0.0011	<0.0025
	8/23/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	3/3/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001
	3/3/2003	<0.0005	0.00063	0.00065	0.0043	<0.0025
MW #3	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	<0.001	<0.001	<0.001	<0.001	<0.001
	4/11/2005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001
MW #8	4/1/2007	<0.001	<0.001	<0.001	<0.002	<0.0025
	8/15/2006	<0.001	<0.001	<0.001	<0.003	<0.0015
	4/5/2006	<0.001	<0.001	<0.001	<0.003	<0.0025
	8/5/2005	<0.001	<0.001	<0.001	<0.001	<0.001
	4/11/2005	0.00053	<0.0005	<0.0005	0.0008	<0.0025
	8/23/2004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
	8/21/2003	<0.001	<0.001	<0.001	<0.001	<0.001

Notes:

mg/L = milligram per liter

MW = monitoring well

RW = recovery well

NA = not analyzed

NE = not established

MTBE = methyl tertiary butyl ether

1 - WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10,000 ug/L TDS or less.

2 - EPA Maximum Contaminant Level

3 - EPA Region VI Human Health Medium-Specific Screening Level 2007

**Table 2**  
**Total Metals Ground Water Analytical Results Summary**  
**Group 2 Investigation Work Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

		Parameters							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)
<b>40 CFR 141.62 MCL (mg/L):</b>		<b>0.01 <sup>(1)</sup></b>	<b>2.0</b>	<b>0.005</b>	<b>0.10</b>	<b>0.015</b>	<b>0.05</b>	<b>0.1 <sup>(2)</sup></b>	<b>0.002</b>
<b>Well ID:</b>	<b>Date Sampled:</b>								
<b>MW #1</b>	8/15/2006	<0.020	0.023	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.0002
	8/5/2005	NA	NA	NA	<0.006	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.052	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
<b>MW #3</b>	8/5/2005	NA	NA	NA	0.016	<0.005	NA	NA	NA
	8/21/2003	NA	NA	NA	0.029	<b>0.022</b>	NA	NA	<0.0002
<b>MW #8</b>	8/15/2006	<0.020	0.018	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	8/5/2005	NA	NA	NA	0.33	<0.005	NA	NA	NA
	8/23/2004	<0.02	0.071	<0.002	1.9	<0.005	<0.05	<0.005	<0.0002
	8/21/2003	NA	NA	NA	0.72	<0.005	NA	NA	<0.0002

**Notes:**

mg/L = milligram per liter

MW = monitoring well

RW = recovery well

NA= not analyzed

NE = not established

40 CFR 141.62 MCL = National Primar Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

(1) MCL as of 1/23/2006

(2) National secondary drinking water regulation

**Table 3**  
**Dissolved Metals Ground Water Analytical Results Summary**  
**Group 2 Investigation Work Plan**  
**Bloomfield Refinery- Bloomfield, New Mexico**

		Parameters															
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	1.0	0.01	NE	0.05	1.0	1.0	0.05	NE	0.20	NE	0.05	0.05	NE	0.03 (b)	10.0
Well ID:	Date Sampled:																
MW #1	8/15/2006	<0.02	0.023	<0.002	74	<0.006	<0.006	<0.02	<0.005	18	0.09	2.4	<0.05	<0.005	120	<0.1	0.047
	8/5/2005	<0.02	0.022	<0.002	68	<0.006	<0.006	0.14	<0.005	18	0.14	2.7	<0.05	<0.005	140	<0.1	<0.005
	8/23/2004	<0.02	0.025	<0.002	67	<0.006	<0.006	0.27	<0.005	18	0.13	2.1	<0.05	<0.005	110	<0.1	0.021
MW #3	8/15/2006	<0.02	0.46	<0.002	61	<0.006	<0.006	<0.005	<0.005	16	0.08	2.6	0.043	<0.005	150	<0.1	0.12
	8/5/2005	<0.02	0.018	<0.002	480	<0.006	<0.006	0.047	<0.005	130	0.43	7.6	<0.05	<0.005	1300	<0.1	0.018
	8/21/2003	<0.02	0.3	<0.002	490	<0.006	<0.006	0.27	<0.005	140	0.58	10	0.024	<0.005	1100	<0.1	0.094
MW #8	8/15/2006	<0.02	0.018	<0.002	230	<0.006	<0.006	0.033	<0.005	35	0.42	3.2	<0.05	<0.005	380	<0.1	0.044
	8/5/2005	<0.02	0.021	<0.002	230	<0.006	<0.006	0.078	<0.005	37	0.65	3.1	<0.05	<0.005	360	<0.1	0.014
	8/23/2004	<0.02	0.021	<0.002	210	<0.006	<0.006	0.059	<0.005	35	0.57	3	<0.05	<0.005	360	<0.1	0.022
	8/21/2003	<0.02	0.36	<0.002	200	<0.006	<0.006	0.044	<0.005	38	0.68	4	0.09	<0.005	350	<0.1	0.13

Notes:  
mg/L = milligram per liter  
MW = monitoring well  
RW = recovery well  
NE = not established  
NA = Not Analyzed  
WQCC 20NNMAC 6.2.3103 = New Mexico Standard for Groundwater of 10,000 ug/L or less



Table 4  
General Chemistry Ground Water Analytical Results Summary  
Group 2 Investigation Work Plan  
Bloomfield Refinery - Bloomfield, New Mexico

		Parameters										
	WQCC 20NNMAC 6.2.3103 (mg/L):	Fluoride (mg/L)	Chloride (mg/L)	Bromide (mg/L)	Nitrite (mg/L)	Nitrogen (mg/L)	Phosphorus (mg/L)	Sulfate (mg/L)	TDS (mg/L)	E.C. (umhos/cm)	CO <sub>2</sub> (mg/L)	Alk (mg/L)
		1.6	250	NE	NE	10	NE	600	1000	NE	NE	NE
Well ID:	Date Sampled:											
MW #1	8/15/2006	0.65	17	<0.50	1.2	NA	<0.50	190	640	940	240	270
	8/5/2005	0.68	31	<0.50	<0.10	2.1	<0.50	190	650	980	300	300
	8/23/2004	0.63	29	0.14	<0.10	1.9	<0.50	220	650	870	220	240
	8/15/2006	0.58	33	0.32	<0.10	1.6	<0.50	200	610	820	240	262
MW #8	8/15/2006	0.67	300	1.5	26	NA	<0.50	980	2200	3200	200	210
	8/5/2005	0.79	260	<2.5	<0.50	27	<0.50	740	2000	2900	260	260
	8/23/2004	0.64	250	1.2	NA	NA	<0.50	920	2100	2600	210	230
	8/21/2003	0.66	260	5	<0.10	14	<0.50	950	2100	2900	220	208

Notes:

Alk = alkalinity, total  
CO<sub>2</sub> = Carbon Dioxide  
E.C. = electrical conductivity  
TDS = total dissolved solids  
umhos/cm = micro-mhos per centimeter  
mg/L = milligram per liter  
NE = not established  
NA = not analyzed  
MW = monitoring well  
RW = recovery well  
WQCC 20NNMAC 6.2.3103 = New Mexico Standard for Groundwater of 10,000 ug/L or less

**Table 5**  
**Volatile Organic Soil Analytical Results Summary**  
**Group 2 Investigation Work Plan**  
**Bloomfield Refinery - Bloomfield, New Mexico**

Sample No.	Sample Location	Soil Screening Levels (mg/kg):	Date Sampled	Parameters						
				Benzene (mg/kg)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Phenolics	Chromium III	Lead
				0.02 <sup>(3)</sup>	21.7 <sup>(3)</sup>	20.2 <sup>(3)</sup>	2.06 <sup>(3)</sup>	47.4 <sup>(3)</sup>	100,000 <sup>(1-2)</sup>	800 <sup>(1-2)</sup>
51469-01	L1 & L2, 0-6" Quad. #1 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	11	10
51469-02	L3 & L4, 6-12" Quad. #1 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	8.9	9.8
51469-03	L5 & L6, 0-6" Quad. #2 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	9.9	9
51469-04	L7 & L8, 6-12" Quad. #2 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	7.6	6.7
51469-05	L9 & L10, 0-6" Quad #3 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	7.8	7.6
51469-06	L11 & L12, 6-12" Quad. #3 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	7.4	7
51469-07	L13 & L14, 0-6" Quad. #4 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	9.1	8.2
51469-08	L15 & L16, 6-12" Quad #4 - Landfill		10/16/1985	<0.5	<1.0	<1.0	<2.0	<0.1	7	7.7

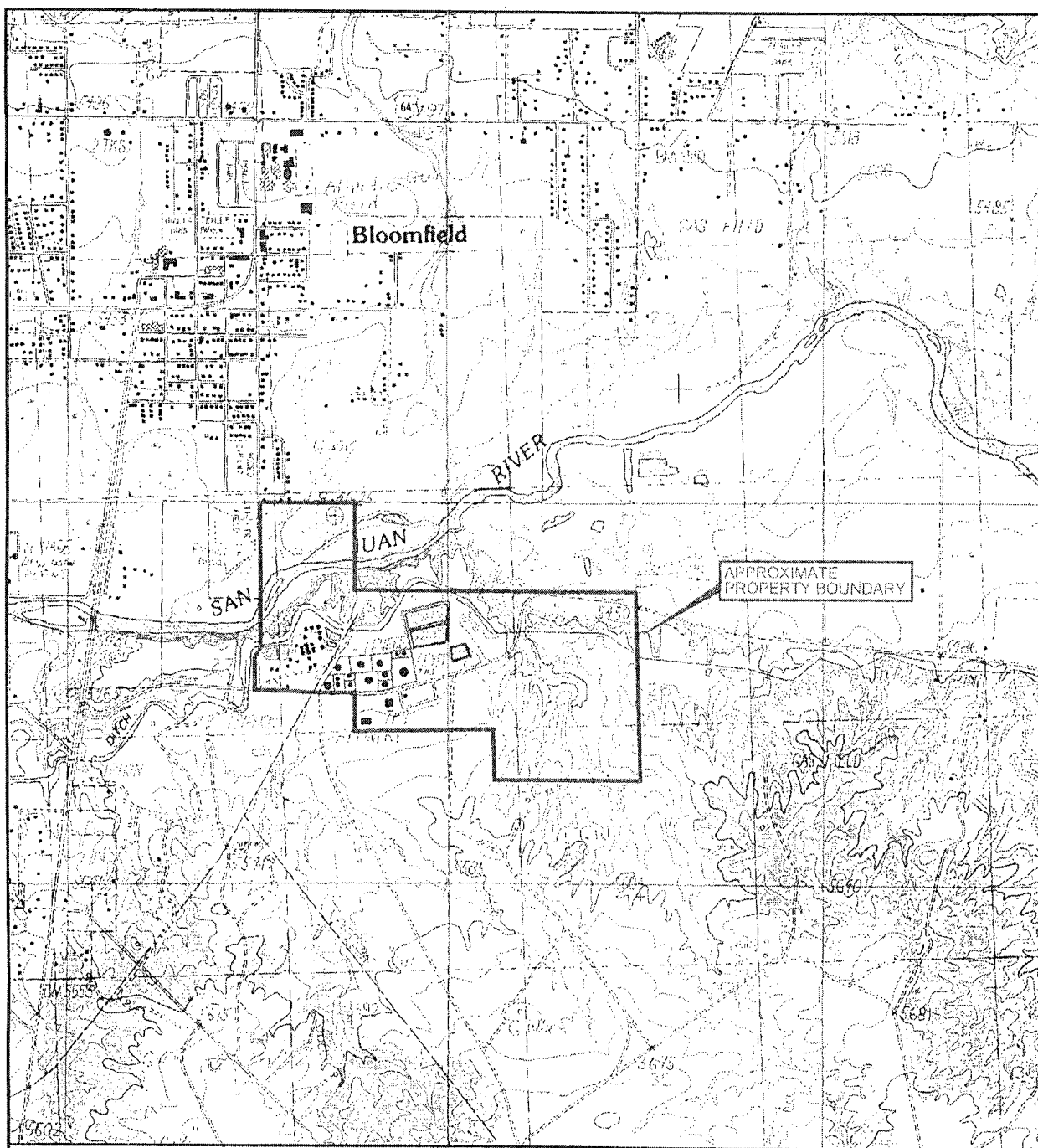
**Table 6**  
**Field Measurement Summary**  
**Group 2 Investigation Work Plan**  
**Western Refinery Company - Bloomfield, New Mexico**

Well ID:	Date Sampled:	Field Measurements				
		E.C. (umhos/cm)	pH (s.u.)	Temperature (deg F)	DO (mg/L)	ORP (--)
#1 East O/F	3/4/2004	NM	NM	NM	NM	NM
	3/4/2003	1049	6.71	51	NM	NM
#2 East O/F	3/4/2004	1199	7.23	47	NM	NM
	3/4/2003	973	7.03	45	NM	NM
#3 East O/F	3/4/2004	1224	7.36	49	NM	NM
	3/4/2003	1083	7.04	50	NM	NM
MW #1	8/15/2006	952	7.03	64	0.9	223
	4/6/2006	815	6.84	56	NR	NR
	8/1/2005	986	7.02	63	9.2	106
	4/1/2005	1115	6.90	54	NR	NR
	8/23/2004	927	6.90	63	5.4	-532
	3/2/2004	887	7.51	53	NM	NM
	8/21/2003	1001	7.41	63	6.5	105
	3/3/2003	1285	8.01	54	NM	NM
MW #3	8/15/2006	NS	NS	NS	NS	NS
	4/6/2006	7212	7.02	65	NR	NR
	8/1/2005	7685	6.98	67	NS	-44
	4/6/2005	2535	7.02	61	NS	NS
	8/23/2004	7558	6.96	64	NS	-11
	8/25/2003	7818	6.96	66	NM	57
MW #5	8/15/2006	NS	NS	NS	NS	NS
	4/6/2006	NS	NS	NS	NS	NS
	8/1/2005	NS	NS	NS	NS	NS
	4/4/2005	NS	NS	NS	NS	NS
	8/23/2004	NS	NS	NS	NS	NS
	8/25/2003	NS	NS	NS	NS	NS
MW #8	8/15/2006	2966	7.04	61	0.5	231
	4/6/2006	2791	6.97	58	NR	NR
	8/1/2005	2730	6.91	59	7.3	114
	4/12/2005	2481	7.04	59	NR	NR
	8/19/2004	2600	7.02	62	2.9	142
	8/25/2003	2654	6.98	60	7.1	176

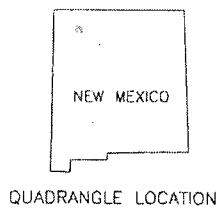
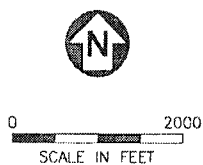
**Notes:**

deg F = degrees Fahrenheit  
E.C. = electrical conductivity  
mg/L = milligrams per liter  
MW = monitoring well  
NM = not measured  
NR = not required

ORP = Oxidation-reduction potential  
SPH = separate phase hydrocarbon contained in well, not sampled  
s.u. = standard units (recorded by portable pH meter)  
umhos/cm = micro-mhos per centimeter  
NS = not sampled, well is dry  
NPP = no product present



Map Source: USGS 7.5 Min. Quad Sheet BLOOMFIELD, NM., 1985.



**GIANT**

INDUSTRIES, INC.

PROJ. NO.: Giant DATE: 11/3/07 FILE: GiantA04

FIGURE 1  
SITE LOCATION MAP  
GIANT BLOOMFIELD REFINERY

**JDC**

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404 Camp Craft Road  
Austin, Texas 78746

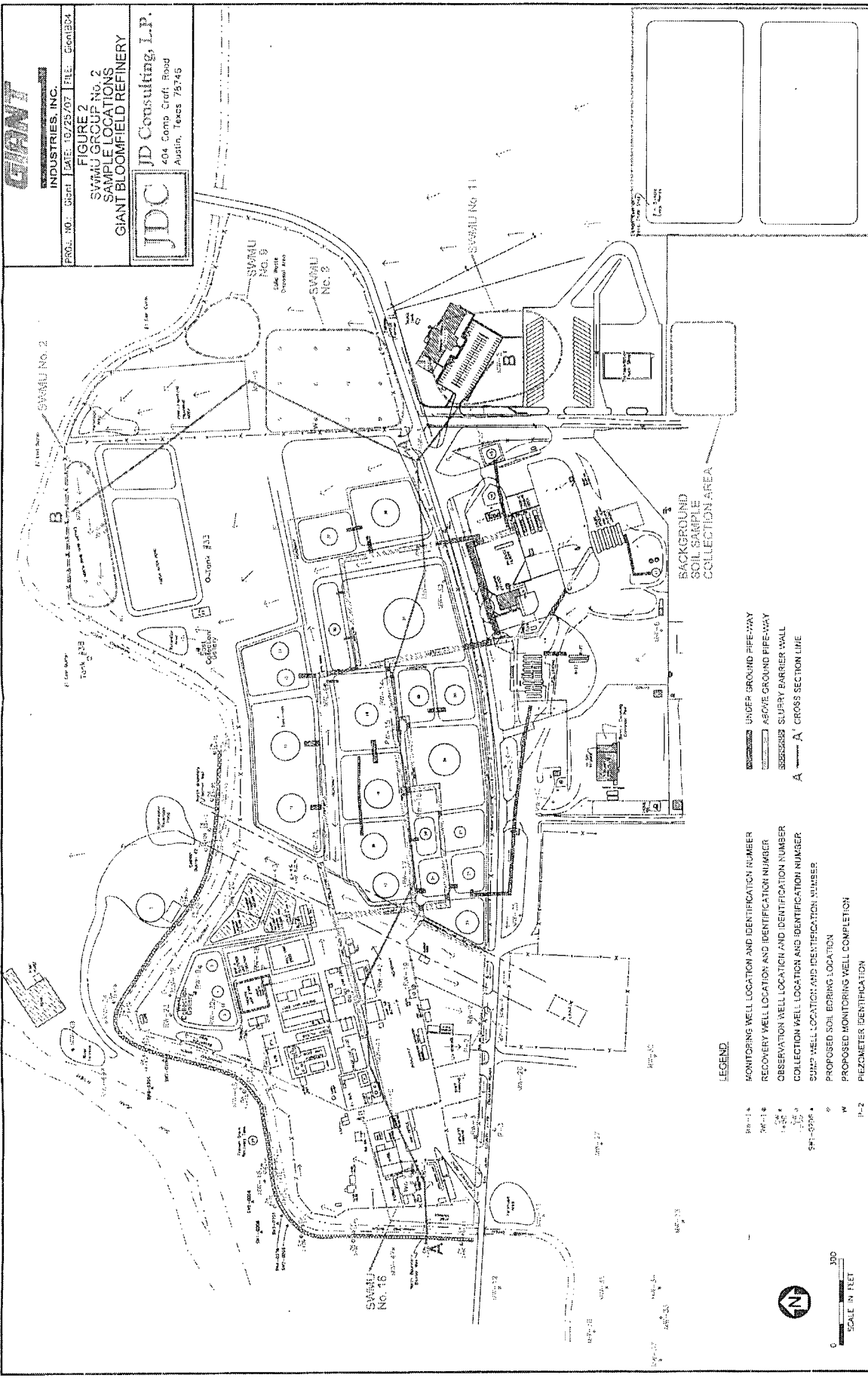
**GIANT**

INDUSTRIES, INC.

PROJ. NO.: 9801 DATE: 10/25/07 FILE: GIB004

FIGURE 2  
SWMU GROUP No. 2  
SAMPLE LOCATIONS  
GIANT BLOOMFIELD REFINERY

**JDC**  
JD Consulting, L.P.  
404 Camp Craft Road  
Austin, Texas 78745



**LEGEND**

- MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER
- OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER
- COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER
- PUMP WELL LOCATION AND IDENTIFICATION NUMBER
- PROPOSED SOIL BORING LOCATION
- PROPOSED MONITORING WELL COMPLETION
- PIEZOMETER IDENTIFICATION
- UNDER GROUND PIPE-WAY
- ABOVE GROUND PIPE-WAY
- SLURRY BARRIER WALL
- CROSS SECTION LINE

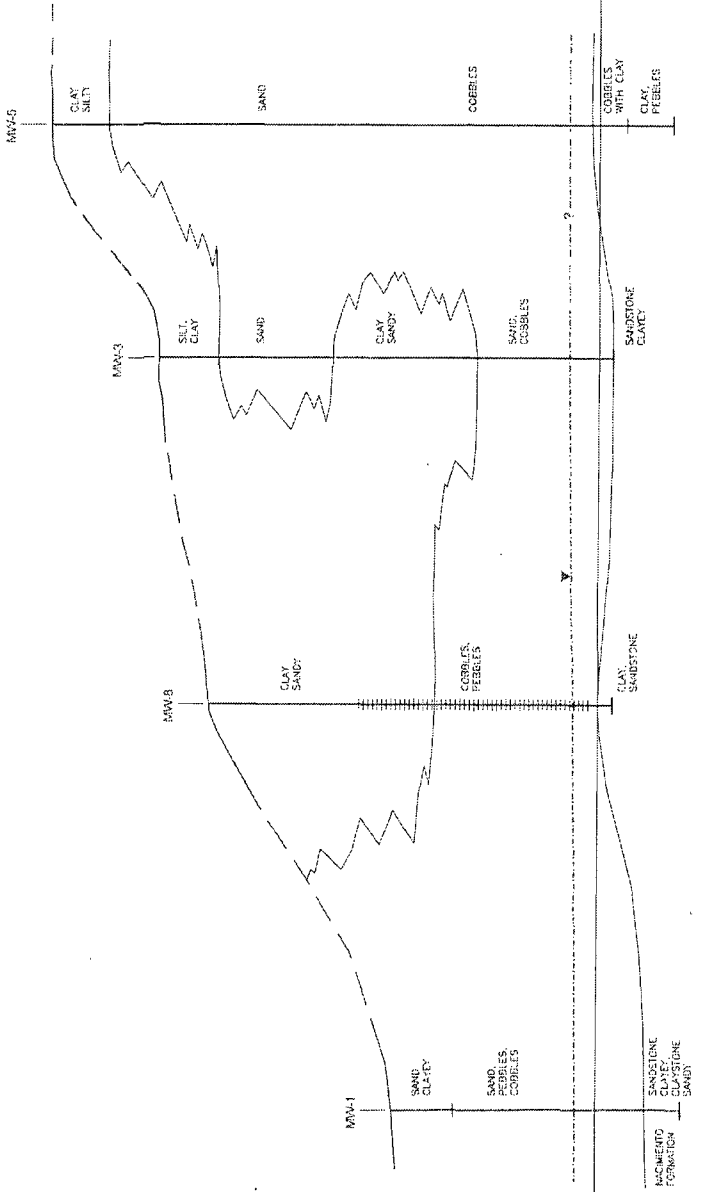


0 300  
SCALE IN FEET



NORTH  
B

ELEVATION (T MSL)  
5550  
5540  
5530  
5520  
5510  
5500  
5490



EXPLANATION

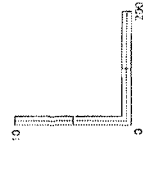
MW-3 - WELL IDENTIFICATION

WELL

SCREEN INTERVAL

LITHOLOGIC CONTACTS

-Y- - POTENTIOMETRIC SURFACE MEASURED APRIL 2007



GIANT

INDUSTRIES, INC.

PROJ. NO.: Giant DATE: 10/31/07 FILE: GOR1908

FIGURE 4

CROSS SECTION B-B'  
NORTH TO SOUTH  
GIANT BLOOMFIELD REFINERY

JDC

JDC Consulting, L.P.

404 Comp Craft Road  
Austin, Texas 78746



0 1250  
SCALE IN FEET

### Legend

Monitoring Well

Recovery Well

Piezometer

Groundwater Elevation  
Contours

Site

Well ID  
Groundwater Elevation  
(ft amsl)

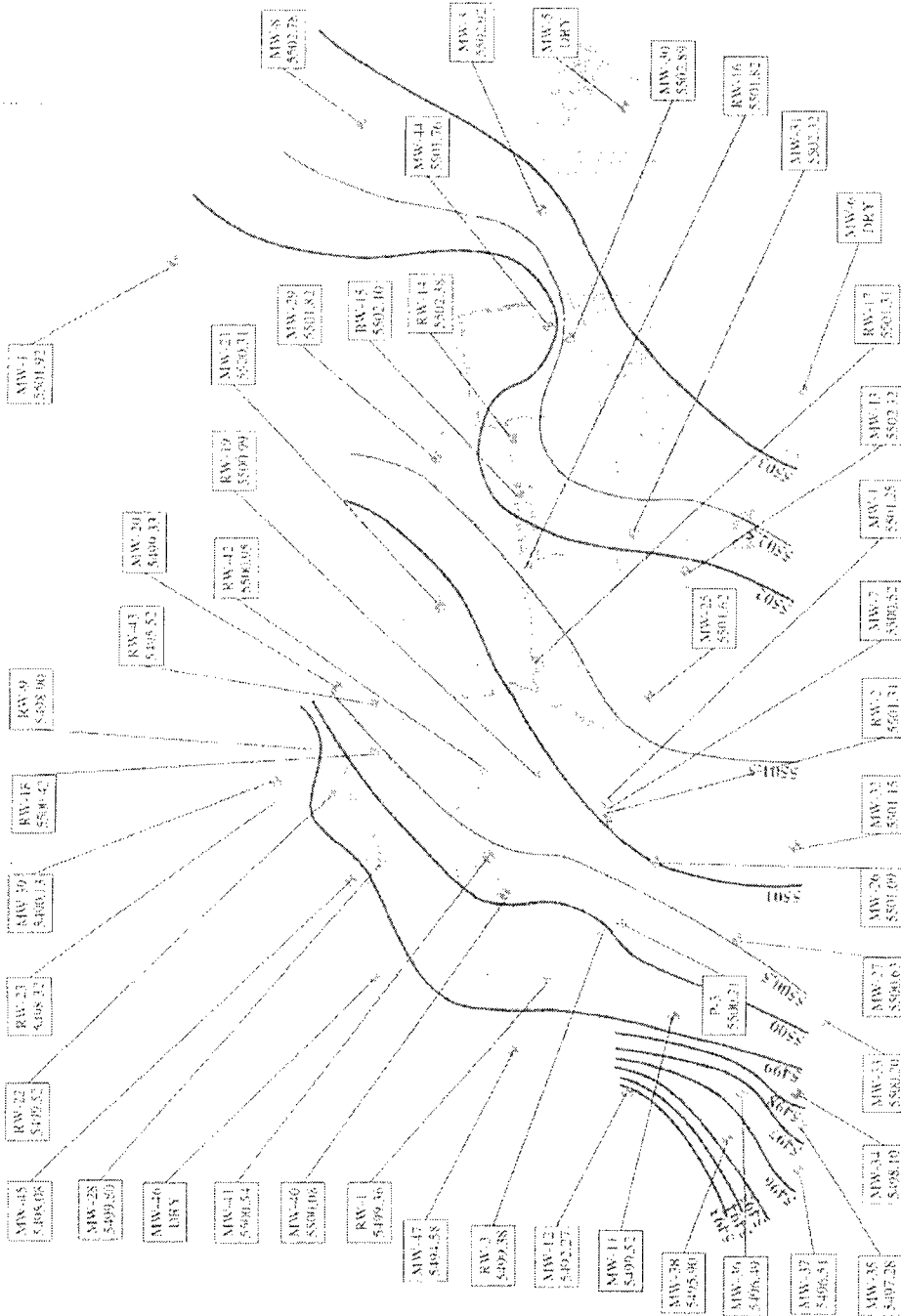
**GIANT**

INDUSTRIES, INC.

FIGURE 5  
APRIL 2007  
POTENTIOMETRIC SURFACE  
GIANT BLOOMFIELD REFINERY

**JDC**

JDC Consulting, L.P.  
404 Camp Creek Road  
Austin, Texas 78746







0 1200  
SCALE IN FEET

### Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Piezometer
- Collection Well
- Sump Well
- Site

MW-28  
NPP  
Well ID

H = Feet

NPP = No Product Present

NA = Not Available

Note:

OWs and CWs were collected on 1/15/07  
SWs were collected on 1/2/07



INDUSTRIES, INC.

PROJ. NO.: 0001 DATE: 11/17/07 FILE: Gant808

FIGURE 6

SPRING 2007

SEPARATE PHASE

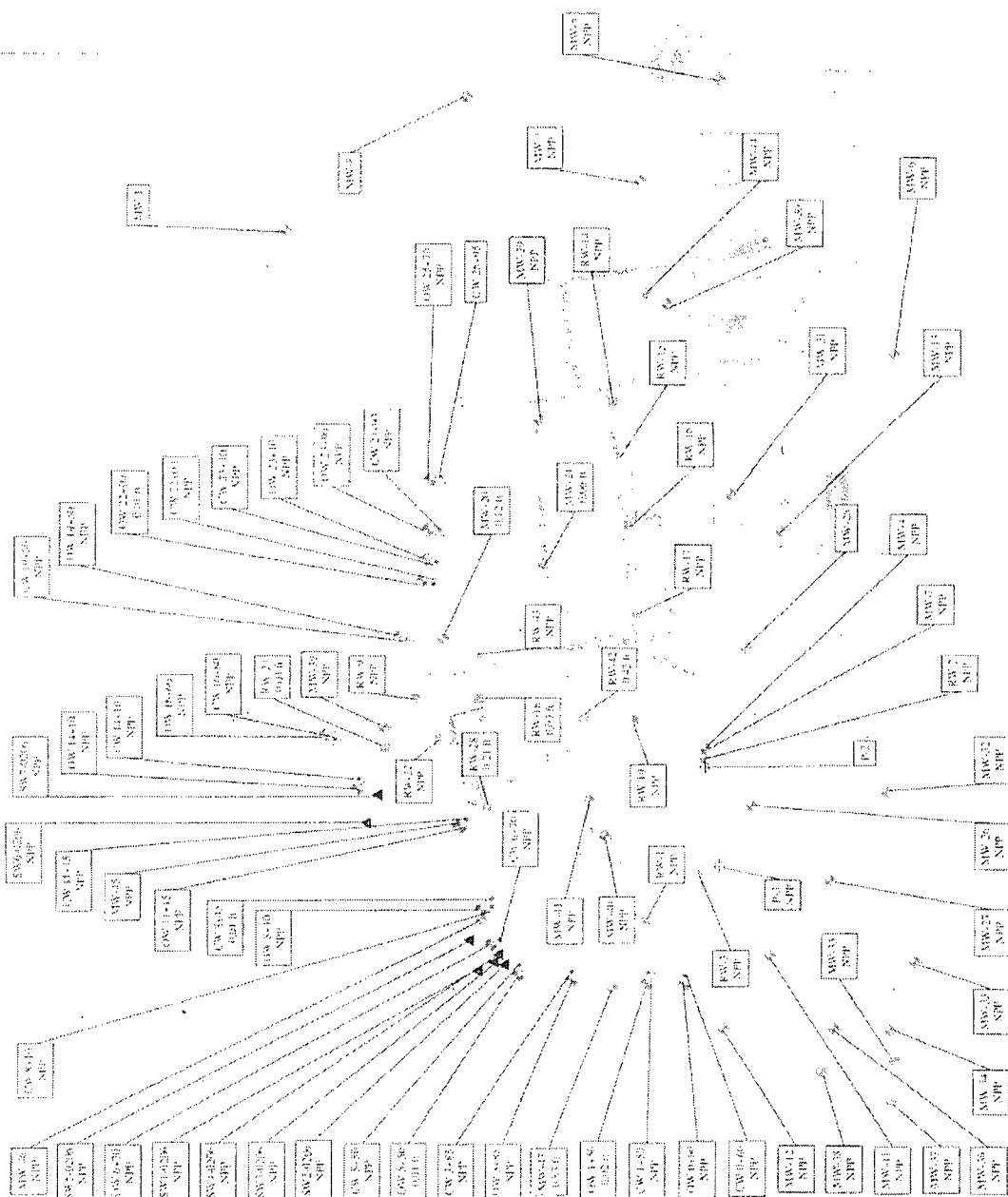
HYDROCARBON THICKNESS MAP

GIANT BLOOMFIELD REFINERY



JDC Consulting, L.P.

404 Comp Craft Road  
Austin, Texas 78746



Map Source: Malcolm-Pirnie Facility-Wide Groundwater Monitoring Plan, Western Refining Bloomfield Refinery, Figure 8 Separate Phase Hydrocarbon Map, July 2007.



SCALE IN FEET  
0 100 200

### Legend

- Monitoring Well
- Observation Well
- Outfall
- Recovery Well
- Sluc

MW-35
< 1.0
< 1.0
< 1.0
3.3
< 2.5

All concentrations in  
micrograms per liter (ug/L)

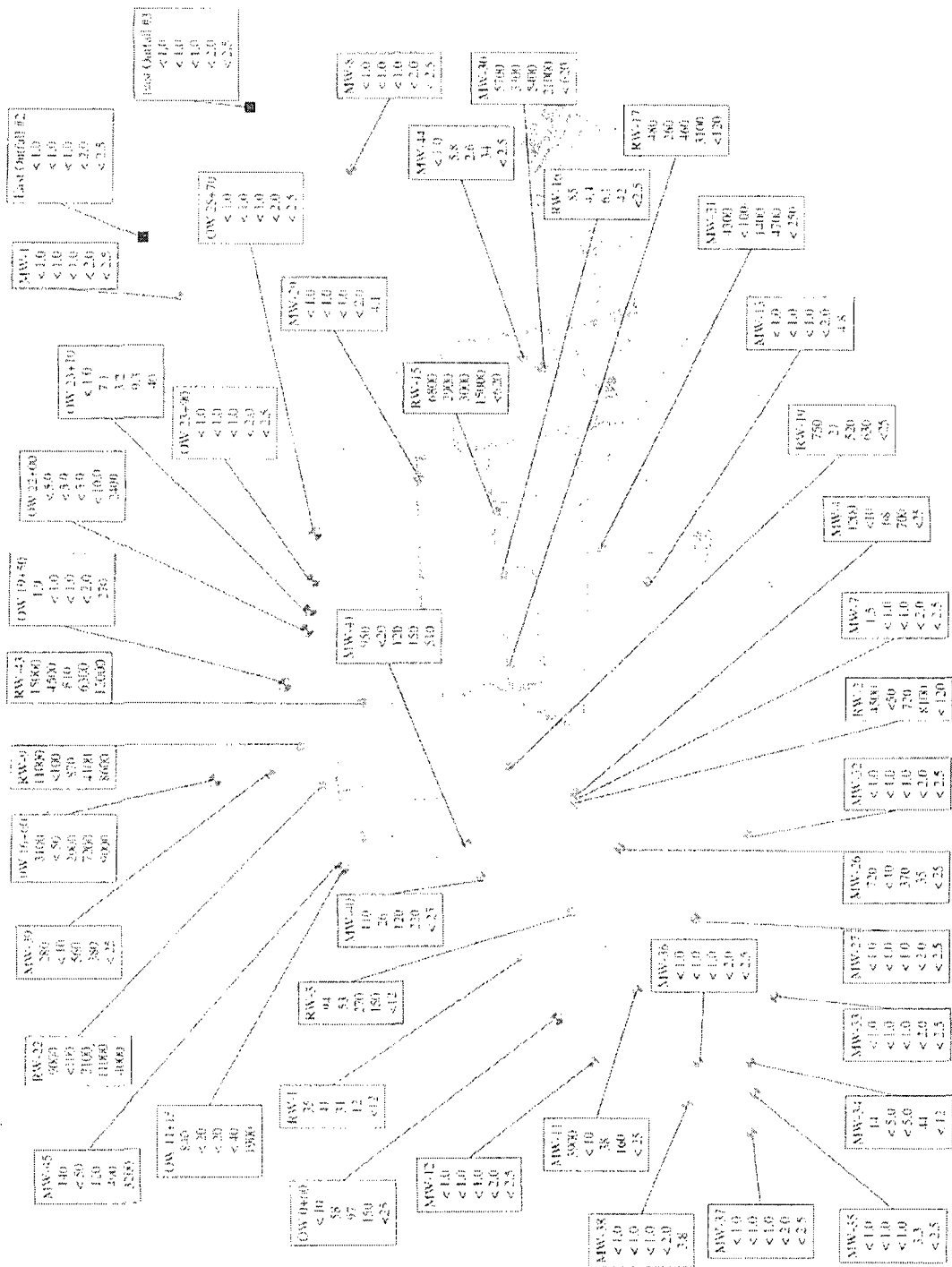
**GIANT**

INDUSTRIES, INC.

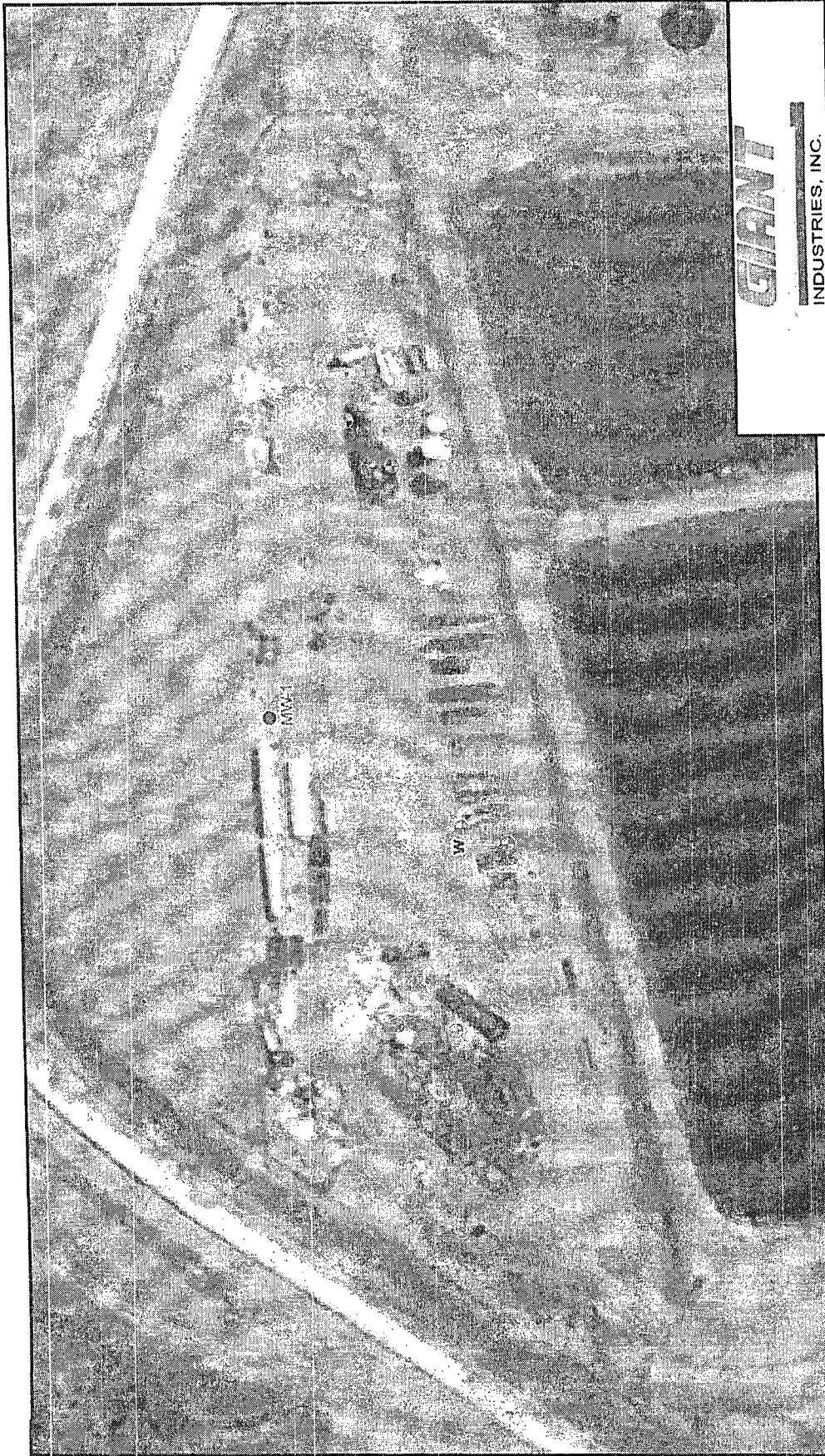
PROJ. NO.: 0001 DATE: 11/7/07 FILE: Gm009

FIGURE 7  
SPRING 2007  
DISSOLVED-PHASE  
GROUNDWATER DATA  
GIANT BLOOMFIELD REFINERY

JDC  
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404 Camp Creek Road  
Austin, Texas 78745



Map Source: Malcolm-Pirnie Facility-Wide Groundwater Monitoring Plan, Western Refining Bloomfield Refinery, Figure 4 Concentration Map, July 2007.



Aerial Map Source: Google Maps, 2007.



0 80  
SCALE IN FEET

LEGEND

- PROPOSED SOIL BORING LOCATION
- W PROPOSED MONITORING WELL COMPLETION
- MW-1 ○ MONITORING WELL LOCATION

**GIANT**

INDUSTRIES, INC.

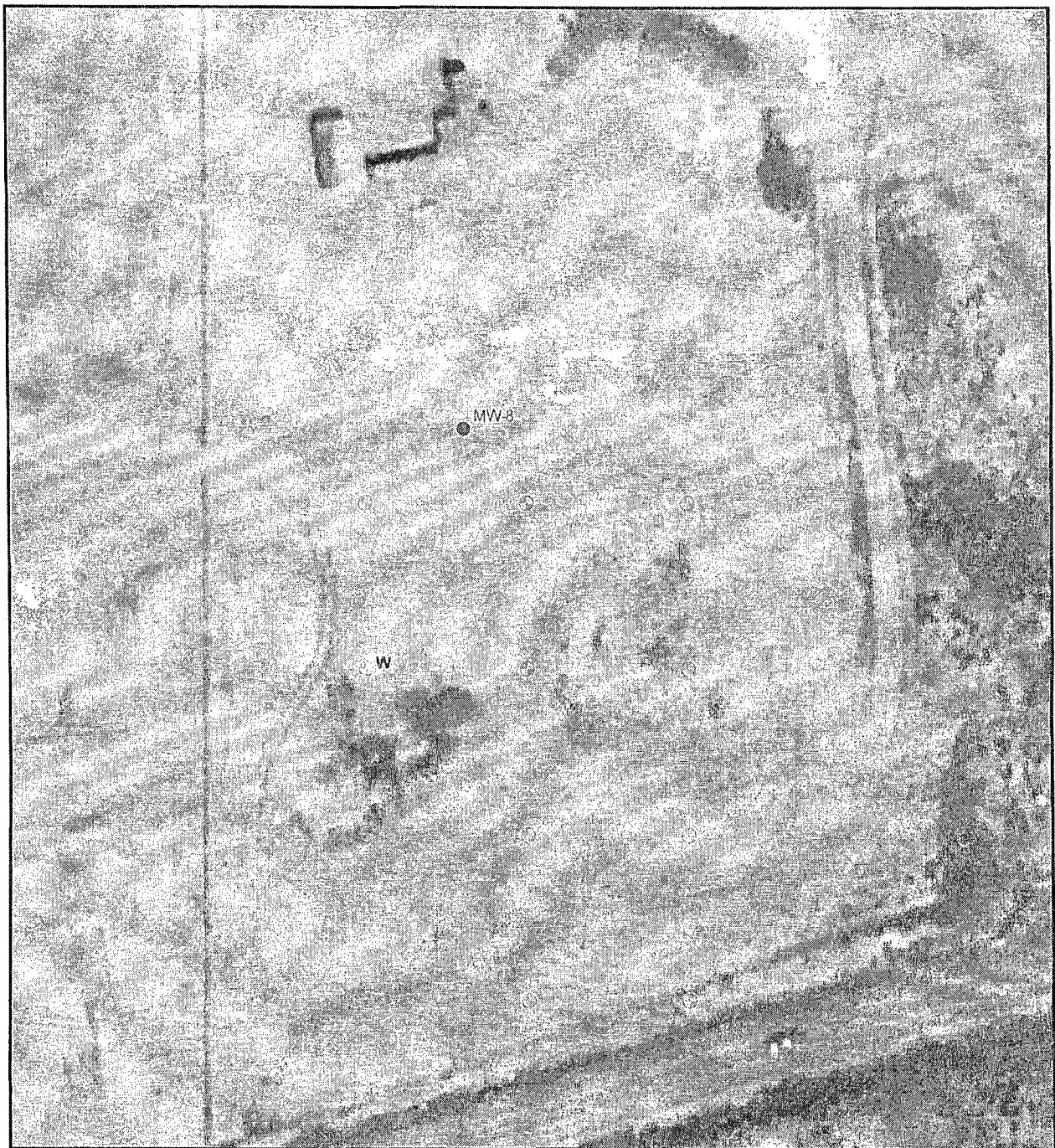
PROJ. NO.: Giant DATE: 10/25/07 FILE: GiantA01

**FIGURE 8**

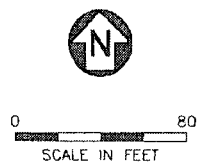
**SWMU No. 2  
SAMPLE LOCATION MAP  
GIANT BLOOMFIELD REFINERY**

**JDC**




**JD Consulting, L.P.**  
404 Camp Craft Road  
Austin, Texas 78746



Aerial Map Source: Google Maps, 2007.



LEGEND

-  PROPOSED SOIL BORING LOCATION
-  PROPOSED MONITORING WELL COMPLETION
-  MW-8 MONITORING WELL LOCATION

**GIANT**  
INDUSTRIES, INC.

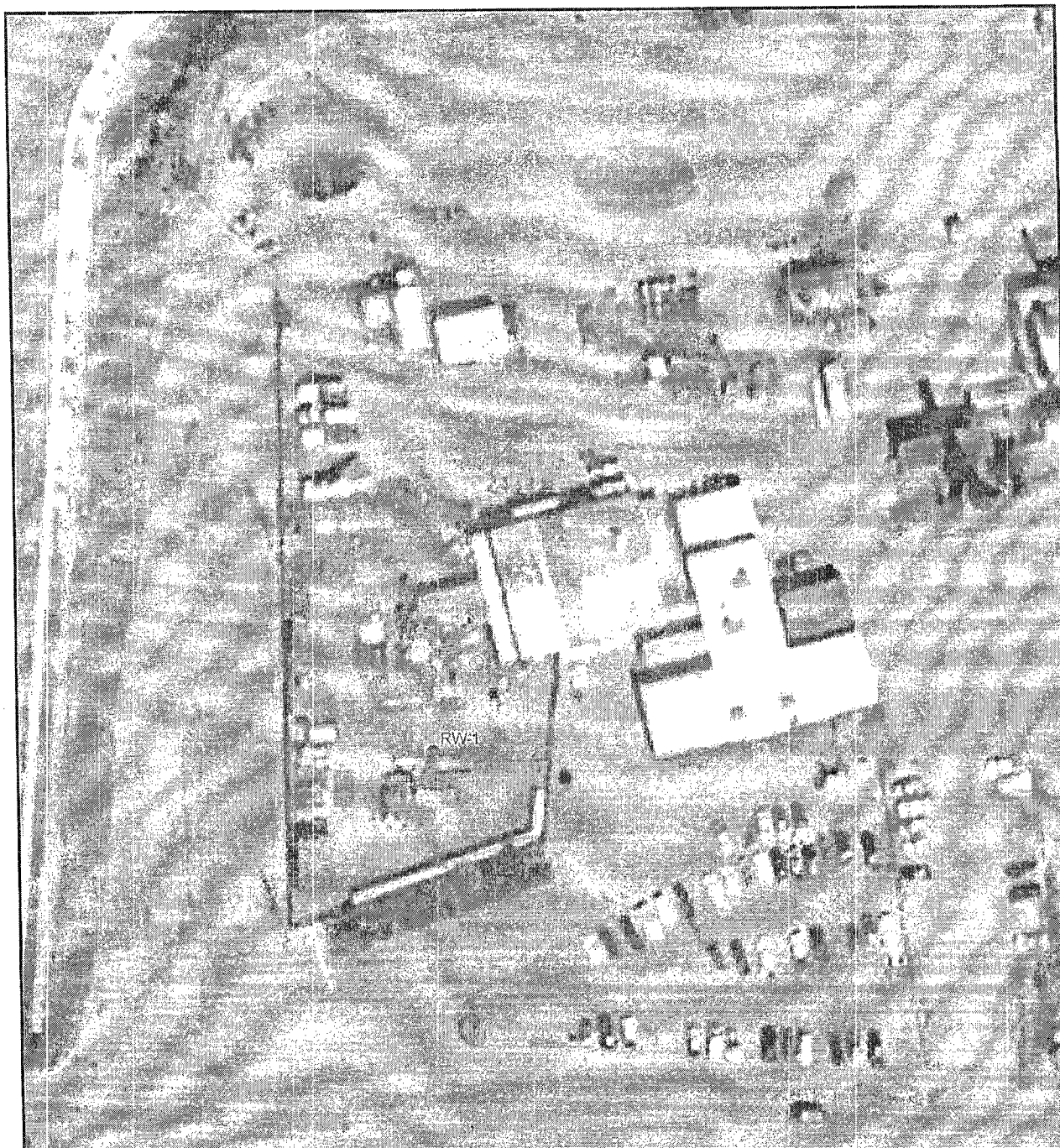
PROJ. NO.: Giant DATE: 10/26/07 FILE: GiantA02

FIGURE 9  
SWMU No. 8  
SAMPLE LOCATION MAP  
GIANT BLOOMFIELD REFINERY



**JD Consulting, L.P.**  
404 Camp Craft Road  
Austin, Texas 78746





Aerial Map Source: Google Maps, 2007.



0 80  
SCALE IN FEET

#### LEGEND

- PROPOSED SOIL BORING LOCATION
- W PROPOSED MONITORING WELL COMPLETION
- RW-1 ● RECOVERY WELL LOCATION

**GIANT**

INDUSTRIES, INC.

PROJ. NO.: Giant DATE: 10/26/07 FILE: GiantA03

FIGURE 10  
SWMU No. 18  
SAMPLE LOCATION MAP  
GIANT BLOOMFIELD REFINERY



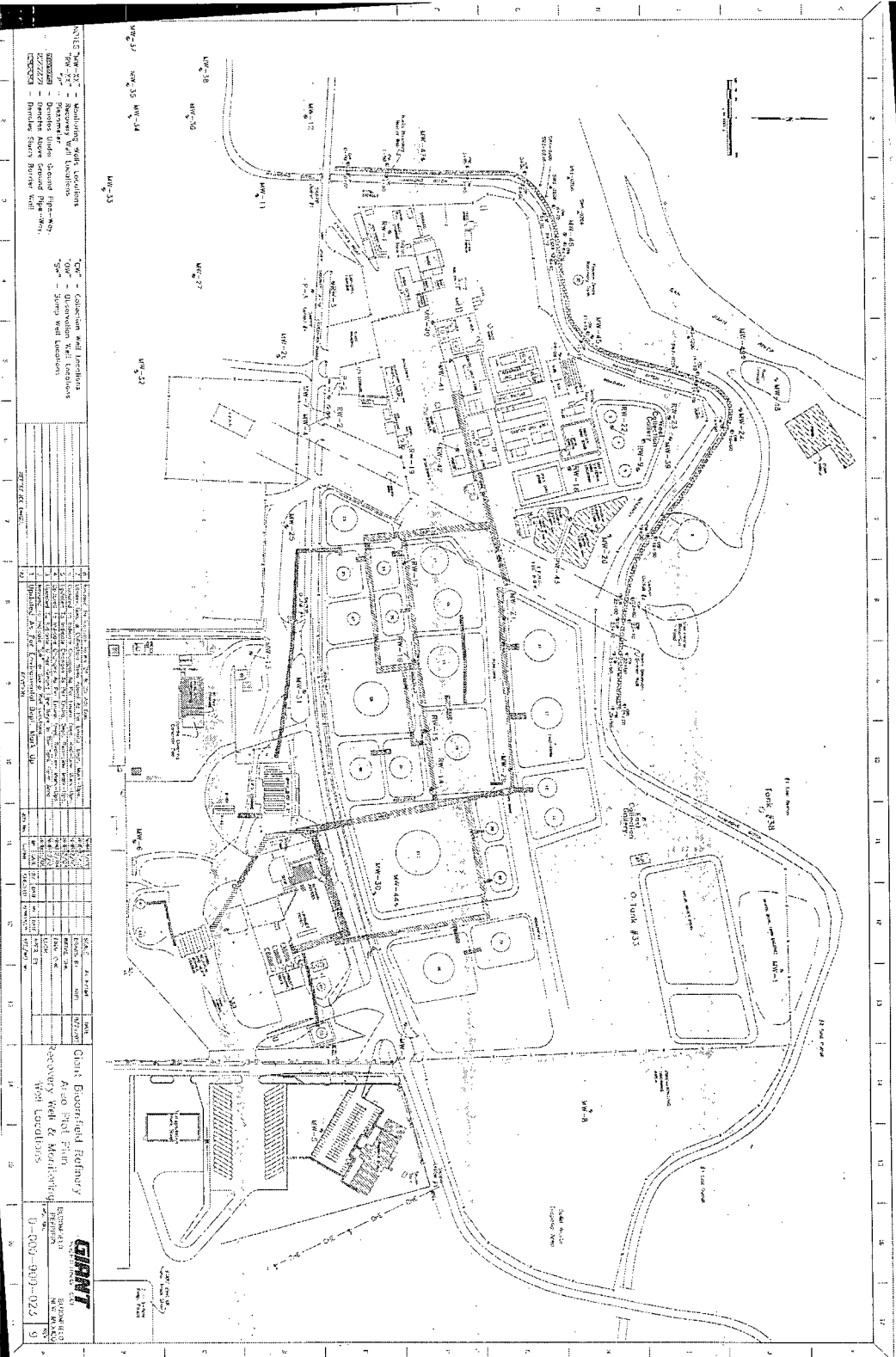
**JD Consulting, L.P.**  
404 Camp Craft Road  
Austin, Texas 78746

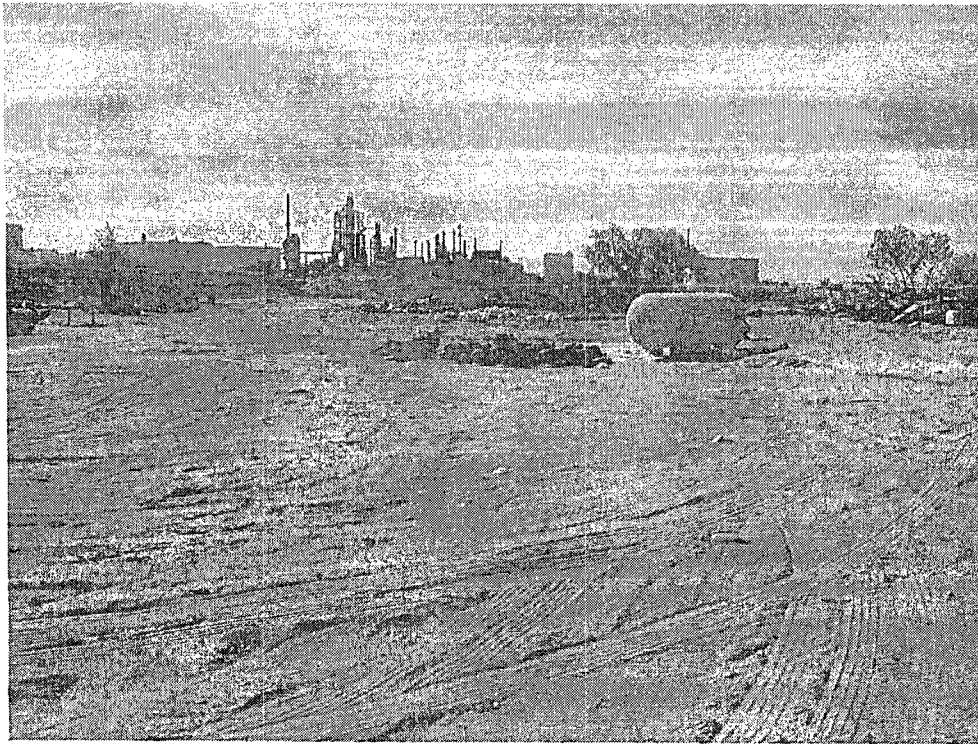
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## References

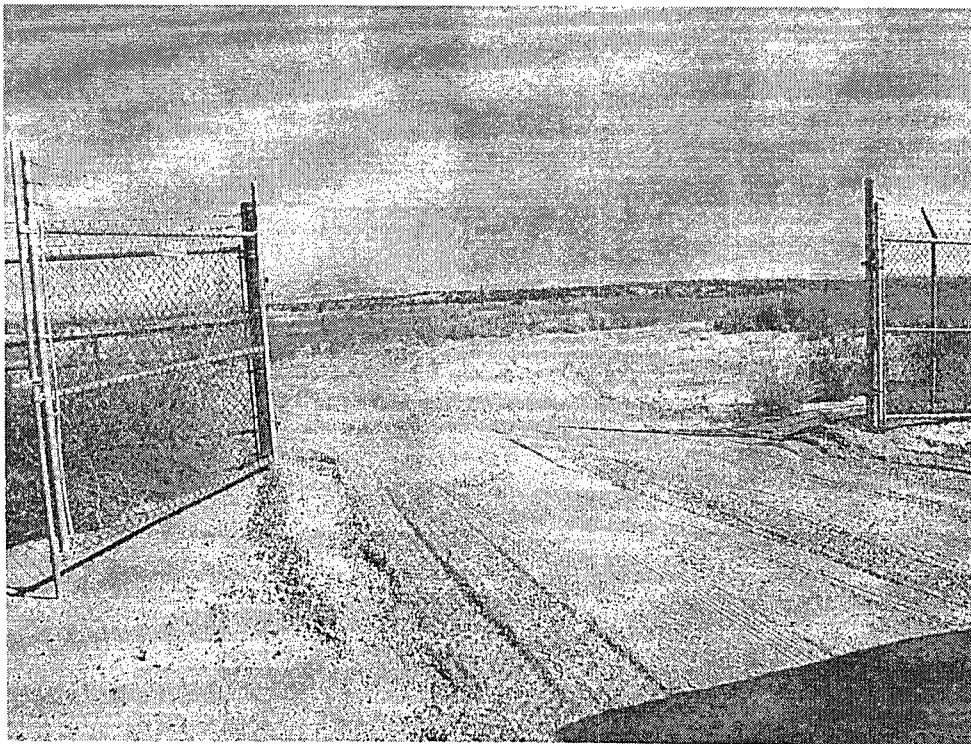
- EPA, 1987, Data Quality Objectives for Remedial Response Activities; United States Environmental Protection Agency, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, OSWER Directive 9355.0-7B, 85p
- EPA, 1991, Human Health Evaluation Manual, Part B: "Development of Risk-Based Preliminary Remediation Goals; United States Environmental Protection Agency, Office of Solid Waste and Emergency Response; Memorandum December 13, 1991, OSWER Directive 9285.7-01B, 54p.
- EPA, 1996, Soil Screening Guidance: User's Guide; United States Environmental Protection Agency, Office of Solid Waste and Emergency Response; Publication 9355.4-23, p. 123.
- EPA, 2000, Guidance on Choosing a Sampling Design for Environmental Data Collection, EPA/240/R-02/005, EPA QA/G-5S, 168 p.
- EPA, 2006, Guidance on Systematic Planning Using the Data Quality Objectives Process, United States Environmental Protection Agency, Office of Environmental Information; EPA/240/B-06/001, p. 111.
- Groundwater Technology, 1994, RCRA Facility Investigation/Corrective Measures Study Report Bloomfield Refining Company #50 County Road 4990 Bloomfield, New Mexico, p.51.

DATE: 2007 - Present





North Bone yard  
Scrap metal storage area.

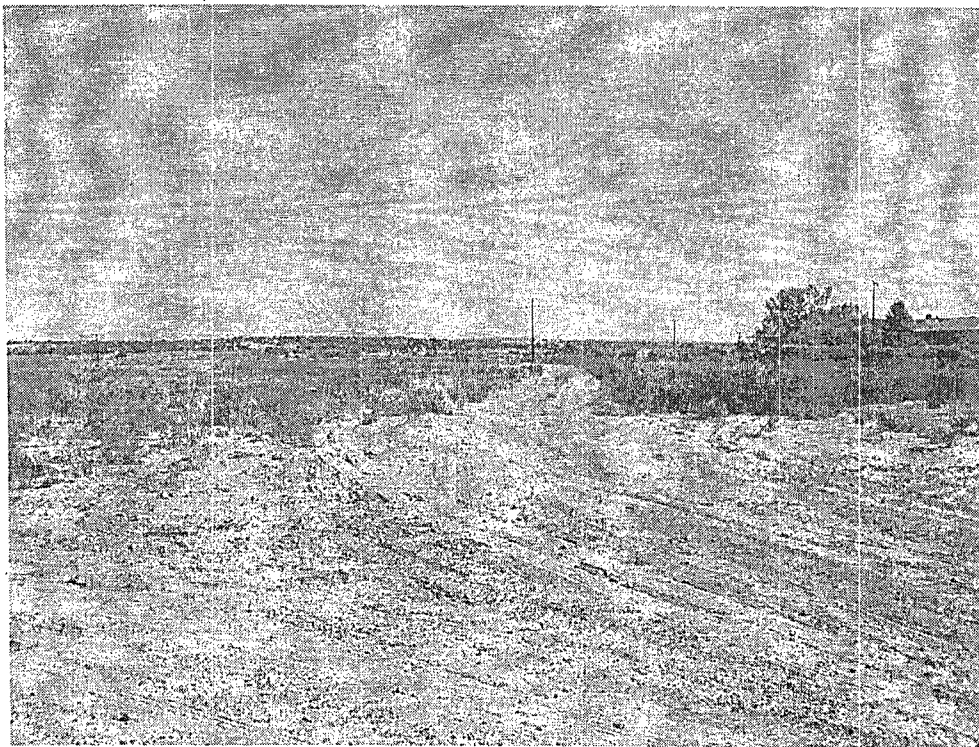


Landfill (SWMU No. 8)  
Looking to southeast across landfill

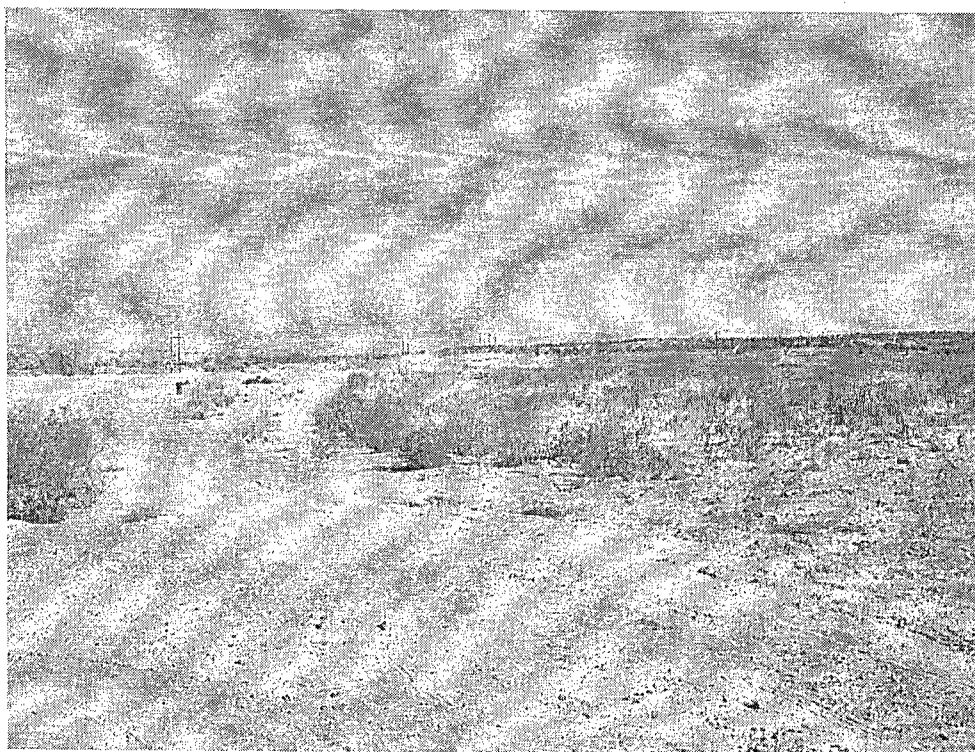




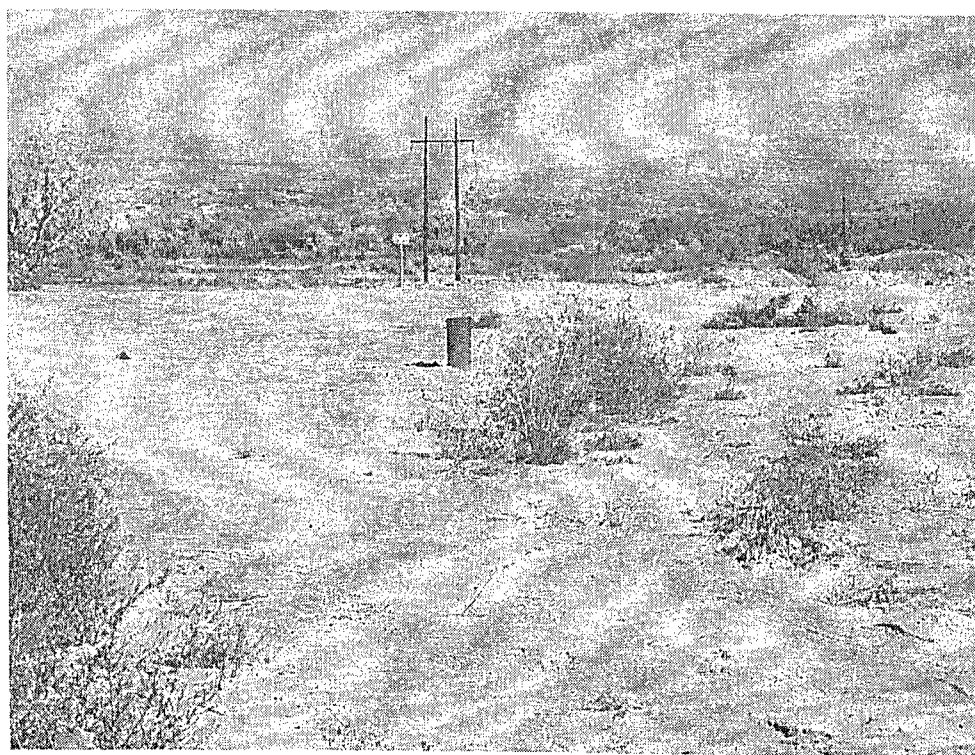
Landfill  
Looking south from Northwest corner.



Landfill  
Looking southeast across landfill area.



Landfill  
Looking east across landfill, MW-8 off to left.



Landfill  
Closeup of MW-8.

---

## **Appendix B**

---

### **Landfill (SWMU No. 8) and Landfill Pond (SWMU No. 9) Historical Documentation**

GARDERE & WYNNE

ATTORNEYS AND COUNSELORS

1500 DIAMOND SHAMROCK TOWER  
DALLAS, TEXAS 75201

214-979-4500

WRITER'S DIRECT DIAL NUMBER

TELECOPIER 214-979-4

CABLE: GARWYN

TELEX 73-0197

(214) 979-4569

June 4, 1986

James L. Turner, Esq.  
Assistant Regional Counsel  
U.S. Environmental Protection Agency  
Region VI  
InterFirst Two Building  
1201 Elm Street  
Dallas, Texas 75270

Re: Bloomfield Refining Company  
RCRA Docket No. VI-501-H;  
Consent Agreement and Final Order

Dear Jim:

On May 20, 1986, I received your letter dated May 19, 1986 which requested certain information on sampling results submitted to you and the New Mexico Environmental Improvement Division (NMEID) on February 13, 1986. You also requested a status report on performance items in paragraphs 1 through 3 (including subparagraphs) of the above-referenced order. The purpose of this letter is to respond to both requests.

In connection with your questions about the sampling results, I am submitting the attached letter from Mr. James E. Rumbo of Engineering-Science, the Company's technical consultant. This letter responds to all five items listed in your information request.

I now turn to the requested status report, based on information provided to me by the Company. Our response focuses on those items which contemplate affirmative performance on the part of the Respondent.

Paragraph 1

The civil penalty of \$5,700 has been paid.

Paragraph 2C

The API separator was thoroughly cleaned in November 1985. The material removed was handled and manifested as a hazardous waste. It was transported to U.S. Pollution Control, Inc.'s Grassy Mountain facility near Clive, Utah. On May 23, 1986, the sludge level was 0.5 feet.

Paragraph 2D

The prescribed documentation is available at the facility.

Paragraph 2E

Spent caustic is removed from the existing spent caustic tank in less than 90 days, and the standards established under 40 C.F.R. 262.34, and its New Mexico equivalent are being observed. However, an entirely new spent caustic tank system has been installed to further comply with the repair and maintenance obligations of this paragraph. It includes a substantial concrete slab, containment dike, and new piping to insure that no discharge of caustic can occur. This system is scheduled to be operational by June 13, 1986. The existing system will then be closed in accordance with 40 C.F.R. § 265.197 and its New Mexico equivalent.

Paragraph 2F

All of the material removed from the SOWP and NOWP in October 1985 was properly handled as a hazardous waste. The required engineering certification of removal will be submitted in conjunction with the final closure plan.

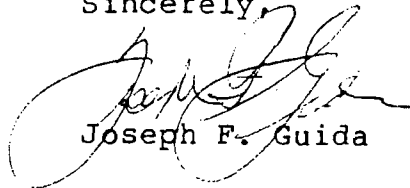
Paragraph 3

The activities specified in "A Sampling and Closure Proposal for the API Wastewater Ponds, Landfill, and Landfill Pond at the Bloomfield Refinery," attached to the above-referenced order as Exhibit B, have been completed. In accordance with the order, the Company submitted a closure plan and proof of financial responsibility on November 22, 1985. On February 13, 1986, the Company provided to EPA and NMEID copies of analytical results and analysis, as contemplated in Exhibit B and to supplement the November 22, 1985 closure plan. Following consultation with NMEID on the plan now before that agency, the Company expects to finalize the closure plan and move forward, as appropriate, on implementation.

James L. Turner, Esq.  
June 4, 1986  
Page 3

If you have any questions or would like additional information, please contact me at your convenience.

Sincerely,



Joseph F. Guida

JFG:ta  
8711S

Enclosures

cc: Ms. Denise Fort  
Mr. Jack Ellvinger

James L. Turner, Esq.  
June 4, 1986  
Page 5

bcc: Mr. Harry F. Mason  
Mr. Chris Hawley ✓

# ES ENGINEERING-SCIENCE

2901 NORTH INTERREGIONAL • AUSTIN, TEXAS 78722 • 512/477-9901

CABLE ADDRESS: ENGINS  
TELEX: 77-6442

June 2, 1986

Mr. James L. Turner  
Assistant Regional Counsel  
U.S. EPA, Region VI  
Interfirst Two Building  
1201 Elm Street  
Dallas, TX 75270

Re: Bloomfield Refining Company, Inc.  
Gary Refining Corp.  
RCRA Docket No. VI-501-H; Consent Agreement and Final Order

Dear Mr. Turner:

Submitted herewith is a response to your letter dated 19 May 1986 to Joe Guida. The subject of your letter was the results obtained from a sampling effort performed by ES personnel at the Bloomfield Refinery pursuant to meeting mutually agreed on stipulations of the consent agreement. You noted concerns expressed by the NMEID director about the validity of sampling results and submitted a list of five requests for additional data which has been reproduced here for convenience:

- (1) A list of the detection limits set for samples 51469-01 through 29, "Inorganic Parameters for Phenolics."
- (2) A description of the protocol used to conduct sample analysis in all samples.
- (3) A comprehensive description of the QA/QC for obtaining all samples and conducting the laboratory analysis of them.
- (4) An explanation of how the detection limits were established for the "Skinner Base/Neutral Organics" and why these fluctuate from 400 to 4,000 ug/kg in some cases.
- (5) A facility map detail of the landfill, landfill pond, and north and south API pond areas, showing all sample locations.

The field sampling effort was designed, planned, and executed carefully to provide representative samples from the areas of interest. The laboratory employed on the project performed state-of-the-art analyses of the samples and reported results in report form. Any "absence of compounds that would normally be present at a refinery" is likely to represent a lack



Mr. James L. Turner  
Page Two  
June 2, 1986

of compounds in the material that was sampled rather than deficient sampling or laboratory technique.

A revised report submitted by the contract laboratory is included in this submittal and should adequately address the first two requests for information. Pages 7 and 8 of the report should satisfy request number 1. The analytical methodology section (pages 18-20) should satisfy request number 2.

QA/QC procedures for the sampling effort were followed for both the local sampling sites and sampling equipment. Transport of samples to the laboratory was made in a timely and secure manner. In the case of the API ponds, the sampling locations within each pond were first cleaned with a series of washes consisting of (in chronological order)alconox soap solution, deionized water, methanol, and deionized water. Clean sampling equipment was utilized to extract and store samples. After each sample collection in all sampling areas, equipment was washed thoroughly using the same series of washes mentioned above. Samples were placed in the appropriate containers and individually enclosed in Zip-loc bags and stored in ice in a cooler. The cooler was sent to the contract laboratory via Federal Express utilizing standard chain-of-custody procedures.

Quality control measures utilized by the laboratory have been enumerated in previously submitted information but have been reiterated here for completeness:

"A method blank was analyzed daily to determine any interferences in the system. Four samples were spiked with known amounts of the targeted compounds to determine the percent recovery. One of the samples was run in duplicate. All the results of the above were satisfactory.

In addition to the above controls, all standards, samples, and blanks were analyzed with an internal standard present to ensure consistency in the system."

With regard to request number 4, detection limits are obviously based on a laboratory's ability to detect concentrations of a substance of interest using a selected laboratory technique. Some compounds are harder to detect than others due to the compound's inherent characteristics (e.g., molecular weight, polarity) and the relative degree to which other compounds interfere with interpretation of results (in the case of GC/MS). For example, in the laboratory report submitted for BRC, the detection limit for benzidine is listed to be 4,000 ug/kg compared with anthracene having a detection limit of 400 ug/kg. In this example, benzidine is harder to detect than anthracene, and the detection limit for benzidine is therefore higher than the detection limit for anthracene. It should also be noted that the detection limits utilized for analysis are typical of the analytical methods specified and are comparable to the analytical detection

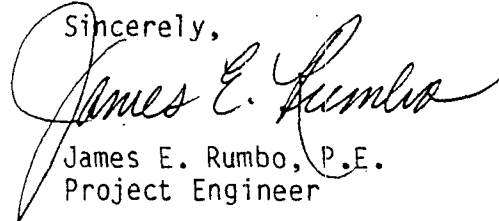
Mr. James L. Turner  
Page Three  
June 2, 1986

limits for the same and similar compounds in soils analyzed under EPA's Contract Laboratory Program.

Figures 1 through 4 depict a facility map with details of sampling areas as solicited in request number 5. The specific sampling sites within the landfill area were not defined, however, due to the lack of a specific area with which to reference the sample locations. During the sampling effort, the area of the landfill observed to be contaminated was irregularly shaped and inconsistent in areal extent with the land area depicted on earlier facility plans. For this reason, that portion of the landfill area appearing to have some contamination was selected for sampling and divided into quadrants. The midpoint of each quadrant (selected by eye) was then sampled. Distances between sampling sites were measured with a tape and ranged from 25 to 65 feet. An approximation of the sampling area within the landfill has been shown on Figure 1.

I trust that the above information is sufficient to answer any questions you may have. If you have any additional questions, please do not hesitate to call.

Sincerely,



James E. Rumbo, P.E.  
Project Engineer

Enclosures

dg

FIGURE 1  
BLOOMFIELD REFINERY FACILITY MAP

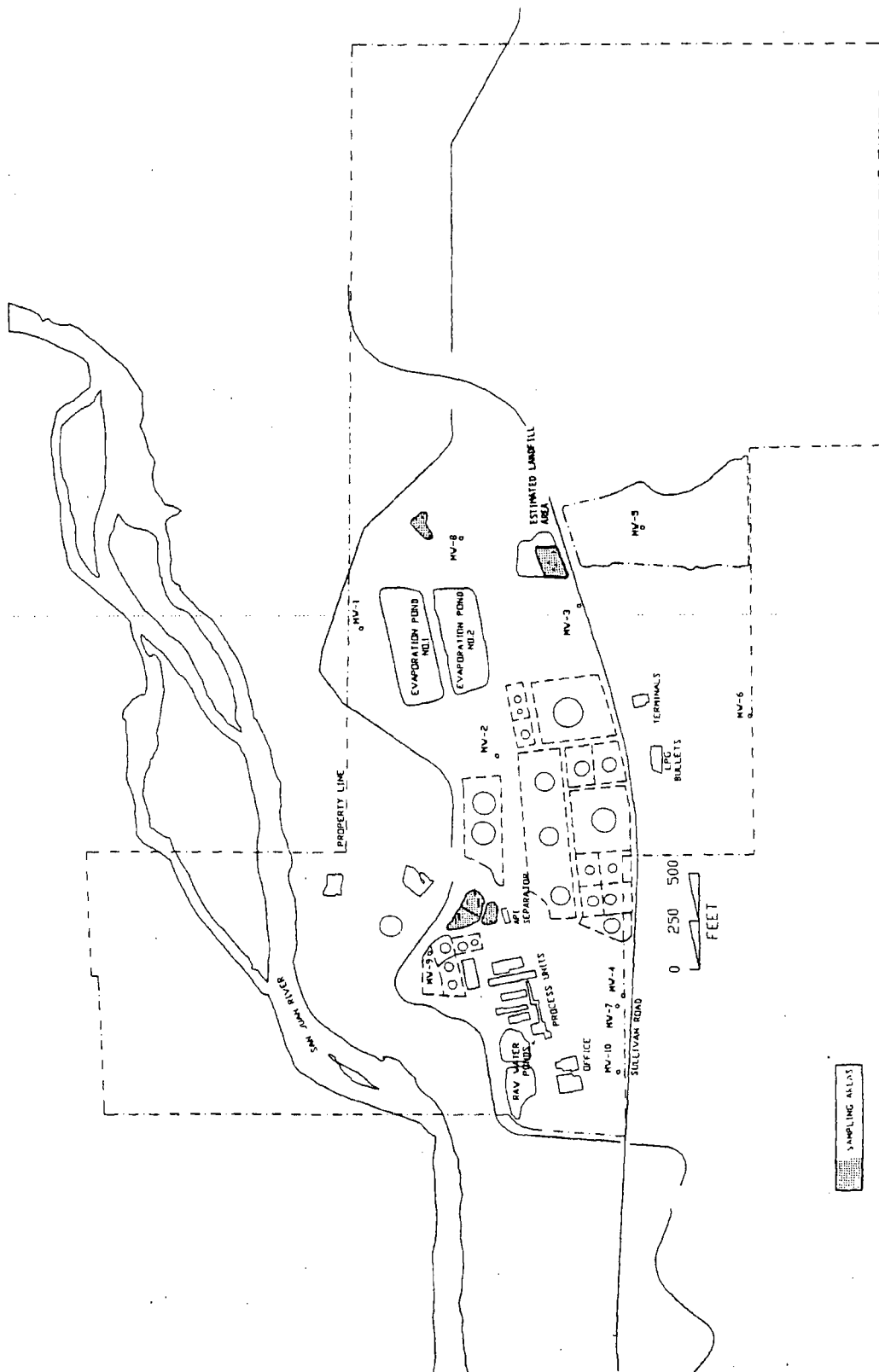
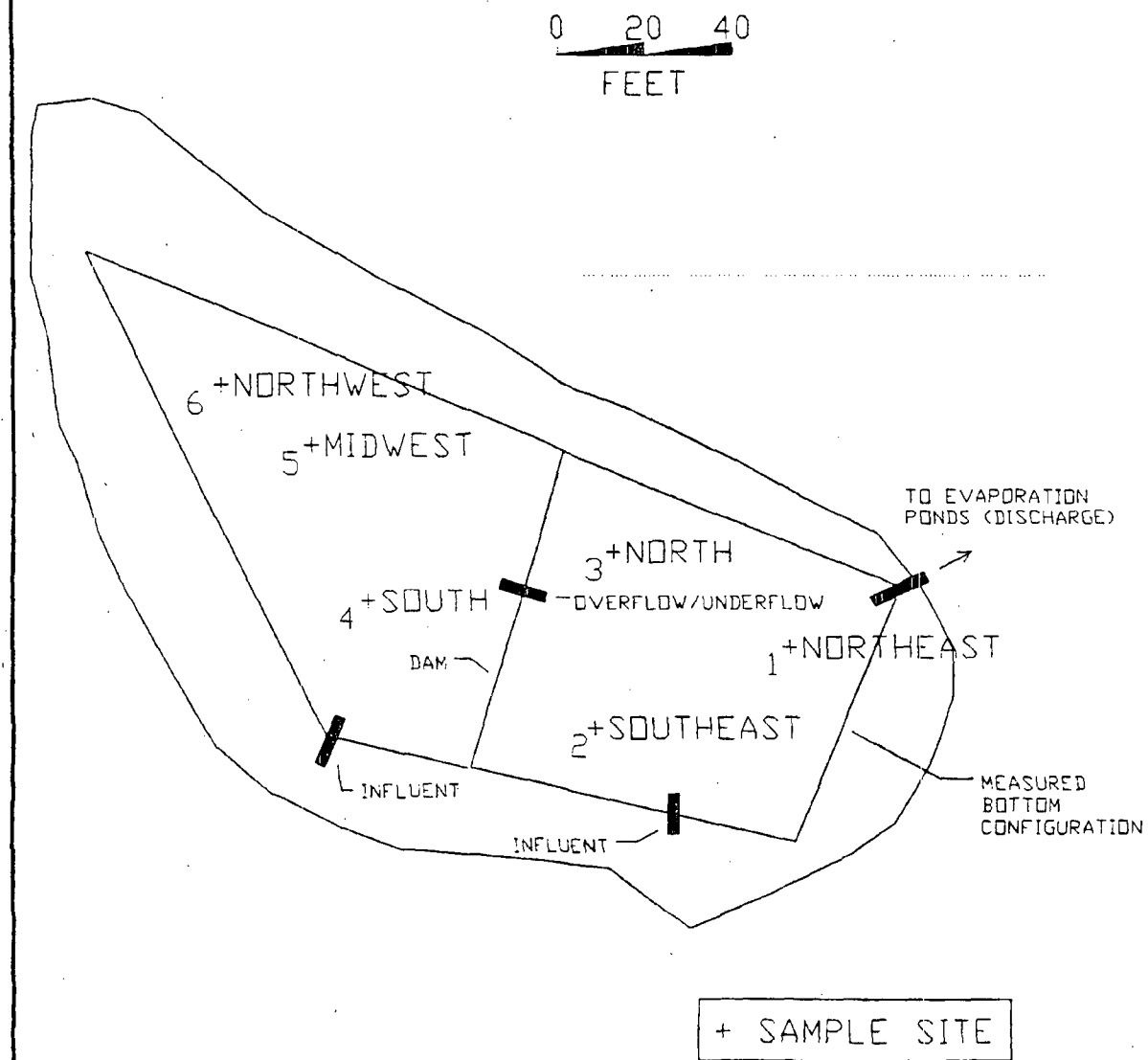
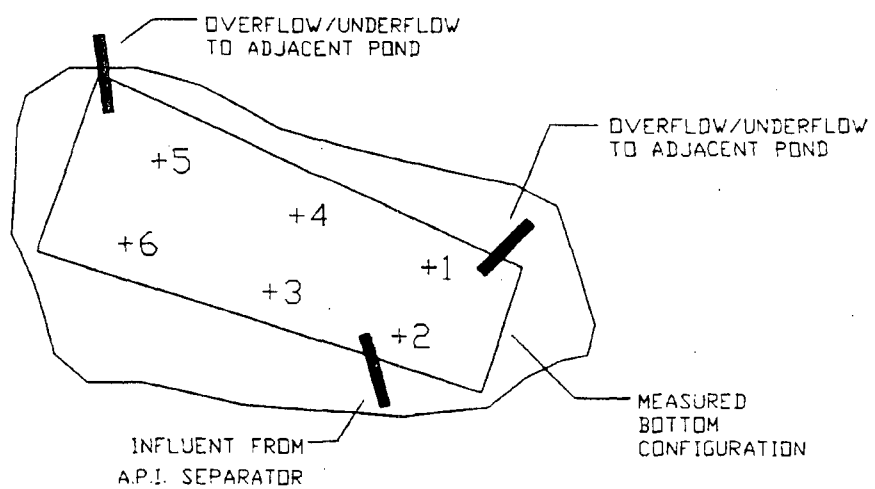


FIGURE 2  
NORTH API POND



# FIGURE 3 SOUTH API POND

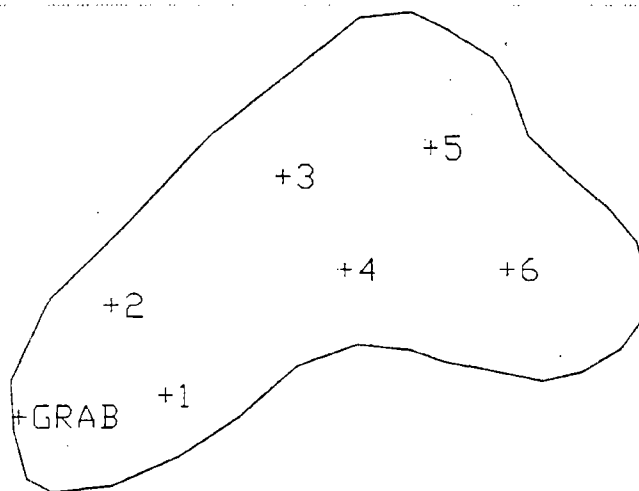
0 20 40  
FEET



+ SAMPLE SITE

# FIGURE 4 LANDFILL POND

0 20 40  
FEET



+ SAMPLE SITE

## SAMPLE DESCRIPTION INFORMATION

for

Engineering Science - Bloomfield Refining Company

<u>RMA Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date Sampled</u>	<u>Date Received</u>
51469-01	L1 & L2, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #1 - Landfill			
51469-02	L3 & L4, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #1 - Landfill			
51469-03	L5 & L6, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #2 - Landfill			
51469-04	L7 & L8, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #2 - Landfill			
51469-05	L9 & L10, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #3 - Landfill			
51469-06	L11 & L12, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #3 - Landfill			
51469-07	L13 & L14, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #4 - Landfill			
51469-08	L15 & L16, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #4 - Landfill			
51469-09	LP1 & LP2, 0-6"	Soil	10/16/85	10/19/85
	Points 1 & 2 @ Landfill Pond			
51469-10	LP3 & LP4, 6-12"	Soil	10/16/85	10/19/85
	Points 1 & 2 @ Landfill Pond			
51469-11	LP5 & LP6, 0-6"	Soil	10/16/85	10/19/85
	Points 3 & 4 @ Landfill Pond			
51469-12	LP7 & LP8, 6-12"	Soil	10/16/85	10/19/85
	Points 3 & 4 @ Landfill Pond			
51469-13	LP9 & LP10, 0-6"	Soil	10/16/85	10/19/85
	Points 5 & 6 @ Landfill Pond			
51469-14	LP11 & LP12, 6-12"	Soil	10/16/85	10/19/85
	Points 5 & 6 @ Landfill Pond			
51469-15	LP13 & LP14, 0-6"	Soil	10/16/85	10/19/85
	S. Evaporation Pond - Landfill Pond			
51469-16	MS1 & MS2, Mystery Sample	Soil	10/16/85	10/19/85
51469-17	APS1 & APS2, 0-6"	Soil	10/15/85	10/19/85
	NE & SE of South API Pond			
51469-18	APS3 & APS4, 6-12"	Soil	10/15/85	10/19/85
	NE & SE of South API Pond			
51469-19	APS5 & APS6, 0-6"	Soil	10/15/85	10/19/85
	N & S of South API Pond			
51469-20	APS7 & APS8, 6-12"	Soil	10/15/85	10/19/85
	N & S of South API Pond			

## SAMPLE DESCRIPTION INFORMATION

for

Engineering Science - Bloomfield Refining Company

(Continued)

<u>RMA Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date Sampled</u>	<u>Date Received</u>
51469-21	APS9 & APS10, 0-6" NW & SW of South API Pond	Soil	10/15/85	10/19/85
51469-22	APS11 & APS12, 6-12" NW & SW of South API Pond	Soil	10/15/85	10/19/85
51469-23	APS13, 0-6" SE near influent S. API Pond	Soil	10/15/85	10/19/85
51469-24	APN1 & APN2, 0-6" NE & SE of North API Pond	Soil	10/15/85	10/19/85
51469-25	APN3 & APN4, 6-12" NE & SE of North API Pond	Soil	10/15/85	10/19/85
51469-26	APN5 & APN6, 0-6" N & S of North API Pond	Soil	10/15/85	10/19/85
51469-27	APN7 & APN8, 6-12" N & S of North API Pond	Soil	10/15/85	10/19/85
51469-28	APN9 & APN10, 0-6" NW & SW of North API Pond	Soil	10/15/85	10/19/85
51469-29	APN11 & APN12, 6-12" NW & SW of North API Pond	Soil	10/15/85	10/19/85

May 28, 1986



TABLE 1. APPENDIX VIII HAZARDOUS CONSTITUENT SUBSET  
FOR PETROLEUM REFINERY STUDIES\*Volatile Organics

Benzene  
 Carbon Disulfide  
 Chlorobenzene  
 Chloroform  
 1,2-Dibromoethane  
 1,2-Dichloroethane  
 1,4-Dioxane  
 Methyl ethyl ketone  
 Styrene  
 Ethyl Benzene  
 Toluene  
 Xylenes  
     Xylenes, m  
     Xylenes, o & p

Base/Neutral Organics

Anthracene  
 Benz(a)anthracene  
 Benzo(b)fluoranthene  
 Benzo(j)fluoranthene  
 Benzo(k)fluoranthene  
 Benzo(a)pyrene  
 Bis(2-ethylhexyl)phthalate  
 Butyl benzyl phthalate  
 Chrysene  
 Dibenz(a,h)acridine  
 Dibenz(a,h)anthracene  
 Di-n-butyl phthalate

Base/Neutral Organics (Cont.)

Dichlorobenzenes  
     o-Dichlorobenzene  
     m-Dichlorobenzene  
     p-Dichlorobenzene  
 Diethyl phthalate  
 7,12-Dimethylbenz(a)anthracene  
 Dimethyl phthalate  
 Di-n-octyl phthalate  
 Fluoranthene  
 Indene  
 Methyl chrysene  
 1-Methylnaphthalene  
 Naphthalene  
 Phenanthrene  
 Pyrene  
 Pyridine  
 Quinoline

Acid Organics

Benzenethiol  
 Cresols  
     o-Cresol  
     p&m-Cresol  
 2,4-Dimethylphenol  
 2,4-Dinitrophenol  
 4-Nitrophenol  
 Phenol

\*"Petitions to Delist Hazardous Wastes, A Guidance Manual," EPA/530-SW-85-003, April, 1985.

## II. RESULTS

The analytical results are presented in the data tables in this section. The data are organized into the tables described below:

- o Phenolics,
- o Total Chromium and Lead,
- o Skinner Volatile Organics,
- o Skinner Base/Neutral Organics,
- o Skinner Acid Organics, and
- o Volatile Aromatics.

For each of the parameters in the phenolics and the metals tables, the result and detection limit is present for each sample. The term ND is used to indicate the parameter was not detected at the detection limit shown.

The term BDL (Below Detection Limit) is used in the skinner organic results tables to indicate that the compound is not present at the detection limit shown. The detection limits for the Appendix VIII organic compounds were obtained from a study of the analytical methods performed by RMAL under contract to the American Petroleum Institute (API)<sup>1</sup>. Analytical standards are not available for three compounds. These compounds cannot be measured; they have been listed in the results tables and have been footnoted to show that standards were not available.

As explained in more detail in the analytical methodology section, the samples were screened prior to analysis in order to optimize the detection limit for each sample and minimize instrumental problems associated with analyzing samples containing

<sup>1</sup>"Recovery and Detection Limits of Organic Compounds in Petroleum Refinery Wastes", January 25, 1985.

relatively high concentrations. This process resulted in high dilutions for several samples containing high concentrations of the target compounds. For these samples, the detection limits for compounds not detected are proportionately high. Also, the compounds which were reported close to (less than two times) the detection limits may be suspect.

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## PHENOLICS

<u>Parameter</u>	<u>51469-01</u>	<u>51469-02</u>	<u>51469-03</u>	<u>51469-04</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				
<u>Parameter</u>	<u>51469-05</u>	<u>51469-06</u>	<u>51469-07</u>	<u>51469-08</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				
<u>Parameter</u>	<u>51469-09</u>	<u>51469-10</u>	<u>51469-11</u>	<u>51469-12</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				
<u>Parameter</u>	<u>51469-13</u>	<u>51469-14</u>	<u>51469-15</u>	<u>51469-16</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				
<u>Parameter</u>	<u>51469-17</u>	<u>51469-18</u>	<u>51469-19</u>	<u>51469-20</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				
<u>Parameter</u>	<u>51469-21</u>	<u>51469-22</u>	<u>51469-23</u>	<u>51469-24</u>
Units				
mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Phenolics				

ND = Not detected.

# ANALYTICAL RESULTS

Rocky Mountain Analytical Laboratory

for

Engineering Science - Bloomfield Refining Company

## PHENOLICS (Continued)

<u>Parameter</u>	<u>Units</u>	<u>51469-25</u>	<u>51469-26</u>	<u>51469-27</u>	<u>51469-28</u>
Phenolics	mg/kg	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
<u>Parameter</u>	<u>Units</u>	<u>51469-29</u>			
Phenolics	mg/kg	ND (0.1)			

ND = Not detected.

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## CHROMIUM AND LEAD

<u>Parameter</u>	<u>Units</u>	<u>51469-01</u>	<u>51469-02</u>	<u>51469-03</u>	<u>51469-04</u>
Chromium	mg/kg	11 (0.5)	8.9 (0.5)	9.9 (0.5)	7.6 (0.5)
Lead	mg/kg	10 (2.5)	9.8 (2.5)	9.0 (2.5)	6.7 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-05</u>	<u>51469-06</u>	<u>51469-07</u>	<u>51469-08</u>
Chromium	mg/kg	7.8 (0.5)	7.4 (0.5)	9.1 (0.5)	7.0 (0.5)
Lead	mg/kg	7.6 (2.5)	7.0 (2.5)	8.2 (2.5)	7.7 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-09</u>	<u>51469-10</u>	<u>51469-11</u>	<u>51469-12</u>
Chromium	mg/kg	6.2 (0.5)	8.1 (0.5)	7.8 (0.5)	10 (0.5)
Lead	mg/kg	9.0 (2.5)	8.5 (2.5)	8.9 (2.5)	12 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-13</u>	<u>51469-14</u>	<u>51469-15</u>	<u>51469-16</u>
Chromium	mg/kg	8.0 (0.5)	7.8 (0.5)	2.3 (0.5)	2.4 (0.5)
Lead	mg/kg	12 (2.5)	13 (2.5)	4 (2.5)	4 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-17</u>	<u>51469-18</u>	<u>51469-19</u>	<u>51469-20</u>
Chromium	mg/kg	4.4 (0.5)	5.3 (0.5)	5.5 (0.5)	14 (0.5)
Lead	mg/kg	5 (2.5)	5 (2.5)	5 (2.5)	4 (2.5)

Detection limits in parentheses.

**for**

**Engineering Science - Bloomfield Refining Company**

**CHROMIUM AND LEAD (Cont.)**

<u>Parameter</u>	<u>Units</u>	<u>51469-21</u>	<u>51469-22</u>	<u>51469-23</u>	<u>51469-24</u>
Chromium	mg/kg	6.8 (0.5)	27 (0.5)	4.9 (0.5)	7.8 (0.5)
Lead	mg/kg	5.1 (2.5)	5.9 (2.5)	6.0 (2.5)	4 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-25</u>	<u>51469-26</u>	<u>51469-27</u>	<u>51469-28</u>
Chromium	mg/kg	3.2 (0.5)	3.6 (0.5)	2.3 (0.5)	2.9 (0.5)
Lead	mg/kg	3 (2.5)	5 (2.5)	3 (2.5)	3 (2.5)

<u>Parameter</u>	<u>Units</u>	<u>51469-29</u>
Chromium	mg/kg	12 (0.5)
Lead	mg/kg	4 (2.5)

**Detection limits in parentheses.**

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## VOLATILE AROMATICS - GC/PID

Parameter	Units	51469-01	51469-02	51469-03	51469-04
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND
Parameter	Units	51469-05	51469-06	51469-07	51469-08
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND
Parameter	Units	51469-09	51469-10	51469-11	51469-12
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND
Parameter	Units	51469-13	51469-14	51469-15	51469-16
Benzene	ug/kg	1.3	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND

ND = Not detected.

Detection limits in parentheses.



## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

(Continued)

## VOLATILE AROMATICS - GC/PID

<u>Parameter</u>	<u>Units</u>	<u>51469-17</u>	<u>51469-18</u>	<u>51469-19</u>	<u>51469-20</u>
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	5.3	ND	ND	ND
Xylenes, o & p	ug/kg	2.1	ND	ND	ND
<u>Parameter</u>	<u>Units</u>	<u>51469-21</u>	<u>51469-22</u>	<u>51469-23</u>	<u>51469-24</u>
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND
<u>Parameter</u>	<u>Units</u>	<u>51469-25</u>	<u>51469-26</u>	<u>51469-27</u>	<u>51469-28</u>
Benzene	ug/kg	ND	ND	ND	ND
Ethylbenzene	ug/kg	ND	ND	ND	ND
Toluene	ug/kg	ND	ND	ND	ND
Xylene, m	ug/kg	ND	ND	ND	ND
Xylenes, o & p	ug/kg	ND	ND	ND	ND
<u>Parameter</u>	<u>Units</u>	<u>51469-29</u>			
Benzene	ug/kg	ND			
Ethylbenzene	ug/kg	ND			
Toluene	ug/kg	ND			
Xylene, m	ug/kg	ND			
Xylenes, o & p	ug/kg	ND			

ND = Not detected.

Detection limits in parentheses.

\*Analyses incomplete.

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## PERCENT MOISTURE

<u>Sample Number</u>	<u>Percent Moisture</u>	<u>Sample Number</u>	<u>Percent Moisture</u>
51469-01	4%	51469-16	4%
51469-02	5%	51469-17	9%
51469-03	4%	51469-18	10%
51469-04	3%	51469-19	10%
51469-05	3%	51469-20	8%
51469-06	3%	51469-21	6%
51469-07	6%	51469-22	6%
51469-08	4%	51469-23	8%
51469-09	23%	51469-24	5%
51469-10	14%	51469-25	5%
51469-11	18%	51469-26	7%
51469-12	13%	51469-27	5%
51469-13	22%	51469-28	4%
51469-14	14%	51469-29	4%
51469-15	28%		

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## SKINNER VOLATILE ORGANICS, SOIL

<u>Parameter</u>	<u>Units</u>	<u>51469-15</u>	<u>51469-16</u>	<u>51469-23</u>
Acrolein	ug/kg	BDL	BDL	BDL
Acrylonitrile*	ug/kg	-	-	-
Benzene	ug/kg	BDL	BDL	BDL
Carbon disulfide	ug/kg	BDL	BDL	BDL
Carbon tetrachloride	ug/kg	BDL	BDL	BDL
Chlorobenzene	ug/kg	BDL	BDL	BDL
Chloromethane	ug/kg	BDL	BDL	BDL
1,2 Dibromoethane	ug/kg	BDL	BDL	BDL
Chloroform	ug/kg	BDL	BDL	BDL
Dichloromethane	ug/kg	BDL	BDL	BDL
1,1-Dichloroethane	ug/kg	BDL	BDL	BDL
1,2-Dichloroethane	ug/kg	BDL	BDL	BDL
1,1-Dichloroethylene	ug/kg	BDL	BDL	BDL
Dichloropropane	ug/kg	BDL	BDL	BDL
Methyl ethyl ketone	ug/kg	BDL	53	BDL
Styrene	ug/kg	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	ug/kg	BDL	BDL	BDL
Tetrachloroethylene	ug/kg	BDL	BDL	BDL
Toluene	ug/kg	BDL	BDL	BDL
1,2-trans-Dichloroethylene	ug/kg	BDL	BDL	BDL
1,1,1-Trichloroethane	ug/kg	BDL	BDL	BDL
1,1,2-Trichloroethane	ug/kg	BDL	BDL	BDL
Trichloroethylene	ug/kg	BDL	BDL	BDL

BDL = Below detection limit. Detection limits in parentheses.

\*Not consistently recovered using Method 8240.

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company

## SKINNER BASE/NEUTRAL ORGANICS, SOILS

Parameter	Units	51469-15	51469-16	51469-23
Anthracene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Benzidine	ug/kg	BDL (4000)	BDL (4000)	BDL (4000)
Benz(c)acridine**	ug/kg	-	-	-
Benzo(a)anthracene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Benzo(a)pyrene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Benzo (b) fluoranthene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Benzo (k) fluoranthene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Bis (2-chloroethyl)ether	ug/kg	BDL (400)	BDL (400)	BDL (400)
Bis (2-chloroisopropyl)ether	ug/kg	BDL (400)	BDL (400)	BDL (400)
Bis (2-ethylhexyl)phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
Butyl benzyl phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
2-Chloronaphthalene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Chrysene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Dibenz(a,h)acridine**	ug/kg	-	-	-
Dibenz(a,i)acridine	ug/kg	BDL (400)	BDL (400)	BDL (400)
7,12-DimethylBenz(a)anthracene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Dibenz(a,h) anthracene	ug/kg	BDL (400)	BDL (400)	BDL (400)
7H Dibenz(o,c)carbazole	ug/kg	BDL (400)	BDL (400)	BDL (400)
1,2-Dichlorobenzene	ug/kg	BDL (400)	BDL (400)	BDL (400)
1,3-Dichlorobenzene	ug/kg	BDL (400)	BDL (400)	BDL (400)
1,4-Dichlorobenzene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Diethyl phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
Dimethyl phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
Di-n-butyl phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
2,4-Dinitrotoluene	ug/kg	BDL (400)	BDL (400)	BDL (400)
2,6-Dinitrotoluene	ug/kg	BDL (400)	BDL (400)	BDL (400)
Di-n-octyl phthalate	ug/kg	BDL (400)	BDL (400)	BDL (400)
1,2-Diphenylhydrazine*	ug/kg	BDL (400)	BDL (400)	BDL (400)
Fluoranthene	ug/kg	BDL (400)	BDL (400)	BDL (400)

BDL = Below detection limit.

Detection limits in parentheses.

\* Measured as azobenzene.

\*\* Not consistently recovered using Method 8270, or no analytical standard available.

## ANALYTICAL RESULTS

for

Engineering Science - Bloomfield Refining Company**SKINNER BASE/NEUTRAL ORGANICS, SOIL (Cont.)**

Parameter	Units	51469-15	51469-16	51469-23
Indene	ug/kg	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	ug/kg	BDL	BDL	BDL
Methyl Benz(c)phenanthrene	ug/kg	BDL	BDL	BDL
3-Methylcholanthrene	ug/kg	BDL	BDL	BDL
Methyl Chrysene**	ug/kg	-	-	-
Naphthalene	ug/kg	BDL	BDL	BDL
Nitrobenzene	ug/kg	BDL	BDL	BDL
n-Nitrosodimethylamine	ug/kg	BDL	BDL	BDL
5-Nitroacenaphthene	ug/kg	BDL	BDL	BDL
Quinoline	ug/kg	BDL	BDL	BDL
Phenanthrene	ug/kg	BDL	BDL	BDL
Pyrene	ug/kg	BDL	BDL	BDL
1,2,4-Trichlorobenzene	ug/kg	BDL	BDL	BDL
Trimethyl Benz(a)anthracene	ug/kg	BDL	BDL	BDL

**SKINNER ACID ORGANICS**

Parameter	Units	51469-15	51469-16	51469-23
2-Chlorophenol	ug/kg	BDL	BDL	BDL
3-Cresol	ug/kg	BDL	BDL	BDL
m/p-Cresol	ug/kg	BDL	BDL	BDL
2,4-Dimethylphenol	ug/kg	BDL	BDL	BDL
1,6-Dinitro-o-phenol	ug/kg	BDL	BDL	BDL
2,4-Dinitrophenol	ug/kg	BDL	BDL	BDL
2-Nitrophenol	ug/kg	BDL	BDL	BDL
1-Nitrophenol	ug/kg	BDL	BDL	BDL
3-Chloro-m-cresol	ug/kg	BDL	BDL	BDL
2,4,6-Trichlorophenol	ug/kg	BDL	BDL	BDL

BDL = Below detection limit. Detection limits in parentheses.

\* Not consistently recovered using Method 8270, or no analytical standard available.



BRUCE KING  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2850

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

January 25, 1994

Mr. David Roderick, Refinery Manager  
Bloomfield Refining Company  
P.O. Box 159  
Bloomfield, New Mexico 87413

Dear Mr. Roderick:

RE: Bloomfield Refining Company Landfill Pond Closure Plan  
Approval (EPA I.D. No. NMD089416416)

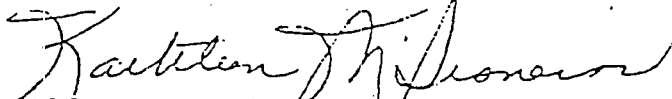
The New Mexico Environment Department (NMED) hereby approves the closure plan for the Bloomfield Refining Company (BRC) landfill pond located near Bloomfield, New Mexico. The approved plan for the landfill pond is contained in the document entitled, "Final Closure Plan for the API Wastewater Ponds, Landfill, and Landfill Pond at the Bloomfield Refinery" dated July 1986. The effective date of the closure plan approval is the date you receive this letter.

The Hazardous and Radioactive Materials Bureau (HRMB) of the NMED released the proposed closure plan and associated documents for a thirty (30) day public comment period which ran from December 10, 1993, through January 9, 1994. The HRMB received one written comment during the public notice period. A copy of the comment is enclosed for your information. The recommendation stated in the comment that BRC take measures to prevent water from ponding in this site for extended periods of time does not require a change in the final approved closure plan. Thus, no changes were made to the proposed closure plan in finalizing our approval. No additional closure activities are required to demonstrate clean closure of the site.

Mr. David Roderick  
Page 2  
January 25, 1994

Please contact Marc Sides of my staff at (505) 827-4308 if you have any questions

Sincerely,

  
Kathleen M. Sisneros, Director  
Water and Waste Management Division

Enclosure

cc: David Neleigh, EPA Permits  
Greg Lyssy, EPA Enforcement  
Mark Wilson, US Fish and Wildlife  
Benito Garcia, HRMB  
Barbara Hoditschek, HRMB  
Marc Sides, HRMB  
File - Red

Team Assignment	Team Member
Plan Manager	Refinery Manager
Plan Development	Environmental Manager
Plan Implementation	The following managers or their designees and General Manager, Operations Manager, Maintenance Manager, Technical Services Manager, Purchasing and Warehousing Manager, Safety Manager, Environmental Manager, and Environmental Coordinator
Site Inspector	Managers (or designees) or Environmental Superintendent (or designee)
Recordkeeping	Environmental Coordinator (or designee)
Training	Environmental Coordinator (or designee)
Spill Prevention and Reporting	Environmental Manager (or designee)

## 4.2 Site Description

### Description of Refinery Activities

The Bloomfield Refinery is engaged in the processing of feedstocks using distillation, hydrotreating, reforming, fluid catalytic cracking, and polymerization. Most of this activity is performed in enclosed "zero discharge" basins, and as such do not affect the quality of stormwater discharges at the Bloomfield Refinery.

Refining-related functions performed in basins that discharge stormwater under the MSGP are limited primarily to support activities, such as vehicular use of roads to access active areas of the refinery, employee and contractor parking areas, storage of warehouse items, scrap storage (or boneyard) areas, and roads used for the inspection of process containment facilities. There are also routine inspections and environmental management that may contribute pollutants to stormwater.

Facility boundaries of the Bloomfield Refinery encompass approximately 285 acres. Operations-affected (disturbed) areas of the facility total 180 acres, approximately 15 acres drain to stormwater outfalls. Stormwater that becomes contaminated as defined in Part 419 is contained and managed in a system managed for zero discharge. In addition, the stormwater in many additional areas of the facility are also contained and do not discharge to a stormwater outfall. There are two stormwater basins that, in the case of significant precipitation event are designed to discharge industrial stormwater pursuant to 122.26, at locations denominated at the facility as Outfall 1 and Outfall 2.

### Facility Location

The Bloomfield Refinery is located approximately 1 mile south of the town of Bloomfield, New Mexico on County Road 4990 in San Juan County. The site is located at Township 29N, Range 11W, Section 27 on USGS topographic mapping for New Mexico. The major transportation route providing access to the facility is County Road 4990. A general location map for the facility is provided in Attachment 8.



## Stormwater Drainage Basin Analysis

For the purposes of this SWPPP, the Bloomfield Refinery is divided into drainage basins illustrated on the Stormwater Map provided in Attachment 8. Each basin has been delineated according to natural topography and constructed diversions. The basins are grouped in the following five categories:

- Basins that drain runoff into contained basins, where it is collected and recycled for use as process water (not 122.26 stormwater);
- Basins that drain runoff into contained basins where it is collected and allowed to evaporate or infiltrate (not 122.26 stormwater);
- Basins that divert stormwater around 122.26 industrial activities (and any Part 419 areas) so that it does not come into contact with regulated activity (unregulated water);
- Basins that drain areas that are not part of the 122.26 industrial activities (nor Part 419 activities) but may provide a contribution to the stormwater leaving the facility (not 122.26 stormwater for the purposes of this permit); and
- Basins that discharge 122.26 industrial stormwater into designated outfalls (122.26 stormwater for which discharge is authorized under the MSGP).

Enclosed basins that do not discharge runoff:

- Process Area
- Evaporation Ponds
- Tank Farm
- API Area
- Fire Training Area
- Raw Water Pond
- Landfill
- Administration Area
- Product Terminal

In each of the basins listed above, runoff reports to "drains" that report to the API unit and are subsequently contained within "zero discharge" facilities owned and operated by Bloomfield, or the runoff reports to another "zero discharge" containment owned and operated by Bloomfield. These basins do not discharge stormwater to the Waters of the U.S. and are not subject to the provisions of the MSG Permit. Therefore, *no further assessment of stormwater in these basins is provided in this SWPPP.*

The Administration Area and the Product Terminal storm runoff is managed in a natural retention area that does not discharge. Therefore, *no further assessment of stormwater in this area is provided in this SWPPP.*

The following statement is provided in the MSGP 6.1.1 Covered Stormwater Discharges:

*The requirements in Part 6.1 apply to stormwater discharges associated with industrial activity from Oil and Gas Extraction and Refining facilities.....*

An irrigation ditch to the north, the Hammond Ditch, routes run-on around a portion of the Bloomfield Refinery Operations. Therefore, water discharging from the diversion would not need coverage under the MSGP and *no further assessment of stormwater in this area is provided in this SWPPP.*

In an area between the irrigation ditch and the San Juan River, a freshwater tank and associated pumps, a freshwater collection pond, and a bio-venting project are in place.

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In an area between the irrigation ditch and the San Juan River, a freshwater tank and associated pumps, a freshwater collection pond, and a bio-venting project are in place.

This area is not part of the 122.26 industrial activities and do not contain significant materials that could contribute to stormwater leaving the facility. Therefore, *no further assessment of stormwater in this area is provided in this SWPPP.*

Basins that discharge stormwater include:

- Outfall 1 Basin
  - Regional Office Building
  - Transportation Maintenance Building
- Outfall 2 Basin
  - Interior Roadways

Stormwater from these basins discharges at outfall locations that are tributary to the San Juan River. Therefore, the discharges are subject to provisions of the MSGP, as implemented by this SWPPP. Proper characterization of the basins is required as a permit condition, so an assessment of each principal basin characteristics is outlined below.

- Location and identification of materials exposed to stormwater.
- Activities in the area
- A list of the potential pollutant(s) or pollutant parameter(s) for each activity. This list must include all significant materials that have been handled, treated, stored, or disposed in a manner to allow exposure to stormwater between the time of three (3) years before being covered under this permit and the present.
- Location of areas with a high potential for significant erosion that may affect stormwater quality<sup>5</sup>.
- Assessment of risk for significant amounts of pollutants to enter into the storm drainage system.

An assessment of these characteristics is provided for each stormwater drainage basin in the following sections. General descriptions of BMPs that are applicable to the facility are provided. Additionally, descriptions of BMPs used to control stormwater throughout each basin, including a more specific discussion of BMPs used at each stormwater outfall, are provided in this plan.

#### Facility Site Maps

Due to the size of the facility, several maps were used to legibly show all BMPs in place at Bloomfield. Those maps are described below and are included in Attachment 8.

- 1. General facility location**
- 2. Overall facility map**
- 3. Localized maps showing BMP and drainage detail**

#### Receiving Waters and Wetlands

The nearest receiving waters for stormwater discharges from our facility are:

<sup>5</sup> EPA does not provide a definition or description of what constitutes an "area with a high potential for significant erosion that may affect stormwater quality." As a result, the areas identified in this plan are based on a qualitative assessment of grade (steepness of slope) and propensity for erosion of earth materials exposed to stormwater.

Basin	Receiving Waters
Outfall 1 Basin	San Juan
Outfall 2 Basin	San Juan

#### Summary of Potential Pollutant Sources

Part 4.2.4 of the MSGP requires a summary of potential pollutant sources that must identify where industrial materials or activities are exposed to stormwater. For each separate area identified, the description must include: activities in the area (Part 4.2.4.1) and pollutants (Part 4.2.4.2). In addition, part 6.1.4.2 of the MSGP requires a summary of sources and activities that have potential pollutants associated with them. The MSGP also requires information about RQ spills, cleanup activities, areas affected, procedures to clean up releases and actions or procedures taken to prevent releases; and remaining potential contamination of stormwater from the release.

#### Outfall 1 Basin

This basin is located in the southern portion of the refinery area outlined in the Stormwater Catch Basins Map in Attachment 8. Features that are located within this basin include:

- Regional Office Building,
- Transportation Maintenance Building,
- Parking areas, and
- Paved, Public Roads.

The access road to the Regional Office Building and Transportation Maintenance Building is a public road that is shared with a residential area south of the refinery. The Regional Office Building and parking areas have no significant materials located within them. The Transportation Maintenance Building contains petroleum products and other chemicals used in truck maintenance. A used oil tank with a containment and a double-walled lubricant tank are located outside near the building.

#### Significant Materials

Significant materials stored and used in this basin are minimal. Materials consist of the products stored at the Transportation Maintenance Building and drips from vehicles onto the parking areas. In addition to the products in storage outside at the Transportation Maintenance Building, the pollutant of concern that may be associated with this area is total suspended solids (TSS).

The Transportation Maintenance Building has the following significant materials stored on a regular basis outside:

- Lubricant
- Used Oil

Both of the containers for these materials have secondary containment and have a minimal risk of contact to stormwater.

Even though most of the products are stored inside, the maintenance area will have the associated lubricants, greases, and cleaning products necessary to maintain equipment. A strong housekeeping and inspection program will keep the impact from this area to a minimum.

The basin consists of approximately 10 acres, most of which is paved with asphalt.

*Erosion Potential*

Significant erosion potential exists in any area that has natural drainage channels, where topography is steep, or where stormwater runoff flows are concentrated.

*Risk Assessment*

The risk for exposure and discharge of significant materials to stormwater in this basin is considered **low**. Reasons for this assessment are outlined below.

There is a remote possibility that petroleum could be spilled in the basin and discharged to stormwater in the event of a vehicular accident on the basin access roads or parking area. However, in such an event, Bloomfield would quickly remove the petroleum product, pursuant to the requirements of the SPCC Plan. TSS from the site will be mitigated by the rip-rap lined channels which will cause the water to slow and drop the suspended solids out.

**Outfall 2 Basin**

This basin is located in the northern portion of the refinery facility outlined in the Stormwater Map in Attachment 8. The portion of this facility that contributes stormwater flow to the outfall consists of interior plant roads.

*Significant Materials*

Significant materials stored and used in this basin are minimal. The materials consist of petroleum products in the pipes and roadways and berms made of natural materials. Pollutants of concern that may be associated with this area are TSS with some potential for petroleum products if a pipe bursts during a storm.

The basin consists of approximately 3.5 acres and most of the area in the basin is disturbed.

*Erosion Potential*

Significant erosion potential exists in any area that has natural drainage channels or where stormwater runoff flows are concentrated.

*Risk Assessment*

The risk for exposure and discharge of significant materials to stormwater in this basin is considered **low to moderate**. Reasons for this assessment are outlined below.

There is a remote possibility that petroleum could be spilled in the basin and discharged to stormwater in the event of a pipeline burst during a storm event or a vehicular accident on the basin access roads. However, in such an event, Bloomfield would quickly remove the petroleum product, pursuant to the requirements of the SPCC Plan. TSS from the plant site will be mitigated by the stormwater detention ponds that will cause the water to slow and drop the suspended solids out.

**Non-Discharging Basins**

Please see drainage basin analysis in Attachment 3 for the materials stored in each of the non-discharging basins.

*Visual Monitoring Waiver* - If visual monitoring cannot be performed during the required period as a result of adverse weather conditions (including drought) or inaccessibility which make the collection of a sample dangerous or otherwise impractical, the following must be performed:

- document the reason for not performing the visual monitoring; and
- retain this documentation on-site with the visual monitoring records.

A form for recording the following visual monitoring requirements is provided in the Attachment 5. The following information must be included in the record:

- name of the person conducting the monitoring;
- location, date and time of the monitoring;
- field observations;
- other pertinent data (i.e., probable sources of any observed stormwater contamination); and
- adverse weather conditions (including drought) which preclude performing visual monitoring.

#### **4.10 Threatened and Endangered (T&E) Species**

Coverage under the MSGP is available only if stormwater discharges, allowable non-stormwater discharges, and discharge-related activities<sup>8</sup> are not likely to jeopardize the continued existence of any species that are listed as threatened or endangered under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is designated or proposed to be designated as critical under the ESA.

The EPA has listed five criteria (A through E) that dischargers must meet one or more of for the entire term of the permit. Certification of eligibility and supporting documentation on the eligibility determination must also be included in this SWPPP.

The EPA's website at <http://cfpub.epa.gov/npdes/stormwater/endangerspecies.cfm> was checked. The portion of that list that applies to San Juan County New Mexico is listed below.

The lists examined identified federally listed or proposed U.S. species by State and County. The U.S. Fish and Wildlife Service Website states: "The County-by-County lists derived from this web site is based on information available to the U.S. Fish and Wildlife Service at the date of preparation. This list is subject to change, without notice, as new biological information is gathered and should NOT be used as the sole and final source for identifying species that may be impacted by a project. Please contact the appropriate field office(s) to get additional information." It has been updated through December 20, 2005. Species listed below with a status of both E and T are generally either endangered or threatened within the specified county. Designation of critical habitat (CH) does not mean that the county constitutes critical habitat, only that critical habitat has been designated for that species (see Addendum A Instructions of the Construction General Permit, or Addendum H instructions of the Multi-Sector Permit)." (Note: the EPA website has not been updated to reflect the change for the MSGP and in fact Addendum A appears to apply in both cases.)

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<sup>8</sup> Discharge related activities include activities which cause, contribute to, or result in stormwater point source pollutant discharges; and measures to control stormwater discharges included in this siting, construction and operation of best management practices (BMPs) to control, reduce or prevent stormwater pollution.

Inverse Name	Scientific Name	Status <sup>9</sup>
<b>BIRDS</b>		
BALD EAGLE	<i>Haliaeetus leucocephalus</i>	T, AD
MEXICAN SPOTTED OWL	<i>Strix occidentalis lucida</i>	T
SOUTHWESTERN WILLOW FLYCATCHER	<i>Empidonax traillii extimus</i>	E
YELLOW-BILLED CUCKOO	<i>Coccyzus americanus</i>	C
<b>MAMMALS</b>		
BLACK-FOOTED FERRET	<i>Mustela nigripes</i>	E, EXPN
<b>FISHES</b>		
COLORADO PIKEMINNOW (SQUAWFISH)	<i>Ptychocheilus lucius</i>	E, EXPN
RAZORBACK SUCKER	<i>Xyrauchen texanus</i>	E
<b>FLOWERING PLANTS</b>		
KNOWLTON CACTUS	<i>Pediocactus knowltonii</i>	E
MANCOS MILK-VETCH	<i>Astragalus humillimus</i>	E
MESA VERDE CACTUS	<i>Sclerocactus mesae-verdae</i>	T

To comply with this certification requirement a discharger must meet one of the following five provisions:

**Criteria A:** No endangered or threatened species or critical habitat are in proximity to your facility or the point where authorized discharges reach the receiving water; or

**Criteria B:** In the course of separate federal action involving your facility formal or informal consultation with the Fish and Wildlife Service and/or National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

- a. Addressed the effects of your stormwater discharges, allowable non-stormwater discharges, and discharge related activities on listed species and critical habitat; and
- b. The consultation resulted in either a no jeopardy opinion or a written concurrence by the Service on a finding that your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities are not likely to adversely affect listed species or critical habitat; or

**Criteria C:** Your activities are authorized under section 10 of the ESA and that authorization addresses the effects of your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities on listed species and critical habitat; or

**Criteria D:** Using best judgment, you have evaluated the effects of your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities on listed endangered or threatened species and critical habitat and do not have reason to believe listed species or critical habitat would be adversely affected; or

<sup>9</sup> T – Threatened, AD – Proposed Delisting, E- Endangered, EXPN – Non-Essential Experimental Population, C – Candidate Taxon, Ready for Proposal

**Criteria E:** Your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities were already addressed in another operator's certification of eligibility under Part 1.2.3.6.3.1 through 1.2.3.6.3.4 which included your facilities activities. By certifying eligibility under this Part, you agree to comply with any measures or controls upon which the other operator's certification was based.

#### Procedures for Complying with T&E Species Certifications

The MSGP includes procedures in Addendum A that must be followed in order for a discharger to certify compliance with Sections 1.2.3.6 and 4.5 of the MSG Permit. In following these procedures a discharger can be confident that "adverse affects" to T&E species have been avoided and they may certify in the NOI that the facility is in compliance with this requirement.

A summary of specific procedures to be followed is outlined below.

#### Step 1: Are there any Endangered Species or Critical Habitat in Your County and, if so, Are They in Proximity to Your Facility or Discharge Locations?

1. Check for listed species (table of species listed above), proceed to 2
2. Check for critical habitat, proceed to 3

Critical habitat for the Razorback Sucker exists in San Juan County, however habitat does not encompass, nor do the drainage areas approach, the area around Bloomfield.

3. Check for Proximity, proceed to 4

There are several species listed for San Juan County and one has critical habitat established, however the habitat comments listed below and the area in which the refinery is located are not similar and therefore, the proximity of the listed species is questionable.

Inverse Name	Habitat Comment	Proximity
<b>BIRDS</b>		
BALD EAGLE	Prefers bodies of water that reflect the primary food sources including fish and waterfowl. Preferentially roosts in pines, spruce, firs, cottonwoods, oaks, poplar and beech trees and they avoid areas with nearby human activities. Not listed in the specific watershed.	Not Expected
MEXICAN SPOTTED OWL	Mixed-conifer forests that have experienced minimal human disturbance, generally selected mature forests with canopy cover of 75%. See critical habitat map, Attachment 4.	Not Expected
SOUTHWESTERN WILLOW FLYCATCHER	Thickets, scrubby and brushy areas, open second growth, swamps, and open woodland (AOU 1983). Not listed in the specific watershed.	Not Expected



Inverte Name	Habitat Comment	Proximity
YELLOW-BILLED CUCKOO	Open woodland (especially where undergrowth is thick), parks, deciduous riparian woodland; in the West, nests in tall cottonwood and willow riparian woodland. Nests in deciduous woodlands, moist thickets, orchards, overgrown pastures; in tree, shrub, or vine, an average of 1-3 meters above ground (Harrison 1979).	Not Expected
<b>MAMMALS</b>		
BLACK-FOOTED FERRET	Limited to open habitat, the same habitat used by prairie dogs: grasslands, steppe, and shrub steppe. When inactive, occupies underground burrow made by prairie dog.	Not Expected – experimental populations not listed locally
<b>FISHES</b>		
COLORADO PIKEMINNOW (SQUAWFISH)	<p>Habitat is generally medium to large rivers. Young prefer small, quiet backwaters. Adults use various habitats, including deep turbid strongly flowing water, eddies, runs, flooded bottoms, or backwaters (especially during high flow). Lowlands inundated during spring high flow appear to be important habitats. Recorded mainly in shoreline habitat over sand (Tyus and McAda 1984). In winter, most common in shallow, ice-covered shoreline areas.</p> <p>Reproductively active adults seek faunally depauperate white-water canyons for deposition of gametes (Tyus 1991). Appears to select river canyons that receive freshwater input of groundwater from sandstone/limestone seeps (Tyus 1985). Young-of-year (postlarval) occupy shallow, alongshore, ephemeral backwaters formed in late summer by receding water levels (Tyus 1991). Juveniles tend to occur downstream from area occupied by adults, though larger juveniles are not uncommon in shoreline habitats similar to those occupied by adults (Tyus 1991).</p>	Not Expected – San Juan is fairly well channeled through this area around Farmington and Bloomfield and is not specifically consistent with the habitat listed

Inverse Name	Habitat Comment	Proximity
RAZORBACK SUCKER	<p>Habitats include slow areas, backwaters, and eddies of medium to large rivers; impoundments. Often associated with sand, mud, and rock substrate in areas with sparse aquatic vegetation, where temperatures are moderate to warm. Hatchery-reared suckers released into the San Juan River inflow of Lake Powell most often used shallowly flooded stands of salt cedar and, in some cases, cobbled shorelines. Limited data indicate that young tend to remain along shorelines, in embayments along sandbars, or in tributary mouths.</p> <p>Spawns most commonly near shore in water less than 0.6 m deep; known and suspected spawning sites are in broad, flat-water segments. Spawns in streams over silty sand, gravel, or rock substrate at depths of about 1-20 ft. Ripe individuals often have been taken over or near coarse sand, or gravel or cobble bars, in flowing water.</p>	<p>Not Expected – Critical habitat is not consistent with this area and was located approximately 32 miles from the site</p>
<b>FLOWERING PLANTS</b>		
KNOWLTON CACTUS	Tertiary alluvial deposits that have formed gravelly, dark, sandy loams on slopes or hills. Found under the shade of trees and shrubs and in open areas in dry pinyon-juniper woodlands at 1800-2000 m elevation.	<p>Not Expected – Habitat is not consistent with site conditions</p>
MANCOS MILK VETCH	Sandstone ledges or mesa tops, often in cracks in the sandstone substrate or in shallow pockets of sandy soil. On sandstone of Cretaceous origin in the Mesa Verde series. Exfoliating Lookout Point Sandstone. Possibly also on limestone. Approximately 1695 m.	<p>Not Expected – Habitat is not consistent with site conditions</p>
MESA VERDE CACTUS	Dry low exposed hills and mesas in full sun of Mancos or Fruitland clays in the desert at about 1200-2000 m elevation. Cracks in the clay soil, where the seeds fall and may germinate, are apparently an important part of the plant's microhabitat. Soils are typically high in selenite. A common associate is Nuttall saltbush ( <i>Atriplex nuttallii</i> ).	<p>Not Expected – Habitat is not consistent with site conditions</p>

4. Check for Criteria "A" Eligibility

If no species were listed for your county or the species that were listed were not in proximity to your discharge and your facility and discharge locations were not in proximity to critical habitat, you are eligible under Criteria "A".

*Criteria A is not applicable for Bloomfield because, while species may be listed for the county, the discharge locations may be in proximity to critical habitat.*

**Step 2: Can You Meet Eligibility Criteria "B", "C", or "E"?**

1. Check for Criteria "B", "C", or "E" Basis
  - There was a completed consultation under ESA § 7 for your facility, proceed to 2
  - There is a previously issued ESA § 10 permit for your facility, proceed to 3
  - Another operator previously certified eligibility for the area where your facility is located, proceed to 4
2. Did ESA consultation result in a "no jeopardy" opinion by the Service or a concurrence by the service that your activities would be "unlikely to adversely affect" listed species or critical habitat? If no, proceed to Step 3
3. If your ESA § 10 permit considered all currently listed species and critical habitat and addresses your stormwater, allowable non-stormwater, and discharge related activities, you are eligible under Criteria "C". If not, proceed to Step 3
4. Did the other operator's certification of eligibility consider all currently listed species and critical habitat and address your stormwater, allowable non-stormwater and discharge related activities? If no, proceed to Step 3

**Step 3: Are Listed Species or Critical Habitat Likely To Be Adversely Affected by Your Facility's Stormwater Discharges, Allowable Non-stormwater Discharges, or Discharge Related Activities?**  
If you are unable to certify eligibility under Criteria A, B, C, or E, you must assess whether your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities<sup>10</sup> are likely to pose jeopardy<sup>11</sup> to listed species or critical habitat.

Document the results of your assessment and make a preliminary determination on whether or not there would likely be any jeopardy to listed species or critical habitat. You will need to determine that your activities are either "unlikely to adversely affect" or "may adversely affect." Your determination may be based on measures that you implement to avoid, eliminate, or minimize adverse affects. Proceed to step 4.

**Step 4: Can You Meet Eligibility Criteria "D"?**

Using best judgment, can you determine that your facility's stormwater discharges, allowable non-stormwater discharges, and discharge-related activities are unlikely to pose jeopardy to listed species or critical habitat?

<sup>10</sup> Stormwater discharge-related activities include: activities which cause, contribute to, or result in point source stormwater pollutant discharges; and measures to control stormwater discharges and allowable non-stormwater discharges including the siting, construction, operation of best management practices (BMPs) to control, reduce or prevent water pollution. [emphasis added]

<sup>11</sup> Effects from stormwater discharges, allowable non-stormwater discharges, and discharge-related activities which could pose jeopardy include: Hydrological (wastewater or stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH), Habitat (excavation, site development, grading, and other surface disturbance activities, including the installation or placement of wastewater or stormwater ponds or BMPs may adversely affect listed species or their habitat), Toxicity (pollutants in wastewater or stormwater may have toxic effects on listed species.)

1. If Step 3 determination is "unlikely to adversely affect," you are eligible under Criteria "D". Incorporate the appropriate measures upon which your eligibility was based into your Stormwater Pollution Prevention Plan and certify eligibility under Part 1.2.3.6.3.4 of the permit. Proceed to Step 5. If not, go to 2.
2. If Step 3 determination is "may adversely affect" you must contact the Service(s) to discuss your findings and measures you could implement to avoid, eliminate, or minimize adverse affects. If you and the Service(s) reach agreement you are eligible under Criteria D. Proceed to Step 5. If not, go to 3.
3. If endangered species issues cannot be resolved, you are not eligible for coverage under the MSGP and must apply for an individual permit.

**Step 5: Submit Notice of Intent and Document Results of the Eligibility Determination**

Once eligibility requirements have been met, you may submit the NOI. Signature and submittal is deemed to constitute your certification, under penalty of law, of your eligibility for permit coverage. You must include documentation of Part 1.2.3.6 eligibility in the SWPPP as follows:

**Criteria A** - A copy of the County-Species List pages with the county(ies) where your facility and discharges are located and a statement on how you determined that no listed species or critical habitat was in proximity to your discharge.

**Criteria B** - A copy of the Service(s)'s Biological Opinion or concurrence on a finding of "unlikely to adversely effect" regarding the ESA § 7 consultation.

**Criteria C** - A copy of the Service(s)'s letter transmitting the ESA § 10 authorization.

**Criteria D** - Documentation on how you determined adverse effects on listed species and critical habitat were unlikely.

**Criteria E** - A copy of the documents originally used by the other operator of your facility (or area including your facility) to satisfy the documentation requirement of Criteria A, B, C, or D.

Following the Steps listed above, Bloomfield has determined that Criteria D will apply. Documentation of the steps follows as does the required documentation.

**Step 1: Are there any Endangered Species or Critical Habitat in Your County and, if so, are They in Proximity to Your Facility or Discharge Locations?**

Inverse Name	Proximity
BALD EAGLE	Not Expected – habitat and site conditions not consistent
MEXICAN SPOTTED OWL	Not Expected – critical habitat excludes plant area
SOUTHWESTERN WILLOW FLYCATCHER	Not Expected – specific watershed not within area designated for occupancy
YELLOW-BILLED CUCKOO	Not Expected – habitat and site conditions not consistent
BLACK-FOOTED FERRET	Not Expected – experimental populations not listed locally

Inverse Name	Proximity
COLORADO PIKEMINNOW (SQUAWFISH)	Not Expected – San Juan characteristics are not consistent with the habitat listed
RAZORBACK SUCKER	Not Expected – Critical habitat is listed 32 miles from the site and is not consistent with site conditions
KNOWLTON CACTUS	Not Expected – Habitat is not consistent with site conditions
MANCOS MILK VETCH	Not Expected – Habitat is not consistent with site conditions
MESA VERDE CACTUS	Not Expected – Habitat is not consistent with site conditions

**Step 2: Can You Meet Eligibility Criteria "B", "C", or "E"?**

Giant Industries – Bloomfield Refinery cannot meet the criteria.

**Step 3: Are Listed Species or Critical Habitat Likely To Be Adversely Affected by Your Facility's Stormwater Discharges, Allowable Non-stormwater Discharges, or Discharge Related Activities?**

Bloomfield evaluated the species that were in proximity to the facility stormwater discharges, allowable non-stormwater discharges and discharge related activities and based on previous studies, habitat, and potential to cause jeopardy, Bloomfield has determined the following:

Listed Species	Jeopardy	Rationale
<b>BIRDS</b>		
BALD EAGLE	No	2,3,5
MEXICAN SPOTTED OWL	No	1,2,3,4,5
SOUTHWESTERN WILLOW FLYCATCHER	No	1,2,3,4,5
YELLOW-BILLED CUCKOO	No	2,3,5
<b>MAMMALS</b>		
BLACK-FOOTED FERRET	No	2,3,5
<b>FISHES</b>		
COLORADO PIKEMINNOW (SQUAWFISH)	No	1,2,4,5
RAZORBACK SUCKER	No	1,2,3,4,5
<b>FLOWERING PLANTS</b>		
KNOWLTON CACTUS	No	1,2,4,5
MANCOS MILK-VETCH	No	1,2,4,5
MESA VERDE CACTUS	No	1,2,4,5

1. Major concern for runoff is sediment which is a naturally occurring phenomenon in New Mexico.
2. Runoff volume from basins has remained virtually unchanged for the past 5 years, however sampling has shown that quality has improved.

3. Critical habitat, habitat definitions, or listed distributions in watersheds exclude the refinery area.
4. There are no stormwater discharge-related activities that cause, contribute to or result in a point source stormwater pollutant discharge in the proximity of any of these species.
5. There are minimal discharge locations at Bloomfield, none of which contain "discharge related activities" that could adversely impact endangered species or designated critical habitat.

Careful study of the available literature and reference to the New Mexico Game and Fish Department data files, indicated that additionally one amphibian, twenty-one birds, five bat, four mammals, and one insect are viewed as sensitive or species of concern. Only one of these additional species is listed as endangered or threatened:

- Gray Vireo

It is evident that the Bloomfield Refinery can meet the certification requirements in Criteria D and submit the NOI.

- Critical habitat listed for the Razorback Sucker are outside of the area of the refinery or its discharge.
- BMPs constructed at outfalls and areas in proximity to the outfalls are located outside of riparian habitat where an endangered or threatened species would be expected to exist.
- The receiving water for stormwater discharges is a normally dry channel that does not support aquatic life, or riparian habitat. This channel is a tributary to the San Juan.

#### **4.11 Historic Places**

The MSGP requires applicants to determine whether their facility's stormwater discharges, allowable non-stormwater discharges, or construction of best management practices to control such discharges, has potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places. The following three scenarios describe how applicants can meet the permit eligibility criteria for protection of historic properties under this permit:

1. If historic properties are not identified in the path of a facility's stormwater and allowable non-stormwater discharges or where construction activities are planned to install BMPs to control such discharges, then the applicant has met the permit eligibility criteria under Part 1.2.3.7.1.
2. If historic properties are identified but it is determined that they will not be affected by the discharges or construction of BMPs to control the discharge, the applicant has met the permit eligibility criteria under Part 1.2.3.7.1.
3. If historic properties are identified in the path of a facility's stormwater and allowable non-stormwater discharges or where construction activities are planned to install BMPs to control such discharges, and it is determined that there is potential to adversely affect the property, the applicant can still meet the permit eligibility criteria under Part 1.2.3.7.2 if they obtain and comply with a written agreement with the appropriate State or Tribal Historic Preservation Officer which

outlines measures the applicant will follow to mitigate or prevent those adverse effects<sup>12</sup>.

Historic properties have not been identified in the areas of stormwater or allowable non-stormwater discharges or BMPs at Bloomfield Refinery, therefore certification and coverage under the eligibility criteria in Part 1.2.3.7.1 is available at this site.

#### **4.12 Comprehensive Site Compliance Evaluation**

The MSGP Section 4.9.1 requires that facility inspections must be conducted at least annually by qualified personnel. Bloomfield personnel will perform this comprehensive site inspection annually and it will include the following areas:

1. Industrial materials, residue or trash that could contaminate or be washed away in stormwater,
2. Leaks or spills from industrial equipment, drums, barrels, tanks or similar containers,
3. Offsite tracking of industrial materials or sediment where vehicles enter or exit the site,
4. Tracking or blowing of raw, final, or waste materials from areas or no exposure to exposed areas,
5. Evidence of, or the potential for, pollutants entering the drainage system,
6. Results of visual monitoring must also be taken into consideration, and
7. Finally BMPs and their effectiveness must be evaluated to ensure they are operating effectively.

Based on the results of the inspections, the SWPPP will be modified as necessary within 14 calendar days following the inspection. If modifications to existing BMPs are required or if new BMPs need to be implemented, the changes must take place prior to the next rain event but not more than 12 weeks following the completion of the evaluation.

A report summarizing the scope, the name of the personnel, and the date of the inspection as well as major observations relating to the implementation of the SWPPP must be completed and retained in the SWPPP for at least three years from the date permit coverage expires or is terminated. Major observations should include:

- Location(s) of the discharges of pollutants from the site,
- Location(s) of the BMPs that need to be maintained,
- Location(s) of the BMPs that failed to operate as designed or proved inadequate for a particular location, and
- Location(s) where additional BMPs are needed that did not exist at the time of inspection.

Record of actions taken as part of the SWPPP must be retained for at least three years from the date that permit coverage expires or is terminated. The inspection reports must

<sup>12</sup> Adverse Effects includes but is not limited to damage, deterioration, alteration, or destruction of the historic property or place.

identify any incidents of non-compliance. Where an inspection report does not identify any incidents of non-compliance, the report must contain a certification that the facility is in compliance with the SWPPP and the MSGP. Both the inspection report and any reports of follow-up actions must be signed in accordance with the provisions of this permit.

A form generated for use in documenting compliance with this portion of the SWPPP is in Appendix 5.

#### 4.13 Updating the SWPPP

The SWPPP will be amended whenever there is a change in design, construction, operation, or maintenance at the facility that has a significant effect on the discharge or potential for discharge of pollutants. Also, if the SWPPP is determined to be ineffective in eliminating or significantly minimizing pollutants from the sources identified in this plan, or if it is determined that it is otherwise not achieving the general objectives of controlling pollutants in discharge from the facility, it will be amended. Revisions to the SWPP are contained in Attachment 6 and upgrades to the stormwater system are contained in Attachment 7.

These amendments will be made and revisions noted in Attachment 6 within 12 weeks of the change.

### 5.0 Monitoring and BMP Inspection Procedures

This section includes facility inspection and monitoring schedules and provides guidance for completing field monitoring and inspection forms.

#### 5.1 Inspection and Monitoring Schedules

BMP Inspection Table summarizes the inspection schedule for structural Best Management Practices (BMPs) used to control the flow of stormwater throughout the facility and at the stormwater discharge outfalls. The SWPPP BMP section provides specific details on the Monthly and Annual inspection requirements.

**BMP Inspection Schedule**

Inspection Item	Weekly	Monthly	Annual
Stormwater Outfalls (shown on Figure 2 with an "Outfall 1" or "Outfall 2" designation)	✓		
Check Ponds, Rip-Rap, Stormwater Barriers and other Sediment Control Systems	✓		
Road Berms, Culverts, Flow Outlets, and Other Stormwater Flow or Diversion Controls		✓	
Significant Materials Storage and Handling Areas (in areas that drain to stormwater)		✓	
TRI Chemicals Storage and Handling Areas (in areas that drain to stormwater)		✓	
Comprehensive Site Compliance Evaluation			✓

The Outfall Water Monitoring Schedule Table summarizes the monitoring requirements for each stormwater outfall during the five-year duration of the MSGP. The SWPPP provides additional information on visual monitoring requirements and



do so in writing. The procedure for making this document available has been set up in the document management system and this procedure will be followed to ensure the latest copy is provided to the public.

### **7.3 Addresses**

Written correspondence concerning discharges covered under this permit and directed to the EPA must be sent to appropriate address listed below:

#### **Notice of Intent (NOI)**

Stormwater Notice of Intent (4203)  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue  
Washington, DC 20460

#### **Notice of Termination (NOT)**

Stormwater Notice of Intent (4203)  
401 M Street, S.W.  
Washington, DC 20460

#### **DMRs and Other Written Communications (as required)**

United States EPA, Region 6  
Stormwater Staff  
Enforcement and Compliance Assurance Division (GEN-WC)  
EPA SW MSGP  
P.O. Box 50625  
Dallas, TX 75205

New Mexico – Program Manager  
Point Source Regulation Section  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, NM 87502

## **8.0 Signatory Requirements**

All Notices of Intent, Notices of Termination, Swap's, reports, certifications, or information either submitted to the Director or that this permit requires be maintained must be signed as follows.

### **8.1 For a Corporation**

By a responsible corporate officer who for this document is a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation. It can also be the manager of one or more manufacturing, production, or operating facilities provided that manager is authorized to make management decisions which govern the operation of the regulated facility including having the duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations. The manager can ensure that the necessary systems are established or actions taken to gather complete and

accurate information for permit application requirements and where authority has been assigned or delegated to the manager in accordance with corporate procedures.

For the purposes of this SWPPP under the MSGP, the General Manager would be the appropriate person to sign any necessary documents.

## 8.2 Stormwater Pollution Prevention Plan Certification

The following certifications and signatory requirements are presented below:

### SWPPP Certification:

*I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

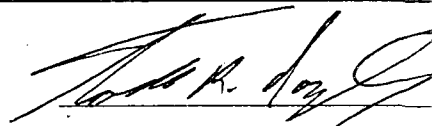
### Certification of Discharge Testing (as described in Section 4.7):

*This facility has been evaluated for the presence of, or potential for, unauthorized non-stormwater discharges to its stormwater conveyance systems. Based on this evaluation, the facility does not have any non-stormwater discharges to its stormwater conveyance systems.*

Authorized Signature

7/19/07

Date



Todd Doyle

Name of Authorized Representative

General Manager

Title



U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
STORM WATER NOTICE OF INTENT CENTER



**NMR05B159**

Dear Operator:

06-24-2002

The EPA has processed your Notice of Intent (NOI) application for the facility noted below. This facility is authorized to discharge storm water associated with multi-sector activity under the terms and conditions imposed by the EPA's NPDES Storm Water Multi-Sector Permit. The facility permit number is listed above and the active date of permit coverage is 05-05-2002.

EPA's multi-sector permit requires certain pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial site. You may also be required to submit monitoring data for your facility's storm water discharges. As a facility authorized to discharge under this storm water multi-sector permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

**FACILITY:**

GIANT REFINING --- BLOOMFIELD  
#50 CR 4990  
BLOOMFIELD, NM  
87413

**OPERATOR:**

SAN JUAN REFINING COMPANY  
#50 CR 4990  
BLOOMFIELD, NM  
87413

You can obtain a copy of the EPA's storm water multi-sector permit, which contains the terms and conditions to which you are now held accountable, from the following website: <http://www.epa.gov/earth1r6/6en/w/sw/msgp2000.pdf>. If you have general questions concerning the storm water program, please call the EPA Region 06 contact: **Brent Larsen, (214) 665-7523**. If you have questions about this form, contact the Notice of Intent Center at (866) 352-7755.



Storm Water NOI (4203M)  
USEPA  
1200 Pennsylvania Avenue  
Washington, D.C.  
20460

October 17, 2002

EPA Processing Center,

Our previous Environmental Manager (Barry Holman) sent an NOI dated May 3, 2002. He inadvertently signed Section D signifying that he was the authorized, responsible individual for our Storm Water Pollution Prevention Plan. I am sending a new NOI that is properly signed by our Refinery Manager, Chad King. I apologize for any inconvenience this may cause and look forward to receiving confirmation of a NPDES Storm Water Multi-Sector Permit.

Sincerely

A handwritten signature in cursive script that reads "Cindy Hurtado".

Cindy Hurtado  
Environmental Assistant  
Giant Refining---Bloomfield  
#50 CR 4990  
Bloomfield, NM  
87413

PHONE  
505-632-8013  
FAX  
505-632-3911

50 ROAD 4990  
P.O. BOX 159  
BLOOMFIELD  
NEW MEXICO  
87413

EPA Form 3510-6 (Revised 08-2000, Expires 04-2003)

Notice of Intent for Storm Water Discharges Associated with  
INDUSTRIAL ACTIVITY Under the Multi-sector NPDES General Permit.

Submission of this completed Notice of Intent (NOI) constitutes notice that the entity in Section B intends to be authorized to discharge pollutants to waters of the United States, from the facility or site identified in Section C, under EPA's Storm Water Multi-sector General Permit (MSGP). Submission of the NOI also constitutes notice that the party identified in Section B of this form has read, understands, and meets the eligibility conditions of Part I of the MSGP; agrees to comply with all applicable terms and conditions of the MSGP; understands that continued authorization under the MSGP is contingent on maintaining eligibility for coverage, and that implementation of the permittee's pollution prevention plan is required two days after a complete NOI is mailed. In order to be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements, including the requirement to prepare and implement a storm water pollution prevention plan.

## A. Permit Selection

Permit number assigned to your facility under the previous permit: NM R05A641

New Permit Number (EPA Use Only)

R05

## B. Facility Operator Information

1. Name: San Juan Refining Company 2. Phone: 505-632-8013

3. Mailing Address: a. Street or P.O. Box: #50 CR 4990

b. City: Bloomfield c. State: NM d. Zip Code: 87413

## C. Facility/Site Information

1. Facility/Site Name: Giant Refining - Bloomfield

2. Location Address: a. Street: #50 CR 4990

b. City: Bloomfield c. County: San Juan

d. State: NM e. Zip Code: 87413

3. a. Latitude: 36° 41' 50" b. Longitude: 107° 58' 20"

4. a. Permit Applicant: ☐ Federal ☐ State ☐ Tribal ☒ Private ☐ Other public entityb. Is the facility located on Indian Country Lands? ☐ Yes ☒ No

5. Does the facility discharge storm water into:

a. Receiving water(s)? ☐ Yes ☒ No If yes, name(s) of receiving water(s):b. A municipal separate storm sewer system (MS4)? ☐ Yes ☒ No

If yes, name of the MS4 operator:

6. The 4-digit Standard Industrial Classification (SIC) codes or the 2-letter Activity Codes that best represent the principal products produced or services rendered by your facility and major co-located activities:

Primary: 2911 Secondary (if applicable):

7. Applicable sector(s) of industrial activity, as designated in Part 1.2.1 of the MSGP, that include associated discharges that you seek to have covered under this permit (choose up to three):

☐ Sector A ☐ Sector F ☒ Sector K ☐ Sector P ☐ Sector U ☐ Sector Z  
☐ Sector B ☐ Sector G ☐ Sector L ☐ Sector Q ☐ Sector V ☐ Sector AA  
☐ Sector C ☐ Sector H ☐ Sector M ☐ Sector R ☐ Sector W ☐ Sector AB  
☐ Sector D ☒ Sector I ☐ Sector N ☐ Sector S ☐ Sector X ☐ Sector AC  
☐ Sector E ☐ Sector J ☐ Sector O ☐ Sector T ☐ Sector Y ☐ Sector AD

## 8. Additional Facility/Site Requirements:

a. Based on the instructions provided in Addendum A of the MSGP, have the eligibility criteria for "listed species" and critical habitat been met? ☒ Yes ☐ Nob. Based on the instructions provided in Addendum B of the MSGP, have the eligibility criteria for protection of historic properties been met? ☒ Yes ☐ No

## D. Certification

Do you certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted? Based on your inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, do you certify that the information submitted is, to the best of your knowledge and belief, true, accurate, and complete? Do you certify that you are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations?

Print Name: BARRY G. HOLMAN CHAD K. TUNG

Signature: [Signature]

Date: 01-30-02

## Instructions for Completing the Notice of Intent for Storm Water Discharges Associated with INDUSTRIAL ACTIVITY Under the Multi-sector General Permit

### Who Must File a Notice of Intent?

Under the provisions of section 402(p) of the Clean Water Act (CWA) and regulations at 40 CFR Part 122, Federal law prohibits "point source" discharges of storm water associated with industrial activity to waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. If you operate a facility which is described in Part 1.2.1. of the Multi-sector General Permit (MSGP) or if you have been designated as needing permit coverage for your storm water discharges by your NPDES permitting authority, and you meet the eligibility requirements in Part 1 of the permit, you may satisfy your CWA obligation for permit coverage by submitting a completed NOI to obtain coverage under the MSGP. If you have questions about whether you need a permit under the NPDES Storm Water Program, contact your NPDES permitting authority (i.e., your EPA Regional storm water coordinator or your State water pollution control agency).

One NOI must be submitted for each facility or site for which you are seeking permit coverage. Only one NOI need be submitted to apply for coverage for all of your activities at each facility (e.g., you do not need to submit a separate NOI for each type of industrial activity located at a facility or industrial complex, provided your storm water pollution prevention plan covers each area for which you are an operator). Finally, the NOI must be submitted in accordance with the deadlines established in Part 2.1 of the MSGP.

### When to File the NOI Form

DO NOT FILE THE NOI UNTIL YOU HAVE OBTAINED A COPY OF THE MULTI-SECTOR GENERAL PERMIT. You will need it to determine your eligibility, prepare your storm water pollution prevention plan, and correctly answer all questions on the NOI form — all of which must be done before you can sign the certification statement on the NOI in good faith (and without risk of committing perjury).

If you have a new facility or are the new operator of an existing facility, this form must be postmarked at least 48 hours before you need permit coverage. If your facility was covered under the 1995 Multi-sector General Permit or if you are currently operating without a permit, see Part 2.1 of the MSGP for your deadlines. CAUTION: You must allow enough lead time to gather the information necessary to complete the NOI (especially that related to determining eligibility with regards to endangered species and historic properties) and prepare the pollution prevention plan required by Part 4 of the MSGP prior to submitting your NOI.

### Where to File the NOI Form

NOIs must be sent to the following address (do not send Storm Water Pollution Prevention Plans (SWPPPs) to this address):

Storm Water Notice of Intent (4203)  
U.S. EPA  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

(For overnight/express delivery of NOIs, add the phone number (202) 260-9541)

NOTE: While not currently available, EPA is exploring the possibility of offering the option to complete the NOI form electronically online via the Internet. If this option does become available, directions will be posted on EPA's web site. To check on the availability of the alternative Online NOI, please visit <http://www.epa.gov/owsw>. If the Online NOI is not available, you must file the NOI at the above address.

If your facility discharges through a municipal separate storm sewer system (MS4) that is permitted as a medium or large MS4 under the NPDES Storm Water Program, you must also submit a signed copy of the NOI to the operator of that MS4, in accordance with the deadlines established in Part 2.1 of the permit.

### Completing the NOI Form

To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words. Please make sure you have addressed all applicable questions and have made a photocopy for your records before sending the completed form to the address above.

### Section A. Permit Selection

You must indicate the NPDES storm water general permit under which you are applying for coverage. Find the generic permit "number" in Part 1.1 of the permit that covers the area where your facility is located. For example, if you are located in New Mexico (except Indian Country lands), the generic number would be NMR05\*\*\*. If you are located on Navajo lands in New Mexico, the generic permit number would be AZR05\*\*1. CAUTION: You must use the correct permit number or your permit coverage will be invalid since you are not located within the coverage area for that permit.

### Section B. Facility Operator Information

1. Provide the legal name of the person, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or other legal entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager.
2. Provide the telephone number of the facility operator.
3. Provide the mailing address of the facility operator. Include the street address or P.O. Box, city, state, and zip code. All correspondence regarding the permit will be sent to this address, not the facility address in Section C.
4. Indicate the legal status of the facility operator as a Federal, State, Tribal private, or other public entity (other than Federal or State). This refers only to the operator, not the owner or the land the facility or site is located upon.

### Section C. Facility/Site Information

1. Enter the official or legal name of the facility or site.
2. Enter the complete street address (if no street address exists, provide a geographic description [e.g., Intersection of Routes 9 and 55]), city, county, state, and zip code. Do not use a P.O. Box.
3. Enter the latitude and longitude of the approximate center of the facility or site in degrees/minutes/seconds. Latitude and longitude can be obtained from U.S. Geological Survey (USGS) quadrangle or topographic maps, by using a GPS unit, by calling 1-(888) ASK-USGS, by searching for your facility's address on several commercial "map" sites on the Internet, or by accessing EPA's web site at <http://www.epa.gov/owm/sw/industry/index.htm> and selecting Latitude and Longitude Finders under the Resources/Permit section.
4. Indicate whether the facility is located on Indian Country lands (e.g., a federally recognized reservation, etc.).
5. Indicate whether the facility or site discharges storm water into a receiving water(s) and/or a municipal separate storm sewer system (MS4). Enter the name(s) of the closest receiving water(s) and/or the MS4 (An MS4 is defined as a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body and is designed or used for collecting or conveying storm water.)
6. List your primary and secondary four 4-digit Standard Industrial Classification (SIC) codes or 2-character Activity Codes that best describe the principal products or services provided at the facility or site identified in Section C of this application. For industrial activities defined in 40 CFR 122.26(b)(1)(i)-(ix) and (xii) that do not have SIC codes that accurately describe the principal products produced or services provided, use the following 2-character Activity Codes:  
HZ = Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA [40 CFR 122.26(b)(1)(iv)];  
LF = Landfills, land application sites, and open dumps that receive or have received any industrial wastes, including those that are subject to regulation under subtitle D of RCRA [40 CFR 122.26(b)(1)(v)];  
SE = Steam electric power generating facilities, including coal handling sites [40 CFR 122.26(b)(1)(vi)];  
TW = Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage [40 CFR 122.26(b)(1)(ix)]; or  
Alternatively, if your facility or site was specifically designated by your NPDES permitting authority (EPA), enter "AD."

### Section D. Certification

Certification statement and signature. (CAUTION: An unsigned or undated NOI form will prevent the granting of permit coverage.) Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means:

- (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
- (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipal, State, Federal, or other public facility: by either a principal executive or ranking elected official.

### Paperwork Reduction Act Notice

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## **Attachment 2**

**Multi-Sector General Permit, October 30, 2000**

**Final Reissuance of the NPDES Stormwater Multi-Sector General Permit for Industrial Activities; Correction, January 9, 2001**

**Final Reissuance of the NPDES Stormwater Multi-Sector General Permit for Industrial Activities; Correction, March 23, 2001**



## **Non Impacted Basins or Basins with no Process**

The non-impacted basin is characterized below.

### **Northern Area**

#### *Characteristics*

The northern area is the area north of the Hammond Ditch and outside of the process area. This area has several facilities that are associated with the Bloomfield refinery that do not discharge stormwater. These facilities include, the bioventing project near the river, the pump house for fresh water, a fresh water storage tank, and several groundwater remediation containment ponds. These areas are either self contained or do not discharge stormwater. Outfall 2 runs along the eastern edge of this area.

#### *Material Found within this Basin*

This area has no significant materials found within the basin there is fresh water and some groundwater in ponds.

## **Stormwater Basins**

These Basins have been previously evaluated in this document.

**Attachment 4**

**Sample Analysis from Previous Years**

**Endangered Species Information**

Note: Internal stormwater samples have historically been taken at Bloomfield. Those samples were called outfalls in previous versions of these stormwater plans even if no discharge to Waters of the United States took place. Only samples from Outfalls 5 and 2 should be considered discharges. These points have been renamed Outfalls 1 and 2 respectively. The internal sampling points have been renamed "Sampling Point X." In this case, X denotes the former sample number to preserve continuity.

**Outfall 1 (formerly known as Outfall 5) Sampling Analysis**

	1/26/06	10/10/05	1/4/05	9/29/04	2/4/04	2/25/03	10/29/02
pH	7.96	8.42	7.8	8.03	7.16	8.3	6.5
Oil and Grease	1.3	<1.0	1.5	<1.0	<5.0	4.7	NA
Biological Oxygen Demand (BOD)	NA	NA	NA	7.3	12.2	8.6	NA
Chemical Oxygen Demand (COD)	NA	NA	NA	28.9	62.8	98	NA
Total Suspended Solids (TSS)	260	190	76	53	220	3100	370
Total Kjeldahl Nitrogen	NA	NA	NA	<1.0	9.2	<1.0	1.1
Nitrate + Nitrite	<0.5	<0.5	0.17	<0.5	0.39	0.67	0.36
Phenols	NA	NA	NA	<1.0	<3.0	<3.0	NA
Ammonia	NA	NA	NA	NA	NA	NA	0.33
Total Phosphorus	0.27	0.3	0.282	0.27	0.25	3.15	0.29
Sulfide as H <sub>2</sub> S	NA	NA	NA	<1.0	<1.0	2	NA
Total Chromium (Cr)	0.0082	<0.006	0.0083	<0.006	<0.006	0.0069	NA
Benzene	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	0.00057	<0.0005
Ethylbenzene	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene	<0.001	<0.005	<0.005	<0.005	<0.0005	<0.001	<0.001
MTBE	0.0026	<0.0025	<0.0025	<0.0025	0.0037	NA	<0.0025

NA = Not Analyzed  
All Results are reported in mg/L

**Outfall 2 (formerly known as Outfall 2) Sampling Analysis**

	10/10/05	1/5/05	9/29/04	2/24/04	2/25/03	10/29/02
pH	7.91	7.88	7.92	7.84	8.54	6.8
Oil and Grease	<1.0	1.8	<1.0	<5.0	1.0	NA
Biological Oxygen Demand (BOD)	NA	NA	7.8	<8.0	<4.0	NA
Chemical Oxygen Demand (COD)	NA	NA	36.1	95	88	NA
Total Suspended Solids (TSS)	1500	390	5500	790	2300	2500
Total Kjeldahl Nitrogen	NA	NA	4.2	2.8	5.6	3.7
Nitrate + Nitrite	8.1	7.8	1.5	5	2.5	1.7
Phenols	NA	NA	<3.0	3.7	<3.0	NA
Ammonia	NA	NA	NA	NA	NA	1.6
Total Phosphorus	1.57	1.19	11.8	3.85	4.18	5.9
Sulfide as H <sub>2</sub> S	NA	NA	<1.0	<1.0	2	NA
Total Chromium (Cr)	0.012	0.039	0.016	0.09	0.026	NA
Benzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	<0.0005	0.008	<0.0005	<0.0005	<0.0005	0.0006
Ethylbenzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
MTBE	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0033

NA = Not Analyzed

All Results are reported in mg/L

**Sample Point 1 (formerly known as Outfall 1) Sampling Analysis**

	03/22/06	10/10/05	1/4/05	9/29/04	1/15/04	10/2/03
pH	8.06	8.51	7.96	7.83	7.59	7.39
Oil and Grease	<2.0	<1.0	1.70	<1.0	15.0	27
Biological Oxygen Demand (BOD)	NA	NA	NA	<8.0	17.2	21.9
Chemical Oxygen Demand (COD)	NA	NA	NA	26.5	65.1	204
Total Suspended Solids (TSS)	59	130	170	99	250	120
Total Kjeldahl Nitrogen	NA	NA	NA	<1.0	3.1	2.8
Nitrate + Nitrite	NA	NA	0.48	0.85	0.78	NA
Phenols	NA	NA	NA	<0.003	<0.003	NA
Ammonia	NA	NA	NA	NA	NA	NA
Total Phosphorus	2.67	0.38	0.79	0.69	0.99	0.83
Sulfide as H <sub>2</sub> S	NA	NA	NA	<1.0	<1.0	1.1
Total Chromium (Cr)	<0.006	<0.006	0.021	<0.006	0.021	<0.05
Benzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025
MTBE	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0033

NA = Not Analyzed

All Results are reported in mg/L

**Sample Point 1 (formerly known as Outfall 1) Sampling Analysis**

	02/13/03	10/29/02	9/11/02	4/14/02
pH	8.05	6.8	7.4	7.83
Oil and Grease	6.6	NA	NA	6
Biological Oxygen Demand (BOD)	7.7	NA	NA	8.6
Chemical Oxygen Demand (COD)	39	NA	NA	200
Total Suspended Solids (TSS)	310	140	120	592
Total Kjeldahl Nitrogen	1.7	NA	2.7	1.06
Nitrate + Nitrite	NA	NA	1.2	NA
Phenols	6.1	NA	NA	0.97
Ammonia	NA	NA	0.42	0.16
Total Phosphorus	0.55	NA	0.6	0.6
Sulfide as H <sub>2</sub> S	<1.0	NA	NA	5.71
Total Chromium (Cr)	0.011	NA	NA	0.03
Benzene	<0.0005	NA	NA	NA
Toluene	<0.0005	NA	NA	NA
Ethylbenzene	<0.0005	NA	NA	NA
Xylene	<0.0005	NA	NA	NA
MTBE	<0.0025	NA	NA	NA

NA = Not Analyzed

All Results are reported in mg/L

Sample Point 3 (formerly known as Outfall 3) Sampling Analysis

	1/26/06	10/10/05	1/4/05	9/29/04	1/20/04	10/2/03	2/13/03
pH	7.96	8.18	8.15	8.27	7.69	7.53	8.06
Oil and Grease	1.3	<1.0	1.60	<1.0	<1.0	2.4	2.9
Biological Oxygen Demand (BOD)	NA	NA	NA	<8.0	6.4	25	14.6
Chemical Oxygen Demand (COD)	NA	NA	NA	16.9	83.6	227	74
Total Suspended Solids (TSS)	260	140	310	510	100	140	450
Total Kjeldahl Nitrogen	NA	NA	NA	<1.0	1.4	3.1	2.8
Nitrate + Nitrite	<0.5	1.6	0.72	0.87	1.5	NA	1.5
Phenols	NA	NA	NA	<3.0	<3.0	NA	0.0097
Ammonia	NA	NA	NA	NA	NA	NA	NA
Total Phosphorus	0.47	0.3	0.64	0.91	0.31	0.51	0.45
Sulfide as H <sub>2</sub> S	NA	NA	NA	<1.0	<1.0	3.7	<1.0
Total Chromium (Cr)	0.0082	<0.006	0.019	<0.006	0.015	<0.006	0.033
Benzene	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	<0.001	<0.0005	<0.0005	0.0018	<0.0005	<0.0005	<0.0005
Ethylbenzene	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylene	<0.003	<0.0005	<0.0005	0.002	<0.0005	<0.0005	<0.0005
MTBE	0.0026	<0.0025	<0.0025	0.0054	0.004	<0.0025	<0.0025

NA = Not Analyzed

All Results are reported in mg/L

**Sample Point 4 (formerly known as Outfall 4) Sampling Analysis**

	10/10/05	1/4/05	9/29/04	2/4/04	2/25/03	10/29/02	9/11/02
pH	8.07	7.92	8.16	7.37	9.31	7.7	7.4
Oil and Grease	<1.0	1.1	<1.0	5	1.2	NA	NA
Biological Oxygen Demand (BOD)	NA	NA	<8.0	<16.0	<4.0	NA	NA
Chemical Oxygen Demand (COD)	NA	NA	24.1	119	46	NA	NA
Total Suspended Solids (TSS)	720	130	320	690	1000	2400	33
Total Kjeldahl Nitrogen	NA	NA	<1.0	2.2	<1.0	1.8	1.3
Nitrate + Nitrite	1.8	1.7	<1.0	0.66	1.2	1.3	2.1
Phenols	NA	NA	<3.0	<3.0	<3.0	NA	NA
Ammonia	NA	NA	NA	NA	NA	0.38	0.33
Total Phosphorus	0.75	0.45	1.57	0.88	1.3	0.8	0.21
Sulfide as H <sub>2</sub> S	NA	NA	<1.0	<1.0	<1.0	NA	NA
Total Chromium (Cr)	<0.006	0.21	<0.006	0.035	<0.006	NA	NA
Benzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.001
Toluene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.001
Ethylbenzene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.001
Xylene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.001
MTBE	<0.0025	<0.0025	<0.0025	<0.0025	NA	NA	NA

NA = Not Analyzed

All Results are reported in mg/L





U.S. Fish & Wildlife Service

## Endangered Species List

[Back to Start](#)

### List of species by county for New Mexico:

Counties Selected: San Juan

Select one or more counties from the following list to view a county list:

Bernalillo

Catron

Chaves





















Cibola

Colfax



[View County List](#)

### San Juan County

<u>Common Name</u>	<u>Scientific Name</u>	<u>Species Group</u>	<u>Listing Status</u>	<u>Species Image</u>	<u>Species Distribution Map</u>	<u>Critical Habitat</u>	<u>More Info</u>
bald eagle	<i>Haliaeetus leucocephalus</i>	Birds	AD, T				<a href="#">P</a>
black-footed ferret	<i>Mustela nigripes</i>	Mammals	E, EXPN				<a href="#">P</a>
Colorado pikeminnow (=squawfish)	<i>Ptychocheilus lucius</i>	Fishes	E, EXPN				<a href="#">P</a>
Knowlton cactus	<i>Pediocactus knowltonii</i>	Flowering Plants	E				<a href="#">P</a>
Mancos milk-vetch	<i>Astragalus humillimus</i>	Flowering Plants	E				<a href="#">P</a>
Mesa Verde cactus	<i>Sclerocactus mesae-verdae</i>	Flowering Plants	T				<a href="#">P</a>
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Birds	T				<a href="#">P</a>
razorback sucker	<i>Xyrauchen texanus</i>	Fishes	E			<a href="#">Final</a>	<a href="#">P</a>
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Birds	E				<a href="#">P</a>
yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Birds	C				<a href="#">P</a>

# bald eagle

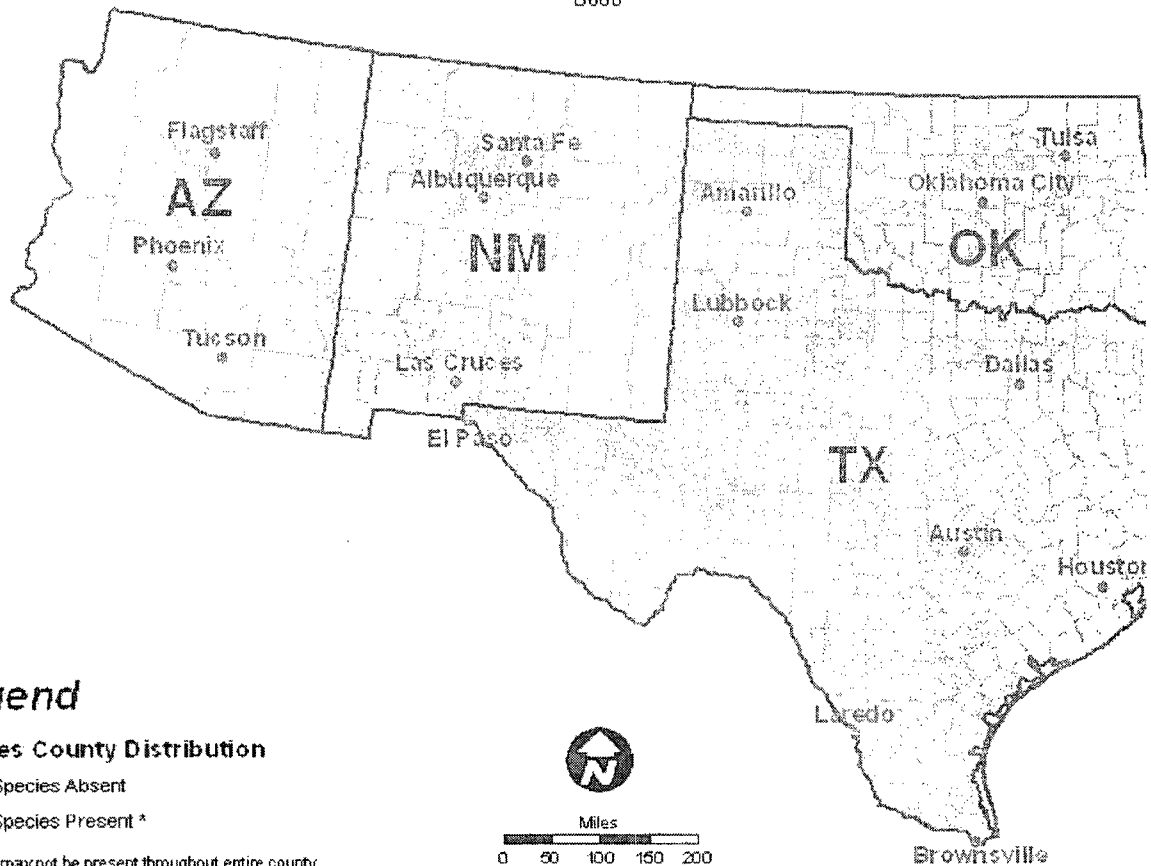
Scientific Name: *Haliaeetus leucocephalus*

## County Distribution Map

### bald eagle

*Haliaeetus leucocephalus*

B008



# Colorado pikeminnow (=squawfish)

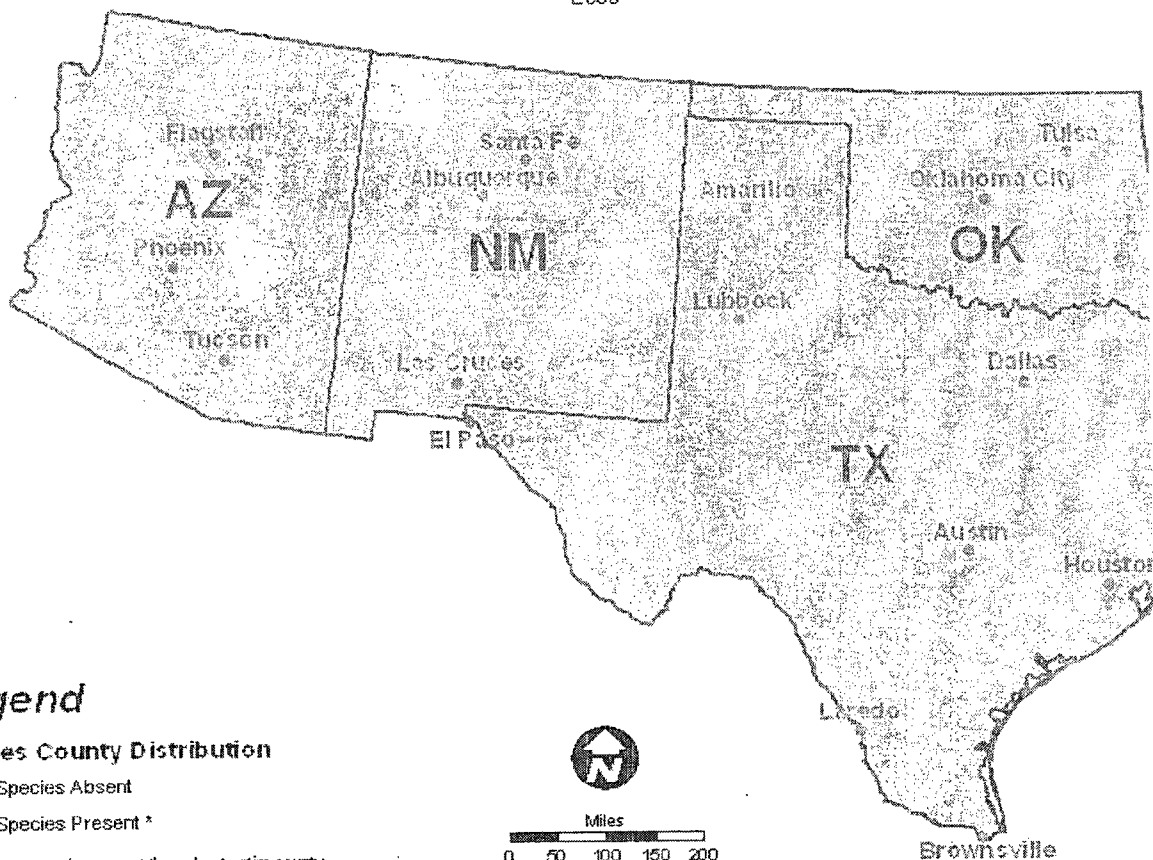
Scientific Name: *Ptychocheilus lucius*

## County Distribution Map

### Colorado pikeminnow (=squawfish)

*Ptychocheilus lucius*

E006



# Knowlton cactus

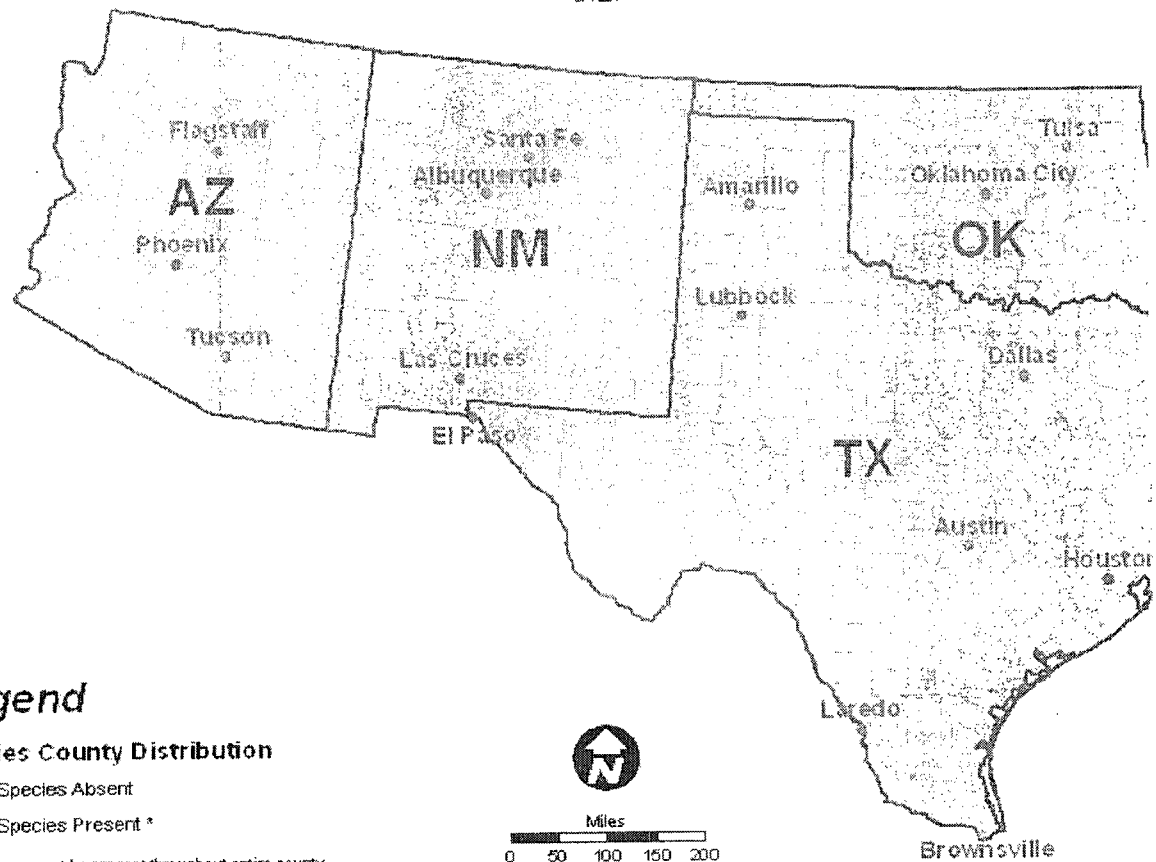
Scientific Name: *Pediocactus knowltonii*

## County Distribution Map

### Knowlton cactus

*Pediocactus knowltonii*

Q1ZY



### Legend

#### Species County Distribution

Species Absent

Species Present \*

\* Species may not be present throughout entire county

# Mancos milk-vetch

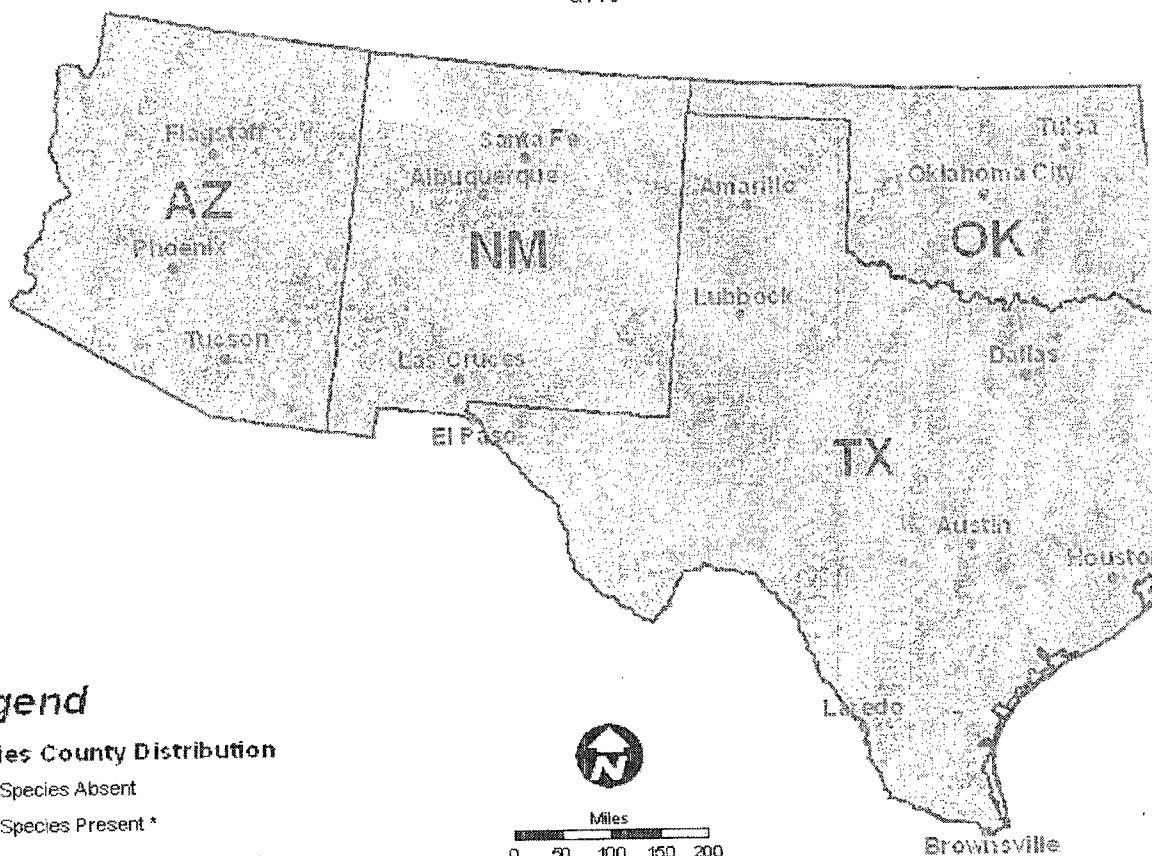
Scientific Name: *Astragalus humillimus*

## County Distribution Map

### Mancos milk-vetch

*Astragalus humillimus*

Q1T9



## Legend

### Species County Distribution

Species Absent

Species Present \*

\* Species may not be present throughout entire county

# Mesa Verde cactus

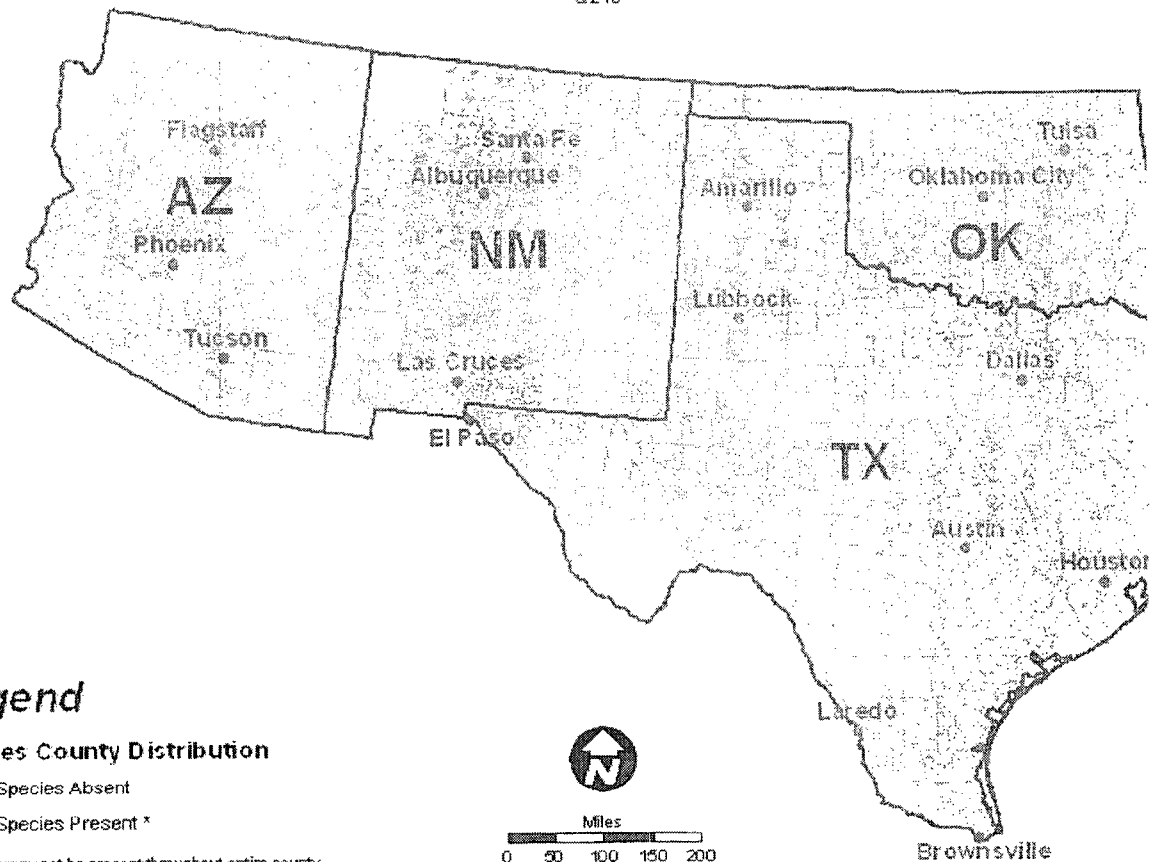
Scientific Name: *Sclerocactus mesae-verdae*

## County Distribution Map

### Mesa Verde cactus

*Sclerocactus mesae-verdae*

Q21J



# Mexican spotted owl

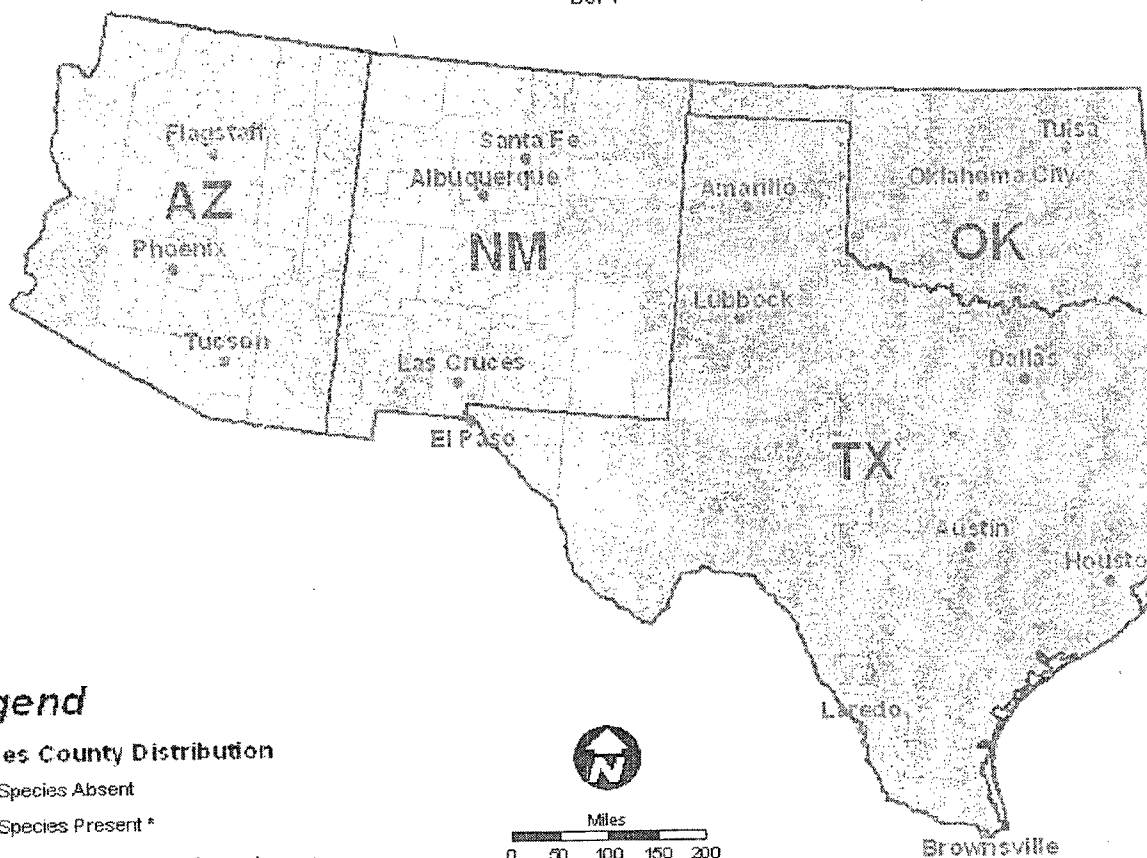
Scientific Name: *Strix occidentalis lucida*

## County Distribution Map

### Mexican spotted owl

*Strix occidentalis lucida*

B074



# razorback sucker

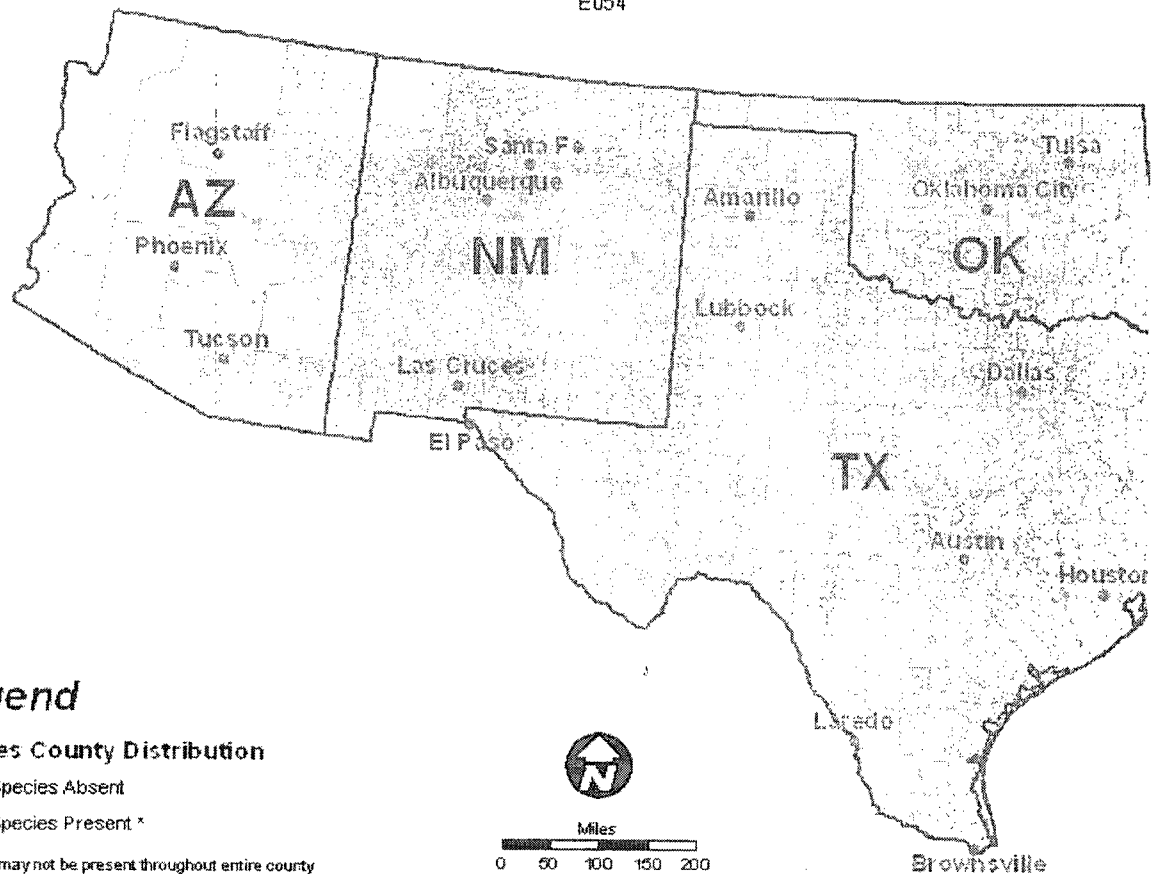
Scientific Name: *Xyrauchen texanus*

## County Distribution Map

### razorback sucker

*Xyrauchen texanus*

E054



## Legend

### Species County Distribution

- Species Absent
- Species Present \*

\* Species may not be present throughout entire county



# southwestern willow flycatcher

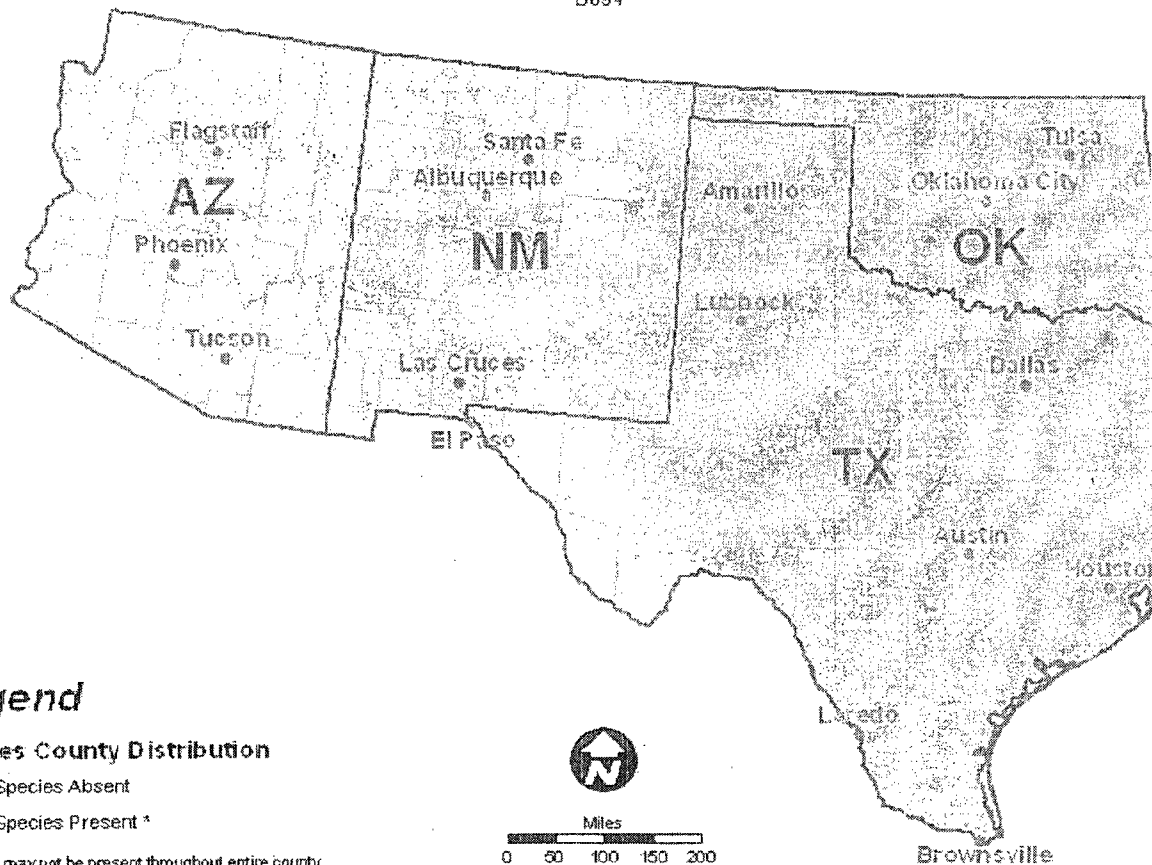
Scientific Name: *Empidonax traillii extimus*

## County Distribution Map

# southwestern willow flycatcher

*Empidonax traillii extimus*

B094



# yellow-billed Cuckoo

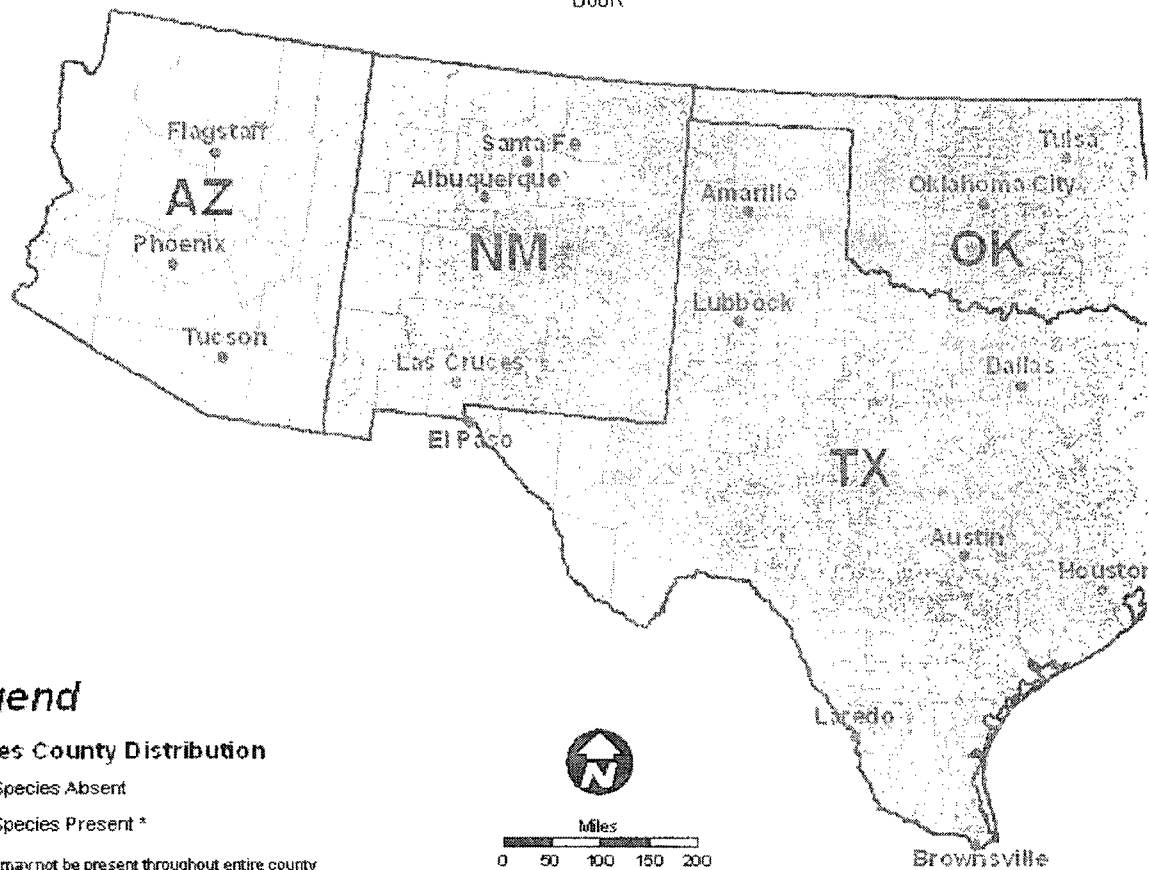
Scientific Name: *Coccyzus americanus*

## County Distribution Map

### yellow-billed cuckoo

*Coccyzus americanus*

B06R



## Legend

### Species County Distribution

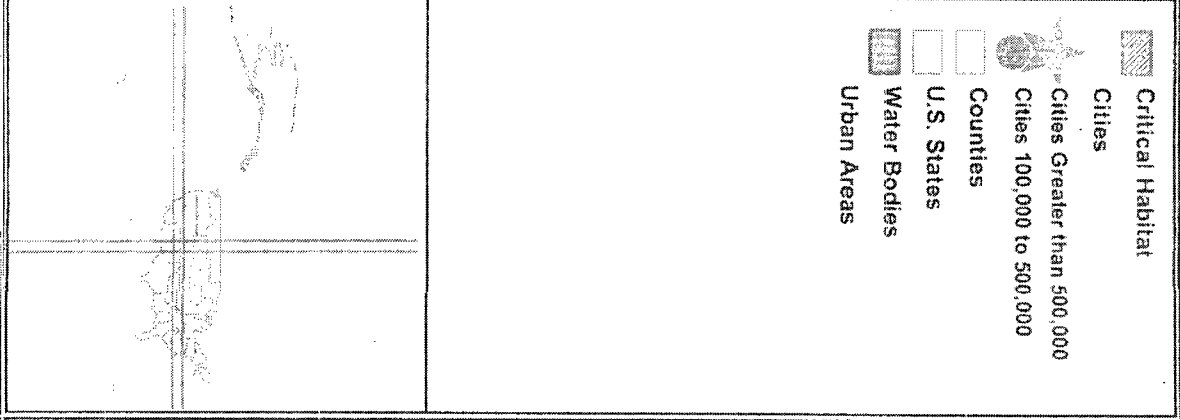
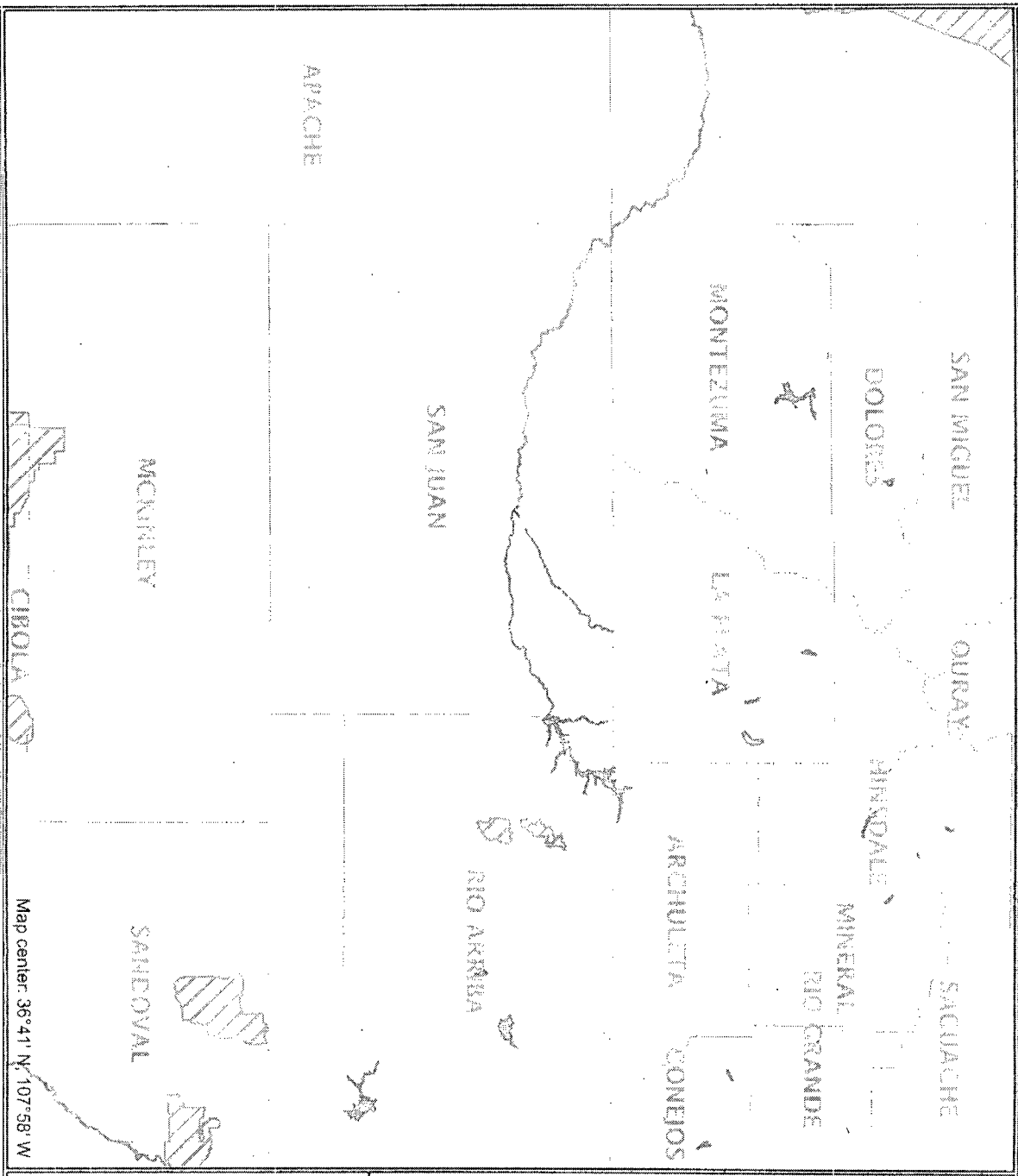
Species Absent

Species Present \*

\* Species may not be present throughout entire county



# Critical Habitat at a 1 to 2.5 million scale



Disclaimer: This map DOES NOT represent all of the critical habitat designated by the U.S. Fish & Wildlife Service. It shows only the available digitized critical habitats that have been submitted into this system as of print date.

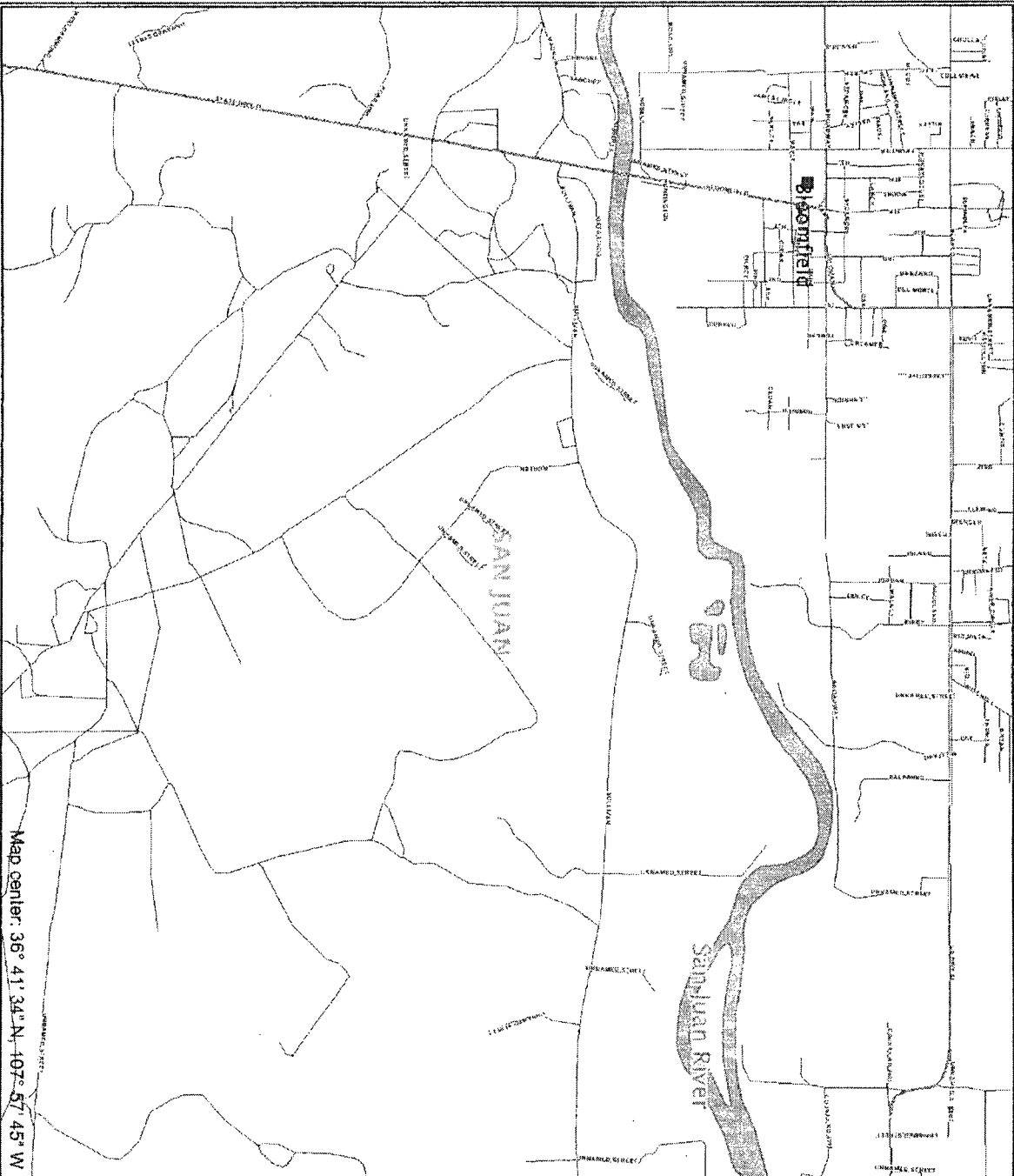


Map center: 36°41' N, 107°58' W

Scale 1:2,500,000  
U.S. Fish & Wildlife Service  
Printed: Mar 7, 2006 2:51:19 PM



# Critical Habitat Map around Bloomfield Refinery 1:50,000 scale

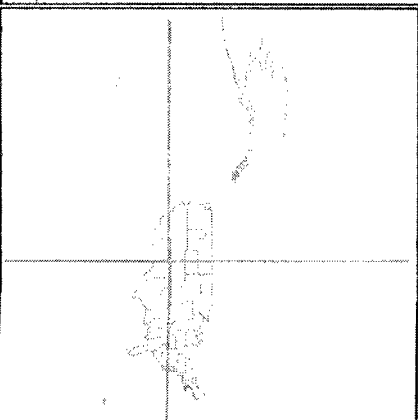


Map center: 36° 41' 34" N, 107° 57' 45" W

Disclaimer: This map DOES NOT represent all of the critical habitat designated by the U.S Fish & Wildlife Service. It shows only the available digitized critical habitats that have been submitted into this system as of print date.



- Critical Habitat
- Cities
- Cities Greater than 500,000
- Cities 100,000 to 500,000
- Towns below 100,000
- Counties
- U.S. States
- Water Bodies
- Urban Areas



Scale 1:50,000  
U.S. Fish & Wildlife Service  
Printed: Mar 7, 2006 11:35:20 AM



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Tel: (512) 347 7588 Fax: (512) 347 8243  
Internet: [www.rpsgroup.com/energy](http://www.rpsgroup.com/energy)

## INVESTIGATION REPORT

### GROUP 2

(SWMU No. 2 Drum Storage Area North Bone Yard, SWMU No. 8 Inactive Landfill, SWMU No. 9 Landfill Pond, SWMU No. 11 Spray Irrigation Area, and SWMU No. 18 Warehouse Yard)

**Bloomfield Refinery**  
**Western Refining Southwest, Inc.**  
**#50 Rd 4990**  
**Bloomfield, New Mexico 87413**

**May 2009**

A handwritten signature in black ink, appearing to read 'James R. Schmaltz', written over a horizontal line.

James R. Schmaltz  
Environmental Manager  
Western Refining Southwest, Inc.,  
Bloomfield Refinery

A handwritten signature in black ink, appearing to read 'Scott T. Crouch', written over a horizontal line.

Scott T. Crouch, P.G.  
Senior Consultant  
RPS JDC, Inc.  
404 Camp Craft Rd.  
Austin, Texas 78746



WNR  
LISTED  
NYSE

BLOOMFIELD REFINERY

May 12, 2009

James Bearzi, Bureau Chief  
New Mexico Environmental Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

Re: Giant Refining Company, Bloomfield Refinery (currently known as Western Refining Southwest, Inc. – Bloomfield Refinery) Order No. HWB 07-34 (CO) Solid Waste Management Unit (SWMU) Group No. 2 Investigation Report

Dear Mr. Bearzi:

Western Refining Southwest, Inc. – Bloomfield Refinery submits the referenced Investigation Report pursuant to Section IV.B.7 of the July 2007 HWB Order. The Investigation Report summarizes the site environmental investigation activities completed for SWMUs designated as Group 2. These include SWMU No. 2 Drum Storage Area North Bone Yard, SWMU No. 8 Inactive Landfill, SWMU No. 9 Landfill Pond, SWMU No. 11 Spray Irrigation Area, and SWMU No. 18 Warehouse Yard. The Investigation Report was developed and formatted to meet the requirements of Section X.C of the July 2007-HWB Order.

If you have any questions or would like to discuss the Investigation Report, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz  
Environmental Manager  
Western Refining Southwest, Inc.  
Bloomfield Refinery

cc: Hope Monzeglio – NMED HWB  
Carl Chavez – NMOCD (w/attachment)  
Brad Jones - NMOCD  
Dave Cobrain – NMED HWB  
Laurie King – EPA Region 6 (w/attachment)  
Todd Doyle – Bloomfield Refinery  
Allen Hains – Western Refining El Paso

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## **Section 1**

### **Introduction**

The Bloomfield Refinery is located immediately south of Bloomfield, New Mexico in San Juan County (Figure 1). The physical address is #50 Road 4990, Bloomfield, New Mexico 87413. The Bloomfield Refinery is located on approximately 263 acres. Bordering the facility is a combination of federal and private properties. Public property managed by the Bureau of Land Management lies to the south. The majority of undeveloped land in the vicinity of the facility is used extensively for oil and gas production and, in some instances, grazing. U.S. Highway 44 is located approximately one-half mile west of the facility. The topography of the main portion of the site is generally flat with steep bluffs to the north where the San Juan River intersects Tertiary terrace deposits.

The Bloomfield Refinery is a crude oil refinery currently owned by Western Refining Southwest, Inc., which is a wholly owned subsidiary of Western Refining Company, and it is operated by Western Refining Southwest, Inc. – Bloomfield Refinery. The Bloomfield Refinery has an approximate refining capacity of 18,000 barrels per day. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization, and diesel hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG.

On July 27, 2007, the New Mexico Environment Department (NMED) issued an Order to San Juan Refining Company and Giant Industries Arizona, Inc. ("Western") requiring investigation and corrective action at the Bloomfield Refinery. This Investigation Report has been prepared for the Solid Waste Management Units (SWMUs) designated as Group 2 in the Order, with the exception of SWMU No. 11 Spray Irrigation Area. This includes:

- SWMU No. 2 Drum Storage Area North Bone Yard (North Bone Yard);
- SWMU No. 8 Inactive Landfill (Landfill);
- SWMU No. 9 Landfill Pond; and
- SWMU No. 18 Warehouse Yard.

## Section 2 Background

This section presents background information for each of the SWMUs, including a review of historical waste management activities for each location to identify the following:

- type and characteristics of all waste and all contaminants handled in the subject SWMU;
- known and possible sources of contamination;
- history of releases; and
- known extent of contamination prior to the current investigation.

### 2.1 SWMU No. 2 Drum Storage Area North Bone Yard

The North Bone Yard (Drum Storage Area) is located to the north of the fresh water pond and south of the Hammond Ditch. It is enclosed by a fence with a single entry point at the southwest corner and is used to store various pieces of equipment, including some scrap metal that is routinely shipped off-site for recycling. In addition, some empty drums may be temporarily stored in this area (see photos in Appendix D). No waste materials are currently managed in this area.

During an inspection conducted by EPA in 1984, several drums containing solvents and oils used in the refining process were noted as being stored in this area. The drums were removed from the North Bone Yard in July 1987 and placed in a designated drum storage area in the warehouse yard located on the west side of the refinery. There has not been a report of any releases from the drums in the North Bone Yard; however, there is no record of historical soil samples from this area. Monitoring well MW-1 is located within the North Bone Yard and numerous ground water samples have been collected and analyzed. The analytical results are included in Tables 1 – 4. There was no indication of ground water impacts at SWMU No. 2 based on the historical ground water analyses at MW-1, which do not indicate concentrations of constituents above the screening levels.

### 2.2 SWMU No. 8 Landfill

The "landfill", which has been identified as SWMU No. 8, is located to the east of the tank farm. In 1982, sludge was removed from the North and South Aeration Lagoons (known earlier as the North and South Oily Water Ponds) and disposed of in an off-site hazardous disposal

facility. The underlying potentially contaminated soils, which were removed from beneath the North and South Aeration Lagoons, were placed in the landfill. The potential contaminants placed in the landfill in 1982 were formed during the secondary treatment of the refinery wastewaters and as such the types of and characteristics of the waste are well known. This includes the more prevalent types of hydrocarbons (e.g., BTEX and semi-volatile organics) associated with crude oil and refined petroleum products and possibly inorganic contaminants (e.g., lead and chromium) that are utilized in or are byproducts of the refining process.

This area was investigated in 1985 to support preparation of a Closure Plan for the API Wastewater Ponds, Landfill and the Landfill Pond (related documentation in Appendix C). Eight soil samples were collected from across the area of the landfill and analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX), phenolics, total chromium, and total lead. The results of these analyses are included in Table 5. As indicated, all analyses were non-detect with detection limits below the applicable action levels except for benzene, which was non-detect but had detection limits above the action level. There is no map of the actual sample locations but the area of the landfill was divided into quadrants and two samples from depths of 0-6" and 6-12" were collected from the center of each quadrant.

In 1989, approximately 2,000 yards of soil were excavated and stockpiled at one location within the landfill. This activity was taken to support closure of this area and in 1991 Bloomfield filed a petition for delisting of these stockpiled materials, which had earlier been classified as a listed hazardous waste (K051 – API separator sludge from the petroleum refining industry). The stockpiled soils were sampled to support the delisting petition and the results are summarized in Table 4 of the Hazardous Waste Delisting Petition Petroleum Contaminated Soil document prepared by ERM-Rocky Mountain, Inc. in April 1991. The Environmental Protection Agency (EPA) granted the delisting petition, with an effective date of September 3, 1996. On February 25, 1998, the NMOCD approved the on-site disposal of these soils as fill material near the naphtha loading rack with the placement of clean soil as a cap.

There is no record of any other waste materials being placed in the landfill with the possible exception of minor quantities of catalyst fines and sulfur. The area is currently inactive as shown in the pictures in Appendix D. There is a single wastewater pipeline at a depth of approximately six feet below ground surface that runs across the landfill, as depicted in Figure 6.

### 2.3 SWMU No. 9 Landfill Pond

The Landfill Pond is located to the northeast of SWMU No. 8 Landfill and immediately east of SWMU No. 10 Fire Training Area (Figure 2). The "pond" was created when a shallow arroyo was blocked by the construction of the Hammond Irrigation Ditch. This area was designated as a SWMU due to the fact that it is topographically lower than the landfill and EPA was concerned that stormwater flowing from the landfill could have transported contaminants to this location. Wastes have not historically been and are not today managed in this area. The potential contaminants that could have impacted this area are the same contaminants that were placed in the landfill (SWMU No. 8).

Seven soil samples were collected from the Landfill Pond in 1985. All of the samples were analyzed for BTEX, phenolics, total chromium, and total lead, and one of the samples was analyzed for the EPA Skinner List constituents. The results of these analyses are include on pages 7 – 16 of the Report of Analytical Results for Engineering Science Bloomfield Refining Company, which was prepared by Rocky Mountain Analytical Laboratory on May 28, 1986 (Appendix C). As indicated, all analyses were non-detect with the exception of chromium and lead, which had low concentrations below the action levels.

In 1986, a closure plan for the API Wastewater Ponds, Landfill, and Landfill Pond was completed. The closure plan documented that the existing conditions at the landfill pond were protective of human health and the environment and proposed no additional actions. The proposed closure plan was submitted for public comment from December 10, 1993 through January 9, 1994. One comment was received, which recommended that measures be taken to prevent water from ponding in the site for extended periods of time. NMED approved closure of the landfill pond on January 25, 1994 and noted that no changes were required to the proposed closure plan. The January 25, 1994 letter, a copy of which is included in Appendix C, stated the following, "No additional closure activities are required to demonstrate clean closure of the site." In correspondence dated June 11, 2008, NMED noted that their administrative record does not contain a report that describes implementation of a closure plan and that NMED did not have corrective action authority delegated from EPA until 1996, thus any prior approvals of no further action should have been approved and signed by EPA. Additional characterization was conducted for this area.

## **Section 3**

### **Scope of Activities**

#### **3.1 Soil Boring and Monitoring Well Installation**

Pursuant to Section IV of the Order, an investigation of soils and ground water was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil borings and monitoring wells were installed at the North Bone yard (SWMUs No. 2), the Landfill (SWMU No. 8), the Landfill Pond (SWMU No. 9), and the Warehouse Yard (SWMU No. 18).

The soil borings were drilled using hollow-stem auguring (HSA) method or air rotary-ODEX method. All soil borings were drilled to a minimum depth of 10 feet with at least one boring at each of the individual potential source areas drilled to the top of saturation, with the exception of SWMU No. 2 where all soil borings were drilled to the water table. Soil samples were collected continuously and logged by a qualified geologist in accordance with USCS nomenclature. Soil samples were collected using split-spoon samplers.

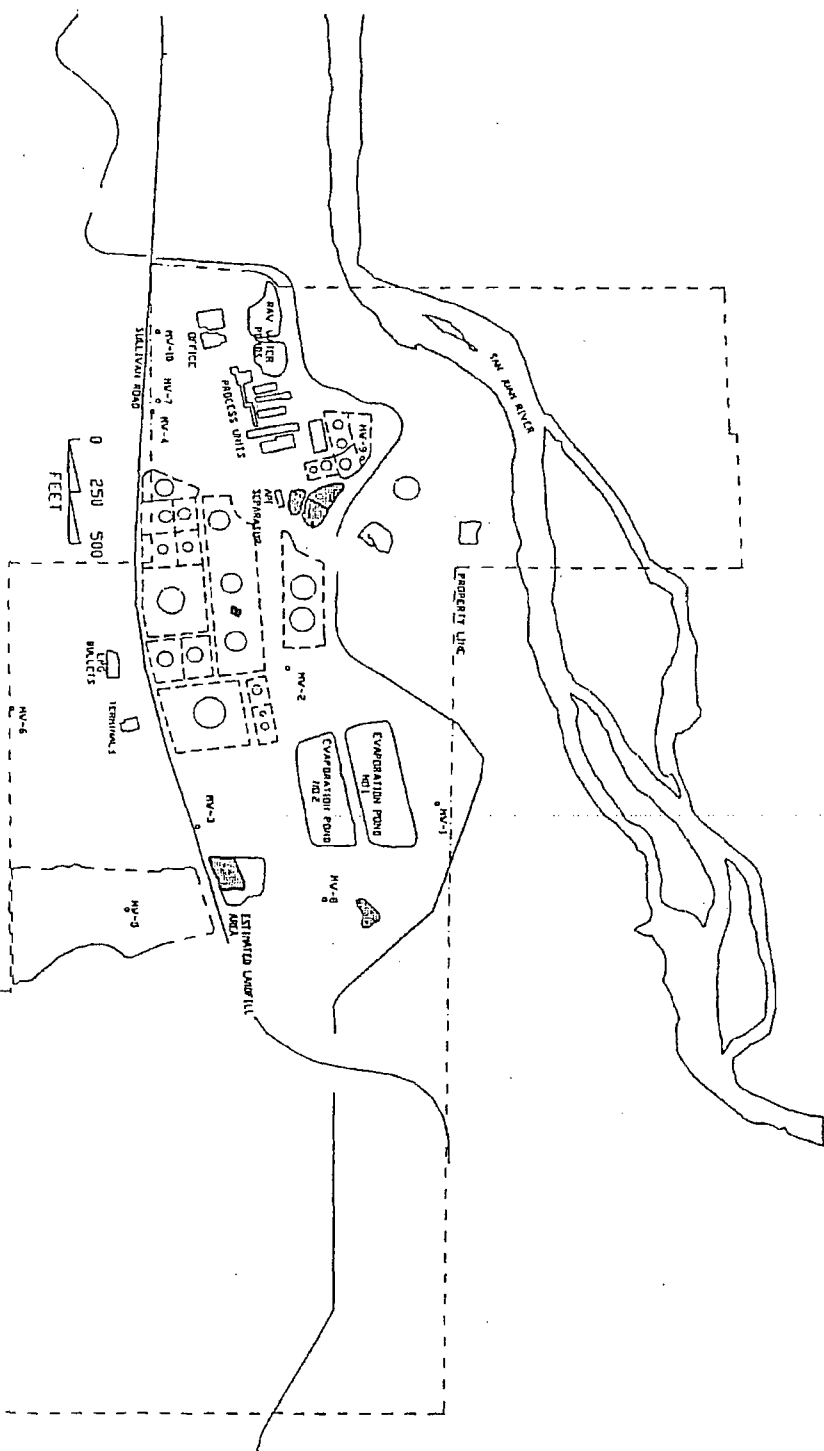
#### **3.2 Background Information Research**

Documents containing the results of previous investigations and subsequent routine ground water monitoring data from monitoring wells were reviewed to facilitate development of the Investigation Work Plan. The previously collected data provides very good information on the overall subsurface conditions, including hydrogeology and contaminant distribution within ground water. The data collected under this scope of services supplements the historical ground water information and provide SWMU-specific information regarding contaminant occurrence and distribution within soils.

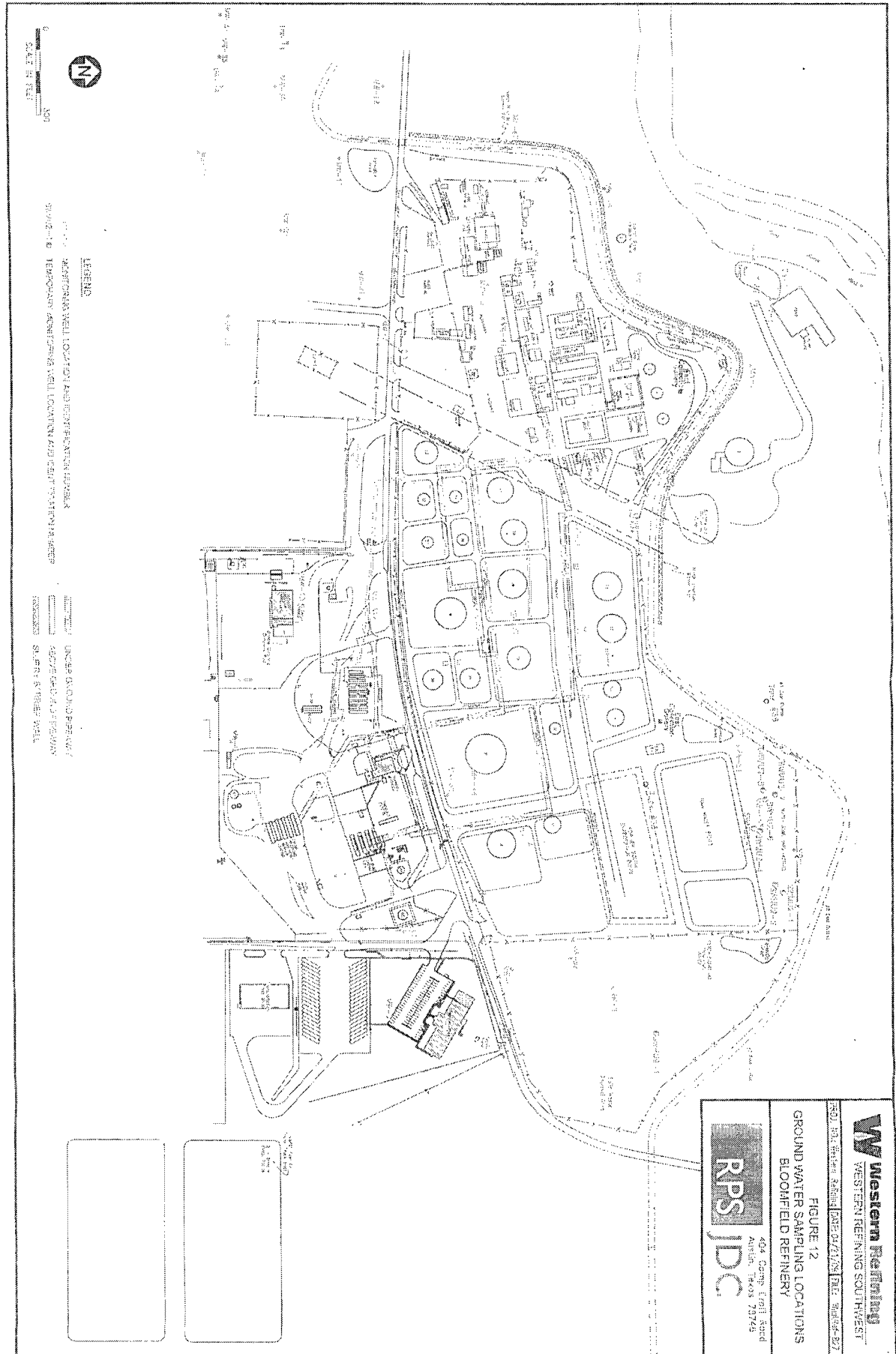
#### **3.3 Collection and Management of Investigation Derived Waste**

Drill cuttings, excess sample material and decontamination fluids, and all other investigation derived waste (IDW) associated with soil borings was contained and characterized using methods based on the boring location, boring depth, drilling method, and type of contaminants suspected or encountered. All purged ground water and decontamination water was disposed in the refinery wastewater treatment system upstream of the API Separator.

FIGURE 1  
BLOOMFIELD REFINERY FACILITY MAP



ES ENGINEERING - SCIENCE  
10000 LEBANON AVENUE  
BLOOMFIELD, NEW JERSEY 07003  
TEL: 201-341-1000  
FAX: 201-341-1001



**WESTERN REFINING**  
WESTERN REFINING SOUTHWEST

404 Camp Ewell Road  
Austin, Texas 78749

**RPS JDC**

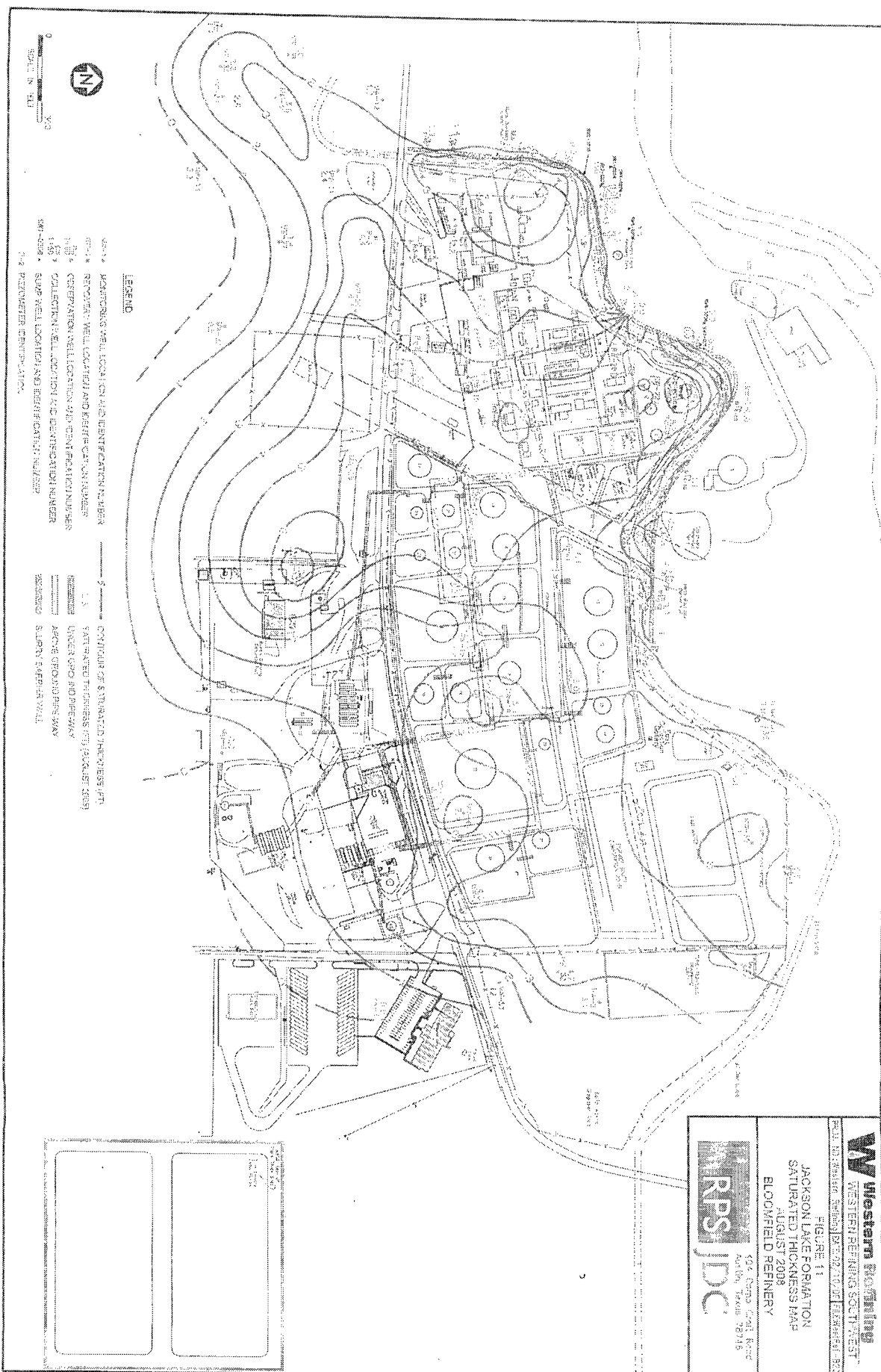




FIGURE 11

JACKSON LAKE FORMATION  
SATURATED THICKNESS MAP  
AUGUST 2008  
BLOOMFIELD REFINERY

604 Corps Cont Road  
Austin, Texas 78745





Aerial Map Source: Google Maps, 2007.



#### LEGEND

- PROPOSED SOIL BORING LOCATION
- PROPOSED MONITORING WELL COMPLETION
- MW-8 MONITORING WELL LOCATION

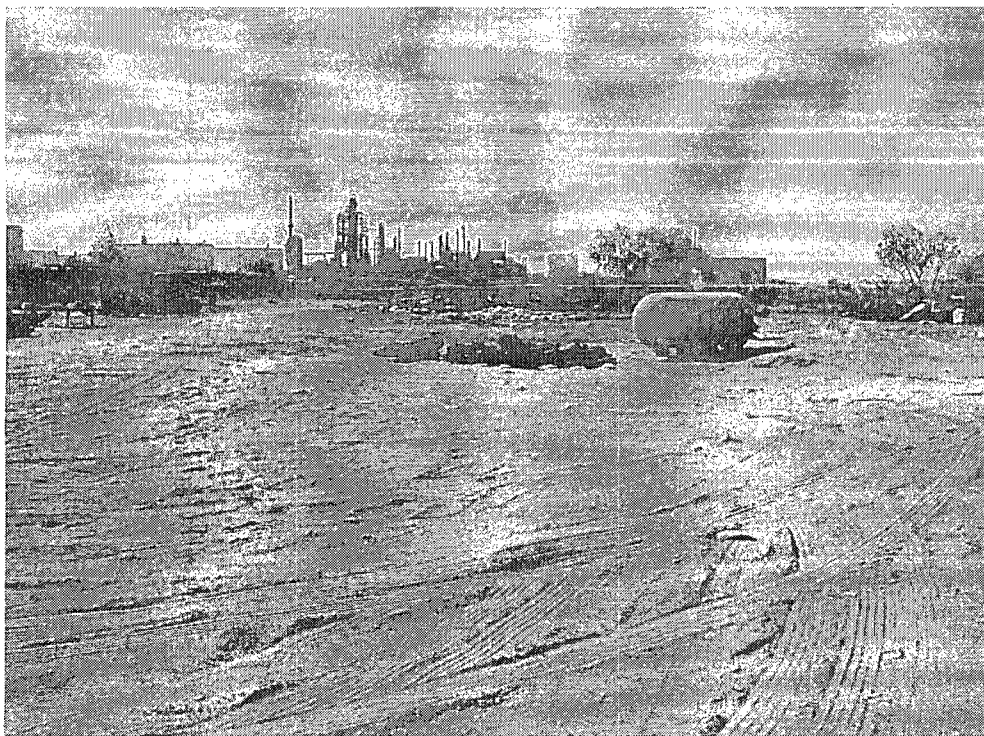
**W Western Refining**

WESTERN REFINING COMPANY

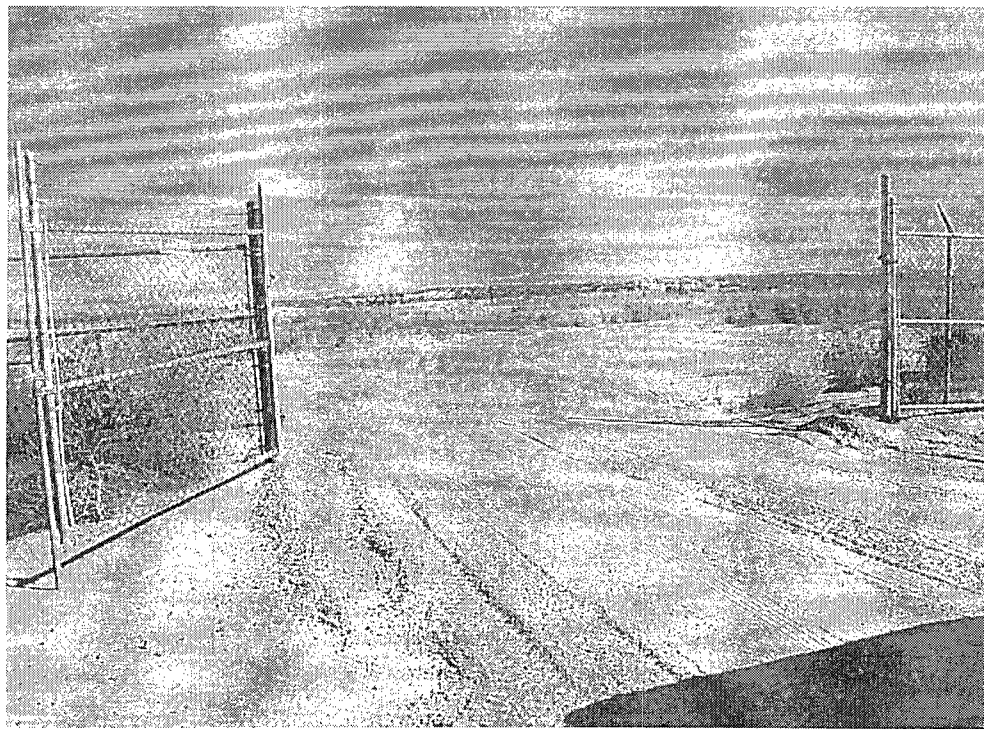
PROJ. NO.: Giant DATE: 10/26/07 FILE: GiantAQ2

#### FIGURE 9 SWMUs No. 8 AND No. 9 SAMPLE LOCATION MAP GIANT BLOOMFIELD REFINERY

**RPS JDC**  
404 Camp Craft Road  
Austin, Texas 78746

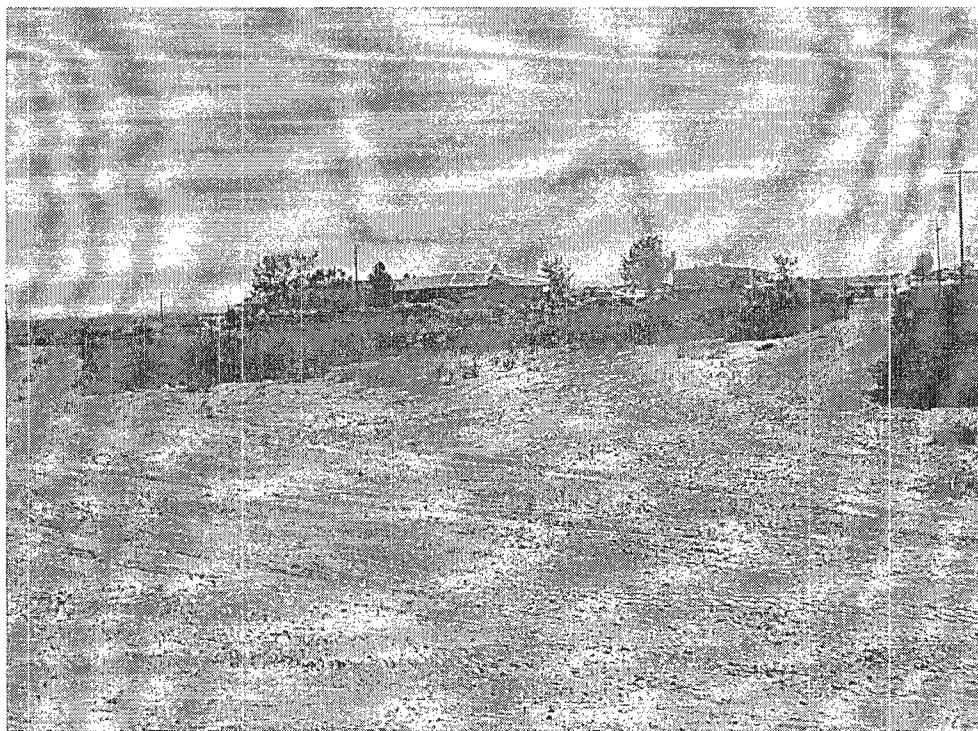


North Bone yard  
Scrap metal storage area.



Landfill (SWMU No. 8)  
Looking to southeast across landfill

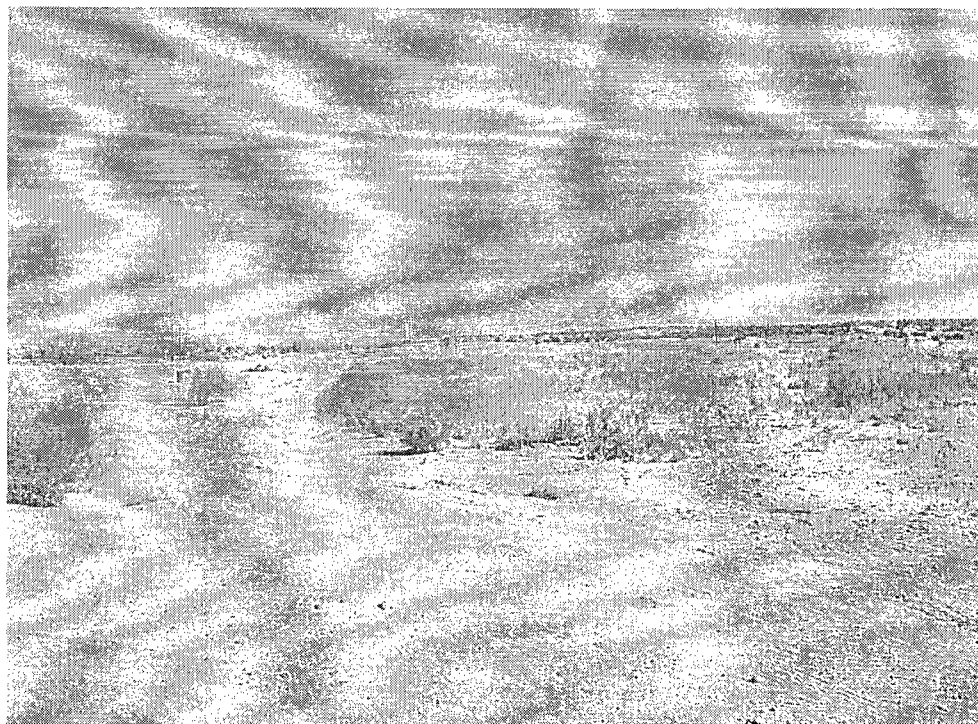




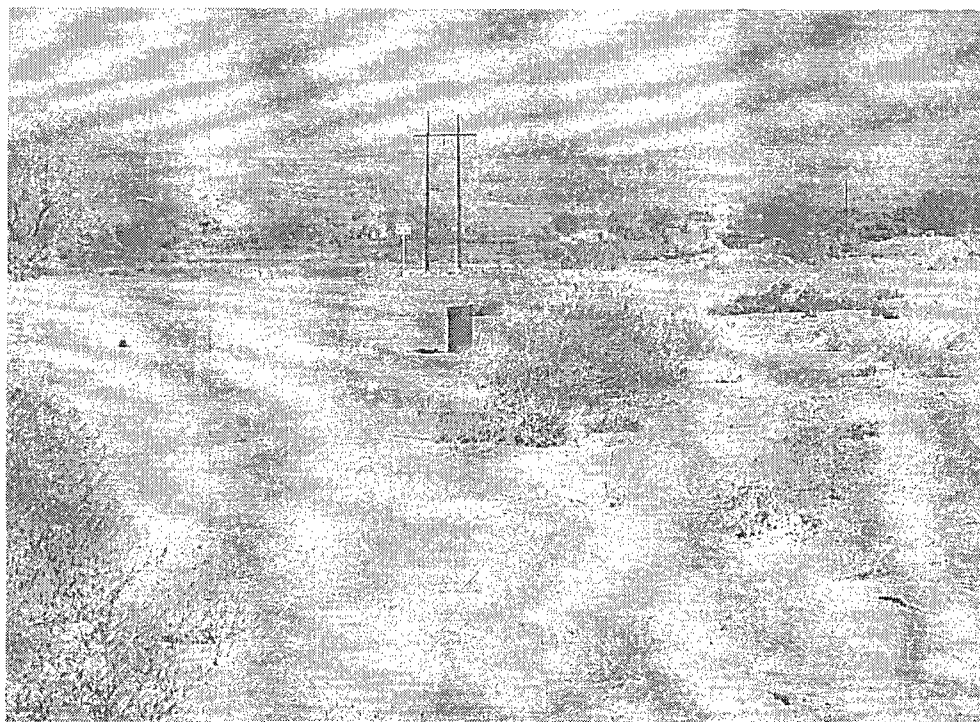
Landfill  
Looking south from Northwest corner.



Landfill  
Looking southeast across landfill area.



Landfill  
Looking east across landfill, MW-8 off to left.



Landfill  
Closeup of MW-8.

sample was collected from the interval 33 to 34 feet bgl. The augers were then tripped out of the borehole and the air rotary/ODEX drilling system was then tripped back into the borehole. Drilling and sampling continued with the air/rotary ODEX drilling system. The borehole was drilled to a depth of 39 feet bgl and sampled to a depth of 41 feet bgl. There were no indications of contamination based on the field screening results nor were there any visual or olfactory evidence of contamination in the interval from 0 to 41 feet bgl.

Slotted (0.01 inch) rigid PVC well screen was placed at the bottom of the well and extended for 15 feet (23 to 38 feet) to ensure that the entire saturated zone was open to the well. Rigid Schedule 40 PVC with threads was utilized for the well casing. No glues or solvents were utilized. A six-inch sand bed was placed at the bottom of the well bore. The 10/20 sand filter pack was installed approximately three feet over the top of the well screen. As the sand was installed in the wellbore the outer casing of the ODEX drilling system was removed. Pursuant to Section IX.C. of the Order, a minimum of two feet of bentonite seal was placed over the filter pack and hydrated. An annular grout was pumped by tremie method to within two feet of the ground surface and allowed to cure for a minimum of 24 hours before surface pad and protective casing were installed. Soil cuttings were placed in open top 55-gallon drums and were sealed when not in use.

Copies of the well construction logs are located in Appendix B.

#### SWMU No. 9 landfill pond

On September 28, 2008 the drilling rig was mobilized to the SWMU No. 9 area (Figure 6). Using the HSA drilling method and split spoon samplers the borehole (SWMU 9-1) was advanced to a depth of 17 feet bgl, two feet below the top of Nacimiento Formation. The boring was converted to a temporary monitoring well with the screen set at 12 to 17 feet bgl. A ground water sample was collected and the boring was plugged with grout.

A copy of the field boring log is located in Appendix B.

#### SWMU No. 18 Warehouse Yard

On September 26, 2008, four soil borings were advanced to a depth of 10 feet (Figure 9). Since there no were indications of contamination based on the field screening results at 10 feet bgl, three of the four borings were terminated at the preplanned depth of 10 feet. The borings were

Copies of the well construction logs are located in Appendix B.

#### SWMU No. 8 Landfill

All soil borings were advanced to a minimum depth of 10 feet in accordance with the Site Investigation Work Plan (Figure 6). There no were indications of contamination based on the field screening results at 10 feet nor were there any evidence of waste materials or other signs of contamination. Ten of the 12 borings were terminated at the preplanned depth of 10 feet.

As directed by NMED, two soil borings (SWMU 8-6A and SWMU 8-12) were drilled to the water table and were subsequently converted to monitor wells (MW-52 and MW-53). Upon completing the sampling and logging of the top 10 feet in the 12 soil borings the drilling rig was mobilized to location SWMU 8-6 to continue sampling and logging beyond 10 feet in depth. A water line was nicked by the drilling augers. The drilling, sampling and logging was stopped for the day. The water line was isolated and repaired, and the monitor well location (SWMU 8-6A) was moved approximately 40 feet due west.

On September 24, 2008 the CME 75 drilling rig was mobilized to location SWMU 8-12. Using HSA drilling method the boring was sampled, screened and logged as described in Section 4.2. At a depth of 39 feet the drilling became difficult. The augers were tripped out of the borehole and were found to be missing cutting teeth. In addition, the blades on the flight augers were severely damaged due to the large cobbles in the formation. A new auger was installed and the drilling commenced. The borehole was drilled to a depth of 41.5 feet prior to ending the day. As seen on the well construction log the Nacimiento Formation was encountered at 38.5 feet bgl. A soil sample was collected from the depth of 37 to 38.5 feet. There were no indications of contamination based on the field screening results nor was there any visual or olfactory evidence of contamination in the interval from 10 to 41.5 feet below ground surface.

The driller recommended that the drilling method should be changed to air rotary-ODEX method. When drilling with the air rotary/ODEX equipment a bit is advanced below casing. The bit consists of "reamer wings" that expand outward during drilling to drill a hole that is larger than the casing outer diameter. When the desired drilling depth is acquired, the bit is rotated backwards and the wings retract allowing the reamer to swing into a retracting position. The drill bit can be retracted through the remaining casing leaving it intact within the borehole. Using this method allows for the collection soil samples as the casing is advanced.

On September 25, 2008 Western Refining requested from NMED a change in the planned location for SWMU 8-6 and also a change in drilling methodology. The changes were granted on September 25, 2008 and a copy of the related correspondence is included in Appendix E.

Since the ODEX drilling equipment would have to be transported to the site the decision was made to continue drilling and sampling at other SWMUs using the HSA method until the equipment arrived.

On September 28, 2008 the borehole for SWMU 8-12 was re-entered. During the drilling process the threads from the blow tube sheared off in the ODEX sub, twice. The parts were required to be transported off site to a machine shop to be repaired. Since the ODEX drilling equipment was inoperable the decision was made to continue drilling and sampling at other SWMUs using the HSA method until the equipment was repaired.

On October 13, 2008 the borehole for SWMU 8-12/MW-53 was re-entered. The borehole was drilled to a depth of 41 feet. Slotted (0.01 inch) rigid PVC well screen was placed at the bottom of the well and extended for 15 feet (25 to 40 feet) to ensure that the entire saturated zone was open to the well. Rigid Schedule 40 PVC with threads was utilized for the well casing. No glues or solvents were utilized. A six-inch sand bed was placed at the bottom of the well bore. The 10/20 sand filter pack was installed to two feet over the top of the well screen. As the sand was installed in the wellbore the outer casing of the ODEX drilling system was removed. Pursuant to Section IX.C. of the Order, a minimum of two feet of bentonite seal was placed over the filter pack and hydrated. An annular grout was pumped by tremie method to within two feet of the ground surface and allowed to cure for a minimum of 24 hours before surface pad and protective casing were installed. Soil cuttings were placed in open top 55-gallon drums and were sealed when not in use.

On October 13, 2008 the borehole for SWMU 8-6A/MW-52 was re-entered. The original location, SWMU 8-6, was abandoned after a water line was struck. With NMED approval the new location was moved 42 feet to the west. Using HSA drilling methods and split spoon samplers the borehole was drilled to a depth of 10 feet prior to shutting down for the end of the day.

On October 14, 2008 the drilling and sampling continued at SWMU 8-6A/MW-52 using HSA drilling methods and split spoon sampling. Saturation was encountered at 34 feet bgl. A soil



minimum of 24 hours before surface pad and protective casing were installed. Soil cuttings were placed in open top 55-gallon drums and were sealed when not in use.

Copies of the well construction logs are located in Appendix B.

#### **4.5 Ground Water Conditions**

The uppermost aquifer is under water table conditions and occurs within the sand and gravel deposits of the Jackson Lake Formation. The Nacimiento Formation functions as an aquitard at the site and prevents site related contaminants from migrating to deeper aquifers. The potentiometric surface as measured in August 2008 is presented in Figure 10 and shows the ground water flowing to the northwest, toward the San Juan River. The potentiometric surface at the site is consistent with the regional gradient in that movement is toward to the San Juan River, which is a location of regional ground water discharge.

The depth to water in the area of the Group No. 2 SWMUs varies from approximately 35 feet near SWMU No. 8 (Inactive Landfill) to only 15 feet at SWMU No. 2 (Drum Storage Area North Bone Yard). No separate phase hydrocarbon (SPH) was measured in any of the new wells installed during this investigation and based on historical data only SWMU No. 18 (Warehouse yard) is located in an area that had SPH present in the past.

The saturated thickness in the water table aquifer varies from zero feet in the southern portion of the site to a maximum of approximately eight feet along the northern portion of the refinery (Figure 11). The areas with the greatest saturated thickness are found near and along the Hammond Ditch and on-site surface impoundments (i.e., the current and former Raw Water Ponds). The predominant source of recharge to the shallow aquifer beneath the refinery is recharge from man-made features (e.g., the Hammond Ditch and on-site surface impoundments).

#### **4.6 Surface Water Conditions**

The only local surface water body, excluding on-site surface impounds and the Hammond Irrigation Ditch, is the San Juan River, which flows along the northern most property boundary. There were no accumulations of surface water observed during the site investigation or conditions likely to result in the future accumulation of surface water. Regionally, the surface topography slopes toward the floodplain of the San Juan River, and across most of the refinery and to the south of the refinery, the drainage is to the northwest. The active portion of the refinery property, where the process units and storage tanks are located, is generally of low

relief with an overall northwest gradient of approximately 0.02 ft/ft. There is a steep bluff (approx. drop of 90 feet) at the northern boundary of the refinery where the San Juan River intersects the floodplain terrace, which marks the southern boundary of the floodplain.

There are two locally significant arroyos, one immediately east and another immediately west of the refinery, which collect most of the surface water flows in the area, thus significantly reducing surface water flows across the refinery. A minor drainage feature is located on the eastern portion of the refinery, where the Landfill Pond (SWMU No. 9) is located and there are several steep arroyos along the northern refinery boundary that primarily capture only local surface water flows.

The average annual rainfall is only approximately 7.5 inches, thus the threat of surface water transport of contaminants as suspended load or dissolved phase is low. Further, the refinery implements a Stormwater Pollution Prevention Plan to ensure that surface waters of the State are not impacted by refinery operations.

On October 15, 2008 the drilling rig was set up on location SWMU 2-5/MW-50 and drilling and sampling was completed to a depth of 20 feet bgl using the air rotary/ODEX drilling method. There were no indications of contamination based on the field screening results nor was there any visual or olfactory evidence of contamination in 10 to 20 foot interval. Since saturation was encountered at 14 feet bgl a soil sample was collected from the interval 13 to 14 feet bgl. Soil cuttings were placed in open top 55-gallon drums and were sealed when not in use.

Copies of the field boring logs are located in Appendix B.

#### **6.1.2 SWMU No. 8 Landfill**

At SWMU No. 8 the following 11 borings were advanced to a depth of 10 feet (Figure 6):

- SWMU 8-1;
- SWMU 8-2;
- SWMU 8-3
- SWMU 8-4;
- SWMU 8-5;
- SWMU 8-6;
- SWMU 8-7;
- SWMU 8-8;
- SWMU 8-9;
- SWMU 8-10; and
- SWMU 8-11;

As directed by NMED, two soil borings (SWMU 8-6A and SWMU 8-12) were drilled to the water table and were subsequently converted to monitor wells (MW-52 and MW-53). The discussion for the installation of these soil borings/wells can be found in Section 4.4.

On September 23, 2008 discrete soil samples were collected from all soil boring locations at SWMU 8 except SWMU 8-6A for laboratory analyses from 0 to 0.5 feet bgl and 1.5 to 2 feet bgl. A portion of the sample interval was placed in pre-cleaned, laboratory-prepared sample containers for laboratory chemical analysis. The use of an Encore® Sampler or other similar device was used during collection of soil samples for VOC analysis. Since there were no indications of contamination based on the field screening results at 10 feet nor was there any evidence of waste materials or other signs of contamination, these borings were terminated at the preplanned depth of 10 feet.

On September 24, 2008 a soil sample was collected from the depth of 37 to 38.5 feet in SWMU 8-12. There were no indications of contamination based on the field screening results nor were

there any visual or olfactory evidence of contamination in the interval from 10 to 41.5 feet below ground surface.

On October 14, 2008 a soil sample was collected from the interval 33 to 34 feet bgl in SWMU 8-6A. There were no indications of contamination based on the field screening results nor was there any visual or olfactory evidence of contamination in the interval from 0 to 41 feet bgl.

Copies of the field boring logs and monitor well construction logs are located in Appendix B.

#### **6.1.3 SWMU No. 9 Landfill Pond**

On September 28, 2008 the drilling rig was mobilized to the SWMU No. 9 area (Figure 6). The drilling rig was set up on location SWMU 9-1. Using the HSA drilling method and split spoon samplers the borehole was advanced to a depth of 17 feet bgl. As seen on the soil boring log the Nacimiento Formation was encountered at 15 feet bgl. Soil samples were collected at 0 to 0.5 feet and 1.5 to 2 feet bgl. In the interval from 3.5 to 7 feet trace clumps of sulfur and a fine-grained red material were observed in the core. A soil sample was collected from the 5 to 7.5 foot interval. Since saturation was encountered at 15 feet bgl a soil sample was collected from the interval 14.5 to 15 feet bgl.

A copy of the field boring log is located in Appendix B.

#### **6.1.4 SWMU No. 18 Warehouse Yard**

On September 26, 2008 discrete soil samples were collected from the four soil boring locations at SWMU No. 18 for laboratory analyses from 0 to 0.5 feet bgl and 1.5 to 2 feet bgl (Figure 9). All borings were advanced to a depth of 10 feet bgl. At the locations for SWMU 18-1 and SWMU 18-4 there were no indications of contamination based on the field screening results nor was there any visual or olfactory evidence of contamination in 0 to 10 foot interval. At the location for SWMU 18-2 there were visual observations of black staining in the upper six inches of the core. At the location for SWMU 18-3 there were visual observations of black staining/coating on gravel in the 2 to 4 foot interval. A lower soil sample was collected from 7.5 to 9 feet bgl in this boring. There were no significant odors associated with the black staining/coating nor were there any elevated PID readings observed in either SWMU 18-2 or SWMU 18-3. Soil cuttings were placed in open top 55-gallon drums and labeled. Decontamination water was placed in open top 55-gallon drum and labeled.

As directed by NMED, one soil boring (SWMU 18-2) was drilled to the water table and was subsequently converted to a monitor well (MW-54). On October 15, 2008 the drilling and sampling continued at SWMU 18-2 using HSA drilling methods and split spoon sampling. Saturation was encountered at 29 feet bgl. A soil sample was collected from the interval immediately above saturation, 28 to 29 feet bgl. An additional soil sample was collected from the 18 to 20 foot interval due to the appearance of black discoloration and odor in the soil. Elevated PID readings were also observed from 18 to 30 feet bgl. A significant reading of 400 ppm was observed in the interval from 28 to 30 feet bgl, which corresponded to the occurrence of saturation.

Copies of the field boring logs and well construction logs are located in Appendix B.

## **6.2 Soil Sample Field Screening Results**

Headspace vapor screening was conducted, which involved placing a soil sample in a plastic sealable bag allowing space for ambient air. The bag was sealed, labeled and then shaken gently to expose the soil to the air trapped in the container. The sealed bag was allowed to rest for a minimum of 5 minutes while the vapors equilibrated. Vapors present within the sample bag's headspace were then measured by inserting the probe of an organic vapor analyzer (OVA) (i.e., MiniRae 2000) in a small opening in the bag. The maximum value and the ambient air temperature were recorded on the field boring log for each sample. The MiniRae 2000 was calibrated to 100 ppm isoButylene each day to the manufacturer's standard for instrument operation. Field screening results and any conditions that were considered to be capable of influencing the results of the field screening were recorded on the field logs. A summary of the results is located in Table 11.

### **6.2.1 SWMU No. 2 Drum Storage Area North Bone Yard**

No elevated PID readings were observed during the investigation of the SWMU No. 2. No conditions encountered during the field activities are considered to be capable of influencing the results of the field screening.

### **6.2.2 SWMU No. 8 Landfill**

No elevated PID readings were observed during the investigation of the SWMU No. 8. No conditions observed during the field activities are considered to be capable of influencing the results of the field screening.

wells and other existing monitoring wells located across the site. As shown in the plot, the dissolved manganese concentrations increase as the dissolved oxygen levels decrease. There are two locations (MW-54 and MW-27) that appear to be anomalous. MW-54 is located within the drainage field of a septic system, which is thought to have affected the manganese concentrations at this location. A more recent manganese analysis at MW-27 revealed a concentration of 4.6 mg/l vs. the earlier reading of 9.6; the more recent result plots within the general clustering of data shown on Figure 14 (Western Refining Southwest, Inc., 2009).

Lower dissolved oxygen concentrations may be explained by either natural degradation of petroleum hydrocarbons using oxygen as an electronic acceptor or the lower dissolved oxygen concentrations can occur under natural conditions in geologic units with reduced circulation (e.g., the Nacimiento Formation).

The sampling data for SWMU No. 2 does not indicate any threat to human health or the environment as the result of site operations. SWMU No. 2 should qualify for a Corrective Action Complete designation.

#### Inactive Landfill (SWMU No. 8)

Soil samples were collected from depths of 0-0.5 feet and 1.5-2 feet at 12 borings with additional deeper samples collected at 37 to 38.5 feet at SWMU 8-12 and 33 to 34 ft at SWMU 8-6A. None of the analyses resulting from soil samples collected at the borings completed at SWMU No. 8 indicate concentrations of constituents exceeding the applicable screening levels. The majority of the analyses are non-detect. The soil analytical results are summarized in Table 9.

Two soil borings were completed as permanent monitoring wells (MW-52 and MW-53). All of the organic analyses are non-detect with the single exception of chloromethane, which was detected at a concentration below the screening level on the second sampling event conducted in January 2009. Arsenic was detected in both wells at low concentrations but above the screening level and is most likely the result of entrained sediment in the ground water sample. Barium was detected at a concentration of 1.1 mg/l, which is slightly above the screening level of 1.0 mg/l in the sample collected from MW-52 on the first sampling event. All other samples, including the second sample collected from MW-52 in Jan. 2009, had concentrations of barium below the screening level. Manganese was detected at concentrations above the screening level in all samples but there is

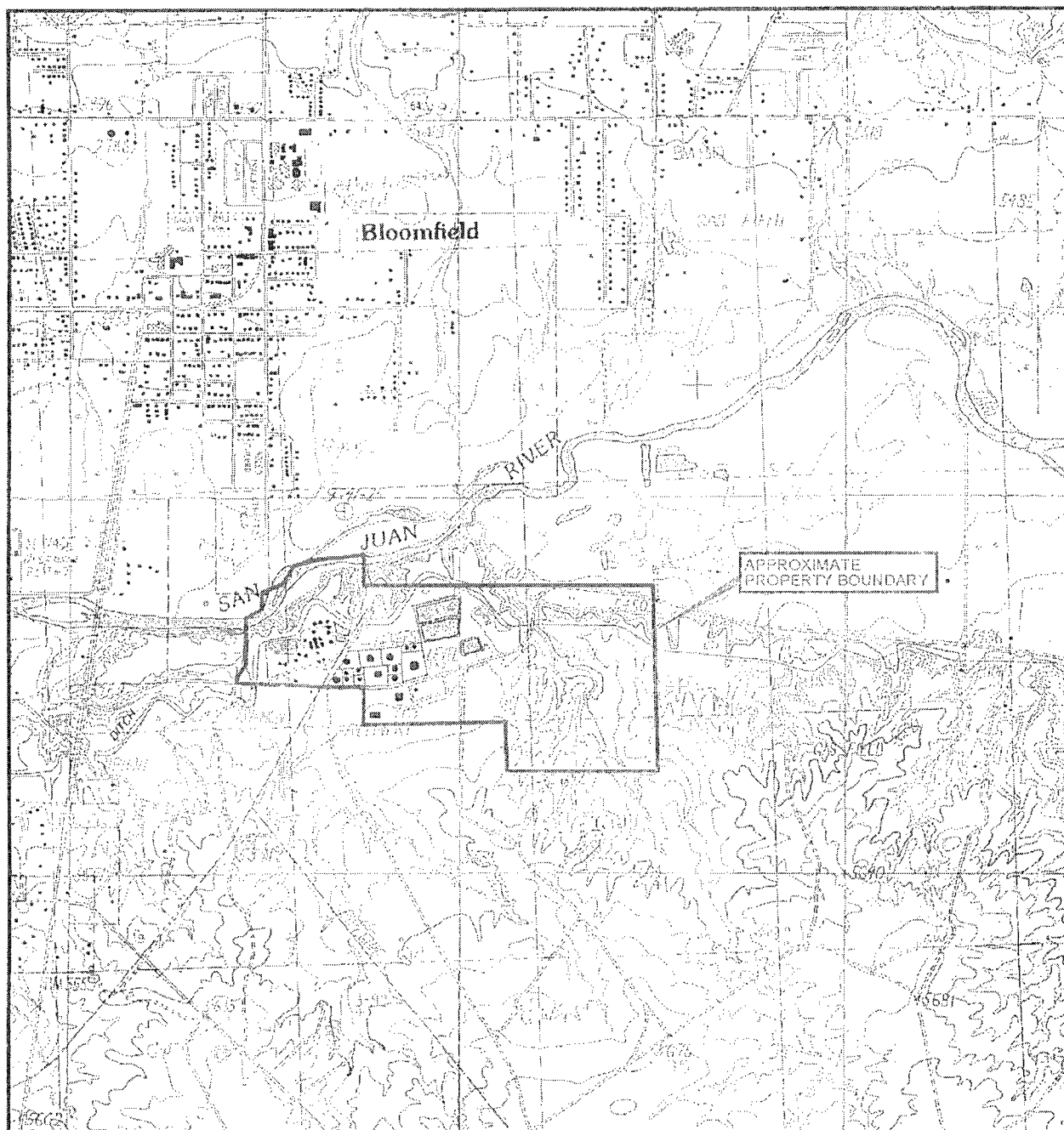
no direct evidence to associate its presence with site operations or waste management activities. Chloride and sulfate are present in concentrations above the WQCC standards but both of these are primarily attributable to naturally occurring concentrations. Isoconcentration maps for chloride and sulfate were prepared using data from the most recent facility-wide sampling event and the analytical results from the new RFI wells. These maps are included as Figures 15 and 16. As shown on the maps, the concentrations of these naturally occurring constituents are highest in the up-gradient portions of facility, although there is an area of elevated sulfate concentrations near the Sulferox Unit. The distribution of the concentrations of these constituents is clear evidence of their natural occurrence and that the concentrations of chloride and sulfate beneath SWMU No. 8 are not the result of waste management activities.

SWMU No. 18 should qualify for a Corrective Action Complete designation as there are no detections of constituents in soils above the residential screening levels and the detections of manganese in ground water are not associated with any waste management activities in SWMU No. 18. The Facility-Wide Ground Water Monitoring Program will include monitoring of ground water in this area.

#### Landfill Pond (SWMU No. 9)

The analyses conducted on soil samples collected from beneath the location of the former "landfill pond" (i.e., soil boring SWMU 9-1) were non-detect for most constituents. The samples were collected from depths of 0 - 0.5, 1.5 - 2, 5 - 7.5, and 14.5 - 15 feet. There were low concentrations of naturally occurring metals, all of which are well below their applicable screening levels as shown in Table 10. There are a few organic constituents (1-methylnaphthalene, 2-methylnaphthalene, and naphthalene) that were detected at generally low concentrations but still above the lowest default screening level, which is based on protection of ground water.

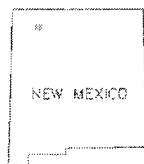
As shown in Table 10, the maximum concentration of 1-methylnaphthalene is 1.4 mg/kg vs. a screening level of 0.015 mg/kg for ground water protection. The maximum concentration of 1.4 mg/kg is below the residential screening level of 22 mg/kg. For 2-methylnaphthalene the maximum detected concentration of 4.2 mg/kg is above the ground water protection screening level of 0.9 mg/kg but is well below the residential screening level of 310 mg/kg. Naphthalene has a maximum detected concentration of 1.3 mg/kg vs. a ground water protection screening level of 0.394 mg/kg; however, the maximum is well below the residential screening level of 79.5 mg/kg. An evaluation of the vertical distribution of these constituents reveals that the maximum



Map Source: USGS 7.5 Min. Quad Sheet BLOOMFIELD, NM., 1955.



0 2000  
SCALE IN FEET



QUADRANGLE LOCATION



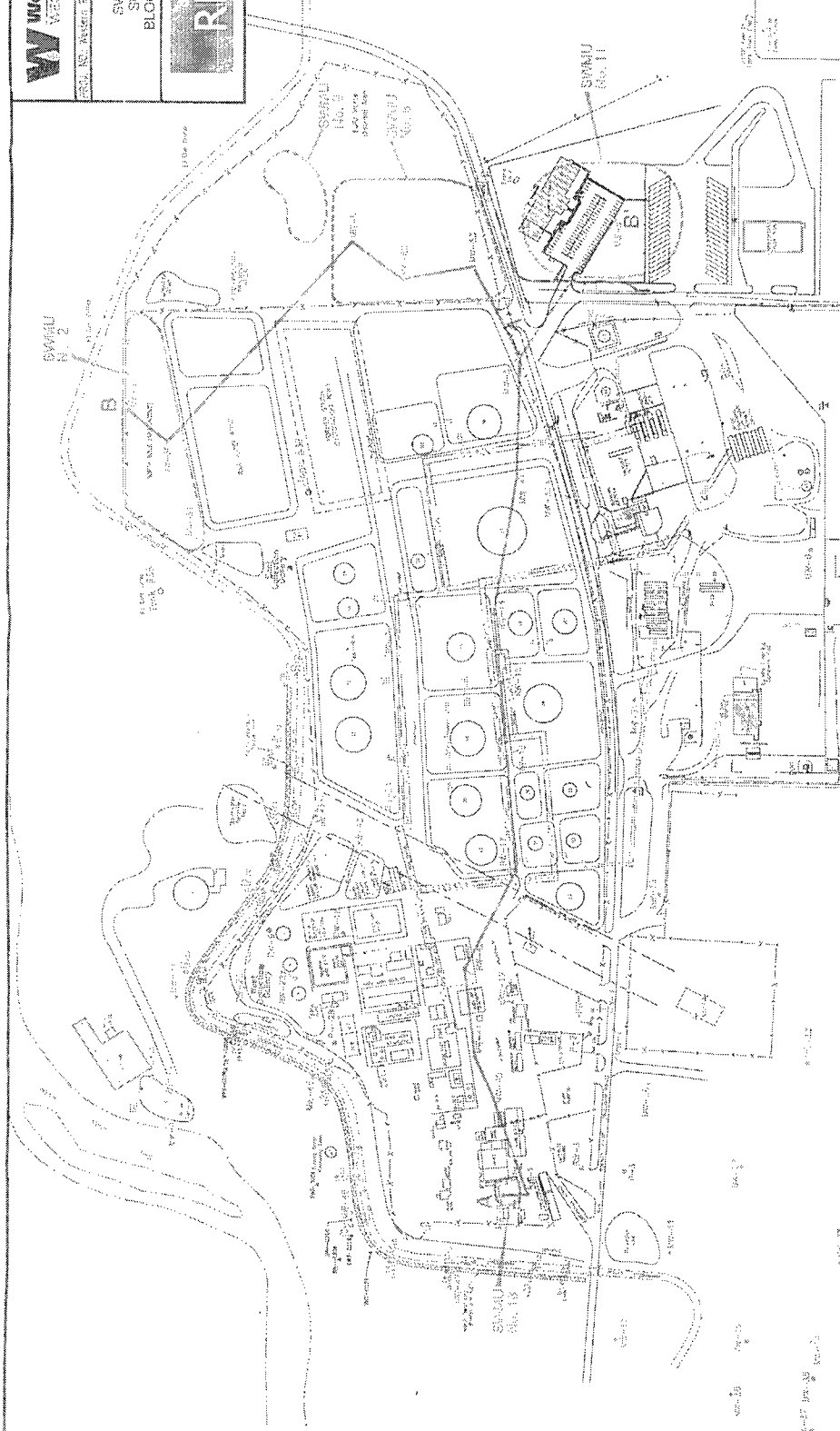
WESTERN REFINING SOUTHWEST

PROJ. NO: Western Refining DATE: 5/19/08 FILE: WestRef-A25

FIGURE 1  
SITE LOCATION MAP  
BLOOMFIELD REFINERY



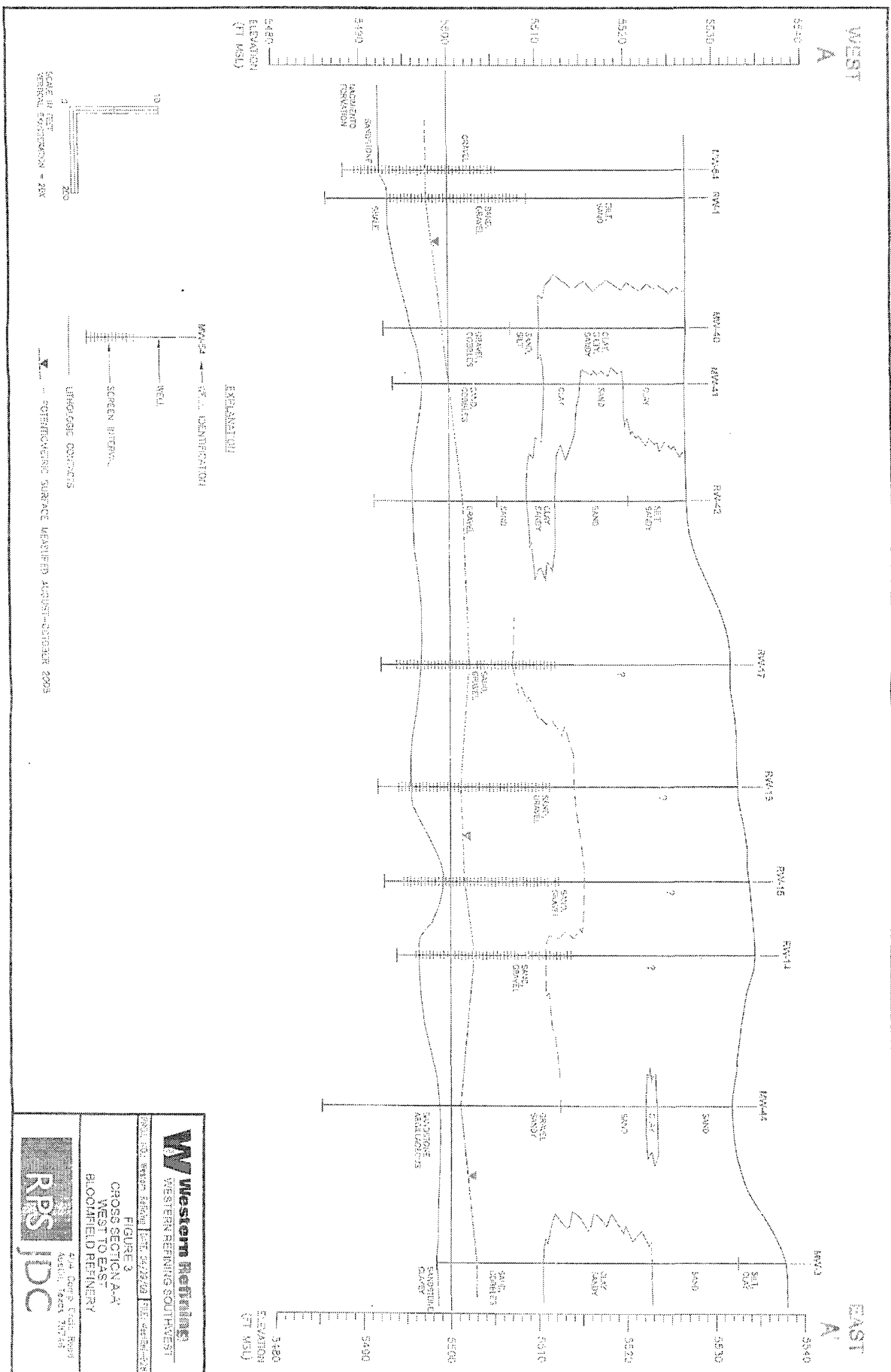


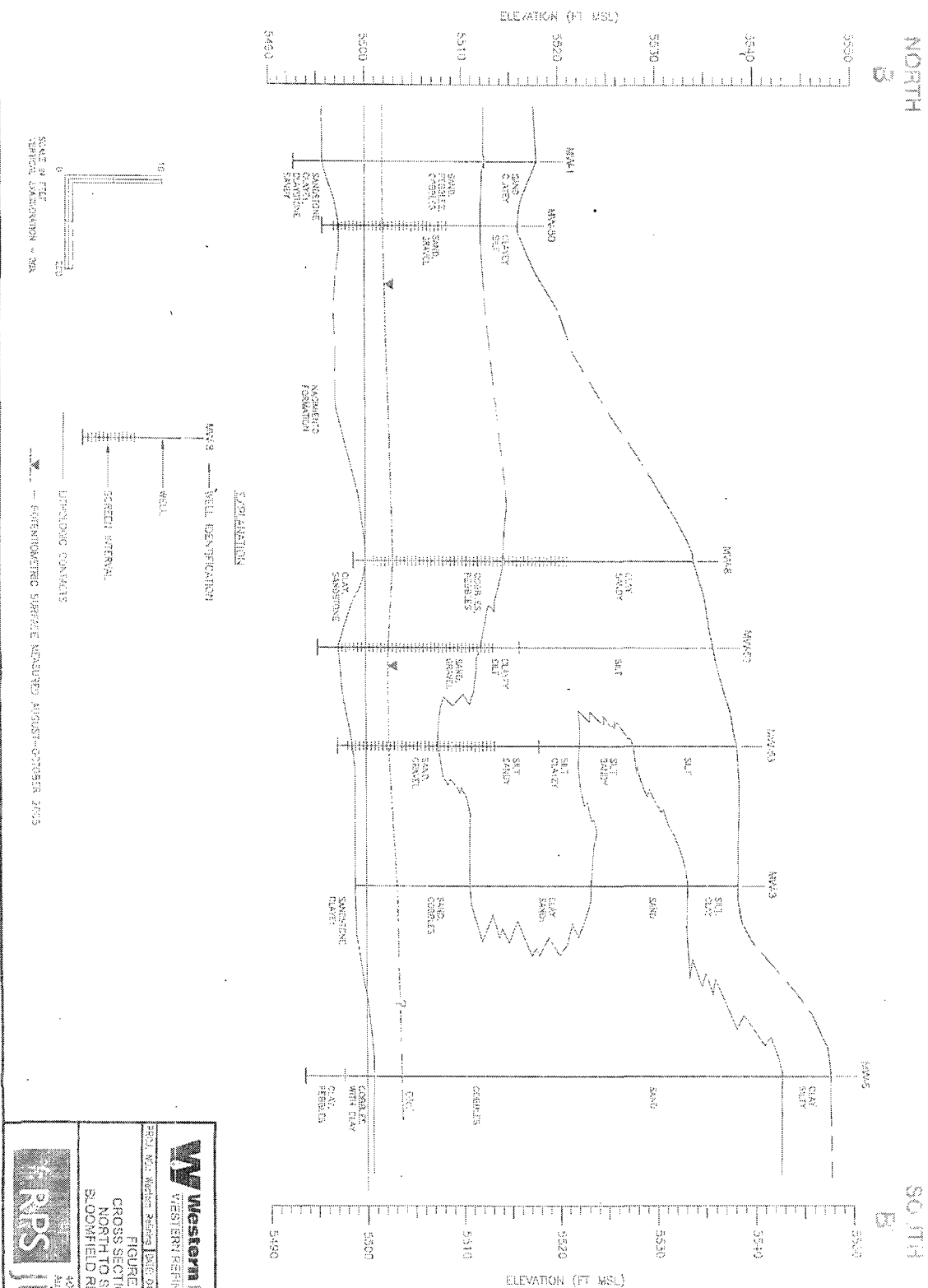


**LEGEND**

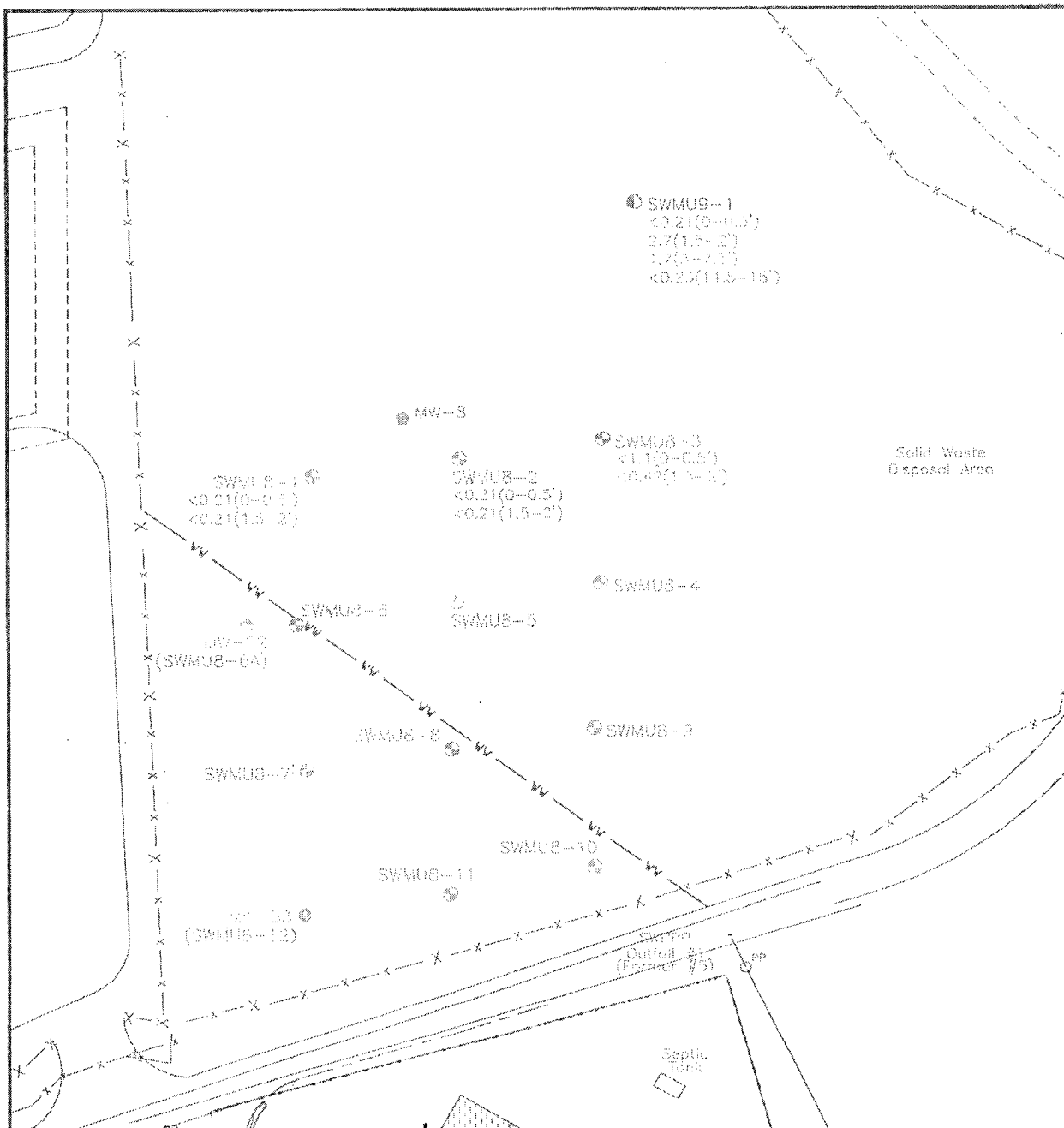
MONITORING WELL LOCATION AND IDENTIFICATION NUMBER  
 RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER  
 OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER  
 COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER  
 STORMWATER WELL LOCATION AND IDENTIFICATION NUMBER  
 0-150 FEET SCALE

SEWER LINE  
 STORMWATER LINE  
 ASBESTOS PIPE  
 SLURRY WALL  
 A-A CROSS SECTION LINE





**W Western Publishing**  
WESTERN PUBLISHING SOUTHWEST  
2001 W. Western Publishing | P.O. Box 770000 | Fort Worth, TX 76107-0001  
FIGURE 4  
CROSS SECTION B-E  
NORTH TO SOUTH  
BLOOMFIELD REFINERY  
304 Cedar Dell Lane  
Houston, Texas 77059  
RPS  
JDC



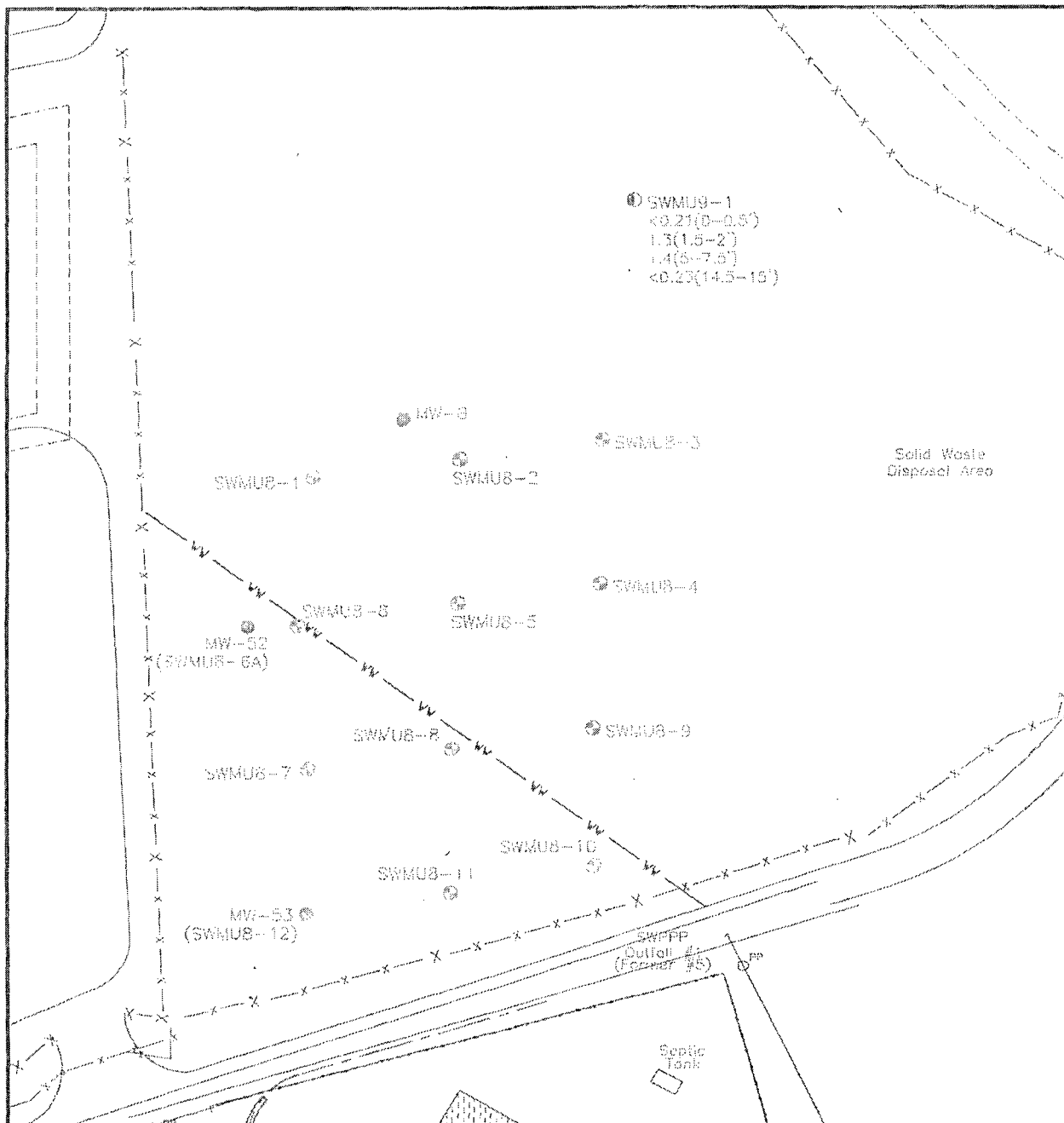
**Western Refining**  
WESTERN REFINING SOUTHWEST

PROJ. NO: Western Refining DATE: 04/21/09 FILE: WestRef-A2B

**FIGURE 6**  
**SWMUs No. 8 & 9**  
**NAPHTHALENE - SOILS MAP**  
**BLOOMFIELD REFINERY**

404 Camp Craft Road  
Austin, Texas 78746

**RPS JDC**



● SWMU9-1  
 <0.21(0-0.5')  
 1.3(1.5-2')  
 1.4(5-7.5')  
 <0.23(14.5-15')

Solid Waste  
 Disposal Area

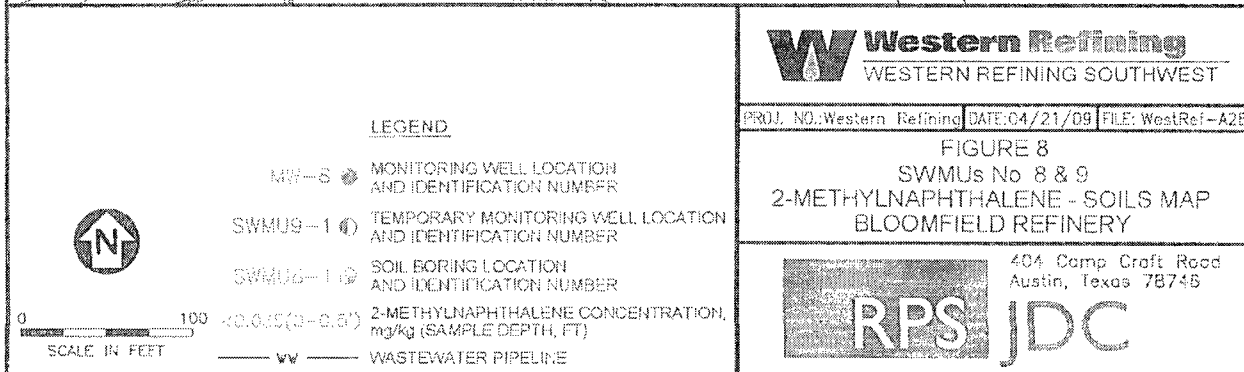
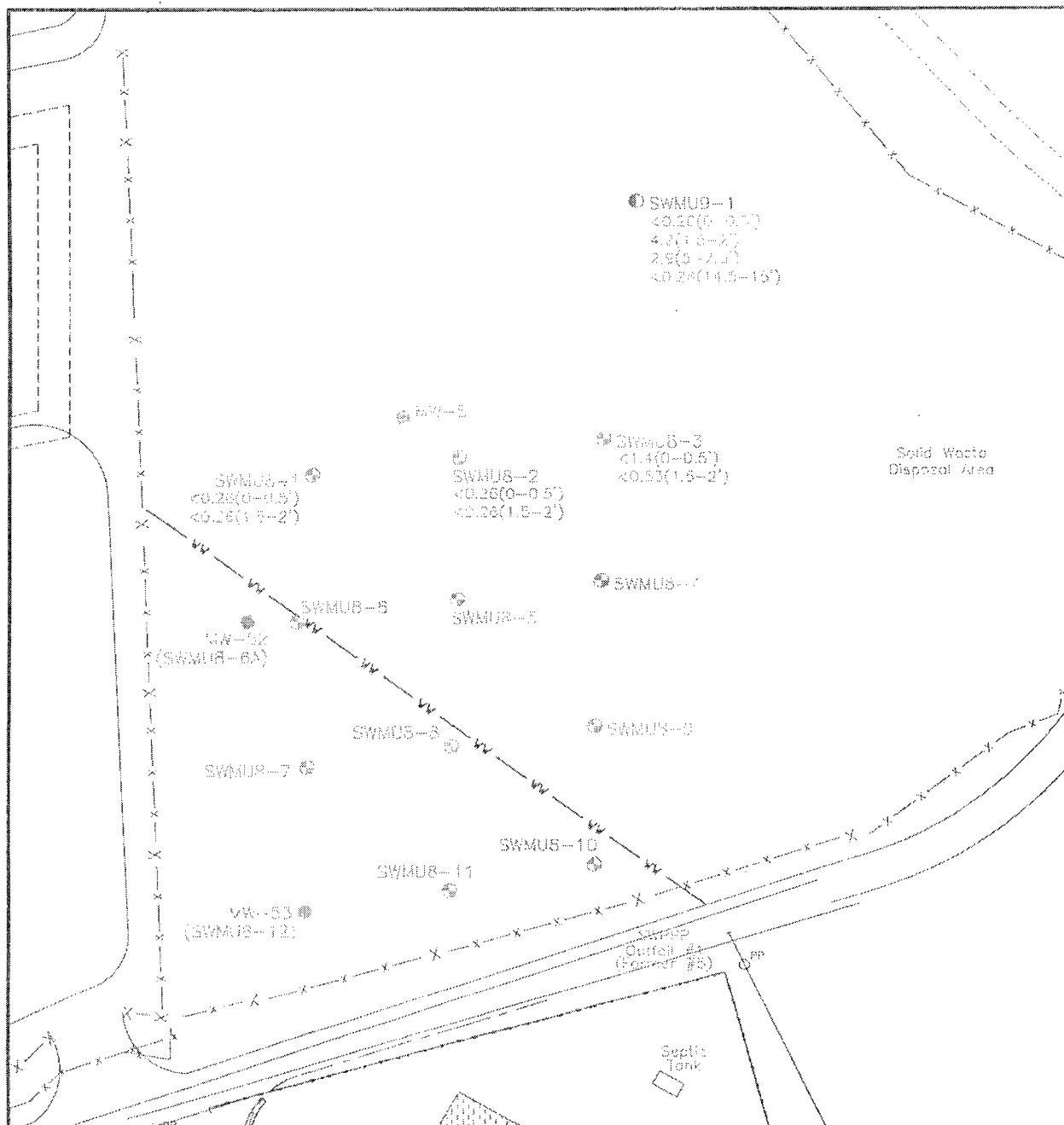
**Western Refining**  
 WESTERN REFINING SOUTHWEST

PROJ. NO.: Western Refining DATE: 04/21/09 FILE: WestRef-A28

**FIGURE 7**  
 SWMUs No. 8 & 9  
 1-METHYLNAPHTHALENE - SOILS MAP  
 BLOOMFIELD REFINERY

404 Camp Craft Road  
 Austin, Texas 78746

**RPS JDC**



## SAMPLE DESCRIPTION INFORMATION

for

Engineering Science - Bloomfield Refining Company

<u>RMA Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date Sampled</u>	<u>Date Received</u>
51469-01	L1 & L2, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #1 - Landfill			
51469-02	L3 & L4, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #1 - Landfill			
51469-03	L5 & L6, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #2 - Landfill			
51469-04	L7 & L8, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #2 - Landfill			
51469-05	L9 & L10, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #3 - Landfill			
51469-06	L11 & L12, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #3 - Landfill			
51469-07	L13 & L14, 0-6"	Soil	10/16/85	10/19/85
	Quadrant #4 - Landfill			
51469-08	L15 & L16, 6-12"	Soil	10/16/85	10/19/85
	Quadrant #4 - Landfill			
51469-09	LP1 & LP2, 0-6"	Soil	10/16/85	10/19/85
	Points 1 & 2 @ Landfill Pond			
51469-10	LP3 & LP4, 6-12"	Soil	10/16/85	10/19/85
	Points 1 & 2 @ Landfill Pond			
51469-11	LP5 & LP6, 0-6"	Soil	10/16/85	10/19/85
	Points 3 & 4 @ Landfill Pond			
51469-12	LP7 & LP8, 6-12"	Soil	10/16/85	10/19/85
	Points 3 & 4 @ Landfill Pond			
51469-13	LP9 & LP10, 0-6"	Soil	10/16/85	10/19/85
	Points 5 & 6 @ Landfill Pond			
51469-14	LP11 & LP12, 6-12"	Soil	10/16/85	10/19/85
	Points 5 & 6 @ Landfill Pond			
51469-15	LP13 & LP14, 0-6"	Soil	10/16/85	10/19/85
	S. Evaporation Pond - Landfill Pond			
51469-16	MS1 & MS2, Mystery Sample	Soil	10/16/85	10/19/85
51469-17	APS1 & APS2, 0-6"	Soil	10/15/85	10/19/85
	NE & SE of South API Pond			
51469-18	APS3 & APS4, 6-12"	Soil	10/15/85	10/19/85
	NE & SE of South API Pond			
51469-19	APS5 & APS6, 0-6"	Soil	10/15/85	10/19/85
	N & S of South API Pond			
51469-20	APS7 & APS8, 6-12"	Soil	10/15/85	10/19/85
	N & S of South API Pond			

Grp 2

pg 66-67

metals: Cr, Pb, Vanadium, ~~Se~~ Be,

VOCs: < NMEP Resid. Criteria

SVOCs: Fluoranthene

Hexachlorocyclopentadiene

Indeno (1,2,3-cd) pyrene

TPH:  
DRO  
MRO



## ANALYTICAL RESULTS

Rocky Mountain Analytical Laboratory

for

Engineering Science - Bloomfield Refining Company

## CHROMIUM AND LEAD

<u>Parameter</u>	<u>Units</u>	<u>51469-01</u>	<u>51469-02</u>	<u>51469-03</u>	<u>51469-04</u>
Chromium	mg/kg	11 (0.5)	8.9 (0.5)	9.9 (0.5)	7.6 (0.5)
Lead	mg/kg	10 (2.5)	9.8 (2.5)	9.0 (2.5)	6.7 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-05</u>	<u>51469-06</u>	<u>51469-07</u>	<u>51469-08</u>
Chromium	mg/kg	7.8 (0.5)	7.4 (0.5)	9.1 (0.5)	7.0 (0.5)
Lead	mg/kg	7.6 (2.5)	7.0 (2.5)	8.2 (2.5)	7.7 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-09</u>	<u>51469-10</u>	<u>51469-11</u>	<u>51469-12</u>
Chromium	mg/kg	6.2 (0.5)	8.1 (0.5)	7.8 (0.5)	10 (0.5)
Lead	mg/kg	9.0 (2.5)	8.5 (2.5)	8.9 (2.5)	12 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-13</u>	<u>51469-14</u>	<u>51469-15</u>	<u>51469-16</u>
Chromium	mg/kg	8.0 (0.5)	7.8 (0.5)	2.3 (0.5)	2.4 (0.5)
Lead	mg/kg	12 (2.5)	13 (2.5)	4 (2.5)	4 (2.5)
<u>Parameter</u>	<u>Units</u>	<u>51469-17</u>	<u>51469-18</u>	<u>51469-19</u>	<u>51469-20</u>
Chromium	mg/kg	4.4 (0.5)	5.3 (0.5)	5.5 (0.5)	14 (0.5)
Lead	mg/kg	5 (2.5)	5 (2.5)	5 (2.5)	4 (2.5)

Detection limits in parentheses.

## ANALYTICAL RESULTS

Rocky Mountain Analytical Laboratory

for

Engineering Science - Bloomfield Refining Company

## SKINNER BASE/NEUTRAL ORGANICS, SOIL (Cont.)

<u>Parameter</u>	<u>Units</u>	<u>51469-15</u>	<u>51469-16</u>	<u>51469-23</u>
Indene	ug/kg	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	ug/kg	BDL	BDL	BDL
Methyl Benz(c)phenanthrene	ug/kg	BDL	BDL	BDL
3-Methylcholanthrene	ug/kg	BDL	BDL	BDL
Methyl Chrysene**	ug/kg	-	-	-
Naphthalene	ug/kg	BDL	BDL	BDL
Nitrobenzene	ug/kg	BDL	BDL	BDL
n-Nitrosodietylamine	ug/kg	BDL	BDL	BDL
5-Nitroacenaphthene	ug/kg	BDL	BDL	BDL
Quinoline	ug/kg	BDL	BDL	BDL
Phenanthrene	ug/kg	BDL	BDL	BDL
Pyrene	ug/kg	BDL	BDL	BDL
1,2,4-Trichlorobenzene	ug/kg	BDL	BDL	BDL
Trimethyl Benz(a)anthracene	ug/kg	BDL	BDL	BDL

## SKINNER ACID ORGANICS

<u>Parameter</u>	<u>Units</u>	<u>51469-15</u>	<u>51469-16</u>	<u>51469-23</u>
2-Chlorophenol	ug/kg	BDL	BDL	BDL
o-Cresol	ug/kg	BDL	BDL	BDL
m/p-Cresol	ug/kg	BDL	BDL	BDL
2,4-Dimethylphenol	ug/kg	BDL	BDL	BDL
4,6-Dinitro-o-phenol	ug/kg	BDL	BDL	BDL
2,4-Dinitrophenol	ug/kg	BDL	BDL	BDL
2-Nitrophenol	ug/kg	BDL	BDL	BDL
4-Nitrophenol	ug/kg	BDL	BDL	BDL
p-Chloro-m-cresol	ug/kg	BDL	BDL	BDL
Pentachlorophenol	ug/kg	BDL	BDL	BDL
Phenol	ug/kg	BDL	BDL	BDL
2,4,6-Trichlorophenol	ug/kg	BDL	BDL	BDL

BDL = Below detection limit.

Detection limits in parentheses.

\*\* Not consistently recovered using Method 8270, or no analytical standard available.

**T-2**  
**Qualified Data**  
**Group 2 RCRA Investigation Summary**  
**Western Refining Southwest, Inc. - Bloomfield Refinery**

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 9-1 (5-7.5)	9/28/2008	Phenanthrene	< 1.2	mg/K-g-dry	Soil	UJ	Qualified due to low surrogate recovery
SWMU 2-3 GW	9/29/2008	Phenol	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
MM-53	10/28/2008	Phenol	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
SWMU 9-1 (5-7.5)	9/29/2008	Pyrene	< 1.2	mg/K-g-dry	Soil	UJ	Qualified due to low surrogate recovery
SWMU 2-3 GW	10/28/2008	Pyrene	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
MM-53	10/28/2008	Pyrene	< 1.2	mg/K-g-dry	Soil	UJ	Qualified due to low surrogate recovery
SWMU 9-1 (5-7.5)	9/29/2008	Pyridine	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
SWMU 2-3 GW	10/28/2008	Pyridine	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
MM-53	10/28/2008	Pyridine	< 10	µg/L	Aqueous	UJ	Qualified due to low surrogate recovery
SWMU 9-1 (5-7.5)	9/23/2008	Selenium	< 3.1	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-5 (1.5-2.0)	9/23/2008	Selenium	< 27	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-6 (0-0.5)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-7 (1.5-2.0)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-8 (0-0.5)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-8 (1.5-2.0)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-6 (0-0.5) Dup	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-7 (0-0.5)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-6 (1.5-2.0)	9/23/2008	Selenium	< 27	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-9 (0-0.5) Dup	9/23/2008	Selenium	< 27	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-9 (0-0.5)	9/23/2008	Selenium	< 27	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-9 (1.5-2.0)	9/23/2008	Selenium	< 13	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-10 (0-0.5)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-10 (1.5-2.0)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-11 (0-0.5)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-11 (1.5-2.0)	9/23/2008	Selenium	< 13	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 8-12 (1.5-2.0)	9/23/2008	Selenium	< 26	mg/K-g-dry	Soil	UJ	Qualified due to low MS/MSD recovery
SWMU 18-1 (0-0.5)	9/26/2008	Selenium	< 13	mg/K-g-dry	Soil	UJ	Qualified due to low MS recoveries
SWMU 18-1 (1.5-2.0)	9/26/2008	Selenium	< 2.7	mg/K-g-dry	Soil	UJ	Qualified due to low MS recoveries
EBS (1)-092908	9/28/2008	Silver	< 0.010	mg/L	Aqueous	UJ	Qualified due to low MS/MSD recovery
SWMU 8-9 (0-0.5)	9/23/2008	Trichlorofluoromethane	2.05	mg/K-g-dry	soil	J	Qualified due to high field duplicate RPD

Notes:  
mg/L - milligrams per liter  
µg/L - microgram per liter  
UJ - Estimated reporting limit  
J - potential bias

RPD - Relative Percent Difference  
MS/MSD - Matrix spike/matrix spike duplicate

Table A-3  
Field Duplicate Summary  
Group 2 RCRA Investigation Summary  
Western Refining Southwest, Inc. - Bloomfield Refinery

	Parameter	SWMU 8-6 (0-0.5') Sample Result	SWMU 8-6 (0-0.5') Dup Field Duplicate	RPD (%)
TPH (mg/kg-dry):	Diesel Range Organics (DRO)	93	81	13.8
	Motor Oil Range Organics (MRO)	300	260	14.3
	Gasoline Range Organics (GRO)	< 5.0	< 5.0	NC
VOCs (ug/kg-dry)	Benzene	< 1.17	< 1.11	NC
	Toluene	< 1.17	< 1.11	NC
	Ethylbenzene	< 1.17	< 1.11	NC
	Xylenes, Total	< 1.17	< 1.11	NC
	Methyl tert-butyl ether (MTBE)	< 1.17	< 1.11	NC
	1,2,4-Trimethylbenzene	< 1.17	< 1.11	NC
	1,3,5-Trimethylbenzene	< 1.17	< 1.11	NC
	1,2-Dichloroethane (EDC)	< 1.17	< 1.11	NC
	1,2-Dibromoethane (EDB)	< 1.17	< 1.11	NC
	Naphthalene	< 1.17	< 1.11	NC
	Acetone	66.9 *	< 4.44	NC
	Bromobenzene	< 1.17	< 1.11	NC
	Bromodichloromethane	< 1.17	< 1.11	NC
	Bromoform	< 1.17	< 1.11	NC
	Bromomethane	< 1.17	< 1.11	NC
	2-Butanone	< 4.67	< 4.44	NC
	Carbon tetrachloride	< 1.17	< 1.11	NC
	Chlorobenzene	< 1.17	< 1.11	NC
	Chloroethane	< 1.17	< 1.11	NC
	Chloroform	< 1.17	< 1.11	NC
	Chloromethane	< 1.17	< 1.11	NC
	2-Chlorotoluene	< 1.17	< 1.11	NC
	Carbon disulfide	< 4.67	< 4.44	NC
	4-Chlorotoluene	< 1.17	< 1.11	NC
	cis-1,2-DCE	< 1.17	< 1.11	NC
	cis-1,3-Dichloropropene	< 1.17	< 1.11	NC
	1,2-Dibromo-3-chloropropane	< 1.17	< 1.11	NC
	Dibromochloromethane	< 1.17	< 1.11	NC
	Dibromomethane	< 1.17	< 1.11	NC
	1,2-Dichlorobenzene	< 1.17	< 1.11	NC
	1,3-Dichlorobenzene	< 1.17	< 1.11	NC
	1,4-Dichlorobenzene	< 1.17	< 1.11	NC
	Dichlorodifluoromethane	< 1.17	< 1.11	NC
	1,1-Dichloroethane	< 1.17	< 1.11	NC
	1,1-Dichloroethene	< 1.17	< 1.11	NC
	1,2-Dichloropropane	< 1.17	< 1.11	NC
	1,3-Dichloropropane	< 1.17	< 1.11	NC
	2,2-Dichloropropane	< 1.17	< 1.11	NC
	1,1-Dichloropropene	< 1.17	< 1.11	NC
	Hexachlorobutadiene	< 1.17	< 1.11	NC
	Isopropylbenzene	< 1.17	< 1.11	NC
	4-Isopropyltoluene	< 1.17	< 1.11	NC
	Methylene chloride	< 2.34	< 2.22	NC
	n-Butylbenzene	< 1.17	< 1.11	NC
	2-Hexanone	< 4.67	< 4.44	NC
	n-Propylbenzene	< 1.17	< 1.11	NC
	sec-Butylbenzene	< 1.17	< 1.11	NC
	Styrene	< 1.17	< 1.11	NC
	tert-Butylbenzene	< 1.17	< 4.44	NC
	4-Methyl-2-pentanone	< 4.67	< 1.11	NC
	1,1,1,2-Tetrachloroethane	< 1.17	< 1.11	NC
	1,1,2,2-Tetrachloroethane	< 1.17	< 1.11	NC
	Tetrachloroethene (PCE)	< 1.17	< 1.11	NC
	trans-1,2-DCE	< 1.17	< 1.11	NC
	trans-1,3-Dichloropropene	< 1.17	< 1.11	NC
	1,2,3-Trichlorobenzene	< 1.17	< 1.11	NC
	1,2,4-Trichlorobenzene	< 1.17	< 1.11	NC
	1,1,1-Trichloroethane	< 1.17	< 1.11	NC
	1,1,2-Trichloroethane	< 1.17	< 1.11	NC
	Trichloroethene (TCE)	< 1.17	< 1.11	NC
	Trichlorofluoromethane	2.14	< 1.11	NC
	1,2,3-Trichloropropane	< 1.17	< 1.11	NC
	Vinyl chloride	< 1.17	< 1.11	NC

Table A-3  
Field Duplicate Summary  
Group 2 RCRA Investigation Summary  
Western Refining Southwest, Inc. - Bloomfield Refinery

	Parameter	SWMU 8-6 (0-0.5') Sample Result	SWMU 8-6 (0-0.5') Dup Field Duplicate	RPD (%)
SVOCs (mg/kg-dry):	Acenaphthene	< 1.1	< 1.1	NC
	Acenaphthylene	< 1.1	< 1.1	NC
	Aniline	< 1.1	< 1.1	NC
	Anthracene	< 1.1	< 1.1	NC
	Azobenzene	< 1.1	< 1.1	NC
	Benzo(a)anthracene	< 1.1	< 1.1	NC
	Benzo(a)pyrene	< 1.1	< 1.1	NC
	Benzo(b)fluoranthene	< 1.1	< 1.1	NC
	Benzo(g,h,i)perylene	< 2.6	< 2.6	NC
	Benzo(k)fluoranthene	< 1.1	< 1.1	NC
	Benzoic acid	< 2.6	< 2.6	NC
	Benzyl alcohol	< 1.1	< 1.1	NC
	Bis(2-chloroethoxy)methane	< 1.1	< 1.1	NC
	Bis(2-chloroethyl)ether	< 1.1	< 1.1	NC
	Bis(2-chloroisopropyl)ether	< 1.1	< 1.1	NC
	Bis(2-ethylhexyl)phthalate	< 2.6	< 2.6	NC
	4-Bromophenyl phenyl ether	< 1.1	< 1.1	NC
	Butyl benzyl phthalate	< 1.1	< 1.1	NC
	Carbazole	< 1.1	< 1.1	NC
	4-Chloro-3-methylphenol	< 2.6	< 2.6	NC
	4-Chloroaniline	< 2.6	< 2.6	NC
	2-Chloronaphthalene	< 1.3	< 1.3	NC
	2-Chlorophenol	< 1.1	< 1.1	NC
	4-Chlorophenyl phenyl ether	< 1.1	< 1.1	NC
	Chrysene	< 1.1	< 1.1	NC
	Di-n-butyl phthalate	< 2.6	< 2.6	NC
	Di-n-octyl phthalate	< 1.1	< 1.1	NC
	Dibenz(a,h)anthracene	< 1.1	< 1.1	NC
	Dibenzofuran	< 1.1	< 1.1	NC
	1,2-Dichlorobenzene	< 1.1	< 1.1	NC
	1,3-Dichlorobenzene	< 1.1	< 1.1	NC
	1,4-Dichlorobenzene	< 1.1	< 1.1	NC
	3,3'-Dichlorobenzidine	< 1.3	< 1.3	NC
	Diethyl phthalate	< 1.1	< 1.1	NC
	Dimethyl phthalate	< 1.1	< 1.1	NC
	2,4-Dichlorophenol	< 2.1	< 2.1	NC
	2,4-Dimethylphenol	< 1.6	< 1.6	NC
	4,6-Dinitro-2-methylphenol	< 2.6	< 2.6	NC
	2,4-Dinitrophenol	< 2.1	< 2.1	NC
	2,4-Dinitrotoluene	< 2.6	< 2.6	NC
	2,6-Dinitrotoluene	< 2.6	< 2.6	NC
	Fluoranthene	< 1.3	< 1.3	NC
	Fluorene	< 2.6	< 2.6	NC
	Hexachlorobenzene	< 1.1	< 1.1	NC
	Hexachlorobutadiene	< 1.1	< 1.1	NC
	Hexachlorocyclopentadiene	< 1.1	< 1.1	NC
	Hexachloroethane	< 1.1	< 1.1	NC
	Indeno(1,2,3-cd)pyrene	< 1.3	< 1.3	NC
	Isophorone	< 2.6	< 2.6	NC
	2-Methylnaphthalene	< 1.3	< 1.3	NC
	2-Methylphenol	< 2.6	< 2.6	NC
	3+4-Methylphenol	< 1.1	< 1.1	NC
	N-Nitrosodi-n-propylamine	< 1.1	< 1.1	NC
	N-Nitrosodiphenylamine	< 1.1	< 1.1	NC
	Naphthalene	< 1.1	< 1.1	NC
	2-Nitroaniline	< 1.1	< 1.1	NC
	3-Nitroaniline	< 1.1	< 1.1	NC
	4-Nitroaniline	< 1.3	< 1.3	NC
	Nitrobenzene	< 2.6	< 2.6	NC
	2-Nitrophenol	< 1.1	< 1.1	NC
	4-Nitrophenol	< 1.1	< 1.1	NC
	Pentachlorophenol	< 2.1	< 2.1	NC
	Phenanthrene	< 1.1	< 1.1	NC
	Phenol	< 1.1	< 1.1	NC
	Pyrene	< 1.1	< 1.1	NC
	Pyridine	< 2.6	< 2.6	NC
	1,2,4-Trichlorobenzene	< 1.1	< 1.1	NC
	2,4,5-Trichlorophenol	< 1.1	< 1.1	NC
	2,4,6-Trichlorophenol	< 1.1	< 1.1	NC

Table A-3  
Field Duplicate Summary  
Group 2 RCRA Investigation Summary  
Western Refining Southwest, Inc. - Bloomfield Refinery

	Parameter	SWMU 8-6 (0-0.5') Sample Result	SWMU 8-6 (0-0.5') Dup Field Duplicate	RPD (%)
Metals (mg/kg-dry):	Mercury	0.046	0.049	6.3
	Antimony	< 2.6	< 2.6	NC
	Arsenic	< 2.6	2.9	NC
	Barium	210	200	4.9
	Beryllium	0.43	0.44	2.3
	Cadmium	< 0.11	< 0.11	NC
	Chromium	85	87	2.3
	Cobalt	4.2	4.4	4.7
	Lead	6.1	6.4	4.8
	Nickel	8.5	11	29.4
	Selenium	< 26	< 26	NC
	Silver	< 0.26	< 0.26	NC
	Vanadium	18	21	15.4
	Zinc	89	92	3.3

Notes:

RPD = Relative percent difference;  $[(\text{difference})/(\text{average})] * 100$

NC = Not calculated; RPD values were not calculated for non-detects

ug/L = micrograms per liter

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

\* = Field Duplicate RPD Outlier

**Table A-3**  
**Field Duplicate Summary**  
**Group 2 RCRA Investigation Summary**  
**Western Refining Southwest, Inc. - Bloomfield Refinery**

	Parameter	SWMU 8-9 (0-0.5') Sample Result	SWMU 8-9 (0-0.5') DUP Field Duplicate	RPD (%)
TPH (mg/kg-dry):	Diesel Range Organics (DRO)	< 11	< 11	0.0
	Motor Oil Range Organics (MRO)	< 55	< 55	0.0
	Gasoline Range Organics (GRO)	< 5.0	< 5.0	NC
VOCs (ug/kg-dry)	Benzene	< 1.06	< 0.993	NC
	Toluene	1.61	1.09	NC
	Ethylbenzene	< 1.06	< 0.993	NC
	Xylenes, Total	< 1.06	< 0.993	NC
	Methyl tert-butyl ether (MTBE)	< 1.06	< 0.993	NC
	1,2,4-Trimethylbenzene	< 1.06	< 0.993	NC
	1,3,5-Trimethylbenzene	< 1.06	< 0.993	NC
	1,2-Dichloroethane (EDC)	< 1.06	< 0.993	NC
	1,2-Dibromoethane (EDB)	< 1.06	< 0.993	NC
	Naphthalene	< 1.06	< 0.993	NC
	Acetone	< 4.24 *	9.58	NC
	Bromobenzene	< 1.06	< 0.993	NC
	Bromodichloromethane	< 1.06	< 0.993	NC
	Bromoform	< 1.06	< 0.993	NC
	Bromomethane	< 1.06	< 0.993	NC
	2-Butanone	< 4.24	< 3.97	NC
	Carbon tetrachloride	< 1.06	< 0.993	NC
	Chlorobenzene	< 1.06	< 0.993	NC
	Chloroethane	< 1.06	< 0.993	NC
	Chloroform	< 1.06	< 0.993	NC
	Chloromethane	< 1.06	< 0.993	NC
	2-Chlorotoluene	< 4.24	< 0.993	NC
	Carbon disulfide	< 1.06	< 3.97	NC
	4-Chlorotoluene	< 1.06	< 0.993	NC
	cis-1,2-DCE	< 1.06	< 0.993	NC
	cis-1,3-Dichloropropene	< 1.06	< 0.993	NC
	1,2-Dibromo-3-chloropropane	< 1.06	< 0.993	NC
	Dibromochloromethane	< 1.06	< 0.993	NC
	Dibromomethane	< 1.06	< 0.993	NC
	1,2-Dichlorobenzene	< 1.06	< 0.993	NC
	1,3-Dichlorobenzene	< 1.06	< 0.993	NC
	1,4-Dichlorobenzene	< 1.06	< 0.993	NC
	Dichlorodifluoromethane	< 1.06	< 0.993	NC
	1,1-Dichloroethane	< 1.06	< 0.993	NC
	1,1-Dichloroethene	< 1.06	< 0.993	NC
	1,2-Dichloropropane	< 1.06	< 0.993	NC
	1,3-Dichloropropane	< 1.06	< 0.993	NC
	2,2-Dichloropropane	< 1.06	< 0.993	NC
	1,1-Dichloropropene	< 1.06	< 0.993	NC
	Hexachlorobutadiene	< 1.06	< 0.993	NC
	Isopropylbenzene	< 1.06	< 0.993	NC
	4-Isopropyltoluene	< 1.06	< 0.993	NC
	Methylene chloride	< 2.12	< 1.99	NC
	n-Butylbenzene	< 1.06	< 0.993	NC
	2-Hexanone	< 4.24	< 3.97	NC
	n-Propylbenzene	< 1.06	< 0.993	NC
	sec-Butylbenzene	< 1.06	< 0.993	NC
	Styrene	< 1.06	< 0.993	NC
	tert-Butylbenzene	< 4.24	< 0.993	NC
	4-Methyl-2-pentanone	< 1.06	< 3.97	NC
	1,1,1,2-Tetrachloroethane	< 1.06	< 0.993	NC
	1,1,2,2-Tetrachloroethane	< 1.06	< 0.993	NC
	Tetrachloroethene (PCE)	< 1.06	< 0.993	NC
	trans-1,2-DCE	< 1.06	< 0.993	NC
	trans-1,3-Dichloropropene	< 1.06	< 0.993	NC
	1,2,3-Trichlorobenzene	< 1.06	< 0.993	NC
	1,2,4-Trichlorobenzene	< 1.06	< 0.993	NC
	1,1,1-Trichloroethane	< 1.06	< 0.993	NC
	1,1,2-Trichloroethane	< 1.06	< 0.993	NC
	Trichloroethene (TCE)	< 1.06	< 0.993	NC
	Trichlorofluoromethane	2.05	4.19	68.5 *
	1,2,3-Trichloropropane	< 1.06	< 0.993	NC
	Vinyl chloride	< 1.06	< 0.993	NC

Table A-3  
Field Duplicate Summary  
Group 2 RCRA Investigation Summary  
Western Refining Southwest, Inc. - Bloomfield Refinery

Parameter	SWMU 8-9 (0-0.5) Sample Result	SWMU 8-9 (0-0.5') DUP Field Duplicate	RPD (%)
SVOCs (mg/kg-dry):	Acenaphthene	< 0.22	NC
	Acenaphthylene	< 0.22	NC
	Aniline	< 0.22	NC
	Anthracene	< 0.22	NC
	Azobenzene	< 0.22	NC
	Benz(a)anthracene	< 0.22	NC
	Benzo(a)pyrene	< 0.22	NC
	Benzo(b)fluoranthene	< 0.22	NC
	Benzo(g,h,i)perylene	< 0.55	NC
	Benzo(k)fluoranthene	< 0.22	NC
	Benzoic acid	< 0.55	NC
	Benzyl alcohol	< 0.22	NC
	Bis(2-chloroethoxy)methane	< 0.22	NC
	Bis(2-chloroethyl)ether	< 0.22	NC
	Bis(2-chloroisopropyl)ether	< 0.22	NC
	Bis(2-ethylhexyl)phthalate	< 0.55	NC
	4-Bromophenyl phenyl ether	< 0.22	NC
	Butyl benzyl phthalate	< 0.22	NC
	Carbazole	< 0.22	NC
	4-Chloro-3-methylphenol	< 0.55	NC
	4-Chloroaniline	< 0.55	NC
	2-Chloronaphthalene	< 0.27	NC
	2-Chlorophenol	< 0.22	NC
	4-Chlorophenyl phenyl ether	< 0.22	NC
	Chrysene	< 0.22	NC
	Di-n-butyl phthalate	< 0.55	NC
	Di-n-octyl phthalate	< 0.22	NC
	Dibenz(a,h)anthracene	< 0.22	NC
	Dibenzofuran	< 0.22	NC
	1,2-Dichlorobenzene	< 0.22	NC
	1,3-Dichlorobenzene	< 0.22	NC
	1,4-Dichlorobenzene	< 0.22	NC
	3,3'-Dichlorobenzidine	< 0.27	NC
	Diethyl phthalate	< 0.22	NC
	Dimethyl phthalate	< 0.22	NC
	2,4-Dichlorophenol	< 0.44	NC
	2,4-Dimethylphenol	< 0.33	NC
	4,6-Dinitro-2-methylphenol	< 0.55	NC
	2,4-Dinitrophenol	< 0.44	NC
	2,4-Dinitrotoluene	< 0.55	NC
	2,6-Dinitrotoluene	< 0.55	NC
	Fluoranthene	< 0.27	NC
	Fluorene	< 0.55	NC
	Hexachlorobenzene	< 0.22	NC
	Hexachlorobutadiene	< 0.22	NC
	Hexachlorocyclopentadiene	< 0.22	NC
	Hexachloroethane	< 0.22	NC
	Indeno(1,2,3-cd)pyrene	< 0.27	NC
	Isophorone	< 0.55	NC
	2-Methylnaphthalene	< 0.27	NC
	2-Methylphenol	< 0.55	NC
	3+4-Methylphenol	< 0.22	NC
	N-Nitrosodi-n-propylamine	< 0.22	NC
	N-Nitrosodiphenylamine	< 0.22	NC
	Naphthalene	< 0.22	NC
	2-Nitroaniline	< 0.22	NC
	3-Nitroaniline	< 0.22	NC
	4-Nitroaniline	< 0.27	NC
	Nitrobenzene	< 0.55	NC
	2-Nitrophenol	< 0.22	NC
	4-Nitrophenol	< 0.22	NC
	Pentachlorophenol	< 0.44	NC
	Phenanthrene	< 0.22	NC
	Phenol	< 0.22	NC
	Pyrene	< 0.22	NC
	Pyridine	< 0.55	NC
	1,2,4-Trichlorobenzene	< 0.22	NC
	2,4,5-Trichlorophenol	< 0.22	NC
	2,4,6-Trichlorophenol	< 0.22	NC



Table A-3  
Field Duplicate Summary  
Group 2 RCRA Investigation Summary  
Western Refining Southwest, Inc. - Bloomfield Refinery

	Parameter	SWMU 8-9 (0-0.5) Sample Result	SWMU 8-9 (0-0.5) DUP Field Duplicate	RPD (%)
Metals (mg/kg-dry):	Mercury	< 0.036	< 0.036	NC
	Antimony	< 2.7	< 2.7	NC
	Arsenic	< 2.7	< 2.7	NC
	Barium	300	300	0.0
	Beryllium	0.46	0.47	2.2
	Cadmium	< 0.11	< 0.11	NC
	Chromium	17	13	26.7
	Cobalt	4.7	4.8	2.1
	Lead	4.7	4.7	0.0
	Nickel	7.0	7.0	0.0
	Selenium	< 27	< 27	NC
	Silver	< 0.27	< 0.27	NC
	Vanadium	20	20	0.0
	Zinc	34	33	3.0

Notes:

RPD = Relative percent difference;  $[(\text{difference})/(\text{average})] * 100$

NC = Not calculated; RPD values were not calculated for non-detects

ug/L = micrograms per liter

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

\* = Field Duplicate RPD Outlier



BRUCE KING  
GOVERNOR

State of New Mexico  
ENVIRONMENT DEPARTMENT  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2850

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

January 25, 1994

Mr. David Roderick, Refinery Manager  
Bloomfield Refining Company  
P.O. Box 159  
Bloomfield, New Mexico 87413

Dear Mr. Roderick:

RE: Bloomfield Refining Company Landfill Pond Closure Plan  
Approval (EPA I.D. No. NMD089416416)

The New Mexico Environment Department (NMED) hereby approves the closure plan for the Bloomfield Refining Company (BRC) landfill pond located near Bloomfield, New Mexico. The approved plan for the landfill pond is contained in the document entitled, "Final Closure Plan for the API Wastewater Ponds, Landfill, and Landfill Pond at the Bloomfield Refinery" dated July 1986. The effective date of the closure plan approval is the date you receive this letter.

The Hazardous and Radioactive Materials Bureau (HRMB) of the NMED released the proposed closure plan and associated documents for a thirty (30) day public comment period which ran from December 10, 1993, through January 9, 1994. The HRMB received one written comment during the public notice period. A copy of the comment is enclosed for your information. The recommendation stated in the comment that BRC take measures to prevent water from ponding in this site for extended periods of time does not require a change in the final approved closure plan. Thus, no changes were made to the proposed closure plan in finalizing our approval. No additional closure activities are required to demonstrate clean closure of the site.

Mr. David Roderick

Page 2

January 25, 1994

Please contact Marc Sides of my staff at (505) 827-4308 if you have any questions

Sincerely,



Kathleen M. Sisneros, Director  
Water and Waste Management Division

Enclosure

cc: David Neleigh, EPA Permits  
Greg Lyssy, EPA Enforcement  
Mark Wilson, US Fish and Wildlife  
Benito Garcia, HRMB  
Barbara Hoditschek, HRMB  
Marc Sides, HRMB  
File - Red

TABLE 9  
SYMAU No. 8 Soil Analytical Results Summary  
Bloomfield Refinery - Bloomfield, New Mexico

[illegible]





## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 60°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5534.094  
**Site Coordinates:** N 49930.673  
E 52884.130

**Boring No.:** SWMU8-1  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	0815	G/2V/ 2E/2J		0.3		90	Ground Surface	0
2	1.5-2'	0830	G/2V/ 2E/2J		0.3		90	Silt (ML) Fine grain, loose to compact, dry, brown	2
4					0.3		90	Silt (ML) Similar to above	4
6					0.5		90	Silt (ML) Similar to above, damp	6
8					0.6		100	Silt (ML) Similar to above, damp	8
10					0.6		100	Clayey Silt (ML) Fine grain, compact, damp brown	10
12								Total Depth = 10' BGL	12
14									14
16									16
18									18
20									20
22									22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 61°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5534.065  
**Site Coordinates:** N 49943.130  
E 52984.200

**Boring No.:** SWMU8-2  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	0915	G/2V/ 2E/2J		0.6		80	Ground Surface	0
2	1.5-2'	0930	G/2V/ 2E/2J		0.5		80	Silt (ML) Fine grain, loose, dry, light brown	2
4					0.7		90	Silt (ML) Similar to above	4
6					0.6		90	Silt (ML) Similar to above, damp, trace fine grain sand	6
8					0.7		90	Silt (ML) Similar to above	8
10								Total Depth = 10' BGL	10
12									12
14									14
16									16
18									18
20									20
22									22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-4 Interval (9/23/08, 62°F); 4-10 Interval (9/23/08, 63°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5534.012  
**Site Coordinates:** N 49956.262  
E 53082.989

**Boring No.:** SWMU8-3  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0	0-0.5'	0945	G/2V/ 2E/2J		0.6		Ground Surface	0
2	1.5-2'	1000	G/2V/ 2E/2J		0.7		<b>Fill</b> Gravel, clay, sand/silt	2
4					0.6		<b>Fill</b> Similar to above	4
6					0.7		<b>Fill</b> Sand/silt, very fine grain, loose, damp, orangish brown	6
8					0.7		<b>Silt (ML)</b> Fine grain, compact, damp, brown	8
10					0.7		<b>Clayey Silt (ML)</b> Fine grain, compact, damp, brown	10
12							Total Depth = 10' BGL	12
14								14
16								16
18								18
20								20
22								22





## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-8 Interval (9/23/08, 72°F); 8-10 Interval (9/23/08, 73°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5536.192  
**Site Coordinates:** N 49858.545  
E 53079.734

**Boring No.:** SWMU8-4  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	1015	G/2V/ 2E/2J		0.7		90	Ground Surface	0
2	1.5-2'	1030	G/2V/ 2E/2J		0.8		90	Silt (ML) Fine grain, loose, dry, brown	2
4					0.7		90	Silt (ML) Similar to above	4
6					0.7		80	Silt (ML) Similar to above, damp	6
8					0.7		80	Silt (ML) Similar to above, damp, trace clayey silt	8
10								Total Depth = 10' BGL	10
12									12
14									14
16									16
18									18
20									20
22									22

## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 75°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5535.872  
**Site Coordinates:** N 49843.523  
 E 52982.291

**Boring No.:** SWMU8-5  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0	0-0.5'	1100	G/2V/ 2E/2J		0.6		Ground Surface	0
2	1.5-2'	1115	G/2V/ 2E/2J		0.6		Silt (ML) Fine grain, loose, dry, brown, gravelly	2
4					0.6		Silt (ML) Similar to above, trace gravel	4
6					0.7		Silt (ML) Fine grain, compact, dry to damp, brown	6
8					0.6		Silt (ML) Similar to above	8
10					0.5		Silt (ML) Similar to above, trace clayey silt	10
12							Total Depth = 10' BGL	12
14								14
16								16
18								18
20								20
22								22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 80°F). SWMU8-6A is 42' W 10° of SWMU 8-6

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5535.908  
**Site Coordinates:** N 49828.227  
E 52839.886

**Boring No.:** SWMU8-6  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Sampling							Sample Description	Depth (ft.)
Depth (ft.)	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0	0-0.5' & Cup	1145	G/2V/ 2E/2J		0.7		Ground Surface	0
2	1.5-2'	1215	G/2V/ 2E/2J		0.6		Silt (ML) Fine grain, loose, dry, brown, trace gravel	2
4					0.3		Silt (ML) Similar to above	4
6					0.5		Silt (ML) Similar to above	6
8					0.5		Silt (ML) Similar to above	8
10					0.5		Silt (ML) Fine grain, compact, dry, brown	10
12							Total Depth = 10' BGL	12
14								14
16								16
18								18
20								20
22								22



## WELL CONSTRUCTION

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery

**Job No.:** 354 - Bloomfield, NM

**Geologist:** Tracy Payne

**Driller:** Enviro-Drill, Inc.

**Drilling Rig:** CME 75

**Drilling Method:** Hollow-Stem Auger/ODEX

**Sampling Method:** Split Spoon

**Comments:** 0-10 Interval (10/13/08, 40°F); 10-41 Interval (10/14/08, 40°F-42°F). SWMU8-6A is 42°W 10°S of SWMU8-6.

**Total Depth:** 41' bgl

**Ground Water:** Saturated 34' bgl

**Elev., TOC (ft. msl):** 5538.626

**Elev., PAD (ft. msl):** 5536.148

**Elev., GL (ft. msl):** 5535.908

**Site Coordinates:**

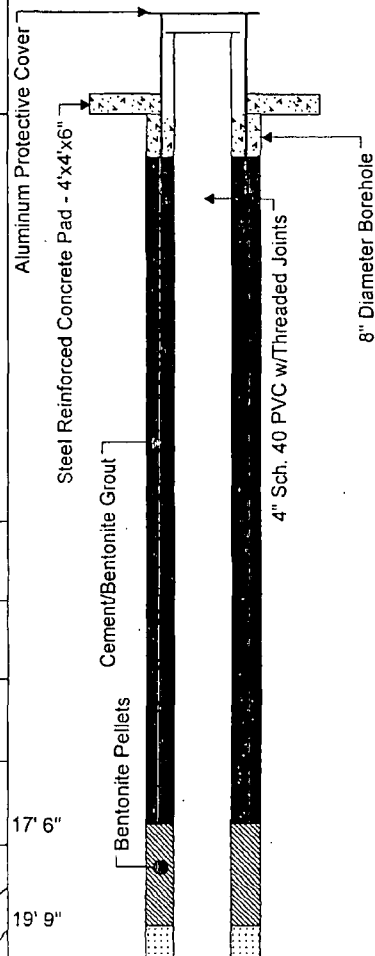
**N** 49828.227 **E** 52839.886

**Well No.:** MW-52 (SWMU8-6A)

**Start Date:** 10/13/2008

**Finish Date:** 10/14/2008

Sampling							Sample Description	Completion Results
Depth (ft.)	Sample Depth	Time	Sample Type/Container/No	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	
2							Silt (ML) Fine grain, loose, dry, brown	
4								
6								
8								
10								
12					0.3	80	Silt (ML) Fine grain, loose, dry to damp, brown	
14					0.4	100	Silt (ML) Similar to above	
16					0.5	100	Silt (ML) Similar to above	
18					0.4	100	Silt (ML) Similar to above	17' 6"
20					0.5	100	Silt (ML) Similar to above	
							Clayey Silt/Silty Clay (ML/CL) Low plasticity, soft, damp, brown	19' 9"





## WELL CONSTRUCTION

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery

**Job No.:** 354 - Bloomfield, NM

**Geologist:** Tracy Payne

**Driller:** Enviro-Drill, Inc.

**Drilling Rig:** CME 75

**Drilling Method:** Hollow-Stem Auger/ODEX

**Sampling Method:** Split Spoon

**Comments:** 0-10 Interval (10/13/08, 40°F); 10-41 Interval (10/14/08, 40°F-42°F). SWMU8-6A is 42°W 10°S of SWMU8-6.

**Total Depth:** 41' bgl

**Ground Water:** Saturated 34' bgl

**Elev., TOC (ft. msl):** 5538.626

**Elev., PAD (ft. msl):** 5536.148

**Elev., GL (ft. msl):** 5535.908

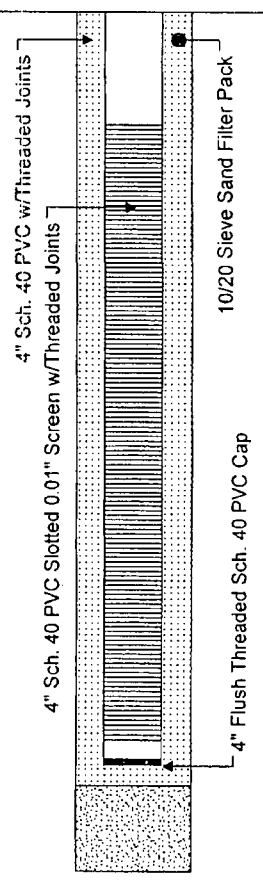
**Site Coordinates:**

**N** 49828.227 **E** 52839.886

**Well No.:** MW-52 (SWMU8-6A)

**Start Date:** 10/13/2008

**Finish Date:** 10/14/2008

Sampling							Sample Description	Completion Results
Depth (ft.)	Sample Depth	Time	Sample Type/Container/No	Saturation	Organic Vapor (ppm)	USCS Class		
22					0.4		100 Clayey Silt/Silty Clay (ML) Similar to above	
24					0.5		100 Clayey Silt/Silt (ML) Similar to above, except decrease in clay content	
26					0.4		60 Clayey Silt/Silt (ML) Similar to above	
28					0.5		70 Gravelly Sand (SW) Fine grain, loose, damp, brown, gravel throughout	
30					0.4		70 Gravelly Sand (SW) Similar to above	
32					0.5		70 Gravelly Sand (SW) Similar to above	
34	33'-34'	0915	G/2V/ 2E/3J	34'	0.5		60 Gravelly Sand (SW) Similar to above, moist to saturated at base	
36							60 Gravelly Sand (SW) Fine to medium grain, loose to compact, saturated, brown	
38							60 Gravelly Sand (SW) Similar to above, trace sandstone at base, very light reddish brown to tan	
40							- Sand/Sandstone (SP/SS) Fine grain, compact, moist to saturated at base, yellowish brown	
42							- Sand/Sandstone (SP/SS) Similar to above	
Total Depth = 41' BGL								



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 81°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5536.338  
**Site Coordinates:** N 49728.414  
E 52880.733

**Boring No.:** SWMU8-7  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	1315	G/2V/ 2E/2J		0.6		60	Ground Surface	0
2	1.5-2'	1330	G/2V/ 2E/2J		0.6		80	Silt (ML) Fine grain, loose, dry, brown	2
4					0.7		80	Silt (ML) Similar to above	4
6					0.7		80	Silt (ML) Similar to above, dry to damp	6
8					0.7		80	Silt (ML) Similar to above	8
10					0.6		80	Silt (ML) Fine grain, loose, damp, brown, trace sand	10
12								Total Depth = 10' BGL	12
14									14
16									16
18									18
20									20
22									22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 80°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5536.768  
**Site Coordinates:** N 49742.785  
E 52978.830

**Boring No.:** SWMU8-8  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	1400	G/2V/ 2E/2J		0.3		60	Ground Surface <b>Silt (ML)</b> Fine grain, loose, dry, brown	0
2	1.5-2'	1415	G/2V/ 2E/2J		0.5		50	<b>Silt (ML)</b> Similar to above	2
4					0.5		50	<b>Silt (ML)</b> Similar to above	4
6					0.5		60	<b>Silt (ML)</b> Similar to above	6
8					0.3		80	<b>Sandy Silt (ML)</b> Fine grain, compact, dry, brown, very fine grain sand	8
10								Total Depth = 10' BGL	10
12									12
14									14
16									16
18									18
20									20
22									22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 80°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5537.239  
**Site Coordinates:** N 49756.679  
E 53076.412

**Boring No.:** SWMU8-9  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5' & Dup	1515	G/2V/ 2E/2J		0.6		90	Ground Surface	0
2	1.5-2'	1530	G/2V/ 2E/2J		0.6		80	Silt (ML) Very fine grain, loose to compact, dry, brown	2
4					0.6		80	Silt (ML) Similar to above	4
6					0.5		80	Silt (ML) Similar to above	6
8					0.5		80	Clayey Silt (ML) Very fine grain, compact, damp, brown	8
10								Total Depth = 10' BGL	10
12									12
14									14
16									16
18									18
20									20
22									22





## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 80°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5538.615  
**Site Coordinates:** N 49661.599  
E 53076.420

**Boring No.:** SWMU8-10  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	1545	G/2V/ 2E/2J		0.5		90	Ground Surface	0
2	1.5-2'	1600	G/2V/ 2E/2J		0.5		90	Silt (ML) Very fine grain, compact, dry, brown	2
4					0.5		90	Silt (ML) Similar to above, trace fine grain sand at base	4
6					0.5		90	Silt (ML) Similar to above	6
8					0.5		90	Silt (ML) Similar to above, damp	8
10					0.6		90	Silt (ML) Similar to above, trace calcareous	10
12								Total Depth = 10' BGL	12
14									14
16									16
18									18
20									20
22									22



## LOG OF BORING

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery  
**Job No.:** 354 - Bloomfield, NM  
**Geologist:** Tracy Payne  
**Driller:** Enviro-Drill, Inc.  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow-Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** 0-10 Interval (9/23/08, 80°F)

**Total Depth:** 10' bgl  
**Ground Water:** Not Encountered  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** 5538.954  
**Site Coordinates:** N 49642.993  
E 52977.706

**Boring No.:** SWMU8-11  
**Start Date:** 9/23/2008  
**Finish Date:** 9/23/2008

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0	0-0.5'	1610	G/2V/ 2E/2J		0.5		90	Ground Surface	0
2	1.5-2'	1620	G/2V/ 2E/2J		0.5		90	Silt (ML) Very fine grain, compact, dry, brown	2
4					0.5		90	Silt (ML) Similar to above, quartz grains random throughout at base	4
6					0.4		90	Silt (ML) Similar to above	6
8					0.5		90	Silt (ML) Similar to above	8
10					0.5		90	Silt (ML) Similar to above	10
12								Total Depth = 10' BGL	12
14									14
16									16
18									18
20									20
22									22



## WELL CONSTRUCTION

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery

**Job No.:** 354 - Bloomfield, NM

**Geologist:** Tracy Payne

**Driller:** Enviro-Drill, Inc.

**Drilling Rig:** CME 75

**Drilling Method:** Hollow-Stem Auger/ODEX

**Sampling Method:** Split Spoon

**Comments:** 0-10 Interval (9/23/08, 80°F); 10-41.5 Interval (9/24/08, (10-28) 60°F, (28-30) 66°F, (30-39) 70°F).

**Total Depth:** 41.5' bgl

**Ground Water:** Not Encountered

**Elev., TOC (ft. msl):** 5541.322

**Elev., PAD (ft. msl):** 5538.7

**Elev., GL (ft. msl):** 5538.46

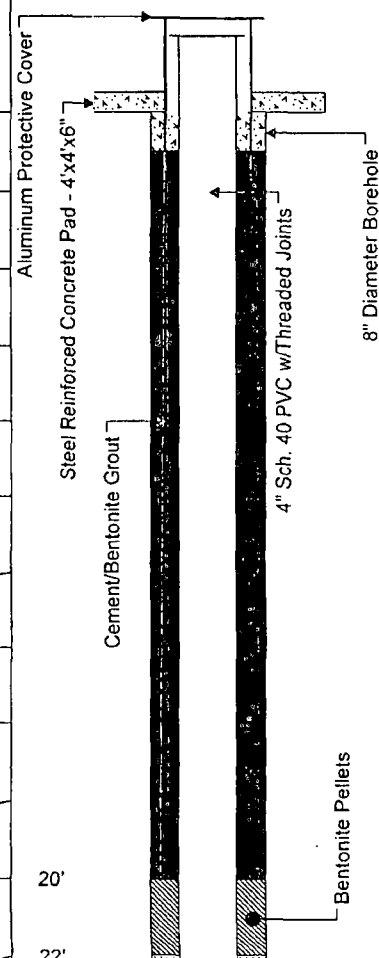
**Site Coordinates:**

N 49628.129 E 52879.301

**Well No.:** MW-53 (SWMU8-12)

**Start Date:** 9/23/2008

**Finish Date:** 9/24/2008

Depth (ft.)	Sampling						Sample Description	Completion Results
	Sample Depth	Time	Sample Type/Container/No	Saturation	Organic Vapor (ppm)	USCS Class		
-2							Ground Surface	
0	0-0.5'	1630	G/2V/ 2E/2J		0.5	70	Silt (ML) Very fine grain, compact, dry, brown	
2	1.5-2'	1645	G/2V/ 2E/2J		0.5	70	Silt (ML) Similar to above	
4					0.5	70	Silt (ML) Similar to above	
6					0.4	90	Silt (ML) Similar to above, damp, trace quartz sand	
8					0.5	90	Silt (ML) Similar to above	
10					0.1	90	Sandy Silt (ML) Very fine grain, compact, dry, brown, with fine grain sand	
12					0.0	90	Sandy Silt (ML) Similar to above	
14					0.0	90	Sandy Silt (ML) Similar to above	
16					0.1	90	Clayey Silt (ML) Very fine grain, compact, dry, brown, calcareous	
18					0.0	90	Clayey Silt (ML) Similar to above	
20					0.1	100	Sandy Silt (ML) Very fine grain, compact to loose, dry, brown, with fine grain sand	
22								

RPS JDC, Inc.  
3833 S. Staples, Suite N-229  
Corpus Christi, Texas 78411

Sheet: 1 of 2

361/855-7335  
361/855-7410 fax



## WELL CONSTRUCTION

**Client:** Western Refining Southwest, Inc.  
**Site:** SWMU Group #2, Bloomfield Refinery

**Job No.:** 354 - Bloomfield, NM

**Geologist:** Tracy Payne

**Driller:** Enviro-Drill, Inc.

**Drilling Rig:** CME 75

**Drilling Method:** Hollow-Stem Auger/ODEX

**Sampling Method:** Split Spoon

**Comments:** 0-10 Interval (9/23/08, 80°F); 10-41.5 Interval (9/24/08, (10-28) 60°F, (28-30) 66°F, (30-39) 70°F).

**Total Depth:** 41.5' bgl

**Ground Water:** Not Encountered

**Elev., TOC (ft. msl):** 5541.322

**Elev., PAD (ft. msl):** 5538.7

**Elev., GL (ft. msl):** 5538.46

**Site Coordinates:**

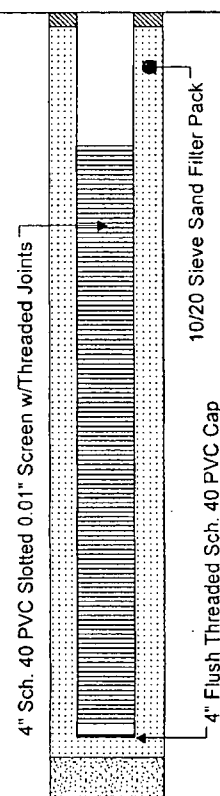
**N** 49628.129 **E** 52879.301

**Well No.:** MW-53 (SWMU8-12)

**Start Date:** 9/23/2008

**Finish Date:** 9/24/2008

Depth (ft.)	Sampling						Sample Description	Completion Results
	Sample Depth	Time	Sample Type/Container/No	Saturation	Organic Vapor (ppm)	USCS Class		
23					0.1	100	Sandy Silt (ML) Similar to above	22'
25					0.1	100	Sandy Silt (ML) Similar to above, damp, calcareous	25'
27					0.1	70	Silty Sand/Gravelly Sand (SM/SW) Fine grain, loose, dry, light brown to brown, gravelly at base	
29					0.1	60	Gravelly Sand (SW) Similar to above	
31					0.1	50	Gravelly Sand/Sandy Gravel (SW) Similar to above, cobble size	
33					0.1	60	Gravelly Sand/Sandy Gravel (SW) Similar to above	
35					0.1	10	Gravelly Sand/Sandy Gravel (SW) Similar to above	
37					0.1	20	Gravelly Sand (SW) Similar to above	
38.5	37-38.5	1430	G/2V/ 2E/2J		0.1	90	Clayey Sand (SC) Fine to medium grain, compact, moist to very moist, yellowish brown	
41						90	Sand/Sandstone (SP/SS) Fine grain, very dense, dry, light brown to reddish brown	40' 40' 6"
43							Clayey Sand (SC) Fine grained, very dense, damp, greenish gray	41.5'
45							Total Depth = 41.5' BGL	



## Scott Crouch

**From:** Monzeglio, Hope, NMENV [hope.monzeglio@state.nm.us]  
**Sent:** Thursday, September 25, 2008 9:10 AM  
**To:** Scott Crouch; Randy Schmaltz  
**Cc:** Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Robinson, Kelly; Tracy Payne  
**Subject:** RE: Western Refining GP 2 Investigation

Scott

You may continue with your proposed location and the ODEX method.

Hope

---

**From:** Scott Crouch [mailto:scrouch@jdconsult.com]  
**Sent:** Thursday, September 25, 2008 7:25 AM  
**To:** Monzeglio, Hope, NMENV; Randy Schmaltz  
**Cc:** Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV; Robinson, Kelly; Tracy Payne  
**Subject:** RE: Western Refining GP 2 Investigation

Hope:

I am providing notice pursuant to Section VIII.A.3.a Drilling, that we have encountered problems, which require a change in the planned location for one of the monitoring wells and also a change in drilling methodology. The request to change the well location pertains to SWMU No. 8 Landfill. We have successfully collected the soil samples at the originally approved locations as shown on the attached map for SWMU No. 8. However, when we drilled deeper at the northern most of the two proposed monitoring well locations we encountered a water line. The water line has been isolated but I would like to move the monitoring well location approx. 40 feet due west to get beyond the impact of the water leak so that we can better determine when we hit the "true" top of saturation. I have marked the new location on the attached map.

We drilled the second monitoring well location (southwest corner) in SWMU No. 8 and encountered very difficult conditions, which resulted in breaking all of the teeth off the lead auger and the auger flights actually began to peel off from the auger. I have attached a few photos. Photo # 964 shows the lead auger and you can see a nub on the left end where the teeth used to be. The driller has recommended that we utilize the ODEX method, which is discussed on page 93 of the Order (attached). I have discussed the options with the driller and they believe the ODEX method will allow us the best opportunity to collect soil samples as we advance the casing.

Please contact me with any questions. We await your response so that we can move forward.

**Scott T. Crouch, P.G.**

## RPS JDC

404 Camp Craft Rd., Austin, TX 78746

☎ Office (512) 347-7588 ☎ Direct (512) 879-6697

☎ Cell (512) 297-3743 ☎ Fax (512) 347-8243

✉ [crouchs@rpsgroup.com](mailto:crouchs@rpsgroup.com)

♻ Before printing, think about the environment

9/25/2008

## Chavez, Carl J, EMNRD

---

**From:** Robinson, Kelly [Kelly.Robinson@wnr.com]  
**Sent:** Monday, September 21, 2009 3:41 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Doyle, Todd; Schmaltz, Randy  
**Subject:** Draft Discharge Permit (GW-001) Comment Letter - Bloomfield Refinery  
**Attachments:** Draft Discharge Permit (GW-001)\_Western Comment Letter.pdf

Good Afternoon Sir,

Western Refining Southwest, Inc. – Bloomfield Refinery (Western) appreciates the opportunity to comment on the “Draft” Discharge Permit (GW-001). Attached is an electronic copy of Western’s comment letter. A hard copy is being sent to you via FedEx overnight.

Thank you for your time!

Sincerely,

Kelly R. Robinson  
**Environmental Engineer**

**Western Refining Southwest, Inc. - Bloomfield Refinery**  
P.O. Box 159  
50 Road 4990  
Bloomfield, NM87413

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2009 SEP 22 AM 11 49

FedEx Overnight Priority #: 8577 6554 5029

September 21, 2009

Carl Chavez  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Re: Draft Discharge Permit (GW-001)  
Western Refining Southwest, Inc.-Bloomfield Refinery

Dear Mr. Chavez:

Western Refining Southwest, Inc.- Bloomfield Refinery (Western) appreciates the opportunity to comment on the "Draft" Discharge Permit (GW-001) and has prepared the following comments.

**Condition 17. F.**

**F. Landfills:** *A closure plan addressing all facility landfill(s) (active or inactive) at the facility shall be submitted to the OCD within 9 months of permit issuance. The active and inactive landfills at the facility are currently being investigated under RCRA SWMUs 8 and 16. This investigation information will help the operator with the final closure within 12 months of permit issuance or a date approved by the agencies. Landfill disposal at these facilities is prohibited on the date of permit issuance may require treatment and/or disposal at an OCD permitted or approved facility.*

**Comment:** Western believes that the conditions in the draft Discharge Permit addressing the active landfill are not allowed by the New Mexico Water Quality Act ("WQA"), Sections 74-6-1 through 74-6-17 NMSA 1978. These conditions concerning the active landfill in Sections 17.F and 21.B.1 of the draft Discharge Permit (1) prohibit waste disposal beginning on the date of permit issuance; (2) require a closure plan to be submitted to OCD within 9 months of permit issuance; and (3) require closure within one year of permit issuance.

Western understands that OCD justifies these conditions by relying on OCD's Surface Waste Management Facilities ("SWMF") regulations at 19.15.16 NMAC, adopted under the authority of the New Mexico Oil and Gas Act ("OGA"), Sections 70-2-1 through 70-2-38 NMSA 1978. Further, Western understands that OCD relies on the specific provision of the SWMF regulations, 19.15.36.13.B(1) NMAC, prohibiting a SWMF from locating within 200 feet of a watercourse as justification for the conditions in the draft

Discharge Permit addressing the active landfill. Western believes there are at least three reasons why these conditions are unlawful, as summarized below.

First, the conditions violate Section 74-6-12.G of the WQA, which states as follows: "The Water Quality Act does not apply to any activity or condition subject to the authority of the oil conservation commission pursuant to provisions of the Oil and Gas Act..." Because the siting requirement is part of the SWMF regulations, adopted under the OGA, OCD is not allowed to apply that requirement in a discharge permit issued under the authority of the WQA.

Second, 2009 amendments to the WQA have clarified that OCD, as a "constituent agency", must demonstrate that a permit condition is necessary. "The constituent agency has the burden of showing that each condition is reasonable and necessary to ensure compliance with the Water Quality Act and applicable regulations, considering site-specific conditions." Section 74-6-5.D of the WQA. Western's Discharge Permit (GW-001) has allowed the active landfill to operate for many years. If OCD now wishes to prohibit operation of the landfill, OCD has the burden of showing that the prohibition is reasonable and necessary under the WQA. It does not appear that such a showing has been made.

Third, even if OCD applied the SWMF regulations under the OGA, instead of the discharge permit regulations under the WQA, the siting requirements in 19.15.36.13 NMAC still would not apply to the active landfill. The transitional provisions of the SWMF regulations, 19.15.36.20 NMAC, state that SWMFs operating pursuant to an OCD permit prior to the effective date of the SWMF regulations (February 14, 2007) may continue to operate in accordance with such permit (in this case, GW-001). Some operational, waste acceptance and closure requirements provided in 19.15.36 NMAC may apply. 19.15.36.20 NMAC. However, the transitional provisions of the SWMF regulations do not include siting requirements as applicable. The inapplicability of the siting requirements in the SWMF regulations to Western's active landfill is understandable, since the site of the landfill was selected long before OCD adopted the SWMF regulations.

**Condition 21. B. 1.**

1. *Upon permit issuance, no wastes shall be disposed within any landfills at the facility, since they may likely need to be removed anyway. A closure plan for landfills at the facility shall be submitted within 9 months of permit issuance for agency approval. Any on-site landfill shall be properly closed with the agencies within one year of permit issuance or by a date approved by the agencies. The active landfill has been used to dispose of K172 fluid catalytic cracking unit (FCCU) catalyst and sulfur byproducts, while the inactive landfill was used to dispose K052 (API separator sludge) waste, and as a stockpiling location for excavated contaminated soils. In April 1991, the operator petitioned EPA for a delisting determination on the inactive landfill, which was granted by EPA. The operator later obtained permission from OCD to use soils from the inactive*



*landfill for fill in a low-lying area near the naphtha loading rack. The actual date of the inactive landfill closure is unclear.*

**Comment:** This condition mistakenly states that K172 and K052 wastes are being mismanaged by the refinery, and implies that the refinery is willingly disposing of listed wastes in disregard of Federal (RCRA) Regulations. The listed waste designation K172 is for Spent Hydrotreating catalysts (metal based) and does not apply to Fluid catalytic cracking catalysts (alumina silica based). Fluid catalytic cracking catalyst is not a listed waste.

The listed waste designation K052 is for Tank bottoms (leaded) from petroleum refining industry. The Bloomfield Refinery petitioned the EPA for a delisting of the above mentioned soils that were accumulated during the 1982 retrofit of the aeration ponds done by Plateau. The EPA granted this petition, delisting this soil. The Bloomfield refinery went through the proper channels and secured the delisting of this soil prior to disposal. With the delisting of this soil, the implication that Bloomfield disposed of a listed waste is inaccurate.

Western requests that Condition 21. B. 1. be removed entirely, or the implication that the refinery mismanaged listed wastes be corrected.

If you have questions or would like to discuss these comments further, please contact Randy Schmaltz at (505) 632-4171.

Sincerely,



Todd R. Doyle  
Refinery Manager  
Bloomfield Refinery

cc: Randy Schmaltz – Western Refining-Bloomfield Refinery