GW - 001

GENERAL CORRESPONDENCE

2007 - 1982
3 of 11

DP Approval Chronology

The original discharge plan was approved on June 05, 1978 and subsequently renewed on June 07, 1984, November 02, 1989, February 04, 1992, and May 24, 1994 with an expiration date of June 07, 1999. OCD approved a change of ownership on January 29, 1996 and approved a minor modification on November 19, 1996, approved a modification (Stage I abatement plan) March 16, 1999, approved discharge plan renewal on April 19, 2000, (included DP and Abatement Plan),

Compliance Language

Giant shall submit for OCD approval a plan including drawings to install a below grade wall and recovery trench system starting at the point where San Juan County road A-78 (Sullivan Road) and Hammond Ditch cross. The trench shall start at this point on the north side of the County road A-78 and proceed continuously north and eventually east along the Hammond Ditch Dirt Road and terminate in an area located just south of the #2 east outfall which is located north of the refinery fresh water ponds. The recovery system shall be placed in the Hammond Ditch road access area on the outside of the Hammond Ditch. The recovery system shall include a cut-off wall and recovery trench with recovery pumps, treatment systems, monitoring points and controls. The system shall be designed to recovery PSH and prevent contaminated water from passing this point.

DP& Abatement:

Feb 08, 1999	Giant submits Stage I Abatement Plan Proposal
March 16, 1999	OCD approves Stage I Abatement Plan as a DP Modification
July 05, 1999	Giant submits DP renewal (VOL I) with Abatement plan incorporated into permit renewal (VOL II)
March 08, 2000	OCD noted several deficiencies and requested information. Note: Sheet piling project was installed without OCD approval. OCD noted that Giant failed to install a recovery system. Item #8.
March 21, 2000	Giant submits DP (VOL I) Revision. Dated March 10, 2000
April 19, 2000	OCD approves DP which includes Abatement Item #19.
May 11, 2000	Giant submits response to OCD March 08, 2000 letter. Letter committed to supplying revised Abatement Plan (VOL II). Issue of River Bank contamination not resolved.
Jan 08, 2002	Giant submits Site Investigation and Abatement Plan (CMS) VOL II Sept 2001-Page 4-15 Giants commits to taking River Samples if contaminants are found in the River Side piezometers.
Jan 14, 2002	Giant supplies Hammond Ditch Project to OCD

July 17, 2002	OCD Responds to Giant's Sept 2001 document above. Giant failed once again to adequately address the Riverside contamination. See Item #2 No recovery plan in place. OCD requested a surface water monitoring plan.
September 12, 2002	Giant submits combined site (OCD Investigation and Abatement Plan) and NMED CMS in response to OCD letter dated July 17, 2002. Note: Under OCD attachment 2 of this document, giant failed to address OCD's concern for the River Bank Contamination. Giant only proposed a new MW and a reference to attachment #6 which did not address OCD concerns. The monitor plan does not include sheet piling sampling of P4 or P5.
December 18, 2002	Giant submits proposed MW locations for MW44,45,46
December 30, 2002	OCD approves (with conditions) Giant's Site investigation and monitoring plan submitted Sept 12, 2002 above. Condition #1 required additional MW's 44,45,46, Condition #17a required conclusions and recommendation. 19 required reporting new contamination.
January 08, 2003	OCD approves Alternate location for MW 44,45,46
April 07, 2003	Giant submits first annual ground water monitoring report for 2002. Note: Giant failed to comply with items #s 1,17a or 19 from December 30, 2002 requirements. Giant did not provide any notification or comments about P4 and P5 which exceeded the groundwater standards. Giant did not install a recovery system in the river bank area.
May 29, 2003	Giant submits Monitoring plan (Have not looked at yet)
December 23, 2003	Giant notifies OCD MW 47 has PSH
March 29, 2004	Giant submits 2003 annual groundwater report (Have not totally investigated this report) MW-45 had 9 feet of product buried in report, Giant did not notify OCD.

GIANT
REFINING COMPANY

December 23, 2003

Dave Cobrain
NMED Hazardous Waste Bureau
2905 Rodeo Park Drive East
Bldg. 1
Santa Fe, NM 87505

Re: Notification of Separate-Phase Hydrocarbon In Monitor Well #47

Dear Mr. Cobrain:

The Giant Bloomfield refinery installed monitor well (MW) #47 in March 2003, which was sampled in April and again in August. The August sampling event detected trace amounts of BTEX but no separate-phase hydrocarbon. On December 18, 2003 Giant discovered separate-phase hydrocarbon in MW-47 while taking a water level measurement.

Giant recently reactivated recovery well (RW) #1, which is approximately 250 feet east of MW-47. Giant will continue.to monitor MW-47 and operate RW-1 while investigating the cause of the separate phase hydrocarbon.

If I can be of further assistance please contact me at 505-632-4171.

Sincerely,

James R. Schmaltz

C: C. King
E. Riege
D. Foust
W. Olson
W. Price

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

GIANT
REFINING COMPANY

RECEIVED

AUG 1 8 2003

OIL CONSERVATION DIVISION

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St. Frances Dr.
Santa Fe, New Mexico 87505

August 13, 2003

Re: **#1 East Outfall Hydrocarbon**

Dear Mr. Price,

The following is a recap of events and actions taken since the discovery of hydrocarbon in the #1 East Outfall:

On July 31, 2003 at approximately 2:50 pm traces of hydrocarbon were found in the #1 East Outfall. This outfall is located northwest of our fresh water ponds on the north side of Hammond Ditch. Steps were taken immediately to contain the hydrocarbon by placing absorption pads in the outfall. Notification messages were left on answering machines for both the NMED – Hazardous Waste Bureau, and NMED – Oil Conservation Division.

Giant contacted Wayne Price and Denny Foust (NMED-OCD), and Dave Cobrain (NMED-HWB) on August 1, 2003 to notify them of the discovery and of the emergency steps taken. The emergency response plan was submitted to NMED-OCD via email and NMED- OCD approved the emergency response plan.

On August 1, 2003 a series of containment dikes were constructed. The dikes were made from earthen materials making use of natural terrain to create a catch basin. An L-shaped overflow pipe has been placed in each containment dike to prevent the release of any separate phase hydrocarbon. (See attached Photo's)

During the construction of the dikes Giant pumped all fluids into the refinery's waste water system via vacuum trucks. This pumping activity continued until the hydrocarbon sheen diminished on August 4, 2003. Samples were taken and analyzed for BTEX. The samples came back under the WQCC standards. Based upon these results the water was allowed to flow out of the secondary containment as discussed. Giant will continue to monitor and sample this outfall and should hydrocarbon reappear or the BTEX analyses

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NEW MEXICO
87413

rise above the WQCC standards, Giant will return to the pumping of all fluids into the refinery's waste water system.

Giant has begun an investigation into the possible source of this hydrocarbon. Test holes were dug in three selected locations using a track hoe. These holes were dug on the northern boundary of the Tank Farm, starting near the center of the refinery working our way east towards the outfall. Giant will provide details of the investigation as they transpire.

If you need more information, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz
Environmental Supervisor
Giant Refining Company – Bloomfield

Cc: Chad King, Bloomfield Refinery Manager
Ed Riege, Giant Refining Environmental Superintendent
Denny Foust, New Mexico Oil Conservation Division – Aztec
Dave Cobrain, NMED – Hazardous Waste Bureau

GIANT
REFINING COMPANY

GW-1

August 7, 2003

Mr. Dave Cobrain
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Bldg 1
Santa Fe, NM 87505

Mr. William C. Olson
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Giant Refining Company, Bloomfield Refinery
EPA ID# NMD089416416
HWB-GRCB-01 001

Dear Mr. Cobrain and Mr. Olson,

This letter is notification that Giant Refinery – Bloomfield will be collecting annual groundwater samples starting August 18, 2003. The sampling is expected to take approximately 2 weeks, concluding on August 31, 2003.

Please contact me at (505) 632-4171 if you would like to observe the sampling and I will provide you with details on the sampling event and set up Giant's required safety orientation.

Sincerely,

James R. Schmaltz
Environmental Supervisor
Giant Refining – Bloomfield

PHONE
505-632-8013
FAX
505-632-3911

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BLOOMFIELD
NEW MEXICO
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March 31, 2003

William C. Olson, Hydrologist
Environmental Bureau
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

RE: Corrective Measures Study and Corrective Measures Implementation
(Site Investigation and Abatement Plan)
Annual Soil and Ground Water Report
Giant Refining Company, Bloomfield Refinery
EPA ID# NMD089416416

Dear Mr. Olson:

This letter responds to the December 30, 2002 letter issued by the New Mexico Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department titled *NMOCD Approval Conditions for Ground Water Remediation and Monitoring.* San Juan Refining Company's (SJRC) investigation, remediation and monitoring proposals were approved by OCD in that letter.

Bloomfield Refinery has prepared and is submitting an annual ground water monitoring report for activities that occurred in 2002 as per the NMOCD letter Attachment, Section 17.

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

Sincerely,

Randy Schmaltz
Environmental Supervisor
San Juan Refining Company
Bloomfield Refinery

cc: Denny Foust, NMOCD Aztec District Office

Price, Wayne

From: Price, Wayne
Sent: Tuesday, March 11, 2003 8:29 AM
To: 'Randy Schmaltz'
Subject: RE: Disposal of Filters (San Juan Refining - Bloomfield)

Dear Mr. Schmaltz:

The OCD hereby approves of your request. OCD will attach this approval and request to your discharge plan and considers this a minor modification of your permit.

Please be advised that NMOCD approval of this request does not relieve Giant of liability should their pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Giant of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

[Price, Wayne]

-----Original Message-----
From: Randy Schmaltz [mailto:rschmaltz@giant.com]
Sent: Tuesday, March 11, 2003 7:36 AM
To: Wayne Price
Subject: Disposal of Filters (San Juan Refining - Bloomfield)

In pursuant of rule 712 (c)(4) San Juan Refining - Bloomfield requests permission to dispose of non-domestic solid waste as described in my letter to you dated February 6, 2003. Thank you for your consideration in this matter.

Sincerely,
Randy Schmaltz

Olson, William

From: Randy Schmaltz [rschmaltz@giant.com]
Sent: Tuesday, March 04, 2003 4:18 PM
To: Dave Cobrain; William Olson
Subject: Giant's Seep #5 (corrected)

Gentlemen, I had been working with (Foutz & Bursum) the owner of the property west of the refinery to get permission to rework Bloomfield Refinery's Seep #5, which is located on their property. Permission had been granted and Bloomfield Refining had contracted with Precision Engineering to redue this seep. On Monday March 3, 2003 the property owner informed me of their plans to mine this portion of their property. As discussed in our phone conservations in order to maintain a sample point to the west of the refinery, and out of the area to be mine Bloomfield Refining will move seep #5 approximately 40 feet east of its original location.

GIANT
REFINING COMPANY

February 6, 2003

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Via: Certified Mail 7099 3220 0010 2242 4023

Re: Disposal of Special Waste

Dear Mr. Price,

As per OCD Rulebook Section 19.15.9.712, San Juan Refining Company is requesting permission to dispose of non-domestic solid waste generated at the Bloomfield Refinery in the San Juan County Landfill.

The waste in question is comprised of process filters used in our transfer from process tankage to sales tankage for diesel and naphtha components. These filters are dry and contain no free liquids.

Included in this letter are TCLP analytical results for the diesel and naphtha filters that meet the requirements in OCD Rulebook 19.15.9.712(E)(3)(e). Also included are MSDS sheets on Giant's crude oil, #2 diesel, naphtha, and JP-8 (#1 diesel). Our processes have not changed through the years; therefore knowledge of process indicates that the constituents these filters see will not change.

We thank you for your prompt attention and look forward to hearing from you concerning this request. If you have questions please call me at (505) 632-4171.

Sincerely,

Randy Schmaltz
Environmental Supervisor
San Juan Refining Company

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505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Service Agreement on File? ☐YES ☐NO Profile Number: WMI _____

☐Hazardous ☒Non-Hazardous ☐TSCA Renewal Date: 1 1

A. Waste Generator Information

1. Generator Name: Giant Refining - Bloomfield
2. SIC Code: 2911
3. Facility Street Address: #50 CR 4990
4. Phone: (505)
5. Facility City: Bloomfield
6. State/Province: New Mexico
7. Zip/Postal Code: 87413
8. Generator USEPA/Federal ID #: N/A
9. County: San Juan
10. State/Province ID #:
11. Customer Name: Giant Refining
12. Customer Phone: (505) 632-4171
13. Customer Contact: Randy Schmaltz
14. Customer Fax: 505-632-3911
15. Billing Address P.O. Box 159 Bloomfield NM 87413 ☐Same as above

B. Waste Stream Information

1. Description
   a. Name of Waste: Used Process Filters
   b. Process Generating Waste: Process Filtering of Petroleum Refining.

c. Color	d. Strong odor (describe):	e. Physical state @ 70°F	f. Layers	g. Free liquid range
Tan / Brown	Diesel odor	☒Solid ☐Liquid ☐Gas ☐Sludge ☐Other	☐Single Layer ☒Multi-layer	Ø to Ø %
				h. pH: Range 7 to 7.5 %

i. Liquid Flash Point: ☐<73°F ☐73-99°F ☐100-139°F ☐140-199°F ☐≥ 200°F ☒Not applicable

j. Chemical Composition (List all constituents [including halogenated organics, debris, and UHC's] present in any concentration and submit representative analysis):

Constituents	Concentration Range	Constituents	Concentration Range
TCLP RCRA Metals Attached			
MSDS - Attached			

TOTAL COMPOSITION MUST EQUAL OR EXCEED 100%

k. ☐Oxidizer ☐Pyrophoric ☐Explosive ☐Radioactive ☐Carcinogen ☐Infectious ☐Shock Sensitive ☐Water Reactive

l. Does the waste represented by this profile contain any of the carcinogens which require OSHA notification? (list in Section B.1.j)..... ☐YES ☒NO

m. Does the waste represented by this profile contain dioxins? (list in Section B.1.j)..... ☐YES ☒NO

n. Does the waste represented by this profile contain asbestos?..... ☐YES ☒NO
   If yes..... ☐friable ☐non-friable

o. Does the waste represented by this profile contain benzene?..... ☐YES ☒NO
   If yes, concentration _____ ppm
   Is the waste subject to the benzene waste operations NESHAP?..... ☐YES ☒NO

p. Is the waste subject to RCRA Subpart CC controls?..... ☐YES ☒NO
   If yes, volatile organic concentration _____ ppmw

q. Does the waste contain any Class I or Class II ozone-depleting substances?..... ☐YES ☒NO

r. Does the waste contain debris? (list in Section B.1.j)..... ☐YES ☒NO

2. **Quantity of Waste**
   Estimated Annual Volume 40 - 50 ☐Tons ☒Yards ☐Drums ☐Other (specify) _____

3. **Shipping Information**
   a. Packaging:
   ☒Bulk Solid; Type/Size: 3 yd bin ☐Bulk Liquid; Type/Size: _____
   ☐Drum; Type; Size: _____ ☐Other: _____
   b. Shipping Frequency: Units _____ Per: ☐Month ☐Quarter ☐Year ☐One time ☐Other _____
   c. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If no, skip d, e, and f)..... ☐YES ☒NO

GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

d. Reportable Quantity (lbs.; kgs.): N/A e. Hazard Class/ID #: _____

f. USDOT Shipping Name: _____

g. Personal Protective Equipment Requirements: NONE

h. Transporter/Transfer Station: _____

C. Generator's Certification (Please check appropriate responses, sign and date below.)

1. Is this a USEPA hazardous waste (40 CFR Part 261)? If the answer is no, skip to 2 ☐YES ☒NO
   a. If yes, identify ALL USEPA listed and characteristic waste code numbers (D, F, K, P, U) _____
   b. If a characteristic hazardous waste, do underlying hazardous constituents (UHCs) apply? (if yes, list in Section B.1.j) ☐YES ☐NO
   c. Does this waste contain debris? (if yes, list size and type in Chemical Composition - B.1.) ☐YES ☐NO

2. Is this a state hazardous waste? ☐YES ☒NO
   Identify ALL state hazardous waste codes _____

3. Is the waste from a CERCLA (40 CFR 300, Appendix B) or state mandated clean-up? ☐YES ☒NO
   If yes, attach Record of Decision (ROD), 104/106 or 122 order or court order that governs site clean-up activity. For state mandated clean-up, provide relevant documentation.

4. Does the waste represented by this waste profile sheet contain radioactive material, or is disposal regulated by the Nuclear Regulatory Commission? ☐YES ☒NO

5. Does the waste represented by this waste profile sheet contain concentrations of Polychlorinated Biphenyls (PCBs) regulated by 40 CFR 761? (if yes, list in Chemical Composition - B.1.j) ☐YES ☒NO
   a. If yes, were the PCBs imported into the U.S.? ☐YES ☐NO

6. Do the waste profile sheet and all attachments contain true and accurate descriptions of the waste material, and has all relevant information within the possession of the Generator regarding known or suspected hazards pertaining to the waste been disclosed to the Contractor? ☒YES ☐NO

7. Will all changes which occur in the character of the waste be identified by the Generator and disclosed to the Contractor prior to providing the waste to the Contractor? ☒YES ☐NO

☐Check here if a Certificate of Destruction or Disposal is required.

Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. I authorize WMI to obtain a sample from any waste shipment for purposes of recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in this Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary. If approved for management, Contractor has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Certification Signature: R. Schmaltz Title: ENVIRONMENTAL SUPERVISOR

Name (Type or Print): RANDY SCHMALTZ Company Name: GIANT REFINING - BLOOMFIELD Date: 2/6/03

☒Check if additional information is attached. Indicate the number of attached pages # 27

D. WMI Management's Decision — FOR WMI USE ONLY

1. Management Method ☐Landfill ☐Non-hazardous Solidification ☐Bioremediation ☐Incineration ☐Hazardous Stabilization ☐Other (Specify) _____
2. Proposed Ultimate Management Facility: _____
3. Precautions, Special Handling Procedures, or Limitation on Approval: _____

4. Waste Form _____ 5. Source _____ 6. System Type _____

Special Waste Decision ☐Approved ☐Disapproved

Salesperson's Signature: _____ Date: _____

Division Approval Signature (Optional): _____ Date: _____

Special Waste Approvals Person Signature: _____ Date: _____

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Bill Richardson
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

January 8, 2003

CERTIFIED MAIL
RETURN RECEIPT NO. 7001-1940-0004-7923-0643

Mr. Barry Holman
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

RE: ALTERNATE WELL INSTALLATION PROCEDURES
SITE INVESTIGATION AND ABATEMENT PLAN
GIANT BLOOMFIELD REFINERY (GW-001)

Dear Mr. Holman:

The New Mexico Oil Conservation Division (NMOCD) has reviewed Giant Refining Company's (Giant) January 7, 2002 "ALTERNATE INSTALLATION PROCEDURES FOR MW-44, MW-45, MW-46, AND S-5, BLOOMFIELD, NM FILE:03-015" which was submitted on behalf of Giant by their consultant Precision Engineering, Inc. This document contains Giant's proposal for alternate well installation procedures for monitor wells MW-44, MW-45, MW-46 and S-5. The alternate well installation procedures are proposed to replace those set out in the NMOCD's December 30, 2002 conditional approval of Giant's long term remediation and monitoring proposal for contaminated soil and ground water at the refinery.

The above-referenced alternate well installation procedures are approved. The NMOCD discussed these changes with the NMED Hazardous Waste Bureau and they verbally concurred in this approval. Please be advised that NMOCD approval does not relieve Giant of responsibility if the proposal fails to adequately monitor contamination related to Giant's facilities. In addition, NMOCD approval does not relieve Giant of responsibility for compliance with any other federal, state or local laws and regulations. If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

cc: Denny Foust, NMOCD Aztec District Office
Dave Cobrain, NMED Hazardous and Radioactive Materials Bureau
Robert Wilkinson, EPA Region VI

Olson, William

From: Werpei@aol.com
Sent: Wednesday, January 08, 2003 2:32 PM
To: rschmaltz@giant.com; eriege@giant.com; wolson@state.nm.us; david_cobrain@nmenv.state.us
Subject: Corrected letter

jan7altproposal.doc

Mr. Schmaltz,

Here is the corrected letter for the Alternate Installation Procedures for the monitoring wells in Bloomfield. Let me know if there is anything else we can do for you. Thank you!

Greg Gumfory

January 7, 2003

Mr. Ed Riege
Giant Refining Company
Route 3, Box 7
I-040 Exit 39
Gallup, New Mexico 87301

Re: Alternate Installation Procedures for MW-44, MW-45, MW-46, and S-5,
Bloomfield, NM File: 03-015

Dear Mr. Riege,

As we have discussed we are somewhat concerned about the proposed installation of the new groundwater wells at your Bloomfield plant. Our concern was mainly about Item 4a of the Discharge Plan GW-1 dated December 30, 2002 which indicated that a minimum of twenty (20) feet of screen would be installed at each monitoring well location with at least fifteen (15) feet of the screen below the water table elevation.

Our records indicate that the water of concern at the site essentially flows across the top of the siltstones and mudstones that form the shales of the Nacimiento Formation. The thickness of the zone varies. Borings near the site suggest that the water bearing zone may be on the order of several inches thick at a minimum to a maximum of approximately five (5) feet. Because of the drain that was installed along the Hammond Ditch alignment we believe that the water may be relatively thin at the westerly installation points since they are on the opposite side of the drain from the refinery. To install the screens as outlined will likely require drilling a minimum of ten (10) feet into the Nacimiento Formation. All previous drilling in the area indicated the Nacimiento was dry. We are concerned that installing the screens so deep into the shales will provide an annulus for water to be injected into the shales and potentially migrate laterally through the shale partings or sandy zones known to exist in the shale beds.

As an alternate we suggest drilling into the shales until unsaturated (not water bearing) material is encountered. We believe this will be within two (2) or three (3) feet of the interface between the Nacimiento Formation and the Jackson Lake Terrace deposits. This depth will be determined using continuous sampling with static split tube continuous samplers running ahead of the auger drill head. Screen will then be placed and sand packed to a minimum of five (5) feet above the top of the water at the time of the drilling. We understand that is very important to assure the screen extends above the top of the water level and will take steps to properly identify the top of the water prior to setting the screen. The final well construction will conform to the requirements of the Discharge Plan GW-1 Attachment you provided.

The discharge plan also referenced specific procedures for developing the wells. Since the Nacimiento Formation is dry, screen placed in this section will allow water to come in contact with the formation. We anticipate this will significantly affect the salinity and, therefore, the electrical conductivity of the water. This may not be a significant concern of yours, however we thought you should consider it. Also, as the well is developed fines from the shales will be drawn into the well. We believe this will occur no matter what size sand pack is used, but, can be limited if contact with the shale formation is limited. With so much water in contact with the shale we believe the wells will have a constant silting problem.

The seep location presents its own set of problems. Because it is so shallow properly sealing the top is a problem. We suggest placing prepack screen (Johnson Vee-Wire Prepack) at the location to tie into the formation similarly to that described above. Where the water is close to the surface, which we understand is the case here, we will keep the screen above the water level and seal to the surface with bentonite plug and finish the surface with a four (4) foot square concrete pad. We recommend the surface finish include an above ground vault to prevent the intrusion of surface flow. If this seems reasonable to all concerned parties let us know.

As always we will provide the construction that you require. You are more familiar with what you are trying to accomplish than us but we believe the suggestions we have made will accomplish our perception of what you are looking for. These alternatives may limit future problems with the wells. Please discuss this with the regulatory agencies to get their input. We will be happy to discuss our concerns as you may require. Please contact us as soon as possible so that we can plan materials.

Sincerely,
Precision Engineering, Inc.

William H. Kingsley, PE

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 6, 2003

Mr. Barry Holman
Environmental Manager
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

Mr. Ed Riege
Environmental Superintendent
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 87301

SUBJECT: CORRECTIVE MEASURES STUDY AND CORRECTIVE MEASURES IMPLEMENTATION (SITE INVESTIGATION AND ABATEMENT PLAN) GIANT REFINING COMPANY, BLOOMFIELD REFINERY EPA ID NO. NMD089416416 HWB-GRCB-01-001

Dear Mr. Holman and Mr. Riege:

The Hazardous Waste Bureau of the New Mexico Environment Department (NMED) has completed its review of the above-referenced Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI) report for technical adequacy as required under 20.4.2.201.7 NMAC. The CMS was submitted in September 2001 to fulfill the requirements of a 1992 EPA Administrative Order on Consent for the refinery. Giant submitted a supplement providing additional information for the CMS and CMI in September 2002. The consent order required that contamination be addressed on a facility-wide basis. The primary areas of concern were the San Juan River, the process areas, the tank farm, the fuel loading facilities and off-site, downgradient of the Refinery. Solid Waste Management Units (SWMUs) were not directly addressed in the Consent Order, but status summaries were included in this CMS at the request of the NMED.

NMED hereby approves the CMS/CMI. Giant Refining Company must fulfill the requirements specified in Attachment A of this document as part of the Corrective Measures Implementation.

The CMS/CMI will be made available for public comment in accordance with 20.4.1.901. The requirements of Attachment A will be made available for public comment along with the CMS. NMED may require additional corrective action based on an evaluation of public comments submitted during the public comment period.

Please call this office at 505-428-2553 if you have questions or need additional information regarding this approval or the attached conditions.

Sincerely,

Dave Cobrain
Project Leader

Attachment

cc: James Bearzi, NMED HWB
John Kieling, NMED HWB
Pam Allen, NMED HWB
Bob Wilkinson, EPA Region VI
Wayne Price, NMOCD
Bill Olson, NMOCD

file: Red/CMS-CMI/01-06-03/approval/GRCB-01-001

ATTACHMENT A
REQUIREMENTS FOR LONG-TERM GROUND WATER MONITORING

CORECTIVE MEASURES STUDY AND IMPLEMENTATION (CMS/CMI)
(DISCHARGE PLAN - ABATEMENT PLAN)
SEPTEMBER 2001

GIANT REFINING COMPANY BLOOMFIELD REFINERY
EPA ID NO. NMD089416416

The NMED requires that Giant implement the following investigation and ground water monitoring actions in order to complete the Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI):

1. Giant shall install three monitoring wells (MW-44, MW-45 and MW-46) at the locations shown in the Giant Refining Company memorandum dated December 18, 2002. The monitoring well installation and subsequent ground water monitoring and sampling must fulfill the requirements listed below.

2. Giant shall collect soil samples at five-foot intervals and at the base of monitoring well borings MW-44 and MW-45 during drilling. Submit the soil samples to an analytical laboratory for analysis of volatile organic compounds (VOCs) using EPA Method 8260 and for gasoline-, diesel- and oil-range organics (GRO, DRO and ORO, respectively) using modified EPA Method 8015.

3. Giant shall collect a soil sample from the top of the water table from background monitoring well boring MW-46. Submit the soil sample obtained from the boring for laboratory analysis of VOCs by EPA Method 8260, GRO, DRO and ORO by modified EPA Method 8015, Water Quality Control Commission (WQCC [see 20.6.2.3103 NMAC]) metals using EPA Methods 6000 and 7000 series and for semivolatile organic compounds (SVOCs) using EPA Method 8270.

4. Giant shall complete proposed monitoring wells MW- 44, MW-45 and MW-46 as follows:

   a. Approximately 20 feet of well screen shall be placed across the water table interface with at least 5 feet of well screen above the water table.
   b. An appropriately sized sand filter pack shall be set in the annulus around the well screen from the bottom of the hole to no more than two feet above the top of the well screen.
   c. A 2-3 feet thick bentonite plug shall be placed in the well annulus above the sand filter pack.
   d. The remainder of the hole shall be grouted to the surface with a cement-bentonite grout containing 3-5% bentonite.

e. A concrete pad and locking well cover shall be placed around the well casing at the ground surface.

5. Giant shall develop the monitoring wells must be developed by pumping, surging, bailing, or a combination of these methods after construction. Development of each well must continue until the water is as free of sediment as practicable with respect to the composition of the subsurface materials within the screened interval. The removal rate and amount of ground water removed must be recorded during well development procedures. Water quality parameters, pH, electrical conductance and temperature should be monitored during development. The monitoring wells should be considered satisfactorily developed when the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least five borehole volumes of water have been removed from the well.

6. Giant shall purge and sample monitoring wells MW-44, MW-45 and MW-46 no less than 24 hours after the wells are developed. The ground water samples shall be analyzed for concentrations of aromatic and halogenated VOCs using EPA Method 8260, SVOCs using EPA Method 8310, both dissolved and total WQCC metals using EPA Methods 6000 and 7000 series, and total dissolved solids (TDS) and major cations and anions using approved EPA analytical methods and quality assurance/quality control (QA/QC) procedures.

7. Giant shall provide the construction details for monitoring point S-5. Giant shall replace monitoring point S-5 if the well casing either does not contain a screened interval or is not screened across the water table. If replacement of monitoring point S-5 is required, a design for the replacement of S-5 must be submitted to the New Mexico Environment Department Hazardous Waste Bureau (NMED), the New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division (OCD) and the U.S. Environmental Protection Agency (EPA) for approval.

8. Giant shall submit a long-term ground water monitoring work plan that specifies the wells to be sampled and the methods for conducting semi-annual and annual ground water monitoring and sampling to the NMED, OCD and EPA for approval. The work plan must be submitted within 180 days of the receipt of this approval and must fulfill the ground water monitoring and sampling requirements listed below.

9. Giant shall measure the depths to water/product from the well casing rims in all facility wells on a semi-annual basis. The water/product levels must be measured to an accuracy of 0.01 foot. Giant shall calculate water table elevations by subtracting the depth to water from the surveyed well casing rim elevations. Giant shall provide a corrected water table elevation in wells containing phase-separated hydrocarbons by adding 0.8 times the measured product thickness to the calculated water table elevation. Giant shall prepare a facility site plan for each ground water monitoring event that presents the well locations, calculated water table elevations, phase-

separated hydrocarbon thicknesses (where present) and facility features including aboveground storage tanks (ASTs) and process units.

10. Giant shall collect ground water samples on a semi-annual basis from wells MW-1, MW-6, MW-12, MW-13, MW-20, MW-24, MW-32, MW-33, MW-35, MW-37, MW-38, MW-44, MW-45, seep S-5 piezometers P-4, P-5 and all Hammond Ditch french drain outfalls along the refinery property. Giant shall submit the samples to an analytical laboratory for chemical analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tertiary butyl ether (MTBE).

11. Giant shall collect ground water samples on an annual basis from the wells listed in Item 10 above and wells RW-1, RW-15, RW-18, MW-3, MW-4, MW-5, MW-8, MW-9, MW-26, MW-27, MW-28, MW-36, MW-42, MW-43 and the background well. Giant shall submit the ground water samples collected on an annual basis to an analytical laboratory for chemical analysis of VOCs by EPA Method 8260, total and dissolved chromium by EPA Method 7191, total and dissolved lead by EPA Method 7421, and TDS and major cations and anions using approved EPA analytical methods and quality assurance/quality control (QA/QC) procedures.

12. The wells must be purged prior to sample collection. Water quality parameters, pH, electrical conductance and temperature must be monitored during purging of the monitoring wells. The monitoring wells should be considered satisfactorily purged when the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least three well casing volumes of water have been removed from the well. Purge water must be collected and disposed through the refinery wastewater treatment system.

13. Giant shall test the ground water samples collected on an annual basis for the following natural attenuation parameters: dissolved iron, dissolved manganese, sulfate, nitrate/nitrite, dissolved oxygen, carbon dioxide and oxidation-reduction potential (ORP) using approved field testing and measurement procedures or EPA analytical methods.

14. Giant shall prepare an initial annual ground water monitoring report for submittal to NMED and OCD that summarizes the semi-annual and annual ground water chemical analytical data results and the results of the ground water natural attenuation parameter measurements, a description of the monitoring well installation activities, the monitoring well installation boring logs, well construction diagrams and soil field screening and chemical analytical data.

15. The initial annual ground water monitoring report, and all annual ground water monitoring reports submitted thereafter by Giant, shall include a comprehensive report on all investigation, remediation and monitoring activities. The report shall be submitted to the NMOCD Santa Fe Office and to the NMED Hazardous Waste

Bureau by April 1 of each respective year with a copy provided to the EPA and the NMOCD Aztec District Office. The annual report shall include:

a. A description of all soil and ground water remediation and monitoring activities which have occurred during the previous calendar year including conclusions and recommendations.

b. Semi-annual water table potentiometric surface maps showing well locations, corrected water table elevations, pertinent site features, the direction of ground water flow and the hydraulic gradient.

c. Semi-annual product thickness maps showing well locations, measured product thickness in each well and pertinent site features.

d. Semi-annual isopleth maps for BTEX, MTBE and other detected contaminants of concern including the concentrations detected at the sampled monitoring wells.

e. Summary tables of all soil and ground water quality sampling results during the past calendar year that compares detected contaminant concentrations to applicable cleanup standards or screening levels and copies of the laboratory analytical data reports and associated QA/QC data for the reporting period.

f. Summary tables of the estimated volume of fluids recovered from each recovery well during each semi-annual reporting period and the total volume recovered to date.

g. Concentration versus time-plots of BTEX, MTBE and other contaminants of concern for each monitoring well.

h. The disposition of all wastes generated.

i. The results of any below grade line testing.

j. The results of any investigation actions conducted during the prior calendar year.

16. Giant shall notify the NMOCD and the NMED at least 15 days prior to all scheduled activities such that the NMOCD and the NMED have the opportunity to witness the events and collect split samples.

17. Giant shall notify the NMOCD and the NMED of the discovery of separate-phase hydrocarbons or the exceedance of a WQCC standard or EPA maximum contaminant level (MCL) in any monitoring well where separate-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards or MCLs during

the preceding monitoring event. The reporting to both agencies must be in accordance with NMOCD Rule 116.

18. Giant shall evaluate the status of Solid Waste Management Units (SWMUs) 1 through 12 and provide a SWMU assessment report to NMED within 360 days of receipt of this correspondence. The SWMU assessment report shall include historical site use, investigation results and corrective actions for each SWMU. Based on the current status and corrective action history for each SWMU, NMED will determine the need for further action on a unit-by unit basis.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 30, 2002

CERTIFIED MAIL
RETURN RECEIPT NO. 7001-1940-0004-7923-0629

Mr. Barry Holman
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

RE: SITE INVESTIGATION AND ABATEMENT PLAN
GIANT BLOOMFIELD REFINERY (GW-001)

Dear Mr. Holman:

The New Mexico Oil Conservation Division (NMOCD) has reviewed Giant Refining Company's (Giant) September 2001 "DISCHARGE PLAN APPLICATION, SITE INVESTIGATION AND ABATEMENT PLAN CMS VOLUME II", September 2002 "SUPPLEMENT TO BLOOMFIELD REFINERY DISCHARGE PLAN APPLICATION, SITE INVESTIGATION AND ABATEMENT PLAN CMS, VOLUME I" and December 18, 2002 "PROPOSED WELL LOCATIONS". These documents contain Giant's proposals for additional site investigations and Giant's long term remediation and monitoring proposal for contaminated soil and ground water at the refinery.

The above-referenced investigation, remediation and monitoring proposals are approved under the conditions contained in the attached document. Please be advised that NMOCD approval does not relieve Giant of responsibility if the proposal fails to adequately contain, remediate or monitor contamination related to Giant's facilities. In addition, NMOCD approval does not relieve Giant of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

cc: Denny Foust, NMOCD Aztec District Office
Dave Cobrain, NMED Hazardous and Radioactive Materials Bureau
Robert Wilkinson, EPA Region VI

ATTACHMENT

DISCHARGE PLAN GW-1

NMOCD APPROVAL CONDITIONS
FOR
GROUND WATER REMEDIATION AND MONITORING

BLOOMFIELD REFINERY
GIANT REFINING COMPANY

December 30, 2002

1. Giant shall install three monitoring wells (MW-44, MW-45 and MW-46) at the locations shown in Giant Refining Company's memorandum dated December 18, 2002. The monitoring well installation and subsequent soil and ground water monitoring and sampling shall fulfill the requirements as set out below.

2. Giant shall obtain a soil sample from every five foot interval from the surface to total depth and at the top of the water table during the drilling of monitor wells MW-44 and 45. Each soil sample shall be sampled and analyzed for volatile organic compounds (VOCs) using EPA Method 8260 and gasoline-, diesel- and oil-range organics (GRO, DRO and ORO, respectively) using modified EPA Method 8015.

3. During the drilling of background monitor well MW-46, Giant shall obtain a soil sample from the top of the water table. The sample shall be analyzed for volatile organic compounds (VOCs) using EPA Method 8260, gasoline-, diesel- and oil-range organics (GRO, DRO and ORO, respectively) using modified EPA Method 8015, New Mexico Water Quality Control Commission (WQCC) metals and semi-volatile organic compounds (SVOCs) using EPA Method 8270.

4. Giant shall complete proposed monitor wells MW- 44, 45 and 46 as follows:

   a. At least 20 feet of well screen shall be placed across the water table interface with at least 5 feet of well screen above the water table.

   b. An appropriately sized gravel pack shall be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.

   c. A 2-3 foot bentonite plug shall be placed above the gravel pack.

   d. The remainder of the hole shall be grouted to the surface with a cement grout containing 3-5% bentonite.

   e. A concrete pad and locking well cover shall be placed around the well casing at the surface.

5. The monitoring wells shall be developed after construction by pumping, surging, bailing, or a combination of these methods after construction. Development of each well shall continue until the water is as free of sediment as practicable with respect to the composition of the subsurface materials within the screened interval. The removal rate and amount of ground water removed shall be recorded during well development. The pH, electrical conductance and temperature of the water shall be monitored during development. The monitoring wells shall be considered satisfactorily developed when the water is free of sediment, the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least five borehole volumes of water have been removed from the well

6. No less than 24 hours after the wells are developed, ground water from monitor wells MW-44, 45 and 46 shall be purged, sampled and analyzed for concentrations of aromatic and halogenated volatile organics using EPA method 8260, SVOC's using EPA method 8310, and total dissolved solids (TDS), major cations and anions and dissolved WQCC metals using appropriate EPA approved methods.

7. Giant shall provide the construction details for monitoring point S-5 in the next annual report. If the well casing for monitoring point S-5 does not contain a sufficient amount of screen across the water table for the detection of free phase product, Giant shall provide a proposed work plan in the annual report for replacement of monitoring point S-5.

8. Giant shall measure the water table and product elevations in all facility monitoring wells on a semi-annual basis. The water/product levels shall be measured to an accuracy of 0.01 foot. A corrected water table elevation shall be determined for all wells containing phase-separated hydrocarbons.

9. Giant shall collect groundwater samples on a semi-annual basis from monitoring wells MW-1, MW-6, MW-12, MW-13, MW-20, MW-24, MW-32, MW-33, MW-35, MW-37, MW-38, MW-44, MW-45; seep S-5; piezometers P-4, P-5; and, all Hammond Ditch french drain outfalls along the refinery property. The samples shall be analyzed for concentrations of benzene, toluene ethylbenzene and xylene (BTEX), and methyl tertiary butyl ether (MTBE).

10. Giant shall collect groundwater samples on an annual basis from wells RW-1, RW-15, RW-18, RW-23, MW-3, MW-4, MW-5, MW-8, MW-9, MW-11, MW-26, MW-27, MW-28, MW-34 MW-42, MW-43 and MW-46. The samples shall be analyzed for concentrations of BTEX and MTBE.

11. On an annual basis ground water from all the monitor wells listed in items 9 and 10 above shall also be analyzed for concentrations of TDS, cations and anions, dissolved WQCC metals, nitrate/nitrite, dissolved oxygen and oxidation-reduction potential (ORP).

12. All soil and water quality samples shall be obtained and analyzed using EPA approved methods and quality assurance/quality control (QA/QC) procedures.

13. All monitor wells shall be appropriately purged prior to water sample collection. Basic water quality parameters such as pH, electrical conductivity and temperature shall be monitored during purging of monitoring wells. The monitoring wells should be considered satisfactorily purged when the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least three well casing volumes of water have been removed from the well.

14. All investigation and remediation generated wastes shall be disposed of at an NMOCD approved facility.

15. All below-grade lines used to convey contaminated fluids shall be pressure tested to a minimum of 3 psi above operating pressure prior to operation

16. All above ground tanks used to store any fluids other than fresh water shall be bermed to contain one and one-third times the volume of the largest tank or all interconnected tanks

17. Each year Giant shall submit a comprehensive annual report on all investigation, remediation and monitoring activities. The report shall be submitted to the NMOCD Santa Fe Office by April 1 of each respective year with a copy provided to the NMOCD Aztec District Office. The annual report shall include:

    a. A description of all soil and ground water remediation and monitoring activities which have occurred during the previous calendar year including conclusions and recommendations.

    b. Semi-annual water table potentiometric maps showing well locations, corrected water table elevations, pertinent site features, and the direction and magnitude of the hydraulic gradient.

    c. Semi- annual product thickness maps showing well locations, measured product thickness in each well and pertinent site features.

    d. Semi-annual isopleth maps for contaminants of concern.

    e. Summary tables of all soil and ground water quality sampling results during the past calendar year including copies of all recent laboratory analytical data sheets and associated QA/QC data.

    f. Summary tables of the semi-annual amount of fluids recovered from each recovery well and the total volume recovered to date.

g. Concentration versus time plots of contaminants of concern for each monitoring well.

h. The disposition of all wastes generated.

i. The results of any below grade line testing.

j. The results of any investigation actions conducted during the prior calendar year.

18. Giant shall notify the NMOCD at least 2 weeks in advance of all scheduled activities such that the NMOCD has the opportunity to witness the events and split samples

19. Giant shall notify the NMOCD of the discovery of separate-phase hydrocarbons or the exceedance of a WQCC standard in any downgradient monitor well where separate-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards during the preceding monitoring event pursuant to NMOCD Rule 116.

INTEROFFICE MEMORANDUM

GIANT REFINING CO.

Date: December 18, 2002

To: Bill Olson

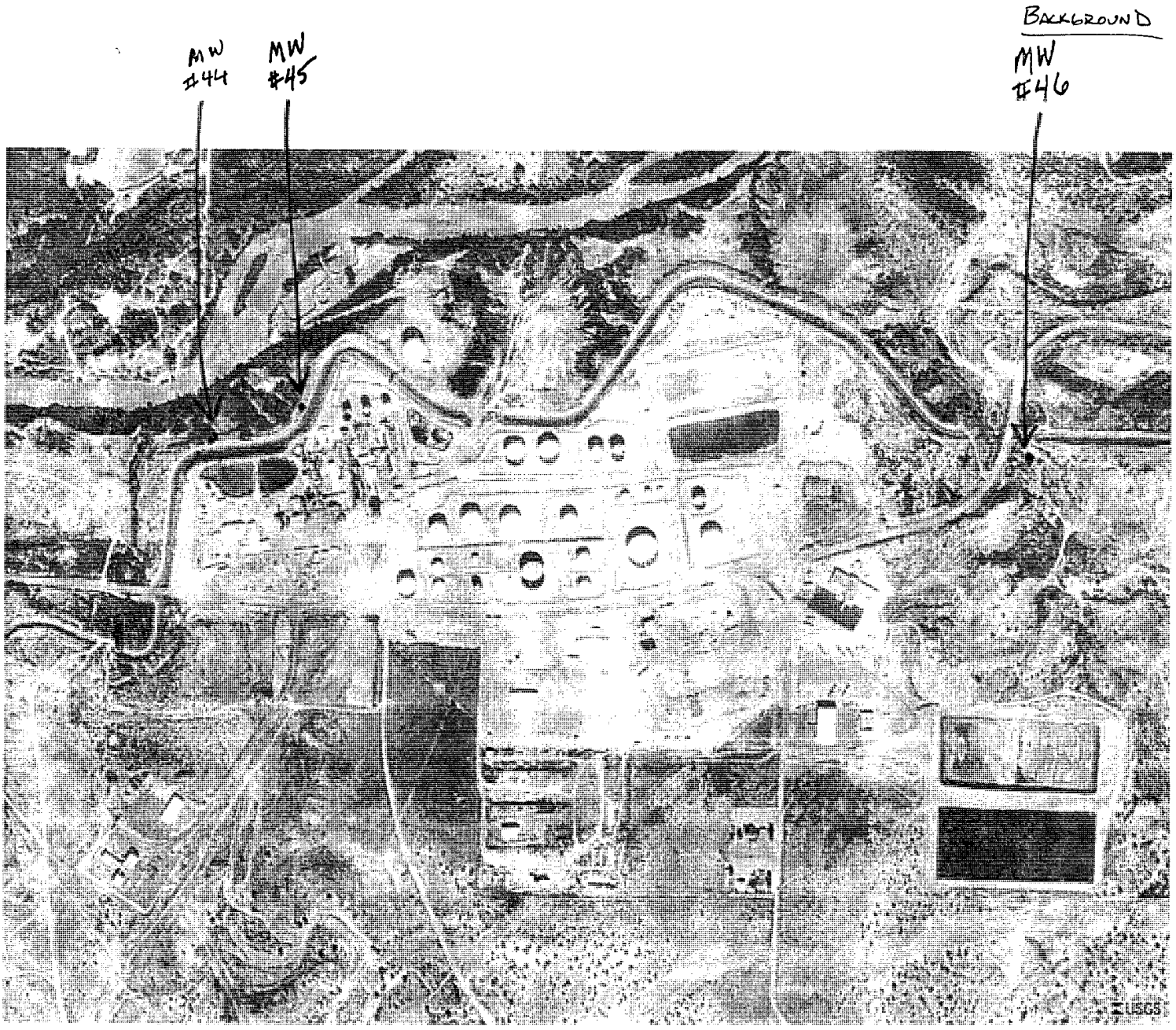
From: Randy Schmaltz

Subject: ***Proposed Well locations***

Bill please find enclosed an aerial photo with the proposed well locations. If this will not work or if you need something formal please let me know.

Thanks Randy

Proposed Well Locations



SCALE 1/8" = 115'

GIANT REFINING COMPANY
" BLOOMFIELD "

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 17, 2002

CERTIFIED MAIL
RETURN RECEIPT NO. 7001-1940-0004-7923-0476

Mr. Barry Holman
Giant Refining Company
50 County Rd. 4990
Bloomfield, New Mexico 87413

RE: SITE INVESTIGATION REPORT AND ABATEMENT PLAN
GIANT BLOOMFIELD REFINERY (GW-001)

Dear Mr. Holman:

The New Mexico Oil Conservation Division (OCD) has reviewed Giant Refining Company's (Giant) January 2, 2002 correspondence titled "SAN JUAN REFINING COMPANY DISCHARGE PLAN" and accompanying September 2001 "DISCHARGE PLAN APPLICATION, SITE INVESTIGATION AND ABATEMENT PLAN, CMS, VOLUME II". These documents contain Giant's summary report on soil and ground water investigative actions conducted at the refinery to date and Giant's proposal for remediation of contaminated soil and ground water.

The OCD has the following comments and requests for information regarding the above referenced document:

1. Most of the information the OCD requires to complete an evaluation of the above referenced document has already been requested by the Hazardous Waste Bureau of the New Mexico Environment Department (NMED) in their May 28, 2002 correspondence to Giant titled "REQUEST FOR SUPPLEMENTAL INFORMATION (RSI), CORRECTIVE MEASURES STUDY (SITE INVESTIGATION AND ABATEMENT PLAN), GIANT REFINING COMPANY, BLOOMFIELD REFINERY, EPA ID#NMD089416416, HWB-GRCB-01-001". In order to answer OCD's concerns and prevent duplicative information, Giant shall submit to the OCD a copy of their response to NMED's request for information.

2. The OCD still does not have complete information regarding seepage control actions for the San Juan River. On February 17, 1998 Giant submitted a remediation plan for the river bank contamination which included installation of a sheet piling system, installation of a recovery/monitor well and enhanced bioremediation of contaminated soils. This work plan was conditionally approved by the OCD on March 6, 1998. Giant submitted requested modifications to the sheet piling system work plan on May 27, 1999, June 21, 1999 and June 22, 1999. The OCD requested additional information on the proposed modifications on July 2, 1999. This information was never submitted and Giant implemented the proposed modifications in the summer of 1999 without OCD approval. To date the OCD has not received either the July 2, 1999 requested information nor any reports on the remediation and monitoring activities as required in the OCD's initial March 6, 1998 approval. In addition, the recommended abatement plan for the river bank area in Section 9 does not include some of the proposed remedial actions which were previously approved (ie. remediation of contaminated soils and installation of a recovery well) . In order to resolve this issue the OCD requires that Giant submit a report on all remedial actions conducted in the river bank area. The report shall provide a summary of all remediation and monitoring actions; information on how Giant has complied with the OCD's March 6, 1998 conditions of approval; maps and as built construction specifications for the items requested in the OCD's July 2, 1999 correspondence; and a recommended remediation plan for the river bank areas.

3. The main text of the document discusses the need for additional upgradient and downgradient monitor wells in order to determine background water quality and complete the delineation of the extent of ground water contamination at the refinery. Please provide a work plan to accomplish this task.

4. The OCD defers comment on Giant's conclusions regarding the source of the total dissolved solids (TDS), chloride, nitrate and metals contamination of ground water and the need for remediation of these constituents until the OCD has the opportunity to review information on background water quality for the site.

5. Please provide a work plan for the proposed enhanced in-situ bioremediation pilot study for remediation of dissolved phase hydrocarbon contamination of ground water.

6. The recommended monitoring plan does not include a plan for monitoring potential migration of contaminants into surface water in the San Juan River. Please submit such a surface water monitoring plan.

Please submit the above information to the OCD Santa Fe Office by August 30, 2002 with a copy provided to the OCD Aztec District Office. Submission of the above information will allow the OCD to complete a review of Giant's abatement plan for the Bloomfield Refinery.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

cc: Denny Foust, OCD Aztec District Office
Dave Cobrain, NMED Hazardous and Radioactive Materials Bureau

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 28, 2002

Mr. Barry Holman
Environmental Manager
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

Mr. David Pavlich
Environmental Superintendent
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 87301

SUBJECT: REQUEST FOR SUPPLEMENTAL INFORMATION (RSI)
CORRECTIVE MEASURES STUDY (SITE INVESTIGATION AND ABATEMENT PLAN)
GIANT REFINING COMPANY, BLOOMFIELD REFINERY
EPA ID# NMD089416416
HWB-GRCB-01-001

Dear Mr. Holman and Mr. Pavlich:

The Hazardous Waste Bureau of the New Mexico Environment Department (NMED) has completed a review of the above-referenced Corrective Measures Study (CMS) for technical adequacy as required under 20.4.2.201.7 NMAC. The CMS was submitted to fulfill the requirements of a 1992 EPA Administrative Order on Consent for the refinery. The consent order required that contamination be addressed on a facility-wide basis. The primary areas of concern were the San Juan River, the process areas, the tank farm, the fuel loading facilities and off-site, downgradient of the Refinery. Solid Waste Management Units (SWMUs) were not directly addressed in the Order but are included in this CMS at the request of the NMED.

NMED understands that the Hammond Ditch irrigation canal has been lined and that a groundwater recovery system was installed in conjunction with the lining of the ditch. After notification of the Hammond Ditch construction activities and reviewing the CMS, NMED requests additional information. The information that must be addressed is described in Attachment A.

The requested information must be submitted to NMED within ninety days of receipt of this RSI. Failure to respond within this time period will result in issuance of a Notice of Deficiency.

Please call this office at 505-428-2553 if you have questions or need additional information regarding this RSI.

Sincerely,

Dave Cobrain
Project Leader

attachment

cc: James Bearzi, NMED HWB
John Kieling, NMED HWB
Pam Allen, NMED HWB
Bob Wilkinson, EPA Region VI
Wayne Price, NMOCD
Bill Olson, NMOCD

file: Red/RSI/05-29-02/CMS report/GRCB-01-001

ATTACHMENT A
REQUEST FOR SUPPLEMENTAL INFORMATION
TECHNICAL ADEQUACY REVIEW

CORECTIVE MEASURES STUDY
(SITE INVESTIGATION AND ABATEMENT PLAN)
SEPTEMBER 2001

GIANT REFINING COMPANY BLOOMFIELD REFINERY
EPA ID NO. NMD089416416

May 28, 2002

The NMED requests the following general information in order to complete it's assessment of the Corrective Measures Study (CMS):

1. A facility map that includes monitoring well locations and refinery features including labeled process units, ASTs and other refinery and terminal features.

2. As-built construction drawings of the Hammond Ditch presenting the groundwater recovery system, the groundwater treatment system (the refinery wastewater treatment system) and all ancillary equipment and piping.

3. Site plans presenting monitoring well locations, significant refinery features and water/product level measurements obtained since 2001. A site plan should be included for each monitoring event.

4. The results of all groundwater recovery and treatment system monitoring and sampling. The results must include treatment system influent and effluent sampling analytical results, remediation system flow rates and volume estimates, product recovery volume estimates and all groundwater quality field measurements and laboratory chemical analytical results.

5. A site plan presenting the locations of proposed monitoring wells to be placed downgradient of the Hammond Ditch to monitor the effectiveness of the groundwater recovery and treatment system.

6. An updated groundwater monitoring and sampling plan that includes facility-wide groundwater monitoring and incorporates monitoring of the newly installed groundwater recovery and treatment system.

7. A site plan that includes the location(s) or proposed locations of monitoring wells in the vicinity of the barrier at the San Juan River to monitor for BETX, TPH as GRO and DRO, and OCD general chemistry parameters (major cations and anions).

Please provide the following additional information corresponding to the CMS section number:

3.1.1 A map showing Hammond Ditch sediment sample locations and the locations of San Juan River and Hammond Ditch water sample collection points.

3.1.2 Eight borings were drilled in the vicinity of the river in 1997 at an artificially low river stage but soil samples were obtained for laboratory analysis from only two of the borings. Total petroleum hydrocarbon (TPH) analytical results are reported for the two samples. Identify whether additional chemical analyses were conducted on the two soil samples or on samples obtained from the other borings and the results of the additional analyses, if available. Provide the title and date of the investigation report that summarizes the results of the investigation. Provide a copy of the report to NMED if one was not previously submitted.

3.1.3 Soil samples obtained from beneath the aeration lagoon liners in 1985 were likely composite samples therefore a lack of significant volatile organic compound (VOC) detections is not unexpected. TPH and VOCs were detected during drilling investigations conducted within the process areas; however, no site plan is provided showing the boring locations relative to facility features including the aeration lagoons. Provide a site plan presenting facility features and boring locations. In addition, Boring SHB-2 is not shown on Plate 10 (boring locations). Please add Boring SHB-2 to Plate 10.

3.2.2 The text and Table 6 reference 1999 groundwater sampling. Provide the results of all monitoring and sampling conducted since 1999. Submit copies of all groundwater monitoring reports generated since 1999 to the NMED.

3.2.2.1 Plate 20 presents year 2000 benzene isopleths. Provide a summary table presenting the 2000 data groundwater sampling data.

The last paragraph in the "Naphthalene" section mentions a reduction in dissolved iron concentrations as being indicative of biodegradation of hydrocarbons along with decreased dissolved oxygen, nitrate and sulfate. Iron and manganese reducing bacteria transform these metals from an insoluble to a more soluble state which would result in increased dissolved iron concentrations therefore decreased dissolved iron concentrations are not indicative of biodegradation.

Background concentrations for RCRA metals and OCD groundwater quality parameters must be established in soil and groundwater. Background sampling should be conducted at a location upgradient of the new evaporation ponds. In addition, the causes for the detection of elevated concentrations of constituents in groundwater samples obtained from monitoring well MW-8 should be discussed.

4.3.3 New exposure pathways were the only pathways considered in the remedial options evaluation instead of all exposure pathways. The CMS cites the evaluation summarized in the 1995 Groundwater Technologies, Inc. risk assessment as the reason for not discussing exposure pathways and receptors beyond considering those associated with each remedial option. Provide an updated discussion of potential receptors and exposure pathways.

4.7.2 Biodegradation is occurring at the site but its effectiveness is not directly measurable. The stable/shrinking plume described in the CMS is more likely the result of the continuing total fluids and product recovery and the containment caused by the formerly unlined Hammond ditch. The total fluids recovery system that is currently operating is likely an effective method for product recovery. Giant Refining Company should collect site-wide dissolved oxygen and oxidation-reduction potential (ORP) measurements to determine whether biodegradation is occurring. In addition, dissolved iron and manganese, nitrate, sulfate, dissolved carbon dioxide and methane concentrations could be measured to document the existence of some of the types of microbial activity occurring beneath the site. Background well measurements of biodegradation parameters must be obtained to determine whether biodegradation of hydrocarbons is occurring beneath the facility.

Price, Wayne

From: Price, Wayne
Sent: Tuesday, January 22, 2002 12:01 PM
To: 'Dave Pavlich'
Cc: Anderson, Roger; 'david_cobrain@nmenv.state.nm.us'; Foust, Denny
Subject: RE: GIANT REFINERY IRRIGATION DITCH

Tracking:

Recipient	Read
'Dave Pavlich'	
Anderson, Roger	Read: 1/22/2002 12:39 PM
'david_cobrain@nmenv.state.nm.us'	
Foust, Denny	

Thank you for the feedback. It looks as though I will not be able to make it this week. I think our recommendation is that the French drain be optionally designed to prevent contaminants from leaving the site. If the system fails to achieve this goal then OCD may require additional work and monitoring.

-----Original Message-----
From: Dave Pavlich [mailto:dpavlich@giant.com]
Sent: Monday, January 21, 2002 11:08 AM
To: 'Price, Wayne'; Dave Pavlich
Cc: Barry Holman
Subject: RE: GIANT REFINERY IRRIGATION DITCH

Wayne:

I am scheduled to be up in Bloomfield on Tuesday. What are the specific items you'd like to cover? Barry sent some info on the project to Bill Olsen a while back. He's also in the process of putting together the map showing Hammond's collection system and its various segments as well as a detail drawing of the french drain groundwater collection system itself. We'll include those along with the minor permit modification request that we chatted about last week. We hope to have that request and information together for you shortly.

Hope you had a good weekend.

Dave

-----Original Message-----
From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Friday, January 18, 2002 4:33 PM
To: 'dpavlich@giant.com'
Cc: Foust, Denny; 'david_cobrain@nmenv.state.nm.us'
Subject: FW: GIANT REFINERY IRRIGATION DITCH

Dear Dave:

Since OCD has not approved the remediation design, and the fact that we really have no control of the ditch authority I think we might want to meet you at the site next week! OCD is concerned that maybe there should be

another collection point!

> -----Original Message-----
> From: Foust, Denny
> Sent: Friday, January 18, 2002 12:06 PM
> To: Price, Wayne
> Subject: GIANT REFINERY IRRIGATION DITCH
>
> <<DCP_0004_1.JPG>>
>
> WAYNE, THIS IS THE SPOT ON THE NORTHWEST SIDE OF THE IRRIGATION DITCH
> WHERE A GRAVEL PAD WILL BE ADDED TO SUPPORT A DOUBLE BOTTOM FREE STANDING
> TANK. WATER WILL BE PUMPED FROM THE TANK UP TO THE DRAIN LINES IN THE
> PLANT. I BELIEVE THIS IS THE SUMP DRAINING UNDER THE TE DITCH AS IT IS TO
> BE CONSTRUCTED ALREADY IN PLACE AND A PUMP WILL NEED TO GET WATER TO THE
> TANK. I DID NOT DISCUSS THAT ASSUMPTION WITH THE CONSTRUCTION FOREMAN SO
> THEY MAY BE DARING DIRECTLY INTO THE FREE STANDING TANK. AMEC HAS THE
> CONTRACT WITH THERESA WINN AS THE PRIMARY CONTACT, BRUCE HARE IS THE
> FOREMAN, CINDY HURTADO IS GIANT'S PRIMARY FIELD CONTACT. AS AN ASIDE
> GIANT CALLS THIS PLANT THE SAN JUAN REFINERY TO DISTINGUISH IT FROM THE
> BLOOMFIELD REFINERY LOCATED AT MCGEE PARK

Price, Wayne

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

Contacts: Dave Pavlich

Dear Dave:

Giant Class I Well:

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

Giant Bloomfield Hammond Ditch:

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

GIANT
REFINING COMPANY

RECEIVED

JAN 14 2002

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

January 10, 2002

Mr. Bill Olsen
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, New Mexico 87505

RE: Hammond Ditch Lining Project

Dear Mr. Olsen:

As per your request I am enclosing the description of Giant's involvement in the construction lining of the Hammond Ditch that runs along the North boundary of the Bloomfield Refinery. In this description I will describe each phase of the project and the extent of Giant's involvement.

PHASE I – Placement and construction of the water collection system

1. Giant will conduct a geotechnical review of the earthen shelf where the water collection tank will be located to confirm the integrity and strength of the surface.
2. Excavate an area in the North shoulder of the access road at least 15 X 15feet in size. This is where the 120 bbl water collection tank will be placed. The tank will be in set to allow for gravity flow of the ground water into the tank from the French drain system under the Hammond ditch.
3. Place a low-density polyethylene liner on the earthen shelf below the water collection tank to prevent vertical migration of contaminants, should the integrity of the tank be compromised. An earthen berm will built to provide secondary containment.
4. Place the 120 bbl steel tank (twelve feet in diameter and six feet in height) in the containment area for tie in to the two influent lines from the French drain system, return water line and electrical conduits.
5. Install a 5 HP open-faced centrifugal pump with flexible hose connections to the collection tank. Also install control panel that will operator the pump, ultrasonic level indicator, high level alarm (to be run to the control room) and a street light for night work.

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

PHASE II – Trenching and placement of return water line and electrical conduit to the collection system

1. Excavate below the ditch and place a 4-inch return water line and two lengths of conduit below the bottom of the drain ditch that shall be used for pumping the collected water back to the API separator.
2. Excavate across the access road to the collection tank and install the return water line and two lengths of conduit cover and backfill.
3. Excavate a second trench across the access road and install two solid 8" inch influent drain pipes that will connect to the perforated French drain system under the Hammond ditch.
4. Trench up the side of the embankment to the refinery with a tracked excavation and connect to the 6" line going to the API separator.
5. Install the return line and conduit in the trench and cover with back fill

PHASE III - Excavation and completion of the Sub-Drainage System (French Drain System)

1. Starting at approximately the middle of the ditch and working East dig out the required amount of soil and then dig a 2' wide by 18" deep trench in the bottom of the ditch for placement of the perforated pipe for the collection of the water.
2. After the trench is completed fill with 6" of screened rock and then install 8" perforated pipe.
3. Fill trench with rock and cover with Geotextile material and 1' of soil.
4. Repeat steps 1-3 for the West side of ditch.
5. Connect the solid 8" pipe from tank to the perforated pipe.

The described project listed above will collect all water gathered from under the Hammond ditch and return it to Giant's API separator to recover any hydrocarbons that may be in the water.

If you require more information or have questions, please do not hesitate to contact me at (505) 632-4168.

Sincerely:

Barry Hofman
Environmental Manager
San Juan Refining Company - Bloomfield, New Mexico

GIANT
REFINING COMPANY

RECEIVED

JAN 0 8 2002

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

January 2, 2002

Mr. William Olson
Hydrologist
Environmental Bureau
Harold S. Runnels Building
1190 ST Francis Dr.
Santa Fe, New Mexico 87502-0110

RE: San Juan Refining Company Discharge Plan

Dear Mr. Olson:

Attached, please find San Juan Refining Company's Discharge Plan, Site Investigation, and Abatement Plan. Dave Colbrain also has been sent a copy of this manual for his review as well. Dave Pavlich and myself are looking forward to meeting with you and Dave Colbrain in the near future to discuss our options.

If you have questions or need more information than provided please do not hesitate to call me anytime at (505) 632-4168.

Sincerely;

Barry Holman
Environmental Manager
San Juan Refining – Giant Bloomfield

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

GIANT
REFINING COMPANY

December 19, 2000

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

Dear Mr. Price,

Attached please find the analytical results of soil collected for the recent spill. The TPH is shown as 10.5 PPM and as we discussed on 12/19/00 I would like to utilize this soil to help build up the berms around the tank farm in the refinery. I consider our conversation a verbal approval of using the soil in this manner.

Thank you for your attention in this matter and if you have questions on this or any other matter please call me at (505) 632-4168.

Sincerely:

Barry Holman
Environmental Manager
San Juan Refining Company

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Giant	Project #:	601209
Sample ID:	ISO N	Date Reported:	12-11-00
Laboratory Number:	18987	Date Sampled:	12-11-00
Chain of Custody No:	8430	Date Received:	12-11-00
Sample Matrix:	Soil	Date Extracted:	12-11-00
Preservative:	Cool	Date Analyzed:	12-11-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**10.5**	**0.1**
Total Petroleum Hydrocarbons	**10.5**	**0.1**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Isomerate North.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	12-11-TPH QA/QC	Date Reported:	12-11-00
Laboratory Number:	18986	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	12-11-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	08-03-00	2.6231E-002	2.6204E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	08-03-00	1.2937E-002	1.2911E-002	**0.20%**	**0 - 15%**

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**177**	**176**	**0.4%**	**0 - 30%**
Diesel Range C10 - C28	**244**	**243**	**0.3%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**177**	**250**	**426**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**244**	**250**	**493**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 18986 - 18987.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

CHAIN OF CUSTODY RECORD

08430

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
GIANT	ISomerate North	
Sampler: B. HOLMAN	Client No. 96012-09	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH 8015					Remarks
ISO N	12/11/00	9:35 AM	18987	Soil		✓					

	Date	Time		Date	Time
Relinquished by: (Signature)	12/11/00	9:50 AM	Received by: (Signature)	12/11/00	9:50
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

GIANT
REFINING COMPANY

December 6, 2000

TO: BILL OLSON

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Ground Water Analytical Results September 2000

Dear Mr. Price,

Attached please find 10 pages of analytical results of the recent sampling event of seeps, monitoring wells and recovery wells. The following seeps, monitoring wells and recovery wells were sampled:

MONITORING WELLS		RECOVERY WELLS	SEEPS
#1	#36	#15	#5
#8	#12	#1	#4
#3	#27		#1
#11	#26		
#34	#9		
#35	#4		

If you have questions or need more information please contact me anytime at (505) 632-4168.

Sincerely:

Barry Holman
Environmental Manager
San Juan Refining Bloomfield-Refining

ASSAIGAI ANALYTICAL LABORATORIES, INC.
7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood Dr., Suite N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2555

Explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

GIANT REFINING-BLOOMFIELD
attn: BARRY HOLMAN
PO BOX 159
BLOOMFIELD, NM 87413

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: **GIANT REFINING-BLOOMFIELD**
Project: **0010031 BLOOMFIELD REFINERY SEPT**

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Client Sample ID: ***SEEP #5*** Sample Matrix: ***GW*** Sample Collected: ***09/28/00 10:50:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-01A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1127-12	71-43-2	Benzene	ND	ug / L	5	1	1	10/10/00
X00394	XG.2000.1127-12	100-41-4	Ethylbenzene	ND	ug / L	5	1	1	10/10/00
X00394	XG.2000.1127-12		Naphthalene	11	ug / L	5	2	1	10/10/00
X00394	XG.2000.1127-12	95-47-6	o-Xylene	ND	ug / L	5	1	1	10/10/00
X00394	XG.2000.1127-12	108-38-3/106-42	p/m-Xylenes	24	ug / L	5	2	1	10/10/00
X00394	XG.2000.1127-12	108-88-3	Toluene	ND	ug / L	5	1	1	10/10/00

Client Sample ID: ***SEEP #4*** Sample Matrix: ***GW*** Sample Collected: ***09/28/00 11:30:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-02A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1127-4	71-43-2	Benzene	ND	ug / L	1	1		10/09/00
X00394	XG.2000.1127-4	100-41-4	Ethylbenzene	ND	ug / L	1	1		10/09/00
X00394	XG.2000.1127-4		Naphthalene	ND	ug / L	1	2		10/09/00
X00394	XG.2000.1127-4	95-47-6	o-Xylene	ND	ug / L	1	1		10/09/00
X00394	XG.2000.1127-4	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2		10/09/00
X00394	XG.2000.1127-4	108-88-3	Toluene	ND	ug / L	1	1		10/09/00

Certificate of Analysis

Client: **GIANT REFINING-BLOOMFIELD**
Project: **0010031 BLOOMFIELD REFINERY SEPT**

Client Sample ID: ***SEEP #1*** Sample Matrix: ***GW*** Sample Collected: ***09/28/00 11:50:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-03A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1138-2	71-43-2	Benzene	1600	ug / L	50	1		10/11/00
X00394	XG.2000.1127-5	100-41-4	Ethylbenzene	720	ug / L	10	1	1	10/09/00
X00394	XG.2000.1127-5		Naphthalene	360	ug / L	10	2	1	10/09/00
X00394	XG.2000.1127-5	95-47-6	o-Xylene	ND	ug / L	10	1	1	10/09/00
X00394	XG.2000.1127-5	108-38-3/106-42	p/m-Xylenes	97	ug / L	10	2	1	10/09/00
X00394	XG.2000.1127-5	108-88-3	Toluene	ND	ug / L	10	1	1	10/09/00

Client Sample ID: ***MW-1*** Sample Matrix: ***GW*** Sample Collected: ***09/28/00 13:05:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-04A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1127-6	71-43-2	Benzene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-6	100-41-4	Ethylbenzene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-6		Naphthalene	ND	ug / L	1	2	1	10/09/00
X00394	XG.2000.1127-6	95-47-6	o-Xylene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-6	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2	1	10/09/00
X00394	XG.2000.1127-6	108-88-3	Toluene	ND	ug / L	1	1	1	10/09/00
0010031-04B		EPA 300.0							
HE0010030	TT.2000.1053-6		Sulfate	130	mg/L	1	0.5	S	10/11/00
0010031-04C		EPA 300.0							
HE0010030	TT.2000.1053-7		Nitrite/Nitrate as Nitrogen	1.4	mg/L	1	0.5	S	10/11/00

Client Sample ID: ***MW-8*** Sample Matrix: ***GW*** Sample Collected: ***09/28/00 13:45:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-05A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1127-7	71-43-2	Benzene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-7	100-41-4	Ethylbenzene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-7		Naphthalene	ND	ug / L	1	2	1	10/09/00
X00394	XG.2000.1127-7	95-47-6	o-Xylene	ND	ug / L	1	1	1	10/09/00
X00394	XG.2000.1127-7	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2	1	10/09/00

Client: **GIANT REFINING-BLOOMFIELD**
Project: **0010031 BLOOMFIELD REFINERY SEPT**

X00394	XG.2000.1127-7	108-88-3	Toluene	ND	ug / L	1	1	1	10/09/00
0010031-05B		**EPA 300.0**							
HE0010030	TT.2000.1053-8		Sulfate	830	mg/L	1	0.5	S	10/11/00
0010031-05C		**EPA 300.0**							
HE0010030	TT.2000.1053-9		Nitrite/Nitrate as Nitrogen	12	mg/L	1	0.5	S	10/11/00
0010031-05D		**EPA 4.1.1/200.7 ICP**							
M001116	MW.2000.1489-44	7439-89-6	Iron, ferrous	0.07	mg / L	1	0.05		10/10/00
0010031-05E		**RSK 147**							
SPL00100117	TT.2000.1126-3		Methane	ND	mg/L	1	0.0012	S	10/11/00

Client Sample ID ***MW-3*** Sample Matrix ***GW*** Sample Collected ***09/28/00 14:20:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-06A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00394	XG.2000.1127-13	71-43-2	Benzene	ND	ug / L	1	1		10/10/00
X00394	XG.2000.1127-13	100-41-4	Ethylbenzene	ND	ug / L	1	1		10/10/00
X00394	XG.2000.1127-13		Naphthalene	ND	ug / L	1	2		10/10/00
X00394	XG.2000.1127-13	95-47-6	o-Xylene	ND	ug / L	1	1		10/10/00
X00394	XG.2000.1127-13	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2		10/10/00
X00394	XG.2000.1127-13	108-88-3	Toluene	ND	ug / L	1	1		10/10/00
0010031-06B		**EPA 300.0**							
HE0010030	TT.2000.1053-10		Sulfate	980	mg/L	1	0.5	S	10/11/00
0010031-06C		**EPA 300.0**							
HE0010030	TT.2000.1053-11		Nitrite/Nitrate as Nitrogen	41	mg/L	1	0.5	S	10/11/00

Client Sample ID ***MW-11*** Sample Matrix ***GW*** Sample Collected ***09/28/00 15:50:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-07A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00394	XG.2000.1138-7	71-43-2	Benzene	250	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-7	100-41-4	Ethylbenzene	15	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-7		Naphthalene	ND	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-7	95-47-6	o-Xylene	ND	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-7	108-38-3/106-42	p/m-Xylenes	160	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-7	108-88-3	Toluene	ND	ug / L	5	1	1	10/11/00

Client: **GIANT REFINING-BLOOMFIELD**

Project: **0010031 BLOOMFIELD REFINERY SEPT**

0010031-07B		**EPA 300.0**							
HE0010030	TT.2000.1053-12		Sulfate	46	mg/L	1	0.5	S	10/11/00
0010031-07C		**EPA 300.0**							
HE0010030	TT.2000.1053-13		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00
0010031-07D		**EPA 4.1.1/200.7 ICP**							
M001116	MW.2000.1489-47	7439-89-6	Iron, ferrous	15.3	mg / L	1	0.05		10/10/00
0010031-07E		**RSK 147**							
SPL00100117	TT.2000.1125-4		Methane	3.7	mg/L	75	0.09	S	10/11/00

Client Sample ID ***MW-34*** Sample Matrix ***GW*** Sample Collected ***09/28/00 16:30:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-08A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00394	XG.2000.1138-5	71-43-2	Benzene	140	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-5	100-41-4	Ethylbenzene	17	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-5		Naphthalene	47	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-5	95-47-6	o-Xylene	ND	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-5	108-38-3/106-42	p/m-Xylenes	85	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-5	108-88-3	Toluene	ND	ug / L	5	1	1	10/11/00
0010031-08B		**EPA 300.0**							
HE0010030	TT.2000.1053-14		Sulfate	55	mg/L	1	0.5	S	10/11/00
0010031-08C		**EPA 300.0**							
HE0010030	TT.2000.1053-15		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00
0010031-08D		**EPA 4.1.1/200.7 ICP**							
M001116	MW.2000.1489-48	7439-89-6	Iron, ferrous	5.72	mg / L	1	0.05		10/10/00
0010031-08E		**RSK 147**							
SPL00100117	TT.2000.1126-5		Methane	3.9	mg/L	75	0.09	S	10/11/00

Client Sample ID ***MW-35*** Sample Matrix ***GW*** Sample Collected ***09/28/00 16:50:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-09A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00401	XG.2000.1138-13	71-43-2	Benzene	21	ug / L	1	1		10/12/00
X00394	XG.2000.1127-14	100-41-4	Ethylbenzene	4.6	ug / L	1	1	1	10/10/00

Certificate of Analysis

Client: **GIANT REFINING-BLOOMFIELD**

Project: **0010031 BLOOMFIELD REFINERY SEPT**

X00394	XG.2000.1127-14		Naphthalene	9.5	ug / L	1	2	1	10/10/00
X00394	XG.2000.1127-14	95-47-6	o-Xylene	ND	ug / L	1	1	1	10/10/00
X00394	XG.2000.1127-14	108-38-3/106-42	p/m-Xylenes	100	ug / L	1	2	1	10/10/00
X00394	XG.2000.1127-14	108-88-3	Toluene	ND	ug / L	1	1	1	10/10/00
0010031-09B		**EPA 300.0**							
HE0010030	TT.2000.1053-18		Sulfate	120	mg/L	1	0.5	S	10/11/00
0010031-09C		**EPA 300.0**							
HE0010030	TT.2000.1053-19		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00
0010031-09D		**EPA 4.1.1/200.7 ICP**							
M001116	MW.2000.1489-49	7439-89-6	Iron, ferrous	2.77	mg / L	1	0.05		10/10/00
0010031-09E		**RSK 147**							
SPL00100117	TT.2000.1126-6		Methane	ND	mg/L	1	0.0012	S	10/11/00

Client Sample ID ***MW-36*** Sample Matrix ***GW*** Sample Collected ***09/28/00 17:15:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-10A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00394	XG.2000.1138-6	71-43-2	Benzene	7.7	ug / L	5	1	1	10/11/00
X00394	XG.2000.1154-2	100-41-4	Ethylbenzene	15	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-6		Naphthalene	15	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-6	95-47-6	o-Xylene	ND	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-6	108-38-3/106-42	p/m-Xylenes	150	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-6	108-88-3	Toluene	ND	ug / L	5	1	1	10/11/00
0010031-10B		**EPA 300.0**							
HE0010030	TT.2000.1053-20		Sulfate	90	mg/L	1	0.5	S	10/11/00
0010031-10C		**EPA 300.0**							
HE0010030	TT.2000.1053-21		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00

Client Sample ID ***MW-12*** Sample Matrix ***GW*** Sample Collected ***09/28/00 17:40:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-11A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00394	XG.2000.1138-3	71-43-2	Benzene	10	ug / L	1	1		10/11/00
X00394	XG.2000.1138-3	100-41-4	Ethylbenzene	2.3	ug / L	1	1		10/11/00
X00394	XG.2000.1138-3		Naphthalene	2.0	ug / L	1	2		10/11/00

Client: **GIANT REFINING-BLOOMFIELD**

Project: **0010031 BLOOMFIELD REFINERY SEPT**

X00394	XG.2000.1138-3	95-47-6	o-Xylene	ND	ug / L	1	1		10/11/00
X00394	XG.2000.1138-3	108-38-3/106-42	p/m-Xylenes	31	ug / L	1	2		10/11/00
X00394	XG.2000.1138-3	108-88-3	Toluene	ND	ug / L	1	1		10/11/00
0010031-11B		EPA 300.0							
HE0010030	TT.2000.1053-22		Sulfate	2100	mg/L	1	0.5	S	10/11/00
0010031-11C		EPA 300.0							
HE0010030	TT.2000.1053-23		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00

Client Sample ID ***MW-27*** Sample Matrix ***GW*** Sample Collected ***09/28/00 18:00:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-12A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1138-4	71-43-2	Benzene	18	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-4	100-41-4	Ethylbenzene	9.9	ug / L	5	1	1	10/11/00
X00394	XG.2000.1154-1		Naphthalene	50	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-4	95-47-6	o-Xylene	ND	ug / L	5	1	1	10/11/00
X00394	XG.2000.1138-4	108-38-3/106-42	p/m-Xylenes	64	ug / L	5	2	1	10/11/00
X00394	XG.2000.1138-4	108-88-3	Toluene	ND	ug / L	5	1	1	10/11/00
0010031-12B		EPA 300.0							
HE0010030	TT.2000.1053-24		Sulfate	49	mg/L	1	0.5	S	10/11/00
0010031-12C		EPA 300.0							
HE0010030	TT.2000.1053-25		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00

Client Sample ID ***MW-26*** Sample Matrix ***GW*** Sample Collected ***09/28/00 18:30:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-13A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00401	XG.2000.1138-14	71-43-2	Benzene	4600	ug / L	50	1	1	10/12/00
X00401	XG.2000.1138-14	100-41-4	Ethylbenzene	1000	ug / L	50	1	1	10/12/00
X00401	XG.2000.1138-14		Naphthalene	170	ug / L	50	2	1	10/12/00
X00401	XG.2000.1138-14	95-47-6	o-Xylene	ND	ug / L	50	1	1	10/12/00
X00401	XG.2000.1138-14	108-38-3/106-42	p/m-Xylenes	4300	ug / L	50	2	1	10/12/00
X00401	XG.2000.1138-14	108-88-3	Toluene	ND	ug / L	50	1	1	10/12/00
0010031-13B		EPA 300.0							
HE0010030	TT.2000.1053-26		Sulfate	1.0	mg/L	1	0.5	S	10/11/00

Certificate of Analysis

Client: GIANT REFINING-BLOOMFIELD
Project: 0010031 BLOOMFIELD REFINERY SEPT

0010031-13C		EPA 300.0							
HE0010030	TT.2000.1053-27		Nitrite/Nitrate as Nitrogen	ND	mg/L	1	0.5	S	10/11/00

Client Sample ID: *FIELD BLANK* Sample Matrix: *GW* Sample Collected: *09/28/00 18:45:00*

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010031-14A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00394	XG.2000.1138-8	71-43-2	Benzene	ND	ug / L	1	1		10/11/00
X00394	XG.2000.1138-8	100-41-4	Ethylbenzene	ND	ug / L	1	1		10/11/00
X00394	XG.2000.1138-8		Naphthalene	ND	ug / L	1	2		10/11/00
X00394	XG.2000.1138-8	95-47-6	o-Xylene	ND	ug / L	1	1		10/11/00
X00394	XG.2000.1138-8	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2		10/11/00
X00394	XG.2000.1138-8	108-88-3	Toluene	ND	ug / L	1	1		10/11/00

*** Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. ***

*** ND = Not detected: less than the sample specific Detection Limit. Results relate only to the items tested. ***

footnote 1 Sample pH was greater than 2 exceeding QA/QC criteria.

ASSAIGAI ANALYTICAL LABORATORIES, INC.
7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood Dr., Suite N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

Explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

GIANT REFINING-BLOOMFIELD
attn: BARRY HOLMAN
PO BOX 159
BLOOMFIELD, NM 87413

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: **GIANT REFINING-BLOOMFIELD**
Project: **0010032 BLOOMFIELD REFINERY SEPT**

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Client Sample ID: ***MW-9*** Sample Matrix: ***GW*** Sample Collected: ***09/29/00 11:20:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-01A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00401	XG.2000.1138-17	71-43-2	Benzene	15000	ug / L	250	1		10/12/00
X00401	XG.2000.1138-17	100-41-4	Ethylbenzene	940	ug / L	250	1		10/12/00
X00401	XG.2000.1138-17		Naphthalene	510	ug / L	250	2		10/12/00
X00401	XG.2000.1138-17	95-47-6	o-Xylene	340	ug / L	250	1		10/12/00
X00401	XG.2000.1138-17	108-38-3/106-42	p/m-Xylenes	4400	ug / L	250	2		10/12/00
X00401	XG.2000.1138-17	108-88-3	Toluene	260	ug / L	250	1		10/12/00
0010032-01B		EPA 300.0							
W00271	MW.2000.1520-11		Sulfate	13.6	mg / L	100	0.05		10/13/00
0010032-01C		EPA 300.0							
W00284	MW.2000.1587-14	14797-65-0	Nitrate, as N	ND	mg / L	10	0.05		10/27/00

Client Sample ID: ***RW-15*** Sample Matrix: ***GW*** Sample Collected: ***09/29/00 12:00:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-02A		SW846 5030A/8021B Purgeable VOCs by GC/PID							
X00401	XG.2000.1138-18	71-43-2	Benzene	7600	ug / L	250	1		10/12/00
X00401	XG.2000.1138-18	100-41-4	Ethylbenzene	3300	ug / L	250	1		10/12/00

Client: **GIANT REFINING-BLOOMFIELD**

Project: **0010032 BLOOMFIELD REFINERY SEPT**

X00401	XG.2000.1138-18		Naphthalene	890	ug / L	250	2		10/12/00
X00401	XG.2000.1138-18	95-47-6	o-Xylene	4600	ug / L	250	1		10/12/00
X00401	XG.2000.1138-18	108-38-3/106-42	p/m-Xylenes	14000	ug / L	250	2		10/12/00
X00401	XG.2000.1138-18	108-88-3	Toluene	14000	ug / L	250	1		10/12/00
0010032-02B		**EPA 300.0**							
W00272	MW.2000.1539-9		Sulfate	2.26	mg / L	1	0.05		10/16/00
0010032-02C		**EPA 300.0**							
W00284	MW.2000.1587-15	14797-65-0	Nitrate, as N	ND	mg / L	10	0.05		10/27/00
0010032-02D		**EPA 4.1.1/200.7 ICP**							
M001116	MW.2000.1489-50	7439-89-6	Iron, ferrous	3.42	mg / L	1	0.05		10/10/00
0010032-02E		**RSK 147**							
SPL00100117	TT.2000.1126-7		Methane	0.79	mg/L	20	0.024	S	10/11/00

Client Sample ID ***MW-4*** Sample Matrix ***GW*** Sample Collected ***09/29/00 12:30:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-03A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00401	XG.2000.1138-21	71-43-2	Benzene	9100	ug / L	250	1		10/13/00
X00401	XG.2000.1138-21	100-41-4	Ethylbenzene	850	ug / L	250	1		10/13/00
X00401	XG.2000.1138-21		Naphthalene	ND	ug / L	250	2		10/13/00
X00401	XG.2000.1138-21	95-47-6	o-Xylene	ND	ug / L	250	1		10/13/00
X00401	XG.2000.1138-21	108-38-3/106-42	p/m-Xylenes	ND	ug / L	250	2		10/13/00
X00401	XG.2000.1138-21	108-88-3	Toluene	ND	ug / L	250	1		10/13/00
0010032-03B		**EPA 300.0**							
W00272	MW.2000.1539-10		Sulfate	ND	mg / L	1	0.05		10/16/00
0010032-03C		**EPA 300.0**							
W00284	MW.2000.1587-16	14797-65-0	Nitrate, as N	ND	mg / L	10	0.05		10/27/00

Client Sample ID ***RW-1*** Sample Matrix ***GW*** Sample Collected ***09/29/00 13:35:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-04A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00401	XG.2000.1138-19	71-43-2	Benzene	180	ug / L	3	1		10/12/00
X00401	XG.2000.1138-19	100-41-4	Ethylbenzene	18	ug / L	3	1		10/12/00
X00401	XG.2000.1138-19		Naphthalene	38	ug / L	3	2		10/12/00

Certificate of Analysis

Client: **GIANT REFINING-BLOOMFIELD**

Project: **0010032 BLOOMFIELD REFINERY SEPT**

X00401	XG.2000.1138-19	95-47-6	o-Xylene	ND	ug / L	3	1		10/12/00
X00401	XG.2000.1138-19	108-38-3/106-42	p/m-Xylenes	25	ug / L	3	2		10/12/00
X00401	XG.2000.1138-19	108-88-3	Toluene	ND	ug / L	3	1		10/12/00
0010032-04B		**EPA 300.0**							
W00271	MW.2000.1520-16		Sulfate	346	mg / L	100	0.05		10/13/00
0010032-04C		**EPA 300.0**							
W00284	MW.2000.1587-17	14797-65-0	Nitrate, as N	ND	mg / L	10	0.05		10/27/00

Client Sample ID ***FIELD BLANK*** Sample Matrix ***GW*** Sample Collected ***09/29/00 14:15:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-05A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00401	XG.2000.1138-15	71-43-2	Benzene	1.6	ug / L	1	1		10/12/00
X00401	XG.2000.1138-15	100-41-4	Ethylbenzene	ND	ug / L	1	1		10/12/00
X00401	XG.2000.1138-15		Naphthalene	ND	ug / L	1	2		10/12/00
X00401	XG.2000.1138-15	95-47-6	o-Xylene	ND	ug / L	1	1		10/12/00
X00401	XG.2000.1138-15	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2		10/12/00
X00401	XG.2000.1138-15	108-88-3	Toluene	ND	ug / L	1	1		10/12/00

Client Sample ID ***TRIP BLANK*** Sample Matrix ***GW*** Sample Collected ***09/29/00 14:17:00***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0010032-06A		**SW846 5030A/8021B Purgeable VOCs by GC/PID**							
X00401	XG.2000.1138-16	71-43-2	Benzene	ND	ug / L	1	1		10/12/00
X00401	XG.2000.1138-16	100-41-4	Ethylbenzene	ND	ug / L	1	1		10/12/00
X00401	XG.2000.1138-16		Naphthalene	ND	ug / L	1	2		10/12/00
X00401	XG.2000.1138-16	95-47-6	o-Xylene	ND	ug / L	1	1		10/12/00
X00401	XG.2000.1138-16	108-38-3/106-42	p/m-Xylenes	ND	ug / L	1	2		10/12/00
X00401	XG.2000.1138-16	108-88-3	Toluene	ND	ug / L	1	1		10/12/00

**** Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. ****

**** ND = Not detected: less than the sample specific Detection Limit. Results relate only to the items tested. ****

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company: San Juan Refining Company	Contact: Barry Holman
Address: #50 CR 4990 Bloomfield, NM 87413	Telephone No.: (505) 632-4168
Facility Name: Bloomfield Refinery	Facility Type: Crude Oil Refinery

Surface Owner	Mineral Owner	Lease No.
Giant Industries, Inc.		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	26&27	29 N	11 W					San Juan

NATURE OF RELEASE

Type of Release: Isomerate	Volume of Release: 80 BBL	Volume Recovered: 45 BBL
Source of Release: Over Pressure Device On Line Opened	Date and Hour of Occurrence: 10/30/00 4:00 AM	Date and Hour of Discovery: 10/30/00 6:45 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Denny Foust	
By Whom? Barry Holman	Date and Hour: 10/30/00 7:15 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Operator was transferring product from one tank to another when the overpressure device in the line opened allowing product to flow into a containment area. The containment area filled and product ran onto the ground.

Describe Area Affected and Cleanup Action Taken.*
Concrete Containment area filled and ran over onto the ground. The stream ran down the grade into the storm water ditch and stopped. The storm water ditch was dry. All contaminated soil was removed from the ditch and placed on plastic and bermed.

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

Signature: Barry Holman	OIL CONSERVATION DIVISION
Printed Name: Barry Holman	Approved by District Supervisor: Denny Foust For Frank Chavez
Title: Environmental Manager	Approval Date: 11/30/2000 Expiration Date:
Date: 11/21/00 Phone:	Conditions of Approval: Soil Sample attached ☐ Attached

* Attach Additional Sheets If Necessary

NKGF0030456945

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

November 06, 2000

Mr. Barry Holman
Giant Transportation
5764 US Hwy. 64
P.O. 159
Bloomfield, New Mexico 87413

Phone: (505) 632-4009
Fax: (505) 632-4073

Client No.: 96012-09
Job No.: 601209

Dear Mr. Holman,

Enclosed are the analytical results for the sample collected from the location designated as "Bullets". One soil sample was collected by Giant designated personnel on 11/02/00, and delivered to the Envirotech laboratory on 11/02/00 for BTEX per USEPA Method 8021.

The sample was documented on Envirotech Chain of Custody No. 8359 and assigned Laboratory No. 18488 (ISO 10/28) for tracking purposes.

The sample was analyzed 11/03/00 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,
Envirotech, Inc.

Christine M. Walters
Lab Coordinator / Environmental Scientist

enclosure

CMW/cmw

C:/files/labreports/giant/.wpd

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Giant Refinery	Project #:	601209
Sample ID:	ISO 10/28	Date Reported:	11-06-00
Laboratory Number:	18488	Date Sampled:	11-02-00
Chain of Custody:	8359	Date Received:	11-02-00
Sample Matrix:	Soil	Date Analyzed:	11-03-00
Preservative:	Cool	Date Extracted:	11-02-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**1.8**
Toluene	**ND**	**1.7**
Ethylbenzene	**50.8**	**1.5**
p,m-Xylene	**130**	**2.2**
o-Xylene	**159**	**1.0**
Total BTEX	**340**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

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: **Bullets.**

Christine M Walters
Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	11-03-BTEX QA/QC	Date Reported:	11-06-00
Laboratory Number:	18463	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-03-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	3.4634E-002	3.4718E-002	0.2%	ND	0.2
Toluene	3.8762E-002	3.8832E-002	0.2%	ND	0.2
Ethylbenzene	5.6290E-002	5.6408E-002	0.2%	ND	0.2
p,m-Xylene	6.1792E-002	6.1947E-002	0.3%	ND	0.2
o-Xylene	6.0646E-002	6.0749E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	ND	ND	0.0%	0 - 30%	1.8
Toluene	3.4	3.3	2.9%	0 - 30%	1.7
Ethylbenzene	18.9	18.5	2.1%	0 - 30%	1.5
p,m-Xylene	29.5	28.9	2.0%	0 - 30%	2.2
o-Xylene	5.5	5.4	1.8%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	50.0	100%	39 - 150
Toluene	3.4	50.0	53.3	100%	46 - 148
Ethylbenzene	18.9	50.0	68.5	99%	32 - 160
p,m-Xylene	30.0	100	130	100%	46 - 148
o-Xylene	5.5	50.0	55.4	100%	46 - 148

* - Administrative range set to 80 - 120%.

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 18463 - 18468, 18488, 18489 and 18491.**

Christine M Walters
Analyst

Review

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CHAIN OF CUSTODY RECORD

08359

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
Giant Ref.	Bullets	
Sampler: Barry Holman	Client No. 601209	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
ISO 10/28	11-2-00	8:30	18488	Soil	1	✓						

	Date	Time		Date	Time
Relinquished by: (Signature) Barry Holman	11/2/00	9AM	Received by: (Signature) Christe Walters	11-2-00	9:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Phone 632-4168

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

GIANT
REFINING COMPANY

AUG 2 1

August 18, 2000

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Mr. Denny Fouts
New Mexico Oil Conservation Division
1000 Rio Brazos Rd.
Aztec, New Mexico 87410

Re: Analytical Report on Reformate Spill

Dear Mr. Price:

Enclosed are the analytical results for the sample I collected from the dirt that was removed after a Reformate spill. The analytical results show that the soil is below the regulatory limits set. I discussed the results with Mr. Denny Fouts and we agreed to put the soil back into the original site of removal.

If you have questions on this or any other matter, please contact me at (505) 632-4168.

Sincerely;

Barry G. Holman
Environmental Manager
Giant San Juan Refining Company

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Giant Refining	Project #:	601209
Sample ID:	BR - Ref - 001	Date Reported:	08-11-00
Laboratory Number:	H889	Date Sampled:	08-11-00
Chain of Custody No:	8111	Date Received:	08-11-00
Sample Matrix:	Soil	Date Extracted:	08-11-00
Preservative:	Cool	Date Analyzed:	08-11-00
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**3.2**	**0.2**
Diesel Range (C10 - C28)	**4.3**	**0.1**
Total Petroleum Hydrocarbons	**7.5**	**0.1**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Bloomfield Refinery Reformate Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-11-TPH QA/QC	Date Reported:	08-11-00
Laboratory Number:	H889	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-11-00
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	08-03-00	2.1477E-002	2.1455E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	08-03-00	1.7996E-002	1.7960E-002	**0.20%**	**0 - 15%**

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**3.2**	**3.2**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**4.3**	**4.3**	**0.0%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**3.2**	**250**	**253**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**4.3**	**250**	**254**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for sample H889.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Giant Refining	Project #:	601209
Sample ID:	BR - Ref - 001	Date Reported:	08-11-00
Laboratory Number:	H889	Date Sampled:	08-11-00
Chain of Custody:	8111	Date Received:	08-11-00
Sample Matrix:	Soil	Date Analyzed:	08-11-00
Preservative:	Cool	Date Extracted:	08-11-00
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	76.6	1.8
Toluene	149	1.7
Ethylbenzene	193	1.5
p,m-Xylene	1,170	2.2
o-Xylene	544	1.0
Total BTEX	2,130	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

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: **Bloomfield Refinery Reformate Spill.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	08-11-BTEX QA/QC	Date Reported:	08-11-00
Laboratory Number:	H889	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-11-00
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	6.1654E-002	6.1802E-002	0.2%	ND	0.2
Toluene	8.4151E-002	8.4303E-002	0.2%	ND	0.2
Ethylbenzene	1.0764E-001	1.0787E-001	0.2%	ND	0.2
p,m-Xylene	1.2081E-001	1.2111E-001	0.3%	ND	0.2
o-Xylene	1.1294E-001	1.1313E-001	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	76.6	77.9	1.7%	0 - 30%	1.8
Toluene	149	151	1.1%	0 - 30%	1.7
Ethylbenzene	193	195	1.2%	0 - 30%	1.5
p,m-Xylene	1,170	1,180	0.9%	0 - 30%	2.2
o-Xylene	544	554	1.8%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	76.6	50.0	126	100%	39 - 150
Toluene	149	50.0	199	100%	46 - 148
Ethylbenzene	193	50.0	243	100%	32 - 160
p,m-Xylene	1,170	100	1,270	100%	46 - 148
o-Xylene	544	50.0	593	100%	46 - 148

* - Administrative range set to 80 - 120%.

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 sample H889.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Contact
Giant Refining Co.	Jim Stiffler
Address	Telephone No.
50 CR 4990 Bloomfield NM	(505) 632-4170
Facility Name	Facility Type
Bloomfield Refinery	Petroleum Refinery

Surface Owner	Mineral Owner	Lease No.
Giant Industries		—

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	26	29N	11W					San Juan

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Fire	unknown	All consumed
Source of Release	**Date and Hour of Occurrence**	**Date and Hour of Discovery**
Sewer Gas	8-14-00 3:45 PM	immediate
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?**	
	Denny Foutz	
By Whom?	**Date and Hour**	
Barry Holman	8-16-00 9:00 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse.**	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Welding work in progress in Process unit when release of vapor occured from unit sewer system & ignited. Fire was extinguished immediatly

Describe Area Affected and Cleanup Action Taken.*

Affected area was REFORMER Process Unit. No CLEAN UP WAS required due to nature of fire and fuel vapor involved.

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

Signature: Jim Stiffler	OIL CONSERVATION DIVISION
Printed Name: Jim Stiffler	Approved by District Supervisor:
Title: Safety Supt.	Approval Date: / Expiration Date:
Date: 8-18-00 Phone: 632-4170	Conditions of Approval: / Attached ☐

* Attach Additional Sheets If Necessary

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 7/7/00

or cash received on _____ in the amount of $ 50.00

from GIANT INDUSTRIES

for BLOOMFIELD REFINERY GW-01

(Facility Name) (DP No.)

Submitted by: WAYNE PRICE Date: 11/17/00

Submitted to ASD by: _____ Date: _____

Received in ASD by: _____ Date: _____

Filing Fee ✓ New Facility ___ Renewal ___

Modification ___ Other _____

(specify)

Organization Code 521.07 Applicable FY 2001

To be deposited in the Water Quality Management Fund.

Full Payment ___ or Annual Increment ___

[redacted]

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

95-207/1022

DATE July 7, 2000

PAY TO THE ORDER OF NMED - Water Quality Management ---------- $ 50.00

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

Security features included. Details on back.

Citizens Bank
Bloomfield Branch
320 West Broadway
Bloomfield, NM 87413

AMOUNTS OVER 500.00 REQUIRE COUNTER SIGNATURE

FOR Discharge plan filing fee

MP

[redacted]

GIANT
REFINING COMPANY

May 11, 2000

Mr. William C. Olsen
Oil Conservation Division
Energy, Minerals, and Natural Resources Department
2040 S. Pacheco
Santa Fe, NM 87505

RE: Revisions to the Giant Bloomfield Refinery Discharge Plan, Volume II

Dear Mr. Olson,

As we discussed in our recent telephone conversation, Giant Refining Company and Hicks Consultants have updated Giant's "Volume II: Discharge Plan and Application, Site Investigation and Abatement Plan, Giant Bloomfield Refinery, Bloomfield, New Mexico". Submission of this revised Plan is awaiting the completion of the updated Bioplume III modeling and updated Risk Assessment by Hicks Consultants. Upon completion of these components of the document, Giant will submit the complete document to the NMOCD for its review. The updated document:

- addresses your comments regarding the original Discharge Plan Volume II submission,
- presents and discusses the groundwater data from the 1999 sampling events,
- updates data tables, and
- corrects some style and usage

Because this updated version contains the results and discussion of the October 1999 sampling event, the Corrective Measure Study (CMS) will serve as the annual monitoring report for 1999. The October 1999 data is discussed in Section 4. This Draft CMS identifies the changes and amendments to the original text that address your comments. Minor stylistic or grammatical changes have not been specifically identified.

Below is a list of corrections and amendments that were made to Volume II in order to address comments listed in your March 8, 2000 letter. The numbering used below follows the numbering you used to list your comments in the letter; therefore, each response below corresponds to a comment in your letter. Each response provides a summary for the correction made and where that correction is found in the updated document.

1. Table 2 has been updated to include the April 28, 1986 surface water sampling of the Hammond Ditch. The document discusses these data in Section 4.6.1.

2. Plate 10 has been amended to include the 1994 GTI surface water sampling locations of the Hammond Ditch.

PHONE
505-632-8006
FAX
505-632-4034

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

3. In Section 4.7.1 of the previous draft, a reference to Table 3 was incorrect. Table 2 contains the data discussed in Section 4.7.1. This error has been corrected in the updated document.

4. The correct toluene value for HD-7B is 0.012 mg/Kg. The toluene value for this sample has been corrected in Section 4.7.1.

5. Table 2 provides the analytical results of the alluvium sampled by Hicks Consultants. Section 4.7.2 discusses the results of the chemical analyses for these alluvial samples. Rather than showing the sample locations on a map, we have provided a brief description of where Hicks Consultants collected these samples.

6. In your sixth comment, you point out that Table 2 "San Juan River Sediment Samples – 10/28/98 (Hicks)" was not discussed. In Volume II, the table had inadvertently been referred to as Table 3. This error has been corrected, and the table is discussed in Section 4.7.2.

7. In Section 7.4.2, references to the NMED have been corrected to refer to the OCD so that it states that the OCD has regulatory authority over the remedial actions at the refinery rather than the NMED.

8. Section 11 describes the seepage control along the San Juan River. The Refinery has installed a bentonite slurry wall and sheet pile (see Plate 41). These features serve as a hydraulic barrier between the Refinery property and the San Juan River. Refinery personnel will install two drive point piezometers so that the efficacy of the hydraulic barrier can be monitored.

9. Section 9 of the previous draft provided the correct remediation recommendations for recovery of SPH. We have update Section 2.5 so that it is consistent with Section 9.

10. Section 5.3 addresses your request for background water quality. We believe an average water chemistry of MW-37 (after 8/98) and MW-1 (12/92-5/98) will provide an appropriate reference to monitor the effectiveness of natural attenuation. We believe the current monitoring network defines the down gradient extent of BTEX in groundwater. Section 11 discusses our rational for no new down gradient monitoring points.

11. We have updated Section 11 to include a monitoring program for detecting the potential migration of contaminates into the San Juan River. This program consists of 2 piezometers - one on each side of the hydraulic barrier. The piezometers will be used to monitor the chemical quality of the groundwater on both sides of the barrier.

12. In Section 11, we have updated the list of monitoring and recovery wells that refinery personnel will sample along with the frequency of sampling.

13. Refinery personnel will monitor the piezometers associated with the hydraulic barrier semi-annually for SPH and water levels. The 16 monitor wells listed in Section 11 will be monitored annually for SPH and water levels. Section 11 describes the monitoring protocol.

14. Tables 8 and 9 have been updated. These tables provide the QA/QC data for the 1999 sampling events.

In the near future, Giant and/or its consultants is planning to:

- Measure fluid levels in MW-9, MW-20, MW-40, MW-41, MW-42, MW-43, RW-18, RW-19
- Sample MW-12 and Seep 5
- Install the two drive-point piezometers near the slurry wall
- Install SPH recovery pumps in MW-42, MW-43, possibly, MW-20

Measurement of fluid levels in the identified wells will provide a baseline from which we can compare SPH extent after the installation of three additional recovery wells. We anticipate that sampling MW-12 and Seep 5 will provide additional data supporting the conclusion that the western edge of dissolved hydrocarbons is sufficiently defined. Installation of the drivepoints and SPH recovery systems are commitments in the Discharge Plan.

Hicks Consultants will be finalizing the CMS in the near future by incorporating Bioplume III modeling and an updated Risk Assessment. Giant will submit the entire updated document to OCD at that time. Giant plans to submit the final CMS to EPA within the next two months. We will provide NMOCD with the analytical results from the sampling of MW-12 and Seep 5 when they are available. We will also report the fluid levels in the two drive points near the slurry wall.

If you have any questions regarding this submission, please do not hesitate to contact me at (505) 632-4168.

Sincerely,

Barry Holman
Environmental Manager
Giant Refining Company

Cc: David Pavlich, Giant Refining Company
Randall Hicks, Hicks Consultants

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 01-MAY-0

or cash received on _____ in the amount of $ 3910.00

from GIANT INDUSTRIES, INC

for GIANT BLOOMFIELD REFINERY GW-01.

(Facility Name) (OP No.)

Submitted by: WAYNE PRICE Date: 5/8/00

Submitted to ASD by: _____ Date: "

Received in ASD by: _____ Date: _____

Filing Fee ___ New Facility ___ Renewal ✓

Modification ___ Other _____

(specify)

Organization Code 521.07 Applicable FY 2000

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment ___

[redacted]

GIANT INDUSTRIES, INC. & SUBSIDIARIES

P.O. Box 12999
Scottsdale, Arizona
85267

480
585-8888

The Chase Mahattan Bank, N.A.
6040 Tarbell Road
Syracuse, New York 13206

50-937
213

Valid For 180 Days From Date of Issue

01-May-00
Date

[redacted]
Check No.

*****3910.00
$
Amount

Pay ***THREE THOUSAND NINE HUNDRED TEN AND 0/100 DOLLARS***

To the Order of NMED--WATER QUALITY MANAGEMENT
2040 SOUTH PACHECO STREET
SANTA FE, NM 87505

James E Arrige

GW-01

[redacted]

GIANT
REFINING COMPANY

RECEIVED
MAY - 8
OIL CONSERVATION DIVISION

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Renewal Flat Fee for Giant San Juan Refining

Dear Mr. Price:

Please find the enclosed fee of $3910.00 for the flat fee renewal. Also attached is your copy of the Discharge Plan Approval Conditions.

If you have questions or require more information, please contact me at (505)632-4168.

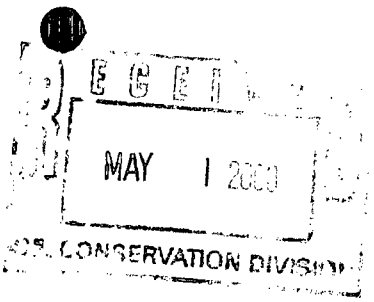
Sincerely,

Barry G. Holman
Environmental Manager
Giant San Juan Refining

PHONE
505-632-8006
FAX
505-632-4034

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

GIANT
REFINING COMPANY



Mr. Wayne Price
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: SWPPP, Plate 5, and Area Plot Plan

Dear Mr. Price:

Enclosed please find the items that we have discussed and that you requested. The Bloomfield Refinery Storm Water Pollution Prevention Plan, Wastewater Flow Diagram (Plate 5), and the updated Bloomfield Refining Area Plot Plan.

If you have questions or need more information, please call me at 505-632-4168.

Sincerely,

Barry G. Holman
Environmental Manager
San Juan Refining (Bloomfield)

PHONE
505-632-8006
FAX
505-632-4034

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

GIANT
INDUSTRIES, INC.
& SUBSIDIARIES

P.O. Box 12999
Scottsdale, Arizona
85267

480
585-8888

Bank # : 11 Check # [redacted]
Vendor # : 84592 Check Date: 01-May-00

Div#	Inv. Date	Voucher	Invoice Number	Gross	Discount	Net
16	25-Apr-00	2354938	13957	3,910.00		3,910.00

GW-01

Total: 3,910.00

Price, Wayne

From: Price, Wayne
Sent: Tuesday, April 11, 2000 10:13 AM
To: 'barryh@gaint.com'
Subject: FW: Revised Inspection report

From: Price, Wayne
Sent: Monday, April 10, 2000 9:42 AM
To: 'barryh@gaint.com'
Subject: Revised Inspection report

Dear Barry:

Pursuant to our telephone conversation this morning, please note OCD is revising its comment on the recent inspection Dated March 30, 2000 report under Pic21 to read "Stained areas on rock bluff are visible from past oil seeps".

GIANT
REFINING COMPANY

RECEIVED
17

April 11, 2000

Mr. Wayne Price
Pet. Engr. Spec.
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Discharge Plan GW-01
Giant Bloomfield Refinery

Dear Mr. Price:

On April 5, 2000 I received the inspection report that was completed by you along with attached pictures of that inspection. The following is the corrective action response and commitment for each item listed on the inspection report.

PROCESS AREAS:

1. Picture 10 – Area west of the wet gas compressor building, oil spray has been discharged to the ground.

   The soil where the oil was discharged was cleaned and bioremediation is already in place. The pumps have sufficient containment but the drains to the sump had become plugged. The drains have been cleaned to prevent future sprays or spills.

2. Picture 15 – Waste catalyst is being discharged to ground outside of containment area.

   Just prior to OCD's visit to our facility, maintenance had completed the dumping of the catalyst and was awaiting the arrival of a transport truck to remove the catalyst. The catalyst that was off of the containment pad was the result of the dumping and has been cleaned up and placed on the containment pad.

ABOVE GROUND TANKS:

1. Picture 3 & 8 – Cooling towers chemical tanks do not have proper containment.

PHONE
505-632-8006
FAX
505-632-4034

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

Both of these areas are being assessed as to the needs of the containment systems. Within the next three months we should have the proper containment system for each of the cooling tower areas. This will include an Impervious bottom with the proper curbing to contain a spill of one of the tote tanks currently stored at the cooling towers. A work order has been written for each of these areas. (WO 44095 & 44094)

2. Picture 2 – Concrete around the closed out monitoring well located in the liquid drum and tote tank storage area needs to be grouted in.

   A work order has been written to complete the grouting. (WO 44107)

LABELING:

1. #1 cooling tower acid tank needs labeled.

   Tanks V-510 and V-511 were identified not to have labels. Both tanks are now labeled as to their contents. (WO 44097 & 44098)

BELOW GRADE TANKS/SUMPS:

1. Picture 6 – Boiler house #4 concrete drain is in need of repair.

   This drain is being investigated to the extent of repair needed. A work order will be issued soon and I will follow-up with you on the progress.

2. Picture 20 – Fuel oil loading rack troughs and sumps require cleaning.

   A work order has been written and this area cleaned within the next week. (WO 44092)

3. Giant shall provide integrity test for all below grade tanks and sumps

   Giant personnel are currently working on a procedure to accomplish the testing. I will provide you with a plan of action in the near future.

UNDERGROUND PROCESS/WASTEWATER LINES:

1. Giant shall provide results of piping pressure test.

   Along with the procedure for integrity testing of below grade tanks and sumps Giant will provide you with a plan of action to accomplish the wastewater sewer piping testing in the near future.

ONSITE/OFFSITE WASTE DISPOSAL AND STORAGE PRACTICES:

1. Picture 27 – Giant shall sample waste going into landfill for WQCC constituents.

   Giant is investigating other alternatives for disposal of the waste currently being disposed of in the landfill.

2. NMOCD recommends Giant to install a barrier around the API-ABT Ponds.

   Giant will take this recommendation under advisement.

SPILL REPORTING:

1. Picture 12 – Need closure report for reformate area – need bottom TPH results and PID results, also need plan for reformate contaminated soil (see picture 25).

   Giant has not taken bottom samples as of this date because of the recent rains. The area where the spill occurred still has a level of water and is inaccessible at this time. As soon as this area dries out we will take the samples needed and send NMOCD a closure report. PID measurements taken at the time of soil cleanup indicated no remaining contamination. These results will also be provided to NMOCD.

   We are in the process of obtaining samples of the contaminated soil of the associated with the spill. As soon as we have the results we will provide NMOCD an action plan of what Giant proposes to do with the soil.

OTHER POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES:

1. Wastewater pond leak detectors have a high fluid levels, Giant to investigate if pond liners are leaking.

   Giant is in the process of pumping out the leak detectors and taking gauges over a period of several days to see if the water comes back into the leak detection system. Giant will keep NMOCD advised of the results. WO 44089

2. Giant to investigate Tank #20 area for contamination.

   As soon as the tank farm dries out Giant will take samples soil surrounding Tank #20 and report the results to NMOCD.

We appreciate the opportunity to respond to the issues raised in the recent NMOCD inspection. We will keep NMOCD informed of the progress that Giant is making on the above listed items. Should you or your staff have any questions regarding the above, please do not hesitate to contact me at (505) 632-4168.

Sincerely,

Barry G. Holman
Environmental Manager
San Juan Refining Company

cc: Denny Foust
John Stokes
Dave Pavlich
Sara Allen

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, NM 87505
(505) 827-7133
Fax: (505) 827-8177

(PLEASE DELIVER THIS FAX) 505-632-4073

To: BARRY HOLMAN - GIANT

From: OCD

Date: 4/5/00

Number of Pages (Includes Cover Sheet) 23

Message:

If you have any trouble receiving this, please call:
(505) 827-7133

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

April 4, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. 5051 5963

Mr. Barry Holman
Environmental Manager
San Juan Refining Co.
111 County Road 4990
Bloomfield, New Mexico 87413

Re: Discharge Plan GW-01
Giant Bloomfield Refinery

Dear Mr. Holman:

The New Mexico Oil Conservation Division (NMOCD) conducted a facility inspection on March 30, 2000. Enclosed is a copy of the inspection report with pictures. Please provide a corrective action response or commitment for each item listed on the inspection report. Since Giant's discharge plan has expired, NMOCD would like to expedite this process so as we may issue the discharge plan approval. Therefore, please address these issues by April 18, 2000.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

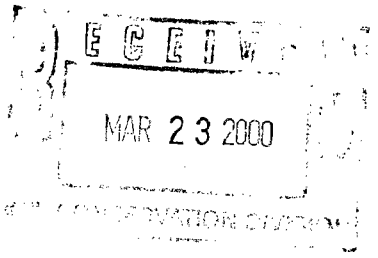
Sincerely Yours,

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

cc: OCD Aztec Office

attachments-1

GIANT
REFINING COMPANY



March 21, 2000

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: San Juan Refining Company, Bloomfield, New Mexico, Discharge Plan GW-1

Dear Mr. Price:

Enclosed are two copies of the revised portions of the Discharge Plan, Volume I. The revisions primarily reflect changes in facility operations as well as upgrades and environmental improvements, which Giant implemented in 1999.

Using the original July 5, 1999 submission binder, please "remove and replace" as follows:

1. Cover pages
2. Items 1-13
3. Appendix A
4. Tables 2-8

The remainder of the document remains unchanged. Expect similar revisions to Volume II of the Discharge Plan within the next several weeks. The revised Volume II includes data collected in October 1999 and serves as our 1999 Annual Monitoring Report. The Volume II revisions will also address several items which were mentioned in a recent letter from Bill Olsen of the OCD following his completion of the review of the original Volume II document.

Should you or your staff have any further questions regarding the above, please do not hesitate to contact me at (505) 632-4168.

Sincerely,

Barry Holman
Environmental Manager
San Juan Refining Company

cc: Robert V. Murphy, Branch Chief, U.S. EPA, Region VI
David Pavlich, Giant Refining
Randall Hicks, Hicks Consulting

PHONE
505-632-8006
FAX
505-632-4034

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

July 5, 1999
Revised March 10, 2000

Volume I:
Discharge Plan Application
Waste and Wastewater Management

GIANT BLOOMFIELD REFINERY

Prepared for:

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

R.T. HICKS CONSULTANTS, LTD.
4665 INDIAN SCHOOL NE, SUITE 106, ALBUQUERQUE, NM 87110

Revised Discharge Permit Application
Volume I

July 6, 1999

Revised March 10, 2000

San Juan Refining Company
Giant Industries Arizona, Inc.
Bloomfield Refinery – Bloomfield, NM

Contact:
John Stokes, Refinery Manager
Barry Holman, Environmental Manager
Chad King, Operations Manager

Prepared for:
San Juan Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413
Office: (505) 632-8013
Fax: (505) 632-3911

R.T. HICKS CONSULTANTS, LTD.
4665 INDIAN SCHOOL NE, SUITE 106, ALBUQUERQUE, NM 87110

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San Juan Pipeline Spill Response Guide
Spill Prevention Control and Countermeasures (SPCC) Plan
Response Plan (Oil Pollution Act of 1990 and Clean Water Act)
Storm Water Pollution Prevention Plan (SWPPP)
OSHA Process Safety Management (PSM) plan

ITEM 1 - *Type of Operation*

The San Juan Refining Company-Bloomfield facility is a petroleum refinery.

ITEM 2 - *Name of Operator or Legally Responsible Party and Local Representative*

San Juan Refining Company, P.O. Box 159, Bloomfield, NM 87413

John Stokes, Refinery Manager	(505) 632-8013
Barry Holman, Environmental Manager	(505) 632-8013
Chad King, Operations Manager	(505) 632-8013

ITEM 3 - *Location of the Discharge Plan Facility*

Bloomfield, New Mexico is a town of 3000 residents located in the Four Corners Region of northern New Mexico (Plate 1). The San Juan Refining Company (SJRC) – Bloomfield Refinery is located at #50 County Road 4990 (Sullivan Road), immediately south of Bloomfield in San Juan County (Plate 2). The site is located on a bluff approximately 100 feet above the south side of the San Juan River, a perennial river that flows to the west. On the bluff and between the river and the process area of the facility is the Hammond Ditch, a man-made channel for irrigation water supply that borders all but the southern portion of the site. Plate 2 shows the approximate property boundaries. Bordering the facility is a combination of federal and private properties (Plate 3). The topography of the site is generally flat with low-lying areas to the east of the process area (Plate 2).

The legal description of the site is 286.93 acres, more or less, being that portion of the NW ¼ NE ¼ and the S ½ NE ¼ and the N ½ NW ¼ SW ¼ and the SE ¼ NW ¼ SW ¼ and the NE ¼ SW ¼ of Section 26, Township 29 North, Range 11 West, San Juan County, New Mexico.

ITEM 4 - *Landowners*

San Juan Refining Company (SJRC/Giant) owns the facility site.

ITEM 5 - *Facility Description*

San Juan Refining Company – Bloomfield is a petroleum refinery with a nominal crude capacity of 18,000 barrels per calendar day. Processing units include crude desalting, crude distillation, catalytic hydrotreating, catalytic reforming, fluidized catalytic cracking (FCC), catalytic polymerization (Cat/Poly), diesel hydrodesulfurization (HDS), gas concentration and treating, and sulfur recovery (SRU). For a history of Refinery improvements and modifications, see Appendix A. Crude supplies arrive by pipeline and tank trucks. SJRC operates a loading terminal where refined products are loaded into tank trucks. Plate 4 shows the site plan.

ITEM 6 - *Materials Stored or Used at the Facility: Type of Container, Estimated Volume, and Location.*

Table 1 contains the Refinery Chemical Inventory. It lists all chemicals stored at the Refinery, estimated storage volume, storage container type, and location.

ITEM 7 - *Sources and Quantities of Effluent and Waste Solids Generated at the Facility*

A. Types of Effluent, Estimated Quantities, Types and Volumes of Additives

Wastewater sources from the process and other areas are commingled at an API separator. These sources, with quality, quantity, and additive information, are:

1. Separators, Scrubbers, and Slug Catchers

The refining process units generate a wastewater stream to the API Separator of approximately 45,240 GPD with an estimated total dissolved solids (TDS) of 873 mg/l. The crude desalter generates the majority of this wastewater (30,240 GPD). Steam and other water vapor losses to the atmosphere from these process units total 194,400 GPD. See Plate 5 for a flow diagram of the Refinery's wastewater system. Table 2 also presents this water balance.

The SRU uses several proprietary chemicals, primarily iron chelates and sulfur conditioning agents in aqueous solutions, as the active ingredients required to remove sulfur from the refinery fuel and diesel HDS gases. (See Table 1 for stored volumes.) A belt filter press recovers these chemicals from the produced sulfur and recycles them back to the SRU process.

Curbed concrete slabs equipped with drains route storm water runoff and wash water from the process area to the API Separator. Storm water runoff from the process units is about 2,300 GPD and wash water is about 9,240 GPD.

The oily water process sewer piping system is of welded construction of standard weight A53 grade B carbon steel, coated with 50 -mil protective tape. Collection headers are 14", 12", and 10" diameters. Collection branches are 8", 6", and 4" diameters equipped with "P" traps at drain inlets. The pipe wall thickness varies up to 3/8" for 14" pipe. The "P" trap drains route stormwater to the API Separator. In addition, area drains are located in critical peripheral areas outside the curbed process slabs to collect and direct all potentially oily wastewater to the API Separator.

The sewer boxes are constructed of reinforced concrete with sealed covers and vents. The entire process sewer collection system empties to the API Separator. See Part C below for the approximate chemistry of the API Separator stream.

2. *Boilers, Waste Heat Recovery Units, Cogeneration Facilities, and Cooling Towers/Fans.*

The boilers generate approximately 91,080 GPD of steam from softened water and some recycled condensate. The blowdown, 21,600 GPD with a TDS of 2,042 mg/l, flows to the API Separator.

The water softening unit treats filtered, raw water for feed to the boilers. It handles approximately 104,040 GPD of filtered water with a TDS content of 240 mg/l. The Refinery utilizes approximately 600 pounds per day of sodium chloride for softening. The softeners require periodic regeneration resulting in a 5,760 GPD discharge of high salt (10,445 mg/l TDS) brine to the API Separator. Softened water, 98,200 GPD with a TDS of 340 mg/l, flows to the boilers.

Typically, 18 quarts per day of the Nalco product Transport Plus 7200 are used to inhibit scale formation in the boilers. This product is an aqueous solution of an acrylamide/acrylate polymer and carboxylate. Four quarts per day of Nalco's Eliminox O_2 Scavenger, an aqueous solution of amines and carbohydrazides, minimizes acid formation from excess oxygen. The Nalco product, Tri-Act 1802 Corrosion Inhibitor, an aqueous solution of amines, is added (seven quarts per day) to the steam system as a corrosion inhibitor and neutralizer of carbolic acid. Table 1 details the storage of these additives.

Approximately 236,160 GPD of filtered water with a TDS of 240 mg/l flow to the two cooling towers. The blow down volume from the cooling towers is approximately 41,760 GPD of water with a TDS of 2,290 mg/l. About 194,400 GPD are lost through evaporation. The wastewater from the cooling towers flows to the API Separator.

The cooling towers receive four quarts per day of the Nalco product, 71-D5+ Antifoam, a blend of fatty acids, polyglycols, polyglycol ester, and oxyalkylate in kerosene and mineral oil, as a defoamer. They use three quarts per day of Nalco's 7344 Chlorine Stabilizer, an aqueous solution of sodium hydroxide, sulfamate, carboxylate, and polyglycol as a biological dispersant. Six gallons per day of Nalco's 7356 Corrosion Inhibitor, an aqueous solution of phosphoric acid and zinc chloride, inhibit the formation of scale and corrosion in the cooling system. The Nalco product, 8302 Dispersant, an aqueous solution of a substituted carboxylate, a substituted triazole, an acrylate polymer, and sodium hydroxide, is used (four gallons per day) as a dispersant to keep calcium phosphate scale from forming. About 37 pounds per day of gaseous chlorine is fed to the cooling towers as a biocide. Sulfuric acid is added (eight gallons per day) for pH control. Again, Table 1 details the storage of these chemicals.

3. *Wash down/Steam out effluent from process and storage equipment internals and externals.*

Concrete slabs with drains routed to the API Separator or to a product recovery tank capture washdown and any spills from the truck loading area. Truck compartments are periodically cleaned with steam or by rinsing with product. The hydrocarbons are recovered in the API Separator and the effluent is routed through the API into the wastewater treatment and disposal system.

4. Solvent/degreaser use

Item 4 lists the solvents used at the Refinery. All solvents are consumed in use; therefore, they do not contribute to the wastewater at the Refinery.

5. Spent acids or caustics

An annual volume of 1000 tons of spent caustic flows to the API Separator. When possible, the spent caustic is sent to the Stone Container Company pulp plant located in Snowflake, Arizona for use in their process.

Approximately 59 tons per year of spent phosphoric acid from the Cat/Poly unit is shipped to a fertilizer plant (Evergreen Resources, Soda Springs, ID) for incorporation into their fertilizer products.

6. Used engine coolants (i.e. antifreeze)

Mesa Environmental of Albuquerque, New Mexico collects the 27 gallons of antifreeze used by the Refinery each year. A 55 gallon drum located on a curbed concrete pad in the warehouse yard receives the used antifreeze.

7. Used lubrication and motor oils

A small tank located on a curbed concrete pad collects the waste lubrication, motor, and hydraulic oils for subsequent offsite disposal. Mesa Environmental of Albuquerque, New Mexico trucks the approximate 500 gallons per year of used oil for disposal.

8. Used process filters

A dumpster at the bundle cleaning pad collects approximately 12 cubic yards per year of dry process filters. Waste Management of Four Corners, Inc., disposes of these as a special waste at the regional landfill in Bloomfield, New Mexico.

9. Solids and sludges from tanks (provide description of materials)

Tank cleaning occurs on a 5-10 year rotating schedule. SJRC's maintenance crew maintains a record of the tank cleaning schedule that is available on request. Solids are collected in roll-offs and disposed of off-site by contracting companies. Duratherm, Inc. and Eltrex, Inc., both located in Houston, Texas, have collected the sludge for disposal within the past several years.

Heat exchanger cleaning generates approximately one ton of sludge per year. SJRC generally hires a contractor to wash the heat exchanger bundles. Heat exchanger cleaning takes place on an average cycle of once every four years in a concrete bay located at the east end of the auxiliary warehouse. The contractors use non-hazardous materials such as steam, water, and biodegradable soap or chemicals compatible with the refining processes. A portable sump

collects the sludges and liquids. A vacuum truck removes the liquids and empties them into the API Separator.

The most recent crude tank cleaning, which occurred in1999, generated approximately 34 tons of sludge that was disposed of by Duratherm, Inc.

10. Paint wastes

Romic Inc. of Chandler, Arizona or other certified disposal firms will be used to dispose of any unused, solvent-based paint wastes that may be generated.

11. Sewage

Domestic sewage is disposed of via septic tanks and leach fields in accordance with New Mexico Environment Department regulations. It is not commingled with other refinery effluent. Three septic tank systems exist on the site; one located under the control room has been operating for 30 years; the other two systems, located under the Refinery offices, are less than three years old.

12. Laboratory wastes

Laboratory wastes not otherwise recycled or shipped for offsite disposal drain to the API Separator. Appendix B contains the laboratory's chemical inventory.

13. Other Liquid Wastes

The Refinery generates no other waste liquids except wastewater.

14. Other Solid Wastes

Sulfur, FCC fines, spent catalyst, and trash are the other solid wastes generated at the Refinery. The Hydrodesulfurization Unit (HDS) produces 180 tons per year of solid sulfur. SJRC sells some of this to local farmers for use as a soil conditioner; the remainder goes to an onsite landfill located in the northeastern corner of the property. The landfill is periodically covered with soil.

The Fluidized Catalytic Cracking (FCC) Unit generates 50 tons per year of fine-grained particles or fines. Approximately one ton per week is deposited in the onsite landfill and covered with soil.

Akzo Chemical Company of Houston, Texas collects the spent FCC catalyst, approximately 100 tons per year, for off-site disposal. American Catalyst Company of Houma, Louisiana or other catalyst disposal/recycling firms collect the spent hydrotreating catalyst, 21,500 lbs. from the HDS reactor, 4175 lbs. from the Reformer. A fertilizer company in Soda Springs, Idaho buys the 158,000 lbs. of spent, phosphoric acid-containing catalyst used each year in the Catalytic Polymerization Unit.

Waste Management of Four Corners, Inc. collects an average of three dumpsters full of solid waste per week for offsite disposal.

B. Quality Characteristics - TDS, Major Cations, Hydrocarbon Analysis, Toxics, Types of Samples, and Sources of Variability

Section C below presents the chemistry of the waste stream from the Aeration Lagoons and Evaporation Ponds. We have assumed that the chemistry of all other effluent sources listed above is typical for each type of waste.

C. Commingled Waste Streams

The Refinery combines the wastewater streams discussed above and feeds them to the API Separator. The API Separator effluent wastewater flows to the Aeration Lagoons (formally known as the Oily Water Ponds) for aeration and biological treatment. From the Aeration Lagoons, the wastewater stream flows to two, double-lined, 5-acre evaporation ponds. From the Evaporation Ponds, the wastewater flows to its final disposal site, a Class 1 underground injection well. The injection well follows specific operational requirements separate from this discharge plan.

Inter-Mountain Laboratories, Inc. of Farmington, NM conducted chemical analyses of the various waste streams. Appendix C contains copies of these chemical analyses. Table 3 presents the BTEX analysis of the influent and effluent from the Aeration Lagoons. Table 4 presents the hazardous characterization of the effluent from the Lagoons. Table 5 shows the chemistry of the effluent from the north, double-lined Evaporation Pond. Table 6 lists the dissolved metal concentrations in the effluent from the north, double-lined Evaporation Pond.

ITEM 8 - *Collection/Storage/Disposal Procedures*

A. Tank Storage

Plate 4 shows the location of storage tanks. Tanks 1 through 45 are aboveground, non-pressurized steel tanks. Tanks B1-B23 are pressurized bullet tanks. Table 7 lists the tank contents and their volumes. Tank dikes designed to contain at least 130% of the tank volume in case of a spill protect all tanks. Any spilled material will be recovered by vacuum truck or be pumped to the API Separator or directly to a process tank.

Storm water that collects inside the tank dikes may also flow to sumps in the tank farm. Refinery personnel monitor these sumps and empty them to the API Separator by vacuum truck or direct pumping as needed.

The Refinery has no underground storage tanks. In addition to the tanks identified in Table 7, an unleaded gasoline tank (2,500 gallons) is in the warehouse yard protected with a concrete slab and retaining walls. A 300-barrel diesel tank located just west of the auxiliary warehouse is protected within a concrete containment basin. Two small vessels for sulfuric acid storage are located on curbed concrete at each of the cooling towers. These are labeled V501 and V511.

Vessels V705, V706, V707, located on curbed concrete at the truck terminal, store product additives.

A few day-tanks, needed periodically for in-plant equipment operations (e.g., diesel fuel for pumps), are stored on a curbed, concrete pad when not in use.

B. Underground Piping

1. Process Piping

Underground process piping that contains refinery crude, products, and intermediates has been minimized and is generally limited to the incoming crude oil pipeline. Appendix D contains the San Juan Pipeline Spill Response Guide. In addition to the incoming crude pipeline, the Refinery uses approximately 100 feet of buried crude charge piping in the Crude Unit and some underground piping for tank dike crossings and road crossings. The major road crossing is from the Refinery to the truck loading terminal. Table 8 lists the installation dates of all underground pipes at the facility.

2. Process Water System Piping

Underground piping for process-related water and wastewater does not contact oil streams. These underground pipes transport filtered water, steam, cooling tower water, and blowdown from the boilers and the cooling towers. The facility's main cooling water pipes were replaced in 1993.

C. Chemical Storage

Chemical and drum storage areas are paved and curbed. Any drainage is contained on the pads or directed to refinery sewers as appropriate. Additional information about chemical storage is available in Table 1.

D. Aeration Lagoons (formerly "Oily Water Treatment Ponds")

Immediately downstream of the API are lined lagoons identified as Aeration Lagoons 1, 2, and 3. An earthen dike separates Lagoon 1 from Lagoons 2 and 3. A concrete wall separates Lagoon 2 from Lagoon 3. All three Aeration Lagoons are constructed primarily below grade.

In 1994, the Aeration Lagoon liners were upgraded. The existing liner system, consisting of a 100-mil high-density polyethylene (HDPE) flexible membrane liner (FML) underlain by a leak detection system and a 33% bentonite-amended soil liner, remained in place. Two additional HDPE FMLs were added over the existing liner along with two additional leak detection layers for a total of one primary and two secondary leak detection layers in the retrofitted impoundments.

E. Evaporation Ponds

Treated wastewater is pumped to one of two double-lined evaporation ponds installed in accordance with the "Guidelines for the Design and Construction of Lined Evaporation Pits" as published by the New Mexico Oil Conservation Division (NMOCD). Each of these ponds has a 5 acre surface area and a 25 acre-foot capacity. They are equipped with two 60-mil HDPE FMLs and a leak detection system. The first pond was installed in December 1989 and the second was installed in September 1990. Each pond provides approximately 12.5 gpm net evaporation per year in addition to wastewater storage prior to injection. Treated wastewater is pumped to the ponds and then to the injection well.

F. Injection Well

A Class 1 injection well was constructed in 1995 according to NMOCD regulations. The well demonstrated the ability to handle the quantity of wastewater requiring disposal (at least 55 gpm on an annual basis) and operates under Discharge Permit Number GW-130. The well is located 2442 feet from the south line and 1250 feet the east line of Section 27, Township 29N, Range 11W, NMPM San Juan County, New Mexico. The nonhazardous wastewater stream is injected into portions of the Cliff House and Upper Menefee Formations (3276 to 3514 feet deep).

ITEM 9 - *Proposed Modifications*

No modifications to the Refinery are being proposed at this time.

ITEM 10 - *Inspection, Maintenance, and Reporting*

A. Notification of Fire, Breaks, Spills, Leaks, & Blowouts

The procedures of Rule 116 in the NMOCD Regulations will be followed in reporting fires, breaks, spills, leaks, and blowouts within the facility. Major events require immediate notification to the District OCD Supervisor and a follow up report due within ten days of the event. Major events include breaks, spills or leaks of 25 or more barrels of crude, intermediates, petroleum products, salt water, effluent wastewater, acids, caustics, solvents, or other chemicals. Minor events of five barrels or more but less than 25 barrels of the above materials will be reported within ten days of the incident.

B. Pond Liner Leak Detection Systems

The leak detection systems for the two evaporation ponds are inspected on a periodic basis. Records of the inspections are maintained at the Refinery. Any leaks in excess of expected rates will be reported to the NMOCD.

The leak detection systems for the Aeration Lagoons are inspected regularly. Inspection records are maintained at the Refinery.

C. Groundwater Remedial Action

The Refinery is actively abating the shallow, perched groundwater underlying the facility. Volume II of the Discharge Plan contains the groundwater monitoring and recovery information in the form of a Groundwater Abatement Plan.

D. Tank Berms

All tanks are protected by tank dikes designed to contain the contents of the tank in case of a spill. Any spilled material will be recovered by vacuum truck or pumped to the API Separator or directly to a process tank.

E. Process Inspection

Process piping is monitored on an on-going basis for visual evidence of leaks. The Cat/Poly and HDS units as well as most equipment in light hydrocarbon liquid service in other units are inspected regularly by an outside contractor for VOC emission compliance. Drains are inspected weekly for proper water seals and condition. Records of these inspections are maintained at the Refinery.

F. Tank Inspections

A tank inspection program is utilized to ensure the integrity of the tanks. Periodically, all storage tanks are emptied, inspected, and repaired. The inspection includes vacuum testing of the floor weld seams. Records of tank emptying and testing are maintained at the Refinery.

G. Corrosion Protection

An electrical corrosion protection system designed to minimize corrosion of tank bottoms and underground piping has been in service since May 1989. The system is checked periodically to verify its proper operation.

ITEM 11 - *Spill/Leak Prevention and Reporting Procedures (Contingency Plans)*

Bloomfield Refinery's Spill Prevention Control and Countermeasures plan appears in Appendix D.

As a petroleum refining facility, Bloomfield handles large amounts of potentially hazardous crude oil, product intermediates, hydrocarbon products, gases, and other chemicals. Because of the hazard potential, particularly from fire, the facility has extensive safety training and well-defined procedures for routine jobs and emergencies. Written safety procedures include an Emergency Plan, Safe Work Permits, Eye Protection, Safety Hats, Electrical Lock-outs, Opening and Isolating Equipment, Smoking Areas, Fire and Safety Permits, Firewatches, Respiratory Equipment, Entering Vessels and Other Confined Spaces, Inspection and Maintenance of Safety Equipment, Employee Injury or Illness Procedures, and Excavation Procedures. These documents are available at the facility for review.

Appendix D contains a copy of the Response Plan (Oil Pollution Act of 1990 and Clean Water Act) for spills that might affect waterways, the Storm Water Pollution Prevention Plan (SWPPP), and the OSHA Process Safety Management (PSM) Plan.

ITEM 12 - *Site Characteristics*

See the Groundwater Abatement Plan and the Final Site Investigation in Volume II of the Discharge Plan.

ITEM 13 - *Other Compliance Information*

A closure plan is not necessary at this time. Giant does not plan to close the Refinery during the time period of this Discharge Plan and the Refinery will likely continue operating for many years into the future. During that time, SJRC may modify its refining process. New unit operations may be added and others eliminated. A detailed closure plan will be submitted when such a document becomes relevant and meaningful. However, when the Refinery plans to close an individual unit operation, such as the raw water ponds, Giant will submit to NMOCD a detailed closure plan for that unit at least 120 days prior to the anticipated closure date.

Upon approval of the Groundwater Abatement Plan, SJRC will submit a closure plan for the existing monitor wells.

Table 2: Water balance of wastewater at the Refinery.

Process Unit	Volume of wastewater (GPD)
Crude Desalter	30,240
Boiler Blowdown	21,600
Cooling Tower Blowdown	41,760
Softeners	5,760
Wash Water	9,420
Storm Water	2,300
Ground Water	7,200
API Separator Effluent	118,100

Table 3: Comparison of influent and effluent from the Aeration Lagoons. Values shown are a typical analysis of a grab sample. Note: API Separator effluent flows directly to the Aeration Lagoons.

	Concentration in API Separator Effluent (ppm)	Concentration in Aeration Lagoon Effluent (ppm)
Benzene	9	0.0003
Toluene	14	<0.0002
Ethyl Benzene	1	<0.0002
Xylene	5	0.01

Table 4: Chemistry of effluent from the Aeration Lagoons. Values shown are average values of grab samples. Toxicity Characteristic Leaching Procedure (TCLP) results. Note: ND = not detected at stated detection limit.

Variable	NMWQCC Limit (mg/L)	Detection Limit (mg/L)	Results (mg/L)
Arsenic	0.1	0.1	ND
Barium	1.0	0.5	0.5
Cadmium	0.01	0.005	ND
Chromium	0.05	0.01	0.01
Lead	0.05	0.2	ND
Mercury	0.002	0.001	ND
Selenium	10.0	0.1	ND
Silver	0.05	0.01	ND
1,1-Dichloroethene	0.005	0.02	ND
1,2-Dichloroethane	0.01	0.02	ND
1,4-Dichlorobenzene	7.5	0.02	ND
2-Butanone	200	0.1	ND
2,4-Dinitrotoluene	0.13	0.02	ND
2,4,5-Trichlorophenol	400	0.02	ND
2,4,6-Trichlorophenol	2.0	0.02	ND
Benzene	0.01	0.02	ND
Carbon Tetrachloride	0.5	0.02	ND
Chlorobenzene	100	0.02	ND
Chloroform	0.1	0.02	ND
Hexachlorobenzene	0.13	0.02	ND
Hexachloroethane	3.0	0.02	ND
Hexachloro-1,3-butadiene	0.5	0.02	ND
Nitrobenzene	2.0	0.02	ND
m,p-Cresol	200	0.02	ND
o-Cresol	200	0.02	ND
Pentachlorophenol	100	0.02	ND
Pyridine	5.0	0.2	ND
1,1,2,2-Tetrachloroethylene	0.02	0.02	ND
1,1,2-Trichloroethylene	0.1	0.02	ND
Vinyl Chloride	0.001	0.02	ND

Table 5. Chemistry of effluent from the north, double-lined Evaporation Pond. Values shown are a typical analysis.

Variable	Detection Limit (mg/L)	Result (mg/l)
Ammonia		7.13
Chloride		5,890
Fluoride		1.38
Nitrate, Nitrite	0.02	ND
Phenols	0.01	ND
Sulfate		1,740
Sulfide as H_2S		30.5
Total cyanide	0.01	ND
Total Dissolved Solids		13,600
Total Kjeldahl Nitrogen		0.13
Total Suspended Solids		26

Table 6. Dissolved metals in effluent from the north, double-lined Evaporation Pond. Values shown are the results of a typical analysis.

Metal	Detection Limit (mg/L)	Result (mg/L)
Aluminum	0.1	0.1
Arsenic	0.005	ND
Barium	0.5	ND
Boron	0.01	1.61
Cadmium	0.002	ND
Chromium	0.02	0.05
Cobalt	0.01	ND
Copper	0.01	0.16
Iron	0.05	0.05
Lead	0.02	ND
Manganese	0.02	0.28
Molybdenum	0.02	0.02
Nickel	0.01	0.01
Selenium	0.005	0.005
Silver	0.01	ND

Table 7: Tank Contents and Volumes

Tank No.	Date Installed	Material Stored	Capacity (bbl)	Diameter (ft)	Vapor Space (ft)	Turnovers per yr
1	1/60	Filtered water	1,500	21	-	-
2	1/78	Filtered water	67,000	100	-	-
3	9/66	JP-4 sales	10,000	41	21	25
4	9/66	JP-4 sales	10,000	41	21	25
5	9/66	Hi Reformate	10,000	41	20	22
8	12/87	Crude slop	500	12	12.5	42
9	12/87	Crude slop	500	12	12.5	42
11	12/82	Low Reformate	55,000	100	20	22
12	12/82	Cat/Poly gas	55,000	100	20	32
13	9/87	Unleaded sales	30,303	67	24	25
14	9/87	Unleaded sales	30,097	67	24	25
17	2/61	Cat feed	40,000	84	20	57
18	1/74	#1 Diesel sales	55,000	100	20	2
19	1/75	#2 Diesel sales	36,000	81	20	34
20	1/76	FCC slop	5,000	38	12	1
21	1/76	Refinery slop	3,000	30	12	1
22	1/80	Sales Rack slop	1,500	30	6	1
23	1/62	Base gasoline	40,000	85	20	20
24	1/77	Naphtha	10,000	54		
25	1/77	Naphtha	10,000	54		
26	12/67	Jet A sales	4,000	34	12	9
27	1/67	Heavy Burner Fuel Sales	10,000	42	20	13
28	4/69	Crude	80,000	110	24	35
29	1/74	#2 diesel sales	17,000	64	17	34
30	174	Premium blend	17,000	64	17	29
31	8/77	Crude	110,000	140	20	35
32	4/88	Premium unleaded	20,000	60	20	20
35	4/88	Unleaded	55,000	100	20	27
36	4/88	Gasoline blend	55,000	100	20	20
37	7/88	Isomerate	10,000	42	0	37
41	1/79	Crude	700	20	6	17
42	1/79	Crude	700	20	6	17
43	1/79	Water/crude	600	20	5	8
44	1/88	Ethanol	2,000	25	12	6
45	1/94	MTBE	5,000	35	0	37
B-12	1/60	Natural Gas	692	6	N/A	
B-13	1/60	Butane	500	5	N/A	
B-14	1/60	Butane	500	5	N/A	
B-15	1/60	Propane	714	7.14	N/A	

B-16	1/78	Propane	714	7.14	N/A	
B-17	1/78	Poly feed	714	7.14	N/A	
B-18	1/78	Poly feed	714	7.14	N/A	
B-19	1/78	Poly feed	714	7.14	N/A	
B-20	1/78	Butane	714	7.14	N/A	
B-21	10/83	Butane	714	7.14	N/A	
B-22	4/88	Saturate LPG	714	7.14	N/A	
B-23	4/88	Saturate LPG	714	7.14	N/A	

Table 8: Installation Dates of Underground Piping

Description	Date Installed
Sewers	
FCC, Gas Con and Treater	6/78
Cat/Poly	4/88
Crude	11/88
Reformer	11/88
HDS, SRU	12/93
Road Crossing to Sales Rack	
Initial Installation	6/78
JP-4	9/87
Cat/Poly Tank 32	4/88
Jet A	2/89
Naphtha Sales	1/75
Miscellaneous	
Crude Unloading Road Crossing to Tank 28	1/77
At Sales Terminals	1/78
Crude Line to Pipe Rack (100 feet)	4/89
Groundwater Recovery	9/88
Sour Water Transfer Lines	6/78
Transfer Lines to Spray Evaporation	6/82
Crude Line (LACT Unit to Pipe Rack)	1/78
Poly Gas Transfer (Cat Poly to Rack Road Crossing)	4/88
JP-4 Sales (Cat/Poly to Rack Road Crossing)	4/88
API Tank Transfer (Cat/Poly to Rack Road Crossing)	4/88
Poly LPG Make (Cat Poly to Rack Road Crossing)	4/88
Poly Gas Slop (Cat Poly to Rack Road Crossing)	4/88
Poly Feed Line (Cat Poly to Rack Road Crossing)	4/88
Slop Transfer Line (Cat Poly to Rack Road Crossing)	4/88
Tank 17 Burner Fuel Sales	1/78
Gas Oil Receiving	1/78
Diesel (To/from HDS to Rack Road Crossing)	12/93

HISTORY OF FACILITY MODIFICATIONS AND IMPROVEMENTS

Previous Owner's Activities

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the GRC facility in the late 1950s. O. L. Garretson bought the facility in the early 1960s, renamed it Plateau, Inc., and sold it in 1964 to Suburban Propane of New Jersey.

Operationally, the facility has steadily evolved through a series of improvements, modifications, and expansions. Suburban upgraded the facility in 1966, increasing the Crude Unit throughput to 4,100 bpcd and adding a 1,850 bpcd Reformer and Naphtha Hydrotreater. In 1975, the Crude Unit was expanded to 8,400 bpcd.

In 1979, the Crude Unit was expanded again to 16,800 bpcd (later demonstrated to have a hydraulic capacity in excess of 18,000 bpcd). A Fluidized Catalytic Cracker (FCC) with a nominal capacity of 6,000 bpcd, an Unsaturated Gas Plant, and a Treater Unit were also added at that time. The capacity of the Reformer/Hydrotreater was increased to 2,250 bpcd. The FCC was upgraded in 1982 to conform to state and federal air quality standards.

Bloomfield Refining Activities

Bloomfield Refining Company (BRC) acquired the facility from Suburban Propane (Plateau) on October 31, 1984. BRC made many improvements to facility operations and equipment. These improvements are summarized below.

1986

Relocated the spent caustic tank onto a concrete pad with concrete retaining walls.

1987

Upgraded the Reformer and increased its capacity to 3,600 bpcd, modified the Laboratory and Treater Unit, and increased tank storage capacity.

Cleaned up the north and south bone yards.

Decommissioned and dismantled old tanks 6 and 7.

Relocated the API recovered oil tanks 8 and 9 to concrete pads with concrete retaining walls.

Established a systematic inspection, maintenance, and repair program for tanks.

1988

Added a 2,000 bpcd Catalytic Polymerization Unit. Removed the facility's two underground storage tanks and replaced them with aboveground storage tanks.

Completed installing the cathodic protection system for the tank farm and underground piping.

Rebuilt the process area sewer system and added curbed, concrete paving to the unpaved process areas.

1989

Increased Reformer throughput to 4,000 bpcd.

Activated the groundwater hydrocarbon recovery system.

Installed a concrete pad with curbing between tanks 3 and 4.

Constructed the first double-lined Evaporation Pond as part of discharge plan improvements.

1990

Constructed the second double-lined Evaporation Pond as part of discharge plan improvements.

Constructed a drum storage shed and converted to bulk chemical usage where possible in order to minimize the use of drummed chemicals.

1991

Revamped the burner fuel sales rack with concrete paving and curbing.

Submitted the permit application for a Class 1 disposal well.

Upgraded the groundwater hydrocarbon recovery system.

1992

Submitted an air quality permit application proposing the installation of a Diesel Hydrodesulfurization (HDS) Unit and a Sulfur Recovery Unit (SRU) to comply with new EPA low-sulfur diesel regulations and to decrease air emissions.

1993

Began a program under a consent agreement with the US EPA to conduct interim measures (IM), a RCRA facility investigation (RFI), and a corrective measures study (CMS) addressing groundwater contamination.

Replaced portions of the underground cooling water piping.

Added concrete paving around the API Separator.

Added process units: HDS unit (2,000 bpcd) and SRU.

Improved (eliminated) storm water runoff to the north.

1994
Completed the Class 1 injection well.

Retrofitted the Aeration Lagoons with two additional liners.

Installed a floating cover for the API Separator.

Closed the clay-lined evaporation ponds and spray evaporation area.

Giant Activities

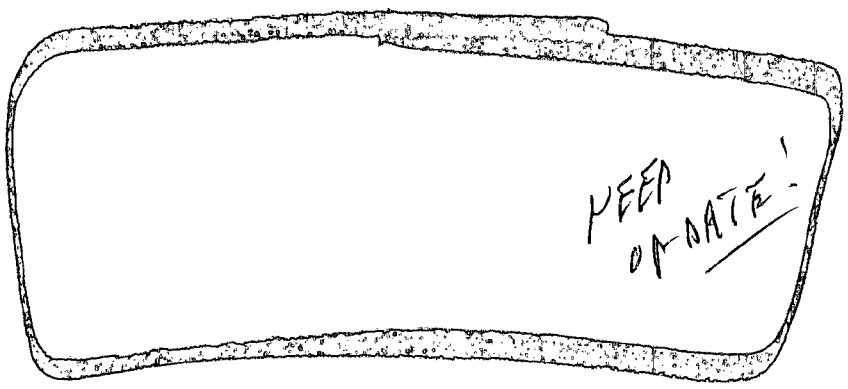
In 1995, San Juan Refining Company, a wholly owned subsidiary of Giant Industries Arizona, Inc., purchased the Bloomfield Refinery from BRC.

1995
Improved the diking south of the Refinery to further reduce storm water runoff.

Began implementation of additional corrective measures for groundwater cleanup as determined from the CMS.

1998
Converted the former evaporation ponds on the east side of the Refinery to raw water storage ponds.

1999
Installed sheet piling and a bentonite slurry wall adjacent to the San Juan River, north of the process units, in order to intercept a small hydrocarbon seep that had been detected in the area.



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

March 8, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. Z-559-572-906

Mr. Barry Holman
Giant Refining Company
111 County Rd. 4990
Bloomfield, New Mexico 87413

RE: INVESTIGATION REPORT AND ABATEMENT PLAN PROPOSAL GIANT BLOOMFIELD REFINERY

Dear Mr. Holman:

The New Mexico Oil Conservation Division (OCD) has reviewed Giant Refining Company's (Giant) July 5, 1999 "VOLUME II: DISCHARGE PLAN APPLICATION, SITE INVESTIGATION AND ABATEMENT PLAN, GIANT BLOOMFIELD REFINERY, BLOOMFIELD, NEW MEXICO". This document contains Giant's comprehensive report on soil and ground water investigative actions conducted at the refinery to date. The document also contains Giant's proposal for remediation of contaminated ground water.

The OCD has the following comments and requests for information regarding the above referenced document:

1. Section 4.6.1 on page 33 states that the April 28, 1986 samples of Hammond Ditch surface water can be found in Table 2. However, Table 2 does not contain this data. Please provide a corrected Table 2 which includes this information.

2. Section 4.6.1 on page 33 states that in 1994 GTI sampled surface water at 14 locations along Hammond Ditch and that the locations are on Plate 10. However, Plate 10 does not show these locations. Please provide a corrected Plate 10 which includes these locations.

3. Section 4.7.1. on pages 34-35 is confusing. The section refers to 28 Hammond Ditch sediment samples from 14 locations and 3 San Juan River sample locations (SJ-1, SJ-2, SJ-3) that are found in Table 3. However, the OCD could not find these samples in Table 3. It appears that the text may refer to data that is actually in Table 2. Please clarify what data the text is referring to and provide a map showing the locations of these sample points.

4. There appears to be a typographic error in the text at the bottom of page 34 in reference to sample HD-7B as containing 12 mg/kg of toluene. Table 2 shows that HD-7B contained only 0.012 mg/kg of toluene. Please provide the correct sample value for this location.

5. Section 4.7.2. on page 35 states that samples of alluvium taken by Hicks Consultants could be found in Table 3. The OCD could not find these sample results in Table 3. Please provide this information and a map showing the sample locations.

6. The OCD did not see a discussion of the Table 2 "San Juan River Sediment Samples – 10/28/98 (Hicks)" analyses for BTEX and metals in the text. Please point out where a discussion of these results can be found and on what map the samples locations can be found.

7. Section 7.4.2. on page 75 states that "nutrient addition to ground water is permissible in New Mexico with a Groundwater Discharge Permit issued by the NMED Groundwater Bureau". This is incorrect. In New Mexico discharge permits for remedial actions at refineries are under the direct authority of the OCD not the NMED.

8. The OCD does not understand what is happening regarding seepage control actions for the San Juan River. On February 17, 1998 Giant submitted a remediation plan for the river bank contamination which included installation of a sheet piling system, installation of a recovery/monitor well and enhanced bioremediation of contaminated soils. This work plan was conditionally approved by the OCD on March 6, 1998. Giant submitted requested modifications to the sheet piling system work plan on May 27, 1999, June 21, 1999 and June 22, 1999. The OCD requested additional information on the proposed modifications on July 2, 1999. This information was never submitted and Giant implemented the proposed modifications in the summer of 1999 without OCD approval. To date the OCD has not received either the July 2, 1999 requested information nor any reports on the remediation and monitoring activities as required in the OCD's initial March 6, 1998 approval. In addition, the recommended abatement plan for the river bank area in Section 9 does not include some of the proposed remedial actions which were previously approved (ie. remediation of contaminated soils and installation of a recovery well) . In order to resolve this issue the OCD requires that Giant submit a report on all recent remedial actions conducted in the river bank area. The report shall provide a summary of all remediation and monitoring actions; information on how Giant has complied with the OCD's March 6, 1998 conditions of approval; maps and as built construction specifications for the items requested in the OCD's July 2, 1999 correspondence; and a single unified recommended remediation plan for the river bank areas.

9. There are conflicting remediation recommendations for separate phase hydrocarbons (SPH) in the report. Section 2.5 on page 17 proposes to discontinue use of all recovery wells except RW-18 for recovery of SPH on ground water. However, Section 9 recommends use of wells RW-18, RW-19, MW-42 and MW-43 for recovery of SPH. Please clarify which wells are proposed to be used for recovery of SPH.

10. The document shows that the extent of ground water contamination has not been completely determined west of the refinery. In addition, due to the presence of low level organic contamination of the upgradient monitor wells and their proximity to potential source areas, the OCD does not believe that background water quality conditions have been determined at the site. The OCD requires that Giant incorporate into the "Recommended Abatement Plan" a work plan for additional monitor wells to complete the definition of the extent of contamination downgradient of monitor well MW-12, MW-38 and seep S-5 and to determine background water quality conditions at the site.

11. Section 11 does not include a plan for monitoring migration of contaminants into surface water in either Hammond Ditch or in the San Juan River. Please submit such a surface water monitoring plan.

12. There appears to be a typographical error on page 92 of Section 11. In the list of 18 monitoring points for semiannual sampling monitor well MW-27 is listed twice. Please clarify what wells are proposed to be sampled on a semiannual basis.

13. There are conflicting proposed plans for water level and SPH monitoring in Section 11. The second paragraph of page 92 proposes to measure water levels and SPH thickness in each well on a quarterly basis while the third paragraph of page 92 proposes to make these measurements on a semiannual basis. Please clarify which proposal Giant is recommending to use for water level and SPH monitoring.

14. The report does not contain the laboratory analytical data and associated QA/QC data for the recent sampling events. Please provide this information.

Please submit the above information to the OCD Santa Fe Office by May 8, 2000 with a copy provided to the OCD Aztec District Office. Submission of the above information will allow the OCD to complete a review of Giant's abatement plan for the Bloomfield Refinery.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Hobbs District Supervisor
Randall Hicks, R.T. Hicks Consultants, Ltd.
Dave Cobrain, NMED Hazardous and Radioactive Materials Bureau

District I - (505) 393-6161
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Hobbs, NM 88241-1980
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Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

RECEIVED
JAN 2 8 2000
Environmental Bureau
Oil Conservation Division

Form C-138
Originated 8/8/95

Submit Original
Plus 1 Copy
to appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: ☐ Non-Exempt: ☒	4. Generator: Giant Refining Company
Verbal Approval Received: Yes ☐ No ☐	5. Originating Site: Bloomfield, NM
2. Management Facility Destination: Giant Mid-Continent	6. Transporter: Not Determined
3. Address of Facility Operator: 111 CR 4990 Bloomfield	8. State: New Mexico
7. Location of Material (Street Address or ULSTR): 50 CR 4990 Bloomfield, NM. 87413	

9. Circle One:

A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job.

(B.) All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved.

All transporters must certify the wastes delivered are only those consigned for transport.

BRIEF DESCRIPTION OF MATERIAL:
Oil contaminated soil from around crude oil stroage tanks in the Bloomfield Refinery Tank farm.

Wait For Metals MJK 1-24-00

Talked to Denny
Test For Metals came Back Hazardous
Not sure Possibly Lead
Did not go to Land Farm
3-10-00
MJK

JAN 2000
RECEIVED
OIL CON. DIV.
DIST. 3

Estimated Volume 4 cy Known Volume (to be entered by the operator at the end of the haul) _____ cy

SIGNATURE: Tim Kinney (Waste Management Facility Authorized Agent) TITLE: General Manager DATE: 1/21/2000

TYPE OR PRINT NAME: Tim Kinney TELEPHONE NO. 505-632-4001

(This space for State Use)

APPROVED BY: Denny G Foust TITLE: Geologist DATE: 1/24/2000

DENIED

APPROVED BY: _____ TITLE: _____ DATE: _____

CERTIFICATE OF WASTE STATUS

1. Generator Name and Address:	2. Destination Name:
Giant Refining Company 50 CR 4990 Bloomfield, NM. 87413	Giant Mid-Continent 111 CR 4990 Bloomfield, NM. 87413
3. Originating Site (name): Giant Refinery Attach list of originating sites as appropriate	**Location of the Waste (Street address &/or ULSTR):** 50 CR 4990 Bloomfield, NM 87413
4. Source and Description of Waste Crude oil contaminated soil from around the crude oil storage tanks in theBloomfield refinery tank farm.	

I, Barry Holman representative for:
(Print Name)
Giant Refining Company do hereby certify that, according to the Resource Conservation and Recovery Act (RCRA) and Environmental Protection Agency's July, 1988, regulatory determination, the above described waste is: (Check appropriate classification)

___ **EXEMPT** oilfield waste

XX **NON-EXEMPT** oilfield waste which is non-hazardous by characteristic analysis or by product identification

and that nothing has been added to the exempt or non-exempt non-hazardous waste defined above.

For **NON-EXEMPT** waste only the following documentation is attached (check appropriate items):

___ MSDS Information
___ RCRA Hazardous Waste Analysis
___ Chain of Custody
XX Other (description):
Lab analysis attached

Name (Original Signature): Barry Holman

Title: Environmental Manager, Giant Refining

Date: 1/21/00

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : GIANT REFINING CO.-BLOOMFIELD PINNACLE I.D.: 001032
PROJECT # : (none)
PROJECT NAME : TANK 28

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	01-2000 TANK 28	NON-AQ	01/17/00	01/18/00	01/18/00	20

PARAMETER	DET. LIMIT	UNITS	01-2000 TANK 28
BENZENE	0.025	MG/KG	< 0.50
TOLUENE	0.025	**MG/KG**	**0.90**
ETHYLBENZENE	0.025	**MG/KG**	**0.89**
TOTAL XYLENES	0.025	**MG/KG**	**12**

SURROGATE:
BROMOFLUOROBENZENE (%) 109
SURROGATE LIMITS (65 - 120)

CHEMIST NOTES:
N/A

STL
Committed To Your Success

LOG NO: C0-02813
Received: 29 FEB 00
Reported: 10 MAR 00

Ms. Kim McNeill
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: 002090, GRCB
Sampled By: Client
Code: 083800310

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
02813-1	002090-01	02-22-00/12:00

PARAMETER	02813-1
RCRA Metals in TCLP Extract (6010)	
Arsenic (TCLP), mg/l	0.008
Barium (TCLP), mg/l	0.094
Cadmium (TCLP), mg/l	0.010
Chromium (TCLP), mg/l	0.022
Lead (TCLP), mg/l	0.005
Selenium (TCLP), mg/l	<0.01
Silver (TCLP), mg/l	<0.005
Analyst	CH
Prep Date	03.06.00
Analysis Date	03.07.00
Batch ID	PT018
Prep Method	1311/3010
Dilution Factor	1
Mercury (TCLP) (7470), mg/l	0.0038
Analyst	JDE
Prep Date	03.07.00
Analysis Date	03.07.00
Batch ID	HGW033
Prep Method	7470A
Dilution Factor	10

F-403 is the Naphtha Filter.

STL
Committed to Your Success

LOG NO: C0-02813
Received: 29 FEB 00
Reported: 10 MAR 00

Ms. Kim McNeill
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: 002090, GRCB
Sampled By: Client
Code: 083800310

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED
02813-2	Method Blank	
02813-3	Lab Control Standard % Recovery	
02813-4	Matrix Spike % Recovery	
02813-5	Matrix Spike Duplicate % Recovery	

PARAMETER	02813-2	02813-3	02813-4	02813-5
RCRA Metals in TCLP Extract (6010)				
Arsenic (TCLP), mg/l	<0.005	98 %	106 %	103 %
Barium (TCLP), mg/l	<0.01	102 %	103 %	97 %
Cadmium (TCLP), mg/l	<0.005	99 %	99 %	97 %
Chromium (TCLP), mg/l	<0.005	102 %	101 %	99 %
Lead (TCLP), mg/l	<0.005	99 %	100 %	98 %
Selenium (TCLP), mg/l	<0.01	94 %	103 %	101 %
Silver (TCLP), mg/l	<0.005	99 %	106 %	104 %
Analyst	CH	CH	CH	CH
Prep Date	03.06.00	03.06.00	03.06.00	03.06.00
Analysis Date	03.07.00	03.07.00	03.07.00	03.07.00
Batch ID	PT018	PT018	PT018	PT018
Prep Method	1311/3010	1311/3010	1311/3010	1311/3010
Dilution Factor	1	1	1	1
Mercury (TCLP) (7470), mg/l	<0.00020	99 %	99 %	100 %
Analyst	JDE	JDE	JDE	JDE
Prep Date	03.07.00	03.07.00	03.07.00	03.07.00
Analysis Date	03.07.00	03.07.00	03.07.00	03.07.00
Batch ID	HGW033	HGW033	HGW033	HGW033
Prep Method	7470A	7470A	7470A	7470A
Dilution Factor	1	1	10	10

Lance Larson, Project Manager

Final Page Of Report

Committed to *Your* Success

Severn Trent Laboratories, Inc.
Pensacola, FL 32514
Tel: (850) 474-1001
Fax: (850) 478-2671

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic

J4	(For positive results) Temperature limits exceeded (≤2°C or ≥ 6°C)
J6	(For positive results) LCS or Surrogate %R is > upper control limit (UCL) or < lower control limit (LCL)
J7	The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J (description)	The analyte was positively identified, the quantitation is estimation
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C); non-reportable for NDPES compliance monitoring
R2	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NDPES compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4	Holding time exceeded, non-reportable for NDPES compliance monitoring.
R5	Collection requirements not met, improper container used for sample
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects
R7	Internal standard area outside –50% to +100% of initial calibration midpoint standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R (description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F	The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (assume the STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
F (description)	The analyte was positively identified but the associated numerical value is below the STL-Pensacola RL
U2	The reported value is ≤ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
+	Elevated reporting limit due to dilution into calibration range
#	Elevated reporting limit due to insufficient sample size
M	A matrix effect was present (sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, sample and/or MS/MSD chromatogram(s) had interfering peaks, or sample result was > 4 X spike added)
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
C	MS/MSD not performed on this order # (this client's sample was not the sample that was spiked)
N/C+	Not Calculable
N/C*	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
D	Diluted out
S	Incorrect sample amount was submitted to the laboratory for analysis
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
E	Compound concentration exceeds the upper calibration range of the instrument.
FracB	Sample results were corrected due to contaminants in Fractionation Blank (a certification statement is required to be submitted with the final report for MA EPH and NC-Modified MA EPH)
Normally used for Inorganics Only	
R9	Improper preservation, sample not filtered in the field, non-reportable for NDPES compliance monitoring
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
N/C	Sample and duplicate results are at or below the STL Reporting Limit; therefore, the RPD is "Not Calculable" and no control limits apply.
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
H	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
NH	Sample and/or duplicate result is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control". Sample is nonhomogeneous.
A	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
Z	The sample result for the spike is below the STL Reporting Limit. It is reported for accurate QC calculations.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
P	Analytical (post-digestion) spike
I	Duplicate Injection

SEVERN TRENT LABORATORIES, INC. - PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida)

New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewate and Hazardous Waster)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with Florida)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Tennessee Division of Underground Storage Tanks Approved Laboratory

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704

\word\certlist\condcert.lst revised 02/28/00

Pinnacle Laboratories, Inc. **Interlab Chain of Custody** Date: 2/25 Page: 1 of 1

Network Project Manager: Kimberly D. McNeill

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

PRODUCTION DUE DATE: 3-8-00

C002813

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL		TOX	TOC	Gen Chemistry		Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
002090-01	2/22	1200	NAQ	1		X																						

PROJECT INFORMATION

PROJECT #: 002090
PROJ. NAME: GKCB
QC LEVEL: (STD) IV
(QC REQUIRED) MS MSD BLANK
TAT: (STANDARD) RUSH!!

DUE DATE: 3/8
RUSH SURCHARGE: –
CLIENT DISCOUNT: –
SPECIAL CERTIFICATION REQUIRED: YES (NO)

COMMENTS:

SAMPLE RECEIPT

Total Number of Containers
Chain of Custody Seals
Received Intact?
Received Good Cond./Cold
LAB NUMBER:

SAMPLES SENT TO:

PENSACOLA - STL-FL X
PORTLAND - ESL-OR
STL - CT
STL - NEW JERSEY
N. CREEK
BARRINGER
SEQUOIA

RELINQUISHED BY: 1.
Signature: Francine Iorvio Time: 1700
Printed Name: Francine Iorvio Date: 2/28
Pinnacle Laboratories, Inc.

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company

RECEIVED BY: 1.
Signature: Linda L. Kitt Time: 1030
Printed Name: Linda L. Kitt Date: 2/29/00
Company STL/FL

RECEIVED BY: 2
Signature: Time:
Printed Name: Date:
Company

Seven Trent Laboratories Florida
PROJECT SAMPLE INSPECTION FORM

Lab Accession #: C002813 Date Received: 29-Feb-00

1.	Was there a Chain of Custody?	(Yes)	No*		8.	Were samples checked for preservative? *(Check pH of all H_2O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)**	Yes	No*	(N/A)
2.	Was Chain of Custody properly filled out and relinquished?	(Yes)	No*		9.	Is there sufficient volume for analysis requested?	(Yes)	No*	N/A (Can)
3.	Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055)	(Yes)	No*	N/A	10.	Were samples received within Holding Time? (REFER TO STL-SOP 1040)	(Yes)	No*	
4.	Were all samples properly labeled and identified?	(Yes)	No*		11.	Is Headspace visible > ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.	Yes*	No	(N/A)
5.	Did samples require splitting? Req By: PM Client Other*	Yes*	(No)		12.	If sent, were matrix spike bottles returned?	Yes	No*	(N/A)
6.	Were samples received in proper containers for analysis requested?	(Yes)	No*		13.	Was Project Manager notified of problems? (initials:_____)	Yes	No*	(N/A)
7.	Were all sample containers received intact?	(Yes)	No*						

Airbill Number(s): 1Z878168014359751 3 Shipped By: UPS

Cooler Number(s): Client Shipping Charges: N/A

Cooler Weight(s): N/A Cooler Temp(s) (°C): N/A

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: LLK Date: 29-Feb-00 Logged By: LLK Date: 29-Feb-00

\+ *Note all Out-of-Control and/or questionable events on Comment Section of this form.*

* *Note who requested the splitting of samples on the Comment Section of this form.*

\+ *All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).*

* *According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).*

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 2-23-00 PAGE: 1 OF 1

PLI Accession #: 002090

SHADED AREA FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER:

COMPANY: Giant - Bloomfield
ADDRESS: 50 Rd 4990
Bloomfield, Nm 87413
PHONE: 505-632-4168
FAX: 505-632-4024

BILL TO: Same as Above
COMPANY: - Barry Holman -
ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.
F-403	2-22-00	12N	solid	-01

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GCMS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
																						X		2

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: F-403
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS	2
CUSTODY SEALS	Y/N/N
RECEIVED INTACT	Y
BLUE ICE/ICE	RT

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

The bags are the same Sample. Treat them as one sample Please. Thanks

RELINQUISHED BY: 1.
Signature: Cindy Hurtado Time: 2pm
Printed Name: Cindy Hurtado Date: 2-23-00
Company: Giant - Bloomfield
See reverse side (Force Majure)

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 1:30
Printed Name: Date: 2/24/00
Pinnacle Laboratories Inc.

GIANT
INDUSTRIES, INC.

111 Road 4990
Bloomfield, New Mexico 87413

505
632.8006

October 20, 1999

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

Re: Treated Process Wastewater Transfer Line

Dear Mr. Price:

Giant Refining Company – Bloomfield recently completed replacement of a portion of the treated process wastewater transfer line. This line transfers treated process wastewater from the refinery to the lined evaporation lagoons. A section of line that was originally constructed with 100 psi PVC line was replaced with 200 psi PVC to insure that there will be no future breaks in the line similar to those that were experienced in the past.

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

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company – Bloomfield

Cc: Denny Foust, NMOCD, Aztec
John Stokes, VP Refining

GIANT INDUSTRIES, INC.

SAN JUAN REGIONAL OFFICE
#111 ROAD 4990
BLOOMFIELD, NM 87413

PHONE - (505) 632-8006
FAX - (505) 632-4024

DATE: 10/20/99

TO: WAYNE PRICE, DENNY FOUST
NMOCD

FROM: LYNN SHELTON
GIANT REFINING

PAGE: 1 of 3

Giant Refining Company

Memo

To: Mr. Wayne Price, Oil Conservation Division

From: Lynn Shelton, Environmental Manager

CC: Denny Foust, Oil Conservation Division – Aztec Office

Date: 10/20/99

Re: Semi-Annual Sampling Event

Dear Mr. Price,

As outlined on page 92 of our Discharge Plan Application, we will sample fourteen monitor wells and three seep sampling points to measure the efficacy of natural attenuation at the Giant Bloomfield Refinery. The event is planned for October 22,1999.

The table below details the laboratory and field parameters for which we will sample. This list is slightly different from that on page 92 of the Discharge Plan Application because seep sampling points #2 and #3 are no longer accessible. We therefore, propose to sample Seep #1 and #4 instead.

Monitor Well number	Laboratory Parameters	Field Parameters
MW-1	BTEX and naphthalene (8260), nitrate	DO, conductance,
MW-3	BTEX and naphthalene, nitrate	DO, conductance,
MW-4	BTEX and naphthalene, nitrate	DO, conductance
MW-8	BTEX and naphthalene, nitrate, sulfate, methane	DO, conductance, iron
MW-9	BTEX and naphthalene, nitrate	DO, conductance
MW-11	BTEX and naphthalene, nitrate	DO, conductance, iron
MW-12	BTEX and naphthalene, nitrate	DO, conductance
MW-26	BTEX and naphthalene, nitrate	DO, conductance
MW-27	BTEX and naphthalene, nitrate	DO, conductance
MW-34	BTEX and naphthalene, nitrate, sulfate, methane	DO, conductance, iron

MW-35	BTEX and naphthalene, nitrate, sulfate, methane	DO, conductance, iron
MW-36	BTEX and naphthalene, nitrate	DO, conductance
RW-1	BTEX and naphthalene, nitrate	DO, conductance
RW-15	BTEX and naphthalene, nitrate	DO, conductance, iron
Seep #1	BTEX and naphthalene	
Seep #3	BTEX and naphthalene	
Seep #5	BTEX and naphthalene	

Please call me with any questions.

GIANT
REFINING COMPANY

October 12, 1999

Mr. Richard E. Powell
State of New Mexico Environment Department
Surface Water Quality Bureau
Harold Runnels Building
1190 St. Francis Drive, P. O. Box 26110
Santa Fe, New Mexico 87502

Dear Mr. Powell:

This is to acknowledge receipt of your report dated October 5, 1999 pertaining to your August 19, 1999 inspection of the Bloomfield Refinery. As discussed by Mr. Shelton of my staff and yourself, we will be meeting with you on Tuesday October 19, 1999 to review some misunderstandings in the report.

Specifically, the evaporation ponds discussed in the report are incorrectly identified as a part of the "main refinery waste water system". The main refinery waste water system consists of lined evaporation ponds and a wastewater injection well permitted by the NMOCD. None of the refinery waste water flows through the two ponds discussed in the inspection report.

Another item in need of clarification is the fact that storm water or product spills that occur as part of the product loading rack, located south of Sullivan Road, are collected for transfer to the refinery waste water treating system for disposal through our underground injection well.

Meeting with you next Tuesday will be myself, VP Refining Operations, Lynn Shelton, Environmental Manager Bloomfield Refinery, and David Pavlich, Environmental Superintendent Ciniza/Bloomfield Refineries. We look forward to discussing and, hopefully, resolving these issues with you next week.

Sincerely,

John Stokes
Vice President Refining Operations

Cc: USEPA, Dallas
USEPA, NPDES Permits Branch (6WQ-P)
Taylor Sharpe, USEPA (6EN-WT)
NMED, District I, Albuquerque
NMED, Farmington Field Office
NMOCD, Roger Anderson

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

AFFIDAVIT OF PUBLICATION

Ad No. 41810

STATE OF NEW MEXICO
County of San Juan:

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

Friday, October 1, 1999

and the cost of publication is:$86.80

Alethia Rothlisberger

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

Christine L Drew

My Commission Expires May 3, 2003.

COPY OF PUBLICATION

NOTICE OF PUBLICATION

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

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

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

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

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

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

APPROVED PAY TO PRICE
OCD 10/18/99 JP

AFFIDAVIT OF PUBLICATION

Ad No. 41763

STATE OF NEW MEXICO
County of San Juan:

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

Friday, September 24, 1999

and the cost of publication is:$96.60

Alethia Rothlisberger

On 9/30/99 ALETHIA ROTHLISBERGER appeared before me, whom I know personally to be the person who signed the above document.

Christine L Duran

My Commission Expires May 3, 2003.

COPY OF PUBLICATION

NOTICE OF PUBLICATION

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

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

(GW-049) : EL PASO NATURAL GAS Company, Mr. Richard Duarte, P.O. Box 1492, El Paso, Texas, 79978 has submitted a renewal application for the previously approved discharge plan for their BLANCO PLANT facility located in Section 14, Township 29 North, Range 11 West, San Juan County, near Bloomfield New Mexico. Approximately 120,000 gallons per day of process waste water with a total dissolved solids concentration of less than 600 mg/l is discharged to the City of Bloomfield public owned treatment works (POTW). Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 14 feet to 39 feet. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 16th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

SEAL

/s/ Roger Candelaria
LORI WROTENBERY, Director

Legal No. 41763, published in The Daily Times, Farmington, New Mexico, Friday, September 24, 1999.

NOTICE OF PUBLICATION

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

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

(GW-049) - EL PASO NATURAL GAS Company, Mr. Richard Duarte, P.O. Box 1492, El Paso, Texas, 79978 has submitted a renewal application for the previously approved discharge plan for their BLANCO PLANT facility located in Section 14, Township 29 North, Range 11 West, San Juan County, near Bloomfield New Mexico. Approximately 120,000 gallons per day of process waste water with a total dissolved solids concentration of less than 600 mg/l is discharged to the city of Bloomfield public owned treatment works (POTW). Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface varies in depth from 14 feet to 39 feet. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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

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

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

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 16th day of September 1999.

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION

LORI WROTENBERY,
DIRECTOR

Legal #66104
Pub. September 22, 1999

The Daily Times

P.O. Box 450 • 201 N. Allen Ave.
Farmington, New Mexico 87499
Telephone 505-564-4575 Fax 505-564-4580

19 10/6

CLASSIFIED AD INVOICE

THANK YOU FOR
YOUR BUSINESS!

STATE OF NM ENERGY,MINERALS &
NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO ST.
SANTA FE, NM 87505-5472

DATE OF INVOICE	SALES PERSON	CUSTOMER NUMBER	DUE DATE
10/01/99	Karla Matheny	d0102625	10/16/99

AD#	TEXT	CLASS	START	STOP	RUNS	AMOUNT	PREPAID	DUE
05502588	41810	999	10/01/99	10/01/99	1	86.80	0.00	86.80

RECEIVED
OCT - 8 1999
OIL CONSERVATION DIVISION

Approved ad & Price
OCD - 10/18/99 JL

PLEASE PAY FROM THIS INVOICE

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Return REMITTANCE COPY with payment.

PLEASE MAKE CHECKS PAYABLE TO:
The Daily Times
P.O. Box 450
Farmington, NM 87499

[illegible]

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

Christine R. Brown

My Commission Expires May 3, 2003.

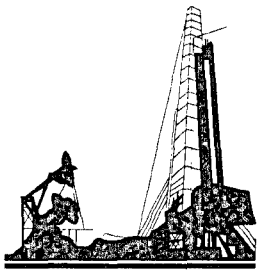
Petroleum Refinery located in the NW/4 NE/4 and the S/2 NE/4 and the N/2 NW/4 SW/4 and the SE/4 NW/4 SW/4 and the NE/4 SW/4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico. The renewal application consist of methods and procedures for handling products, waste, waste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

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

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

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, NM 87505
(505) 827-7133
Fax: (505) 827-8177



(PLEASE DELIVER THIS FAX)

To: LYNN SHELTON - GIANT

From: OCD

Date: 9/29/99

Number of Pages (Includes Cover Sheet) 2

Message: OK TO HAUL WASTE

PER WAYNE PRICE - OCD

If you have any trouble receiving this, please call:
(505) 827-7133

GIANT
INDUSTRIES, INC.
111 Road 4990
Bloomfield, New Mexico 87413
505
632.8006

C-138 OK BY _ OCD MARTYNE KIELING! 9/27/99

OK BY W Price - OCD file!

September 16, 1999

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

Re: Evaporation Pond Sludge
Giant Refining Company – Bloomfield GW-001

Dear Mr. Price:

Giant Refining Company – Bloomfield submitted a written request on August 18, 1999 for permission to apply evaporation pond sludge directly to the land surface in an area immediately south of the evaporation pond.

Giant hereby withdraws that request. Instead, the pond sludge will be processed through a centrifuge and the solids will be land applied at Giant Mid-Continent's permitted land farm. Analytical data documenting that the pond sludge is non-hazardous was submitted with the August 18 letter. Because the material is non-hazardous, contains no recoverable petroleum hydrocarbon and will be applied to a segregated cell of the land farm, Giant proposes that no additional sampling be required in the segregated cell in which the sludge is applied.

Included with this letter are the appropriate forms needed for approval of this land application.

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

Sincerely:

Lynn Shelton

Lynn Shelton
Environmental Manager
Giant Refining Company – Bloomfield

Enclosures

GIANT INDUSTRIES, INC.

111 Road 4990
Bloomfield, New Mexico 87413

505
632.8006

August 3, 1999

Mr. William Olson
NMOCD
2040 S. Pacheco St.
Santa Fe, New Mexico 87505

Re: RIVER TERRACE REMEDIATION
GIANT REFINING COMPANY – BLOOMFIELD

Dear Mr. Olson:

Giant Refining Company – Bloomfield submits the permeability data for the slurry wall that was installed on the river terrace immediately north of this facility. Additionally, a copy of the Particle Size Distribution Test Report is included for your information.

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

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company – Bloomfield

Enclosure

Cc: John Stokes, Vice President, Giant Refining Company
Denny Foust, NMOCD, Aztec

recon
Remedial Construction Services, Inc.

July 9, 1999

Mr. Lynn Shelton
Giant Refinery
#50 County Road 4990
Bloomfield, NM 87413

RE: Permeability Data

Dear Mr. Shelton;

Attached are the tests and the graphs to substantiate our claim that the backfill placed will have an permeability of less than 1x10-6. The sieve analysis shows that the fill contained approximately 75% passing the 200 sieve. The viscosity of the slurry was measured at 40 – 50 seconds with a marsh funnel. This viscosity of slurry contains 5% to 6% by weight bentonite. When 45 second slurry is blended with a backfill you will end up with approximately 1 to 1.5% bentonite by dry weight in the backfill.

You can then use the charts to show the range of permeabilities you can expect. Should you need any additional information or if you have any questions please contact me at 281-955-2442.

Respectfully Submitted;

Steven R. Birdwell
President

9720 Derrington Houston, TX 77064 281/955-2442 281/890-5172 Fax

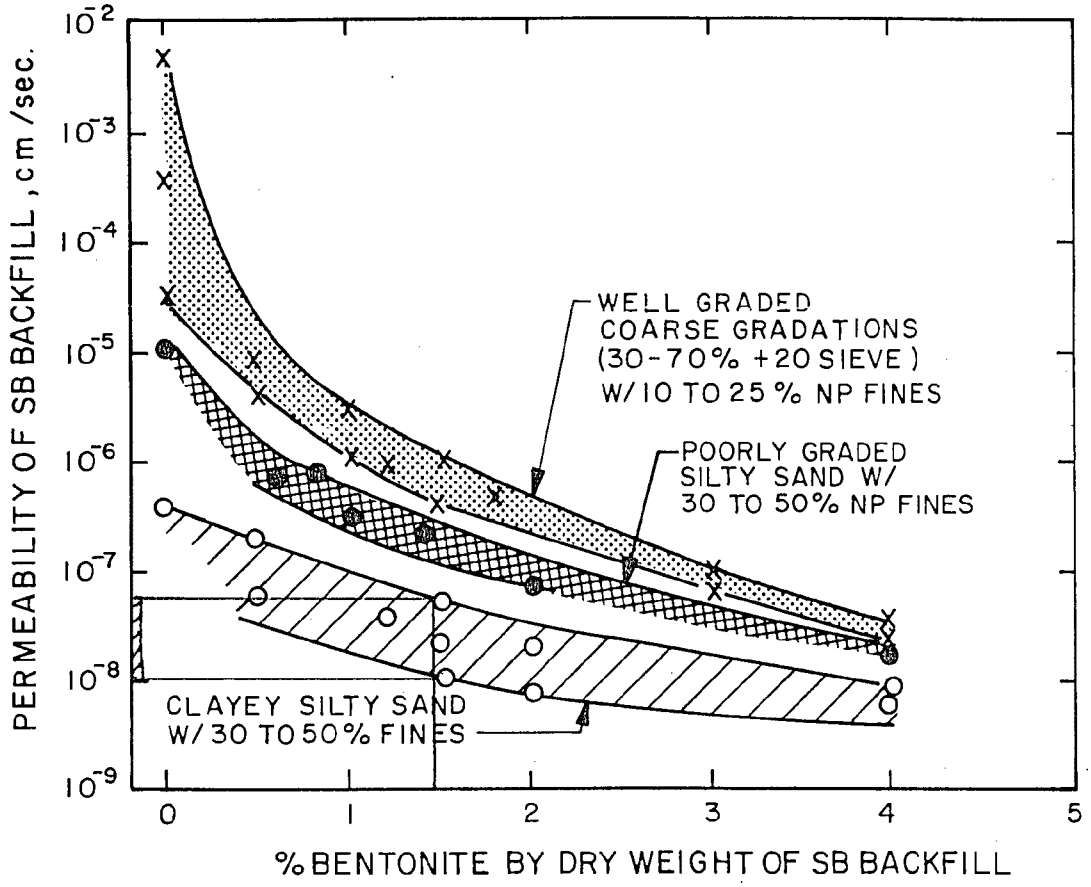


FIG. 11 RELATIONSHIP BETWEEN PERMEABILITY AND QUANTITY OF BENTONITE ADDED TO SB BACKFILL

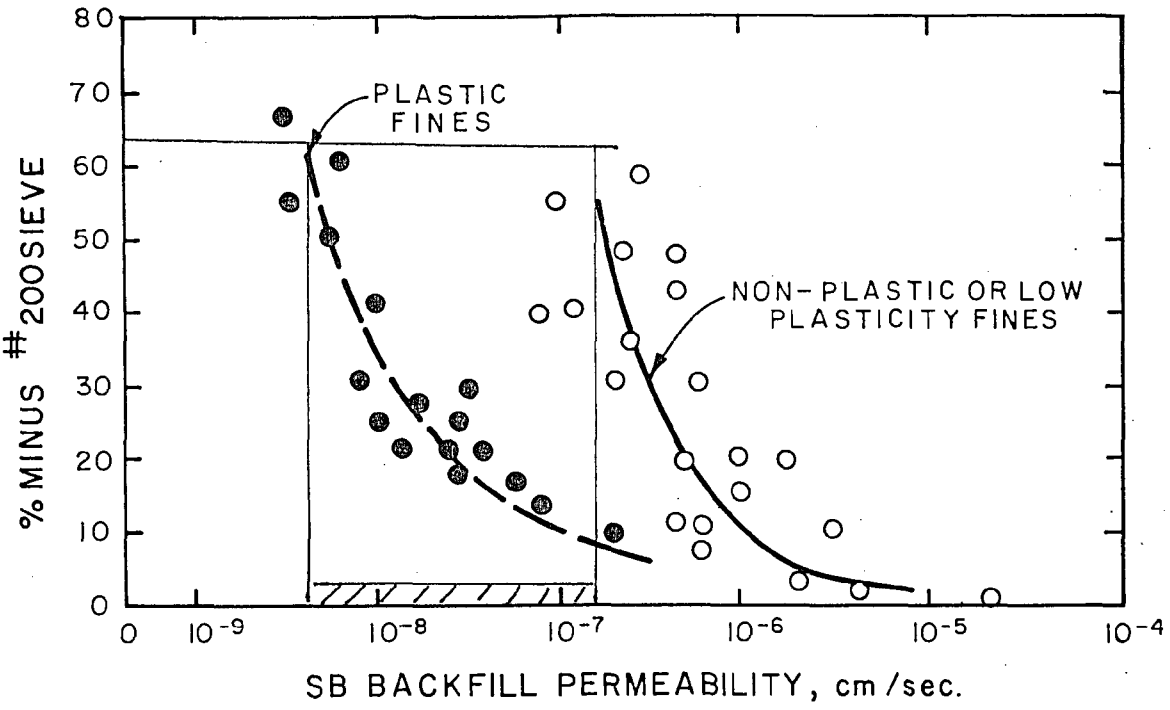
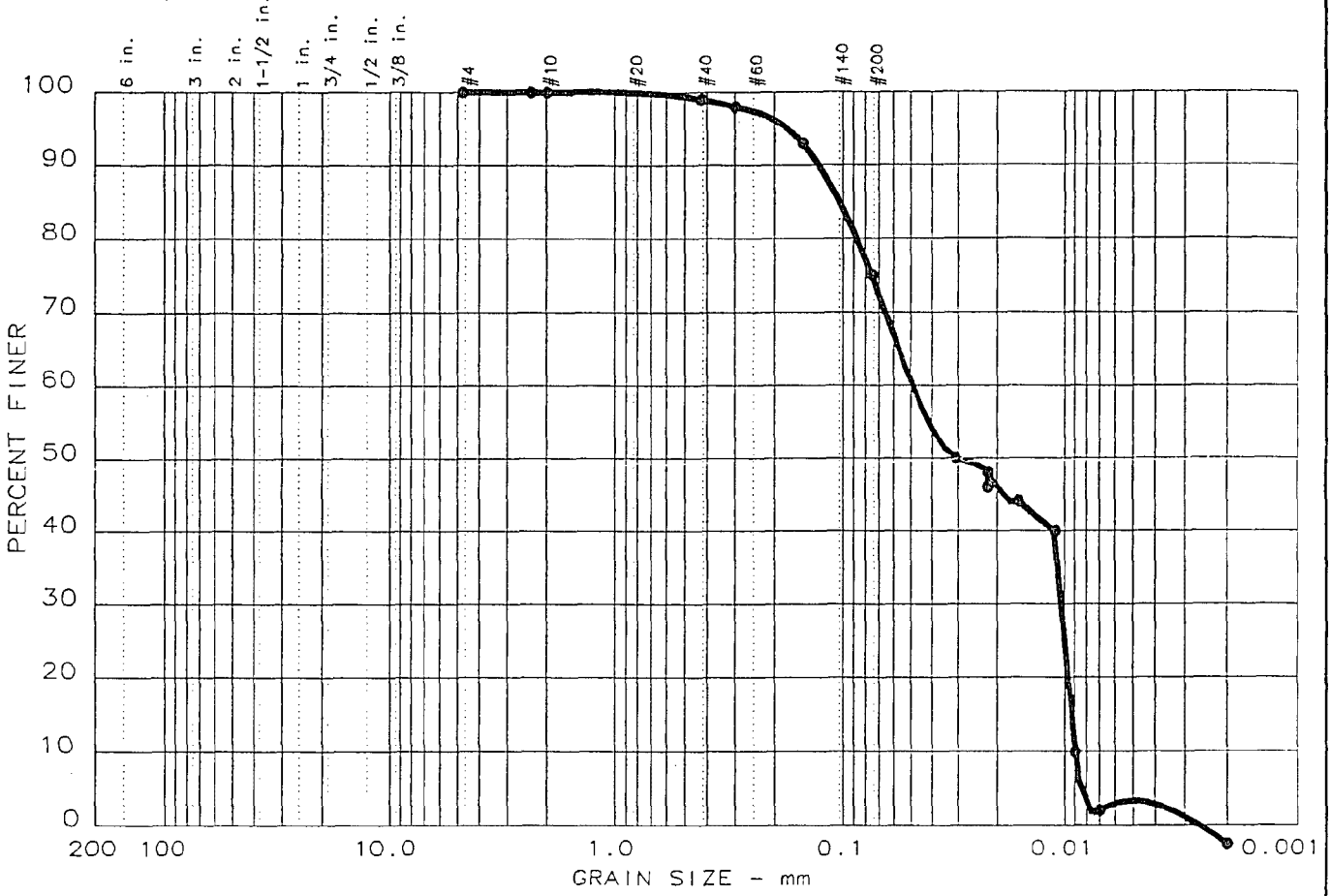


FIG. 12 PERMEABILITY OF SOIL–BENTONITE BACKFILL RELATED TO FINES CONTENT

PARTICLE SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	13	0.0	0.0	25.0	71.7	3.3	ML		

SIEVE inches size	PERCENT FINER ●		
	GRAIN SIZE		
D_{60} D_{30} D_{10}	0.01 0.00		
	COEFFICIENTS		
C_c C_u	0.24 5.4		

SIEVE number size	PERCENT FINER ●		
4	100.0		
8	100.0		
10	100.0		
40	99.0		
50	98.0		
100	93.0		
200	75.0		

Sample information:
● San Juan Concrete
Silt with Sand

Remarks:
Submitted by: RCSI

Basin Engineering Inc.

Project No.: 9924-01
Project: Giant Refining Pump Station

Date: 06/23/99 Data Sheet No. 01

RECEIVED
JUL 15 1999
Environmental Bureau
Oil Conservation Division

GIANT INDUSTRIES, INC.
111 Road 4990
Bloomfield, New Mexico 87413
505
632.8006

July 6, 1999

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: San Juan Refining Company, Bloomfield, New Mexico, Discharge Plan GW-1

Dear Mr. Price:

R.T. Hicks Consultants, Ltd. will hand-deliver our renewal application for Groundwater Discharge Permit number GW-1 on July 6, 1999. Our renewal application consists of two volumes:

Volume I	Discharge Plan Application, Waste and Wastewater Management
Volume II	Discharge Plan Application, Site Investigation and Abatement Plan

Hicks Consultants will deliver the Application in paper and electronic format. Due to the length of Volume II, NMOCD may find that information is more easily retrieved from the Adobe Acrobat file (text) or the Microsoft Excel files (tables and selected Plates).

We are confident that you will find Volume II is consistent with our earlier proposals. The environmental data developed over the past 15 years supports:

- continued removal of separate phase hydrocarbons from groundwater in the central Refinery area
- construction and maintenance of a hydraulic barrier between the San Juan River and the alluvial sediments due north of the Refinery
- monitored natural attenuation to address dissolved-phase hydrocarbons in groundwater

After we address your comments and questions regarding this Discharge Plan renewal application, we will submit a revised Corrective Measures Study (CMS) to the U.S. EPA. We will forward a copy of that document to NMOCD.

Sincerely,
Giant Refining Company

Lynn Shelton
Environmental Manager

cc: Mr. Warren Arthur, U.S. EPA, Dallas
Kim Bullerdick, Giant Industries
Ned Kendrick, Montgomery and Andrews
Randall Hicks, Hicks Consulting

July 5, 1999

Volume I:

Discharge Plan Application, Waste and Wastewater Management

GIANT BLOOMFIELD REFINERY

Prepared for:

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

R.T. HICKS CONSULTANTS, LTD.
4665 INDIAN SCHOOL NE, SUITE 106, ALBUQUERQUE, NM 87110

Ground Water Discharge Permit Application
Volume I

July 6 1999

Giant Refining Company – Bloomfield, NM

Contact:
John Stokes, Refinery Manager
Lynn Shelton, Environmental Manager
Chad King, Operations Manager

Prepared for:
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413
Office: (505) 632-8013
Fax: (505) 632-3911

R.T. HICKS CONSULTANTS, LTD.
4665 INDIAN SCHOOL NE, SUITE 106, ALBUQUERQUE, NM 87110

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Appendix B: Laboratory Chemical Inventory
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San Juan Pipeline Spill Response Guide
Spill Prevention Control and Countermeasures (SPCC) Plan
Response Plan (Oil Pollution Act of 1990 and Clean Water Act)
Storm Water Pollution Prevention Plan (SWPPP)
OSHA Process Safety Management (PSM) plan

TABLE 1: Chemical Inventory
TABLE 2: Water Balance of Wastewater
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PLATE 1: Location of Bloomfield, New Mexico
PLATE 2: Refinery Site
PLATE 3: Land Ownership around the Refinery
PLATE 4: Site Plan
PLATE 5: Wastewater Flow Diagram

ITEM 1
Type of Operation

The Giant Refining Company-Bloomfield facility is a petroleum refinery.

ITEM 2
Name of Operation or Legally Responsible Party and Local Representative

Giant Refining Company, P.O. Box 159, Bloomfield, NM 87413

John Stokes, Refinery Manager	(505) 632-8013
Lynn Shelton, Environmental Manager	(505) 632-8013
Chad King, Operations Manager	(505) 632-8013

ITEM 3
Location of the Discharge Plan Facility

Bloomfield, New Mexico is a town of 3000 residents located in the Four Corners Region of northern New Mexico (Plate 1). The Giant Refining Company (GRC) – Bloomfield Refinery is located at #50 County Road 4990 (Sullivan Road), immediately south of Bloomfield in San Juan County (Plate 2). The site is located on a bluff approximately 100 feet above the south side of the San Juan River, a perennial river that flows to the west. On the bluff and between the river and the process area of the facility is the Hammond Ditch, a man-made channel for irrigation water supply that borders all but the southern portion of the site. Plate 2 shows the approximate property boundaries. Bordering the facility is a combination of federal and private properties (Plate 3). The topography of site is generally flat with low-lying areas to the east of the process area (Plate 2).

The legal description of the site is 286.93 acres, more or less, being that portion of the NW ¼ NE ¼ and the S ½ NE ¼ and the N ½ NW ¼ SW ¼ and the SE ¼ NW ¼ SW ¼ and the NE ¼ SW ¼ of Section 26, Township 29 North, Range 11 West, San Juan County, New Mexico.

ITEM 4
Landowners

Giant Refining Company owns the facility site.

ITEM 5
Facility Description

Giant Refining Company – Bloomfield is a petroleum refinery with a nominal crude capacity of 18,000 barrels per calendar day. Processing units include crude desalting, crude distillation, catalytic hydrotreating, catalytic reforming, fluidized catalytic cracking (FCC), catalytic polymerization (cat/poly), diesel hydrodesulfurization (HDS), gas concentration and treating, and sulfur recovery (SRU). For a history of refinery improvements and modifications, see Appendix A. Crude supplies arrive by pipeline and tank trucks. GRC

operates a loading terminal where refined products are loaded into tank trucks. Plate 4 shows the site plan.

ITEM 6
Materials stored or used at the facility: type of container, estimated volume and location.

Table 1 contains the Giant Refinery Chemical Inventory. It lists all chemicals stored at the Refinery, estimated storage volume, storage container and location.

ITEMS 7
Sources and Quantities of Effluent and Waste Solids Generated at the Facility
A. Types of Effluent, Estimated Quantities, Types and Volumes of Additives

Wastewater sources from the process and other areas are commingled at an API separator. These sources, with quality, quantity, and additive information, are:

1. Separators, Scrubbers, and Slug Catchers
The refining process units generate a wastewater stream to the API separator of 45,240 GPD with an estimated total dissolved solids (TDS) of 873 mg/l. The crude desalter generates the majority of this wastewater (30,240 GPD). Steam and other vapor losses to the atmosphere from these process units total 194,400 GPD. See Plate 5 for a flow diagram of the Refinery's wastewater stream. Table 2 also presents this water balance.

The SRU uses several proprietary chemicals, primarily iron chelates and sulfur conditioning agents in aqueous solutions, as the active ingredients required to remove sulfur from the refinery fuel and diesel HDS gases. (See Table 1 for stored volumes.) A belt filter press recovers these chemicals from the produced sulfur and recycles them back to the SRU process.

Curbed concrete slabs equipped with drains route storm water runoff and wash water from the process area to the API separator. GRC estimates storm water runoff from the process units to equal 2,300 GPD and wash water to equal 9,240 GPD.

The oily water sewer piping system is welded construction of standard weight A53 grade B carbon steel coated with 50 mil protective tape. Collection headers are 14", 12", and 10" diameters. Collection branches are 8", 6", and 4" diameters equipped with "P" traps at drain inlets. The pipe wall thickness varies up to 3/8" for 14" pipe. The "P" trap drains route stormwater to the API separator. In addition, area drains are located in critical peripheral areas outside the curbed process slabs to collect and direct all oily wastewater to the API separator.

The sewer boxes are constructed with reinforced concrete with sealed covers and vents. The entire oily/water sewer collection system empties to the API separator. See Part C below for chemistry of the API separator stream.

2. Boilers, Waste Heat Recovery Units, Cogeneration Facilities, and Cooling Towers/Fans.
The boilers generate approximately 91,080 GPD of steam from softened water and some recycled condensate. The blowdown, 21,600 GPD with a TDS of 2,042 mg/l, flows to the API separator.

The water softening unit treats filtered, raw water for feed to the boilers. It handles approximately 104,040 GPD of filtered water with a TDS content of 240 mg/l. GRC adds approximately 600 pounds per day of sodium chloride for softening. The softeners require periodic regeneration resulting in a 5,760 GPD discharge of a high salt (10,445 mg/l TDS) brine to the API separator. Softened water, 98,200 GPD with a TDS of 340 mg/l, flows to the boilers.

GRC uses 18 quarts per day of the Nalco product, Transport Plus 7200, to inhibit scale formation in the boilers. This product is an aqueous solution of an acrylamide/acrylate polymer and carboxylate. Four quarts per day of Nalco's Eliminox O_2 Scavenger, an aqueous solution of aminos and carbohydrazides, minimizes acid formation from excess oxygen. The Nalco product, Tri-Act 1802 Corrosion Inhibitor, an aqueous solution of amines, is added (seven quarts per day) to the steam system as a corrosion inhibitor and neutralizer of carbolic acid. Table 1 details the storage of these additives.

Approximately 236,160 GPD of filtered water with a TDS of 240 mg/l flow to the two cooling towers. The blow down volume from the cooling towers is approximately 41,760 GPD of water with a TDS of 2,290 mg/l. GRC estimates that 194,400 GPD are lost through evaporation. The wastewater from the cooling towers flows to the API separator.

The cooling towers receive four quarts per day of the Nalco product, 71-D5+ Antifoam, a blend of fatty acids, polyglycols, polyglycol ester, and oxyalkylate in kerosene and mineral oil, as a defoamer. They use three quarts per day of Nalco's 7344 Chlorine Stabilizer, an aqueous solution of sodium hydroxide, sulfamate, carboxylate, and polyglycol as a biological dispersant. Six gallons per day of Nalco's 7356 Corrosion Inhibitor, an aqueous solution of phosphoric acid and zinc chloride, inhibit the formation of scale and corrosion in the cooling system. The Nalco product, 8302 Dispersant, an aqueous solution of a substituted carboxylate, a substituted triazole, an acrylate polymer, and sodium hydroxide, is used (four gallons per day) as a dispersant to keep calcium phosphate scale from forming. GRC feeds 37 pounds per day of gaseous chloride to the cooling towers as a biocide. Sulfuric acid is added (eight gallons per day) for pH control. Again, Table 1 details the storage of these chemicals.

3. Wash down/Steam out effluent from process and storage equipment internals and externals.
Concrete slabs with drains routed to the API separator or to a product recovery tank capture washdown and any spills from the truck loading area. GRC periodically cleans truck compartments with steam or by rinsing with product. The hydrocarbons are recovered in the API separator and the effluent is routed through the API into the wastewater treatment and disposal system.

4.Solvent/degreaser use
Item 4 lists the solvents used at the refinery. All solvents are consumed; therefore they do not contribute to the wastewater at the refinery.

5. Spent acids or caustics
An annual volume of 1000 tons of spent caustic flows to the API separator. When possible, GRC sends some spent caustic to a Stone Container Company pulp plant located in northern Snowflake, Arizona for use in their process.

The Refinery generates no acid.

6. Used engine coolants (i.e. antifreeze)
Mesa Environmental of Albuquerque, New Mexico collects the 27 gallons of antifreeze used by the refinery each year. A 55 gallon drum located on a curbed concrete pad in the warehouse yard receives the used antifreeze.

7. Used lubrication and motor oils
A small tank located on a curbed concrete pad collects the waste lubrication, motor, and hydraulic oils for subsequent offsite disposal. Mesa Environmental of Albuquerque, New Mexico trucks the approximate 500 gallons per year of used oil for disposal.

8. Used process filters
A dumpster located on concrete near the bundle cleaning pad collects approximately 12 cubic yards per year of dry process filters. Waste Management of Four Corners, Inc. disposes of these as a special waste at the regional landfill in Bloomfield, New Mexico.

9. Solids and sludges from tanks (provide description of materials)
Tank cleaning occurs on a 5-10 yr rotating schedule. GRC's maintenance crew maintains a record of the tank cleaning schedule that is available on request. Solids are collected in rolloffs and disposed off-site by one of two contracting companies. Either Duratherm, Inc. or Eltrex, Inc., both located in Houston, Texas, collects the sludge for disposal.

Heat exchanger cleaning generates approximately one ton of sludge per year. GRC hires a contractor to wash the heat exchanger bundles. Heat exchanger cleaning takes place on an average cycle of one every four years in a concrete bay located at the east end of the auxiliary warehouse. The contractors use non-hazardous materials such as steam, water, and bio-degradable soap or chemicals compatible with the refining processes. A portable sump collects the sludges and liquids. A vacuum truck removes the liquids and empties them into the API separator.

No crude tank sludge was generated in 1998. Therefore, estimating the volume of crude tank sludge that will be generated in the future is difficult. GRC will hire a contractor to collect and dispose of crude tank sludge.

10. Painting wastes
Romic Inc. of Chandler, Arizona collects and disposes of the empty solvent-based and lead-based paint cans. The amount of partially empty paint cans is less than one 55 gallon drum per year.

11. Sewage
Domestic sewage is disposed, via septic tanks and leach fields, in accordance with New Mexico Environment Department regulations. It is not commingled with other refinery effluent. Three septic tank systems exist on the site; one located under the control room has been operating for 30 years; the other two systems, located under the refinery offices, are less than three years old.

12. Laboratory wastes
All laboratory wastes drain to the API separator. Appendix B contains the laboratory's chemical inventory.

13. Other waste liquids
The refinery generates no other waste liquids exept groundwater. Volume II of the Discharge Plan contains the Groundwater Abatement Plan.

14 Other waste solids
Sulfur, FCC fines, spent catalyst and trash are the other waste solids generated at the Refinery. The hydrodesulfurization unit (HDS) produces 180 tons per year of solid sulfur. GRC sells some of this to local farmers for use as a soil conditioner; the remainder goes to an onsite landfill located in the northeastern corner of the property. GRC periodically covers the landfill with soil.

The fluidized catalytic cracking unit generates 50 tons per year of fine-grained particles or fines. GRC deposits approximately one ton per week in the onsite landfill and covers the deposits with soil.

Akzo Chemical Company of Houston, Texas collects the spent FCC catalyst, approximately 100 tons per year, for off-site disposal. American Catalyst Company of Houma, Louisiana collects the spent hydrotreating catalyst, 21,500 lbs from the HDS reactor, 4175 lbs from the Reformer. A fertilizer company in Soda Springs, Idaho buys the 120,000 lbs. of spent silicon catalyst used each year in the catalytic polymerization unit.

Waste Management of Four Corners, Inc. collects an average of 3 dumpsters full of solid waste per week for offsite disposal.

B. Quality Characteristics
TDS, Major Cations, Hydrocarbon Analysis, Toxics, Types of Samples, and Sources of Variability
Section C below presents the chemistry of the waste stream from the oily water ponds and from the evaporation ponds. We assumed that the chemistry of all other effluent sources listed above was typical for each type of waste.

C. Commingled Waste Streams

GRC combines the waste streams discussed above and feeds them to the API separator. RCRA classifies the API separator effluent as hazardous waste because of benzene concentrations. The API separator effluent flows to the oily water ponds for biological treatment. The oily water ponds aerate the waste stream until benzene concentrations have been reduced to levels no longer regulated by RCRA (less than 500 ppb). From the oily water treatment ponds, the wastewater stream flows to two double-lined 5-acre evaporation ponds. From the evaporation ponds, the wastewater flows to its final disposal site, a Class 1 underground injection well. The injection well follows specific operational requirements separate from this discharge plan.

Inter-Mountain Laboratories, Inc. of Farmington, NM conducted all chemical analyses of waste streams. Appendix C contains copies of chemical analyses. Table 3 presents the BTEX analysis of the influent and effluent from the oily water ponds. Table 4 presents the hazardous characterization of effluent from the oily water ponds. Table 5 shows the chemistry of effluent from the north double-lined evaporation pond. Table 6 lists the dissolved metal concentrations in effluent from the north double-lined evaporation pond.

ITEM 8

Collection/Storage/Disposal Procedures

A. Tank Storage

Plate 4 identifies the tanks. Tanks 1 through 45 are above-ground, unpressurized steel tanks. Tanks B1-B23 are pressurized bullet tanks. Table 7 lists the tank contents and their volumes. Tank dikes designed to contain at least one third of the tank volume in the event of a spill protect all tanks. Any spilled material will be recovered by vacuum truck, or pumped to the API separator or directly to a process tank.

Storm water that collects inside the tank dikes flows to sumps underneath the tanks in the tank farm. GRC monitors the sumps daily and empties them to the API separator by vacuum truck or direct pumping as needed.

The refinery does not have any underground storage tanks. In addition to the tanks identified in Table 7, GRC maintains an unleaded gasoline tank (2,500 gallons) in the warehouse yard protected with a concrete slab and retaining walls and a 300-barrel diesel tank located just west of the auxiliary warehouse protected with a berm. Two small vessels for sulfuric acid storage are located on curbed concrete at each of the cooling towers. These are labeled V501 and V511. Vessels V705, V706, V707, located on curbed concrete at the terminal store product additives.

A few day-tanks, needed periodically for in-plant equipment operations such as the diesel pump, are stored on a curbed, concrete pad when not in use.

B. Underground Piping

1. Process Piping

Underground process piping that contains refinery crude, products, and intermediates has been minimized and is generally limited to the incoming crude pipeline. Appendix D contains the San Juan Pipeline Spill Response Guide. In addition to the incoming crude pipeline, GRC uses approximately 100 feet of buried crude charge piping in the crude unit. GRC employs some underground piping for tank dike crossings and road crossings. The major road crossing is from the refinery to the truck loading terminal. Table 8 lists the installation dates of all underground pipes at the facility.

2. Process Water System Piping

Underground piping for process-related water and wastewater do not contact oil streams. These underground pipes transport some filtered water, steam, some cooling tower water, and blowdowns from the boilers and the cooling towers. GRC replaced the main cooling water pipes in 1993.

C. Chemical Storage

Chemical and drum storage areas are paved and curbed with any drainage contained on the pads or directed to refinery sewers as appropriate. Additional information about chemical storage is available in Table 1.

D. Oily Water Treatment Ponds (RCRA Regulated)

Immediately downstream of the API are lined ponds identified as the south oily water pond (SOWP), and two sections of the north oily water pond (NOWP-W and NOWP-E). An earthen dike separates the SOWP from NOWP-W and NOWP-E; a concrete wall separates the NOWP-W from the NOWP-E. All three of the ponds are constructed primarily below grade.

In 1994, GRC upgraded the ponds to comply with the RCRA mandated minimum technology requirements. The existing liner system, consisting of a 100-mil high density polyethylene (HDPE) flexible membrane liner (FML) underlain by a leak detection system and a 33% bentonite-amended soil liner, remained in place. GRC added two additional HDPE FMLs over the existing liner and two additional leak detection layers for a total of one primary and two secondary leak detection layers in the retrofitted impoundments.

D. Evaporation Ponds

Treated wastewater is pumped to one of two, double-lined evaporation ponds installed in accordance with the "Guidelines for the Design and Construction of Lined Evaporation Pits" as published by the New Mexico Oil Conservation Division (NMOCD). Each of these ponds has a 5-acre surface area and a 25 acre-foot capacity. They are equipped with two 60-mil HDPE FMLs and a leak detection system. The first was installed in December 1989, and the second was installed in September 1990. The ponds will each provide 12.5 gpm net evaporation per year in addition to storage prior to injection. GRC pumps treated wastewater

first to the south pond, then to the north pond, then pump from the north pond to the injection well.

E. Injection Well

GRC constructed a Class 1 injection well in 1995 according to NMOCD regulations. The well demonstrated the ablility to handle the quantity of wastewater that requires disposal (at least 55 gpm on an annual basis) and operates under Permit Number GW-130. The well is located 2442 feet from the south line and 1250 feet the east line of Section 27, Township 29N, Range 11W, NMPM San Juan County, New Mexico. The final, nonhazardous wastewater stream is injected into portions of the Cliff House and upper Menefee formations (3276 to 3514 feet deep).

ITEM 9

Proposed Modifications

GRC proposes no modifications to the refinery at this time.

ITEM 10

Inspection, Maintenance, and Reporting

A. Notification of Fire, Breaks, Spills, Leaks, & Blowouts

GRC will follow the procedures of Rule 116 in the NMOCD Regulations in reporting fires, breaks, spills, leaks, and blowouts within the facility. Major events require immediate notification to the District OCD Supervisor and a follow up report due within ten days of the event. Major events include breaks, spills or leaks of 25 or more barrels of crude, intermediates, petroleum products, salt water, effluent wastewater, acids, caustics, solvents, or other chemicals. Minor events of five barrels or more but less than 25 barrels of the above materials will be reported within ten days of the incident.

B. Pond Liner Leak Detection Systems

GRC inspects the leak detection systems for the two evaporation ponds on a weekly basis and maintains records of the inspections at the refinery. Any leaks in excess of expected rates will be reported to the NMOCD.

GRC inspects the leak detection systems for the RCRA regulated treatment ponds daily and maintains these records at the refinery.

C. Groundwater Remedial Action

The refinery is actively abating the shallow, perched groundwater underlying the facility. Volume II of the Discharge Plan contains the groundwater monitoring and recovery information in the form of a Groundwater Abatement Plan.

D. Tank Berms

All tanks are protected by tank dikes that will contain the contents of the tank in the event of a spill. Any spilled material will be recovered by vacuum truck, or pumped to the API separator or directly to a process tank.

E. Process Inspection

GRC operations personnel inspect process piping daily for visual evidence of leaks. The Cat/Poly and the HDS units are inspected by an outside contractor for VOC emission compliance. Drains are inspected weekly for proper water seals and condition. GRC maintains records of these inspections at the refinery.

F. Tank Inspections

A tank inspection program is utilized to ensure the integrity of the tanks. GRC periodically empties, inspects and repairs all storage tanks. The inspection includes vacuum testing of the floor weld seams. GRC maintains records of tank emptying and testing at the refinery.

G. Corrosion Protection

An electrical corrosion protection system, designed to minimize corrosion of tank bottoms and underground piping, has been in service since May, 1989. GRC checks the system periodically to verify its proper operation.

ITEM 11
Spill/Leak Prevention and Reporting Procedures (Contigency Plans)
Giant Refinery's Spill Prevention Control and Countermeasures plan appears in Appendix D.

As a petroleum refining facility, GRC handles large amounts of potentially hazardous crude, product intermediates, hydrocarbon products, gases, and other chemicals. Because of the hazard potential, particularly from fire, the facility has extensive safety training and well-defined procedures for routine jobs and emergencies. Written safety procedures include an Emergency Plan, Safe Work Permits, Eye Protection, Electrical Lock-outs, Safety Hats, Opening and Isolating Equipment, Smoking Areas, Fire and Safety Permits, Firewatches, Respiratory Equipment, Entering Vessels and Other Confined Spaces, Inspection and Maintenace of Safety Equipment, Employee Injury or Illness Procedure, and Excavation Procedures. These documents are available at the facility for review.

Appendix D contains a copy of the Response Plan (Oil Pollution Act of 1990 and Clean Water Act) for spills that might affect waterways, Appendix D contains the Storm Water Pollution Prevention Plan (SWPPP), and Appendix D shows the OSHA Process Safety Management (PSM) plan.

ITEM 12

Site Characteristics

See the Groundwater Abatement Plan and the Final Site Investigation in Volume II of the Discharge Plan.

ITEM 13

Other Compliance Information

A closure plan is not necessary at this time. GRC does not plan to close the Refinery during the time period of this Discharge Plan, and the Refinery will likely continue operating for many years into the future. During that time, GRC may modify its refining process. New unit operations may be added, others eliminated. A detailed closure plan will be submitted when such a document becomes relevant and meaningful. However, when GRC plans to close an individual unit operation, such as the raw water ponds, GRC will submit to NMOCD a detailed closure plan for that unit at least 120 days prior to the anticipated closure date.

Upon approval of the Groundwater Abatement Plan, GRC will submit a closure plan for the existing monitor wells.

TABLES

Table 1: Giant Refining Company - Bloomfield Chemical Inventory

OCD Item 6 Categories: A = Process Specific, B = Acids/Caustics, C = Detergents, Soaps, D = Solvents, Inhibitors, Degreasers, E = Paraffin Treatment, Emulsion Breakers
F = Biocides, G = Other

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt Stored	UOM	Storage Type and Location	Comments
Acetylene	G	Acetylene	100	1	CYL	Warehouse Maintenance Weld Shack	
Antifreeze/Coolant	G	Ethylene Glycol Water	60 40	2	Drum	Warehouse Yard	
Argon	A	Argon	100	2	CYL	Warehouse	
Betz 2W157	A	Proprietary Blend Aromatic Solvent Light Aromatic Solvent HVY Aromatic Solvent N-Butyl Alcohol Octyl Alcohol	100	127	Gal	521 Gal Portafeeds Boilerhouse 1	Desalting Compound.
Betz 5K7	A	Proprietary Blend HVY Aromatic Naphtha	100	159	Gal	521 Gal. Portafeeds Boilerhouse 1	Preflash & Crude Column Filmer
Betz 8Q31 pour depressant	A	Hvy Aromatic Distillate Aromatic Solvent Ethyl Benzene Xylene Trimethyl Benzene Cumene Vinyl Acetate Monomer	45 20 10 10 5 5 1	436	GAL	3000 Gallon tank near PCPT./LD HS.	Pour point additive. Winter additive for diesel.
GRC Base Gas - Natural Gasoline	A	Complex Mixture of HCs Benzene Toluene Xylene (Mixed) Ethylbenzene	100 3.68 1.45 0.15 0.18	20,310	Bbl	Tankfarm TK 23 40,000 bbl	Light Straight Run is from Crude Unit: 391,827 bbl. Natural is unloaded to Base Gas: 182,211 bbl
GRC Burner Fuel, #6 Fuel Oil, Slurry	A	High Boiling HCs	100	3504	Bbl	Tankfarm TK 27 10,000 bbl	

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
GRC Butane	A	Mixture of C4 HCs	100	1805	Bbl	Tankfarm PV B13 500 bbl B14 500 bbl B20 714 bbl B21 714 bbl	Blended: 129,927 bbls
GRC Caustic Dilute	A	Sodium Hydroxide Water	14 86	15,000	Gal	Treater 2 Tks 15000 Gal ea. SRU 1 Tk 200 gal	One tank is split into two compartments. When spent goes to tank 10.
Caustic soda solution 50%	A	Sodium Hydroxide Water	50 50	48,204	LBS	Treater 11,000 Gal tank	Used in merox treating. After dilution goes to dilute tanks, see GRC caustic dilute.
Crude Oil, Crude Feed	A	Complex Mixture of HCs Benzene Hydrogen Sulfide Toluene Xylene (Mixed) Ethyl Benzene	100 0.50 0.82 1.09 0.25	195177	Bbl	Tankfarm Tk 31 110,000 Tk 28 80,000 Tk 8 500 Tk 9 500	Feed to Crude Unit.
GRC Diesel	A	Complex HC Mixture Crude Unit FCCU Unit	100 78 22	23661	Bbl	Tankfarm Tk 19 36,000 Bbl Tk 29 17,000 Bbl	Also in Diesel Tank at Terminals: 300 Bbls. Crude = 1,331,453 Bbls LCO = 366,857 Bbls
GRC FCC Heavy Cycle Oil	A	Complex Mixture of HCs Polynuclear Aromatics	100 5	0	Bbl	FCCU Only	Recycle Only. See FCC Products.
FCCU Fines from Precipitators	A	Aluminum Oxide Copper Nickel Vanadium Lead Silicon Oxide Other	40 0.02 0.08 0.05 0.01 50 9.85	2000	Lbs	Landfill, East End of Facility	Fines from Electrostatic Precipitator. Landfilled since 10/82. Precipitator is 99.8% effecient, so est. amt. emitted from stack in 1995 = 211 lbs. Est. amt. landfilled thru 12/95 = 1059 tons Catalyst in inventory and process = 100 tons Alumina landfilled in 1995 = 42000 lbs. Non-hazardous by TCLP.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
GRC High Octane Premium Unleaded Gasoline	A	Complex mixture of HCs.	100	0	Bbl	Tankfarm Tank 36 55,000 BBL Tank 32 20,000 BBL	Blended at loading rack in truck compartments. Volume included with other products.
GRC High Octane Regular Gasoline	A	complex mixtue of HC'S	100	0	BBL	Tankfarm Tank 35 55,000 BBL	Blended at loading rack in truck compartments. Volume included with other products.
GRC High Octane Unleaded Gasoline	A	complex mixture of HC's	100	0	BBL	Tankfarm Tank 30 17,000 BBL	Blended at loading rack in truck compartments. Volume included with other products.
Dow CA-100, Additive	A	Proprietary additive Water	45 55	550	GAL	Portafeed-1 550 gals. SRU chm. bldg.	
GRC Hi-Reformate	A	Complex mixture of HC's Benzene Ethyl Benzene Toluene Xylene (mixed) 1, 2, 4 Trimethyl Benzene	100 65.60 2.98 21.10 18.89 4.41	4835	BBL	Tankfarm Tank 5 1000 BBL	Blended at loading rack to make 97 octane product.
GRC Hydrogen	A	Hydrogen	100	426	LBS	Pres. Tanks north of Reformer	Max capacity est. at 100,000 FT^3 at 188 FT^3/Lb. Normally produced. New purchased for startup. Rarely used. Backup supply for reformer startup.
GRC Jet A	A	Mixed Hydrocarbons	100	4000	BBL	Tankfarm Tank 26 4000 BBL	Jet A, #1 diesel, & kerosene are the same. See kerosene.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
GRC JP8 Jet Fuel	A	Heavy Naphtha Light Naphtha Kerosene Benzene Ethyl Benzene Toluene Xylene (mixed)	87.5 1.1 11.4 2.33 0.93 2.8 5.02	737	BBL	Tankfarm Tanks 3 & 4 10,000 BBL ea	
GRC Kerosene, #1 Diesel	A	Mixed Hydrocarbons	100	341	BBL	Tankfarm Tank 18 55,000 bbls Tank 26 4000 bbls	
GRC Light Cycle oil	A	Complex mixture of HC's Polynuclear aromatics	100	0	BBL	Tank 29 17,000 BBL	Volume included in #2 diesel, Tank 29.
GRC Light Straight Run	A	Light straight run Benzene	100	0	BBL	Tank 23 40,000 BBL	Volume included in base gas, Tank 23.
GRC Natural Gasoline	A	Complex mixture of HC's	100	0	BBL	Tankfarm Press vessel B12 692 bbl Tank 23 4000 bbl	Volume included in Base Gas.
GRC oxy Premium unleaded gasoline	A	Premium gasoline Ethanol MTBE	90 10	0	BBL	Tank 36 55,000 BBL	Volume included in other products. ETOH or MTBE blended as trucks are loaded.
Dow CA-2102, Sulfur cond. agent	A	Proprietary ingredients	100	550	GAL	Portafeed-1 550 gals. SRU chm. bldg.	
GRC oxy unleaded gasoline	A	Unleaded gasoline Ethanol MTBE	90 10	0	BBL	Tanks 13 & 14 30,000 BBL ea	Ethanol or MTBE blended as trucks are loaded.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
GRC Poly feed	A	Mixture of mistly C3 & C4 Propane Propane Butane Butane	100	1532	BBL	Tankfarm Press vessel B17, B18, B19 714 BBL each	
GRC Poly Gasoline	A	complex mixture of HC's	100	0	BBL	Tankfarm Tank 12 55,000 bbl	Volume included in Poly/Cat gasoline
GRC Poly/Cat gasoline	A	Naphtha, Hvy cat crked Naphtha, polymn Ethyl Benzene Toluene Xylene (mixed) 1, 2, 4 trimethyl benzene Benzene	83 17 0.68 2.20 4 1.43 0.70	31377	BBL	Tankfarm Tank 12 55,000 bbl	BRC intermediate from FCCU & cat/poly units. Cat gas = 1,239,240 bbls, poly gas = 223,957 bb Blended into gasoline products.
GRC premium unleaded gasoline	A	Complex mixture of HC's Benzene Ethyl Benzene Toluene Xylene (Mixed) 1, 2, 4 Trimethyl benzene	100 5.12 2.3 10.8 13.5 2.64	8500	BBL	Tankfarm Tank 32 20,000 bbl	
GRC Propane	A	Mixture of mostly C3's	100	714	BBL	Tankfarm Press Vessel B15 714 BBl B16 714 BBl	Amount sold, other included with fuel gas.
GRC reduced crude, cat feed	A	Complex mixture of HC's	100	16104	BBL	Tankfarm Tank 17 40,000 bbl Tank 20 5,000 bbl Tank 21 3,000 bbl	Feed to Fcc unit, includes Fcc slop.
Dow CA-299, Sulfur cond. agent	A	Glycol Ether Ethanol Surfactants	10.5 0.1	550	GAL	Portafeed-1 550 gals. SRU chm. bldg.	

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Safety-Kleen Solvent	D	Petroleum Naphtha Additive Dyes	99.997 0.30	86	LBS	Shop	Disposed off-site by Safety-Kleen.
Terrestic 32	G	Lubricating Oil	100	2	DRM	Air Blr-1	
Texaco Gasoline Additive	G	Polymericamine, Lt Naphtha Petroleum Distillates Xylene Benzene Toluene Eyhyl Benzene Hexanol/Alkenylsuccinimid	30 20 8 0.5 2 2 10	1000	GAL	2000 Gal bulk tank at Terminals	Volume included with produts.
United catalyst C84-3-01	A	Carbon Silicon Pyrophosphate & Silicon Orthophosphate Silicon Dioxide	11 75 5	8000	LBS	In Reactor Poly Unit or bags to be loaded.	Cat/Poly unit. Spent catalyst sent to fertilizer plant for reuse/reprocessing. Two reactors hold 40000 lbs each.
Unocal ATF dexron (R) II	A	Petroleum Hydrocarbon	100	4	DRM	Warehouse-2 Reformer-1 Instr. Air -1 Cat/poly-1	
WD-40	G	Lubricating Oil	100	24	CAN	12 oz. cans Warehouse Shops Process	Also keep 3, 1-gal cans in Warehouse.
Zeplon, Zep	G	1, 1, 1-Trichloroethane 1, 1, 2-Trichloro-1,2,2-Trifluoroethane	75 5	8	CAN	20 oz. cans Terminals	Used for dry lubrication of product meter register.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Chevron TPM 15W40 diesel engine oil	G	Motor Oil Heavy Para. Distillates Hvy. dewax para distls zn alkyl dilthiophosphate	100 75 25 1.5	25	GAL	Warehouse 5 gal. pail 1 gal. Bottles	Disposed Offsite by Central Oil Recyclers, Farmington, NM
Chlorine	A	Chlorine	100	3000	LBS	CT-1 2000# each 22- 150 lb cyl CT-2 2 ea 1 TN cyl	Cooling tower treatment. Warehouse also may keep two 150 lb cylinders.
Conoco gasoline add. An-421	G	Trade secret Hvy aromatic naphtha Xylene (mixed) Ethyl Benzene Benzene	50 20 35 2.50 0.04	1000	Gal	2000 Gallon Bulk tank terminals.	Volume included with products.
Criterion catalyst 444/544	A	Aluminum oxide Molybdenum Trioxide Cobalt oxide	89.8 8 2.2	612	LBS	Reformer	Spent catalyst disposed by reclamation. Reactor holds 1.75 drums.
Carbon Dioxide	A	Carbon dioxide	100	4	CYL	Warehouse	
Helium	A	Helium	100	2	CYL	Warehouse Lab	
Hydrogen	A	Hydrogen	100	2	CYL	Warehouse Lab	
Nitrogen	A	Nitrogen	100	60	CYL	Warehouse Plantwide	
Oxygen	G	Oxygen	100	2	CYL	Warehouse Units Weld shack	

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt Stored	UOM	Storage Type and Location	Comments
Dow IC-110, Iron Chelate mixture	A	Proprietary chelants Sodium Nitrate Ammonium Nitriate Sodium Glycolate Water	26 16 1 1 56	1800	GAL	2500 Gal Tank SRU chm. bldg.	SRU Chm. bldg.
Dow IC-210, Gas cond. chelant	A	Proprietary chelants Sodium Hydroxide Sodium Glycolate Deionized water	41 1 2 56	1500	GAL	2500 Gal tank SRU chm. bldg.	SRU Chm. bldg.
Du Pont Antioxidant No. 22	A	N, N' Di-sec. Butlyl-P- Phenylene Diamine	100	1	DRM	Warehouse-1 Cat/Poly-1	Poly unit additive.
Du Pont Stadis 425	A	Kerosene Toluene Benzene Aromatic Solvents Dodecyl Benz Sulf Acid Trade secrets	70 20 0.02 7.00 8.00 15	1	DRM	ESP-1 Warehouse-1	Diesel additive.
Ethanol, 200 proof	A	Ethyl Alcohol Nautural Gasoline	95 5	533	BBL	Tank 45 at Terminals of 2000 bbls.	Gasoline oxygenator. Blended directly into trucks while loading. See MTBE.
Ethyl Hitec 4963	A	Proprietary mixture Naphthalene Xylene 2-Ethyl-1-Hexanol Trimethylbenzene Mineral Oil	100	5000	GAL	10,000 BBL Tank Terminals	GRC gasoline additive.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt Stored	UOM	Storage Type and Location	Comments
Dow IC-110, Iron Chelate mixture	A	Proprietary chelants Sodium Nitrate Ammonium Nitriate Sodium Glycolate Water	26 16 1 1 56	1800	GAL	2500 Gal Tank SRU chm. bldg.	SRU Chm. bldg.
Dow IC-210, Gas cond. chelant	A	Proprietary chelants Sodium Hydroxide Sodium Glycolate Deionized water	41 1 2 56	1500	GAL	2500 Gal tank SRU chm. bldg.	SRU Chm. bldg.
Du Pont Antioxidant No. 22	A	N, N' Di-sec. Butlyl-P- Phenylene Diamine	100	1	DRM	Warehouse-1 Cat/Poly-1	Poly unit additive.
Du Pont Stadis 425	A	Kerosene Toluene Benzene Aromatic Solvents Dodecyl Benz Sulf Acid Trade secrets	70 20 0.02 7.00 8.00 15	1	DRM	ESP-1 Warehouse-1	Diesel additive.
Ethanol, 200 proof	A	Ethyl Alcohol Nautural Gasoline	95 5	533	BBL	Tank 45 at Terminals of 2000 bbls.	Gasoline oxygenator. Blended directly into trucks while loading. See MTBE.
Ethyl Hitec 4963	A	Proprietary mixture Naphthalene Xylene 2-Ethyl-1-Hexanol Trimethylbenzene Mineral Oil	100	5000	GAL	10,000 BBL Tank Terminals	GRC gasoline additive.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Intercat Cop 550 Promoter	A	Aluminum Oxide Noble Metal	99.91 0.09	300	LBS	Warehouse-4 bkts Conrolt room-1 bkt	Comes in 50 lb buckets with 25 each 2lb bags/buckets
John Deere Hydraulic Oil	G	Hydraulic Oil	100	10	GAL	Warehouse	For backhoe.
Marvel Mystery oil	G	Solvents	30	3	GAL	Toolroom Warehouse	Used in toolroom for oiling equipment
Merox WS Reagent	A	Cobalt Compound Water	28 72	4	GAL	1 Gallon bottles Warehouse-4 Bottles	
Methyl Alcohol	A	Methanol	100	2	DRM	Warehouse, FCCU, Reformer, Terminals	Most used as injection into FCCU. Used for Anti-FCCU, refrm, icing at Terminals.
Monosodium Phosphate	A	Monosodium Phosphate	100	500	LBS	50 lb sacks in Warehouse	Used in poly unit to adjust the pH of wash water.
MTBE	G	Methyl Tert. Butyl Ether	100	688	BBL	Tank 44 Terminals 2000 bbls	Blended directly into gasoline while loading.

Giant Refining Company - [illegible]mfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Nalco 7356 Corrosion Inhibitor	D	Phosphoric Acid Zinc Chloride	10 5	435	GAL	200 Gal. Portafeeds 1 at ea. CT	
Nalco 71-D5+ Antifoam	D	Kerosene Mineral Oil Fatty Acids Polyglycols Poly Ester Oxyalkylate Distillates	20	633	GAL	400 GAL Portafeeds 1 at ea. CT Warehouse-1	
Nalco Eliminox 02 Scavenger	D	Amino compound Water Carbohydrate		552	GAL	400 gal Portafeed at Boilerhouse 200 gal Portafeed at Warehouse	
Nalco Transport Plus 7200	D	Acrylamide Polymer Acrylate Polymer Carboxylate Water		615	GAL	400 Gal. Portafeeds Boilerhs-1 Warehouse-1	Boiler feed water and waste gas boiler One 55 gal. drum in warehouse for emergency.
Nalco Tri-Act 1802 Corrosion	D	Ethoxylated Amine	5	725	GAL	400 Gal.	
Inhibitor		Methoxypropylamine Ethanolamine	20 20			Portafeed Boilerhs-1	
		Cyclohexylamine	20			Fcc Boiler-1	Steam system additive. BH1802
		Water	35			Warehouse-1	& FG 1802. Keep one 55 gal drum in warehouse for emergency.
Nalcolyte 8157 Coagulate	D	Polymine		2	GAL	Warehouse-1	Used in filtered water.
		Water				River pump	Deleted drums 7/95. Now in Portafeed.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Neutra Rust 661 paint	a	Water Isopropyl Alchohol Additives Butyl Ethoxel Vinyl Copolymer Latex	30 8 2 2	2	GAL	Toolroom	
Octel Oil Red B Liquid Dye	A	Xylene Ethyl Benzene Benzene AZO Alkyl Aniline O-Toluidine	35 6.70 0.04 58 0.03 0.03	400	LBS	250 Gal. tanks Warehouse-1 300 Gal tank at Terminal	Premium unleaded gasoline dye. Delivered in 250 gallons returnable portafeeds that are loaded into the 300 gal bulk tank at Terminals.
Pennzoil motor Oil	G	Hydrocarbon Lubricant	100	2	DRM	Warehouse	
Perchloroethylene	A	1, 1, 1-Trichloroethane	95	2	DRM	Warehouse-2 Reformer-1	Used to chloride the reformer catalyst but is carefully controlled with isolated concrete paving and curbing; no possibility of its entering the sewer system.
Phillips ASTM Reference Fuel-80 Octane	A	N-Heptane Isooctane	20 80	1	DRM	Warehouse-1 Knock-1	Used for knock tests.
Phillips Isooctane Ref. Fuel	A	Isooctane	100	1	DRM	Knock-1 Warehouse-1	Used for knock tests.
Phillips Reference Fuel, Toluene	A	Toluene Benzene	99.9 0.1	5	GAL	5 gal can lab - 1	Used for knock tests.

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Phillips Reference Fuel-N-Heptane	A	N-Heptane	100	40	GAL	5 gal can lab - 1	Used in lab for gasoline knock testing.
Phillips Scentinel A	G	Ethyl Mercaptan	100	40	GAL	200 Gal Tank. Terminals	Odorant for Product.
Shell gasoline add. Nap 96	G	Chemical Mix. secret Xylene Toluene Benzene Hvy Aromatic naphtha 1, 2, 4 - Trimethyl Benzene	100 40 30 1.5 5 5	700	GAL	2000 Gal tank at Terminals	Injected directly into products.
1 SS Concentrate soap RW-160 soap	C	Terpene Ethoxylate Ethoxylate		3		Warehouse-1 Process-1	In 55 gal drum
Stoddard solvent	D	Stoddard solvent Xylene	100 1	2	DRM	Trans-2 Warehouse-2	After use put back in crude.
Sulfuric Acid	B	Sulfuric Acid	100	8051	LBS	CT-1 500 Gal 15.28 Lbs/gal. CT-2 500 Gal. RQ & TPQ: 1000 lbs. tanks	

Giant Refining Company - Bloomfield
Chemical Inventory

Chemical Description

MSDS Trade Name	OCD Item 6 Category	Ingredients	Percent	Daily Avg Amt	UOM	Storage Type and Location	Comments
Safety-Kleen Solvent	D	Petroleum Naphtha Additive Dyes	99.997 0.30	86	LBS	Shop	Disposed off-site by Safety-Kleen.
Terrestic 32	G	Lubricating Oil	100	2	DRM	Air Blr-1	
Texaco Gasoline Additive	G	Polymericamine, Lt Naphtha Petroleum Distillates Xylene Benzene Toluene Eyhyl Benzene Hexanol/Alkenylsuccinimid	30 20 8 0.5 2 2 10	1000	GAL	2000 Gal bulk tank at Terminals	Volume included with produts.
United catalyst C84-3-01	A	Carbon Silicon Pyrophosphate & Silicon Orthophosphate Silicon Dioxide	11 75 5	8000	LBS	In Reactor Poly Unit or bags to be loaded.	Cat/Poly unit. Spent catalyst sent to fertilizer plant for reuse/reprocessing. Two reactors hold 40000 lbs each.
Unocal ATF dexron (R) II	A	Petroleum Hydrocarbon	100	4	DRM	Warehouse-2 Reformer-1 Instr. Air -1 Cat/poly-1	
WD-40	G	Lubricating Oil	100	24	CAN	12 oz. cans Warehouse Shops Process	Also keep 3, 1-gal cans in Warehouse.
Zeplon, Zep	G	1, 1, 1-Trichloroethane 1, 1, 2-Trichloro-1,2,2-Trifluoroethane	75 5	8	CAN	20 oz. cans Terminals	Used for dry lubrication of product meter register.

Table 2: Water balance of wastewater at the refinery.

Process Unit	Volume of wastewater (GPD)
Crude Desalter	30,240
Boiler Blowdown	21,600
Cooling Tower Blowdown	41,760
Softeners	5,760
Wash Water	9,420
Storm Water	2,300
Ground Water	7,200
API Separator Effluent	118,100

Table 3: Comparison of Influent and Effluent from the oily water treatment ponds. Values shown are a typical analysis of a grab sample. Note: API Separator effluent flows directly to the oily water treatment ponds.

	Concentration in API Separator Effluent (ppm)	Concentration in Oily Water Pond Effluent (ppm)
Benzene	9	0.0003
Toluene	14	<0.0002
Ethyl Benzene	1	<0.0002
Xylene	5	0.01

Table 4: Chemistry of effluent from the oily water treatment ponds: Values shown are average values of grab samples. Toxicity Characteristic Leaching Procedure (TCLP) results. Note: ND = not detected at stated detection limit.

Variable	NMWQCC Limit (mg/L)	Detection Limit (mg/L)	Results (mg/L)
Arsenic	0.1	0.1	ND
Barium	1.0	0.5	0.5
Cadmium	0.01	0.005	ND
Chromium	0.05	0.01	0.01
Lead	0.05	0.2	ND
Mercury	0.002	0.001	ND
Selenium	10.0	0.1	ND
Silver	0.05	0.01	ND
1,1-Dichloroethene	0.005	0.02	ND
1,2-Dichloroethane	0.01	0.02	ND
1,4-Dichlorobenzene	7.5	0.02	ND
2-Butanone	200	0.1	ND
2,4-Dinitrotoluene	0.13	0.02	ND
2,4,5-Trichlorophenol	400	0.02	ND
2,4,6-Trichlorophenol	2.0	0.02	ND
Benzene	0.01	0.02	ND
Carbon Tetrachloride	0.5	0.02	ND
Chlorobenzene	100	0.02	ND
Chloroform	0.1	0.02	ND
Hexachlorobenzene	0.13	0.02	ND
Hexachloroethane	3.0	0.02	ND
Hexachloro-1,3-butadiene	0.5	0.02	ND
Nitrobenzene	2.0	0.02	ND
m,p-Cresol	200	0.02	ND
o-Cresol	200	0.02	ND
Pentachlorophenol	100	0.02	ND
Pyridine	5.0	0.2	ND
1,1,2,2-Tetrachloroethylene	0.02	0.02	ND
1,1,2-Trichloroethylene	0.1	0.02	ND
Vinyl Chloride	0.001	0.02	ND

Table 5. Chemistry of effluent from the north double-lined evaporation pond. Values shown are a typical analysis.

Variable	Detection Limit (mg/L)	Result (mg/l)
Ammonia		7.13
Chloride		5,890
Fluoride		1.38
Nitrate, Nitrite	0.02	ND
Phenols	0.01	ND
Sulfate		1,740
Sulfide as H_2S		30.5
Total cyanide	0.01	ND
Total Dissolved Solids		13,600
Total Kjeldahl Nitrogen		0.13
Total Suspended Solids		26

Table 6. Dissolved metals in effluent from the north double-lined evaporation pond. Values shown are the results of a typical analysis.

Metal	Detection Limit (mg/L)	Result (mg/L)
Aluminum	0.1	0.1
Arsenic	0.005	ND
Barium	0.5	ND
Boron	0.01	1.61
Cadmium	0.002	ND
Chromium	0.02	0.05
Cobalt	0.01	ND
Copper	0.01	0.16
Iron	0.05	0.05
Lead	0.02	ND
Manganese	0.02	0.28
Molybdenum	0.02	0.02
Nickel	0.01	0.01
Selenium	0.005	0.005
Silver	0.01	ND

Table 7: Tank Contents and Volumes

Tank No.	Date Installed	Material Stored	Capacity (bbl)	Diameter (ft)	Vapor Space (ft)	Turnovers per yr
1	1/60	Filtered water	1,500	21	-	-
2	1/78	Filtered water	67,000	100	-	-
3	9/66	JP-4 sales	10,000	41	21	25
4	9/66	JP-4 sales	10,000	41	21	25
5	9/66	Hi Reformate	10,000	41	20	22
8	12/87	Crude slop	500	12	12.5	42
9	12/87	Crude slop	500	12	12.5	42
11	12/82	Low Reformate	55,000	100	20	22
12	12/82	Cat/Poly gas	55,000	100	20	32
13	9/87	Unleaded sales	30,303	67	24	25
14	9/87	Unleaded sales	30,097	67	24	25
17	2/61	Cat feed	40,000	84	20	57
18	1/74	#1 Diesel sales	55,000	100	20	2
19	1/75	#2 Diesel sales	36,000	81	20	34
20	1/76	FCC slop	5,000	38	12	1
21	1/76	Refinery slop	3,000	30	12	1
22	1/80	Sales Rack slop	1,500	30	6	1
23	1/62	Base gasoline	40,000	85	20	20
24		Naphtha	10,000	54		
25		Naphtha	10,000	54		
26	12/67	Jet A sales	4,000	34	12	9
27	1/67	Heavy Burner Fuel Sales	10,000	42	20	13
28	4/69	Crude	80,000	110	24	35
29	1/74	#2 diesel sales	17,000	64	17	34
30	174	Premium blend	17,000	64	17	29
31	8/77	Crude	110,000	140	20	35
32	4/88	Premium unleaded	20,000	60	20	20
35		Unleaded	55,000	100	20	27
36		Gasoline blend	55,000	100	20	20
37		Isomerate	10,000	42	0	37
41	1/79	Crude	700	20	6	17
42	1/79	Crude	700	20	6	17
43	1/79	Water/crude	600	20	5	8
44		Ethanol	2,000	25	12	6
45		MTBE	5,000	35	0	37
B-12	1/60	Natural Gas	692		N/A	
B-13	1/60	Butane	500	5	N/A	
B-14	1/60	Butane	500	5	N/A	
B-15	1/60	Propane	714	7.14	N/A	

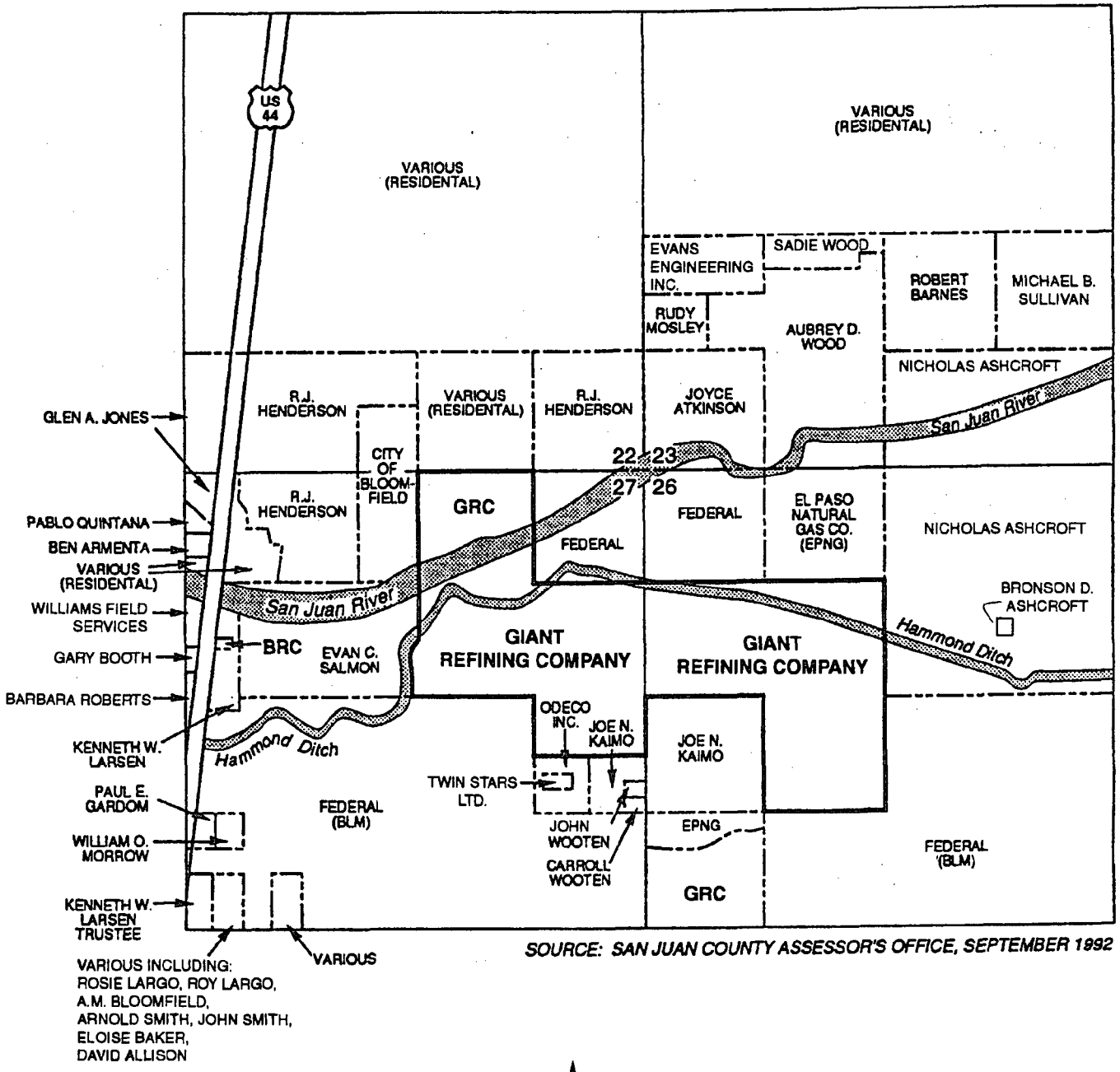
B-16	1/78	Propane	714	7.14	N/A	
B-17	1/78	Poly feed	714	7.14	N/A	
B-18	1/78	Poly feed	714	7.14	N/A	
B-19	1/78	Poly feed	714	7.14	N/A	
B-20	1/78	Butane	714	7.14	N/A	
B-21	10/83	Butane	714	7.14	N/A	
B-22	4/88	Saturate LPG	714	7.14	N/A	
B-23	4/88	Saturate LPG	714	7.14	N/A	

Table 8: Installation Dates of Underground Pipes

Description	Date Installed
Sewers	
FCC, Gas Con and Treater	6/78
Cat/Poly	4/88
Crude	11/88
Reformer	11/88
HDS, SRU	12/93
Road Crossing to Sales Rack	
Initial Installation	6/78
JP-4	9/87
Cat/Poly Tank 32	4/88
Jet A	2/89
Naphtha Sales	1/75
Miscellaneous	
Crude Unloading Road Crossing to Tank 28	1/77
At Sales Terminals	1/78
Crude Line to Pipe Rack (100 feet)	4/89
Groundwater Recovery	9/88
Sour Water Transfer Lines	6/78
Transfer Lines to Spray Evaporation	6/82
Crude Line (LACT Unit to Pipe Rack)	1/78
Poly Gas Transfer (Cat Poly to Rack Road Crossing)	4/88
JP-4 Sales (Cat/Poly to Rack Road Crossing)	4/88
API Tank Transfer (Cat/Poly to Rack Road Crossing)	4/88
Poly LPG Make (Cat Poly to Rack Road Crossing)	4/88
Poly Gas Slop (Cat Poly to Rack Road Crossing)	4/88
Poly Feed Line (Cat Poly to Rack Road Crossing)	4/88
Slop Transfer Line (Cat Poly to Rack Road Crossing)	4/88
Tank 17 Burner Fuel Sales	1/78
Gas Oil Receiving	1/78
Diesel (To/from HDS to Rack Road Crossing)	12/93

PLATES

T29N R11W, SEC. 22, 23, 26 & 27



Note:
Locations of property boundaries, improvements, and natural features are approximate.

Legend

- Property Boundary Line
- Section Line

R.T. HICKS CONSULTANTS, LTD.
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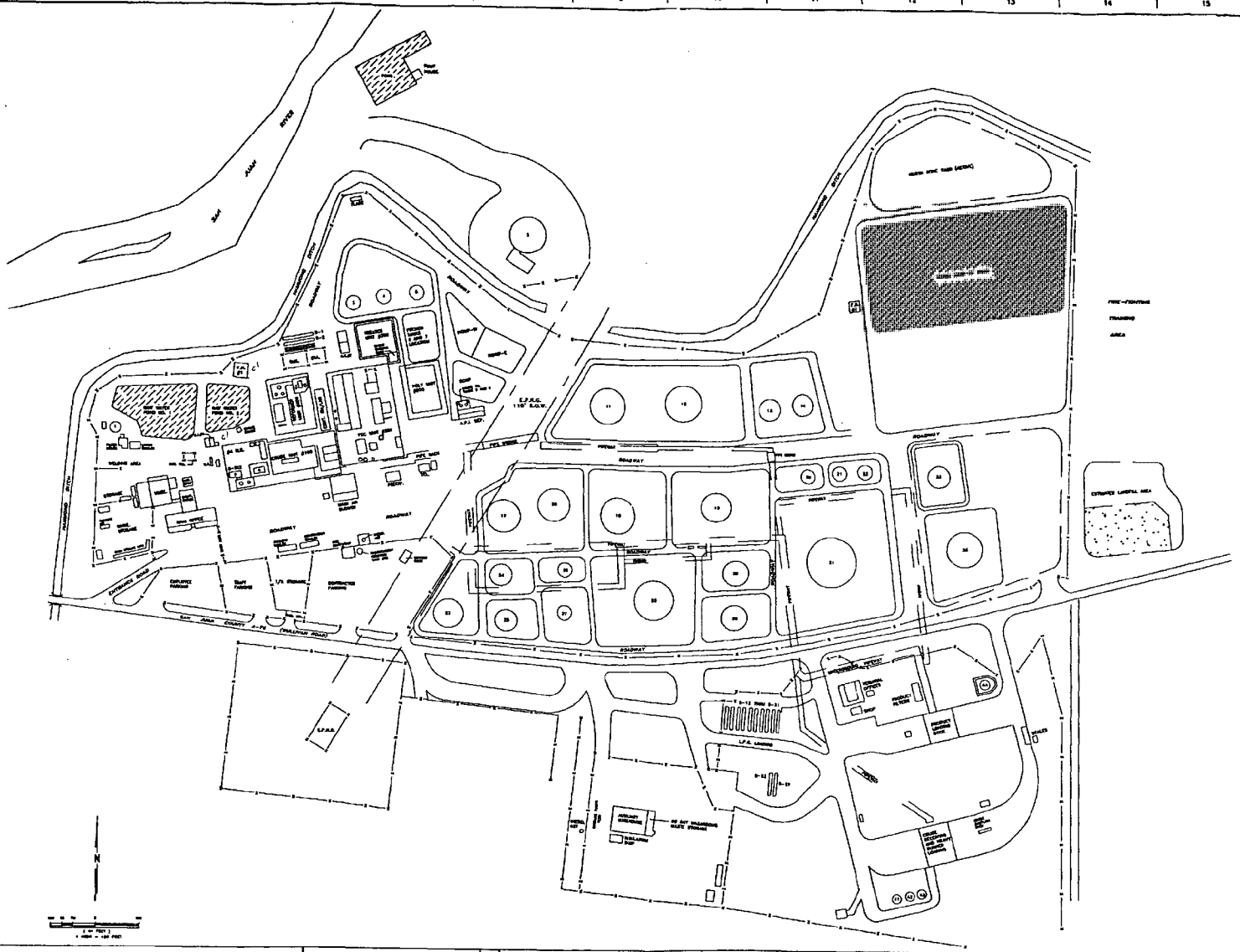
Bloomfield Refinery	Plate 3
Land Ownership Around Refinery	May 1999



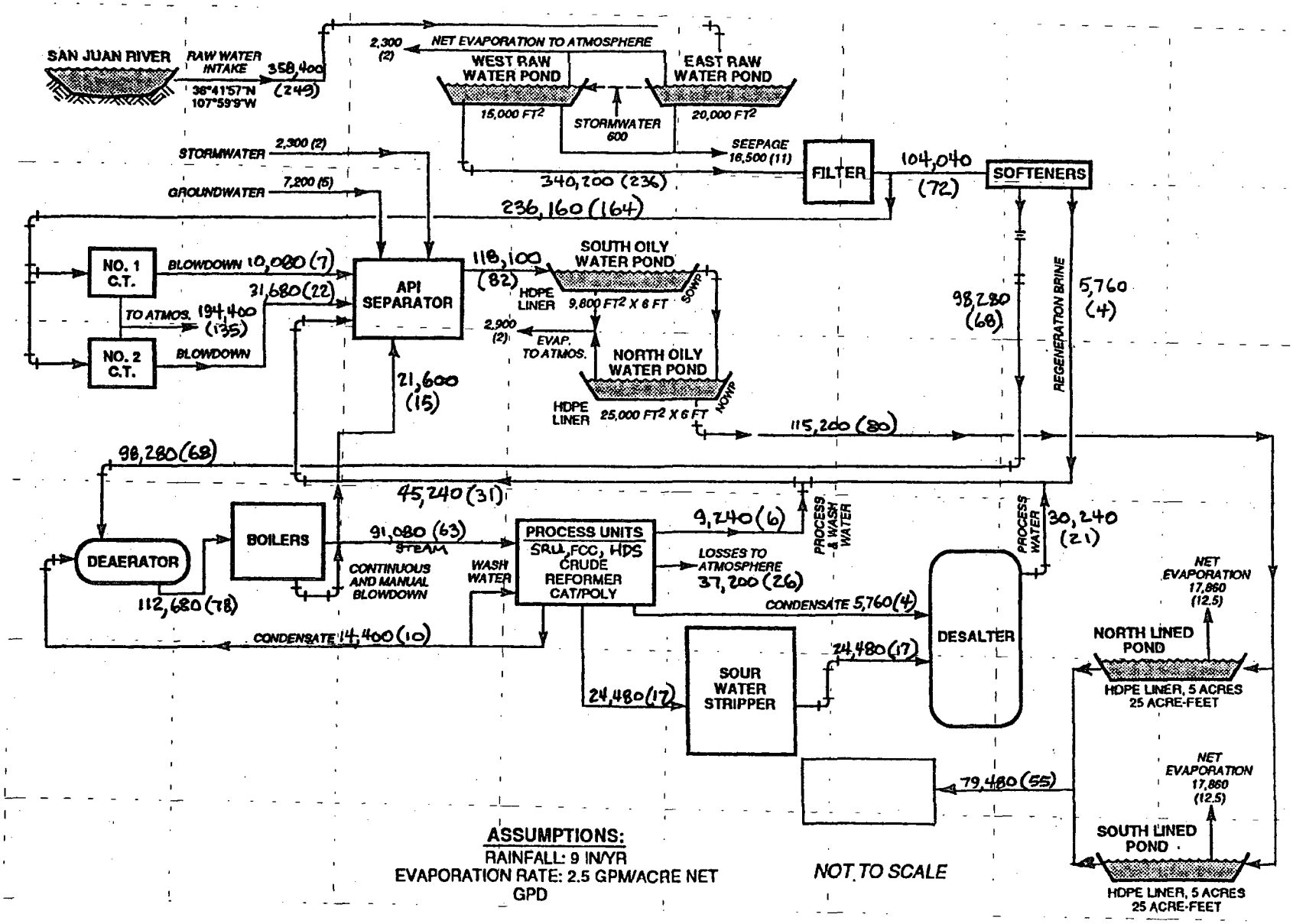
NOTES

REFERENCE DWGS.	NO.	REVISION	JOB No.	BY	DATE	BY	DATE	BY	DATE
				DRAWN		CHECKED		APPROVED	

SCALE	AS NOTED
DRAWN BY	
INITIAL CHK.	
FINAL CHK.	
ENGR.	
APPR. BY	
AFE/WO No.	
DATE	

PLOT PLAN
Plate 4
BLOOMFIELD REFINERY

GIANT REFINING CO.
BLOOMFIELD REFINERY — BLOOMFIELD NEW MEXICO
DWG. NO. — REV. 0



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Giant Refining Company

Wastewater Flow Diagram

Plate 5

May, 1999

APPENDIX A

FACILITY HISTORY

Previous Owner's Activities

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the GRC facility in the late 1950s. O. L. Garretson bought the facility in the early 1960s, renamed it Plateau, Inc., and sold it in 1964 to Suburban Propane of New Jersey.

Operationally, the facility has steadily evolved through a series of improvements, modifications, and expansions. Suburban upgraded the facility in 1966, increasing the crude unit throughput to 4,100 bpcd and adding a 1,850 bpcd reformer and naphtha hydrotreater. In 1975, the crude unit was expanded to 8,400 bpcd.

In 1979, the crude unit was expanded again to 16,800 bpcd (later demonstrated to have a hydraulic capacity in excess of 18,000 bpcd). A fluidized catalytic cracker (FCC) with a nominal capacity of 6,000 bpcd, an unsaturated gas plant, and a treater unit were also added at that time. The capacity of the reformer/hydrotreater was increased to 2,250 bpcd. The FCC was upgraded in 1982 to conform with state and federal air quality standards.

GRC Activities

Giant Refining Company (GRC) acquired the facility from Suburban Propane (Plateau) on October 31, 1984. GRC made many improvements to facility operations and equipment. These improvements are summarized below.

1986
Relocated spent caustic tank onto a concrete pad with concrete retaining walls.

1987
Upgraded the reformer and increased capacity to 3,600 bpcd, modified the laboratory and treater unit, and increased tank storage capacity.

Cleaned up north and south bone yards.

Decommissioned and dismantled old tanks 6 and 7.

Relocated API crude tanks 8 and 9 onto concrete pads with concrete retaining walls.

Established a systematic inspection/maintenance/repair program for tanks.

1988
Added a 2,000 bpcd catalytic polymerization unit. Removed the facility's two underground storage tanks and replaced them with aboveground storage tanks.

Completed cathodic protection system for tank farm and underground piping.

Rebuilt process area sewer system and added curbed, concrete paving to the unpaved process areas.

1989
Increased reformer throughput to 4,000 bpcd.

Activated groundwater hydrocarbon recovery system.

Installed a concrete pad with curbing between tanks 3 and 4.

Constructed first double-lined evaporation pond as part of discharge plan improvements.

1990
Constructed second double-lined evaporation pond as part of discharge plan improvements.

Constructed a drum storage shed and converted to bulk chemical usage to minimize use of drummed chemicals.

1991
Revamped burner fuel sales rack with concrete paving and curbing.

Submitted permit application for underground class 1 disposal well.

Upgraded groundwater hydrocarbon recovery system.

1992
Submitted air quality permit application proposing the installation of a diesel hydrodesulfurization (HDS) unit and a sulfur recovery unit (SRU) to decrease air emissions.

1993
Began a program under a consent agreement with the US EPA to conduct interim measures (IM), a RCRA facility investigation (RFI), and a corrective measures study (CMS) addressing groundwater contamination.

Replaced portions of the underground cooling water piping.

Added concrete paving around the API separator.

Added process units: HDS unit (2,000 bpcd) and SRU.

Improved (eliminated) storm water runoff to north.

1994
Completed the class 1 injection well.

Retrofitted the south and north oily water ponds with two additional liners in accordance with RCRA minimum technology requirements.

Installated a floating cover for API separator.

Closed clay-lined evaporation ponds and spray evaporation area.

1995
Improved diking south of refinery to reduce additional storm water runoff.

Began implementation of additional corrective measures for groundwater cleanup as determined from CMS.

1998
Converted former evaporation ponds on east side of refinery to raw water ponds.

Constructed evaporation ponds on south eastern portion of refinery.

APPENDIX B

2

Item/Compound	Formula	orm.W	Date	# Cont.	Size
Alumina, neutral	Al_2O_3		13-Jan-98	1	25
Ammonium Chloride	NH_4Cl		13-Jan-98	1	400
Ammonium Chloride	NH_4Cl		16-Jan-98	1	75
Ammonium Oxalate	$(NH_4)_2C_2O_4$		16-Jan-98	1	450
Ammonium monohydrogen phosphate	$(NH_4)_2HPO_4$		16-Jan-98	1	450
Barium hydroxide Octahydrate	$Ba(OH)_28H_2O$		16-Jan-98	1	450
Barium hydroxide Octahydrate	$Ba(OH)_28H_2O$		16-Jan-98	1	250
Barium hydroxide Octahydrate	$Ba(OH)_28H_2O$		19-Jan-98	1	15
Boric Acid	H_3BO_3		19-Jan-98	1	450
Cadmium chloride 2.5 hydrate	$CdCl_2.2.5H_2O$		19-Jan-98	2	450
Cadmium Sulfate, anhydrous	$CdSO_4$		19-Jan-98	1	500
Cadmium Sulfate 8/3 hydrate			19-Jan-98	1	150
Calcium Carbonate	$CaCO_3$		20-Jan-98	1	450
Calcium Chloride dihydrate	$CaCl_2.2H_2O$		20-Jan-97	1	450
Clacium Hydride	CaH_2	42.10	27-Jan-98	1	80
Calcium Sulfate, anhydrous	$CaSO_4$		20-Jan-98	2	500
Carborundum			20-Jan-98	1	500
Cobalt chloride hexahydrate	$CoCl_2.6H_2O$		20-Jan-98	1	10
Cupric Sulfate Pentahydrate	$CuSO_4.5H_2O$		21-Jan-98	1	250
Copper(II) Sulfate pentahydrate	$CuSO_4.5H_2O$		21-Jan-98	1	75
Ferrous ammonium sulfate hexahydrat	$Fe(NH_4)_2(SO_4)_2.6H_2O$		21-Jan-98	2	450
Hydrazine sulfate	$N_2H_4H_2SO_4$		21-Jan-98	1	15
Hydrogen Peroxide	H_2O_2		21-Jan-98	2	500
Iodine	I_2		21-Jan-98	1	100
Iodine Solution 1N			21-Jan-98	1	400
Lanthanum Oxide	La_2O_3		21-Jan-98	1	90
Lead Acetate trihydrate	$Pb(C_2H_3O_2)_2.3H_2O$		21-Jan-98	1	350
Lead Acetate trihydrate	$Pb(C_2H_3O_2)_2.3H_2O$		21-Jan-98	1	500
Lead Chloride	$PbCl_2$		21-Jan-98	1	450
Lead Oxide	PbO		#########	1	500
Magnesium Chloride Hexahydrate	$MgCl_2.6H_2O$		21-Jan-98	1	450
Manganous sulfate monohydrate	$MnSO_4.H_2O$		21-Jan-98	1	450
Mercuric Bromide	$HgBr_2$		21-Jan-98	1	45
Mercuric Bromide	$HgBr_2$		21-Jan-98	1	113
Mercuric Bromide	$HgBr_2$		21-Jan-98	1	450
Mercuric Oxide	HgO		21-Jan-98	1	110
Mercuric Nitrate Hydrate	$Hg(NO_3)_2.H_2O$		21-Jan-98	1	110
Mercuric Sulfate	$HgSO_4$		21-Jan-98	1	100

Phosphorous pentoxide	P_2O_5	141.94	27-Jan-98	1	75
Potassium Bromate			22-Jan-98	1	450
Potassium Carbonate, anhydrous			22-Jan-98	1	450
Potassium chlorate			22-Jan-98	1	350
Potassium Bromide			22-Jan-98	1	400
Potassium Chloride	KCl	74.56	28-Jan-98	1	685
Potasium Chromate			16-Jan-98	1	250
Potassium Dichromate	$K_2Cr_2O_7$	294.19	23-Jan-98	2	375
Potassium Dichromate	$K_2Cr_2O_7$	294.19	29-Jan-98	1	375
Potassium Ferrocyanide	$K_4Fe(CN)_6$		22-Jan-98	1	350
Potassium Ferrocyanide	$K_4Fe(CN)_6$		23-Jan-98	1	400
Potassium Ferricyanide	$K_3Fe(CN)_6$		23-Jan-98	1	110
Potassium Ferricyanide	$K_3Fe(CN)_6$		23-Jan-98	1	450
Potassium Fluoride, anhydrous	KF		23-Jan-98	2	450
Potassium Fluoride, Dihydrate	$KF.2H_2O$		23-Jan-98	1	400
Potassium Hydrogen Phthalate			23-Jan-98	1	75
Potassium Hydroxide			#########	1	2.5
Potassium Iodide			23-Jan-98	1	300
Potassium Iodate			23-Jan-98	1	80
Potassium Monohydrogen Phosphate	K_2HPO_4	174.18	29-Jan-98	1	150
Potassium Permanganate			21-Jan-98	1	100
Potassium Permanganate			21-Jan-98	1	2.2
Potassium Persulfate			23-Jan-98	1	400
Potassium Dihydrogen Phosphate			23-Jan-98	1	400
Potassium Thiocyanate			23-Jan-98	1	100
Raney Nickel Alloy			23-Jan-98	1	450
Raney Catalyst Powder	Ni-Al		29-Jan-98	1	450
Silver Nitrate			28-Jan-98	1	80
Silver Sulfate	Ag_2SO_4		26-Jan-98	1	25
Sodium Acetate, anhydrous	$NaC_2H_3O_2$		16-Jan-98	1	400
Sodium Acetate, anhydrous	$NaC_2H_3O_2$		26-Jan-98	1	450
Sodium Arsenite	$NaAsO_2$	129.91	26-Jan-98	1	450
Sodium Borate Decahydrate	$Na_3B_4O_710H_2O$		26-Jan-98	1	450
Sodium Bicarbonate	$NaHCO_3$	84.01	26-Jan-98	1	250
Sodium Carbonate, anhydrous	Na_2CO_3	105-99	26-Jan-98	1	450
Sodium Carbonate Monohydrate	$Na_2CO_3.H_2O$	124.00	26-Jan-98	1	200
Sodium Chloride	NaCl	58.44	26-Jan-98	1	450
Sodium Chloride	NaCl	58.44	26-Jan-98	1	75
Sodium Hydroxide	NaOH	40	26-Jan-98	1	250
Sodium Sulfate, anhydrous	Na_2SO_4	142.04	26-Jan-98	5	500

Sodium Sulfide Nonahydrate	$Na_2S.9H_2O$	240.18	26-Jan-98	1	350
Sodium Sulfide Nonahydrate	$Na_2S.9H_2O$	240.18	26-Jan-98	1	350
Sodium Thiosulfate Pentahydrate	$Na_2S_2O_3.5H_2O$	248.21	27-Jan-98	1	400
Sodium Thiosulfate Pentahydrate	$Na_2S_2O_3.5H_2O$	248.21	27-Jan-98	1	500
Stannous Chloride, Dihydrate	$SnCl_2.2H_2O$	225.63	27-Jan-98	1	450
Sulfur, sublimed	S	32.06	27-Jan-98	1	200
Sulfur, sublimed	S	32.06	27-Jan-98	1	500
Sulfur, precipitated	S	32.06	27-Jan-98	1	500
Tin(II) Chloride Dihydrate	cf Stannous chloride				
Uranine	cf Fluorecein/MO				
Zinc	Zn	65.37	27-Jan-98	1	500
Zinc Acetate dihydrate	$Zn(C_2H_3O_2)_2.2H_2O$	219.49	27-Jan-98	1	450

Inorganic Chemicals

quantity on hand	Units	Maker	Purity	Location	Lab Use	CAS #	Hazard	MSDS	
25	g	Aldrich		SR11			none	-	
400	g	Baker	reagent	SR11			none		
75	g	VWR	Tech	SR11	gen		none	-	
450	g	Fisher	Cert	SR11	gen		poison	-	
450	g	Fisher	Cert	SR11	gen		none	-	
450	g	Baker	reagent	SR11	JP-8	12230-71-6	poison	-	
250	g	Fisher	Cert	SR11	JP-8	12230-71-6	poison	-	
15	g	rebot	rebot	SR11	JP-8	12230-71-6	poison	-	
450	g	Baker	reagent	SR11	gen		low	-	
900	g	Baker	reagent	SR11			carcinogenic	-	
500	g	Baker	reagent	SR11	sulfide		carconogen		
150	g	Fisher	Cert	SR11	sulfide		carcinogenic		
450	g	Fisher	Cert	SR11	gen	471-34-1	none	-	
450	g	Fisher	Cert	SR11	gen	10035-04-8	none	-	
	g	Fisher		SR11	drying	7789-78-8	eacts w wate	-	
1000	g	EM		SR11	gen	7778-18-9	none	-	
500	g	Fisher		SR11	lpg	409-21-2	none	-	320 grit
10	g	Baker	reagent	SR11	Spectro		low	-	
250	g	Baker	reagent	SR11	gen		low	-	
75	g	Rebot	tech	SR11	gen		low	-	
900	g	Fisher	Cert	SR12	tit std		low	-	
15	g	Hach		SR12	red	10034-93-2	poison	-	
1000	ml	Fisher	reagent	SR12	gen	7722-84-1	oxidizer	-	
100	g	Fisher	Cert	SR12	oxid	7782-68-5	oxidizer	-	
400	ml	Ricca		SR12	tit	7782-68-5	irr	-	
90	g	Fisher	9% mi	SR12	AA	1312-81-8			
350	g	Malin	AR	SR12	sulfur	6080-64-6	poison	-	
500	g	Fisher	Cert	SR12	sulfur	6080-64-6	poison	-	
450	g	Fisher	Cert	SR12		7758-95-4	poison	-	
	g	Acros	reagent	SR12	Doctor	1317-36-8	low		
450	g	Fisher	Cert	SR12		7791-18-6	none	-	
450	g	B&A	reagent	SR12		10034-95-5	irr	-	
45	g	Malin	AR	SR12		7789-47-1	poison	-	
113	g	MCB	AR	SR12		7789-47-1	poison	-	
450	g	MCB	AR	SR12		7789-47-1	poison	-	
110	g	Malin	AR	SR12	sulfur	21908-53-2	poison	-	
110	g	Fisher	Cert	Sr12	chloride				
100	g	Baker	reagent	SR12		7783-25-9	poison	-	

	g	Fisher	reagent	SR13	drying	1314-56-3	reacts w water	-	
450	g	Malin	AR	SR13	gen	7758-01-2	poison	-	
450	g	Fisher	Cert	SR13	gen	584-08-7	caustic	-	
350	g	Malin	AR	SR13	oxid	3811-04-9	oxidizer	-	
400	g	Malin	AR	SR13	gen	1158-02-3	sed	-	
	g	Fisher	Cert	SR13	gen				
250	g	Fisher	Cert	Sr22					
750	g	Fisher	Tech	SR13	gen	7778-50-9	carcinogenic	-	
	g	EM	reagent	SR13	gen	7778-50-9	carcinogenic	-	
350	g	Malin	AR	SR13		14459-95-1	low	-	
400	g	MCB	AR	SR13		14459-95-1	low		
110	g	Malin	AR	SR13	gen	14459-95-1	low		
450	g	MCB	AR	SR13		14459-95-1	low		
900	g	MCB	reagent	SR13		7789-21-5	poison	-	
400	g	Malin	AR	SS11		7789-21-5	poison	-	
75	g	Fisher	P.S.	SR13	tit	877-24-7	none	-	
2.4	kg	Acros	Cert	SR13	gen	1310-58-3	caustic	-	
300	g	Malin	AR	SR21	gen	7681-11-0	low	-	
80	g	Fisher	Cert	SR21	P.S.	7758-05-6	oxidizer	-	
	g	Baker	reagent	SR21	buffer	7758-11-4	none	-	
100	g	Malin	AR	SR21	tit	7758-05-6	oxidizer	-	
2.2	kg	Baker	reagent	SS11	tit sln	7722-64-7	oxidizer	-	
400	g	Fisher	Cert	SR21	oxid	7727-21-1	oxidizer	-	
400	g	EM	reagent	SR21	buf	7778-77-0	buffer	-	
100	g	Fisher	Cert	SR21	iron tst	330-20-0	irr	-	
450	g	Acros		SR21	cat	12635-29-9		-	
	g	Grace		SR21	cat	12635-29-9	carcinogenic	-	
80	g	VWR	reagent	SR21	titrant	7761-88-8	poison	-	
25	g	DGF	reagent	Sr21		10294-26-5		-	
400	g	Fisher	Cert	Sr21	gen	127-09-3	nill	-	
450	g	EM	reagent	Sr21	gen	127-09-3	nill	-	
450	g	Fisher	Cert	SS11	P.S.	7784-46-5	poison	-	
450	g	Baker	reagent	SR21	buffer	1303-96-4	low	-	
250	g	Malin	reagent	SR21	gen	144-55-8	none	-	
450	g	Fisher	Cert	SR21	gen	497-19-8	low	-	
200	g	Baker	reagent	SR21	gen	5968-11-6	low	-	
450	g	Fisher	Cert	SR21	gen	7647-14-5	none	-	
75	g	Fisher	Cert	SR21	gen	7647-14-5	none	-	
250	g	Fisher	98.5	SR21	gen	1310-73-2	caustic	-	
2500	g	Fisher	Cert	SR21	dry	7757-82-6	none	-	

350	g	EM	reagent	SR21	S anal	1313-84-4	caustic	-	
350	g	Fisher	reagent	SR21	S anal	1313-84-4	caustic	-	
400	g	Malin	AR	SR22	S anal	10102-17-7	none	-	
500	g	Fisher	Cert	Sr22	S anal	10102-17-7	none		
	g	Baker	reagent	SR22	Hg anal	10025-69-1	moderate		
200	g	Fisher	USP	SR22	Doctor	7704-34-9	flammable	-	
500	g	Fisher	USP	SR22	Doctor	7704-34-9	flammable	-	
500	g	Fisher	USP	SR22	Doctor	7704-34-9	flammable	-	
0									
0									
500	g	Fisher	Cert	SR22	Fe anal	7440-66-6	low	-	
450	g	Fisher	Cert	SR22	S anal	5970-45-6	moderate	-	

APPENDIX C

ATTACHMENT 3

	Pages
Benzene in Wastewater Discharge	1
BTEX in Wastewater Discharge	2-7
Total VOC in API Discharge	8-16
TCLP in Wastewater Discharge and Pond Sludges	17-70
North Double-lined Pond	71-106
Sulfur Product	107-133
FCC Equilibrium Catalyst	134-142

BLOOMFIELD REFINING COMPANY
BENZENE IN WASTEWATER DISCHARGE

DATE	UNITS	DET LIMIT	RESULT
01/15/93	mg/l	0.0002	ND
02/03/93	mg/l	0.005	0.04
02/25/93	mg/l	0.003	0.004
03/04/93	mg/l	0.01	0.338
04/20/93	mg/l	0.001	ND
06/01/93	mg/l	0.0005	ND
07/13/93	mg/l	0.0002	0.00021
08/11/93	mg/l	0.0002	ND
09/07/93	mg/l	0.0002	ND
10/11/93	mg/l	0.0002	ND
11/17/93	mg/l	0.0002	ND
12/13/93	mg/l	0.0002	0.00025
01/15/93	mg/l	0.0002	0.00026
02/14/94	mg/l	0.0002	0.0001
02/17/94	mg/l	0.0002	ND

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Bloomfield Refinery

Case Narrative

On January 13, 1994, a single water sample was submitted to Inter-Mountain Laboratories - Farmington for analysis. The sample was received cool and intact. Analysis for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) was performed on the water sample as per the accompanying chain of custody form.

BTEX analysis was performed by EPA Method 5030, Purge and Trap, and EPA Method 602.2, Purgeable Aromatics, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph, equipped with a photoionization detector. BTEX analytes were detected in the sample at levels above the stated detection limits, as indicated on the report sheets.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analysis of the sample reported herein are found in Standard Methods for Analysis of Water and Waste Water, 1992 and The Federal Register, Vol. 49, N0. 209, October, 1984.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Dr. Denise A. Bohemier,
Organic Lab Supervisor

BRC4512

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Bloomfield Refining Co.

Project ID:	Bloomfield, NM	Report Date:	01/19/94
Sample ID:	NOWP - E Discharge	Date Sampled:	01/13/94
Lab ID:	4512	Date Received:	01/13/94
Sample Matrix:	Water	Date Analyzed:	01/19/94
Preservative:	Cool, HCl		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	0.26	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	6.74	0.40
o-Xylene	3.43	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	129	88 -110%
Bromofluorobenzene	111	86 -115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments: High toluene-d8 recovery is due to matrix interference at the d8 retention time.

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Purgeable Aromatics

Matrix Spike Analysis

Lab ID:	4512Spk	Report Date:	01/19/94
Sample Matrix:	Water	Date Sampled:	01/13/94
Preservative:	Cool, HCl	Date Received:	01/13/94
Condition:	Intact	Date Analyzed:	01/19/94

Target Analyte	Spike Added (ug/L)	Original Conc. (ug/L)	Spiked Sample Conc. (ug/L)	% Recovery	Acceptance Limits (%)
Benzene	10	0.26	10.4	101%	39 -150
Toluene	10	ND	10.7	107%	46 - 148
Ethylbenzene	10	ND	12.3	123%	32 - 160
m,p-Xylenes	20	6.74	28.9	111%	NE
o-Xylene	10	3.43	13.8	104%	NE

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Spike acceptance range not established by the EPA.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	123	88 - 110%
Bromofluorobenzene	110	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

PURGEABLE AROMATICS

Quality Control Report

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB34353

Report Date: 01/19/94
Date Analyzed: 01/19/94

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.20
Toluene	ND	0.20
Ethylbenzene	ND	0.20
m,p-Xylenes	ND	0.40
o-Xylene	ND	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	96	88 -110%
Bromofluorobenzene	95	86 -115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Purgeable Aromatics

Duplicate Analysis

Lab ID:	4510Dup	Report Date:	01/19/94
Sample Matrix:	Water	Date Sampled:	01/13/94
Preservative:	Cool	Date Received:	01/13/94
Condition:	Intact	Date Analyzed:	01/19/94

Target Analyte	Original Conc. (ug/L)	Duplicate Conc. (ug/L)	Acceptance Range (ug/L)
Benzene	165	162	133 - 193
Toluene	ND	ND	NA
Ethylbenzene	208	210	137 - 281
m,p-Xylenes	426	433	NE
o-Xylene	ND	ND	NE

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.
NE - Duplicate acceptance range not established by the EPA.

	Surrogate	Percent Recovery	Acceptance Limits
Quality Control:	Toluene-d8	96	88 - 110%
	Bromofluorobenzene	95	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review

Inter-Mountain Laboratories,

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
BLOOMFIELD REFINING CO.	BLOOMFIELD, NM	
Sampler: (Signature)	**Chain of Custody Tape No.**	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	BTEX				Remarks
NDWPE DISCHARGE	1-13-94	3:00P		WATER	2	X				

	Date	Time		Date	Time
Relinquished by: (Signature)	1-13-94	4:20P	Received by: (Signature)	1/14/94	1620
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

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☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
☑ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
☐ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450
☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945
☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

17778

Bloomfield Refining Company
A Gary-Williams Energy Corporation Subsidiary

Date: October 22, 1991

Copy To: Joe Warr
Dave Roderick
John Goodrich

To: File

From: Chris Hawley CH

Subject: VOC EMISSIONS FROM RCRA REGULATED UNITS - PROPOSED RULES BY EPA

The EPA is now in the process of proposing rules to require controls of VOC emissions from tanks, containers, and surface impoundments that are subject to TSDF requirements of RCRA. Our SOWP and NOWP (as they exist now or as they will exist as tanks) are subject to assessment for applicability to the new rules. The assessment is two-part: 1. the rule would apply only to TSDFs and large quantity generator's tanks, and; 2. only wastes that have a volatile organic concentration of 500 ppm would be covered. Controls include covers, vapor control, etc.

EPA requires that a generator determine the VOC concentration of the waste as close to the point of generation as possible. In our case, this would be the overflow weir from the API separator.

On September 6, 1991, a sample was obtained from the API discharge and submitted for total VOC analysis. The results of 18 ppm (see attached data) are significantly below 500 ppm; therefore, we do not need to be concerned about the proposed rule affecting our SOWP or NOWP operation.

CH/jm

Attachment

8

Inter·Mountain
Laboratories, Inc.

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

Case Narrative

On September 6, 1991 a sample set consisting of two samples was received by Inter-Mountain Laboratories - Farmington, NM. Enclosed is a copy of the chain of custody indicating the requested analysis. The normal turn around time was requested and is reflected in the analytical price.

It is the policy of this laboratory to employ, whenever possible, analytical methods which have been approved by regulatory agencies. The methods which we use are referenced in SW-846, "Test Methods for Evaluating Solid Waste", USEPA, 1986; "Chemical Analysis of Water and Waste", USEPA, 1978; and other references as applicable. All reports in this package have the analytical methods and the references footnoted.

A Hewlett-Packard Gas Chromatograph was used for the analysis which determined the absence of target BTEX compounds in sample identified as NOWP-E Discharge.

Quality Assurance reports have been included in this package. These reports can be identified by the notation in the upper left hand corner of the report.

Please feel free to call if you have any questions.

Tony Tristano

Tony Tristano
Senior Analytical Chemist

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

CASE NARRATIVE

On September 10, 1991, one sample was received for analysis at Inter-Mountain Labs, Bozeman, Montana. The chain of custody form requested analysis for Volatile Organics by Method 624. Client name was listed as Bloomfield Refining Co.

Detectable levels of target analytes were found.

Limits of detection for each instrument/analysis are determined by sample matrix effects, instrument performance under standard conditions, and dilution requirements to maintain chromatography output within calibration ranges.

Jack Felkey
IML-Bozeman

BRC2460

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

EPA METHOD 624
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING CO.		
Sample ID:	API Discharge	Date Reported:	10/01/91
Project ID:	None	Date Sampled:	09/06/91
Laboratory ID:	B912460	Date Received:	09/10/91
Sample Matrix:	Aqueous	Date Extracted:	09/18/91
Preservation:	Cool	Date Analyzed:	09/18/91
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	250	ug/L
Bromomethane	ND	250	ug/L
Vinyl chloride	ND	250	ug/L
Chloroethane	ND	250	ug/L
Methylene chloride	ND	250	ug/L
Trichlorofluoromethane	ND	250	ug/L
1,1-Dichloroethene	ND	250	ug/L
1-Dichloroethane	ND	250	ug/L
ɾans-1,2-Dichloroethene	ND	250	ug/L
Chloroform	ND	250	ug/L
1,2-Dichloroethane	ND	250	ug/L
1,1,1-Trichloroethane	ND	250	ug/L
Carbon tetrachloride	ND	250	ug/L
Bromodichloromethane	ND	250	ug/L
1,2-Dichloropropane	ND	250	ug/L
cis-1,3-Dichloropropene	ND	250	ug/L
Trichloroethene	ND	250	ug/L
Benzene	5800	250	ug/L
Dibromochloromethane	ND	250	ug/L
1,1,2-Trichloroethane	ND	250	ug/L
trans-1,3-Dichloropropene	ND	250	ug/L
2-Chloroethylvinyl ether	ND	250	ug/L
Bromoform	ND	250	ug/L
1,1,2,2-Tetrachloroethane	ND	250	ug/L
Tetrachloroethene	ND	250	ug/L
Toluene	11000	250	ug/L
Chlorobenzene	ND	250	ug/L
Ethyl benzene	1200	250	ug/L
1,3-Dichlorobenzene	ND	250	ug/L
1,2-Dichlorobenzene	ND	250	ug/L
1,4-Dichlorobenzene	ND	250	ug/L

ND - Analyte Not Detected at Stated Detection Limits

11

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

EPA METHOD 624
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING CO.		
Sample ID:	API Discharge	Date Reported:	10/01/91
Laboratory ID:	B912460	Date Sampled:	09/06/91
Sample Matrix:	Aqueous	Date Analyzed:	09/18/91

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown alkane	3.60	2000	ug/L
Unknown alkane	5.70	2000	ug/L
m,p-Xylene	16.85	5100	ug/L
o-Xylene	17.46	2200	ug/L
Substituted benzene	19.51	2000	ug/L

"Unknown concentrations calculated assuming a Relative Response Factor = 1

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	95	76 - 114
Toluene-d8	97	88 - 110
Bromofluorobenzene	97	86 - 115

References:

Method 624 - Purgeables, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, Appendix A, Federal Register 40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

VOLATILE ORGANIC COMPOUNDS
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Client:	BLOOMFIELD REFINING CO.		
Sample ID:	Matrix Spike	Date Reported:	10/01/91
Laboratory ID:	MS2680V	Date Sampled:	NA
Sample Matrix:	Aqueous	Date Received:	NA
Preservation:	NA	Date Extracted:	09/18/91
Condition:	NA	Date Analyzed:	09/18/91

ORIGINAL SAMPLE PARAMETERS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONC. (ug/L)	MS CONC. (ug/L)	MS REC (%)	QC LIMITS REC.
1,1-Dichloroethene	100	0	83	83	61-145
Trichloroethene	100	0	80	80	71-120
Benzene	100	15	110	95	76-127
Toluene	100	0	98	98	76-125
Chlorobenzene	100	0	100	100	75-130

DUPLICATE SAMPLE PARAMETERS

COMPOUND	SPIKE ADDED (ug/L)	MSD CONC. (ug/L)	MSD REC (%)	RPD (%)	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	100	77	77	8	14	61-145
Trichloroethene	100	83	83	4	14	71-120
Benzene	100	110	95	0	11	76-127
Toluene	100	100	100	2	13	76-125
Chlorobenzene	100	100	100	0	13	75-130

Spike Recovery: 0 out of 10 outside QC limits.
RPD: 0 out of 5 outside QC limits.

US
Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard. Suite B
Bozeman, Montana 59715

EPA METHOD 624
HSL VOLATILE COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING CO.		
Sample ID:	Method Blank	Date Reported:	10/01/91
Laboratory ID:	MB261BV	Date Sampled:	NA
Sample Matrix:	Aqueous	Date Received:	NA
Preservation:	NA	Date Extracted:	09/18/91
Condition:	NA	Date Analyzed:	09/18/91

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Vinyl chloride	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Methylene chloride	ND	5.0	ug/L
Trichlorofluoromethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1-Dichloroethane	ND	5.0	ug/L
ans-1,2-Dichloroethene	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Benzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
2-Chloroethylvinyl ether	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Ethyl benzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L

ND - Analyte Not Detected at Stated Detection Limits

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

EPA METHOD 624
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING CO.		
Sample ID:	Method Blank	Date Reported:	10/01/91
Laboratory ID:	MB261BV	Date Sampled:	NA
Sample Matrix:	Aqueous	Date Analyzed:	09/18/91

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	104	76 - 114
Toluene-d8	104	88 - 110
Bromofluorobenzene	101	86 - 115

References:

Method 624 - Purgeables, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, Appendix A, Federal Register 40 CFR 136, Environmental Protection Agency, October 26, 1984.

Analyst

Reviewed

Inter-Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
BRC	BLOOMFIELD	

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

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	BTEX	VOC 624			Remarks
NOWP-E DISCHARGE	9-6-91	3:00 P	7141	water	2	✓				
API DISCHARGE	9-6-91	3:10 P	7142	water	2		✓			

NFE AAT 09/06/91

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	9-6-91	3:40 P	~~Received by: (Signature)~~ AAT 09/06/91		
~~Relinquished by: (Signature)~~ AAT 09/06/91	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature) Tony Tristano	09/06/91	1540

Inter-Mountain Laboratories, Inc.

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- ☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
- ☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
- ☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450
- ☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945
- ☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

04224

Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

CASE NARRATIVE

On 6 August 1992, six TCLP extracts were received by Inter-Mountain Laboratories, Inc. at 1633 Terra Ave., Sheridan, Wyoming. The sample custody document indicated request for analysis of parameters from the TC Rule analyte list. The samples arrived cool and intact, custody sheets remained with the extract.

The TCLP preparation and extraction was performed following the steps defined by the EPA using Method 1311, SW-846, November 1990, and found in the Federal Register, 40 CFR 261, Volume 55, No. 126, June 1990. A duplicate analysis was prepared to evaluate the extraction reproducibility. Relative percent differences were reported only if the analyte concentrations exceeded five times the detection levels. A matrix spike was used to determine matrix effect on the recovery of the target analytes. Matrix spike information was used, via the TC Rule, for the final calculation of the analyte concentrations. Method blanks were used to determine any method induced contamination.

Limits of detection for each instrument or analysis were determined with respect to matrix effect, instrument performance under standard operating conditions and sample dilution. TCLP results were reported as mass per unit volume of leachate. Data qualifiers may have been used in accordance with USEPA data validation guidelines.

Reviewed by: _____
Thomas Bury
Laboratory Manager/IML-Sheridan

Data File ID: _____00-600_____

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TCLP REFERENCE LIST:

1.0 Date of Sampling: ___30 July 1992_____

Date of Laboratory Receipt: ___31 July 1992_____

Date of TCLP Extraction: ___4 August 1992_____

2.0 Quality Control Parameters:

Holding Times Maintained: ____X_____ Yes _____ No

Method Blank Data: ____X_____ Yes _____ No

Matrix Spike Data: ____X_____ Yes _____ No

Data Qualifiers: ____X_____ Yes _____ No

J = Estimated Quantity; B = Present in Blank; R = Data Unusable;
UJ = Analyzed but Not Detected, Sample Detection Value.

3.0 Analyte Information:

Parameter:	CAS #:	Regulatory Level (mg/L)	Detection Level (mg/L)	Method
Arsenic	7440-38-2	5.0	0.1	6010A
Barium	7440-39-3	100	0.5	6010A
Cadmium	7440-43-9	1.0	0.005	6010A
Chromium	7440-47-3	5.0	0.01	6010A
Lead	7439-92-1	5.0	0.2	6010A
Mercury	7439-97-6	0.2	0.001	7470A
Selenium	7782-22-4	1.0	0.1	6010A
Silver	7440-22-4	5.0	0.01	6010A

4. 0 Comments: _____

_____

_____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923346	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/21/92
Laboratory ID:	B923346	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Ogranic Acid	27.10	0.2	mg/L
Unknown Ogranic Acid	27.35	0.7	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	121
Toluene-d8	105
Bromofluorobenzene	104

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923346	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/10/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE Discharge	Date Reported:	08/24/92
Laboratory ID:	B923346	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/10/92

Parameter	Retention Time(min.)	Concentration	Units
Hydrocarbon envelope	10 - 38		
Unknown hydrocarbon	16.75	0.01	mg/L
Unknown hydrocarbon	18.47	0.02	mg/L
Unknown hydrocarbon	20.00	0.03	mg/L
Unknown hydrocarbon	20.68	0.02	mg/L
Unknown hydrocarbon	23.18	0.03	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	56
Phenol-d6	52
Nitrobenzene-d5	79
2-Fluorobiphenyl	86
2,4,6-Tribromophenol	94
Terphenyl-d14	98

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	1 NOWPE Discharge	Date Sampled:	07/30/92
Lab ID:	B923346/5658	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923347	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

Inter·Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923347	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Organic Acid	21.90	0.2	mg/L
Unknown Organic Acid	27.10	0.2	mg/L
Unknown Organic Acid	27.35	0.5	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	116
Toluene-d8	102
Bromofluorobenzene	102

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923347	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
4,5-Trichlorophenol	ND	0.02	400
4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923347	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Hydrocarbon envelope	12 - 34		
Unknown hydrocarbon	13.71	0.02	mg/L
Unknown hydrocarbon	19.13	0.03	mg/L
Unknown hydrocarbon	21.56	0.01	mg/L
Unknown hydrocarbon	22.32	0.02	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	34
Phenol-d6	37
Nitrobenzene-d5	57
2-Fluorobiphenyl	67
2,4,6-Tribromophenol	68
Terphenyl-d14	63

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

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Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	2 South Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923347/5659	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923348	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	08/06/92
Preservation:	HCl	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923348	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown Organic Acid	21.94	0.4	mg/L
Unknown Organic Acid	27.13	0.1	mg/L
Unknown Organic Acid	27.36	0.4	mg/L

'Inknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	119
Toluene-d8	103
Bromofluorobenzene	104

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923348	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923348	Date Sampled:	07/30/92
Sample Matrix:	Water	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown hydrocarbon	12.94	0.02	mg/L
Unknown hydrocarbon	13.72	0.03	mg/L
Unknown aromatic	13.11	0.03	mg/L
Unknown hydrocarbon	19.11	0.03	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	20
Phenol-d6	30
Nitrobenzene-d5	64
2-Fluorobiphenyl	67
2,4,6-Tribromophenol	44
Terphenyl-d14	70

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	3 North Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923348/5660	Date Received:	07/31/92
Matrix:	Water	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: _____

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923349	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Date Reported:	08/21/92
Laboratory ID:	B923349	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Toluene	17.15	0.02	mg/L
Xylene(total)	19.80,20.26	0.9	mg/L
Unknown Organic Acid	17.18	0.2	mg/L

'Inknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	105
Toluene-d8	103
Bromofluorobenzene	100

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923349	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

Inter-Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	1 NOWPE	Date Reported:	08/24/92
Laboratory ID:	B923349	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown substituted aromatic	9.51	0.02	mg/L
Unknown substituted phenol	13.05	0.02	mg/L
Naphthalene	13.41	0.018	mg/L
2-Methylnaphthalene	15.36	0.019	mg/L
1-Methylnaphthalene	15.63	0.02	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	47
Phenol-d6	54
Nitrobenzene-d5	60
2-Fluorobiphenyl	61
2,4,6-Tribromophenol	83
Terphenyl-d14	72

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, 'ol. 55, No. 126, June 29, 1990.

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Inter·Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	1 NOWP-E	Date Sampled:	07/30/92
Lab ID:	B923349/5661	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	0.6	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	0.05	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923350	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Toluene	17.15	0.14	mg/L
Ethylbenzene	19.65	0.06	mg/L
Xylene(total)	19.80,20.26	0.25	mg/L
Unknown Hydrocarbon	14.99	0.1	mg/L
Unknown Aromatic	21.95	0.07	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	109
Toluene-d8	103
Bromofluorobenzene	101

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923350	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown ketone	7.29	0.02	mg/L
Unknown substituted aromatic	9.50	0.03	mg/L
Naphthalene	13.41	0.018	mg/L
2-Methylnaphthalene	15.36	0.018	mg/L
1-Methylnaphthalene	15.63	0.01	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	46
Phenol-d6	44
Nitrobenzene-d5	65
2-Fluorobiphenyl	69
2,4,6-Tribromophenol	83
Terphenyl-d14	69

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	2 South Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923350/5662	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	1.5	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923351	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted TCLP:	08/04/92
Preservation:	None	Date Analyzed:	08/05/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.02	0.7
1,2-Dichloroethane	ND	0.02	0.5
2-Butanone	ND	0.1	200
Benzene	ND	0.02	0.5
Carbon Tetrachloride	ND	0.02	0.5
Chlorobenzene	ND	0.02	100
Chloroform	ND	0.02	6
Tetrachloroethene	ND	0.02	0.7
Trichloroethene	ND	0.02	0.5
Vinyl Chloride	ND	0.02	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/21/92
Laboratory ID:	B923351	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/05/92

Tentative Identification	Retention Time (min)	Concentration	Units
Carbon Disulfide	5.72	0.035	mg/L
Unknown Hydrocarbon	17.48	0.4	mg/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	105
Toluene-d8	104
Bromofluorobenzene	98

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923351	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	3 North Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923351	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	42
Phenol-d6	40
Nitrobenzene-d5	68
2-Fluorobiphenyl	70
2,4,6-Tribromophenol	78
Terphenyl-d14	79

References:
Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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1633 Terra Avenue
Sheridan, Wyoming 82801

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	3 North Evap Pond	Date Sampled:	07/30/92
Lab ID:	B923351/5663	Date Received:	07/31/92
Matrix:	Sludge	TCLP Extract:	08/04/92
Preservation:	Cool/Intact	Date Analyzed:	08/08/92

Parameter:	Analytical Result	Regulatory Level	(Units)
Arsenic	<0.1	5.0	mg/L
Barium	1.0	100	mg/L
Cadmium	<0.005	1.0	mg/L
Chromium	<0.01	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.001	0.20	mg/L
Selenium	<0.1	1.0	mg/L
Silver	<0.01 UJ	5.0	mg/L

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Trip Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	B923352	Date Received:	07/31/92
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	None	Date Analyzed:	08/06/92
Condition:	Intact		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Trip Blank	Date Reported:	08/21/92
Laboratory ID:	B923352	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

'nknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	118
Toluene-d8	108
Bromofluorobenzene	102

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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QUALITY ASSURANCE / QUALITY CONTROL

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
METHOD BLANK

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Method Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Q217A	Date Received:	NA
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	NA	Date Analyzed:	08/05/92
Condition:	NA		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

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

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	96
Toluene-d8	104
Bromofluorobenzene	92

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
METHOD BLANK

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Method Blank	Date Reported:	08/21/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Q218A	Date Received:	NA
Sample Matrix:	Water	Date Extracted TCLP:	NA
Preservation:	NA	Date Analyzed:	08/06/92
Condition:	NA		

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,1-Dichloroethene	ND	0.005	0.7
1,2-Dichloroethane	ND	0.005	0.5
2-Butanone	ND	0.02	200
Benzene	ND	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6
Tetrachloroethene	ND	0.005	0.7
Trichloroethene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in Method Blank.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Method Blank	Date Reported:	08/21/92
Laboratory ID:	Q218A	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

'Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%
1,2-Dichloroethane-d4	107
Toluene-d8	104
Bromofluorobenzene	94

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	TMB - 217	Date Received:	NA
Sample Matrix:	Water	Date Extracted-TCLP:	NA
Preservation:	NA	Date Analyzed:	08/06/92
Condition:	NA	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result	Detection Limit	Units
1,4-Dichlorobenzene	ND	0.02	mg/L
Hexachloroethane	ND	0.02	mg/L
Nitrobenzene	ND	0.02	mg/L
Hexachloro-1,3-butadiene	ND	0.02	mg/L
4,6-Trichlorophenol	ND	0.02	mg/L
2,4,5-Trichlorophenol	ND	0.02	mg/L
2,4-Dinitrotoluene	ND	0.02	mg/L
Hexachlorobenzene	ND	0.02	mg/L
Pentachlorophenol	ND	0.02	mg/L
o-Cresol	ND	0.02	mg/L
m & p-Cresol *	ND	0.02	mg/L
Pyridine	ND	0.2	mg/L

ND - Compound not detected at stated Detection Limit.
* - Compounds coelute by GCMS.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Date Reported:	08/24/92
Laboratory ID:	TMB - 217	Date Sampled:	NA
Sample Matrix:	Water	Date Analyzed:	08/06/92

Parameter	Retention Time(min)	Concentration	Units

No additional compounds found at reportable levels.

nknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	41
Phenol-d6	32
Nitrobenzene-d5	51
2-Fluorobiphenyl	47
2,4,6-Tribromophenol	48
Terphenyl-d14	61

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter-Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

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

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	Blank 70	Date Received:	NA
Sample Matrix:	Extraction Fluid	Date Extracted-TCLP:	08/03/92
Preservation:	NA	Date Analyzed:	08/10/92
Condition:	NA	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result	Detection Limit	Units
1,4-Dichlorobenzene	ND	0.02	mg/L
Hexachloroethane	ND	0.02	mg/L
Nitrobenzene	ND	0.02	mg/L
Hexachloro-1,3-butadiene	ND	0.02	mg/L
4,6-Trichlorophenol	ND	0.02	mg/L
2,4,5-Trichlorophenol	ND	0.02	mg/L
2,4-Dinitrotoluene	ND	0.02	mg/L
Hexachlorobenzene	ND	0.02	mg/L
Pentachlorophenol	ND	0.02	mg/L
o-Cresol	ND	0.02	mg/L
m & p-Cresol *	ND	0.02	mg/L
Pyridine	ND	0.2	mg/L

ND - Compound not detected at stated Detection Limit.
* - Compounds coelute by GCMS.

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Method Blank	Date Reported:	08/24/92
Laboratory ID:	Blank 70	Date Sampled:	01/19/00
Sample Matrix:	Extraction Fluid	Date Analyzed:	08/10/92

Parameter	Retention Time(min)	Concentration	Units

No additional compounds found at reportable levels.

ıknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	70
Phenol-d6	56
Nitrobenzene-d5	96
2-Fluorobiphenyl	89
2,4,6-Tribromophenol	101
Terphenyl-d14	118

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

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Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

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

Client:	**Bloomfield Refining**	Report Date:	08/23/92
Sample ID:	IML Blank 70	Date Analyzed:	08/08/92
Lab ID:	5664		
Matrix:	Fluid		

Parameter:	Analytical Result	(Units)
Arsenic	<0.1	mg/L
Barium	<0.5	mg/L
Cadmium	<0.005	mg/L
Chromium	<0.01	mg/L
Lead	<0.2	mg/L
Mercury	<0.001	mg/L
Selenium	<0.1	mg/L
Silver	<0.01	mg/L

Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL VOLATILE COMPOUNDS
MATRIX SPIKE SUMMARY

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	TCLP Matrix Spike	Date Reported:	08/21/92
Laboratory ID:	W3349	Date Sampled:	NA
Sample Matrix:	Extraction Fluid	Date Received:	NA
Preservation:	NA	Date Extracted TCLP:	08/04/92
Condition:	NA	Date Analyzed:	08/05/92

Parameter	Spike Added (ug/L)	Sample Concentration (ug/L)	Matrix Spike Concentration (ug/L)	Matrix Spike Recovery (%)
Vinyl Chloride	100	0	69	69
1,1-Dichloroethene	100	0	102	102
1,2-Dichloroethane	100	0	126	126
Chloroform	100	0	108	108
arbon Tetrachloride	100	0	108	108
richloroethene	100	0	99	99
Benzene	100	0	90	90
Tetrachloroethene	100	0	99	99
Chlorobenzene	100	0	98	98
Methyl Ethyl Ketone	100	0	66	66

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

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Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS
MATRIX SPIKE SUMMARY

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	Blank Matrix Spike	Date Reported:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	NA
Laboratory ID:	TBS-217	Date Received:	NA
Sample Matrix:	Extraction Fluid	Date Extracted:	08/05/92
Preservation:	NA	Date Analyzed:	08/10/92
Condition:	NA		

Parameter	Matrix Spike Conc.	Sample Conc.	Matrix Spike Recovery	Spike Amount	Percent Recovery
1,4-Dichlorobenzene	63	0	63	100	63
Hexachloroethane	54	0	54	100	54
Nitrobenzene	94	0	94	100	94
Hexachloro-1,3-butadiene	66	0	66	100	66
4,6-Trichlorophenol	120	0	120	100	120
2,4,5-Trichlorophenol	114	0	114	100	114
2,4-Dinitrotoluene	86	0	86	100	86
Hexachlorobenzene	91	0	91	100	91
Pentachlorophenol	59	0	59	100	59
o-Cresol	92	0	92	100	92
m,p-Cresol	85	0	85	100	85
Pyridine	61	0	61	100	61

All values are total nanograms.

Reference:

Method 8270, Semivolatile Organics - GC/MS, Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency, SW-846, Vol. IB, November 1986.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Analyst

Reviewed

Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

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

Client: **Bloomfield Refining**
Sample ID: *1 NOWPE Discharge*
Lab ID: B923346/5658
Date: 08/23/92

Parameter:	Spiked Sample Result mg/L	Sample Result mg/L	Spike Added mg/L	Percent Spike Recovery
Arsenic	2.5	<0.1	2.5	100.0
Barium	2.4	0.5	2.0	95.0
Cadmium	0.517	<0.005	0.500	103.4
Chromium	0.98	0.01	1.00	97.0
Lead	1.8	<0.2	2.0	90.0
Mercury	0.0100	<0.001	0.010	100.0
Selenium	2.4	<0.1	2.5	96.0
Silver *	0.06	<0.01	0.50	12.0

* Low recovery due to the percipitation of silver with inorganic chlorides.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Laboratory Data Validation, Functional Guidelines for Evaluating Inorganics Analyses, USEPA, July 1988.

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
HSL SEMI-VOLATILE COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Sample ID:	2 South Evap Pond	Report Date:	08/24/92
Project ID:	Bloomfield/NM	Date Sampled:	07/30/92
Laboratory ID:	B923350 Duplicate	Date Received:	07/31/92
Sample Matrix:	Sludge	Date Extracted-TCLP:	08/03/92
Preservation:	None	Date Analyzed:	08/13/92
Condition:	Intact	Date Extracted-BNA:	08/05/92

Parameter	Analytical Result (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
1,4-Dichlorobenzene	ND	0.02	7.5
Hexachloroethane	ND	0.02	3
Nitrobenzene	ND	0.02	2
Hexachloro-1,3-butadiene	ND	0.02	0.5
2,4,6-Trichlorophenol	ND	0.02	2
2,4,5-Trichlorophenol	ND	0.02	400
2,4-Dinitrotoluene	ND	0.02	0.13
Hexachlorobenzene	ND	0.02	0.13
Pentachlorophenol	ND	0.02	100
o-Cresol	ND	0.02	200 **
m & p-Cresol *	ND	0.02	200 **
Pyridine	ND	0.2	5

ND - Compound not detected at stated Detection Limit
B - Compound detected in Method Blank.
* - Compounds coelute by GCMS.
** - Regulatory Limit of combined Cresols.

Inter-Mountain Laboratories, Inc.

910 Technology Boulevard, Suite B
Bozeman, Montana 59715

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	BLOOMFIELD REFINING COMPANY		
Sample ID:	2 South Evap Pond	Date Reported:	08/24/92
Laboratory ID:	B923350 Duplicate	Date Sampled:	07/30/92
Sample Matrix:	Sludge	Date Analyzed:	08/13/92

Parameter	Retention Time(min.)	Concentration	Units
Unknown substituted aromatic	9.51	0.02	mg/L
Unknown substituted aromatic	10.08	0.01	mg/L
Naphthalene	13.39	0.015	mg/L
2-Methylnaphthalene	15.37	0.016	mg/L
1-Methylnaphthalene	15.62	0.01	mg/L

Unknown concentrations calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%
2-Fluorophenol	39
Phenol-d6	40
Nitrobenzene-d5	55
2-Fluorobiphenyl	64
2,4,6-Tribromophenol	81
Terphenyl-d14	69

References:

Method 8270, Gas Chromatography/Mass Spectrometry for Semi-Volatile Organics, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, December 1987.

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, Environmental Protection Agency, 'ol. 55, No. 126, June 29, 1990.

Analyst

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Inter-Mountain Laboratories, Inc.

1633 Terra Avenue
Sheridan, Wyoming 82801

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

Client: **Bloomfield Refining**
Sample ID: 1 NOWPE Discharge
Lab ID: B923346/5658
Date: 08/23/92

Parameter:	Initial Sample Result mg/L	Second Sample Result mg/L	Relative Percent Difference
Arsenic	<0.1	<0.1	
Barium	0.5	0.5	0.0
Cadmium	<0.005	<0.005	
Chromium	0.01	0.01	0.0
Lead	<0.2	<0.2	
Mercury	<0.001	<0.001	
Selenium	<0.1	<0.1	
Silver	<0.01	<0.01	

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 6010A : Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, Nov. 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Laboratory Data Validation, Functional Guidelines for Evaluating Inorganics Analyses, USEPA, July 1988.

Reviewed by: _____

Inter-Mountain Laboratories, Inc.

Farmington → Albuquerque

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
IML - Farmington	BR

Sampler: (Signature)	Chain of Custody Tape No.
Orig. COC	None

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP BOA	TCLP Metals	TCLP VOA	Remarks
1 DOWPE Discharge	073092	0900	B923346	Water	4				
2 South Evap Pond	"	0930	B923347	"	4				
3 North Evap Pond	"	1006	B923348	"	4				
1 DOWP - E	"	1140	B923349	Sludge	3				
2 South Evap Pond	"	0930	B923350	"	3				
3 North Evap Pond	"	1000	B923351	"	3				
Trip Blank			B923352						

NFE

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Wanda Chee	073092	1655	UPS		
UPS	7/31/92	1030	Billie J. Perry	7/31/92	1030

Relinquished by: (Signature)	Date	Time	Received by Laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945

☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone (406) 586-8450

☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

05934

inl Inter-Mountain Laboratories, Inc.

00-600

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Bloomfield Refining Co. via IML-Farmington	Bozeman → Sheridan	
Sampler: (Signature) Client	**Chain of Custody Tape No.** Ref. Blank C.O.C. #10378	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP M+	Remarks
05 5658	8/4/92	08:30	B923346	Water	1	✓	
			B923347	Water	2	✓	
		↓	B923348	Water	2	✓	
		09:15	B923349	Sludge	2	✓	
		↓	B923350	Sludge	2	✓	
	↓	↓	B923351	Sludge	2	✓	

D.R.L

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D.R. Lingenfelter	8/5/92	16:00	UPS	8/5/92	16:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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10379

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
Bloomfield Ref. via Farmington IML	Bozeman → Sheridan	
Sampler: (Signature) Client	**Chain of Custody Tape No.** COC # 10379	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP MT					Remarks
Blank 70	8/4/92	08:30	Blank 70	Extract #1	2	✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
D. R. Lingenfelter	8/5/92	16:00	UPS	8/5/92	16:00
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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Inter-Mountain Laboratories, Inc.

10378

☐	☐	☐	☒	☐	☐
1633 Terra Avenue Sheridan, Wyoming 82801 Telephone (307) 672-8945	1714 Phillips Circle Gillette, Wyoming 82716 Telephone (307) 682-8945	2506 West Main Street Farmington, NM 87401 Telephone (505) 326-4737	910 Technology Blvd. Suite B Bozeman, Montana 59715 Telephone (406) 586-8450	Route 3, Box 256 College Station, TX 77845 Telephone (409) 776-8945	3304 Longmire Drive College Station, TX 77845 Telephone (409) 774-4999

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CHAIN OF CU. JDY RECORD

Client/Project Name	Project Location
BLOOMFIELD REFINING COMPANY	BLOOMFIELD /NM

Sampler: (Signature)	Chain of Custody Tape No.
CHRIS HANLEY	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP BNA	TCLP METALS	TCLP VOA's	TCLP VOA's	Remarks
1 NOWP-E DISCHARGE	7-30-92	9:00a		WATER	4	1	1	0	2	
2 SOUTH EVAP POND	7-30-92	9:30a		WATER	4	1	1	0	2	
3 NORTH EVAP POND	7-30-92	10:00a		WATER	4	1	1	0	2	
1 NOWP-E	7-30-92	11:40a		SLUDGE	3	1	1	1		
2 SOUTH EVAP POND	7-30-92	9:30a		SLUDGE	3	1	1	1		
3 NORTH EVAP POND	7-30-92	10:00a		SLUDGE	3	1	1	1		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
CHRIS HANLEY	7/30/92	3:55P			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

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☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone [illegible]) 586-8450

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3702

Inter-Mountain
Laboratories, Inc.

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

Bloomfield Refinery

Case Narrative

On August 20, 1992 a single water sample was submitted to Inter-Mountain Laboratories, Farmington for analysis. The sample was received cool and intact and was designated "NDLP". Analysis for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) was performed on the water sample as per the accompanying chain of custody form.

The BTEX analysis was performed by EPA Method 5030, Purge and Trap, and EPA Method 8020, Aromatic Volatile Hydrocarbons, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph equipped with a Photoionization Detector. BTEX analytes were not detected in the sample, as indicated on the enclosed report sheets.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analysis of the sample reported here are found in Analysis of Water and Waste, SW-846, USEPA, 1986.

Quality control reports have been included for your information. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Dr. Denise A. Bohemier,
Organic Lab Supervisor

BRC9513

Inter·Mountain
Laboratories, Inc.

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

BTEX
Volatile Aromatic Hydrocarbons

Bloomfield Refinery

Project Name:	NA	Report Date:	9/4/92
Sample ID:	NDLP	Date Sampled:	8/21/92
Sample Number:	9513	Date Received:	8/21/92
Sample Matrix:	water	Date Analyzed:	9/4/92
Preservative:	Cool, HCl		
Condition:	intact		

Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-xylene	ND	1.0
o-xylene	ND	1.0

ND - Analyte not detected at stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	101%	88-110%
4-Bromofluorobenzene	99%	86-115%

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

Comments:

Analyst

Review

Inter·Mountain
Laboratories, Inc.

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

QUALITY CONTROL REPORT
METHOD BLANK - VOLATILE AROMATIC HYDROCARBONS

Laboratory ID: MB0903B
Sample Matrix: Water

Date Analyzed: 9/3/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
p,m-Xylene	ND	1.0
o-Xylene	ND	1.0

ND - Analyte not detected at stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	95%	88-110%
Bromofluorobenzene	93%	86-115%

Reference:

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

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

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

Quality Control Report
Matrix Spike Analysis

Sample Number: 9514
Sample Matrix: Water
Preservative: Cool,HCl
Condition: Intact

Report Date: 09/03/92
Date Sampled: 08/21/92
Date Received: 08/21/92
Date Analyzed: 09/03/92

Analyte	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	Percent Recovery	Acceptance Limit
Benzene	10.0	ND	10.6	106%	39-150%
Toluene	10.0	ND	10.3	103%	46-148%
Ethylbenzene	10.0	ND	10.3	103%	32-160%
p,m-Xylene	20.0	ND	20.8	104%	NE
o-Xylene	10.0	ND	20.7	103%	NE

ND-Analyte not detected at stated detection limits.
NE-EPA has not established acceptance limits for this analyte.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	106%	88-110%
4-Bromofluorobenzene	105%	86-115%

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

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

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

QUALITY CONTROL REPORT
MATRIX SPIKE DUPLICATE - VOLATILE AROMATIC HYDROCARBONS

Sample Number:	9514	Date Sampled:	08/21/92
Sample Matrix:	Water	Date Received:	08/21/92
Preservative:	Cool,HCl	Date Analyzed:	09/03/92
Condition:	Intact		

Analyte	Spike Result (%)	Duplicate Result (%)	Percent Difference
Benzene	106%	103%	3%
Toluene	103%	101%	3%
Ethylbenzene	103%	100%	2%
p,m-Xylene	104%	102%	2%
0-Xylene	103%	101%	2%

ND-Analyte not detected at stated detection limit.

Quality Control: Duplicate acceptance limit set at 20% difference.

Surrogate	Percent Recovery	Acceptance Limits
Toluene-d8	105%	88-110%
4-Bromofluorobenzene	105%	86-115%

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

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

CLIENT:	Bloomfield Refinery	DATE REPORTED:	09/14/92
ID:	NDLP		
SITE:	1500	DATE RECEIVED:	08/20/92
LAB NO:	F9513	DATE COLLECTED:	08/20/92

Total Dissolved Solids (180C), mg/L.	13600
Total Suspended Solids, mg/L.....	26
Fluoride, mg/L.....	1.38
Sulfide as H2S, mg/L.....	30.5
Total Nitrate and Nitrite, mg/L.....	<0.02
Total Kjeldahl Nitrogen, mg/L.....	0.13
Ammonia, mg/L.....	7.13
Total Cyanide, mg/L.....	<0.01
Phenols, mg/L.....	<0.01

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

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

CLIENT: Bloomfield Refinery
ID: NDLP
SITE: 1500
LAB NO: F9513

DATE REPORTED: 09/14/92
DATE RECEIVED: 08/20/92
DATE COLLECTED: 08/20/92

Trace Metals by AA (Dissolved Concentration), mg/L

	Analytical Result:	Detection Limit:
Silver (Ag)	ND	<0.01
Arsenic (As)	ND	<0.005
Cadmium (Cd)	ND	<0.002
Chromium (Cr)	0.05	<0.02
Copper (Cu)	0.16	<0.01
Iron (Fe)	0.05	<0.05
Manganese (Mn)	0.28	<0.02
Lead (Pb)	ND	<0.02
Selenium (Se)	0.005	<0.005
Zinc (Zn)	ND	<0.01

Trace Metals by ICAP (Dissolved Concentration), mg/L

	Analytical Result:	Detection Limit:
Aluminum (Al)	0.1	<0.1
Boron (B)	1.61	<0.01
Barium (Ba)	ND	<0.5
Cobalt (Co)	ND	<0.01
Molybdenum (Mo)	0.02	<0.02
Nickel (Ni)	0.01	<0.01

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

Wanda Orso
Water Lab Supervisor

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

CASE NARRATIVE

On August 22, 1992, one water sample was received by Inter-Mountain Laboratories - College Station, Texas. It was received cool and intact, and was identified by Project Location "NDLP". Analyses for Toxicity Characteristic Leaching Procedure (TCLP) Semivolatiles, TCLP Volatiles, Halogenated Volatile Organics, and TCLP Metals were performed according to the accompanying chain of custody form.

No target analytes were detected at reportable levels. Due to matrix interference the sample had to be diluted in order to run TCLP Semivolatiles within calibration range. Detection levels are therefore higher than usual for that analysis.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the organic analyses of samples reported here are found in "Test Methods for Evaluating Solid Waste", SW-846, USEPA, 1986. Inorganic analyses (TCLP Metals) were done by methods found in vol. 55 of the EPA Federal Register, June, 1990.

Quality Control reports have been included for your information and use. These reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Mary Higginbotham

Mary Higginbotham
Project Manager

BRC1689

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS

Client:	**Bloomfield Refinery**		
Project Name:	NA	Report Date:	08/28/92
Project Location:	NDLP	Date Sampled:	08/20/92
Sample ID:	NDLP	Date Received:	08/22/92
Sample Number:	9513/C921669	Date Analyzed:	08/27/92
Sample Matrix:	Water		
Preservative:	Cool		
Condition:	Intact		

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	5.0
Bromoform	ND	0.5
Bromomethane	ND	5.0
Carbon tetrachloride	ND	0.5
Chlorobenzene	ND	0.5
Chloroethane	ND	0.5
2-Chloroethylvinylether	ND	0.5
Chloroform	ND	0.5
Chloromethane	ND	5.0
Dibromochloromethane	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethene	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
Methylene Chloride	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Trichloroethene	ND	0.5
Trichlorofluoromethane	ND	0.5
Vinyl chloride	ND	5.0

ND - Analyte not detected at stated detection limit.

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

METHOD 8010
HALOGENATED VOLATILE ORGANICS
Page 2 - Quality Control

Client:	**Bloomfield Refinery**		
Project Name:	NA	Report Date:	08/28/92
Sample ID:	NDLP	Date Sampled:	08/20/92
Sample Number:	NDLP	Date Received:	08/22/92
Sample Matrix:	9513/C921669	Date Analyzed:	08/27/92
Preservative:	Water		
Condition:	Cool		

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1-Chloro-2-Fluorobenzene	79%	75-125%
Bromochloromethane	90%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

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Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

Sample Number:	C921669 Duplicate	Date Sampled:	08/20/92
Sample Matrix:	Water	Date Received:	08/22/92
Preservative:	Cool	Date Analyzed:	08/27/92
Condition:	Intact		

Analyte	Sample Result (ug/L)	Duplicate Result (ug/L)	Percent Difference
Bromodichloromethane	ND	ND	NA
Bromoform	ND	ND	NA
Bromomethane	ND	ND	NA
Carbon tetrachloride	ND	ND	NA
Chlorobenzene	ND	ND	NA
Chloroethane	ND	ND	NA
2-Chloroethylvinylether	ND	ND	NA
Chloroform	ND	ND	NA
oromethane	ND	ND	NA
Dibromochloromethane	ND	ND	NA
1,2-Dichlorobenzene	ND	ND	NA
1,3-Dichlorobenzene	ND	ND	NA
1,4-Dichlorobenzene	ND	ND	NA
Dichlorodifluoromethane	ND	ND	NA
1,1-Dichloroethane	ND	ND	NA
1,2-Dichloroethane	ND	ND	NA
1,1-Dichloroethene	ND	ND	NA
trans-1,2-Dichloroethene	ND	ND	NA
1,2-Dichloropropane	ND	ND	NA
cis-1,3-Dichloropropene	ND	ND	NA
trans-1,3-Dichloropropene	ND	ND	NA
Methylene Chloride	ND	ND	NA
1,1,2,2-Tetrachloroethane	ND	ND	NA
Tetrachloroethene	ND	ND	NA
1,1,1-Trichloroethane	ND	ND	NA
1,1,2-Trichloroethane	ND	ND	NA
Trichloroethene	ND	ND	NA
Trichlorofluoromethane	ND	ND	NA
Vinyl chloride	ND	ND	NA

ND - Analyte not detected at stated detection limit
NA - Value not applicable or calculated

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

Sample Number:	C921669 Duplicate	Date Sampled:	08/20/92
Sample Matrix:	Water	Date Received:	08/22/92
Preservative:	Cool	Date Analyzed:	08/27/92
Condition:	Intact		

Quality Control:

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

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

Sample Number: C921671 Spike
Sample Matrix: Soil
Preservative: Warm
Condition: Intact

Date Sampled: 08/24/92
Date Received: 08/25/92
Date Analyzed: 08/28/92

Analyte	Spike Added (ug/Kg)	Sample Result (ug/Kg)	Spike Result (ug/Kg)	Percent Recovery	Acceptance Limit
Bromodichloromethane	44.8	ND	58.3	130%	42-172%
Bromoform	22.4	ND	24.1	107%	13-159%
Bromomethane	NA	ND	NA	NA	D-144%
Carbon tetrachloride	22.4	ND	25.7	115%	43-143%
Chlorobenzene	22.4	ND	24.7	110%	38-150%
Chloroethane	NA	ND	NA	NA	46-137%
2-Chloroethylvinylether	22.4	ND	23.1	103%	14-186%
Chloroform	22.4	ND	25.5	114%	49-133%
Chloromethane	NA	ND	NA	NA	D-193%
Dibromochloromethane	22.4	ND	24.2	108%	24-191%
2-Dichlorobenzene	22.4	ND	23.8	106%	D-208%
1,3-Dichlorobenzene	22.4	ND	23.1	103%	7-187%
1,4-Dichlorobenzene	22.4	ND	27.3	122%	42-143%
1,1-Dichloroethane	22.4	ND	24.1	107%	47-132%
1,2-Dichloroethane	22.4	ND	24.5	109%	51-147%
1,1-Dichloroethene	22.4	ND	23.6	105%	28-167%
trans-1,2-Dichloroethene	22.4	ND	22.7	101%	38-155%
1,2-Dichloropropane	22.4	ND	26.5	118%	44-156%
cis-1,3-Dichloropropene	22.4	ND	24.7	110%	22-178%
trans-1,3-Dichloropropene	22.4	ND	25.7	114%	22-178%
Methylene Chloride	22.4	ND	16.7	74%	25-162%
1,1,2,2-Tetrachloroethane	22.4	ND	26.3	118%	8-184%
Tetrachloroethene	22.4	ND	23.0	103%	26-162%
1,1,1-Trichloroethane	22.4	ND	24.7	110%	41-138%
1,1,2-Trichloroethane	22.4	ND	25.1	112%	39-136%
Trichloroethene	22.4	28.2	44.5	73%	35-146%
Trichlorofluoromethane	NA	ND	NA	NA	21-156%
Vinyl chloride	NA	ND	NA	NA	28-163%

ND - Analyte not detected at stated detection limit.

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

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

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Kevin Wadsworth
Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

Sample Number: MB0827V1
Sample Matrix: Water

Date Sampled: NA
Date Received: NA
Date Analyzed: 08/27/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Bromodichloromethane	ND	5.0
Bromoform	ND	0.5
Bromomethane	ND	5.0
Carbon tetrachloride	ND	0.5
Chlorobenzene	ND	0.5
Chloroethane	ND	0.5
2-Chloroethylvinyl ether	ND	0.5
Chloroform	ND	0.5
Chloromethane	ND	5.0
Dibromochloromethane	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	0.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethene	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
Methylene Chloride	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
Tetrachloroethene	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Trichloroethene	ND	0.5
Trichlorofluoromethane	ND	0.5
Vinyl chloride	ND	5.0

ND - Analyte not detected at stated detection limit.

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

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

Sample Number: MB0827V1
Sample Matrix: Water

Date Analyzed: 08/27/92

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	1-Chloro-2-Fluorobenzene	85%	75-125%
	Bromochloromethane	101%	75-125%

Reference: Method 5030, Purge and Trap
Method 8010, Halogenated Volatile Organics
SW-846, Test Methods for Evaluating Solid Wastes, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

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

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted: 08/26/92
Date Analyzed: 09/08/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
Bis(2-chloroethoxy)methane	ND	10
Bis(2-chloroethyl)ether	ND	10
Bis(2-chloroisopropyl)ether	ND	10
Bis(2-ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
m - Cresol	ND	10
p - Cresol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3 - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10
4,6 - Dinitro -2- methylphenol	ND	25

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)
METHOD BLANK ANALYSIS

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

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

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di-n-octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

EPA Method 8270

SEMIVOLATILE HYDROCARBONS

ADDITIONAL DETECTED COMPOUNDS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: Method Blank
Sample Number: MB548

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

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
No compounds detected at reportable levels		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Soil Acceptance Limits
2 - Fluorophenol	52%	25 - 121 %
Phenol - d6	106%	24 - 113 %
Nitrobenzene - d5	98%	23 - 120 %
2 - Fluorobiphenyl	89%	30 - 115 %
2,4,6 - Tribromophenol	9%	19 - 122 %
Terphenyl - d14	95%	18 - 137 %

References:

Method 3510: Separatory Funnel Liquid-Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Mary Higginbotham
Analyst

Review

Inter-Mountain
Laboratories, Inc.

11183 SH 30
College Station, TX 778
Phone (409) 776-8945
FAX (409) 774-4705

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Measured Concentration (mg/L)	Spike Biased Concentration (mg/L)	Reporting Limit (mg/L)	Maximum Allowable Level (mg/L)	Method Reference
Arsenic	ND	ND	0.2	5.0	6010
Barium	ND	ND	0.5	100	6010
Cadmium	ND	ND	0.05	1.0	6010
Chromium	ND	ND	0.05	5.0	6010
Lead	ND	ND	0.1	5.0	6010
Mercury	ND	ND	0.005	0.2	7470
Selenium	ND	ND	0.2	1.0	6010
Silver	ND	ND	0.1	5.0	6010

ND - Parameter Not Detected at stated reporting level.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

90

Inter-Mountain
Laboratories, Inc.

11183 SH 30
College Station, TX 77845
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TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - MATRIX SPIKE

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Unspiked Sample Concentration (mg/L)	Spiked Sample Concentration (mg/L)	Spike Amount (mg/L)	Percent Recovery	Method Reference
Arsenic	ND	1.06	1.00	106	6010
Barium	ND	1.18	1.00	118	6010
Cadmium	ND	0.42	0.50	84	6010
Chromium	ND	0.43	0.50	86	6010
Lead	ND	0.42	0.50	84	6010
Mercury	ND	0.022	0.025	88	7470
Selenium	ND	0.88	1.00	88	6010
Silver	ND	0.42	0.50	84	6010

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

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TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - DUPLICATE ANALYSIS

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Sample ID: NDLP
Laboratory Number: 9513/C921669/14747
Sample Matrix: Water
Preservative: None
Condition: Cool, Intact

Report Date: 9/9/92
Date Sampled: 8/20/92
Date Received: 8/24/92
Date Extracted: 8/25/92

Analyte	Original Concentration (mg/L)	Duplicate Concentration (mg/L)	Relative Percent Difference	Reporting Limit (mg/L)	Method Reference
Arsenic	ND	ND	NC	0.2	6010
Barium	ND	ND	NC	0.5	6010
Cadmium	ND	ND	NC	0.05	6010
Chromium	ND	ND	NC	0.05	6010
Lead	ND	ND	NC	0.1	6010
Mercury	ND	ND	NC	0.005	7470
Selenium	ND	ND	NC	0.2	6010
Silver	ND	ND	NC	0.1	6010

NC - Noncalculable RPD due to value(s) less than RL.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

92

Inter-Mountain
Laboratories, Inc.

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FAX (409) 774-4705

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - METHOD BLANK

CLIENT: Bloomfield Refinery
PROJECT: NDLP

Laboratory Number: 9513/C921669/14747
Sample Matrix: Water

Report Date: 9/9/92
Date Extracted: 8/25/92

Analyte	Measured Concentration (mg/L)	Reporting Limit (mg/L)	Method Reference
Arsenic	ND	0.2	6010
Barium	ND	0.5	6010
Cadmium	ND	0.05	6010
Chromium	ND	0.05	6010
Lead	ND	0.1	6010
Mercury	ND	0.005	7470
Selenium	ND	0.2	6010
Silver	ND	0.1	6010

ND - Parameter Not Detected at stated reporting level.

REFERENCE: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990. Analysis performed according to SW-846 "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods:, United States Environmental Protection Agency, November, 1986.

Reviewed by:

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: NDLP
Laboratory ID: 9513 / C921669
Sample Matrix: Water
Condition: Cool, Intact

Report Date: 09/01/92
Date Sampled: 08/20/92
Date Received: 08/22/92
TCLP Extraction: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	ND	0.005	0.5
Carbon tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6.0
1,2 - Dichloroethane	ND	0.005	0.5
1,1 - Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.005	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl chloride	ND	0.005	0.2

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	93%	76 - 114%
Toluene - d8	102%	88 - 110%
Bromofluorobenzene	98%	86 - 115%

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: NDLP
Laboratory ID: 9513 / C921669

Report Date: 09/01/92
Date Sampled: 08/20/92
Date Analyzed: 09/01/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
Unknown hydrocarbon	4.05	0.006 *
Carbon disulfide	4.37	0.018

* - Concentration calculated using assumed relative response factor = 1

Comments:

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
MATRIX SPIKE ANALYSIS

Client:	**BLOOMFIELD REFINERY**		
Project Name:	NDLP	Report Date:	09/01/92
Sample ID:	Matrix Spike	Date Sampled:	08/20/92
Laboratory ID:	C921669 SPK	Date Received:	08/22/92
Sample Matrix:	Water	TCLP Extracted:	09/01/92
Condition:	Cool, Intact	Date Analyzed:	09/01/92

Analyte	Spiked Sample Concentration	Sample Concentration	Spike Recovered	Spike Added	Percent Recovery
Benzene	0.094	ND	0.094	0.100	94%
Carbon tetrachloride	0.092	ND	0.092	0.100	92%
Chlorobenzene	0.092	ND	0.092	0.100	92%
Chloroform	0.082	ND	0.082	0.100	82%
1,2 - Dichloroethane	0.087	ND	0.087	0.100	87%
- Dichloroethylene	0.093	ND	0.093	0.100	93%
,ethyl ethyl ketone	0.125	ND	0.125	0.100	125%
Tetrachloroethylene	0.094	ND	0.094	0.100	94%
Trichloroethylene	0.090	ND	0.090	0.100	90%
Vinyl chloride	0.051	ND	0.051	0.100	51%

All units in mg/L.
ND - Not detected

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	95%	76 - 114%
Toluene - d8	100%	88 - 110%
Bromofluorobenzene	101%	86 - 115%

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB 0901F
Sample Matrix: Solid
Condition: NA

Report Date: 09/01/92
Date Sampled: NA
Date Received: NA
TCLP Extraction: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	ND	0.005	0.5
Carbon tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6.0
1,2 - Dichloroethane	ND	0.005	0.5
1,1 - Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.005	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl chloride	ND	0.005	0.2
Toluene	ND	0.005	NE
Xylenes, total	ND	0.005	NE

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	94%	76 - 114%
Toluene - d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB 0901F

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

Analyte	Retention Time (minutes)	Concentration * (mg/L)
None detected at reportable levels		

* - Calculated using assumed relative response factor of 1

Comments:

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Analyst

Review

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EPA Method 8240
VOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **BLOOMFIELD REFINERY**
Project Name: NDLP
Sample ID: Method Blank
Laboratory ID: MB 0901
Sample Matrix: Water
Condition: NA

Report Date: 09/01/92
Date Sampled: NA
Date Received: NA
Date Extracted: 09/01/92
Date Analyzed: 09/01/92

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	25
Acrolein	ND	50
Acrylonitrile	ND	50
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	20
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
1,2-Dichloroethene (total)	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

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EPA Method 8240

VOLATILE HYDROCARBONS

METHOD BLANK ANALYSIS

ADDITIONAL DETECTED COMPOUNDS

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

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

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

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2-Dichloroethane-d4	93%	76 - 114%
Toluene-d8	101%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

Reference:

Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics
Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **Bloomfield Refinery**
Project Location: NDLP
Sample ID: NDLP
Laboratory ID: 9513/ C921669
Sample Matrix: Water
Condition: Cool, intact

Report Date: 09/09/92
Date Sampled: 08/20/92
Date Received: 08/22/92
Date Extracted -
TCLP: 08/25/92
BNA: 08/26/92
Date Analyzed: 09/08/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.100	200
m,p - Cresol	ND	0.100	200
1,4 - Dichlorobenzene	ND	0.100	7.5
2,4 - Dinitrotoluene	ND	0.100	0.13
Hexachlorobenzene	ND	0.100	0.13
Hexachloro-1,3-butadiene	ND	0.100	0.5
Hexachloroethane	ND	0.100	3.0
Nitrobenzene	ND	0.100	2.0
Pentachlorophenol	ND	0.100	100
Pyridine	ND	0.100	5.0
2,4,5 - Trichlorophenol	ND	0.100	400
2,4,6 - Trichlorophenol	ND	0.100	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	*	21 - 100%
Phenol - d6	*	10 - 94%
Nitrobenzene - d5	*	35 - 114%
2 - Fluorobiphenyl	*	43 - 116%
2,4,6 - Tribromophenol	*	10 - 123%
Terphenyl - d14	*	33 - 141%

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

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

Report Date: 09/09/92
Date Sampled: 08/20/92
Date Analyzed: 09/08/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
None detected at reportable levels		

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Comments:

*Surrogates lost due to dilution of sample needed for analysis

Mary Higginbotham
Analyst

Review

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
MATRIX SPIKE ANALYSIS

Client: **Bloomfield Refinery**
Sample ID: TCLP Matrix Spike
Laboratory ID: BS537
Sample Matrix: Reagent Water

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted - 08/21/92
Date Analyzed: 08/21/92

Analyte	Concentration (mg/L)	Spike Added (mg/L)	Percent Recovery
o - Cresol	0.077	0.100	77%
m,p - Cresol	0.088	0.100	88%
1,4 - Dichlorobenzene	0.085	0.100	85%
2,4 - Dinitrotoluene	0.075	0.100	75%
Hexachlorobenzene	0.078	0.100	78%
Hexachloro-1,3-butadiene	0.075	0.100	75%
Hexachloroethane	0.079	0.100	79%
Nitrobenzene	0.075	0.100	75%
Pentachlorophenol	0.075	0.100	75%
Pyridine	0.078	0.100	78%
2,4,5 - Trichlorophenol	0.080	0.100	80%
2,4,6 - Trichlorophenol	0.076	0.100	76%

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	97%	21 - 100%
Phenol - d6	94%	10 - 94%
Nitrobenzene - d5	112%	35 - 114%
2 - Fluorobiphenyl	113%	43 - 116%
2,4,6 - Tribromophenol	100%	10 - 123%
Terphenyl - d14	111%	33 - 141%

Mary Higginbotham
Analyst

Review

Inter·Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
METHOD BLANK ANALYSIS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB825
Sample Matrix: Reagent Water

Report Date: 09/09/92
Date Sampled: N/A
Date Received: N/A
Date Extracted -
TCLP: 08/25/92
BNA: 08/26/92
Date Analyzed: 08/26/92

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.010	200
m,p - Cresol	ND	0.010	200
1,4 - Dichlorobenzene	ND	0.010	7.5
2,4 - Dinitrotoluene	ND	0.010	0.13
Hexachlorobenzene	ND	0.010	0.13
Hexachloro-1,3-butadiene	ND	0.010	0.5
Hexachloroethane	ND	0.010	3.0
Nitrobenzene	ND	0.010	2.0
Pentachlorophenol	ND	0.010	100
Pyridine	ND	0.010	5.0
2,4,5 - Trichlorophenol	ND	0.010	400
2,4,6 - Trichlorophenol	ND	0.010	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	68%	21 - 100%
Phenol - d6	71%	10 - 94%
Nitrobenzene - d5	68%	35 - 114%
2 - Fluorobiphenyl	74%	43 - 116%
2,4,6 - Tribromophenol	74%	10 - 123%
Terphenyl - d14	101%	33 - 141%

Inter·Mountain Laboratories, Inc.

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TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **Bloomfield Refinery**
Project Name: NDLP
Sample ID: TCLP Method Blank
Laboratory ID: TMB825

Report Date: 09/09/92
Date Sampled: N/A
Date Analyzed: 08/26/92

Analyte	Retention Time (minutes)	Concentration (mg/L)
None detected at reportable levels		

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 - 302, Part V, Environmental Protection Agency, Vol. 55, No. 126, June 29, 1990.

Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, United States Environmental Protection Agency, September 1986.

Mary Higginbotham
Analyst

Review

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CHAIN OF CU[illegible]DY RECORD

Client/Project Name	Project Location
Bloomfield Refinery	

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

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP Metals Vol, Semi Vol	8010-8020	See attached letter		Remarks
NOLP	082092	1500		H_2O	9					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	8-20-92	1555	[signature]	082092	1555
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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Inter-Mountain Laboratories, Inc.

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- ☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
- ☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
- ☐ 910 Technology Blvd. Suite B, Bozeman, Montana 59715, Telephone ([illegible]) [illegible]586-8450
- ☐ Route 3, Box 256, College Station, TX 77845, Telephone (409) 776-8945
- ☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

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College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606 / 0694G00141
Sample Matrix: Solid
Condition: Cool, intact

Report Date: 02/18/94
Date Sampled: 01/27/94
Date Received: 01/28/94
Date Extracted -
TCLP: 01/30/94
BNA: 01/31/94
Date Analyzed: 02/05/94

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.020	200
m,p - Cresol	0.024	0.020	200
1,4 - Dichlorobenzene	ND	0.020	7.5
2,4 - Dinitrotoluene	ND	0.020	0.13
Hexachlorobenzene	ND	0.020	0.13
Hexachloro-1,3-butadiene	ND	0.020	0.5
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Pentachlorophenol	ND	0.020	100
Pyridine	ND	0.020	5.0
2,4,5 - Trichlorophenol	ND	0.020	400
2,4,6 - Trichlorophenol	ND	0.020	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	55%	21 - 110%
Phenol - d6	66%	10 - 110%
Nitrobenzene - d5	57%	35 - 114%
2 - Fluorobiphenyl	66%	43 - 116%
2,4,6 - Tribromophenol	63%	10 - 123%
Terphenyl - d14	73%	33 - 141%

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College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606 / 0694G00141

Report Date: 02/18/94
Date Sampled: 01/27/94
Date Analyzed: 02/05/94

Analyte	Retention Time (minutes)	Concentration (mg/L)
2.4-Dimethylphenol	13.52	0.022
Naphthalene	14.26	0.029
2-Methylnaphthalene	16.01	0.050
1-Methylnaphthalene	16.25	0.039
Unknown organic acid	6.85	0.06 *
Unknown hydrocarbon	31.96	0.1 *
Unknown hydrocarbon	32.08	0.2 *
Unknown hydrocarbon	36.05	0.07 *
Unknown hydrocarbon	36.24	0.06 *

* - Concentration calculated using assumed Relative Response Factor = 1

References: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261, Environmental Protection Agency, November 1992.
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

SOIL ANALYSIS

Client: Bloomfield Refining Co.
Project: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606
Sample Matrix: Solid
Condition: Cool/Intact

Date Reported: 02/21/94
Date Sampled: 01/25/94
Date Received: 01/25/94

Parameter	Analytical Result	Units	Date of Analysis
Percent Moisture	12.88	percent	01/31/94
Total Sulfur*	103	percent	02/04/94

Reference: USDA Handbook 60 (1954); Method 26; p. 107.
National Technical Institute; EPA 600/2-78-054; Method 3.2.4.

Comments: *Total Sulfur is based upon dry weight of sample. Dilution of sample was required in order to determine sulphur content using the LECO sulfur analyzer. The sample was "diluted" 1:10 with sand.

Reported By:

Reviewed By:

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

RCRA CHARACTERISTICS

Client:	**BRC**		
Sample Id:	Sulfur Product	Date Reported	02/16/94
Lab Id:	4606/6764	Date Sampled:	01/27/94
Matrix:	Solid	Date Received:	02/03/94
Condition:	Cool/Intact	Date Analyzed:	02/04-02/11/94

Parameter:	Analytical Result	(units)
Corrosivity	5.97	pH in s.u.
Reactivity-CN	<0.1	mg/Kg
Reactivity-S	<1	mg/Kg
Ignitability*	Will not ignite	F°

*Reported as 'will' or 'will not' ignite due to matrix of sample.

Section 7.3.3.2: Test Method to Determine Hydrogen Cyanide Released From Wastes. SW-846, Sept. 1986

Section 7.3.4.1: Test Method to Determine Hydrogen Sulfide Released From Wastes. SW-846, Sept. 1986.

Method 9045: pH Measurement of Soils. SW-846, Sept., 1986.

Reviewed: D. Parker

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL PETROLEUM HYDROCARBONS

EPA Method 418.1

Bloomfield Refinery Co.

Project ID:	Bloomfield NM	Report Date:	02/21/94
Sample Matrix:	Solid	Date Sampled:	01/25/94
Preservative:	Cool	Date Received:	01/25/94
Condition:	Intact, Dry	Date Extracted:	02/21/94
		Date Analyzed:	02/21/94

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
Sulfur Product	4606	44.2	12.4

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Vonnie Dowl
Analyst

Marlon Hoppe
Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL PETROLEUM HYDROCARBONS
EPA Method 418.1

Method Blank Analysis

Project ID:	Bloomfield NM	Report Date:	02/21/94
Sample Matrix:	Solid	Date Extracted:	02/21/94
		Date Analyzed:	02/21/94

Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
MB34386	ND	2.50

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

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Inter-Mountain Laboratories, Inc.

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Farmington, New Mexico 87401

Quality Control Report
TOTAL PETROLEUM HYDROCARBONS
EPA Method 418.1

Duplicate Analysis

Project ID:	Bloomfield NM	Report Date:	02/21/94
Sample ID:	Sulfur Product	Date Extracted:	02/21/94
Sample Matrix:	Solid	Date Analyzed:	02/21/94

Lab ID	Duplicate Conc. (mg/kg)	Sample Conc. (mg/kg)	Percent Difference	Acceptance Limit
4606Dup	33.9	44.2	26%	< 30%

ND - Analyte not detected at the stated detection limit.
NA - Not calculated.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

Review

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Farmington, New Mexico 87401

TOTAL PETROLEUM HYDROCARBONS

EPA Method 418.1

Bloomfield Refining Co.

Project ID:	Bloomfield NM	Report Date:	01/31/94
Sample Matrix:	Soil	Date Sampled:	01/25/94
Preservative:	Cool	Date Received:	01/25/94
Condition:	Intact	Date Extracted:	01/28/94
		Date Analyzed:	01/28/94

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
Sulfur Product	4606	97.3	23.7

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL PETROLEUM HYDROCARBONS
EPA Method 418.1

Method Blank Analysis

Project ID:	Bloomfield NM	Report Date:	01/31/94
Sample Matrix:	Soil	Date Extracted:	01/28/94
		Date Analyzed:	01/28/94

Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
MB34362	ND	2.50

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL PETROLEUM HYDROCARBONS
EPA Method 418.1

Matrix Spike Analysis

Project ID:	Bloomfield NM	Report Date:	02/03/94
Sample Matrix:	Soil	Date Extracted:	01/28/94
		Date Analyzed:	01/28/94

Lab ID	Spiked Sample Conc. (mg/kg)	Unspiked Sample Conc. (mg/kg)	Spike Added (mg/kg)	Percent Recovery
MBSPK34362	14.4	ND	15.0	96%

Acceptance Limits: 81 - 109%

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL PETROLEUM HYDROCARBONS
EPA Method 418.1

Matrix Spike Duplicate Analysis

Project ID:	Bloomfield NM	Report Date:	02/03/94
Sample Matrix:	Soil	Date Extracted:	01/28/94
		Date Analyzed:	01/28/94

Lab ID	Spiked Duplicate Conc. (mg/kg)	Spiked Sample Conc. (mg/kg)	Percent Difference	Acceptance Limit
MBSPKDP34362	13.3	14.4	7%	< 16%

ND- Analyte not detected at the stated detection limit.

Reference: Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986; Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Location: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606 / 0694G00141
Sample Matrix: Solid
Condition: Intact

Report Date: 02/18/94
Date Sampled: 01/27/94
Date Received: 01/28/94
Date Extracted -
TCLP: 01/30/94
Volatile: 02/02/94
Date Analyzed: 02/02/94

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Benzene	0.014	0.005	0.5
Carbon Tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100
Chloroform	ND	0.005	6.0
1,2-Dichloroethane	ND	0.005	0.5
1,1-Dichloroethylene	ND	0.005	0.7
Methyl ethyl ketone	ND	0.010	200
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
Vinyl Chloride	ND	0.005	0.2

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	98%	76 - 114%
Toluene - d8	102%	88 - 110%
Bromofluorobenzene	96%	86 - 115%

Inter-Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606 / 0694G00141

Report Date: 02/18/94
Date Sampled: 01/27/94
Date Analyzed: 02/02/94

Analyte	Retention Time (minutes)	Concentration (mg/L)
Toluene	13.07	0.043
Ethylbenzene	15.63	0.004 J
m,p-Xylene	15.82	0.019
o-Xylene	16.43	0.011

* - Concentration calculated using assumed relative response factor = 1
B - analyte detected in method blank
J - Estimated concentration, below reported detection limit

References:

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 Environmental Protection Agency, November 1992.
Method 8240A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - MATRIX SPIKE

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Sulfur Product
Laboratory ID: 4606 / 0694G00141
Sample Matrix: Solid
Condition: Cool, intact

Report Date: 02/18/94
Date Sampled: 01/27/94
Date Received: 01/28/94
Date Extracted -
TCLP: 01/30/94
BNA: 01/31/94
Date Analyzed: 02/05/94

Analyte	Concentration (mg/L)	Spike Added (mg/L)	Percent Recovery
o - Cresol	0.187	0.200	93%
m,p - Cresol	0.316	0.400	79%
1,4 - Dichlorobenzene	0.142	0.200	71%
2,4 - Dinitrotoluene	0.182	0.200	91%
Hexachlorobenzene	0.177	0.200	88%
Hexachloro-1,3-butadiene	0.157	0.200	79%
Hexachloroethane	0.116	0.200	58%
Nitrobenzene	0.169	0.200	84%
Pentachlorophenol	0.212	0.200	106%
Pyridine	0.133	0.200	66%
2,4,5 - Trichlorophenol	0.181	0.200	90%
2,4,6 - Trichlorophenol	0.215	0.200	108%

ND - Analyte not detected at stated limit of detection
NA - Value not applicable or calculated

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	56%	21 - 110%
Phenol - d6	70%	10 - 110%
Nitrobenzene - d5	64%	35 - 114%
2 - Fluorobiphenyl	67%	43 - 116%
2,4,6 - Tribromophenol	69%	10 - 123%
Terphenyl - d14	78%	33 - 141%

Comments:

Wendi Mlog
Analyst

MR Scott
Review

Inter-Mountain Laboratories, Inc.

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: TCLP Method Blank
Laboratory ID: TMB03SV
Sample Matrix: TCLP Leachate Fluid

Report Date: 02/09/94
Date Sampled: N/A
Date Received: N/A
Date Extracted -
TCLP: 01/30/94
BNA: 01/31/94
Date Analyzed: 02/05/94

Analyte	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o - Cresol	ND	0.010	200
m,p - Cresol	ND	0.010	200
1,4 - Dichlorobenzene	ND	0.010	7.5
2,4 - Dinitrotoluene	ND	0.010	0.13
Hexachlorobenzene	ND	0.010	0.13
Hexachloro-1,3-butadiene	ND	0.010	0.5
Hexachloroethane	ND	0.010	3.0
Nitrobenzene	ND	0.010	2.0
Pentachlorophenol	ND	0.010	100
Pyridine	ND	0.010	5.0
2,4,5 - Trichlorophenol	ND	0.010	400
2,4,6 - Trichlorophenol	ND	0.010	2.0

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	50%	21 - 100%
Phenol - d6	57%	10 - 94%
Nitrobenzene - d5	55%	35 - 114%
2 - Fluorobiphenyl	57%	43 - 116%
2,4,6 - Tribromophenol	60%	10 - 123%
Terphenyl - d14	73%	33 - 141%

Inter·Mountain Laboratories, Inc.

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QUALITY CONTROL REPORT - METHOD BLANK

TOXICITY CHARACTERISTIC LEACHING PROCEDURE

SEMIVOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Project Name:	Bloomfield, NM	Report Date:	02/09/94
Sample ID:	TCLP Method Blank	Date Sampled:	N/A
Laboratory ID:	TMB03SV	Date Analyzed:	02/05/94

Analyte	Retention Time (minutes)	Concentration (mg/L)
None detected at reportable levels		

References: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 Environmental Protection Agency, November 1992.
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Comments:

Wendi M Rog
Analyst

MR Scott
Review

Inter·Mountain Laboratories, Inc.

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Method Blank
Laboratory ID: MB 42
Sample Matrix: Reagent Water

Report Date: 02/18/94
Date Extracted: 01/31/94
Date Analyzed: 02/05/94

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	10
Benzyl alcohol	ND	10
Bis(2-chloroethoxy)methane	ND	10
Bis(2-chloroethyl)ether	ND	10
Bis(2-chloroisopropyl)ether	ND	10
Bis(2-ethylhexyl)phthalate	ND	25
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
p - Chloroaniline	ND	10
p - Chloro - m - cresol	ND	10
2 - Chloronaphthalene	ND	10
2 - Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
m - Cresol	ND	10
p - Cresol	ND	10
Di - n - butylphthalate	ND	25
Dibenz(a,h)anthracene	ND	10
o - Dichlorobenzene	ND	10
m - Dichlorobenzene	ND	10
p - Dichlorobenzene	ND	10
3,3 - Dichlorobenzidine	ND	10
2,4 - Dichlorophenol	ND	10
Diethyl phthalate	ND	10
2,4 - Dimethylphenol	ND	10
Dimethyl phthalate	ND	10
4,6 - Dinitro -2- methylphenol	ND	25

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QUALITY CONTROL REPORT - METHOD BLANK

EPA Method 8270
SEMIVOLATILE ORGANIC COMPOUNDS (cont)

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Method Blank
Laboratory ID: MB 42

Report Date: 02/18/94
Date Analyzed: 02/05/94

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
2,4 - Dinitrophenol	ND	25
2,4 - Dinitrotoluene	ND	10
2,6 - Dinitrotoluene	ND	10
Di-n-octyl phthalate	ND	25
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	25
Hexachloroethane	ND	10
Hexachlorobutadiene	ND	10
Ideno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2 - Methylnaphthalene	ND	10
Naphthalene	ND	10
o - Nitroaniline	ND	10
m - Nitroaniline	ND	10
p - Nitroaniline	ND	10
Nitrobenzene	ND	10
o - Nitrophenol	ND	10
p - nitrophenol	ND	10
n - Nitrosodimethylamine	ND	10
n - Nitrosodiphenylamine	ND	10
n-Nitroso-di-n-propylamine	ND	10
Pentachlorophenol	ND	25
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4 - Trichlorobenzene	ND	10
2,4,5 - Trichlorophenol	ND	10
2,4,6 - Trichlorophenol	ND	10

ND - Analyte not detected at stated limit of detection

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK

EPA Method 8270
SEMIVOLATILE HYDROCARBONS
ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Method Blank
Sample Number: MB 42

Report Date: 02/18/94
Date Analyzed: 02/05/94

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L)
No compounds detected at reportable levels.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
2 - Fluorophenol	43%	21 - 110 %
Phenol - d6	49%	10 - 110 %
Nitrobenzene - d5	46%	35 - 114 %
2 - Fluorobiphenyl	48%	43 - 116 %
2,4,6 - Tribromophenol	52%	10 - 123 %
Terphenyl - d14	72%	33 - 141 %

References: Method 3510: Separatory Funnel Liquid-Liquid Extraction
Method 8270: Gas Chromatography / Mass Spectrometry for Semivolatile Organics
Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - BLANK SPIKE
VOLATILE ORGANIC COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Project Location:	Bloomfield, NM	Report Date:	02/10/94
Sample ID:	NA	Date Sampled:	NA
Laboratory ID:	MB0201 Blank Spike	Date Received:	NA
Sample Matrix:	Water	Date Extracted:	02/01/94
Condition:	Intact	Date Analyzed:	02/01/94

Analyte	Blank Spike Concentration	Blank Concentration	Spike Added	Percent Recovery
Benzene	95	ND	100	95%
Carbon tetrachloride	96	ND	100	96%
Chlorobenzene	87	ND	100	87%
Chloroform	97	ND	100	97%
1,2 - Dichloroethane	96	ND	100	96%
Dichloroethylene	135	ND	100	135%
yl ethyl ketone	72	ND	100	72%
Tetrachloroethylene	89	ND	100	89%
Trichloroethylene	91	ND	100	91%
Vinyl chloride	118	ND	100	118%

All units in ug/L
ND - Not detected
NA - Not added/not applicable

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	112%	70 - 121%
Toluene - d8	101%	81 - 117%
Bromofluorobenzene	100%	74 - 121%

References: Method 8240: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Wastes, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Analyst

Review

Inter·Mountain Laboratories, Inc.

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK ANALYSIS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
VOLATILE ORGANIC COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Location: Bloomfield, NM
Sample ID: TCLP Method Blank
Laboratory ID: TMB03V
Sample Matrix: NA
Condition: NA

Report Date: 02/10/94
Date Sampled: N/A
Date Received: N/A
Date Extracted -
TCLP: 01/30/94
Volatile: 02/02/94
Date Analyzed: 02/02/94

Analyte	Concentration (mg/L)	Detection Limit (mg/L)
Benzene	ND	0.005
Carbon tetrachloride	ND	0.005
Chlorobenzene	ND	0.005
Chloroform	ND	0.005
1,2 - Dichloroethane	ND	0.005
1,1 - Dichloroethylene	ND	0.005
Methyl ethyl ketone	ND	0.005
Tetrachloroethylene	ND	0.005
Trichloroethylene	ND	0.005
Vinyl chloride	ND	0.005

ND - Analyte not detected at stated limit of detection

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2 - Dichloroethane - d4	95%	76 - 114%
Toluene - d8	101%	88 - 110%
Bromofluorobenzene	99%	86 - 115%

Inter·Mountain Laboratories, Inc.

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK ANALYSIS

TOXICITY CHARACTERISTIC LEACHING PROCEDURE

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Project Name:	Bloomfield, NM	Report Date:	02/10/94
Sample ID:	TCLP Method Blank	Date Sampled:	N/A
Laboratory ID:	TMB03V	Date Analyzed:	02/02/94

Analyte	Retention Time (minutes)	Concentration (mg/L)
No compounds found at detectable levels.		

* - Concentration calculated using an assumed relative response factor = 1

Comments:

References: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261 Environmental Protection Agency, November 1992.
Method 8240A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Analyst

Review

Inter-Mountain Laboratories, Inc.

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College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK
VOLATILE ORGANIC COMPOUNDS

Client:	**BLOOMFIELD REFINING COMPANY**		
Project Location:	Bloomfield, NM	Report Date:	02/10/94
Sample ID:	Method Blank	Date Sampled:	NA
Laboratory ID:	MB0201	Date Received:	NA
Sample Matrix:	Water	Date Extracted:	02/01/94
Condition:	NA	Date Analyzed:	02/01/94

Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Acetone	ND	25
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	5
2-Butanone (MEK)	ND	20
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	5
Methylene chloride	ND	5
4-Methyl-2-pentanone	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Vinyl acetate	ND	5
Vinyl chloride	ND	5
Xylenes (total)	ND	5

ND - Analyte not detected at stated limit of detection

Inter·Mountain Laboratories, Inc.

3304 Longmire
College Station, Texas 77845

QUALITY CONTROL REPORT - METHOD BLANK

VOLATILE ORGANIC COMPOUNDS

ADDITIONAL DETECTED COMPOUNDS

Client: **BLOOMFIELD REFINING COMPANY**
Project Name: Bloomfield, NM
Sample ID: Method Blank
Laboratory ID: MB0201

Report Date: 02/10/94
Date Sampled: NA
Date Analyzed: 02/01/94

Tentative Identification	Retention Time (Minutes)	Concentration (ug/L) *
None detected at reported limits.		

* - Concentration calculated using assumed Relative Response Factor = 1

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
1,2-Dichloroethane-d4	97%	76 - 114%
Toluene-d8	99%	88 - 110%
Bromofluorobenzene	100%	86 - 115%

Reference: Method 8240A: Gas Chromatography / Mass Spectrometry for Volatile Organics Test Methods for Evaluating Solid Waste, SW - 846, Final Update I, United States Environmental Protection Agency, July 1992.

Comments:

U M Rog
Analyst

MR Scott
Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

Client:	**Bloomfield Refining Company**	Date Reported:	02/25/94
Sample ID:	Sulfur Product	Date Sampled:	01/27/94
Lab ID:	4606	Date Received:	01/28/94
Matrix:	Solid	TCLP Extract:	01/30/94
Condition:	Cool/Intact	Date Analyzed:	02/03-02/12/94

Parameter:	Analytical Result	Regulatory Level	Units
Arsenic	<0.2	5.0	mg/L
Barium	0.7	100	mg/L
Cadmium	<0.05	1.0	mg/L
Chromium	<0.05	5.0	mg/L
Lead	<0.2	5.0	mg/L
Mercury	<0.005	0.20	mg/L
Selenium	<0.2	1.0	mg/L
Silver	<0.1	5.0	mg/L

DRAFT

Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126 June 29, 1990.
Method 7470A : Mercury in Liquid Waste (Manual Cold Vapor Technique), SW-846, Nov. 1990.

Determination of Metal Concentrations by Graphite Furnace Atomic Absorption, SW-846, Nov. 1990.

DRAFT

Reviewed by:_____

Preliminary results
131 - mh

Inter-Mountain Laboratories, Inc.

TRACE METAL CONCENTRATIONS

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Bloomfield Refining Company**	Report Date:	02/25/94
Sample Id:	Sulfur Product	Date Sampled:	01/27/94
Lab Id:	4606	Date Received:	01/28/94
Matrix:	Solid	Date Analyzed:	02/03-02/12/94
Condition:	Intact		

Parameter:	Analytical Result	Units
Arsenic	<0.25	mg/kg
Barium	<25	mg/kg
Chromium	2.8	mg/kg
Cadmium	<0.1	mg/kg
Lead	<1	mg/kg
Mercury	0.163	mg/kg
Selenium	<0.25	mg/kg
Silver	11.5	mg/kg
Iron	4200	mg/kg

DRAFT

Method 3050A:
Acid Digestion of Sediments, Sludges, and Soils,USEPA, SW-846, Vol. 1A, Nov. 1990.

Method 7471:
Mercury in Solid or semi-Solid Waste (Manual Cold-Vapor Technique) USEPA SW-846, Vol 1A, Sept. 1986.

Determination of Metal Concentrations by Graphite Fumace Atomic Absorption, SW-846, Nov. 1990.

DRAFT

Reviewed: _____

Preliminary results
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Inter-Mountain Laboratories, Inc.

CHAIN OF CUST[illegible]DY RECORD

FILE COPY

Client/Project Name	Project Location
Bloomfield Refining CO	Blmfld, NM
Sampler: (Signature)	**Chain of Custody Tape No.**

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	RCI / TCLP Mt + total Mt (RCRA)	TCLP vol/semi / total Fe	% moisture / total sulfur	TPH 418.1	Remarks
Sulfur Product	1/25/94		4606	Solid	1					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			[signature]	1/25/94	
Relinquished by: (Signature)	**Date**	**Time**	**Received by: (Signature)**	**Date**	**Time**
Relinquished by: (Signature)	**Date**	**Time**	**Received by laboratory: (Signature)**	**Date**	**Time**

17844

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Telephone (409) 776-8945

☐ 3304 Longmire Drive
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Telephone (409) 774-4999

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Bloomfield Refining Co.

Case Narrative

On April 27, 1993, a solid sample was submitted to Inter-Mountain Laboratories - Farmington for analysis. The sample was received intact. Analyses for Toxicity Characteristic Leaching Procedure (TCLP) - Metals and Total Lead were performed on the samples as per the accompanying chain of custody form.

The samples were digested according to Method 3050, "Acid Digestion of Sediments, Sludges, and Soils". Analysis was by Method 2932, using a Varian SpectraAA 300 Graphite Furnace Atomic Absorption Spectrometer. Lead was detected in the samples at levels above the stated detection limits, as indicated in the enclosed report.

TCLP extraction on the sample was performed according to Method 1311. Analyses were performed according to the EPA 7000 series of methods for atomic absorption spectroscopy. Detectable levels of arsenic, barium, lead, and silver were found in the leachate.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The methods used in the analyses of the samples reported herein are found in Test Methods for Evaluation of Solid Waste, SW-846, USEPA, 1986.

Quality control reports appear at the end of the analytical package and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,

Dr. Denise A. Bohemier,
Organic Lab Supervisor

BRC2455

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS

CLIENT: BLOOMFIELD REFINING COMPANY
PROJECT: Bloomfield, NM

Sample ID: E - CAT
Laboratory ID: 2455
Sample Matrix: Solid
Preservative: Cool
Condition: Intact

Report Date: 05/06/93
Date Sampled: 04/26/93
Date Received: 04/27/93
Date Extracted: 04/28/93

Analyte	Concentration	Detection Limit	Regulatory Level	Units
Arsenic	0.008	0.005	5.0	mg / L
Barium	0.7	0.5	100	mg / L
Cadmium	ND	0.002	1.0	mg / L
Chromium	ND	0.02	5.0	mg / L
Lead	0.04	0.02	5.0	mg / L
Mercury	ND	0.05	0.2	mg / L
Selenium	ND	0.005	1.0	mg / L
Silver	0.01	0.01	5.0	mg / L

ND - Parameter not detected at stated Detection Limit.

REFERENCES: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990.
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW - 846, United States Environmental Protection Agency, November, 1986.
Method 7060: Arsenic (AA, Furnace Technique)
Method 7080: Barium (AA, Direct Aspiration)
Method 7131: Cadmium (AA, Furnace Technique)
Method 7190: Chromium (AA, Direct Aspiration)
Method 7421: Lead (AA, Furnace Technique)
Method 7470: Mercury in Liquid Waste (Manual Cold Vapor Technique)
Method 7740: Selenium (AA, Furnace Technique)
Method 7760: Silver (AA, Direct Aspiration)

CRB

Reviewed

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL METALS

Trace Metal Concentrations

Bloomfield Refining Co.

Project ID:	Bloomfield, NM	Report Date:	05/07/93
Sample ID:	E - CAT	Date Sampled:	04/26/93
Lab ID:	2455	Date Received:	04/27/93
Sample Matrix:	Solid	Date Digested:	04/29/93
		Date Analyzed:	04/29/93

Analyte	Concentration	Detection Limit	Units
Lead	73	1.0	mg/kg

ND- Analyte not detected at the stated detection limit.

Reference: Method 3050: "Acid Digestion of Sediments, Sludges, and Soils"; Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.

Comments:

Gloria Bartlett
Analyst

Review

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Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL METALS
Trace Metal Concentrations

Method Blank Analysis

Lab ID: 2455Blank
Sample Matrix: Liquid

Report Date: 05/07/93
Date Digested: 04/29/93
Date Analyzed: 04/29/93

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Lead	ND	1.0

ND- Analyte not detected at the stated detection limit.

Reference: Method 3050: "Acid Digestion of Sediments, Sludges, and Soils"; Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.

Comments:

Gloria Bartlett
Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control Report
TOTAL METALS
Trace Metal Concentrations

Matrix Spike Analysis

Lab ID: Blank Spike
Sample Matrix: Solid

Report Date: 05/07/93
Date Digested: 04/29/93
Date Analyzed: 04/29/93

Analyte	Spiked Sample Conc. (mg/kg)	Unspiked Sample Conc. (mg/kg)	Spike Added (mg/kg)	Percent Recovery
Lead	5.0	0.0	5.0	100%

ND- Analyte not detected at the stated detection limit.

Reference: Method 3050: "Acid Digestion of Sediments, Sludges, and Soils"; Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.

Comments:

Gloria Bartlett
Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - METHOD BLANK

CLIENT: BLOOMFIELD REFINING COMPANY
PROJECT: Bloomfield, NM

Sample ID: E - CAT
Sample Matrix: Solid

Report Date: 05/06/93
Date Extracted: 04/28/93

Analyte	Concentration	Detection Limit	Regulatory Level	Units
Arsenic	ND	0.005	5.0	mg / L
Barium	0.6	0.5	100	mg / L
Cadmium	ND	0.002	1.0	mg / L
Chromium	ND	0.02	5.0	mg / L
Lead	ND	0.02	5.0	mg / L
Mercury	ND	0.05	0.2	mg / L
Selenium	ND	0.005	1.0	mg / L
Silver	ND	0.01	5.0	mg / L

ND - Parameter Not Detected at stated reporting level

REFERENCES: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990.
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW - 846, United States Environmental Protection Agency, November, 1986.
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Method 7080: Barium (AA, Direct Aspiration)
Method 7131: Cadmium (AA, Furnace Technique)
Method 7190: Chromium (AA, Direct Aspiration)
Method 7421: Lead (AA, Furnace Technique)
Method 7470: Mercury in Liquid Waste (Manual Cold Vapor Technique)
Method 7740: Selenium (AA, Furnace Technique)
Method 7760: Silver (AA, Direct Aspiration)

Reviewed

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOXICITY CHARACTERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - DUPLICATE ANALYSIS

CLIENT: BLOOMFIELD REFINING COMPANY
PROJECT: Bloomfield, NM

Sample ID: E - CAT
Laboratory ID: 2455dup
Sample Matrix: Solid
Preservative: Cool
Condition: Intact

Report Date: 05/06/93
Date Sampled: 04/26/93
Date Received: 04/27/93
Date Extracted: 04/28/93

Analyte	Original Concentration	Duplicate Concentration	Relative Percent Difference	Detection Limit	Units
Arsenic	0.008	0.007	13.3	0.005	mg / L
Barium	0.7	0.6	15.4	0.5	mg / L
Cadmium	ND	ND	NC	0.002	mg / L
Chromium	ND	ND	NC	0.02	mg / L
Lead	0.04	0.04	2.5	0.02	mg / L
Mercury	ND	na	NC	0.05	mg / L
Selenium	ND	ND	NC	0.005	mg / L
Silver	0.01	0.01	0.0	0.01	mg / L

ND - Parameter Not Detected at stated detection level.
NC - Noncalculable RPD due to value(s) less than DL.

REFERENCES: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990.
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW - 846, United States Environmental Protection Agency, November, 1986.
Method 7060: Arsenic (AA, Furnace Technique)
Method 7080: Barium (AA Direct Aspiration)
Method 7131: Cadmium (AA, Furnace Technique)
Method 7190: Chromium (AA, Direct Aspiration)
Method 7421: Lead (AA, Furnace Technique)
Method 7470: Mercury in Liquid Waste (Manual Cold Vapor Technique)
Method 7740: Selenium (AA, Furnace Technique)
Method 7760: Silver (AA, Direct Aspiration)

Reviewed

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOXICITY CHARATERISTIC LEACHING PROCEDURE
TRACE METAL CONCENTRATIONS
QUALITY CONTROL REPORT - MATRIX SPIKE

CLIENT: BLOOMFIELD REFINING COMPANY
PROJECT: Bloomfield, NM

Sample ID: E- CAT
Sample Matrix: Solid

Report Date: 05/06/93
Date Extracted: 04/28/93

Analyte	Spiked Sample Concentration	Unspiked Sample Concentration	Spike Amount	Percent Recovery	Units
Arsenic	0.028	<0.005	0.050	112	mg / L
Barium	6.9	2.6	10.0	110	mg / L
Cadmium	0.002	<0.002	0.002	97	mg / L
Chromium	0.85	<0.02	2.00	85	mg / L
Lead	0.03	<0.02	0.05	114	mg / L
Mercury	<0.05	<0.05	NA	NA	mg / L
Selenium	0.023	<0.005	0.050	82	mg / L
Silver	0.91	<0.01	2.00	91	mg / L

ND - Parameter not detected at established Detection Limit.

REFERENCES: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302, Part V, EPA Vol. 55, No. 126, June 29, 1990.
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW - 846, United States Environmental Protection Agency, November, 1986.
Method 7060: Arsenic (AA, Furnace Technique)
Method 7080: Barium ((AA, Direct Aspiration)
Method 7131: Cadmium (AA, Furnace Technique)
Method 7190: Chromium (AA, Direct Aspiration)
Method 7421: Lead (AA Furnace Technique)
Method 7470: Mercury in Liquid Waste (Manual Cold Vapor Technique)
Method 7740: Selenium (AA, Furnace Technique)
Method 7760: Silver (AA, Direct Aspiration)

Reviewed

Inter-Mo Laboratories

CHAIN OF CU.)DY RECORD

FILE COP.

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

Sampler: (Signature) — Chain of Custody Tape No.

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	TCLP-METALS	TOTAL Pb			Remarks
E-CAT	4-26-93	—	2455	SOLID-SILICA CATALYST + Al_2O_3	1	✓	✓			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	4-27-93	16:30		4/27/93	1630
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945

☑ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 1160 Research Dr., Bozeman, Montana 59715, Telephone 586-8450

☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

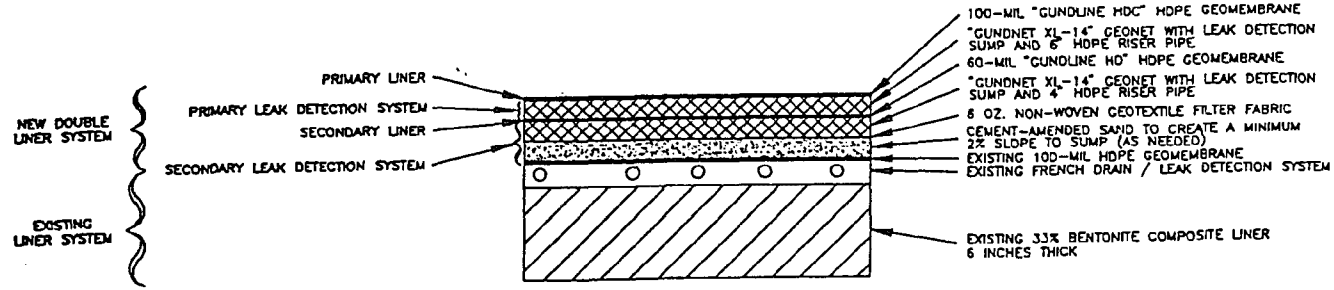
12586

ATTACHMENT 4

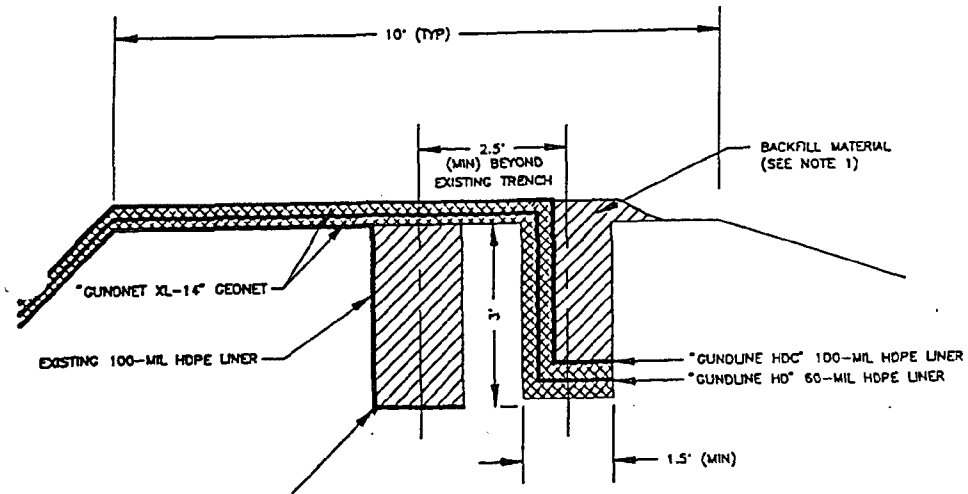
	Pages
Spill Prevention Control & Countermeasure Plan	1-10
Oil Spill Response Plan (Refinery)	11-17
Refinery Emergency Plan	18-40
San Juan Pipe Line Spill Response Guide	41-50
Storm Water Pollution Prevention Plan	51-62
OSHA Process Safety Management Summary	63-64

APPENDIX D

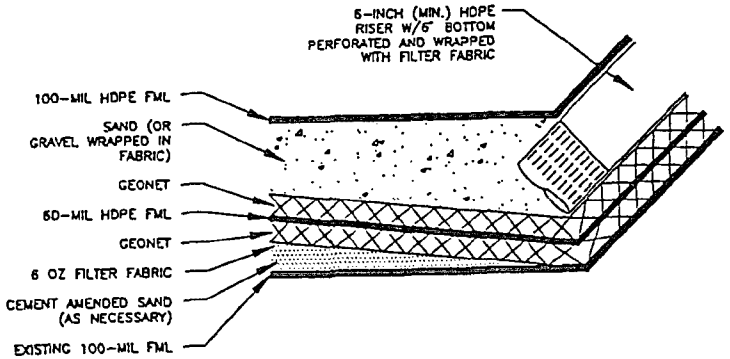
NOTES
1) USE SUITABLE GRANULAR BACKFILL MATERIAL COMPACT BACKFILL TO MINIMUM 90% STANDARD PROCTOR DENSITY AT ± 3% OF OPTIMUM MOISTURE CONTENT.



LINER DETAIL
DETAIL A (TYP)
(N.T.S.)



ANCHOR TRENCH DETAIL
DETAIL B (TYP)
(N.T.S.)



PRIMARY LEAK DETECTION SUMP DETAIL
DETAIL C (TYP)
(N.T.S.)

CONCEPTUAL
NOT FOR CONSTRUCTION

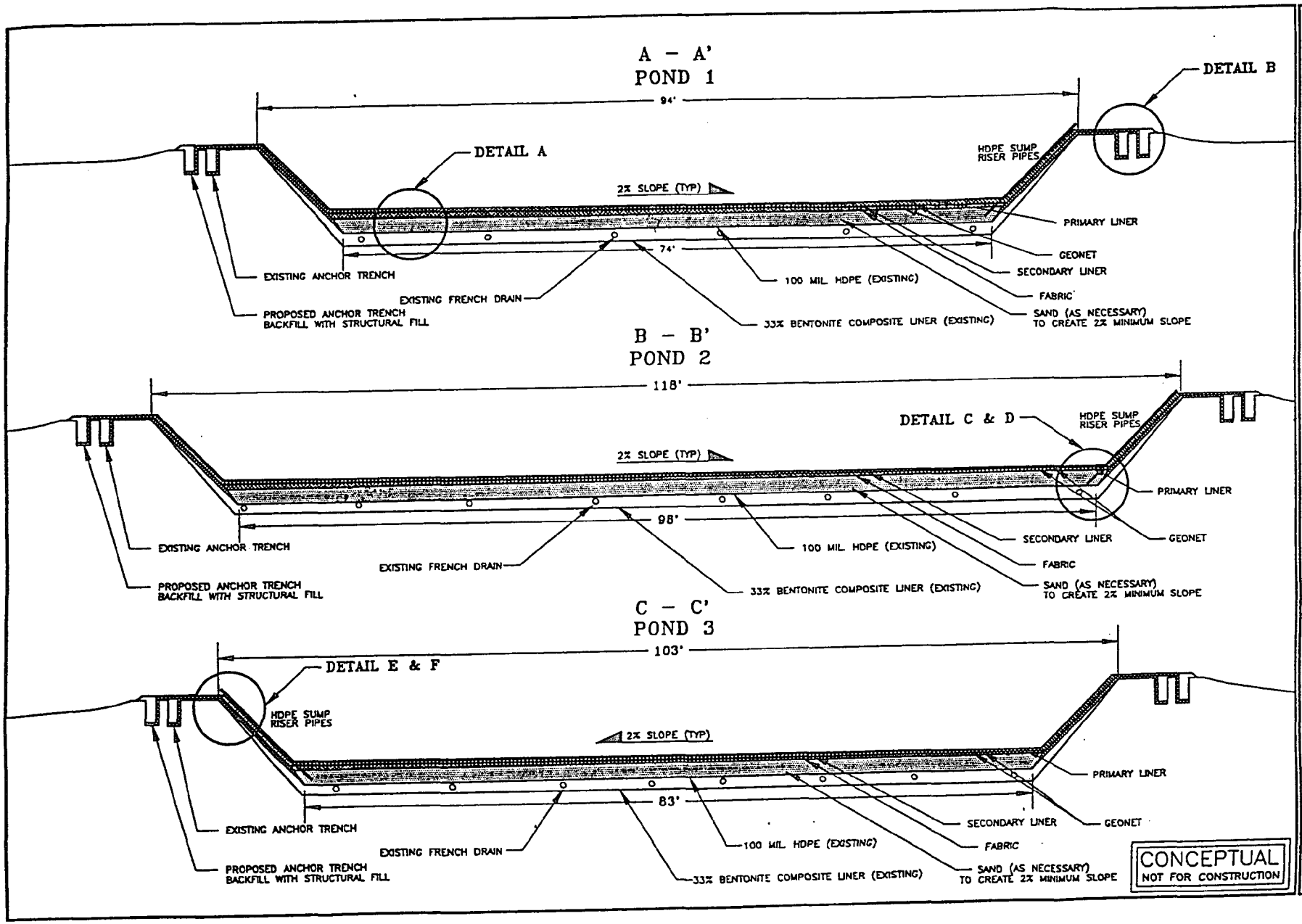
ERM-Rocky Mountain, Inc.
5950 South Willow Drive
Suite 200
Greenwood Village, Colorado 80111
(303) 741-5050
ERM

BLOOMFIELD REFINING COMPANY
BLOOMFIELD, NEW MEXICO 87413

SURFACE IMPOUNDMENT RETROFIT
SYSTEM DETAILS

DESIGNED	EAG
DRAWN	SRL
CHECKED	
DATE	02/10/94
JOB NO	931044.0
FILENAME	FIG-3

FIGURE 9



ERM–Rocky Mountain, Inc.
5950 South Willow Drive
Suite 200
Greenwood Village, Colorado 80111
(303) 741-5050

BLOOMFIELD REFINING COMPANY
BLOOMFIELD, NEW MEXICO 87413

CROSS SECTIONAL VIEW OF SURFACE IMPOUNDMENTS

DESIGNED	EAG
DRAWN	SRL
CHECKED	
DATE	02/11/94
JOB NO	931044.0
FILENAME	FIG-2

FIGURE 8

BLOOMFIELD REFINING COMPANY

SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

WITH EMERGENCY PLAN AND STORMWATER POLLUTION PREVENTION PLAN

Prepared By:

Bloomfield Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

June, 1999

SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

1.0 GENERAL INFORMATION

1.1 Name of facility: **Giant Refining Company - Bloomfield**

1.2 Type of facility: **Onshore Facility - Petroleum Refinery**

1.3 Location of facility: **#50 County Road 4990**
Bloomfield, New Mexico 87413

Near latitude: 36°41'50"
longitude: 107° 58'20"

1.4 Name and address of operator:

Name : **Giant Refining Company - Bloomfield**
Address: **P.O. Box 159**
Bloomfield, New Mexico 87413

1.5 Designated person accountable for oil spill prevention at the facility:

Name and title: **Lynn Shelton, Environmental Manager**

1.6 Reportable oil spill event during last five years: **None**

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature: _____

Name: **John Stokes**
Title: **Refinery Manager**

CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR, Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Chad King
Printed Name of Registered Professional Engineer

(Seal)

_____
Signature of Registered Professional Engineer

Date_____ Registration No._____ State_____

PART 1 GENERAL INFORMATION

1.7 Potential Spills - Prediction & Control

NO.	SOURCE	MAJOR TYPE OF FAILURE	TOTAL QUANTITY (BBLS)	RATE (BBLS /HR)	DIR. OF FLOW	SECONDARY CONTAINMENT
	PRODUCT TANKS					
3	JP-8	RUPTURE	10,000	SEE 1	SEE	EARTHEN DIKES
4	JP-8	"	10,000	"	DWGS	"
5	HI-REFORMATE	"	10,000	"	"	"
8	CRUDE SLOP	"	500	"	"	CONCRETE ENCLOSURE
9	CRUDE SLOP	"	500	"	"	"
11	REFORMATE	"	55,000	"	"	EARTHEN DIKES
12	POLY/CAT MIX	"	55,000	"	"	"
13	NOLEAD SALES	"	30,000	"	"	"
14	NOLEAD SALES	"	30,000	"	"	"
17	REDUCED CRUDE	"	40,000	"	"	"
18	#1 DIESEL	"	55,000	"	"	"
19	#2 DIESEL	"	36,000	"	"	"
20	FCC SLOP	"	5,000	"	"	"
21	FCC SLOP	"	3,000	"	"	"
22	GASOLINE SLOP	"	1,500	"	"	"
23	BASE GASOLINE	"	40,000	"	"	"
24	REFORMER FEED	"	10,000	"	"	"
25	REFORMER FEED	"	10,000	"	"	"
26	JET A SALES	"	4,000	"	"	"
27	HVY BURNER FUEL	"	10,000	"	"	"
28	CRUDE	"	80,000	"	"	"
29	#2 DIESEL SALES	"	17,000	"	"	"
30	PREMIUM BLEND	"	17,000	"	"	"
31	CRUDE	"	110,000	"	"	"
32	PREMIUM GASOLINE	"	20,000	"	"	"
35	REFORMER FEED	[redacted]	55,000	[redacted]	[redacted]	[redacted]
36	POLY/CAT MIX	[redacted]	55,000	[redacted]	[redacted]	[redacted]
44	ETHANOL	"	2,000	"	"	"
	PRESSURE TANKS					
B-01	LPG SLOP	"	286	"	"	"
B-02	LPG SLOP	"	430	"	"	"
B-12	LT NATURAL	"	692	"	"	"
B-13	BUTANE	"	500	"	"	"
B-14	BUTANE	"	500	"	"	"
B-15	PROPANE	"	714	"	"	"
B-16	PROPANE	"	714	"	"	"
B-17	POLY FEED	"	714	"	"	"
B-18	POLY FEED	"	714	"	"	"
B-19	POLY FEED	"	714	"	"	"
B-20	BUTANE	"	714	"	"	"
B-21	BUTANE	"	714	"	"	"
B-22	SATURATE LPG	"	714	"	"	"
B-23	SATURATE LPG	"	714	"	"	"
	PROCESSES					
	FCC UNIT	"		"	"	PROCESS AREAS ARE
	CRUDE UNIT	"		"	"	EQUIPPED WITH
	REFORMER UNIT	"		"	"	CONCRETE PADS &
	CAT/POLY UNIT	"		"	"	CURBS THROUGHOUT.
	LOADING AREA	OVERFLOW		250	"	CNCRT PADS & CURBS.

Note: Rate extremely variable, depending upon nature and extent of failure. Tank 11 is used to calculate worst case scenario (see Response Plan section).

1.8 Containment or diversionary structures or equipment to prevent oil from reaching navigable waters are practicable.

Yes, secondary containment is provided for all oil release sources. In addition, an arroyo that is located to the north, central part of the refinery (see drawings) that normally would drain to the San Juan River, is equipped with dikes that would act as tertiary containment.

1.9 Inspections and Records

A. The required inspections follow written procedures. Yes

B. The written procedures and a record of inspections, signed by the appropriate supervisor or inspector, are attached. Some

Discussion: The refinery is manned on a 24-hour basis. Each area of the facility has assigned personnel responsible for continuous monitoring of the facility systems. Process equipment is monitored in accordance with appropriate API Standards. Tanks are inspected in accordance with API Standard 653, Tank Inspection, Repair, Alteration, and Reconstruction.

1.10 Personnel Training and Spill Prevention Procedures

A. Personnel are properly instructed in the following:

(1) operations and maintenance of equipment to prevent oil discharges, and Yes

(2) applicable pollution control laws, rules, and regulations. Yes

Describe procedures employed for instruction:

Operations personnel complete an operator certification program that includes pollution prevention techniques. New personnel are given on-the-job training by experienced personnel and supervisors of all aspects of the job. Hazardous materials training is provided to all employees. Emergency response training is provided at least annually. Fire training, which includes techniques applicable to overall ability to prevent oil releases, is provided annually.

B. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan. Yes

Describe briefing program: New employees are given extensive initial training. Monthly safety training, to include spill prevention, is conducted by plant supervision. Spill incident reports are prepared for all spills that occur within the refinery. Supervision discusses the incident with the responsible party and determines a course of action to avoid future occurrences. Small incidences are considered serious.

SPCC PLAN, BLOOMFIELD REFINING COMPANY
PART 2, ALTERNATE A, DESIGN AND OPERATING INFORMATION

A. Facility Drainage

1. Drainage from diked storage areas is controlled as follows (include operating description of valves, pumps, ejectors, etc.): Diked areas are not directly drained. Any spills within diked storage areas will be removed by the use of portable pumps (a large diesel operated pump is maintained by the refinery) or mobile vacuum units. The refinery owns one vacuum truck and others can be quickly obtained from local contractors.

2. Drainage from undiked areas is controlled as follows (include description of ponds, lagoons, or catchment basins and methods of retaining and returning oil to facility): Drainage in the process areas is controlled by oily/water sewers routed to the API separator which removes oil. The refinery does not operate a separate storm water system. The water effluent from the separator (and oil carryover in the event of an overloading incident) goes to a series of three lined ponds and then selectively to four possible evaporation ponds. Any oil carried over would be skimmed utilizing booms and vacuum trucks and returned to the API separator for oil recovery.

3. The procedure for supervising the drainage of rain water from secondary containment into a storm drain or an open watercourse is as follows (include description of (a) inspection for pollutants, and (b) method of valving security). The refinery is located in a relatively arid region with average rainfall of about 9 inches. Rainwater is not normally removed from secondary containment. Secondary containment is not equipped with direct draining equipment. If removal of rain water is required, it would be removed utilizing pumps or vacuum trucks. Any removed rain water will be emptied into the refinery waste water system, routed first through the API separator. The refinery is a zero discharge facility. No stormwater is directly discharged to any storm drains or open watercourses. Waste water is currently disposed by evaporation.

SPCC PLAN, BLOOMFIELD REFINING COMPANY
PART 2, ALTERNATE A, DESIGN AND OPERATING INFORMATION

B. Bulk Storage Tanks

1. Describe tank design, materials of construction, fail-safe engineering features, and if needed, corrosion protection: Tanks are all of circular steel construction. Tanks 20, 21, 24, and 25 are bolted construction. The rest are welded construction. Tanks 11, 12, 13, 14, 32, and 44 are built on a concrete tank ring and sand cushion; tanks 8 and 9 are built on concrete pads with concrete retaining walls; and all others are constructed on sand pads only. All tanks are painted for external corrosion control. The tank floors and under ground piping are protected with an active electrical cathodic protection system.

2. Describe secondary containment design, construction materials, and volume: Secondary containment consists of earthen dikes (minimum). Volume is adequate for most tanks, but will be evaluated during 1993 inspection.

3. Describe tank inspection methods, procedures, and record keeping: Tanks throughout the refinery are manually gaged each day. The gauger is on the alert for any leaks or tank disorders. Daily inventory logs are checked and balanced to determine disorders or losses. Tanks are scheduled for periodic cleaning, depending on age, during which complete internal inspections are done. Repairs are made before putting the tank back in service. Tanks are inspected in accordance with API Standard 653. Records include detailed individual tank files, computerized inspection histories, and API 653 inspection results.

4. Internal heating coil leakage is controlled by one or more of the following control factors:

(a) Monitoring the steam return or exhaust lines for oil. Yes

Describe monitoring procedure: Daily product sampling and continuous lookout for oil in the steam return lines.

(b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system. Yes

(c) Installing external heating systems. N/A

5. Disposal facilities for plant effluent discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event. N/A

C. Facility Transfer Operations, Pumping, and In-plant Process

1. Corrosion protection for buried pipelines:

(a) Pipelines are wrapped and coated to reduce corrosion. Yes

(b) Cathodic protection is provided for pipelines if determined necessary by electrolytic testing Yes

(c) When a pipeline section is exposed, it is examined and corrective action taken as necessary: Yes

2. Pipeline terminal connections are capped or blank-flanged and marked if the pipeline is not in service or on standby service for extended. Yes

Describe criteria for determining when to cap or blank-flange: Buried lines containing oil or oil products have been eliminated except where absolutely necessary such as road or dike crossings. All abandoned lines are plugged or capped.

3. Pipe supports are designed to minimize abrasion and corrosion and allow for expansion and contraction. Yes

Describe pipe support design: Supports are steel and concrete structures of various shapes. Shoes are provided on process piping. Fireproofing has been applied to some critical, vertical steel members.

4. Describe procedures for regularly examining all above-ground valves and pipelines (including flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces): Daily visual inspections are done by plant personnel.

5. Describe procedures for warning vehicles entering the facility to avoid damaging above-ground piping: A rigid permitting procedure is followed to authorize vehicles in the refinery. Where possible, roads cross over pipes. Overhead piperacks in traffic areas are very high to allow clearance for all types of vehicles. Contractors are given careful safety instructions before they are allowed in the refinery.

SPCC PLAN, BLOOMFIELD REFINING COMPANY
PART 2, ALTERNATE A, DESIGN AND OPERATING INFORMATION

D. Facility Tank Car & Tank Truck Loading/Unloading Rack

Tank car and tank truck loading/unloading occurs at the facility. (If YES, complete 1 through 5 below.) Yes

1. Loading/unloading procedures meet the minimum requirements and regulations of the Department of Transportation. Yes

2. The unloading area has a quick drainage system. Yes

3. The containment system will hold the maximum capacity of any single compartment of a tank truck loaded/unloaded in the plant. Yes

Describe containment system design, construction materials, and volume: The truck product loading area controls spills with a concrete slab and curbing. The slab is designed to drain spills to a sump which is then pumped to Tank 22 from which the material is blended back into leaded gasoline or other appropriate product. The truck crude unloading area controls spills with a concrete slab and curbing. The slab is designed to drain spills to a sump which can then be pumped to the crude treating tanks or the API separator. Both areas have secondary containment (earthen dikes) in the event of sump overfilling. Overflow, automatic shutoffs are required on trucks.

4. An interlocked warning light, a physical barrier system, or, warning signs are provided in loading/unloading areas to prevent vehicular departure before disconnect of transfer lines. Yes

Describe methods, procedures, and/or equipment used to prevent premature vehicular departure: Warning and instruction signs are provided in the area. New drivers are trained in the proper operation of the loading/unloading equipment. Company personnel (other than truck drivers) are present in the area to provide assistance when needed.

5. Drains and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure. Yes

The facility does not have any rail operations.

SPCC, BLOOMFIELD REFINING COMPANY
PART 2, ALTERNATE A, DESIGN AND OPERATING INFORMATION

F. Security

1. Plants handling, processing, or storing oil are fenced.
Yes

2. Entrance gates are locked and/or guarded when the plant is unattended or not in production. Yes

3. Any valves which permit direct outward flow of a tank's contents are locked closed when in non-operating or standby status.
No

4. Starter controls on all oil pumps in non-operating or standby status are:
(a) locked in the off position; No
(b) located at site accessible only to authorized personnel.
Yes

5. Discussion of items 1 through 4 as appropriate: The refinery is operated on a 24-hour basis with all valves operated by trained, authorized personnel. The valves associated with the piping between process areas and tankage are part of a closed piping system. Water draw-off piping is routed to tank sumps. The valves for water draw-offs are operated only by authorized personnel and are attended constantly when in operation. These valves are also located inside the tank secondary containment. If piping is disconnected for maintenance reasons, blind flanges are bolted to the valves.

6. Discussion of the lighting around the facility: The refinery is equipped with extensive lighting, adequate for a 24 hour per day operation. The tankfarm is not lighted in many areas but emergency mobil lighting is available.

GIANT REFINING COMPANY - BLOOMFIELD

SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

EMERGENCY PLAN

THREAT ASSESSMENT

Nature of Business Activity

Giant Refining Company - Bloomfield operates a 16,800 barrel per day crude petroleum refinery designated with the Standard Industrial Classification (SIC) code 2911. The facility is engaged in the refining of crude petroleum into a range of petroleum products that include gasoline, kerosene, distillate fuel oils, residual fuel oils, military jet fuel (JP4), butane, and propane. Processing units include crude desalting, crude distillation, catalytic hydrotreating and reforming, fluidized catalytic cracking, and catalytic polymerization.

Facility Location

The Bloomfield Refinery facility is located near latitude $36^{O}41'50"$ and longitude $107^{O}58'20"$. The facility is situated such that approximately 30.76 undeveloped acres of the plant property lie north of the center line of the San Juan River. The remainder of the facility property, 256.17 acres including the refinery, is located south of the San Juan River on a terrace approximately 120 feet above the present river level.

Immediately north of the San Juan River is Bloomfield, New Mexico, a small town of about 5,500 people. Federal property managed by the Bureau of Land Management borders the facility to the south. Undeveloped private and public lands in addition to several gravel pits border the property to the east, and private undeveloped land lies to the west to Highway 44. The majority of undeveloped land in the vicinity of the refinery is used for oil and gas production and, in some instances, grazing.

The nearest residences include two homes located about 400 feet south of the property line, south of the product terminals. Additional residences are located just north of the undeveloped refinery property across the San Juan River in the town of Bloomfield (about 1400 feet north of the active refinery site).

Site Environment and Climate

The Bloomfield Refinery is located on the Jackson Lake Terrace of the San Juan River approximately 120 feet above the present river level and 500 feet south of the river's edge. The Terrace was formed during the Pleistocene by downcutting of a former valley floor which had been aggraded with cobble and gravel deposits during the last glacial advance. The terrace deposits on which the refinery is situated are comprised of approximately 15 feet of cobble and gravel deposits overlying the Nacimiento Formation of Tertiary Age. The cobble bed is overlain by approximately 20 feet of fine-grained, wind-blown silt and sand. South of the refinery, the cobble wedges out leaving only loess in overlying contact with the Nacimiento Formation. Existing data

appears to indicate that the Pleistocene cobble bed occurs underneath the entire refinery site.

The climate in the vicinity of the Bloomfield Refinery is characterized by dry, cool winters with some snow cover, and warm somewhat dry summers. There is considerable sunshine, and the average precipitation and relative humidity are low. The annual average precipitation for the site is approximately 9.2 inches and the annual evaporation rate is approximately 58.16 inches. Temperatures vary significantly in the vicinity of the refinery, from -10 degrees F during the winter to 100 degrees F in the summer. The yearly average maximum temperature is approximately 66 degrees F, while the average minimum temperature is close to 38 degrees F.

Surface Waters, Drainage Patterns and Controls

The San Juan River is the only perennial stream in the vicinity of the refinery. The River is neither a gaining nor losing stream along its reach near the facility. Its alluvium-filled channel is incised into the impermeable clay of the Nacimiento Formation. The flow of the San Juan River at Bloomfield is regulated by the Navajo Dam which minimizes the possibility of flooding by the River. The flow of the River is regulated betweem a minimum of 500 cfs and a maximum of 5000 cfs. Access for booms and vacuum trucks in the vicinity of Bloomfield Refining Company can be found along most of the northern bank. Access to the southern bank is more limited, with the first location at the river terrace immediately north of the refinery and the second near highway 44.

In addition to the San Juan River, the Hammond Irrigation Ditch passes through the refinery property from east to west, between the refinery and the San Juan River. The ditch is about 27 miles long with about half of its length downstream of the refinery. The capacity of the canal varies from 90 cubic feet per second at the headworks to 5 cfs at at the terminus. The ditch flows through an inverted siphon beneath Sullivan Road on the east side of the property. The section of ditch through the refinery is clay lined (the lining is not in good shape and the Bureau of Reclamation is currently planning a lining project) and is excavated into the Quaternary Jackson Lake Terrace deposits. The course of the ditch through the refinery property is shown on the topographic map provided behind the drawings tab.

The Hammond Ditch conveys water only during the irrigation season from mid-April to mid-October. Seepage from the ditch and into the cobble bed is significant. This is evidenced by the fact that trees, bulrushes, marsh grass and other vegetation choke the valleys of the majority of intermittent stream channels descending from the Jackson Lake Terrace south of the San Juan River. A dirt road borders the ditch to the north so access for booming and vacuum trucks is easily available.

Flood Plain

The 100-year 24-hour rainfall is only 2.6 inches, therefore, surface run-off and run-on are managed as part of the facility's zero discharge plan. Concrete pads with curbs collect stormwater falling directly into process area units. The process units are equipped with peripheral stormwater drains that collect stormwater falling outside the curbed areas. This water is routed to

the API separator for subsequent treatment in the wastewater treatment system. Refinery berms and tank dikes will contain any other on-site flood water.

The active portion of the refinery is situated approximately 100 feet above the elevation of the San Juan River; therefore, flooding of the River will not affect the facility.

Vulnerable Waterways

The San Juan River, a tributary of the Colorado River, is located to the immediate north of the refinery. The River provides recreational use, irrigation water, drinking water, and wildlife habitat both upstream and downstream. It is known to contain certain endangered species, most notably the Colorado squawfish (Ptychocheilus lucius) and the razorback sucker (Xyrauchen texanus). In addition to its status as a navigable waterway, the New Mexico Oil Conservation Division has proposed that the river channel be considered a "vulnerable area". It is obvious that a spill affecting the San Juan River, Hammond Ditch, and the shorelines of those waterways should be avoided by all practical means. Bloomfield Refining Company does not see the need to further define the vulnerability of the San Juan River. Additional information about these waterways can be obtained from the United States Department of the Interior, Bureau of Reclamation, Upper Colorado Region, Durango Projects Office, 835 E. Second Avenue, P. O. Box 640, Durango, Colorado 81302-0640.

Potential Contaminants

Petroleum and petroleum products are complex mixtures of hydrocarbons that vary over a wide weight range. Common names of the potential contaminants are identified in the SPCC plan. Potential contamination could consist of dissolved toxic components, floating components, or sinking components of the hydrocarbon mixtures that reach the waterway. Special hazards such as fire and explosion potential are identified in the facility Emergency Plan.

Release Potential

Although Bloomfield Refining Company has taken significant measures to eliminate the possibility of a reportable spill, the proximity of the refinery to the San Juan River requires that a worst case scenario be considered possible.

Worst Case Spill Volume

The worst case is assumed that tank 11 (55,000 barrel capacity) and its secondary containment would catastrophically fail while full. The worst case volume is calculated at 2,541,000 gallons (110% of the tank capacity). The facility's Emergency Plan that follows is designed to respond to that and any other emergency.

Spill History

Bloomfield Refining Company has not had a reportable spill.

INFORMATION SUMMARY

Name of Pipeline Operator: Bloomfield Refining Company
P. O. Box 159
Bloomfield, NM 87413

Comments: Bloomfield Refining Company operates the pipeline as an associated activity to the refining operations. Although specific individuals are assigned to the pipeline operation, Bloomfield Refining Company will commit resources as necessary to assist in a pipeline emergency response. The response plan written specific to the refining operations (included elsewhere in this submittal) should be considered applicable to the pipeline response where appropriate.

Name of Response Zone: San Juan Pipeline, San Juan County, New Mexico

Name, Address, and Telephone Numbers of Qualified Individual:

Ron Weaver
P. O. Box 159
Bloomfield, New Mexico 87413

Business: (505) 632-8013 (24-hr)
(505) 632-3377

Home: (505) 632-5971

Description of Response Zone: San Juan County, New Mexico
6 5/8" M/L.

San Juan Pipeline Emergency Notification Requirements

Almost any emergency resulting in the release or potential release of oil into the environment will require some sort of notification to Federal and/or State governmental agencies. In most cases an initial verbal notification needs to be made as soon as possible (as soon as the responsible person can free himself from the demands of the emergency but no later than 24 hours).

Be prepared to report your name, address, telephone number; identity, location, and nature of spill; identity of pipeline; nature of injuries or property damage; other relevant circumstances; and correction actions taken.

There is never a penalty for unnecessarily reporting a spill.

Did spill enter or threaten to enter waterway (San Juan River, Hammond Ditch)?
If yes, immediately call

National Response Center
(800) 424-8802

and

New Mexico Oil Conservation Division, Aztec.....(505) 334-6178
New Mexico Oil Conservation Division, Santa Fe.....(505) 827-5885
New Mexico Surface Water Bureau.....(505) 827-2793