3R - 258

GENERAL CORRESPONDENCE

YEAR(S): 2004 - 1994

Lodestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

3R258

RECEIVED

APR 02 2004

Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505

March 30, 2004

Mr. William Olson
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

RE: Annual Report for Giant's Bloomfield Crude Station

Dear Mr. Olson:

Lodestar Services, Incorporated is pleased to submit the enclosed copy of *Annual Report, Bloomfield Crude Station, Bloomfield, New Mexico, March 2004* on behalf of Giant Industries Arizona, Inc.

Please call Mr. Tim Kinney of Giant at (505) 632-4001 or myself at (505) 334-2791 with any questions regarding this submittal.

Respectfully Submitted,
Lodestar Services, Inc.

Martin Nee

Cc. Mr. Tim Kinney, Giant
Mr. Denny Foust, OCD Aztec

3R258

Olson, William

From: Martin Nee [mjn@martinnee.com]
Sent: Monday, January 19, 2004 7:58 AM
To: wolson@state.nm.us
Subject: sampling notification

Hello Bill,

We will be sampling at the Giant's Bloomfield Crude Station and the former Bloomfield Refinery on January 20 and 21

Martin Nee
Lodestar Services, Inc.

AESE

August 9, 2002

Mr. William Olson
New Mexico Oil Conservation Division
1220 South Street. Frances Drive
Santa Fe, New Mexico 87505

RE: Case #3R258 Bloomfield Crude Station

Dear Mr. Olson,

Giant Industries Arizona, Inc. is pleased to submit this *Bioventing Plan* pursuant to your June 13, 2002 letter item "*2) Giant shall submit a work plan for the proposed soil bioventing remediation system to the OCD by August 13, 2002. The work plan shall be submitted to the OCD Santa Fe Office with a copy provided to the OCD Aztec District Office.*"

Please do not hesitate to call if you have any question or require additional information.

Respectfully Submitted,
A. E. Schmidt Environmental

Martin Nee

cc: Mr. Denny Foust, NMOCD Aztec District Office, Mr. Tim Kinney, Ms. Jacque Cumbie, and Mr. David Kirby, Giant Industries Arizona, Inc.

A. E. SCHMIDT ENVIRONMENTAL
906 San Juan Boulevard, Suite D
Farmington, New Mexico 87401
(505) 566-9116

Bioventing Plan
July 2002

RECEIVED
AUG 13 2002
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared For

Giant Industries Arizona, Inc.
Bloomfield Crude Station,
Bloomfield, NM

Project 6207

AESE

906 San Juan Boulevard Suite D
Farmington, New Mexico 87401
505-566-9116

Table of Contents

List of Figures

Giant Industries Arizona, Inc.
Bloomfield Crude Station, Bloomfield, NM
Bioventing Plan
July, 2002

1.0 Introduction

Ongoing investigation and remediation at the Giant Industries Arizona, Inc. former Crude Station, have led to this Bioventing work plan submittal to the New Mexico Oil Conservation Division (NMOCD). Bioventing is an in-situ remediation technique by which air is slowly injected into hydrocarbon impacted soils. The air supplies oxygen to indigenous microorganisms that mineralize hydrocarbons to water and carbon dioxide. This work plan addresses impacted soil and is not intended to address ground water issues at the site.

Giant owns the property referred to as the former Crude Station located on the southwest corner of Blanco Boulevard and Fifth Street in the City of Bloomfield, San Juan County, New Mexico. The site occupies approximately 5.5 acres within the N1/2, NW1/4, NW1/4 of Section 22, Township 29 North, Range 11 West. A regional location map is shown in Figure 1. A 55,000-barrel crude oil storage tank was previously located on this site within an earthen berm, which occupied approximately 100,000 square feet on the west side of the former Crude Station. Historical releases from this tank are believed to be the source of impacted soil at the site.

West of the former tank site is a City of Bloomfield Electrical Substation and two natural gas well sites owned and operated by Manana Gas. To the West of the electric substation and the Manana well sites, on the corner of North Frontier and Blanco Boulevard, is a vacant lot. What appears to be a monument, located on this lot, may indicate a previous well site that has been plugged and abandoned. Historical research of this area indicates that several oil, and possibly gas wells with their associated pits, may have once been operational on this lot, such as the Bishop #1 and Bishop #3, the Hare #1, and the Kittell #1. These oil and gas operations may have contributed to impacted soil and groundwater in the vicinity of the Crude Station.

The geography, hydrogeology and geology of the site are described in a report previously submitted to the NMOCD titled *Site Assessment for the Bloomfield Crude Station*, dated May 1995.

The current physical setting at the site is an open area where the tank had been until its decommissioning in 1996. There are three ground water monitoring wells located on site. Following decommissioning of the tank, approximately 12,924 cubic yards of hydrocarbon impacted soil were removed and 6,048 cubic yards of clean back-fill was placed in the excavation during August 2000. Ground water was encountered during excavation at approximately 15 feet beneath ground surface.

The earthen berms that surrounded the former Tank 967D have been partially removed during the tank decommissioning in 1996, during remedial excavation work in 2000, and during 2001 when the excavation was finally closed. As detailed in the October 2000

report, titled *Report for Remedial Excavation - Work Performed During August 2000 For The Bloomfield Crude Station*, the area beneath the western edge of the tank pad, exposed during excavation, exhibited the most highly impacted soils. The excavation began on the east side of the tank pad and proceeded to the west; midway across the tank pad phase-separated hydrocarbons (PSH) were observed on the ground water along the southern edge of the excavation. Test holes used to define the limits of migration indicated that "significant amounts of overburden" would have to be removed to excavate additional hydrocarbon impacted soil and excavation ceased. A portion of the center of the excavation was left open until 2001 to allow Giant to recover PSH.

2.0 Pilot Test

Giant initiated a bioventing pilot test on June 20, 2001 to investigate the feasibility of in-situ remediation of hydrocarbon impacted soils not removed during excavation. The pilot test included the injection of air into three levels within the vadose zone. Oxygen, carbon dioxide, and volatile hydrocarbon concentrations from within the pore space of the soil in each zone was monitored. Air injection ceased on June 21, 2001 and respiration rates of the biologic activity were monitored for an additional five days, through June 26, 2001.

Oxygen, carbon dioxide, and ionizable hydrocarbon readings collected during the bioventing pilot test are presented in *Monitoring Well Installation, Groundwater Sampling, and Bioventing Pilot Test, Bloomfield Crude Station, July 2001.* A 14 percent decrease in oxygen along with a 50 percent increase in carbon dioxide concentrations measured in the soil gas during the five days following the air-injection, indicated significant biologic activity at the site. During the five days following the pilot test, approximately nine-pounds of hydrocarbons were mineralized to carbon dioxide and water within a 30-foot radius.

The following recommendation was made in the above report:

"Implement bioventing at the site to reduce the hydrocarbon concentrations in soil below NMOCD standards. Injection wells should be used on the perimeter of the impacted soil to prevent offsite migration of hydrocarbon containing soil gas. Space injection wells 60-feet on center with an injection rate of approximately 25 cubic feet per minute. Air should be injected at a depth of 10- to 15-feet beneath ground surface. Delineation of impacted soil will proceed with the installation of injection wells and monitoring points."

3.0 Bioventing Plan

The laboratory and headspace results of soil sampling from the walls of the 2000 excavation are shown on Figure 2. Proposed injection and monitoring point locations are shown on Figure 3. A schematic of the proposed piping and valve layout to deliver air to the injection points is shown on Figure 4. A typical injection point cross-section is also shown on Figure 4. Initially, the proposed monitoring and injection locations will be flagged in the field and installation will begin at the perimeter of the former excavation. In the event that non-impacted soil is found at a proposed monitoring point location, that monitoring point will be used as an injection point and no further soil boring or sampling will continue away from the excavation.

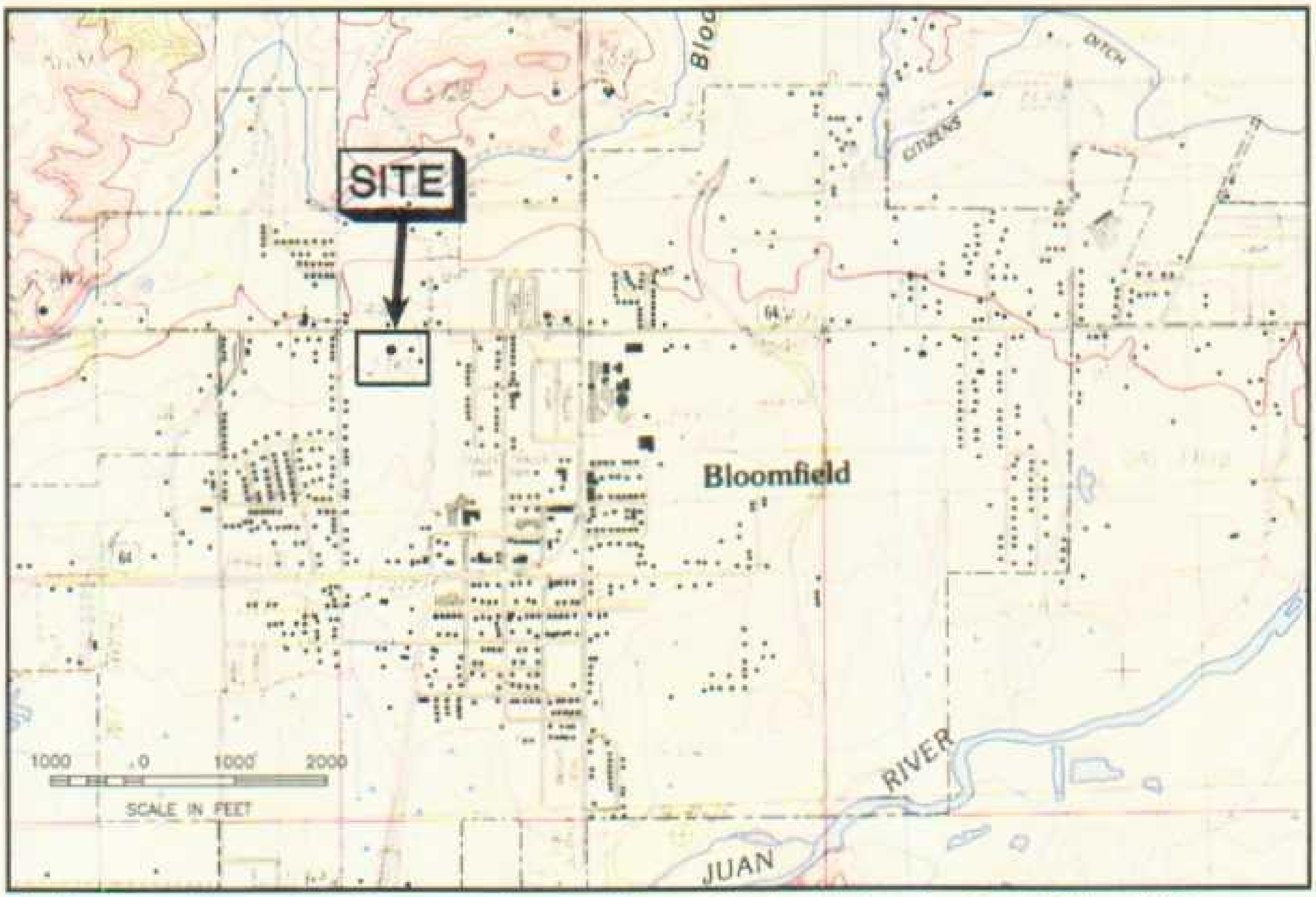
Injection and monitoring points will be installed using a hand-powered auger. Soil samples will be collected from each injection and monitoring point boring at three-foot intervals and analyzed in the field using headspace techniques. The results of the field screening will be used to test the effectiveness of the system during operation and for comparative analysis at closure. It is anticipated to take one year or less to reduce the concentrations of hydrocarbons to less that 100 parts per million (ppm) volatiles by field screening and 100 ppm total petroleum hydrocarbons by laboratory analysis. When results from comparative samples collected adjacent to monitoring points are beneath these standards bioventing will cease and a request for clean closure will be submitted to the NMOCD.

Figure 1: Site Location Map

NEW MEXICO

SAN JUAN COUNTY

AREA IN DETAIL



Modified from U.S. Geological Survey Quadrangle of Bloomfield, New Mexico, Provisional Edition 1985.

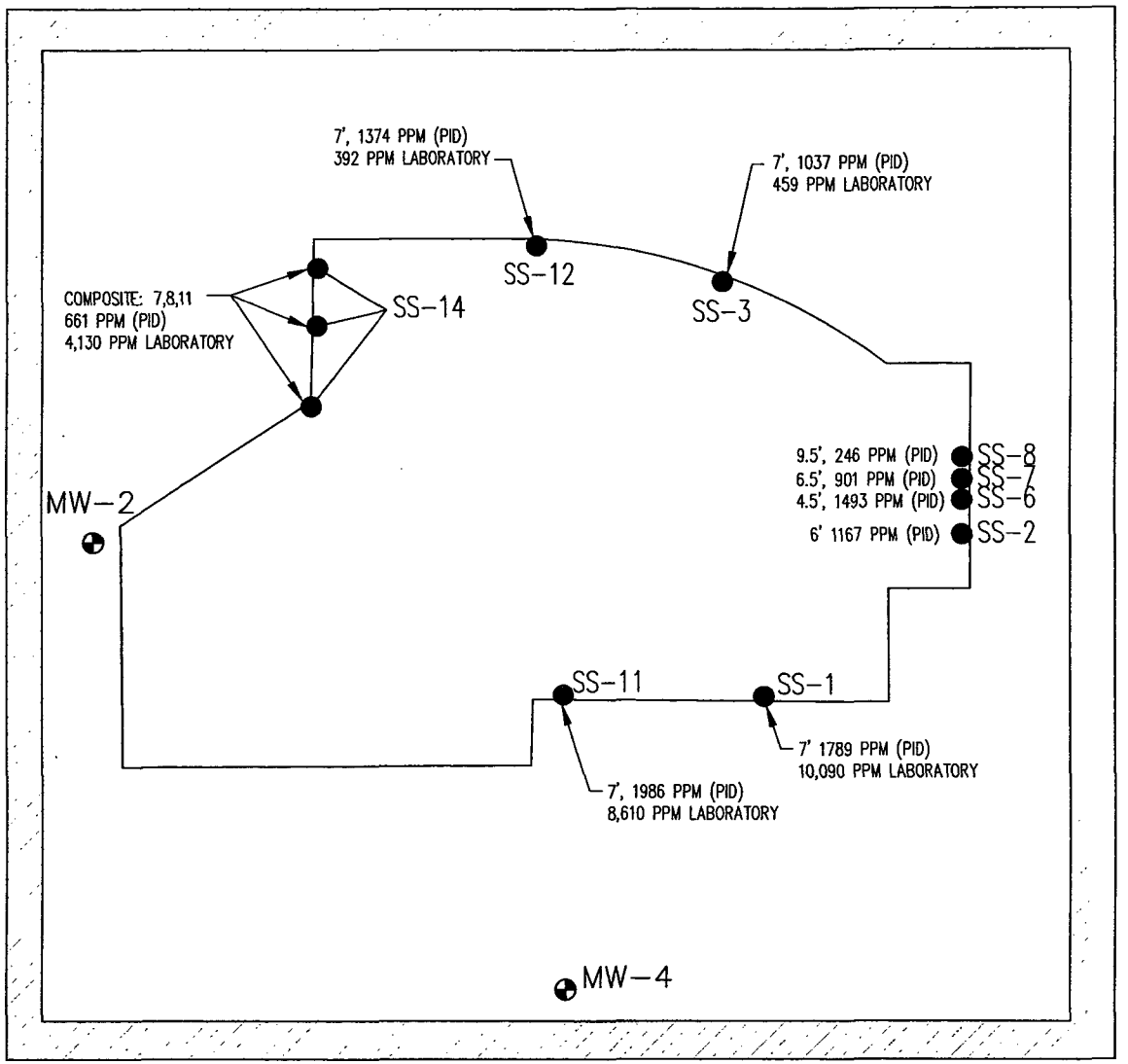
SCALE IS VARIABLE

N

AESE 906 San Juan Blvd., Suite "D" Farmington, New Mexico 87401 Tele: (505) 566-9116	TITLE: GIANT INDUSTRIES ARIZONA, INC. BLOOMFIELD, NEW MEXICO SITE LOCATION MAP	DWN: CJG CHKD: MN DATE: 05/10/02	DES.: ALL APPD: MN REV.: 0	PROJECT NO.: 6171 GIANT INDUSTRIES BLOOMFIELD, NM FIGURE 1

D:\DRAW\GOLDEN\6171A

Figure 2: 2000 Excavation Soil Sampling and Analytical Results



LEGEND

- MONITORING WELL NUMBER AND LOCATION
- SOIL SAMPLE NUMBER AND LOCATION (SEE TABLE 1)
- BERMS

NOT TO SCALE

N

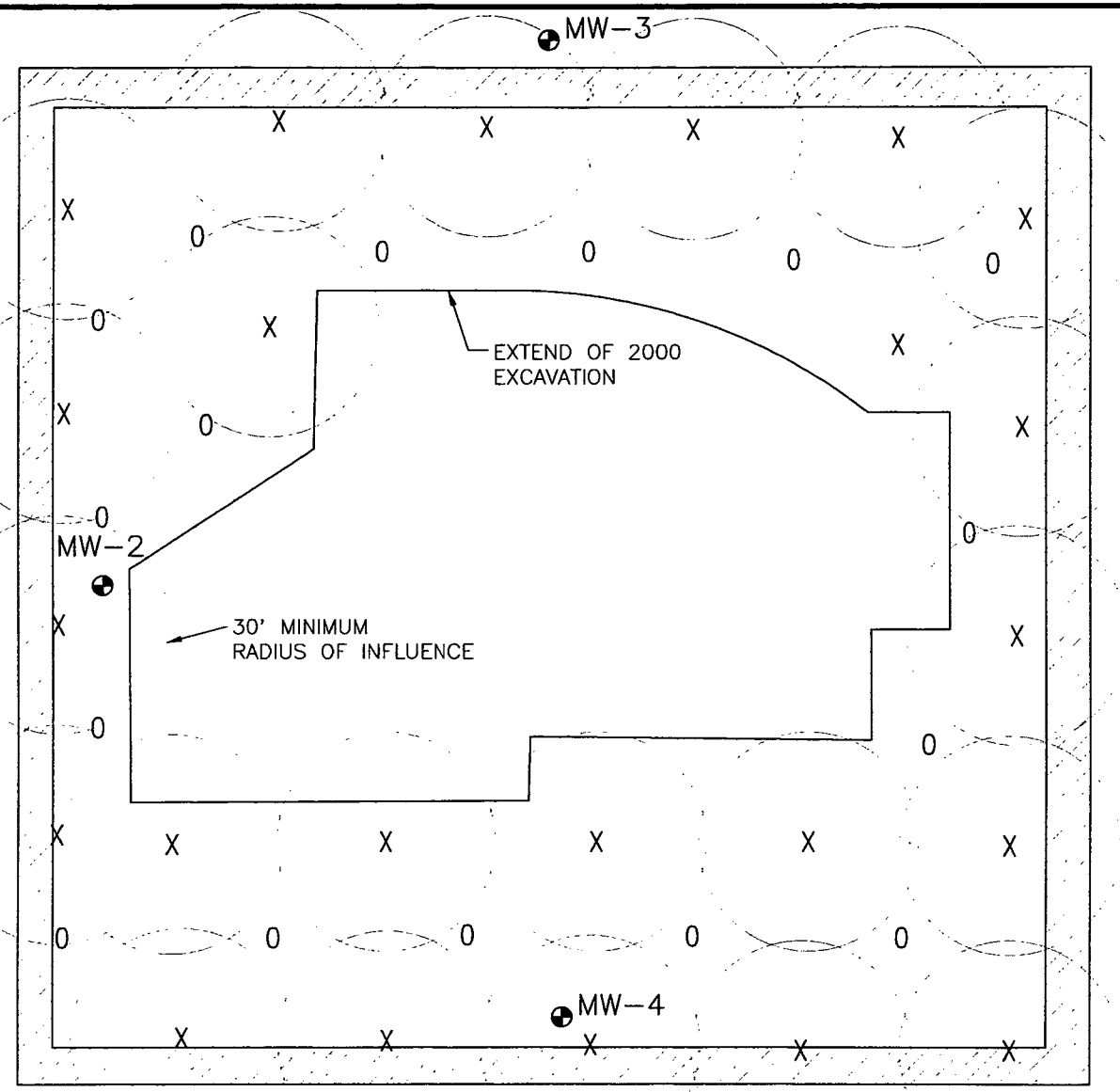
D:\DRAW\GOLDEN\6171F

AESE
906 San Juan Blvd., Suite "D"
Farmington, New Mexico 87401
Tele: (505) 566-9116

TITLE:
GIANT INDUSTRIES ARIZONA, INC.
BLOOMFIELD, NEW MEXICO
EXCAVATION SAMPLE LOCATIONS

DWN:	DES.:	PROJECT NO.: 6171
CJG	ALL	CRUDE STATION BIO VENTING
CHKD:	APPD:	
MN	MN	
DATE:	REV.:	FIGURE 2
07/19/02	0	

Figure 3: Injection and Monitoring Point Location Map



LEGEND

- ⊕ MONITORING WELL NUMBER AND LOCATION
- BERMS
- X PROPOSED INJECTION
- 0 PROPOSED MONITOR

N

NOT TO SCALE

D:\DRAW\GOLDEN\6171G

AESE
906 San Juan Blvd., Suite "D"
Farmington, New Mexico 87401
Tele: (505) 566-9116

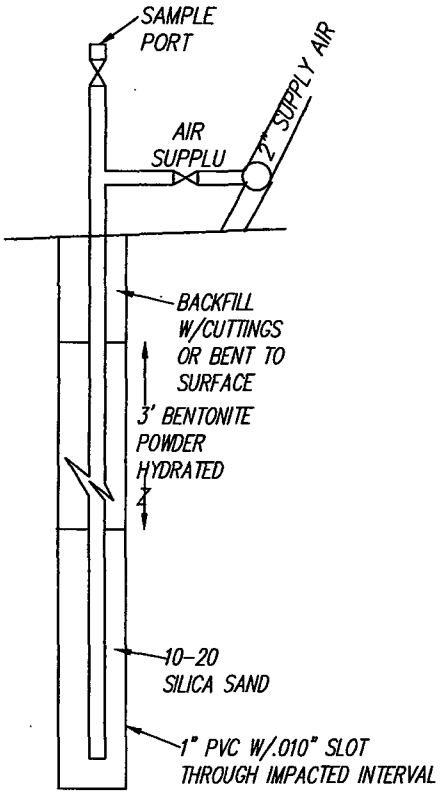
TITLE:
GIANT INDUSTRIES ARIZONA, INC.
BLOOMFIELD, NEW MEXICO
EXCAVATION SAMPLE LOCATIONS

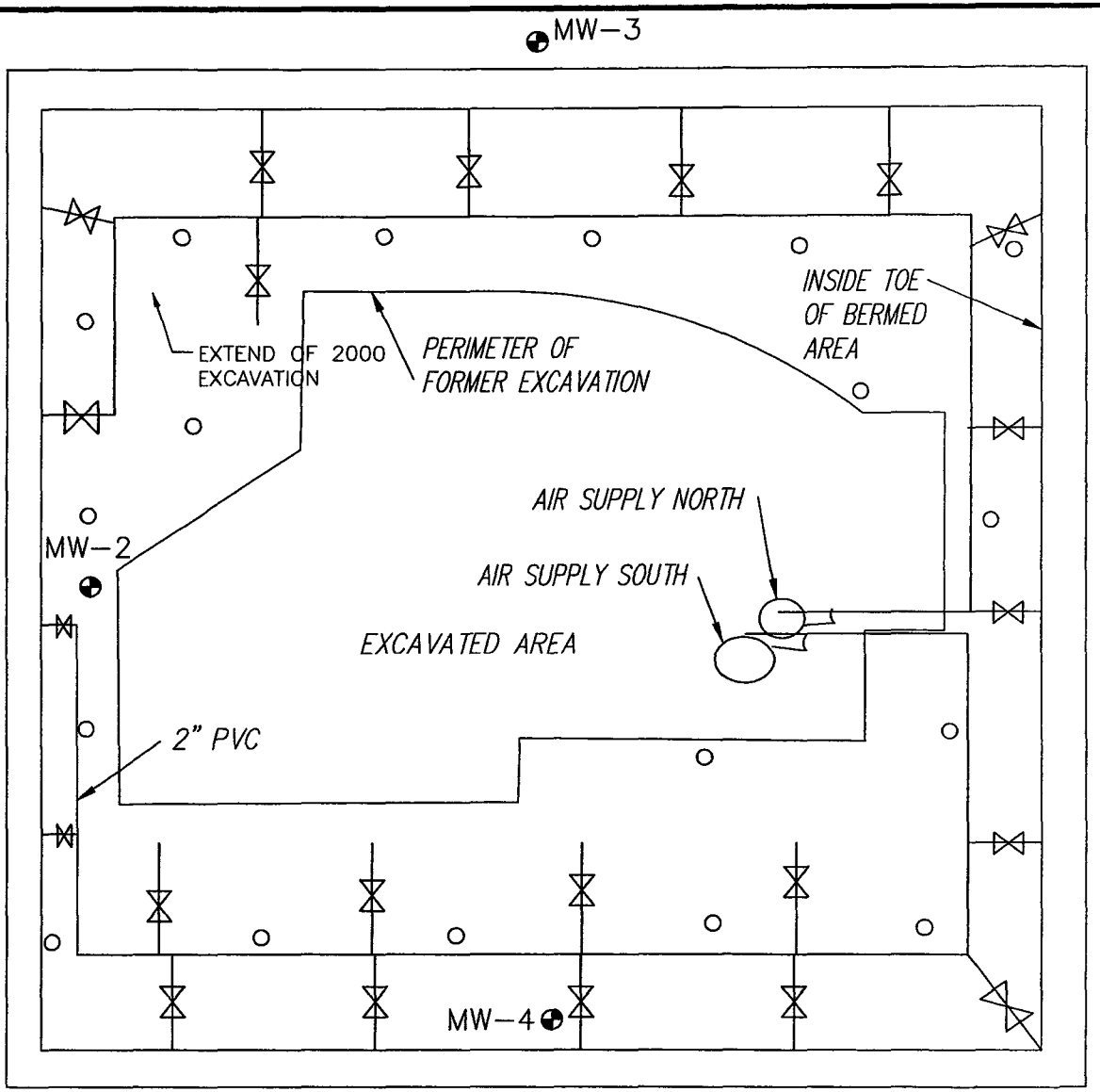
DWN:	DES.:
CJG	ALL
CHKD:	APPD:
MN	MN
DATE:	REV.:
07/19/02	0

PROJECT NO.: 6171
INJECTION AND MONITORING POINT LOCATION MAP

FIGURE 3

Figure 4: Piping Schematic





LEGEND

- MONITORING WELL NUMBER AND LOCATION
- BERMS
- X PROPOSED INJECTION
- 0 PROPOSED MONITOR

N

NOT TO SCALE

D:\DRAW\GOLDEN\6171H

AESE
906 San Juan Blvd., Suite "D"
Farmington, New Mexico 87401
Tele: (505) 566-9116

TITLE:
GIANT INDUSTRIES ARIZONA, INC.
BLOOMFIELD, NEW MEXICO
EXCAVATION SAMPLE LOCATIONS

DWN:	DES.:
CJG	ALL
CHKD:	APPD:
MN	MN
DATE:	REV.:
07/19/02	0

PROJECT NO.: 6171
PIPING SCHEMATIC

FIGURE 4

AESE

OIL CONSERVATION DIV.
02 JUL -3 AM 9:03

July 1, 2002

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

RE: Case #3R258 Bloomfield Crude Station.

Dear Mr. Olson,

A letter to you from us dated June 26, 2002 contained an error in the text. In the second paragraph, we reported that Giant has recovered approximately 1.74 quarts of product from Monitoring Well 2 at the Bloomfield Crude Station. The letter should have stated that Giant has recovered approximately 10.052 in^3. We regret any inconvenience this error may have caused and have enclosed a copy of the corrected letter. Please note that the total amount of product recovered is now equivalent to that reported in the summary table.

Please do not hesitate to call if you have any questions or require additional information.

Respectfully Submitted,
A. E. Schmidt Environmental

Ashley L Lowe

Ashley L. Lowe
cc: Mr. Denny Foust, OCD Aztec District Office; Mr. Tim Kinney, Ms. Jacque Cumbie, and Mr. David Kirby, Giant Industries, Inc.

AESE

June 26, 2002

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

RE: Case #3R258 Bloomfield Crude Station.

Dear Mr. Olson,

Pursuant to your June 13, 2002 letter item *"1) Giant shall install and implement the product recovery system at the site by July 13, 2002":* Giant has initiated product removal through weekly hand bailing since May 13, 2002. Giant has recovered approximately 10.052 in^3 of product, and has reduced the product thickness in monitoring well MW-2 to 0.6 inches. The following table details our product recovery efforts.

Giant will continue with manual weekly product removal until the product is gone or a passive or active mechanical system is installed. Giant may apply vacuum to the well to enhance product recovery. Should Giant pursue this plan it will be discussed in the Soil Bioventing Work Plan that will be submitted to you by August 13, 2002.

DATE	PRODUCT THICKNESS (ft)	VOLUME REMOVED (in^3)
May 13, 2002	0.81	1.964
May 22, 202	0.65	3.582
May 30, 2002	0.44	2.541
June 5, 2002	0.24	0.982
June 13, 2002	0.15	0.520
June 19, 2002	0.08	0.347
June 26, 2002	0.05	0.116
Total		**10.052**

Please do not hesitate to call if you have any questions or require additional information.

Respectfully Submitted,
A. E. Schmidt Environmental

Ashley L. Lowe

Ashley L. Lowe
cc: Mr. Denny Foust, OCD Aztec District Office; Mr. Tim Kinney, Ms. Jacque Cumbie, and Mr. David Kirby, Giant Industries, Inc.

3R258

AESE

RECEIVED
JUL 01 2002
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

June 26, 2002

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

RE: Case #3R258 Bloomfield Crude Station.

Dear Mr. Olson,

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June 19, 2002	0.08	0.347
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Total		**10.052**

Please do not hesitate to call if you have any questions or require additional information.

Respectfully Submitted,
A. E. Schmidt Environmental

Ashley L. Lowe

Ashley L. Lowe
cc: Mr. Denny Foust, OCD Aztec District Office; Mr. Tim Kinney, Ms. Jacque Cumbie, and Mr. David Kirby, Giant Industries, Inc.

CONFIDENTIAL PRIVILEGED

PERKINS COIE LLP- ANCHORAGE

FAX NUMBER: (907) 276-3108
SWITCHBOARD: (907) 279-8561

IF THERE ARE PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL:

(907) 279-8561

Addressee: *OCD* (COMPANY) FAX NO. *505/476-3462*

Roger Anderson (INDIVIDUAL) Direct Dial _____

Addressee: *OCD* (COMPANY) Fax No. *505/476-3462*

Bill Olson (INDIVIDUAL) Direct Dial _____

From: *Teresa Berwick* Date *December 13, 2001*

Cover Sheet & *3* page(s) Client Number _____

Return to *Teresa Berwick* / / *300*
NAME EXT. OFFICE LOCATION

Original document(s) will be: ☐ sent to you ☐ held in our files

MESSAGE:

Sent By _____ ☐ Call Addressee to confirm they received this fax.

[FAXCOVER.02]

PERKINS COIE LLP
1029 WEST THIRD AVENUE, SUITE 300, ANCHORAGE, ALASKA 99501-1970
TELEPHONE: 907-279-8561 FACSIMILE: 907-276-3108

December 13, 2001

Jim Lundschen
Santa Fe Legal & Business Copying
4001 Office Court Drive
Santa Fe, NM 87507

Re: Copying Project at Environment Department and Oil Conservation Division

Dear Jim:

This is to confirm the copy request we discussed this morning. The New Mexico Environment Department and Oil Conservation Division have agreed to check out the documents to you for 24 hours so that they can be copied on your premises. The agencies will have the documents gathered together and ready for you to pick up on Monday afternoon, December 17, 2001. If you need to come at a different time, please call the contact people at the numbers below to make other arrangements, and also give me a call to let me know.

The agencies have asked me to emphasize their general policy that the documents must be returned exactly in the same order. Otherwise, if any documents are returned out of order, Santa Fe Legal & Business Copying will be precluded from checking out documents in the future.

DOCUMENTS

Please pick up and copy the following documents from the Environment Department. The Environment Department estimates that these documents are about 6 inches thick, or roughly 1,500 pages.

1. Documents from 1989-1990 Superfund investigation of Aerex refinery site in Bloomfield, New Mexico.

2. Documents from 1994 Site Inspector Prioritization.

Please also pick up and copy the following documents from the Oil Conservation Division. The Oil Conservation Division estimates these documents total about 1,900 pages.

1. Aerex Refinery documents (file number 3R0001).

2. Giant Industries crude pumping station documents (file number 3R0258).

CONTACT INFORMATION

Environment Department	**Oil Conservation Division**
Marcy Leavitt Ground Water Quality Bureau Chief New Mexico Environment Department 1190 St. Francis Drive Santa Fe, NM 87501 (505) 827-2919 (phone)	Roger Anderson Environmental Bureau Chief New Mexico Oil Conservation Division 1220 South St. Francis Drive, 3d Floor Santa Fe, NM 87505 (505) 476-3490 (phone)
Or: Maria Voyles Environment Department (505) 827-2425	Or: Bill Olson Oil Conservation Division (505) 476-3491

GENERAL INSTRUCTIONS

1. Make one (1) copy of each document.

2. All copies should be in black-and-white on standard paper (no color copies).

3. Check for double-sided documents, and be sure to capture text on the back sides of pages.

4. Staple and/or clip the copies in the same way that the originals are fastened together in the file.

5. Make copies of file labels, and keep these together with the documents that came from that file.

6. If there are any unusually large documents, such as maps or diagrams, try to shrink these to a manageable size. If expensive special copying procedures are required, just skip these documents. (We are mostly interested in the correspondence and data reports, not the maps.)

PAYMENT AND SHIPPING

As we discussed, Santa Fe Legal & Business Copying charges between $0.8 and $0.12 per page depending on the number of staples that must be removed by hand. Based on the estimated number of pages above, the maximum estimated cost for this copy project should be about $400.

1,500 pages @ $0.12 =	$180
1,900 pages @ $0.12 =	$228
Total	$408

Please send an invoice to Perkins Coie LLP for the services described above. Our Federal Express account number is 1193-0326-5. Please ship the copies to us by one-day mail, and charge the postage to our account. On item 7 (Payment, Bill to:) of the FedEx label, be sure to check the box marked "Recipient."

Please don't hesitate to call me at (907) 263-6927 if you have any questions or problems. If you run into any circumstances that will result in copying charges over $500, please contact me right away so that we can discuss our alternatives. Thank you very much for your assistance.

Sincerely yours,
PERKINS COIE LLP

Teresa A. Berwick

cc: Marcy Leavitt, Envt. Dept. (by fax 505-827-2965)
Maria Voyles, Envt. Dept. (by fax 505-827-2965)
Roger Anderson, OCD (by fax 505-476-3462)
Bill Olson, OCD (by fax 505-476-3462)

P.01

TRANSACTION REPORT

DEC-13-2001 THU 02:01 PM

FOR:

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DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
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NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 29, 2001

Teresa A. Berwick
Perkins Coie LLP
1029 West Third Avenue, Suite 300
Anchorage, Alaska 99501-1981

Re: Your Request to Inspect Public Records dated November 20, 2001

Dear Ms. Berwick,

I previously responded to your request to inspect public records (received in this office on November 26, 2001). I failed to notice that you also requested documents pertaining to the crude pumping station, operated near the Aerex Refinery site by Giant Industries.

We have a separate file on the crude pumping station site. The file number is 3R0258. The file appears to be approximately 1500 pages in length. As with the other file, you are welcome to inspect this file during normal business hours at this address; if you choose to view the file, please contact Roger A. Anderson, Bureau Chief, so that he can have the file ready for you when you arrive.

Alternatively, should you wish to obtain a copy of the file in lieu of personal inspection, you may copy the file on one of the Division's Xerox machines at a cost of $.25 per copy.

If you have any questions, please do not hesitate to give me a call at (505) 476-3451.

Sincerely,

Stephen C. Ross
Assistant General Counsel

Cc: William C. Olson, Environmental Bureau
Lawrence Romero, Records Custodian
File 3R0001 (Aerex)

GOLDEN ENVIRONMENTAL MANAGEMENT, INC.
AN AESE COMPANY

906 SAN JUAN BOULEVARD
SUITE D
FARMINGTON, NEW MEXICO 87401
505-566-9116 FAX: 505-566-9120

July 30, 2001

Mr. William Olson
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Olson:

On behalf of Giant Industries Arizona, Inc., Golden Environmental Management, Inc. is pleased to submit the enclosed copy *of Monitoring Well Installation, Ground Water Sampling, and Bioventing Pilot Test, Bloomfield Crude Station, Bloomfield, New Mexico* dated July 2001.

Please call Mr. Tim Kinney of Giant at (505) 632-4001with any questions regarding this submittal.

Respectfully Submitted,
GOLDEN ENVIRONMENTAL MANAGEMENT

Martin Nee

Cc. Mr. Tim Kinney, Giant
Mr. Denny Foust, OCD Aztec

Olson, William
From: Olson, William
Sent: Wednesday, June 20, 2001 11:07 AM
To: 'Tim Kinney'
Subject: RE: Bloomfield Station

The below referenced extension request is approved.

From: Tim Kinney [SMTP:tkinney@giant.com]
Sent: Tuesday, June 19, 2001 3:34 PM
To: 'wolson@state.nm.us'
Subject: Bloomfield Station

As we discussed today, Giant is seeking an extension of 30 days, until July 1st, to submit a report of remedial activities at the Old Bloomfield Pipeline Station. Complications with access tot he property have delayed the pilot test. Thank you for your consideration.

Tim Kinney
Pipeline and Transportation Services
(505)632-4001
<<File: Notebook.jpg>>

GIANT

INDUSTRIES, INC.
SAN JUAN REGIONAL OFFICE

November 6, 2000

Certified Return Receipt 7000 0520 0021 3642 7513

Mr. Bill Olson
NMOCD
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Bill:

RE: Bloomfield Station Cleanup

Pursant to my letter of August 29, 2000 enclosed is a document titled Report For Remedial Excavation Work Performed During August 2000 For The Bloomfield Crude Station Bloomfield, New Mexico which outlines the findings of the soil removal project at the Bloomfield Station. Also enclosed is a copy of a proposal to perform a bioventing pilot project. As determined by the effectiveness of the pilot project, Giant proposes to use bioventing to address remaining contamination at the site.

Pending NMOCD approval, Giant would like to begin the bioventing pilot test in May of 2001. In the interim, Giant plans to monitor the open excavation site, removing any liquid hydrocarbons that accumulate. The excavation has been fenced and is monitored regularly.

Please call me at (505) 632-4001 if I can answer any questions. Thank you for your consideration of this request.

Sincerely,

Tim Kinney

Tim Kinney
General Manager
Pipeline and Transportation Services

/dm

Enclosures

cc: Luke Wethers
Sarah Allen
Robert Thompson w/o enclosures
Denny Foust
Gary Winn w/o enclosures

PHONE
505-632-8006
FAX
505-632-4021

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

PHILIP SERVICES CORP.
Industrial Services Group
Central Region

October 24, 2000 Project 62800256

Via Facsimile (505) 632-4073

Mr. Gary Winn
Giant Industries Arizona, Inc.
111 County Road 4990
Bloomfield, New Mexico 87413

RE: Proposal for Pilot Test at the Bloomfield Crude Station in Bloomfield, NM

Dear Mr. Winn,

Philip Environmental Services Corporation (Philip) is pleased to submit to Giant Industries Arizona, Inc. (Giant) this proposal and cost estimate to perform a pilot test at the Bloomfield Crude Station (the site) in Bloomfield, NM.

Philip will conduct a pilot test to determine the feasibility of in situ bioventing as a technique for remediation at the crude station. We feel that bioventing can be used to degrade the hydrocarbons in place with no emissions to the surface. This technique may also be used to remove the product from the water table and remediate dissolved phase hydrocarbons if necessary.

PROJECT BACKGROUND

Philip has recently been involved in remedial activities at the site, which included excavating hydrocarbon-impacted soil and transporting the soil to Giant's landfarm located approximately 37 miles southwest of Bloomfield on the Bisti. Clean soil was hauled back to the site from the landfarm and used to backfill the excavation. During the remedial activities, Philip excavated approximately 12, 924 cubic yards of hydrocarbon-impacted soil.

The project has since been temporarily put on hold while Giant re-evaluates their options and determines their next course of action.

On September 14, 2000, Philip received a verbal Request for Proposal (RFP) from Giant to complete a pilot test at the site to determine if in-situ bioventing is a suitable alternative for cleaning up the site and obtaining closure from the New Mexico Oil Conservation Division (NMOCD).

Based on this verbal RFP, Philip proposes to complete the pilot test as follows.

REMEDIATION PILOT TEST AND EVALUATION

Philip proposes to perform a two-week pilot test to evaluate the feasibility of bioventing and to gather data for the final system design. The effectiveness of a bioventing system depends on a number of factors, including air permeability of the impacted soils, presence of boundary conditions in the soil, and the thickness of the vadose zone.

4000 Monroe Road • Farmington, NM 87401 • (505) 326-2262 • Fax (505) 326-2388

The pilot test will include installing a vent well and three three-interval monitoring points, air injection and monitoring, and data evaluation.

VENT WELL AND MONITORING POINT INSTALLATION

One vent well and three monitoring points will be installed within the area to be remediated and will be located so that the wells can be an integral part of the final remediation system. The three monitoring point locations will be installed 10, 20 and 30 feet from the vent well and will be directly inline with the vent well.

The vent well will be installed just above the water table to a depth of approximately 13 – 14 feet below ground surface (bgs). The well will be completed using ten feet of 0.01 inch slotted two-inch diameter threaded PVC well screen and two-inch diameter threaded PVC casing. The annulus around the well screen will be backfilled with clean, 10-20 grade, silica sand-pack to a depth of six inches above the top of the screen. An 18-inch thick bentonite seal will be placed immediately above the sand-pack. The remaining annulus will be grouted to the surface with a neat cement grout.

The monitoring points will be installed by drilling a borehole using standard 4-1/4 inch inside diameter hollow stem augers (HSA) to just above the water table, approximately 13 – 14 feet bgs. Within each borehole, Philip will install three 1-inch diameter wells to monitor soil gas conditions at three different depths. Each well will be spaced equally apart with the shallowest point being set at a depth not shallower than two and one half feet bgs. Each well will be built with one foot of 0.01 inch slotted one-inch diameter threaded PVC screen and one-inch diameter threaded PVC casing. Each monitoring interval screen will be centered in a two-foot thick sand pack with a one-foot thick bentonite seal placed above and below each sand pack. The annulus between the bentonite seals will be backfilled with soil cuttings from the borehole. The deepest monitoring interval will not have a bentonite seal below it.

REMEDIATION PILOT TEST ACTIVITIES

Philip will install a suitable low flow explosion proof blower to blow air into the vent well and aerate subsurface soils to stimulate in-situ biological activity and promote remediation. This pilot test will be performed to evaluate the effectiveness of the technology to remediate the impacted soil. During the pilot test, the monitoring points will be used to evaluate the radius of influence and monitor oxygen (O_2) consumption, carbon dioxide (CO_2) production and the presence of volatile organic compounds (VOC's) in the vadose zone. Readings will be measured at the monitoring points using a GasTech Trace-Tector™ meter or equivalent prior to initiating the pilot test, one hour after the pilot test has started, ten times during operation of the pilot test, and at the completion of the pilot test.

PILOT TEST REPORT

Philip will prepare a report that includes the results of the pilot test. The pilot test is required to collect information necessary to complete the design of a full-scale remediation system. Design parameters will include radius-of-influence of the bioventing system, bioventing equipment specifications, predicted hydrocarbon consumption rates, and the well spacing required to remediate soil within the contaminated area.

SCHEDULE

Following a notice to proceed from Giant and approval from the NMOCD, the pilot test can be setup and installed in one month. The soil remediation pilot test will operate for two weeks, at which point the data will be reviewed and the pilot test report prepared. Giant can then use this information for the final system design. The pilot test vent well and monitoring points can be used as part of the final remediation system. Philip assumes Giant will provide the 230-volt power source necessary to operate the system.

Philip appreciates the opportunity to submit this proposal and cost estimate to Giant and would like to meet with you to further discuss this project. If you have any questions or need additional information, please contact Martin Nee or me at (505) 326-2262.

Sincerely,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Robert Thompson
Project Manager

J:\628\62800256\Pilot Tst-Prop.doc

GIANT

INDUSTRIES, INC.
SAN JUAN REGIONAL OFFICE

AUG 31 2000

August 29, 2000

Certified Return Receipt P144 977 763

Mr. Bill Olson
NMOCD
Environmental Bureau
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Bill:

RE: Bloomfield Station Cleanup

Considerable progress has been made at the Bloomfield Station site. To date approximately 10,000 cubic yards have been transported to Giant's landfarm for remediation. The removal of highly contaminated soil has been the focus of soil removal activity. The volume of contaminated soil appears to have been grossly underestimated and some aspects of the site mischaracterized. The project will not be completed by August 31, 2000 as requested.

Due to the nature of the site and the remaining contamination, Giant is requesting additional time to re-evaluate the future direction of the project and propose a modified approach. Giant proposes to submit the findings of this phase of the cleanup and a proposal for further action within 60 days. I trust that this will be acceptable.

Please call me at (505) 632-4001 if I can answer any questions. Thank you for your consideration of this request.

Sincerely,

Tim Kinney
General Manager
Pipeline and Transportation Services

/dm

cc: Luke Wethers
Sarah Allen
Martin Nee
Denny Foust
Gary Winn

PHONE
505-632-8006
FAX
505-632-4021

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

PHILIP SERVICES CORP.
Industrial Services Group
Central Region

July 24, 2000

Project 62800256

Mr. William Olson
New Mexico Oil Conservation Division
2040 South Pacheco St.
Santa Fe, New Mexico 87505

RE: Site Health and Safety Plan for the Giant Bloomfield Crude Station Remediation Project

Dear Mr. Olson:

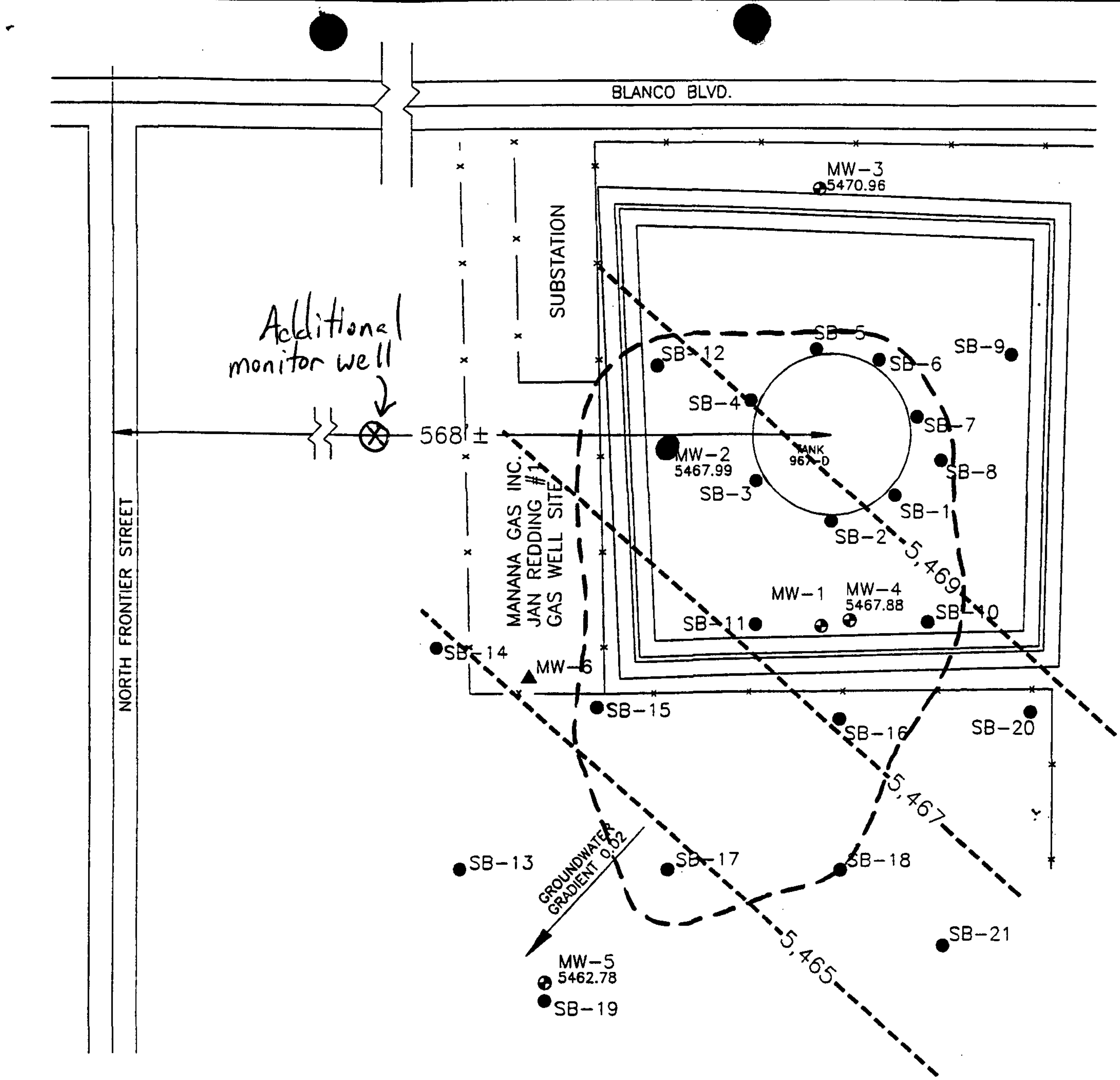
Per your request, I have enclosed a copy of the Site Health and Safety Plan for the Giant Bloomfield Crude Station remediation project. Please review and provide comments or approval no later than July 27, 2000 as we are scheduled to begin field activities on July 31, 2000.

If you have any questions or need additional information, you may contact Martin Nee or me at (800) 326-2262.

Sincerely,
PHILIP ENVIRONMENTAL SERVICES CORPORATION

Robert Thompson
Project Manager

cc: Denny Foust, New Mexico Oil Conservation Division
Tim Kinney, Giant Industries Arizona, Inc.



LEGEND

—×———×—	FENCE LINE
MW-2 5467.99	APPROXIMATE MONITORING WELL LOCATION, NUMBER AND ELEVATION
▲ MW-6	PROPOSED MONITORING WELL LOCATION
— — — —	ESTIMATED BOUNDARY OF IMPACTED SOILS
— —5,469— —	APPROXIMATE EQUIPOTENTIAL LINE

NOTE: MW-2 water level corrected for product thickness.

PHILIP SERVICES CORP.	TITLE: GROUNDWATER GRADIENT MAP	DWN: TMM	DES.:	PROJECT NO.: 62800075 GIANT INDUSTRIES BLOOMFIELD, NM
		CHKD:	APPD:	
		DATE: 1/3/00	REV.: 1	FIGURE 4

COL. 628/00075B-004

PHILIP SERVICES CORP.
Industrial Services Group
Central Region

September 27, 1999

Mr. Bill Olson
NMOCD
Environmental Bureau
2040 S. Pacheco St
Santa Fe, NM 87505

RE: Work Plan for the Giant Bloomfield Crude Station

Dear Mr. Olson:

Philip Environmental Services Corporation (Philip) has prepared the following description of investigation activities, site maps, and proposed plan for further investigation on behalf of Giant Industries Arizona, Inc. pursuant to the New Mexico Oil Conservation Division's June 21, 1999 request.

Background

The Giant Bloomfield Crude Station (the site) is located on the southeast corner of Blanco Boulevard and Fifth Street in Bloomfield, New Mexico, 1.25 miles north of the San Juan River on the bank of the floodplain (Figure 1).

The site was originally leased for oil exploration and production on September 6, 1929 and since that time has been owned and leased by several companies who have operated various process units and tanks on or near the site, including refining operations. Aerex Refining, Plateau Refining, Shell Oil Company, El Paso Products, Malco, and Clayton Investment of Thriftway Marketing are known to have operated refining or other businesses on this property. A 1981 aerial photograph shows that the eastern part of the site was dismantled prior to that year. A 1990 investigation and report from the then New Mexico Environmental Improvement Division documented hydrocarbon contamination in soil and groundwater in the eastern portion of the refinery.

The western portion of the site is still actively occupied by an aboveground tank farm owned by Giant Industries, Arizona, Inc. (Giant) and is known as the Bloomfield Crude Station. A more detailed account of the site's history is given in Giant's May 1994 "Initial Site Assessment and Characterization Plan".

Prior to December 1996, the site contained several buildings and tanks. The tanks included one 55,000, one 10,000, and one 2,500-barrel storage tank as well as a fuel tank for use by Giant vehicles.

Based on interviews and other research, Giant believes that tank 967-D, a 55,000-barrel crude oil storage tank, was constructed in 1956 and used through 1991. The tank was located in the western half of the Bloomfield Crude Station site within a bermed area that is approximately 340 feet by 280 feet. Complete descriptions of all the materials that were stored in tank 967-D are not available.

In connection with the closure of tank 967-D in March 1994, an excavation was made, by backhoe, on the east side of the tank to a depth of approximately 12' to determine the presence of hydrocarbons. Samples taken on March 15, 1994 were analyzed by EPA methods 8015 and 8020 for fuel hydrocarbons and BTEX, respectively, and the results indicated the presence of hydrocarbons in the subsurface soils.

The New Mexico Oil Conservation Division (NMOCD) was notified on March 15, 1994 of the potential release at the Giant Bloomfield site.

The results of the March 1994 investigation are discussed in a report dated May 9, 1994, titled "Initial Site Assessment and Characterization Plan" for the Giant Bloomfield Station, that was prepared by Giant and submitted to the NMOCD in May 1994. As a result of this investigation, Giant proposed to characterize the extent of potential contamination at the site by drilling and sampling as well as by visual observation. This scope of work included soil borings, soil sampling, groundwater monitor well installation and groundwater sampling.

Site Characterization

A letter dated June 23, 1994; from Giant to the NMOCD, clarified the site characterization work plan described in the May 9, 1994 report. In a letter dated August 19, 1994, NMOCD approved the work plan submitted by Giant.

On September 14, 1994, Giant contracted with Philip Environmental Services Corporation (Philip) (*formerly* Burlington Environmental Inc.) to provide the next phase of a site investigation. During the week beginning September 19, 1994, Philip supervised the installation of four monitoring wells, MW-1 through MW-4, and eight exploratory soil borings, SB-1 through SB-8 (Figure 2). Soil samples were collected from the soil borings, and groundwater samples were collected from the monitoring wells. Hydrocarbons were detected in all eight soil borings, concentrated in sandy clays or clayey sands beneath a dry, loose, surface sand layer. Hydrocarbon contamination was present in three of the four monitor wells, but most of the contamination was below New Mexico Water Quality standards. Free product was found only in Monitor Well 2.

A report titled "Site Assessment and Proposed Action Plan for the Bloomfield Crude Station, Bloomfield, New Mexico", dated January 1995, was generated from the information gathered in this phase of the site investigation and submitted to the NMOCD. The January 1995 report included recommendations for an additional phase of investigation. In a letter dated March 13, 1995, the NMOCD approved the recommendations for further investigation as described in the January 1995 report.

On March 23, 1995 Philip submitted a proposal and cost estimate for the next phase of investigation. This proposal was approved, and during the week beginning April 24, 1995, Philip completed 13 soil borings, SB-9 through SB-21, and installed one monitoring well off-site, MW-5 (Figure 2). Field headspace readings were taken with a photoionization detector (PID) on soil samples collected from all of the borings. Groundwater samples were collected from the newly installed well and from three of the four existing on-site wells. Hydrocarbons were detected in seven of the thirteen new soil borings. This information, combined with the first round of soil borings, was used to delineate the approximate area of impacted soils (Figure 2). No hydrocarbons were detected in water from MW-5. A report titled "Site Assessment for the Bloomfield Crude Station, Bloomfield, New Mexico" was prepared by Philip in May 1995.

Proposed Remediation

An August 9, 1995 letter from NMOCD to Giant indicated that NMOCD had reviewed the May report and found it to be lacking in proposed remediation for the contaminated soil and groundwater. NMOCD set forth a deadline of October 6, 1995 for submittal of a remedial action work plan.

On August 21, 1995, Philip submitted a proposal to Giant to perform pilot testing and remedial system design and installation at the Bloomfield Crude Station. This included removal of free product and the in situ remediation of hydrocarbon contaminated soils in the tank area by bioventing.

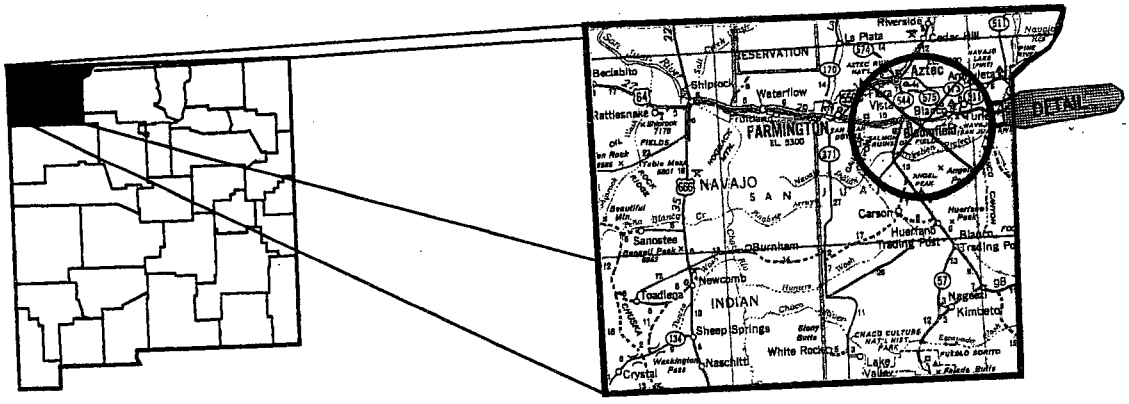
On October 5, 1995, a follow-up letter was submitted to NMOCD by Giant thanking them for a deadline extension and proposing to submit the remedial action work plan by November 6, 1995.

On October 12, 1995 Giant approved the remedial action work plan and issued Purchase Order # 05327 authorizing Philip to conduct pilot testing and remedial system design and installation for the Bloomfield Crude Station.

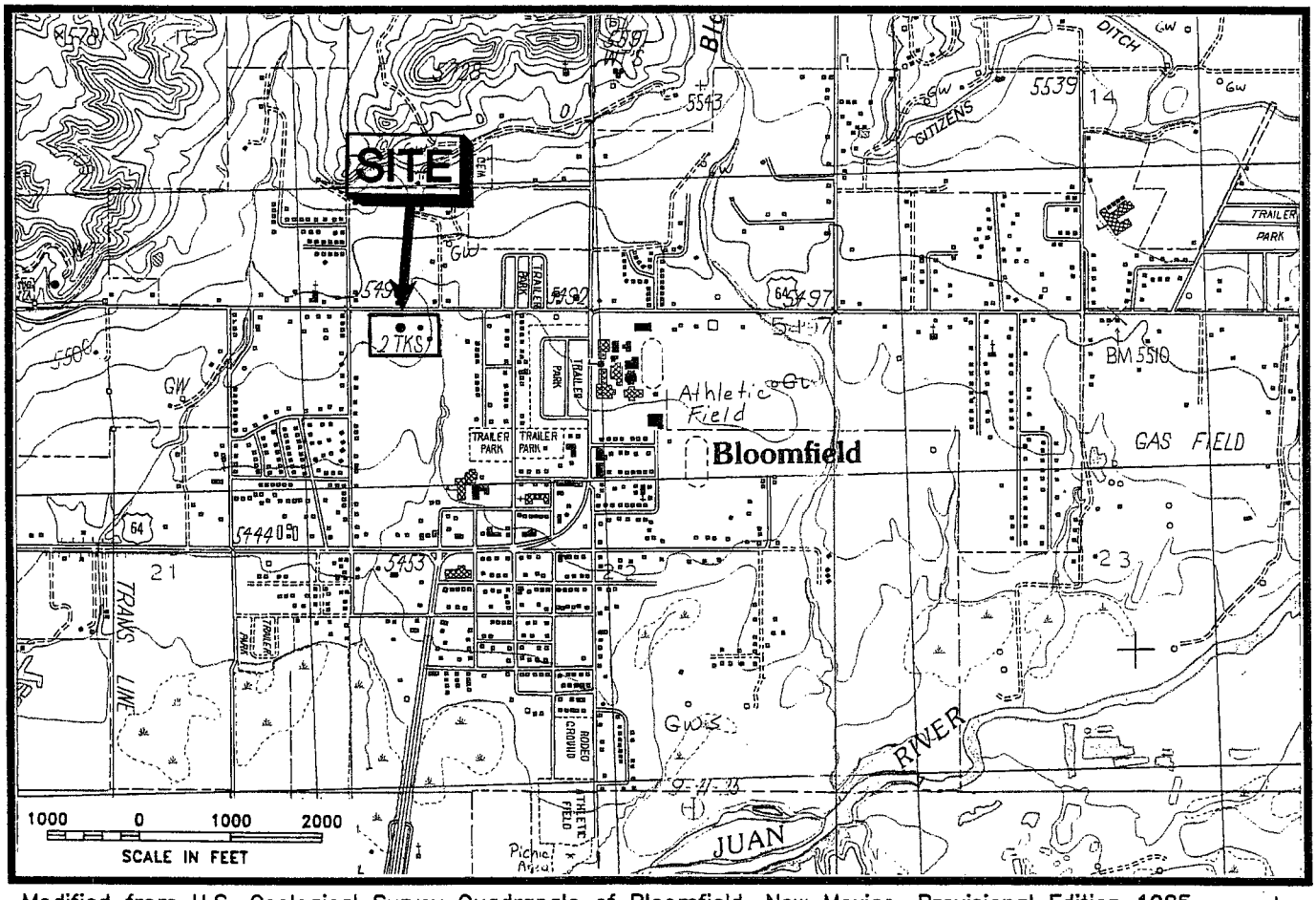
The Remedial Action Work Plan was submitted to the NMOCD on November 3, 1995.

NEW MEXICO

SAN JUAN COUNTY



DETAIL OF SITE VICINITY



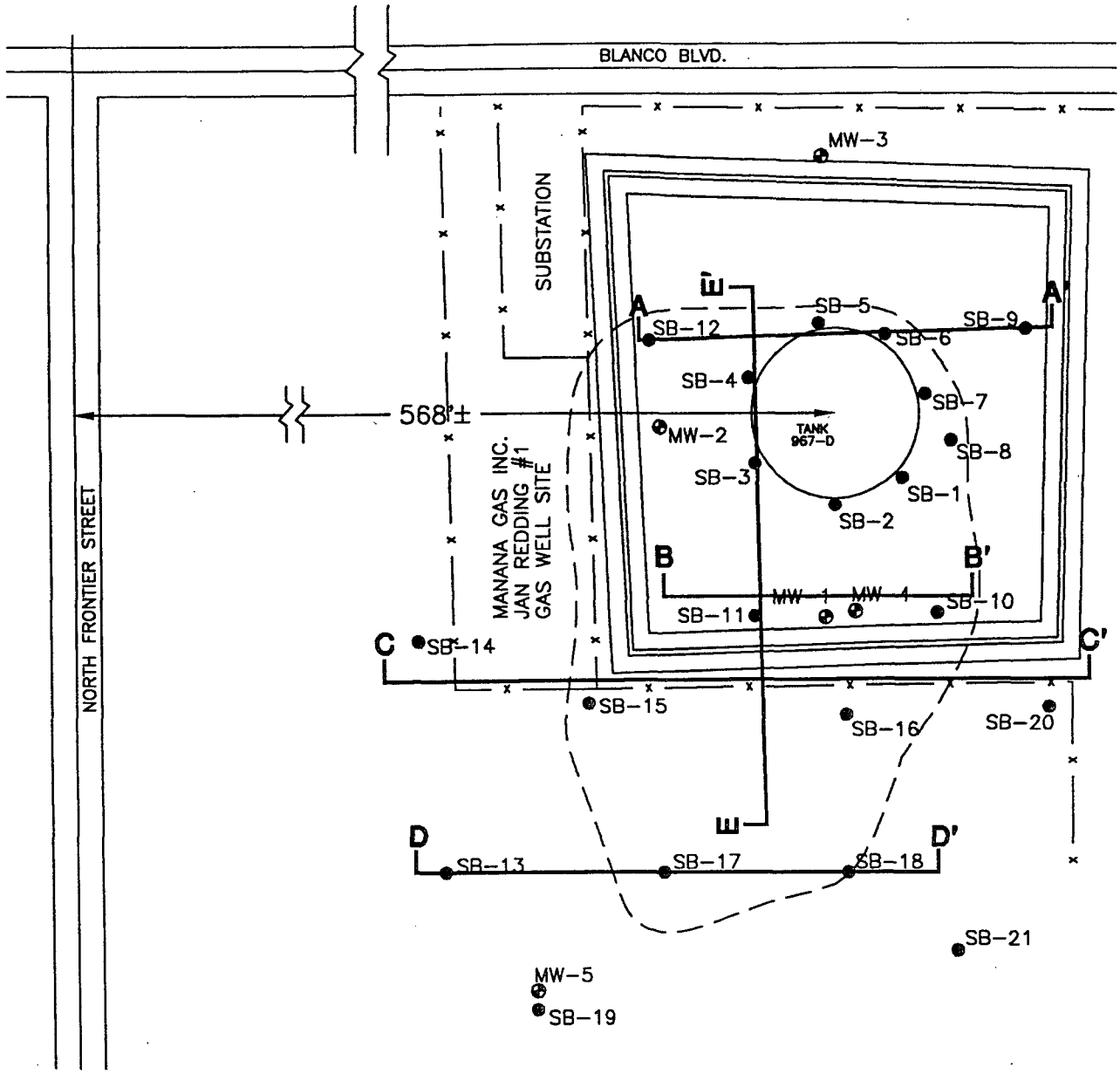
Modified from U.S. Geological Survey Quadrangle of Bloomfield, New Mexico, Provisional Edition 1985.

SCALE IS VARIABLE

N

PHILIP ENVIRONMENTAL	TITLE: Regional Site Location Map Bloomfield Crude Station	SCALE: VARIABLE DWN: TMM DES: CHKD: APPD:	DATE: 6/5/95
		PROJECT NO: 13023 GIANT INDUSTRIES BLOOMFIELD, NM	
		FIGURE 1	REV:

COL 13023c-002



LEGEND

×——×——×	FENCE LINE
⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
● SB-1	APPROXIMATE BOREHOLE LOCATION AND NUMBER
— — — —	ESTIMATED BOUNDARY OF IMPACTED SOILS
A ⌊ A'	CROSS SECTION LOCATION

0 100
FEET

N

PHILIP ENVIRONMENTAL	TITLE: Giant Industries Arizona, Inc. Bloomfield, New Mexico Impacted Soils	SCALE 1=100. DWN: TMM DES: CHKD: APPD:	DATE
		PROJECT NO: 13023 GIANT INDUSTRIES BLOOMFIELD, NM	REV:
		FIGURE 2	

COL 13023D-003

GIANT
INDUSTRIES, INC.
SAN JUAN REGIONAL OFFICE

August 23, 1999

Mr. Bill Olson
NMOCD
Environmental Bureau
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Bill:

RE: BLOOMFIELD CRUDE STATION WORK PLAN

Thank you for your consideration in granting Giant an extension of the due date for the Bloomfield Crude Station Work Plan. The plan will be submitted on or before September 3, 1999.

Sincerely,

Tim Kinney
General Manager

/dm

cc: Mike Hardy
Martin Nee
Sarah Allen

PHONE
505-632-8006
FAX
505-632-4021

111 COUNTY
ROAD 4990
BLOOMFIELD
NEW MEXICO
87413

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

December 3, 1998

Mr. William C. Olson
Hydrologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Workplan for Additional Investigation of Lead Impacts
Giant Industries Arizona, Inc. Bloomfield Crude Station

Dear Mr. Olson:

Referencing your correspondence dated August 31, 1998 requiring additional investigation of lead based paint impacts at the Giant Industries Arizona, Inc. Bloomfield Crude Station, Blagg Engineering, Inc. (BEI) has developed the following workplan for NMOCD approval. The section of the Bloomfield Crude Station involved with closure of lead paint impacts is limited to Cells A and C abutting and below a prior 55,000 gallon tank (Figure 1). Cells B and D have previously been closed out, and the following workplan addresses sampling for closure of Cells A and C only. This workplan has been prepared following discussions with yourself on October1, 1998 concerning the appropriate areal and vertical distribution of sampling.

At your suggestion, BEI contacted the New Mexico Environment Department (NMED) with respect to sampling and analytical protocol. BEI discussed appropriate analytical protocol with Mr. Christopher Holmes, NMED Superfund Oversite, on October 1, 1998. Mr. Holmes forwarded to BEI a copy of the U.S. EPA OSWER Directive #9200.4-27P, which provides clarification of a 2,000 mg/Kg closure level for lead in soils at industrial sites. This closure level is for total lead analysis on soil samples. Since the Bloomfield Crude Station is an industrial property, BEI and Giant believe a 2,000 mg/Kg closure standard is appropriate to the site, assuming background total lead analysis does not exceed 2,000 mg/Kg. If background lead analysis is in excess of 2,000 mg/Kg then the appropriate closure standard will be equal to background total lead content.

Outlined below is the sampling and testing protocol for closure of Cells A and C at the Bloomfield Crude Station.

Sampling and Analysis Strategy

Cells A and C within the bermed area of the former 55,000 gallon tank will be sub-divided into 9 each (18 total) equally sized sample units (Figure 2). Each sample unit will be labeled with an identification number. A 5-point composite soil sample will be collected from the 0"-2" depth in each sample unit, composited, placed into a sample container, labeled, sealed and delivered to a

qualified laboratory for analysis.

Samples will be collected using stainless steel sampling equipment and placed into laboratory supplied sample containers. Sampling equipment will be decontaminated with Alconox soap in potable water wash and rinsed in distilled water prior to composite sample collection. Chain-of-Custody documentation will follow the samples.

Two (2) background 5-point composite samples shall be collected for laboratory analysis. These background samples will be collected from two (2) sample units of equal size to the sample units included in the test program. Background sample locations will be from the east and west extent of the site property boundaries.

Laboratory analysis will be for total lead in soil. Sample digestion will be conducted by U.S. EPA Method 3020 and lead analysis will be performed following U.S. EPA Method 7421. Laboratory QA/QC procedures and test results will be supplied with the analytical reports.

Reporting

An engineers report will be prepared following receipt of the laboratory analytical test results. The results of the testing will be discussed and copies of laboratory reports will be included. Sample test results will be compared to background test results. Recommendations for further testing, remediation or closure will be included in this report.

Questions concerning this transmittal may be directed to Jeff Blagg of Blagg Engineering, Inc. at (505)632-1199.

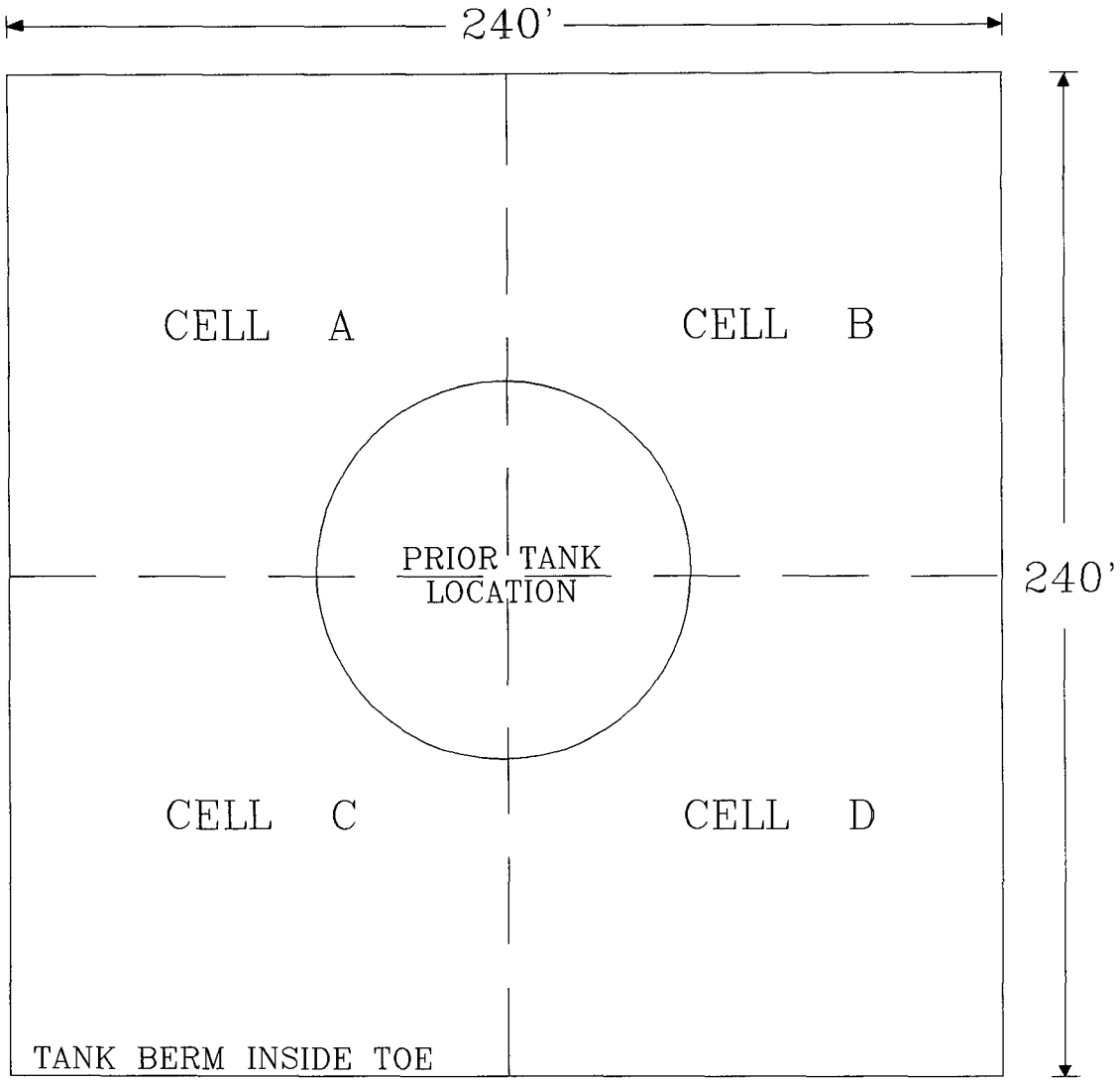
Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

Attachments: Figures 1 & 2

cc: Tim Kinney - Giant
Denny Foust - NMOCD Aztec

GIANT\BLFM2.PRP.WPD



GIANT INDUSTRIES ARIZONA, INC.
BLOOMFIELD CRUDE STATION
BLOOMFIELD, NEW MEXICO

OCTOBER 1998

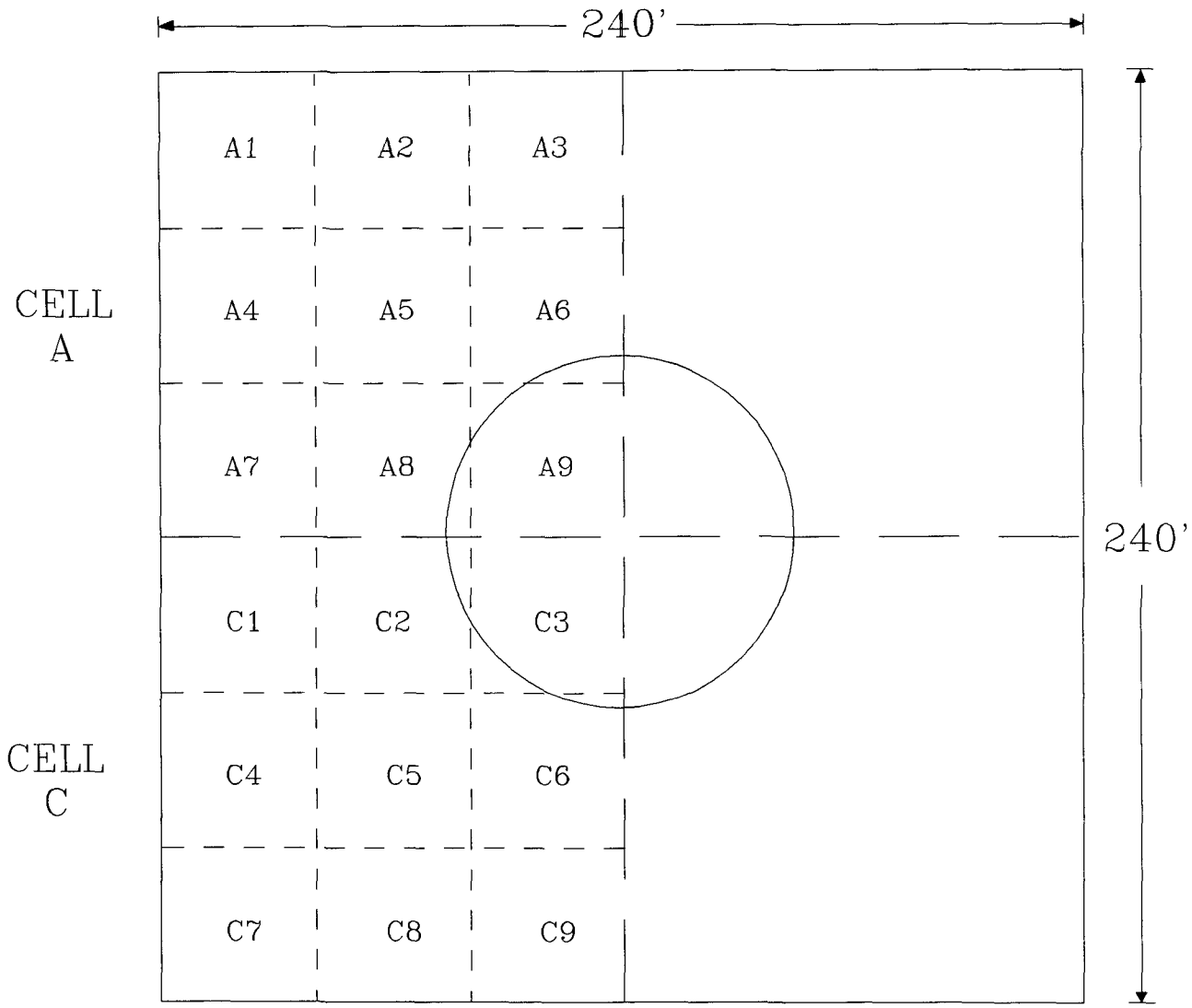
BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

FIGURE 1
TANK BERM
CELL DIAGRAM

10/9/98

DRWN BY: JCB

FILE: BLMF1



A3: DESIGNATION OF PROPOSED
5-POINT COMPOSITE SAMPLE UNIT

GIANT INDUSTRIES ARIZONA, INC. BLOOMFIELD CRUDE STATION BLOOMFIELD, NEW MEXICO OCTOBER 1998	BLAGG ENGINEERING, INC. CONSULTING ENGINEERING SERVICES P.O. BOX 87 BLOOMFIELD, NEW MEXICO 87413 PHONE: (505) 632-1199	FIGURE 2 PROPOSED SAMPLE UNITS 10/9/98 DRWN BY: JCB FILE: BLMF2

GIANT

23733 North Scottsdale Road
Scottsdale, Arizona 85255

P.O. Box 12999
Scottsdale, Arizona 85267

602-585-8888

October 23, 1998

William C. Olson, Hydrologist Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: Work Plan for Additional Investigation of Lead Impact.
Giant Industries Arizona, Inc., Bloomfield Crude Station

Dear Mr. Olson,

I am writing to request a thirty-day extension in which to file the work plan for the Bloomfield Crude Oil Station, currently due on October 30, 1998. Giant is requesting this extension in order to have sufficient time in which to share the Plan with the Freemyer Company, Inc., the contractor who caused the fire at the site. This fire resulted in the lead waste which is the subject of this remediation effort.

Please confirm in writing if this extension will be granted. Please contact me immediately by telephone if you do not intend to grant this extension.

Thank you for your consideration of this request.

Sincerely,

Sarah L. Allen

Sarah Allen
Corporate Counsel

CC: Tim Kinney, Giant Industries Arizona, Inc.
Jeff Blagg, Blagg Engineering. Inc.
Denney Faust, NMOCD Aztec

KSR/sra

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

August 31, 1998

CERTIFIED MAIL
RETURN RECEIPT NO: Z-274-520-550

Mr. Timothy A. Kinney
Giant Industries, Inc.
111 County Rd. 4990
Bloomfield, New Mexico 87413

RE: BLOOMFIELD CRUDE STATION

Dear Mr. Kinney:

The New Mexico Oil Conservation Division (OCD) has made a number of attempts to get an opinion from the New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau regarding Giant's conclusions on lead contaminated soils as contained in Giant's February 26, 1997 "REQUEST FOR CLOSURE FOR TANK REMEDIAL OPERATIONS, GIANT INDUSTRIES ARIZONA, INC., BLOOMFIELD CRUDE STATION". To date the OCD has received no response from the NMED and the OCD is concerned about the resulting lack of progress on remedial actions at the site.

Due to the site being located in a populated area and the potential for public impacts the OCD requires that Giant provide the OCD with a work plan for conducting additional investigation of the extent of lead contaminated soils remaining in Cell A and Cell C. The work plan will be submitted to the OCD Santa Fe Office by October 30, 1998 with a copy provided to the OCD Aztec District Office.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Jeffery C. Blagg, Blagg Engineering, Inc.
Benito Garcia, Bureau Chief, NMED HRMB

Z 274 520 550

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PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

MEMORANDUM

FROM: Roger C. Anderson, Environmental Bureau Chief

TO: Benito Garcia, NMED Hazardous and Radioactive Materials Bureau Chief

DATE: April 17, 1997

RE: **GIANT BLOOMFIELD CRUDE STATION**

Attached is a copy of a remedial action report submitted to the OCD regarding leaded paint wastes which resulted from a fire in a crude oil storage at Giant's crude oil pump station in the town of Bloomfield, New Mexico.

During the fire lead paint from the land flaked off and was distributed onto the adjacent soils. The OCD had required remedial action for the leaded paint wastes as part of overall site remedial actions for petroleum contaminants. The attached report shows that final soil sampling after removal of paint waste flakes revealed that 2 of the 4 quadrants in the area sampled had soil lead concentrations above RCRA hazardous waste characteristics. Giant concluded that the soils are nonhazardous based upon the average soil lead concentration for the 4 quadrants. The OCD requests that HRMB provide the OCD with a determination of Giants conclusion that the soils are nonhazardous.

xc: OCD Aztec District Office

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

February 26, 1997

Mr. William C. Olson
Hydrologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Request for Closure for Tank Remedial Operations
Giant Industries Arizona, Inc.
Bloomfield Crude Station

Dear Mr. Olson:

Giant Industries Arizona, Inc. has contracted with Blagg Engineering, Inc. to perform third party environmental services at their Bloomfield Crude Station in Bloomfield, New Mexico. A tank fire on December 12, 1995 during demolition activities caused lead based paint chips to flake off of a 55,000 barrel crude storage tank and tank bottom materials to flow out of the tank and onto the ground surface. Blagg Engineering, Inc. has reviewed reports and laboratory analytical data concerning environmental restoration of the impacted soils surrounding the tank. Outlined below is a summary of this review, including conclusions and recommendations.

Summary of Report Review

A draft report (attached) outlining environmental restoration activities, soil sampling procedures and analytical results for the Bloomfield Crude Station was prepared on behalf of Freemyer Company Inc. by Philip Environmental Services, Inc. Freemyer directed site remediation of soils impacted by lead based paint and tank bottom waste; Philip provided technical expertise for proper removal, transportation, disposal, sampling and documentation.

In brief summary of the draft report, lead impacted soils within the 235' x 235' bermed area of the 55,000 barrel tank were vacuumed, placed in drums and transported to the USPCI Grassy Mountain Facility in Lone Mountain, Utah. Tank bottom waste that could be recycled was shipped to Controlled Recovery Inc. in Hobbs, New Mexico. Waste that could not be recycled was profiled by the toxicity characteristic leaching process (TCLP) and, following approval, transported to the New Mexico Oil Conservation Division permitted Envirotech, Inc. landfarm. Proper site specific health and safety considerations, documentation, shipment and sampling protocol was followed.

Restoration activities were pre-approved by the NMOCD. Work was conducted between March 7 and July 24, 1996. Please note that the draft report identifies the tank size as 50,000 barrel (actual size is 55,000 barrel) and the tank fire incident date as December 19, 1995 (actual date was December 12, 1995).

With a letter dated August 5, 1996 Philip Environmental petitioned the NMOCD to approve a plan for site sampling and closure. NMOCD responded on August 6, 1996 with approval of the plan. This plan included dividing the tank berm area into four main quadrants and collecting one five point composite sample from each quadrant, for a total of four samples. Sample testing was to be by TCLP for lead. Samples were collected on August 7, 1996, properly labeled, preserved and delivered to a laboratory for analysis. An additional background sample was collected on August 21, 1996 at the western property limit at a site away from the impacted berm area. Presented in Table 1 are the laboratory analytical results for this sampling:

Table 1

Giant Bloomfield Crude Station
Soil Sample Analytical Results, Post Remediation
TCLP LEAD

Sample Identification	Sample Date	Analytical Results, mg/L, Lead
Cell A (G96-A8796)	8/7/96	5.2
Cell B (G96-B8796)	8/7/96	4.6
Cell C (G96-C8796)	8/7/96	5.1
Cell D (G96-D8796)	8/7/96	4.3
Cell A, B, C & D Average	8/7/96	4.8
Background (G96-D8796)	8/21/96	<0.022
TCLP Allowable, 40CFR261.24	-------	5.0

Conclusions

Based on review of the draft report documents concerning the Giant Bloomfield Crude Station environmental remediation following the tank fire, Blagg Engineering, Inc. finds the following conclusions:

1) A tank fire on December 12, 1995 during demolition activities caused lead based paint chips to flake off of a 55,000 barrel tank and tank bottom materials to flow out of the tank and onto the ground surface.

2) Remedial activities directed by Freemyer Company Inc. and performed by Philip Environmental Services, Inc. were conducted between March 7 and July 24, 1996 to remove contamination resulting from the tank fire.

3) Site sampling and TCLP testing from within the impacted bermed area following remedial efforts indicate that minimal lead residue remains at the subject site.

Recommendations

Based on review and conclusions of the draft report documents for the site, Blagg Engineering, Inc. recommends the following:

1) Lead based paint chips have been removed from the soils surrounding the tank. Based on average TCLP lead analyses on the remaining soils surrounding the tank area of less than 5.0 ppm, site closure is recommended with respect to environmental impacts resulting from the tank fire.

Questions concerning this transmittal may be directed to Jeff Blagg of Blagg Engineering, Inc. at (505)632-1199.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

Attachment: Bloomfield Crude Station, Tank Removal Operations Report

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 0800	Date 8/6/96
Originating Party	**Other Parties**	
Bill Olson - Envir. Bureau	Martin Nee - Phillip Environmental	

Subject

Giant Bloomfield Crude Station

Discussion

Conclusions or Agreements

Gave verbal approval of 8/5/96 soil sampling plan with condition that a report be submitted to OCD by Sept. 6, 1996

Distribution

file
Denny Foust - OCD Aztec

Signed Bill Olson

PHILIP ENVIRONMENTAL

Environmental Services Group
Southern Region

August 5, 1996 Project 15749

Mr. Bill Olson
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

RE: Lead Sampling at the Former Giant Bloomfield Refinery, Bloomfield, New Mexico

Dear Mr. Olson:

Philip Environmental Services Corporation (Philip) hereby submits the following sampling plan, for collection of soil samples for Toxicity Characteristic Leaching Procedure (TCLP) lead analysis, from the above mentioned location.

SCOPE OF WORK

Philip proposes to perform the following sampling plan:

The bermed area of the former tank shall be divided into four main quadrants. Each main quadrant shall have a unique identification designation associated with it (e.g. A, B, C, and D). Each main quadrant shall be further subdivided into four sub-quadrants. One surface soil sample shall be collected from the center of each sub-quadrant and from the center of the main quadrant, for a total of five sample points within each main quadrant. Following collection from each sample point, the soil from each sub-quadrant shall be composited and containerized. A total of four five-point composite soil samples shall be submitted to the laboratory for TCLP lead analysis.

Samples shall be collected using stainless steel sampling equipment. The sampling equipment shall be decontaminated with an Alconox® soap, potable water wash, followed by a distilled water rinse prior to sampling collection.

Each sample container shall be labeled with the appropriate analysis, date and time of collection, unique sample number, sample location, and sample collector. All sample identification numbers and requested analysis will be documented on a Chain-of-Custody Form. All samples will be placed on ice, and shipped via overnight delivery to the laboratory following strict Chain-of-Custody procedures.

PHILIP ENVIRONMENTAL SERVICES CORPORATION
4000 Monroe Road • Farmington, NM 87401
(505) 326-2262 • Fax (505) 326-2388

Philip appreciates this opportunity of providing this proposal to New Mexico Oil Conservation Division, and looks forward to working on this project. If you require additional information, please contact Martin Nee, of Philip's Farmington, New Mexico office at (505) 326-2262.

Sincerely,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Martin J. Nee
Project Manager

CMC:cc

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

JAR T. THORNTON, III
DEPUTY SECRETARY

May 23, 1996

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Bill Olson	From MNee
Co. NMOCD	Co. Philip Env
Dept. Env	Phone # 505 326 2262
Fax # 505-827-[illegible]	Fax # 505 326 2388

Mr. Martin Nee, Broker
Philip Environmental
4000 Monroe Rd.
Farmington, NM 87401

RE: Giant Bloomfield Crude Station - NMP 360 079 380

Dear Mr. Nee,

According to the information I received from you this morning, Giant Bloomfield Crude Station located in Bloomfield NM, recently had a fire that resulted in a one time cleanup of lead paint contaminated debris, this site fell under the **Status of a Large Quantity Generator** for the month of May and calendar year of 1996. This will place the site under all RCRA rules and regulations. You have already been assigned a provisional number for a profile of the waste for USPCI. Please notify me with the **Date of Shipment.** Also, the responsible party will be required to pay Hazardous Waste Fees for the calendar year of 1996. Invoices for 1996 will be sent in August of 1997. Also, the responsible party will be required to submit the 1997 Hazardous Waste Report (Biennial Report), which will be sent out somewhere around December 1997.

Enclosed, are the **Annual Hazardous Waste Fee Regulations; Fee Report Form** (forms may change yearly) and the **U.S. EPA 1995 Hazardous Waste Report** for your convenience.

It is my understanding that Freemyer Co. Inc. located in Odessa, TX is the contractor for Giant Bloomfield Crude Station and will claim responsibility and Ownership of the waste. All billings and reports will be forwarded to Mr. Jeff Thummel, P.O. Box 7271, Odessa, TX 79760.

I can be reached at (505) 827-1558 if you have questions about management of your hazardous waste, or if you need any further assistance.

Sincerely,

Anna Walker
Management Analyst
Administrative and Special Projects
NMED/HRMB

cc: Norma Silva, Program Manager, Administrative & Special Projects, NMED/HRMB
Stella Montoya, Management Analyst III , Administrative & Special Projects, NMED/HRMB
Coby Muckelroy, Enforcement Section, NMED/HRMB

PHILIP ENVIRONMENTAL

OIL CONSERVATION DIVISION
RECEIVED

'96 APR 12 AM 8 52

April 10, 1996

Project 15749

Mr. Jeff Thummel
Freemyer Company Inc.
P. O. Box 7279
Odessa, Texas 79760

RE: Bloomfield Tank Station

Dear Mr. Thummel:

Pursuant to our March 20, 1996, meeting at the Bloomfield Tank Station (site) and Philip Environmental Services Corporation's (Philip) discussions with Bill Olson of the New Mexico Oil Conservation Division (OCD), this letter serves to document what was agreed upon and the schedule for future work at the site.

During a March 18, 1996, conversation with Bill Olson, Bill stated that he had no problems with Philip's approach and with the activities performed at the site to date. Following removal of the tank, the OCD wants the area inside of the berms broken into four quadrants and a composite sample collected from four locations within a grid on each quadrant. The samples must be analyzed for toxicity characteristic leaching procedure (TCLP) lead. The OCD agrees that the tank bottoms are going to Controlled Recovery Inc. (CRI) in Hobbs, New Mexico, and that the tank bottoms do not need to be profiled as waste, as they are being recycled. Regarding the hydrocarbon impacted soils, the OCD understands that the soil will be stockpiled on-site until a decision is made for the best disposal alternative. Mr. Olson indicated that the soil will have to be profiled for ignitability, corrosivity, reactivity, TCLP metals, TCLP benzene and pesticides. All waste profiling for disposal at OCD permitted facilities will be approved by the OCD in advance. Closure of the site will be based upon analytical results for benzene, total benzene, toluene, ethylbenzene, and xylene (BTEX), and total petroleum hydrocarbons. The OCD wants a report on the activities at the site following field operations, and will be at the site to inspect the location when the bottom of the tank is removed.

During our March 20, 1996, meeting, Philip and Freemyer agreed on the following:

1. The heavy hydrocarbons/pariffins will be picked up and stockpiled on plastic at the site. This work was completed during the week of March 18, 1996.
2. Freemyer will make arrangements for the two full roll-offs at the site to be transported to CRI. When the transporter picks up the full roll-offs, additional empty ones will be dropped off and the stockpiled hydrocarbons will be loaded by Philip for transportation to CRI. Freemyer will make arrangements for recycling the stockpiled heavy hydrocarbons/paraffins at CRI. This schedule is dependent on Freemyer making arrangements for the transportation and recycling of the materials in the two roll-offs at the site. Philip will work with Freemyer to expedite operations and anticipates that work will be completed by April 26, 1996.

PHILIP ENVIRONMENTAL SERVICES CORPORATION
4000 Monroe Road • Farmington, NM 87401
(505) 326-2262 • Fax (505) 326-2388

3. The two frac-tanks at the site will be removed by Freemyer during the week of April 8, 1996.

4. Demolition of the tank is scheduled for April 15, 1996, and will take approximately 5 days to complete. The remaining tank bottoms will be loaded into roll-offs for disposal at CRI. The OCD will be notified so they can be on location when the tank bottom is removed.

5. Following tank removal, the lead paint that comes off the tank during demolition, and the paint chips that are covered with wind blown sand will be scraped and placed on plastic at the site and covered. This waste will be profiled and a determination of disposal made at that time. This work will be completed immediately after tank demolition, most likely during the week of or April 22, 1996. Philip anticipates that the lead paint waste will be disposed of during the week of April 29, 1996.

6. With the tank and lead removed, the remaining issue at the site will be the hydrocarbon-impacted soil. Freemyer will be at the site during excavation of the impacted soil. The impacted soil will be excavated and stockpiled on plastic at the site. Once the volumes of impacted soil are known, a disposal option will be determined and the waste will either be remediated at the site or disposed. Philip anticipates the excavation to be completed during the week of April 29, 1996.

7. Once the excavation is complete and Freemyer has made a decision regarding the disposal of the impacted soil and all other wastes have been transported and disposed, Philip will prepare a report for submission to the OCD. Philip anticipates the completion of a draft report for submission to Freemyer and Giant on approximately May 31, 1996.

If you have any questions or require additional information, please call Martin Nee in Philip's Farmington, New Mexico, office at (505) 326-2262.

Respectfully submitted,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Martin J. Nee
Project Manager

CC: Tim Kinney, Giant
Bill Olson, OCD, Santa Fe, New Mexico
Denny Foust, OCD, Aztec, New Mexico

J:\15749\FREELTR1

The Daily Times

Our Mission Truth — *Serving the Four Corners*

MOSTLY CLOUDY, CHANCE OF RAIN
HIGH 53
LOW 29
WEATHER, PAGE C8

Volume 108 Number 135 — *Farmington, New Mexico* — *Five Sections*

Tank fire lights night sky in Bloomfield

Firefighter injured in oily blaze

SHERRI HOLIMAN
STAFF WRITER

BLOOMFIELD — An black cloud of smoke blanketed Bloomfield late Tuesday afternoon as firefighters struggled to contain an oil tank fire in which a firefighter was burned.

While battling the blaze, Bloomfield volunteer firefighter David Wagoner slipped into a containment dike and burning oil scalded his body, Bloomfield police Lt. Jim Davis said.

The Air Care 1 helicopter flew Wagoner, 35, to the University of New Mexico Hospital in Albuquerque, Bloomfield Fire Chief George Duncan said. Duncan said Wagoner, a volunteer with the Bloomfield Fire Department for 18 years, had second-degree burns below his knees and on the back of his thighs.

Flames began pouring from the 1.7-million-gallon tank at 4:30 p.m. Five hours later, after attention from six Bloomfield units and a foam unit from Giant's Bloomfield Refinery, the fire was out, Davis said.

Related photo Page B3

A cleaning crew was working inside the Giant Industries Inc. tank shortly before the blaze was reported, Davis said.

Authorities aren't sure what sparked the fire, however.

"Crews haven't been able to access the inside of tank to see what the cause was," Davis said.

Giant spokesman Tim Kinney said the tank had not been used for several years, but there was some residue inside which could have been ignited by the cleaning crew.

Giant officials and members of the Bloomfield fire department will continue to investigate the incident, Kinney added.

Although the amount of damage has not been determined, the company isn't anticipating a large monetary loss, Kinney said.

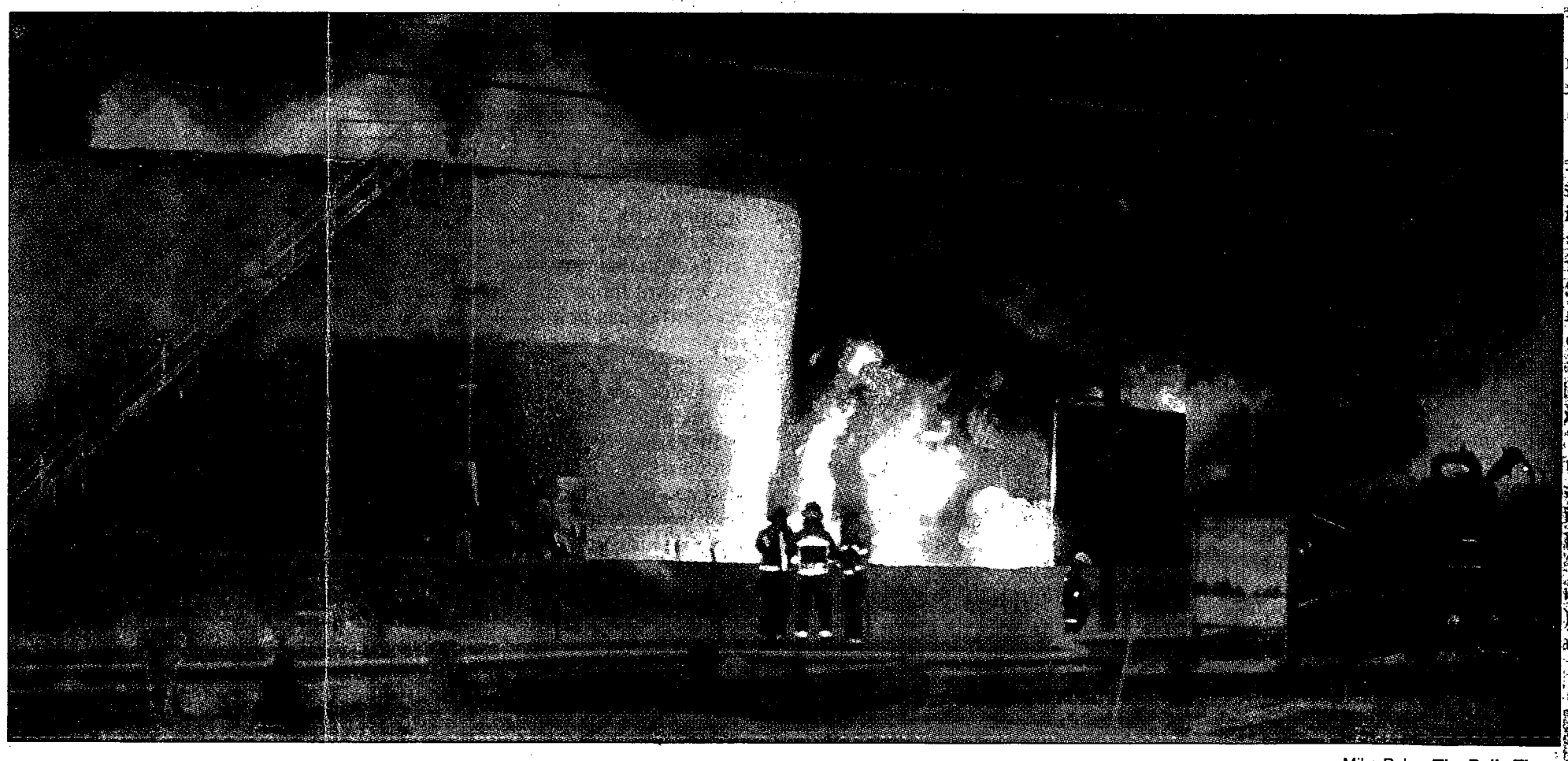
"The tank was going to be scrapped, so it had little or no value," he said.

Bloomfield police officers were dispatched to the scene to direct traffic and two units from the sheriff's department were called in to assist, Sheriff's Sgt. Bill Morgan said.

The intensity of the blaze and its proximity to two small fuel tanks forced firefighters to evacuate two apartment complexes and homes located between Frontier Street and Fifth Avenue, Davis said.

He said the evacuation occurred because authorities at the scene were concerned the small tanks would explode.

The evacuees returned to their homes at 9:14 p.m., Duncan said.



Mike Pahos/**The Daily Times**

Firefighters assess the situation as a Giant Industries, Inc., oil tank blazes in Bloomfield Tuesday night.

Bill Olson

Grant Bloomfield Station
12/14/95

Grant Bloomfield Station
12/14/95

Grant Bloomfield Station
12/14/95

Grant Bloomfield Station
12/14/95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Grant Bloomfield station
12/14/95

Bill Olson

The Dail
Our Mission Truth
Volume 108 Number 136 Farmington,

Firefighter stable after battling flames

Second firefighter reported injured

SHERRI HOLIMAN
STAFF WRITER

BLOOMFIELD —Investigators still aren't sure what caused an oil tank fire that injured two volunteer firefighters Tuesday night.


Wagoner

David Wagoner is listed in stable condition at the University of New Mexico Hospital with severe burns to 12 percent of his body, a hospital spokesman said.

Wagoner was hurt when he slipped into a containment dike full of burning oil while volunteer firefighters from Bloomfield and the Giant's Bloomfield Refinery struggled to extinguish the fire, Bloomfield Fire Chief George Duncan said.

Bloomfield volunteer firefighter Lynn Milton received second-degree burns to his hand and knee. He was transported to San Juan Regional Medical Center where he was treated and released, a hospital spokeswoman said.

More than 30 firefighters responded to the scene on Blanco Boulevard when the fire began in an empty 1.7-million-gallon tank at 4:30 p.m.

A cleaning crew was working on the inside of the tank, which was in the process of being dismantled, shortly before the blaze was reported, Duncan said.

"Anytime you have anyone injured, it puts a sad note on the operation, however we were pleased that the fire was extinguished and no one else was injured and surrounding property wasn't damaged," Duncan said.

"The worst of his burns are on his feet where his boots filled with the hot oil and water mixture," Blanche Wagoner said of her son's injuries. "It's going to be a long, painful recovery."

From his hospital bed Wednesday, David Wagoner said he'll be in the hospital for at least two weeks recovering from his injuries.

"I'm hoping to be home for Christmas," he said.

However, if doctors decide to do a skin graft on his feet, he may be in the hospital longer.

"We were advancing on the fire to put foam inside the tank," Wagoner said. "We were unable to see the hole to shoot the foam in, so I was trying to reposition the nozzle when I stepped into a hole."

The hole, which was filled with hot oil, was obscured by the white foam covering the ground.

Blanche Wagoner said the incident has been tough for the family, especially her son's wife Cindy and their three children.

David Wagoner, who served on the Bloomfield city council from 1988-1993, has been a volunteer with the fire department since the age of 16, his mother said.

George Seitts, Giant's public affairs manager in Arizona, said company officials are working closely with investigators, to ensure incidents of this magnitude are avoided in the future.

PHILIP ENVIRONMENTAL

OIL CONSERVATION DIVISION
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'95 NO 6 AM 8 52

November 3, 1995

Mr. William Olson
Hydrogeologist
New Mexico Oil Conservation Division
Environmental Bureau
P.O. Box 2088
Santa Fe, NM 87504-2088

Dear Mr. Olson:

On behalf of Giant Industries Arizona, Inc. (Giant), Philip Environmental Services Corporation (Philip) submits the enclosed Remedial Action Workplan for Giant's Bloomfield Crude Station in Bloomfield, New Mexico.

Please contact Tim Kinney of Giant at (505) 632-3306 or Sarah Kelly of Philip at (505)326-2262 if you have any questions.

Sincerely,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Sarah Kelly

Sarah Kelly
Hydrogeologist

PHILIP ENVIRONMENTAL SERVICES CORPORATION
4000 Monroe Road • Farmington, NM 87401
(505) 326-2262 • Fax (505) 326-2388

REMEDIAL ACTION WORKPLAN

OCTOBER 1995

GIANT INDUSTRIES ARIZONA, INC.
BLOOMFIELD CRUDE STATION
BLOOMFIELD, NEW MEXICO

PREPARED FOR

GIANT INDUSTRIES
ARIZONA, INC.
BLOOMFIELD, NEW MEXICO

Project 14904

PREPARED BY

PHILIP ENVIRONMENTAL

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262

TABLE OF CONTENTS

LIST OF FIGURES

1.0 INTRODUCTION

Giant Industries Arizona, Inc. (Giant) is pleased to present this remedial action work plan to the New Mexico Oil Conservation Division (NMOCD) for Giant's Bloomfield Crude Station, in Bloomfield, New Mexico. This workplan addresses impacted groundwater, the removal of free product, and the in-situ remediation of subsurface soils in the area of a 55,000 barrel crude oil storage tank. A chronology of the work completed at the site is as follows:

- On March 15, 1994, the NMOCD was notified that hydrocarbons were found in the subsurface soils at the site. The results of soil sampling subsequent to the discovery of hydrocarbon-impacted soil are discussed in a report dated May 9, 1994, titled "*Initial Site Assessment and Characterization Plan*" for the Giant Bloomfield Station; the report was prepared by Giant, and submitted to the NMOCD in May 1994.

- In a letter dated August 19, 1994, the NMOCD approved the work plan submitted by Giant in their May 9, 1994, report.

- During the week of September 19, 1994, Philip Environmental Services Corporation (Philip) supervised the installation of four monitoring wells, MW-1 through MW-4, and eight exploratory soil borings, SB-1 through SB-8. Giant submitted "Site Assessment and Proposed Action Plan for the Bloomfield Crude Station, Bloomfield, New Mexico", dated January, 1995, to the NMOCD describing and discussing the work completed during September, 1994. This report included recommendations for a second phase of investigation.

- In a letter dated March 13, 1995, the NMOCD approved the recommendations for further investigation, as described in the January 1995 report.

- During the week of April 24, 1995, Philip completed 13 soil borings, SB-9 through SB-21, and installed one monitoring well off-site, MW-5.

- During May 1995, Giant submitted "Site Assessment For Bloomfield Crude Station" to the NMOCD, this report summarized the results of the entire investigation at the crude station.

- The NMOCD approved the May 1995, final investigation report in a letter dated August 9, 1995, and requested that Giant provide the NMOCD with a remedial action work plan for the facility.

Giant believes that the proposed remedial strategy presented in this remedial action work plan should provide closure at this site within a reasonable period of time.

1.1 Groundwater Issues

In general, the groundwater at the site is unsuitable for domestic supply due to high concentrations of both sulfate and total dissolved solids (TDS). The general chemistry analytical results indicated TDS concentrations at all well locations, including upgradient well MW-3, were above New Mexico Water Quality Control Commission (NMWQCC) standards. Sulfate concentrations were also above the NMWQCC standard at all locations, with the exception of MW-2.

Giant's proposed action for groundwater impacted with dissolved-phase hydrocarbons is based upon the following facts:

- natural concentrations of TDS and sulfate in groundwater being over NMWQCC standards;
- the unlikely future use of the groundwater due to low well yield and other existing water supply sources;
- the limited extent of impacted groundwater; and
- proposed hydrocarbon source removal.

The proposed action will include semiannual monitoring of groundwater for benzene, toulene, ethlylbenzene and xylenes (BTEX), and annual reporting to the NMOCD.

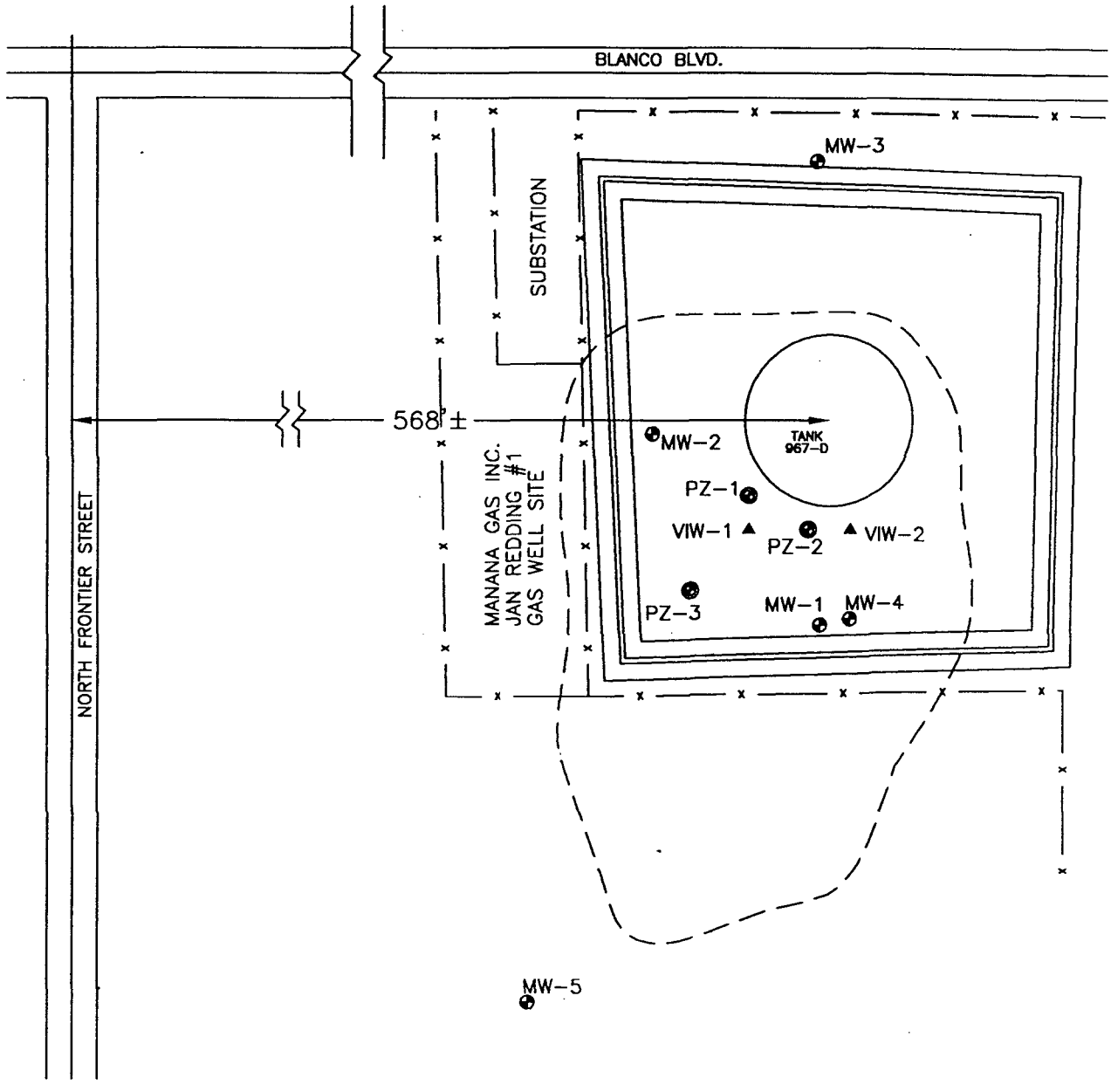
1.2 Technical Approach for Soil Remediation and Product Recovery

Bioventing is the proposed method of in-situ remediation of impacted soil at this facility. Bioventing stimulates the natural in-situ biodegradation of petroleum hydrocarbons in soil, by providing oxygen to existing microorganisms. In contrast to an aggressive soil vapor extraction program, bioventing utilizes low rates of air flow by injection or extraction to provide only enough oxygen to stimulate and sustain microbial activity, while minimizing or eliminating the production of a hydrocarbon-contaminated off-gas. Air injection alone is not recommended at this site, because of the possibility of increasing the vapor migration rate towards the property boundaries. However, air extraction or extraction combined with injection appear to be viable alternatives. During the initial phase of remediation, bioventing via vacuum extraction is proposed, in conjunction with recovery of free product from the water table.

Giant's proposed technical approach is to initiate a two-week duration pilot test for free-product removal and remediation of the impacted soils before implementing the final system. The pilot test results will be used to evaluate bioventing as a viable remediation option for this site and aid in the placement of the remediation wells.

The bioventing system involves an air-extraction/injection blower and air-vent/injection wells. Air is drawn at low-flow rates, generally 10 cubic feet per minute (cfm) or less, from the contaminated soils via the vent wells. Soil-gas monitoring points are installed in the contaminated soil interval to monitor system performance. These narrowly screened monitoring points are used to sample soil gas in discrete intervals of the subsurface. These points are required to monitor local respiration rates in the vadose zone.

An estimate of the soil's permeability to air flow and the radius of influence of air-injection wells are both important elements of pilot testing and full-scale bioventing design. On-site testing will be used to determine the radius of influence that can be achieved for a given well configuration, as well as the optimum flow rate and air pressure.



LEGEND

⊗———⊗	FENCE LINE
⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
— — — —	ESTIMATED BOUNDARY OF IMPACTED SOILS
▲ VIW-1	VENT/INJECTION WELL LOCATION AND NUMBER (PROPOSED)
⊕ PZ-1	PIEZOMETER LOCATION AND NUMBER (PROPOSED)

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PHILIP ENVIRONMENTAL

TITLE: Bloomfield Crude Station Remediation Pilot Test Proposed Well and Piezometer Locations

SCALE	1=100	DATE	PROJECT NO: 14904
DWN:	TMM	10/6/95	GIANT INDUSTRIES BLOOMFIELD, NM
DES:			
CHKD:			FIGURE 1
APPD:			REV:

COL. 14904A-003

2.0 WORK PLAN

Initially, Giant will conduct a pilot test and the data collected will be used to estimate respiration rates, the radius of influence for soil venting, and to develop a free-phase hydrocarbon recovery plan.

2.1 Remediation Pilot Test and Evaluation

Giant proposes to perform a two-week pilot test, prior to the final system design to evaluate the most cost-effective approach for the remediation system and the specifications of the system components. The pilot test will consist of a free product recovery test, well and piezometer installation, soil-gas permeability testing, in-situ respiration testing, and data evaluation.

The effectiveness of a bioventing system depends on a number of factors, including air permeability of the impacted soils, presence of boundary conditions in the soil, and the thickness of the vadose zone. Venting and air injection test data will be used to complete the design of a full-scale remediation system.

2.1.1 Pilot Test Well and Piezometer Installation

Two venting wells, VIW-1 and VIW-2, and three piezometers, PZ-1, PZ-2, and PZ-3, will be installed within the area to be remediated. These pilot wells will be located so that they can also be an integral part of the final remediation system. The proposed location of these wells is shown on Figure 1. The vent/injection wells will be installed to a depth of approximately 20 feet below ground surface (bgs) and constructed of 4-inch-diameter, Schedule-40 polyvinyl chloride (PVC) well screen and riser pipe. The well construction will include sand as a filter pack along the screen, a bentonite seal above the filter pack, and cement/bentonite-mix grout to surface. The screened interval will extend down below the water table and up across the impacted interval of the vadose zone. It is anticipated that the venting wells will have approximately 10 feet of screen; 5 feet below the water table, and 5 feet above the water table. Care will be taken to seal the open portion of the well below the surface sand layer, to minimize the risk of air short-circuiting at the well. The wells will be screened below the water table to allow them to also be used for product recovery.

Three piezometers will be installed for use as soil-gas monitoring (respiration) points. The proposed location of these piezometers is shown on Figure 1.

Each piezometer will be constructed with 2-inch diameter, Schedule-40 PVC, and screened in the impacted interval of the vadose zone. The bottom of the screen will be placed at the top of the capillary fringe. The length of the screened interval will not exceed 5 feet. These monitoring points will allow the soil-gas to be sampled from the contaminated soil profile. Soil-gas information will help to monitor the movement of the introduced oxygen through the soils and to estimate biodegradation rates. The piezometers will also be useful in determining the radius of influence for the venting wells.

During drilling of wells and piezometers, the soils will be characterized by a geologist. Soil samples will be retrieved using a split-spoon sampler at 5-foot intervals. The soil samples will be described and field screened for Volatile Organic Compounds (VOCs), using a photoionization detector (PID). Two samples from each boring will be sent to a laboratory for chemical analysis. The samples from each boring will be collected from the interval with the highest field-screen VOC concentration and from the deepest interval. These samples will be analyzed for for BTEX using USEPA Method 8020 and for total petroleum hydrocarbons (TPH) using USEPA Method 418.1.

2.1.2 Soil-Gas Permeability Test

A soil-gas permeability test will be conducted to determine the air permeability of the site soil and the radius of influence of the vent wells. Positive or negative air pressure will be measured at the monitoring points. These data will be used to determine the site's suitability for bioventing and to ensure that the entire pilot test site receives a supply of oxygen-rich air to sustain in-situ biodegradation. This test will take approximately eight hours to complete and will be conducted at this site two times. The first test will be run by extracting air from VIW-1. Upon completion of the air extraction soil gas permeability test, the test will be rerun in a similar manner but with air being extracted at VIW-1 and injected at VIW-2 simultaneously.

A (Model 1.2145-L) venting unit from Philip's PARTS® inventory will be used for the vent test. This venting unit is equipped with a 2 horsepower (hp), 230-volt, single-phase motor. The venting unit is capable of producing up to 50 standard cubic feet per minute (scfm) at 60 inches of water (in. H_20) vacuum.

A (Model 1.2036-M) blower unit from Philip's PARTS® inventory will be used for the air injection portion of the test. This blower unit is equipped with a 5-hp, 230-volt, single-phase motor.

The venting and air injection equipment will be set up and tested prior to mobilization to the site. The venting unit, blower unit, header piping, and discharge piping will be

installed in an enclosed equipment trailer. The trailer is designed to minimize noise, protect the equipment from vandalism and adverse weather, and reduce installation and disassembly activities at the site.

After the equipment is installed, baseline water levels, organic vapor levels as measured with a PID, oxygen (O_2), carbon dioxide (CO_2), and vacuum/pressure measurements will be recorded. These measurements will be taken and recorded at PZ-1, PZ-2, PZ-3, MW-1, MW-2, MW-3, MW-4, VIW-1 and VIW-2. All measurements will be recorded on a test log.

After initial conditions are measured, the soil-venting portion of the test will begin. The test will be conducted as a step-test and will start at approximately 5 to 10 in. H_20 vacuum. The vacuum will be stepped up in the smallest increments possible.

Vacuum measurements and PID readings will be taken at PZ-1, PZ-2, and PZ-3. Vacuum readings will be taken at 1 to 3 minute intervals for the first hour of the test, or until the 3-minute change in pressure is less than 0.1 inches H_2O. At this time, a 5- to 20-minute interval will be used. After the interval of pressure data collection has increased, pressure data will continue to be gathered for 4 to 8 hours, or until the pressure reading in PZ-3 (the outermost monitoring point) does not increase by more than 10% over a 1-hour interval. At this time, the pressure will be stepped up. After the first hour of the test, water level and pressure measurements will be taken at MW-1, MW-2, MW-3, MW-4, and VIW-2. Blower data (air pressure and flow) will be recorded every 30 minutes.

Soil gas permeability and vent well radius of influence will be calculated using the Hyperventilate™ computer program.

2.1.3 In-Situ Respiration Test

This test provides a rapid field measurement of the in-situ biodegradation rates. O_2 utilization and CO_2 production are measured at each vent well during this test to determine if biodegradation is taking place, and if so, at what rate. The results from this test will determine if in-situ microbial activity is occurring and if it is O_2 limited. This test will run for approximately one week and will begin immediately after completion of the soil gas permeability test.

O_2, CO_2, and hydrocarbon levels will be measured at the monitoring points prior to the soil gas permeability test. Immediately after the permeability test, soil gas will be measured for O_2, CO_2, and hydrocarbon levels at all available monitoring points (all PZs, MWs, and VIWs) Soil gas measurements will be taken at 2, 4, 6, and 8 hours and then every 4 to 12 hours, depending upon the rate at which oxygen is utilized. The in-situ

respiration test will be terminated when the oxygen level is about 5%, or after 5 days of sampling.

Data collected during this test will be used to calculate oxygen utilization rates and biodegradation rates. The decision to proceed with bioventing will be based on the results of the biodegradation rate calculations. The calculated air permeability of the site soils and the estimated radius of influence will also affect the decision to proceed with bioventing at this site.

The system will be monitored intensively for the first two or three days of operation, and during the soil-gas permeability test and the in-situ respiration test. Monitoring will consist of measuring soil-gas oxygen, carbon dioxide, and hydrocarbon concentrations before, during, and after air extraction and injection.

During the bioventing pilot testing, one air sample will be collected from the vent well when air flow rates are stabilized at the rate most likely to be used for remediation. One additional sample will be collected for quality control. These samples will be sent to a laboratory to be analyzed for BTEX using USEPA Method 8020, and TPH using USEPA Method 8015. Air samples will be collected from a sample port in the venting unit suction piping using a sampling pump to fill a tedlar bag.

2.1.4 Free Product Recovery Test

A bail-down or free-product recovery test will be performed, to provide an estimate of the rate at which product is yielded to the wells. Using this information, the volume of product to be removed from the site will be estimated. Prior to the start of each phase of the bioventing pilot test, free-product thickness will be measured. Following the completion of each phase of the pilot test, product thickness will also be measured and the free product removed by bailing. If practical, free product will also be measured during the testing phases. All of the information collected will be used to estimate the free-product recovery rate during bioventing. Once this information is obtained, the product recovery method most appropriate for use at this site can be chosen. Giant anticipates recovering the free phase hydrocarbons either by using a belt skimmer or suction system, either of which would be coupled with vacuum extraction of soil vapor.

2.1.5 Pilot Test Report

A pilot test report will be prepared that will document the field activities, well locations, field measurements and laboratory data, calculations, results, and conclusions. The data from the soil gas permeability and in-situ respiration tests will be analyzed and a conclusion will be reached as to whether bioventing is to be implemented.

2.2 Remediation System Design and Workplan Preparation

Based on the results of the pilot test, the data will be used to complete the final design of a full-scale remediation system. The final design will include the pilot test report, the number of remediation wells and their locations, equipment specifications, a system operating plan, product recovery equipment specifications (if necessary), and predicted vapor emission data. In addition the final design will include a plan for evaluating the effectiveness of the remediation system that will include monitoring requirements, remediation evaluation, and reporting requirements.

3.0 SCHEDULE

Upon approval by the New Mexico Oil Conservation Division, Giant will require approximately two weeks to schedule the installation of the components necessary for the remediation pilot test. Pilot test system installation, bioventing pilot testing, and free-product recovery testing can be completed within three weeks of the start of field work. The Pilot Test Report will require three weeks to produce after the Remediation Pilot Test is completed. The Remediation System Design and Workplan will require an additional two weeks to complete after the submission of the Pilot Test Report.

GIANT
INDUSTRIES, INC.

Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

505
632-8024
632-8006

October 5, 1995

Mr. Bill Olson
NMOCD
Environmental Bureau
2040 S. Pacheco St.
Santa Fe, NM 87505

Dear Bill:

Thank you for your consideration in allowing us an extension of time to complete the proposal for remediating the Bloomfield Station. We propose to submit the report by November 6, 1995.

Sincerely,

Tim Kinney
General Manager
Crude Gathering Operations

/dm

cc: Carl Shook - Giant
Martin Nee - Philip Environmental
Kim Bullerdick - Giant
Jacque Cumbie - Giant

PHILIP ENVIRONMENTAL

OIL CONSERVATION DIVISION
RECEIVED

'95 JUL 21 AM 8 52

July 19, 1995

Mr. Bill Olson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

RE: Giant Industries Arizona, Inc. Bloomfield Station Assessment Report

Dear Bill:

Please find enclosed a corrected version of Page 8 of the above-referenced report. Several of the elevations reported on the table of Page 8 were incorrect. The corrected elevations do not affect the technical content of the report, as they were typographical errors.

If you have any questions or require additional information please contact Sarah Kelly of Philip Environmental Services Corporation at (505) 326-2262.

Sincerely,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Sarah Kelly/sk

Sarah Kelly
Hydrogeologist

cc: Mr. Denny Foust (w/enclosures)
New Mexico Oil Conservation Division
1000 Rio Brazos Rd
Aztec, NM 87410

Mr. Tim Kinney (w/enclosures)
Giant Industries Arizona, Inc.
5764 US Highway 64
Farmington, New Mexico 87401

Enclosure-
As stated

j:\13023\b_olson.doc

3.3 SITE HYDROGEOLOGY

On October 31, 1994, the depth to groundwater in MW-1 was measured with an ORS oil/water interface probe. The ORS probe indicated approximately 4 inches of water standing in the well. MW-2, MW-3, and MW-4 were also checked with the ORS probe on that date and only MW-2 had a measurable product layer. On April 27, 1995, depth to groundwater measurements were again taken with the ORS probe; as before, only MW-2 had a measurable product layer. It was noted that the water level in MW-1 had changed less than 1 inch since the measurement taken in October 1994. In MW-2, MW-3, and MW-4, water levels varied from 3 to 7 inches. This indicates that the water level measured in MW-1 does not reflect the elevation of the potentiometric surface, but is more likely standing water that has accumulated in the bottom of the well. For this reason MW-1 was not used to estimate the configuration of the potentiometric surface, shown on Figure 6 of this report. Water table elevations measured in both phases are shown in Table 2.

TABLE 2 - WATER LEVEL ELEVATIONS

Well	10/31/94 Water Level	04/27/95 Water Level	10/31/94 Product Thickness	04/27/95 Product Thickness
MW-1	5470.49	5470.45	None	None
MW-2	5469.99	5469.50	0.11	0.47
MW-3	5473.57	5472.98	None	None
MW-4	5469.49	5469.77	None	None
MW-5	N/A	5464.58	None	None

Water level elevation is given in feet above mean sea level

MW-2 water level is not corrected for product thickness

Product thickness is given in feet

In light of the relatively similar lithologies noted in all of the borings, it is assumed that all of the wells are hydraulically connected. It is expected that the various clay and clayey sand layers will cause significant variations in the vertical and horizontal hydraulic conductivity. It is assumed that MW-1 is completed above the potentiometric surface. Figure 6 is a potentiometric surface map of the site, created using water level measurements taken with the ORS probe in MW-2, MW-3, MW-4, and MW-5. These four wells were used together, because they are screened in approximately the same interval — the shallow saturated zone. The water level in MW-2 for this figure was corrected for the influence of the product thickness.

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. Pacheco
Santa Fe, New Mexico 87505

August 9, 1995

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-387

Mr. Timothy A. Kinney
General Manager
Crude Gathering Operations
Giant Industries, Inc.
5764 US. Highway 64
Farmington, New Mexico 87401

RE: SITE INVESTIGATION REPORT
GIANT BLOOMFIELD CRUDE STATION

Dear Mr. Kinney:

The New Mexico Oil Conservation Division (OCD) has completed a review of Giant Industries Inc's (GIANT) June 29, 1995 correspondence and May 1995 "SITE ASSESSMENT FOR THE BLOOMFIELD CRUDE STATION, BLOOMFIELD, NEW MEXICO". These documents present the results of Giant's recent soil and ground water investigations adjacent to tank 967-D at the Giant Bloomfield Crude Station.

The investigation work performed to date is satisfactory. However, the report does not contain recommendations for remediation of contaminated soil and ground water at the facility. The OCD requests that Giant provide the OCD with a remedial action work plan for the facility by October 6, 1995.

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

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec Office

Z 765 962 387

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PS Form 3800, March 1993

Fold at line over top of envelope to the right of the return address

GIANT
INDUSTRIES, INC.

Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

505
632-8024
632-8006

June 29, 1995

VIA FEDERAL EXPRESS

Mr. William Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Bill:

RE: BLOOMFIELD CRUDE STATION

Enclosed is a revised Site Assessment for the Bloomfield Crude Station. Please contact me with any questions or comments.

Sincerely,

Tim Kinney /dm

Tim Kinney
General Manager
Crude Gathering Operations

/dm

Enclosure

cc w/enc.: Kim Bullerdick
Jacque Cumbie
N. D. Stidham
Max Johnson
Wayne Martin

cc w/o enc.: Carl Shook
Denny Foutz

PHILIP ENVIRONMENTAL

4000 Monroe Road
Farmington, New Mexico 87401
PH: (505) 326-2262 ▪ FAX: (505) 325-2388

DATE: Wednesday, April 26, 1995 TIME: 1:59 PM

TO: Bill Olson PHONE:
COMPANY: OCD FAX: 5058278177

FROM: Martin Nee PHONE: (505) 326-2262
FAX: (505) 326-2388

RE: **Bloomfield tank**

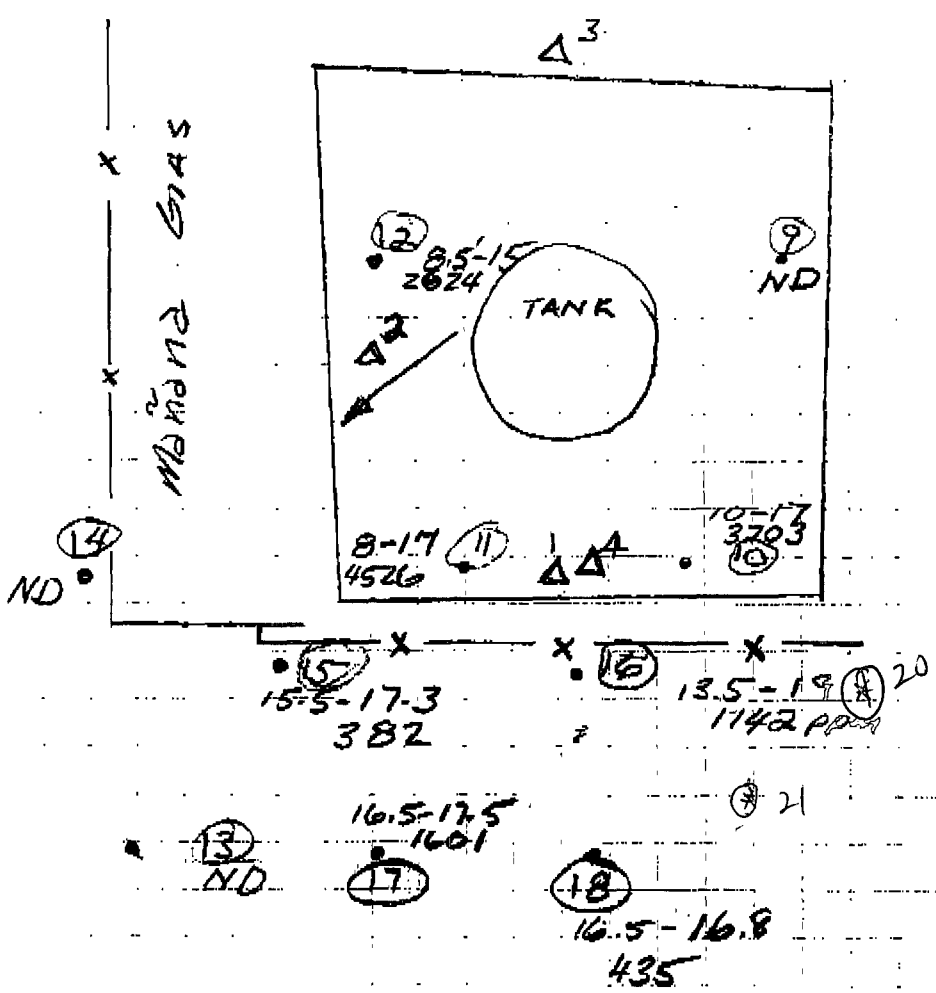
PROJECT NO: Number of pages including cover: 2

☒ *Hard copy **WILL NOT** follow* ❖ ☐ *Hard copy **WILL** follow*

M E S S A G E

Give me a call when you get this
Thanks

f a x **T R A N S M I S S I O N**



④ Boring loc

△ Monitor well

827-8177

Mr. William C. Olson, Hydrogeologist
Environmental Bureau
New Mexico Energy, Minerals and
Natural Resource Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: SITE INVESTIGATION
GIANT BLOOMFIELD CRUED STATION

Dear Mr. Olson,

Thank you for keeping me informed in this matter. Please note my new address for future correspondence.

OLD ADDRESS:
Michael Daly
1217 Camino Monte
Farmington, NM 87401

NEW ADDRESS:
Michael Daly
605 Venada Circle
Farmington, NM 87401-3951

Sincerely,

Michael Daly

Bill Olson

From: Bill Olson
To: Frank Chavez
Cc: Denny Foust
Subject: Giant Bloomfield Crude Station
Date: Thu, Mar 9, 1995 10:39AM
Priority: High

Attached is a draft letter of approval of Giant's investigation report. Please give me any written comments by 11:00 am on Monday 3/13/95. Thanks!

<<File Attachment: INVEST2.APR>>

Bill Olson

From: Frank Chavez
Date sent: Thu, Mar 9, 1995 11:14AM
To: Bill Olson
Subject: Registered: Frank Chavez

Your message
To: Frank Chavez
Subject: Giant Bloomfield Crude Station
Date: Thu, Mar 9, 1995 10:39AM
was accessed on
Date: Thu, Mar 9, 1995 11:14AM

Bill Olson

From: Denny Foust
Date sent: Fri, Mar 10, 1995 1:30PM
To: Bill Olson
Subject: Registered: Denny Foust

Your message
To: Denny Foust
Subject: Giant Bloomfield Crude Station
Date: Thu, Mar 9, 1995 10:39AM
was accessed on
Date: Fri, Mar 10, 1995 1:30PM

Bill Olson

From: Denny Foust
To: Bill Olson
Subject: RE: Giant Bloomfield Crude Station
Date: Fri, Mar 10, 1995 3:18PM

Denny makes the following comments on conditions:
2. I don't need 7 days notice 48 hours is plenty✓
3.Suggested wording--All waste generated during investigation activities must be disposed of at an OCD approved site.

From: Bill Olson
To: Frank Chavez
Cc: Denny Foust
Subject: Giant Bloomfield Crude Station
Date: Thursday, March 09, 1995 10:39AM
Priority: High

Attached is a draft letter of approval of Giant's investigation report. Please give me any written comments by 11:00 am on Monday 3/13/95. Thanks!

<<File Attachment: INVEST2.APR>>

GIANT
INDUSTRIES, INC.

Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

505
632-8024
632-8006

January 13, 1995

Mr. William Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco Street
Santa Fe, NM 87505

Dear Mr. Olson:

RE: BLOOMFIELD CRUDE STATION

Enclosed is the Site Assessment and Proposed Action Plan for the Bloomfield Crude Station. Please contact me with any questions or comments as they arise.

Sincerely,

Tim Kinney
General Manager
Crude Gathering Operations

/dm

Enclosure

cc w/enc: Kim Bullerdick
Jacque Cumbie
N. D. Stidham
Max Johnson
Wayne Martin

cc w/o enc: Carl Shook
Denny Faust

GIANT
INDUSTRIES, INC.

Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

505
632-8024
632-8006

November 2, 1994

Mr. William Olson
New Mexico Oil Conservation Division
Environmental Bureau
2040 S. Pacheco
Santa Fe, NM 87505

Dear Mr. Olson:

RE: BLOOMFIELD INVESTIGATION

This letter is to confirm our recent phone conversation regarding the status of the Bloomfield investigation. We have experienced delays in this project and expect to issue a report within the next 30 days. The report was originally scheduled for October 28th.

Thank you for your patience in this matter.

Sincerely,

Tim Kinney
General Manager
Crude Gathering Operations

/dm

cc: Kim Bullerdick
Carl Shook
Jacque Cumbie

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 1010	Date 9/12/94
Originating Party		**Other Parties**
Tim Kinney - Giant Refining		Bill Olson - Envir. Bureau

Subject

Bloomfield Crude Station Ground Water Investigation

Discussion

Expect to start drilling boreholes and monitor well, next Monday 9/19/94.

Conclusions or Agreements

I will inform Denny Foust at Aztec office

Distribution
File
Denny Foust - OCD Aztec

Signed Bill Olson

GIANT
INDUSTRIES, INC.

Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

505
632-8024
632-8006

RECEIVED
JUL 01 1994
OIL CONSERVATION DIV.
SANTA FE

June 23, 1994

Mr. William C. Olson
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

Dear Mr. Olson:

RE: SITE ASSESSMENT GIANT BLOOMFIELD STATION

Regarding your letter of June 15, 1994, Giant Industries Arizona, Inc. ("Giant") offers the following response to comments and questions noted:

1. There are no plans at present to physically remove Tank 967-D.

2. Sample number 1 was taken at a depth of approximately four feet. Sample number 2 was taken at a depth of approximately ten feet.

3. Three monitor wells will be installed regardless of the results of photoionization testing. The revised site plan drawing is attached.

4. Details of well completion, development and sampling are attached.

5. Soil samples from hand augered corings will be collected as holes are advanced. The sample which exhibits the highest PID reading from each well will be analyzed for total petroleum hydrocarbons utilizing the appropriate EPA method.

6. Attached is the historical metals information that you requested. This information was obtained from the New Mexico Environment Department in connection with the old Aerex Refinery.

7. All groundwater samples taken from monitoring wells during this initial round of sampling will be sampled for PAH components.

We look forward to your review of the work plan. I would like to reiterate our desire to pursue this investigation in the near future. Please call me with any questions that may arise.

Sincerely,

Timothy A. Kinney
General Manager
Giant Crude Gathering Operation

/dm

Attachments

cc: OCD Aztec Office
Michael Daly
Kim Bullerdick - Giant
Lynn Shelton - Giant
Carl Shook - Giant
Martin Nee - Burlington

MONITOR WELL
INSTALLATION, DEVELOPMENT
AND SAMPLING PLAN

Prepared By:

GIANT INDUSTRIES, INC.
5764 U. S. Highway 64
Farmington, NM 87401

MONITOR WELL INSTALLATION

The well casing will be composed of four-inch, flush joint, polyvinyl chloride (PVC) screen and pipe, precleaned and prepackaged by the manufacturer. The casing will be installed by connecting individual sections while they are lowered into the borehole through the hollow center of the auger column. A screen will be placed at the air/water interface, with five feet above the static water level and at least ten feet below.

After the well casing has been installed, the auger flights will be retrieved in five-foot intervals. Precleaned and prepackaged 10-20 grade silica sand will be poured down the auger annulus to fill the void left as each five-foot flight is removed. This sand, combined with a small volume of formation sand that may slough into the borehole during retraction of the auger column, will provide the filter pack for the well screen. The sand will be placed to a level of two to three feet above the top of the screen.

A bentonite seal will be placed on top of the filter pack to form an impervious barrier and prevent downward migration of moisture. The remainder of the well annulus up to the ground surface will be grouted with a neat cement slurry containing 5% bentonite. The grout will be inserted from the surface after all remaining auger flights have been removed. The well head will be completed with a flush to grade water proof vault set in a three-foot by three-foot concrete slab. The locations and elevations of the monitor wells will be surveyed by a certified land surveyor.

WELL DEVELOPMENT

Well development will be conducted in two phases. In the first phase, water will be bailed from the wells in order to remove gross amounts of clay and silt. Bailing will also serve as a verification of proper well alignment. during the second phase of well development, water will also be bailed from the well. The well will be determined to be fully developed when the indicator parameters of pH, temperature and electrical conductance of water sampled from the well have stabilized over three consecutive measurements.

SAMPLING

The wells will be sampled with a bottom-filling teflon bailer. The bailer will be cleaned prior to use on each well. The bailer will be washed with lab soap, rinsed with methanol, and triple-rinsed with distilled water prior to use on each well. The samples will be obtained according to guidelines cited in EPA's RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (OSWER-9950.1) and shipped to the laboratory in an ice chest following strict chain-of-custody procedures. Analytical Technologies will analyze the samples for halogenated and aromatic volatile organic compounds (EPA 601 and 602), polynuclear aromatic hydrocarbons (EPA 610), and EPA priority pollutant metals. Inter-Mountain Laboratories in Farmington, New Mexico, will analyze the ground-water samples to characterize the general chemistry including ionic balance, nitrates/nitrites and total dissolved solids.

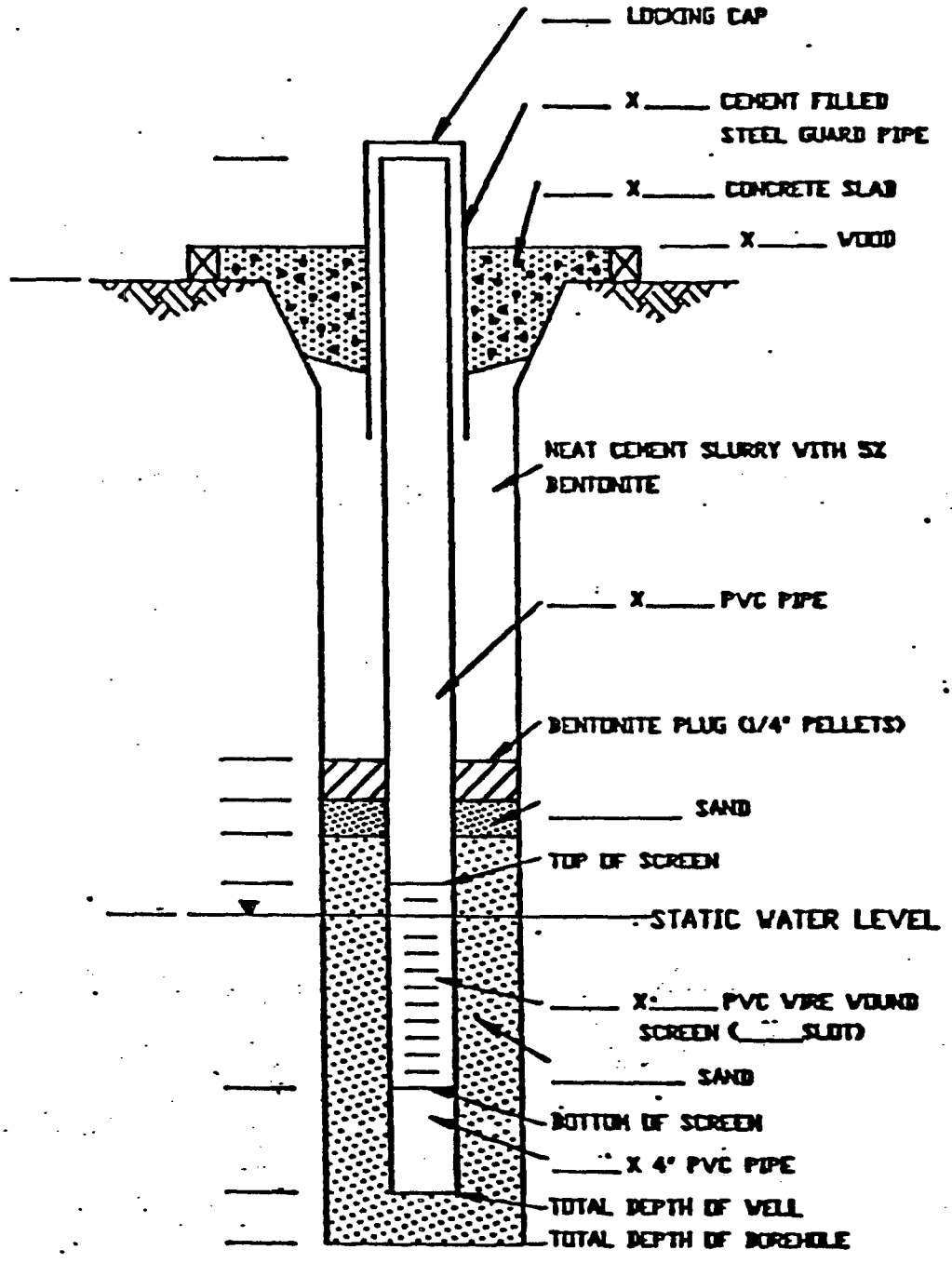


FIGURE 3-1

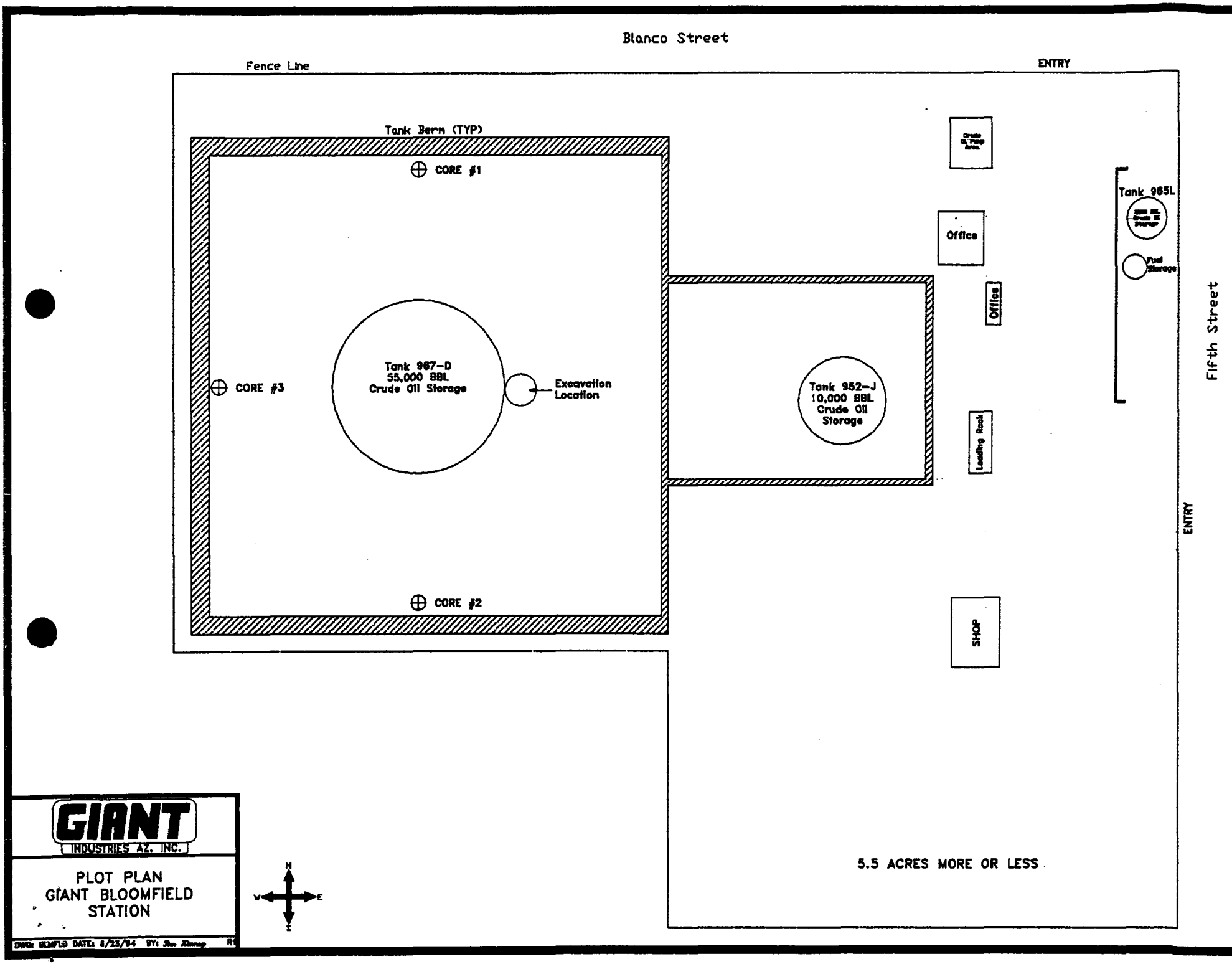
TYPICAL MONITOR WELL COMPLETION DIAGRAM

AEREX REFINERY

TABLE 10: GROUNDWATER, MONITOR WELLS 1 TO 3, JUNE 1990
ANALYSIS: HEAVY METALS, DISSOLVED

	MONITOR WELL		
	#1	#2	#3
barium	<0.10	0.10	0.30
chromium	<0.005	<0.005	<0.005
copper	<0.10	<0.10	<0.10
lead	<0.005	<0.005	<0.005
manganese	2.90	1.80	13.00
strontium	3.60	5.90	6.90
zinc	<0.10	<0.10	<0.10

NOTES:
1. All samples were analyzed by NM Scientific Laboratory Division.
2. Units are in parts per billion.


Blanco Street
Fence Line
ENTRY
Tank Berm (TYP)
CORE #1
CORE #3
CORE #2
Tank 967-D
55,000 BBL
Crude Oil Storage
Excavation
Location
Tank 952-J
10,000 BBL
Crude Oil
Storage
Office
Office
Loading Rack
SHOP
Tank 965L
Fuel
Storage
Fifth Street
ENTRY
5.5 ACRES MORE OR LESS
GIANT
INDUSTRIES AZ. INC.
PLOT PLAN
GIANT BLOOMFIELD
STATION
N
W
E
S

William Olson
Oil Conservation Division
Energy Minerals and Natural Resources De
P.O. Box 2088
Santa Fe, NM 87504-2088

July 5, 1994

Dear Mr. Olson

On June 10, 1994 we wrote your office advising that we planned a residential development south of the Giant Property in Bloomfield. Our plans have changed and we are no longer planning any residential development on the property. If any development does occur in the near future, it will be an industrial use.

Thank you for your consideration in this matter.

Sincerely,

Michael Daly

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

June 15, 1994

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

CERTIFIED MAIL
RETURN RECEIPT NO. P-111-334-130

Mr. Timothy A. Kinney
Giant Refining Co.
P.O. Box 256
Farmington, New Mexico 87499

RE: SITE ASSESSMENT
GIANT BLOOMFIELD CRUDE STATION

Dear Mr. Kinney:

The New Mexico Oil Conservation Division (OCD) is in the process of reviewing Giant Refining Company's May 24, 1994 "GIANT INDUSTRIES ARIZONA, INC. INITIAL SITE ASSESSMENT AND CHARACTERIZATION PLAN FOR THE BLOOMFIELD STATION". This document presents Giants initial soil investigations and a work plan for additional investigation related to petroleum contaminated soils adjacent to tank 967-D at the Giant Bloomfield Crude Station.

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

1. The document states that the contamination was discovered during closure of tank 967-D. Is this tank going to be removed from the site?

2. Table 1 does not include the depths at which sample 1 and sample 2 were taken. Please provide the OCD with this information.

3. The work plan recommends installation of monitoring wells if a field photo-ionization detector (PID) survey of the soils from the corings reveals contamination in excess of 250 parts per million (ppm). Due to the shallow nature of the ground water at the site, the OCD requires that these corings be completed as monitoring wells regardless of the PID measurements taken. In addition, the OCD requires that Giant install a third monitor well due west of tank 967-D along the berm in order that the direction of the ground water gradient can be determined. Please provide a commitment to perform these work elements.

4. The work plan does not include information on how the monitor wells are to be completed, developed and sampled. Please provide this information.

5. Additional hand augered corings are proposed around the circumference of the tank. The soils from these corings are proposed to be field surveyed for volatile organics using a photo-ionization detector (PID). The OCD requires that a soil samples also be taken from each of these corings from the depth interval with the highest PID reading and be analyzed for total petroleum hydrocarbons using appropriate EPA analytical methods. Please provide a commitment to perform these analyses.

6. The work plan recommended that ground water samples not be analyzed for heavy metals based on historical knowledge. Please provide this information.

7. The OCD requires that ground water samples from the monitor wells also be analyzed for polynuclear aromatic hydrocarbons (PAH) using appropriate EPA analytical methods. Please provide a commitment to perform these analyses.

Submission of the above information will allow the OCD to complete a review of the above referenced work plan.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec Office
Michael Daly, 1212 Camino Monte, Farmington, NM

P 111 334 130

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No Insurance Coverage Provided
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TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, June 1991

Fold at line over top of envelope to the right of the return address

William Olson
Oil Conservation Division
Energy Minerals and Natural Resources Dept.
P.O. Box 2088
Santa Fe, NM 87504-2088

June 10, 1994

Dear Mr. Olson

Thank you for providing the information regarding the leak at the Giant Facility in Bloomfield. Please keep us in the loop and informed as to the progress in this matter. Enclosed please find a copy of a proposed subdivision which is in the approval stages with the City of Bloomfield. This subdivision, in part, lies South of the tank in question.

Sincerely,

Michael Daly
1217 Camino Monte
Farmington, NM 87401

GIANT REFINING CO.

P.O. Box 256
Farmington, New Mexico
87499

505
632-3306

May 24, 1994

Mr. Bill Olson
New Mexico Oil Conservation Division
Environmental Bureau
P. O. Box 2088
Santa Fe, NM 87504-2088

Dear Mr. Olson:

RE: Giant Industries Arizona, Inc.
Initial Site Assessment and
Characterization Plan
for the Bloomfield Station

Enclosed you will find a revised copy of the referenced plan correcting some typographical errors. I apologize for any inconvenience this may cause you.

Sincerely,

Timothy A. Kinney
dm

Timothy A. Kinney
General Manager
Crude Gathering Operations

/dm

Enclosure

cc Denny Foust

GIANT REFINING CO.

P.O. Box 256
Farmington, New Mexico
87499

505
632-3306

May 24, 1994

Mr. Bill Olson
New Mexico Oil Conservation Division
Environmental Bureau
P. O. Box 2088
Santa Fe, NM 87504-2088

Dear Mr. Olson:

RE: Giant Industries Arizona, Inc.
Initial Site Assessment and
Characterization Plan
for the Bloomfield Station

Enclosed you will find a revised copy of the referenced plan correcting some typographical errors. I apologize for any inconvenience this may cause you.

Sincerely,

Timothy A. Kinney
dm

Timothy A. Kinney
General Manager
Crude Gathering Operations

/dm

Enclosure

cc Denny Foust

GIANT BLOOMFIELD STATION

INITIAL SITE ASSESSMENT AND CHARACTERIZATION PLAN

PREPARED FOR:

NEW MEXICO OIL CONSERVATION DIVISION

PREPARED BY:

LYNN SHELTON
SENIOR ENVIRONMENTAL COORDINATOR
GIANT REFINING COMPANY

MAY 9, 1994

CONTENTS

I. INTRODUCTION

A. Site Location

Giant Refining Company's Bloomfield station (the site) is located on the southwest corner of Blanco Boulevard and Fifth Street within the City of Bloomfield, San Juan County, New Mexico. The site is within the N½, NW¼, NW¼ of Section 22 of Township 29 North, Range 11 West. The site occupies 5.502 acres, more or less.

B. Historical Background

The site was originally leased for oil exploration and production on September 6, 1929 and since that time has been owned and leased by several companies who have operated various process units and tanks on or near the site, including refining operations. The site is presently used as a staging yard for Giant trucking and pipeline operations.

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Located in the north central section of the City of Bloomfield, the site is at an elevation of approximately 5,480 feet.

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these units. Both the quaternary alluvial deposits and the sandstones of the tertiary Nacimiento Formation are primary aquifers for this area.

The alluvial deposits consist of gravel, sand, silt, clay and mixtures thereof. Logs from on-site monitor wells at the Aerex refinery site show the presence of silty clays, silty sands, and medium to fine-grained sands to a depth of 15 feet. Gravel was also encountered but at a much lower percentage than the above sediments.

Available data (Stone, 1983 and Lyford, 1979) reports that the alluvial deposits do not exceed 100 feet in thickness, with most thicknesses at an average of 50 feet in most perennial stream channels. This corroborates the statement by a local driller that the valley fill in Bloomfield is 75-80 feet in thickness.

Consisting of interbedded carbonaceous mudstones and medium to very coarse grained sandstones, the Nacimiento Formation ranges in thickness from 418 to 2,232 feet in the San Juan Basin. Again, no site specific data is available for the site. Groundwater in the sandstones in the Nacimiento Formation may be locally confined and may also be locally interconnected with the quaternary deposits. The quaternary alluvium is believed to be recharged primarily by **irrigation** discharge and, to a lesser extent, by upward flow from the underlying Nacimiento Formation.

The regional hydraulic gradient in the alluvial aquifer generally follows the topography, that is, toward the river. Well data from the Aerex refinery site seems to corroborate this observation. Surficial topography indicates that the alluvial aquifer lies on a 2° - 3° dip to the south becoming more southwesterly as it nears the San Juan River.

Regional data indicates that the transmissivities of the valley fill varies widely. Hydraulic conductivities in the alluvium along the San Juan, Animas, and La Plata rivers may exceed 7.06×10^{-1} cm/sec in places. Hydraulic conductivities along ephemeral streams are generally lower than those along the perennial rivers in the San Juan Basin. Hydraulic conductivities at the El Paso Natural Gas Blanco Plant located approximately 1½ miles northeast of the site range from 1.3×10^{-4} to 6.6×10^{-6} cm/sec. The Blanco plant is located on alluvium, which fills a canyon cut into the Nacimiento Formation. This indicates that hydraulic conductivities at the Giant site can be reasonably expected to be lower than along the river.

It is known that agricultural activity in the form of cultivation and irrigation has occurred immediately north and up gradient of the facility. This seasonal activity may have a direct affect on the transmissivity and fate of contamination in the soil at this site.

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III. SITE CHARACTERIZATION PLAN

Giant proposes to characterize the extent of potential contamination at the site by drilling and sampling as well as by visual observation.

Two corings will be made initially. The first (#1) will be located 75' to 85' north of tank 967-D and the second (#2) will be located 75' south of tank 967-D (see site drawing). These corings will be drilled using a rotary rig with continuous coring by means of a split sampling tube.

The soil core will also be tested with a photoionization detector (PID) at the same intervals and at any point that staining or pooling may be observed. If hydrocarbon levels in excess of 250 PPM are detected with the PID in either coring, both corings will be completed with PVC casing and screened across the aquifer. After development, these completed wells will be used as piezometers as well as for sampling groundwater if needed in the future. Wells will be fitted with locking protective covers to prevent vandalism.

Precise lithologic logs will be recorded for use in determining local characteristics of the alluvium and hydraulic conductivities.

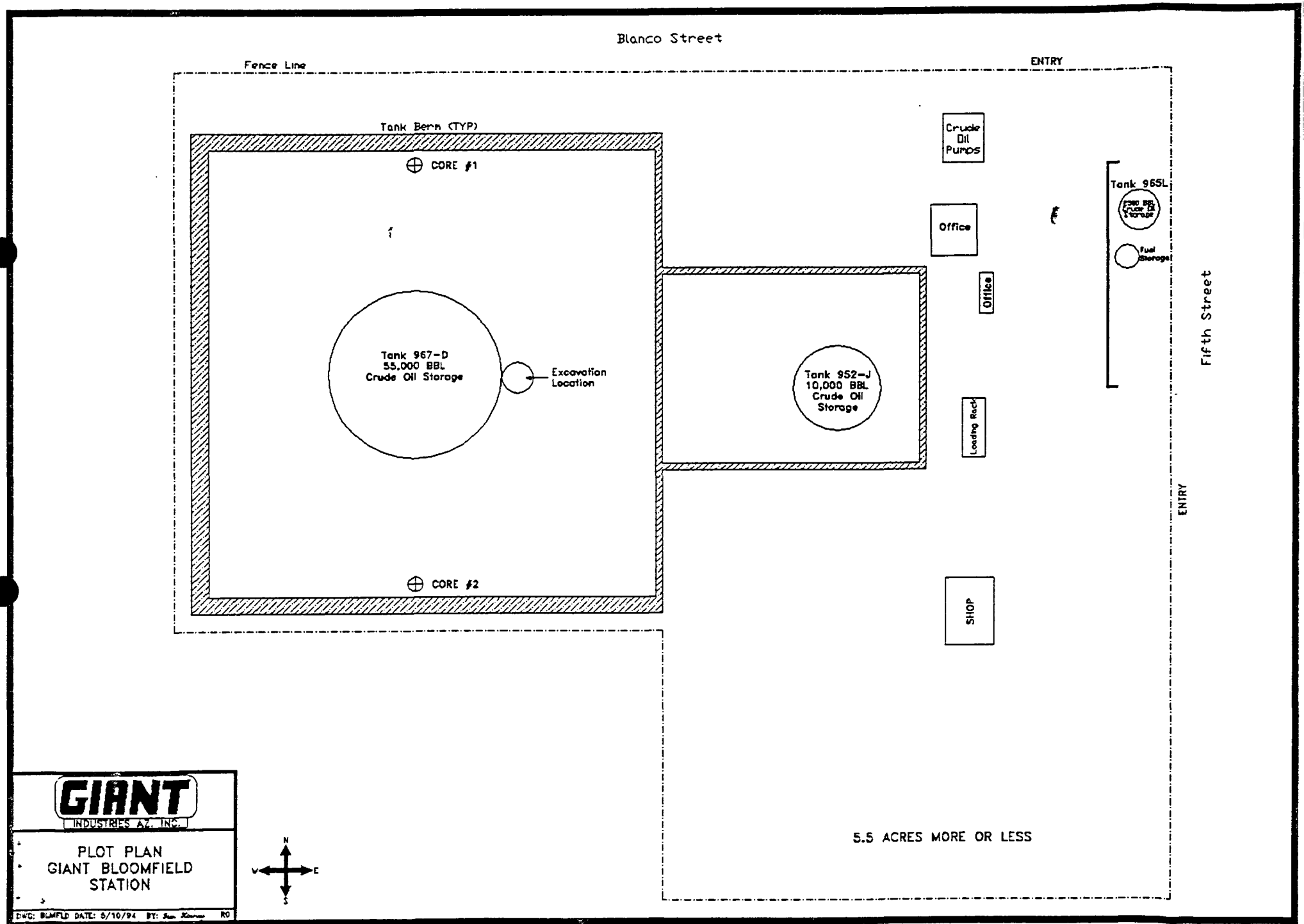
Water samples, if any, will be analyzed for hydrocarbon fingerprinting using EPA Method 8015 and for volatile organic hydrocarbons using EPA Method 8020. Historical data does not indicate a need for analyzing samples for heavy metals at this time.

Analytical data generated from these samples will determine the initial characteristics of contamination of the site and the extent of additional, if any, characterization to be performed.

Additional corings will be made with a hand auger to a depth of 10′ to 15′ at various locations around the circumference of tank 967-D. These will be tested with the PID and inspected by visual observations for staining. Although precise lithologic logs for these corings are difficult to obtain, random observations will be helpful and should be noted.

IV. CONCLUSION

Excavation near tank 967-D has indicated that hydrocarbon is present in the soil. The extent of vertical or horizontal migration, if any, of hydrocarbons is unknown and will be assessed by this sampling event. Adequate data should be generated in this initial characterization to determine if the contamination is locally confined around tank 967-D, if additional characterization is needed, or if the levels of contamination warrant no further action.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STATION
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R0

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MARCH 15, 1994

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MARCH 29, 1994

Depth	Reading	Units
0.5 ft	180	ppm
1.0 ft	192	ppm
3.0 ft	220	ppm
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* Taken in the excavated area - east side of tank 967-D.

GIANT REFINING CO.

P.O. Box 256
Farmington, New Mexico
87499

505
632-3306

May 16, 1994

Mr. Bill Olson
New Mexico Oil Conservation Division
Environmental Bureau
P. O. Box 2088
Santa Fe, NM 87504-2088

Dear Mr. Olson:

Giant Industries Arizona, Inc. hereby submits the enclosed "Initial Site Assessment and Characterization Plan for the Bloomfield Station" for your review and approval.

Please contact me at 632-8006 with comments and questions.

Sincerely,

Timothy A. Kinney
General Manager
Crude Gathering Operations

/dm

cc Denny Foust

GIANT BLOOMFIELD STATION

INITIAL SITE ASSESSMENT AND CHARACTERIZATION PLAN

PREPARED FOR:

NEW MEXICO OIL CONSERVATION DIVISION

PREPARED BY:

LYNN SHELTON
SENIOR ENVIRONMENTAL COORDINATOR
GIANT REFINING COMPANY

MAY 9, 1994

CONTENTS

I. INTRODUCTION

A. Site Location

Giant Refining Company's Bloomfield station (the site) is located on the southwest corner of Blanco Boulevard and Fifth Street within the City of Bloomfield, San Juan County, New Mexico. The site is within the N½, NW¼, NW¼ of Section 22 of Township 29 North, Range 11 West. The site occupies 5.502 acres, more or less.

B. Historical Background

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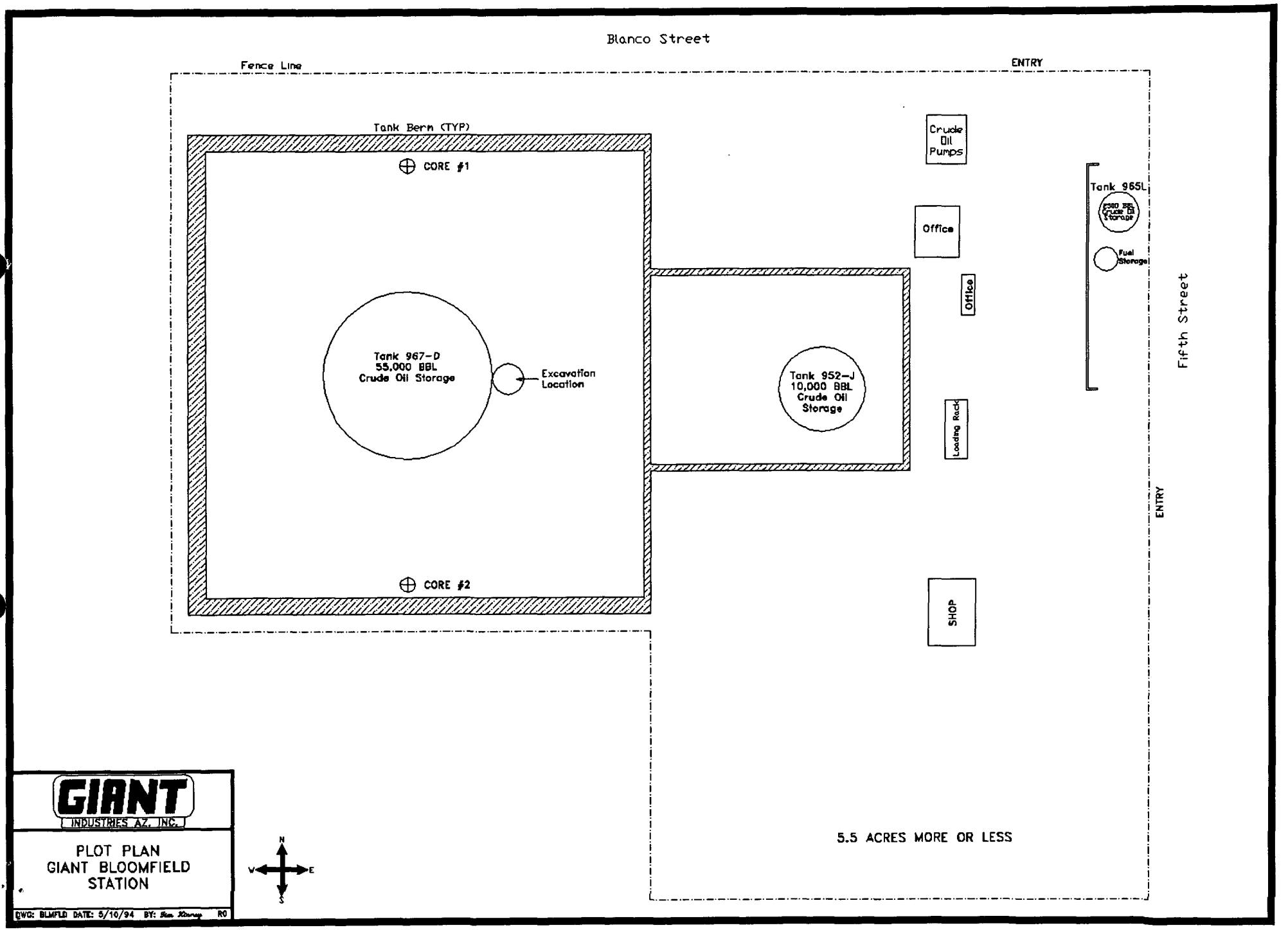
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P.O. Box 256
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87499

505
632-3306

March 22, 1994

Mr. Bill Olson
New Mexico Oil Conservation Division
Environmental Bureau
P. O. Box 2088
Santa Fe, NM 87504-2088

Dear Mr. Olson:

As a follow up to our conversation of March 15, 1994, Giant Industries hereby notifies the New Mexico Oil Conservation Division that it has identified potential hydrocarbon contamination adjacent to a tank at our Bloomfield crude gathering facility located at 503 W. Blanco Blvd. in Bloomfield, New Mexico.

A work plan outlining the initial planned investigation of the site will be submitted prior to May 15, 1994.

Please contact me at 632-8006 with comments and questions.

Sincerely,

Timothy A. Kinney

Timothy A. Kinney
General Manager
Crude Gathering Operations

/dm

STALLION SPRINGS SUBDIVISION

CURRENT ZONING INDUSTRIAL
PROPOSED ZONING R – 2
PROPOSE 14 R–1 LOTS; 20 R–2 LOTS

ENGINEER: MICHAEL DALY, 326–4020

40 0 40 80 120
GRAPHIC SCALE – FEET

SCALE: 1″ = 40’

BLANCO BOULEVARD

FIRE HYDRANT

EXISTING FIRE HYDRANT

N. FRONTIER STREET

ARABIAN AVENUE

CITY OF FARMINGTON

GIANT INDUSTRIES

FIFTH STREET

MILLER STREET

FIRE HYDRANT

APPALOOSA STREET

FIRE HYDRANT

FIRE HYDRANT

GIANT INDUSTRIES

R–1 LOTS

R–2 LOTS

TARPLEY SUBDIVISION