ENTERED

Gallup file Aug 2010

Ultra - Low Diesel Spill

VanHorn, Kristen, NMENV

Tanks 116 + 115
OCD "corrective Action"

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 17, 2010 2:57 PM
To: Riege, Ed
Cc: Coleman.Simth@state.nm.us; Van Horn, Kristen, NMENV; VonGonten, Glenn, EMNRD
Subject: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Ed:

Re: C-141 Tk-116 Ultra-Low Sulfur Diesel Release Follow-Up

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http://ocdimage.emnrd.state.nm.us/Imaging/FileStore/SantaFeAdmin/AO/63592/pENV000GW00033_115_AO.tif (see pages 265-299 and 309 – 362).
Do you have an update or perhaps there is a final report that was submitted to OCD that should be in our file?

A preliminary response is requested by next Friday COB 8/27/2010 and/or a proposed schedule for receipt of report on CA Project may be approved by the OCD. Please contact Cole Smith at (505) 476-5550 and me to discuss. Thank you.

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

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Wednesday, August 18, 2010 8:28 AM
To: Smith, Coleman, NMENV
Cc: Van Horn, Kristen, NMENV; VonGonten, Glenn, EMNRD
Subject: RE: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Coleman:

Thanks for the clarification and bringing this to my attention for follow-up. OCD is seeking an update on Western's approved CA. Let me know if I may be of further assistance.

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

From: Smith, Coleman, NMENV
Sent: Wednesday, August 18, 2010 8:12 AM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV
Subject: RE: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Carl,

I should correct my earlier statement. The T-116 spill should not be considered "cleaned up" – passive bioremediation could take years, and even then, probably would only remediate a small fraction of the total diesel fuel that is in the ground. What I should have said is that after one year, the passive system has probably done about all it's going to do. I understand that OCD (or Haz Waste) will require a true remediation (removal of the soil) if the tank is ever decommissioned and removed.

Gallup has an ongoing Compliance Order with the Air Quality Bureau that requires a quarterly accounting of all benzene waste activities, and a projection for the next quarter. If they exceed 2.5 metric tons in any quarter (a projected rate of 10 metric tons per year), they will become subject to 40 CFR 61, Subpart FF – which contains very strict requirements for benzene disposal. This quarterly accounting applies to all waste streams, including all spills. That is why we are very interested in spills, and analysis of the petroleum liquid benzene content. In the case of the T-116 spill, the diesel analysis showed "non-detect" for benzene. But this cannot be assumed, and Gallup should be giving us the liquid analysis for each spill that happens.

Thanks again,

Cole

Coleman A. Smith, Ph.D.
Permit Specialist, Major Source Unit
Air Quality Bureau
New Mexico Environment Department
1301 Siler Road, Bldg. B
Santa Fe, NM 87507
voice: (505) 476-5550
fax: (505) 476-4375
AQB main: (505) 476-4300


Please consider the environment before printing this e-mail.

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 17, 2010 4:58 PM
To: Smith, Coleman, NMENV
Cc: Van Horn, Kristen, NMENV
Subject: RE: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Thanks Coleman. I will be following up to make sure we have the final closure report with appropriate data to confirm closure of the release.

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

From: Smith, Coleman, NMENV
Sent: Tuesday, August 17, 2010 4:55 PM
To: Chavez, Carl J, EMNRD
Subject: RE: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Carl,

I received the .tif file and was able to save it to .pdf, then print out the part about the diesel spill and corrective action. Thank you so much – this is just the information I was looking for. It appears that Gallup already cleaned up the Tank 116 spill, and is now asking for a "blanket" air quality exemption to install similar perforated pipes at any future spill site. So the exemption application isn't specific to the Tank 116 spill.

I don't know why they waited until now to contact us. That is one of the questions I will ask Ed tomorrow.

Thanks again,

Cole

Coleman A. Smith, Ph.D.
Permit Specialist, Major Source Unit
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AQB main: (505) 476-4300


Please consider the environment before printing this e-mail.

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 17, 2010 3:26 PM

To: Smith, Coleman, NMENV
Subject: FW: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Carl J. Chavez, CHMM
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Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Tuesday, August 17, 2010 2:57 PM
To: 'Riege, Ed'
Cc: 'Coleman.Simth@state.nm.us'; Van Horn, Kristen, NMENV; VonGonten, Glenn, EMNRD
Subject: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

Ed:

Re: C-141 Tk-116 Ultra-Low Sulfur Diesel Release Follow-Up

OCD received a call from Cole Smith (NMED- AQB) regarding the above release that occurred in April 24, 2008. According to Cole, he is assessing this remediation in consideration of the existing facility air quality permit from NMED to determine whether the facility has or is exceeding its allowed air quality emission under the permit. Preliminarily, it appears that Western is just now seeking an exemption from the AQB permit to install the passive bio-vent system and AQB is seeking more details to assess whether Western would exceed its existing Air Quality Emission Permit?

Based on an excavation and proposed passive soil vent remediation, chem.-flow model with soil monitoring, the OCD approved the CA on September 21, 2009 with the requirement that a schedule for installation of the perforated pipes with notification that pipes were installed, etc. The OCD is also seeking to determine the status of the passive remediation proposed by Western to determine whether remediation was achieved and the basis? The disposition of excavated contaminated soils?

The OCD requests confirmation of whether T-116 is located within a RCRA SWMU or AOC? If not, NMED- Haz. Waste Bureau needs to also know more about this release.

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http://ocdimage.emnrd.state.nm.us/Imaging/FileStore/SantaFeAdmin/AO/63592/pENV000GW00033_115_AO.tif (see pages 265-299 and 309 – 362).
Do you have an update or perhaps there is a final report that was submitted to OCD that should be in our file?

A preliminary response is requested by next Friday COB 8/27/2010 and/or a proposed schedule for receipt of report on CA Project may be approved by the OCD. Please contact Cole Smith at (505) 476-5550 and me to discuss. Thank you.

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(Pollution Prevention Guidance is under "Publications")

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 26, 2010 3:56 PM
To: Smith, Coleman, NMENV
Cc: Van Horn, Kristen, NMENV; Larsen, Thurman; Riege, Ed; VonGonten, Glenn, EMNRD; Cobrain, Dave, NMENV
Subject: FW: T-116 Passive Bio-venting Project Status- OCD RESP 082710
Attachments: OCD RESP 082710.pdf

Coleman:

I think NMED- Hazardous Waste Bureau (HWB) and OCD are awaiting NMED- AQB's approval of the corrective action.....

The OCD is concerned about migration of contamination to the water table near this location. Western will need to comply with the OCD's approval with conditions on the corrective actions.

OCD and NMED should be sharing information on this OCD corrective action/ RCRA- Area of Concern (AOC). It appears the contamination lies within a HWB AOC.

Please contact me if you have questions.

Thank you.

Carl J. Chavez, CHMM
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Oil Conservation Division, Environmental Bureau 1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
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E-mail: CarlJ.Chavez@state.nm.us
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(Pollution Prevention Guidance is under "Publications")

-----Original Message-----
From: Larsen, Thurman [mailto:Thurman.Larsen@wnr.com]
Sent: Thursday, August 26, 2010 2:34 PM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV; Riege, Ed
Subject: T-116 Passive Bio-venting Project Status- OCD RESP 082710

<<OCD RESP 082710.pdf>> Dear Mr. Chavez,

The above attachment is in response to your e-mail from Agust 17, 2010 concerning the status of T-116 (Release of Ultra-Low Sulfur Diesel) spill and the Passive Bio-venting Remediation Project.

Regards,

Beck Larsen,
Environmental Egineer
Western Refining

The message is ready to be sent with the following file or link attachments:

OCD RESP 082710

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Western Refining

GALLUP

WNR LISTED NYSE

August 26, 2010

New Mexico Energy, Minerals & Natural Resources Dept
Oil Conservation Division, Environmental Bureau (OCD)
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Attention: Mr. Carl Chavez

Dear Mr. Chavez:

This letter is in response to your e-mail of August 17, 2010 addressing your concerns and further clarification about in-situ passive bio-venting remediation in the contaminated zone surrounding T-116.

In an e-mail of September 21, 2009, Western Refining obtained approval from the OCD to conduct a pilot test and to continue with a larger scale effort to bring down the levels of hydrocarbons in the soils to acceptable levels. The pilot study was initiated using one pipe. Analysis indicated that there was 6000 ppm in an area of 500 square feet and about 2 feet deep. This would equate to maximum of 0.17 TPY. Agency approval has to be received from both OCD and NMED prior to initiating a large scale bio-venting remediation project. Western Refining has been using Trinity Consultants in order to obtain approval from the NMED/ Air Quality Bureau (AQB) in order to proceed with this project. The AQB has contacted OCD for additional information as a result of a request which was submitted to the Agency in order to apply for an exemption to our current air quality permit that would allow us to proceed with this project. This project will not commence until Agency (NMED/AQB) permission has been granted. Once the Agency's approval has been granted, the passive bio-venting remediation project will commence on a larger scale by placing approximately 20 perforated pipes in the affected area according to the sampling plan. These pipes will be placed at uniform spacing of about 6 feet distance between the pipes and at 2 feet depth to the bottom of these pipes.

Volatile Organic Compound (VOC) Monitoring will be conducted using the using a leak detection device (Model # TVA-1000) that is currently utilized under the Leak Detection and Repair (LDAR) Program in order to detect hydrocarbons that may be present in the soil. Soil samples will be collected at the bottom of the pipes about every 6 months in order to determine any VOC reduction. A report will be submitted to the Agencies (OCD, the NMED / Hazardous Waste Bureau (HWB), and the NMED / Air Quality Bureau (AQB). Based on the pilot test, it is expected that the levels of hydrocarbons will be substantially reduced. If the VOC concentrations are not reduced below regulatory levels, the bio-venting process will continue until acceptable levels have been reached.

Remedial activities and soil cleanup have not been initiated for this area due to the proposed Passive Bio-venting that was pending approval from NMED. The purpose of the in-situ Passive Bio-ventilation redial project is to remediate the soil in place. Contaminated soil has not been removed pending approval from the AQB.

The Area of Concern (AOC) for tank (T-116) is part of the Tank Farm System which includes a berm surrounding the tank and is not part of a SWMU. Enclosed is a copy of the Final Report including the C-141 (Final) and the Sampling Plan that was previously submitted to the Agency.

We look forward to a successful conclusion to this effort, recognizing that this approach has many benefits to the environment and to the safe operation of the refinery.

Best regards,

Beck Larsen
Environmental Engineer
Western Refining (Gallup)

Enc: C-141 (Final) with Sampling Plan

Riege, Ed

From: Chavez, Carl J, EMNRD [CarlJ.Chavez@state.nm.us]

Sent: Tuesday, August 17, 2010 2:57 PM

To: Riege, Ed

Cc: Coleman.Simth@state.nm.us; Van Horn, Kristen, NMENV; VonGonten, Glenn, EMNRD

Subject: Initial C-141 T-116 Release Ultra-Low Sulfur Diesel Signed 8/20/2009 & Corrective Action (CA) Update (GW-032)

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1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

Larsen, Thurman

From: Rajen, Gaurav
Sent: Friday, October 23, 2009 7:29 AM
To: 'Wendy Alexander'
Cc: Riege, Ed
Subject: Your questions re AQB and remediation

Do write to me with specific questions – we also need a generic determination regarding remediation projects, not a site specific determination – what are the quantities involved, for example, etc., before AQB regs, kick in?

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Monday, September 21, 2009 10:59 AM
To: Rajen, Gaurav; Monzeglio, Hope, NMENV
Cc: Riege, Ed
Subject: RE: Final report - Tank 116 spill

Raj:

Re: Final Report Section 4.0 Conclusions below.

4.0 Conclusions

As the spill site is an active work area, and because of the close proximity of functioning pipelines, we have been compelled to fill in the excavated areas (excavated to 2 feet) after having removed known contaminated dirt. We request the Oil Conservation Division (OCD) to allow us to add more perforated pipes at the location and continue to reduce the DRO levels that were found to exist at the site (of the order of 4000 – 5000 ppm). When this area is removed from service, we will clean up all contaminated soils to required levels if any are found.

Approved. Please provide a schedule for installing the perforated pipes as proposed and notify the agencies when the pipes are installed in accordance with the schedule.

Please contact me if you have questions. Thank you.

Please be advised that NMOCD approval of this corrective action does not relieve Western Refining Southwest, Inc.- Gallup Refinery of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve the Gallup Refinery of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Carl J. Chavez, CHMM
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Oil Conservation Division, Environmental Bureau
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E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
Pollution Prevention Guidance is under "Publications")

From: Rajen, Gaurav [mailto:Gaurav.Rajen@wnr.com]
Sent: Tuesday, August 25, 2009 1:58 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Riege, Ed
Subject: Final report - Tank 116 spill

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Western Refining Southwest Inc.	Contact Gaurav Rajen
Address I-40 Exit 39, Jamestown, NM 87347	Telephone No. 505-722-0227
Facility Name Gallup Refinery	Facility Type Oil refinery

Surface Owner Western Refining	Mineral Owner Western Refining	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23&33	15N	15W					McKinley

Latitude 35°29'22" Longitude 108°25'24"

NATURE OF RELEASE

Type of Release Ultra-Low Sulfur Diesel (ULSD)	Volume of Release 45 barrels (1890 gallons) final estimate	Volume Recovered 12 barrels (500 gallons) estimate
Source of Release Overflow from Tank 116	Date and Hour of Occurrence 4/24/2008; 2:00 am (approximately)	Date and Hour of Discovery 4/24/2008; 2:50 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Carl J. Chavez, NMEMNRD, Oil Conservation Division; Hope Monzeglio, NMED Hazardous Waste Bureau (via telephone)	
By Whom? Gaurav Rajen and Cheryl Johnson	Date and Hour 4/24/2008 (approximately) 11:00 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. Not applicable	

If a Watercourse was Impacted, Describe Fully.* Not applicable

Describe Cause of Problem and Remedial Action Taken.* At approximately 2:50 am on 4/24/2008, the Operations Shifter discovered Tank 116 running over. The Pump Operator was notified and a transfer was started into Tank 583. Tank 116 had run over and spilled ULSD onto the soil within the area surrounded by a berm. A lesser amount of ULSD ran down within the foam line leading into the tank. Through a drain valve on the foam line that is buried in the ground outside the berm area, some ULSD leaked out onto a service road running adjacent to Tank 116. The operator used a backhoe to build a containment dike on this road outside the tank berm area, and the spill on the road was blocked from further migration.

Describe Area Affected and Cleanup Action Taken.*
The affected area within the berm had a surface area originally estimated as approximately 500 square feet with some vertical penetration of the ULSD. Through excavation and sampling, this area has a final estimate of approximately 1000 square feet, and of 2 feet depth. An affected area of approximately 500 feet in length and average 5 feet wide (ranging between 2-10 feet depending on the amount of pooling of the spilled material) lay along the service road. The material on the road surface penetrated to a depth of 3 inches (maximum) into the underlying surface as the road surface is partially paved.

A truck with a vacuum pump was used to collect free ULSD product from within the berm and on the service road. Absorbent material was placed on the spill along the road; and this area was isolated through the use of barricades. In further cleanup actions, contaminated soils were excavated, confirmatory environmental samples were collected and analyzed, and all contaminated materials disposed off in accordance with applicable regulations at a permitted landfill. Details are provided in the attached report.

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

Signature: Mark B. Turri	OIL CONSERVATION DIVISION	
Printed Name: Mark B. Turri	Approved by District Supervisor:	
Title: Refinery Manager – Gallup	Approval Date:	Expiration Date:
E-mail Address: mark.turri@wnr.com	Conditions of Approval:	Attached ☐
Date: 8-20-2009 Phone: 505-722-3833		

- Attach Additional Sheets If Necessary

C-141 Final Report - Tank 116 Spill

1.0 Description of Site and Incident

Tank 116 is located within the northern tank farm area of the Gallup Refinery. Figure 1 depicts an aerial view of the refinery – and Tank 116 is described in a detailed image extracted from this picture.

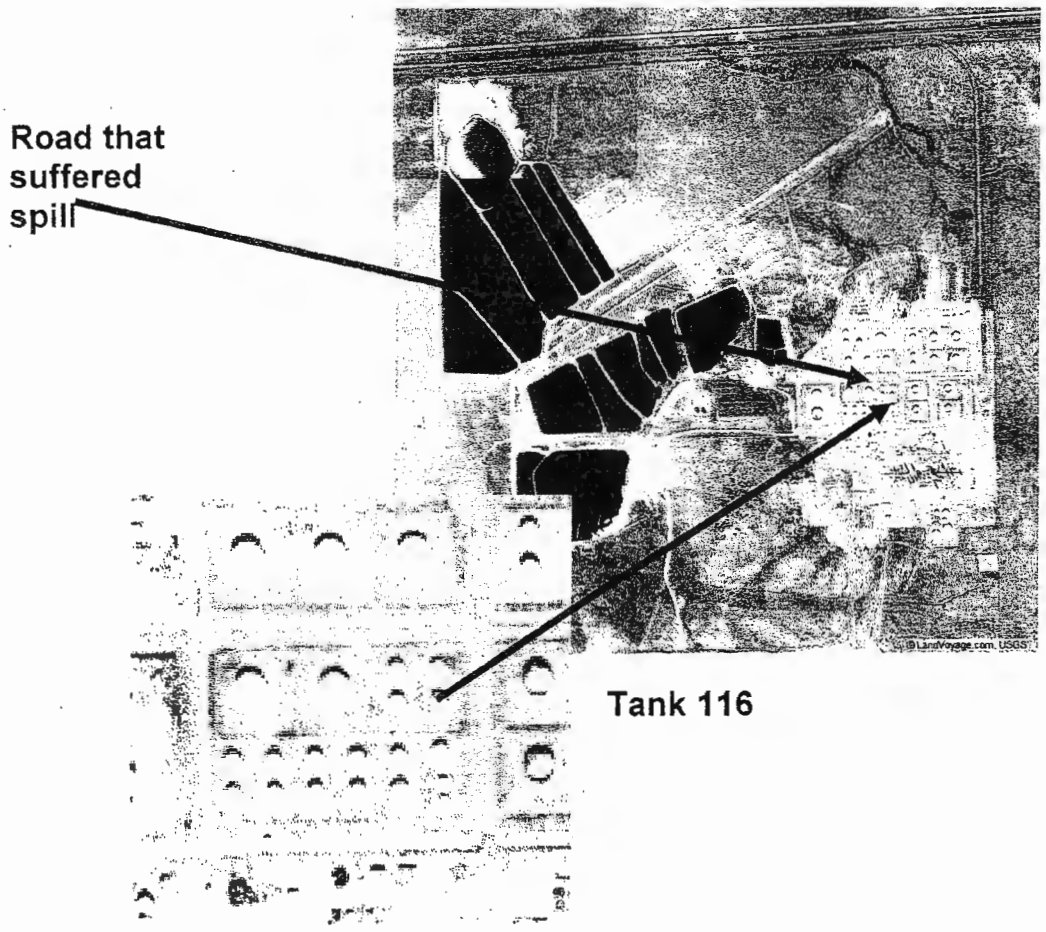

Figure 1: Location of Tank 116 within the Gallup Refinery

1.1 Nature of Spill Incident

At approximately 2:50 am on 4/24/2008, the Operations Shifter discovered Tank 116 running over. The Pump Operator was notified and a transfer was started into Tank 583. Tank 116 had run over and spilled Ultra Low Sulfur Diesel (ULSD) onto the soil within the area surrounded by a berm. A lesser amount of ULSD ran down within the foam line leading into the tank. This foam line is designed to provide foam into the tank to suppress fires in an emergency and has to be kept open. Through a drain valve on the foam line that is buried in the ground outside the berm area, some ULSD leaked out onto a service road running adjacent to Tank 116. The operator used a backhoe to build a containment dike on this road outside the tank berm area, and the spill on the road was blocked from further migration. Figure 2 depicts the spill around the tank within the area of the berm. The photograph presented in Figure 3 depicts the spill emanating from the buried drain valve that migrated along the service road.

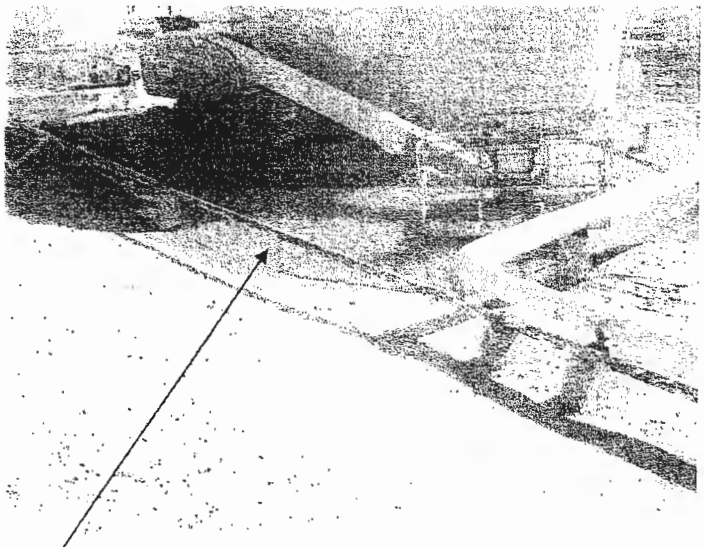

Figure 2: Photograph depicting contaminated areas within the berm adjacent to Tank 116 – Tank 116 is off the picture; much of the product flowed and collected next to Tank 115 which can be seen. At this time, maintenance work was ongoing on Tank 115 which is why heavy equipment is seen in the area.

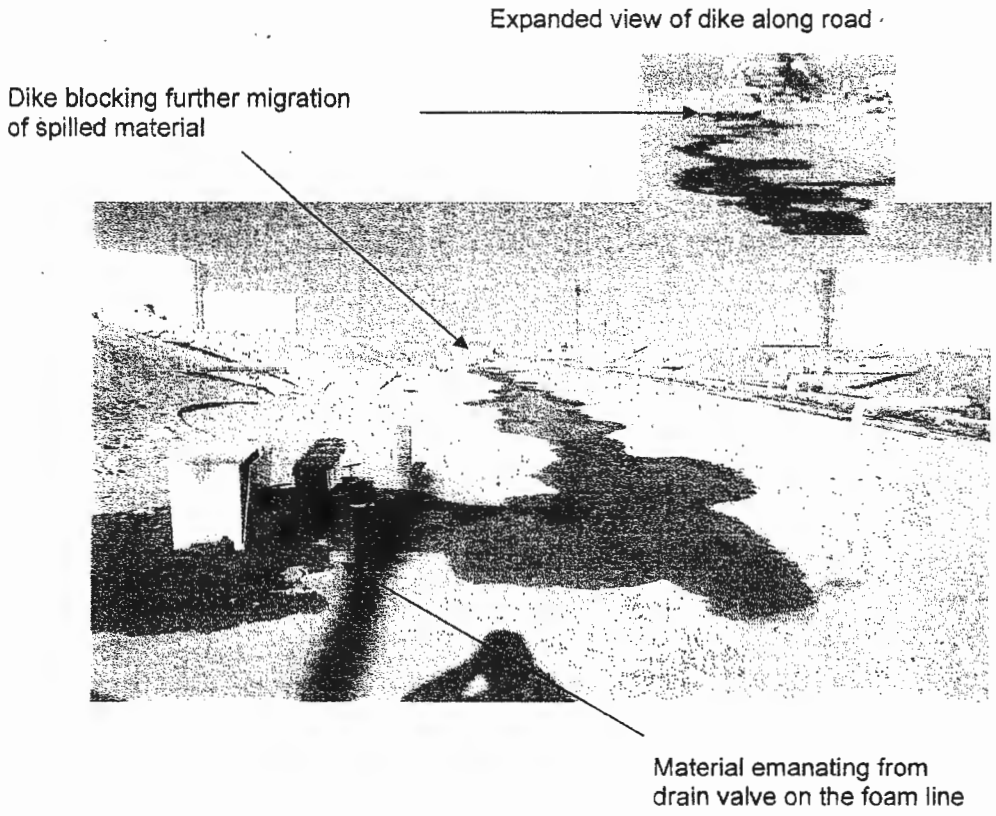

Figure 3: Photograph depicting spilled material along a service road adjacent to Tank 116.

2.0 Remediation Actions

Almost immediately following the spill, a vacuum truck was used to pick up free product (as much as possible), and absorbent material was placed on affected areas to soak up product remaining on the surface. Later, contaminated soil was excavated and stored on plastic in a staging area for later disposal in a permitted landfill. Figures 4-7 depict photographs of various stages of the excavation and subsequent clean-up of the area.

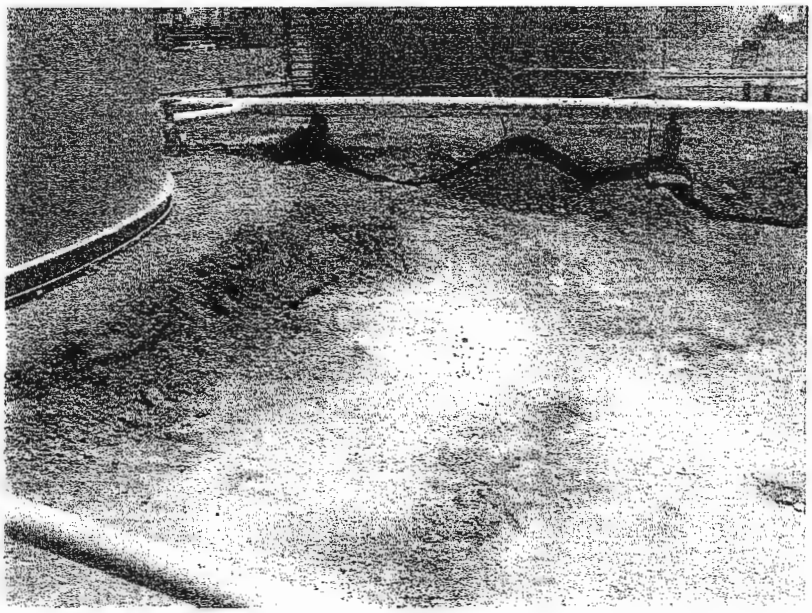

Figure 4: Excavation of contaminated soil in the area described in Figure 2. Note active pipeline towards the rear.

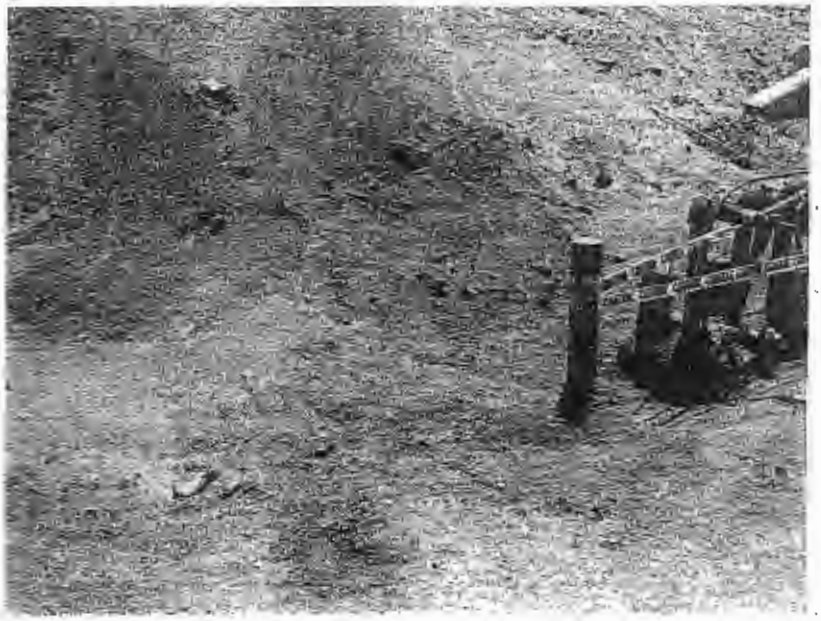

Figure 5: Preliminary excavation of contaminated soils near the drain pipes where product flowed out from the open foam line within the tank

Figure 6: Preliminary clean-up of road which had experienced run-off of product.

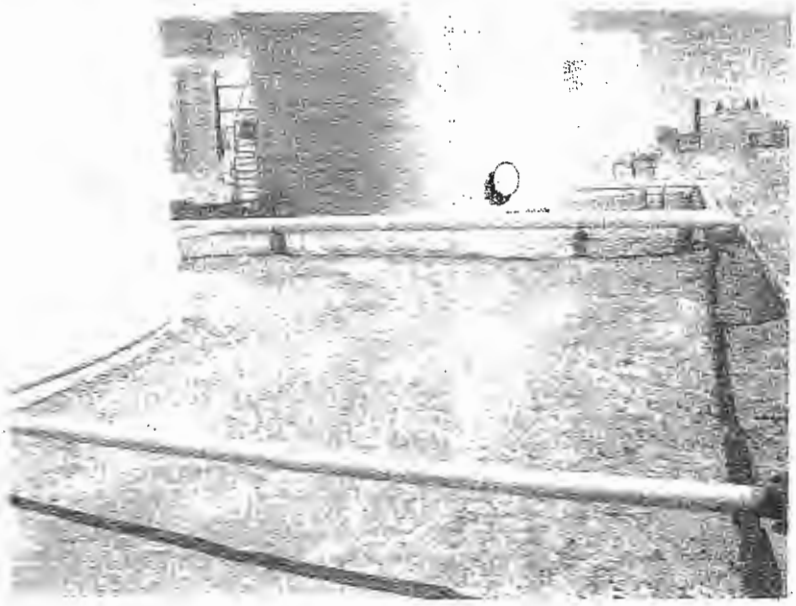

Figure 7: Final clean-up of affected area near Tank 116

After all free product had been removed and contaminated soil (from visual observation) excavated, we prepared a sampling plan and collected soil samples that were sent to Hall Environmental Analytical Laboratories for testing. The sampling locations and preliminary results for Diesel Range Organics (DRO) in red font are described in Figure 8. Appendix A presents details of the laboratory results. The composite samples were biased to locations where we could observe soil staining.

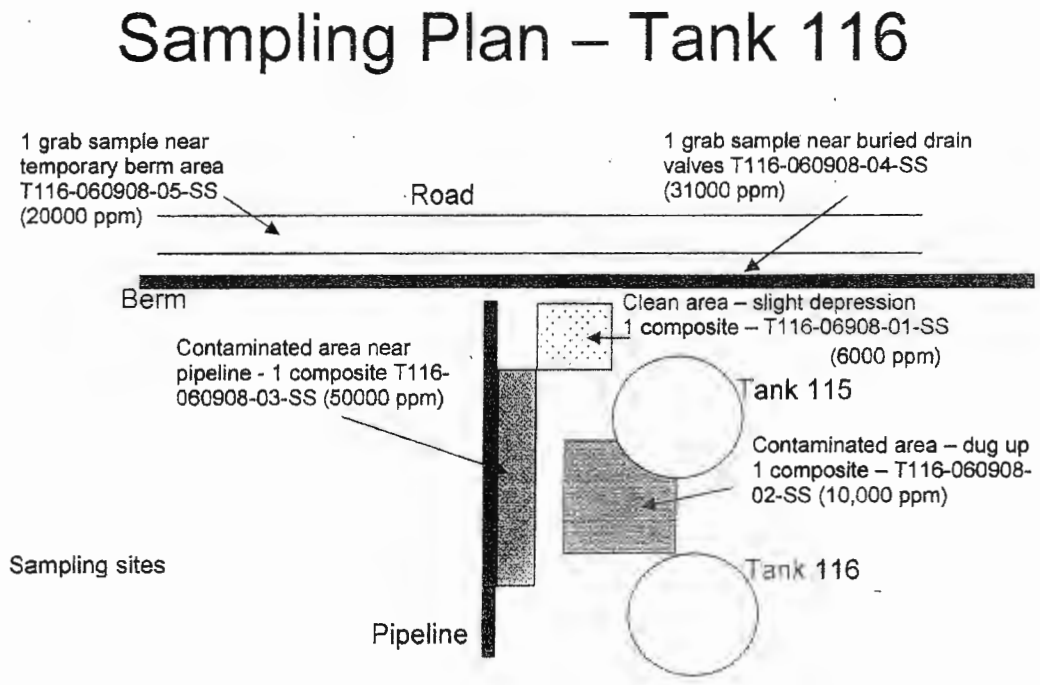

Figure 8: Preliminary sampling locations and results for DRO

These data showed levels of DRO from 6000 ppm to 50,000 ppm. The samples were also analyzed for Gasoline Range Organics (GRO) and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) using EPA-approved and OCD-recommended methods. GRO and BTEX were at non-detect levels. Based on these data, subsequent excavations were undertaken and the sites were sampled again. Figure 9 presents results from this second set of samples.

These tanks are an active work site. While waiting to receive the second set of laboratory results we were compelled to cover the excavated areas for safety reasons as depressions and excavations represent a safety hazard for personnel who continuously work around these tanks.

Sampling Plan – Tank 116

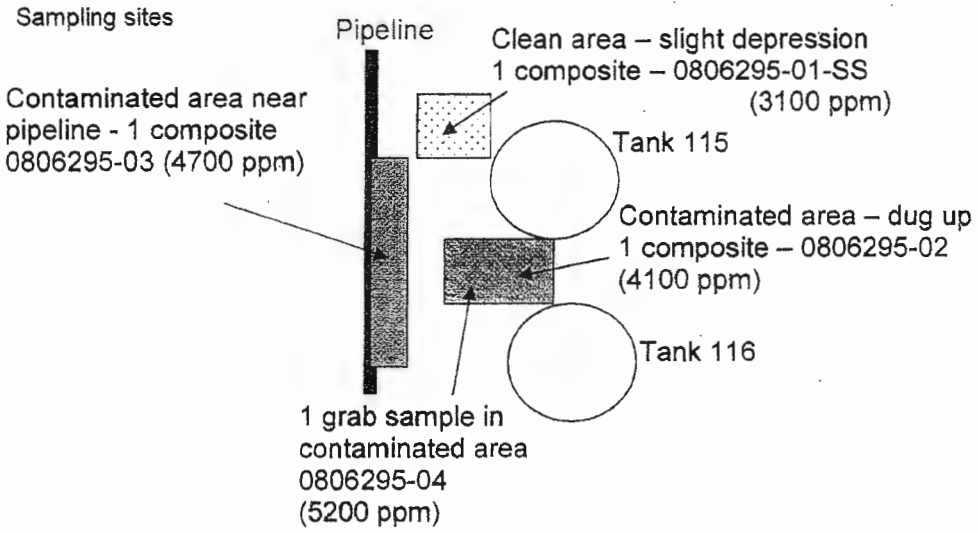

Figure 9: Second set of results after excavation had occurred.

Laboratory data for these samples are also presented in Appendix A. These results show levels of DRO of the order of 4000 - 5000 ppm that were found at the bottom of the excavated area even after 2 feet of contaminated dirt had been removed.

We have assessed the potential for contaminants from this current spill to migrate into the subsurface as being much less than 2 feet. We have excavated soils to this level and disposed off these soils at a permitted landfill. We believe that the levels of DRO being found below this level are probably from previous historical occurrences. Also, near the active pipelines located within the spill area that bring product in and out of the tanks it is not possible for us to excavate deeper without prejudice to the safety of these pipelines. We have reduced the levels of contamination by a factor greater than 10. However, there is some contamination at the level of approximately 4000 – 5000 ppm of DRO existing at the site.

3.0 Abatement Options

What can be done about possible past spills now that the site is covered?

Our approach has been the following:

- We have modeled the likely spread of contaminants into the subsurface using an EPA-approved model called CHEMFLO. We assumed a loamy-clay soil with 1

foot of ponded liquids on top. No contamination was predicted to travel deeper than about 1-2 feet even if the liquids stayed at a 1 foot depth on the surface for over 1000 hours – this was not the case in practice as product was picked up within a few hours after the spill. Details are provided in Appendix A. This lends support to the conclusion that contaminated soils below two feet is probably from previous activities.

- We have carried out a test of passive venting at the site, using a perforated pipe emplaced in to the soil above an area of contamination and started collecting measurements of vapor concentrations within this pipe. Figure 10 depicts a photograph of the perforated pipe we constructed, and Figure 11 shows it in place near a pipeline where it is difficult to excavate.

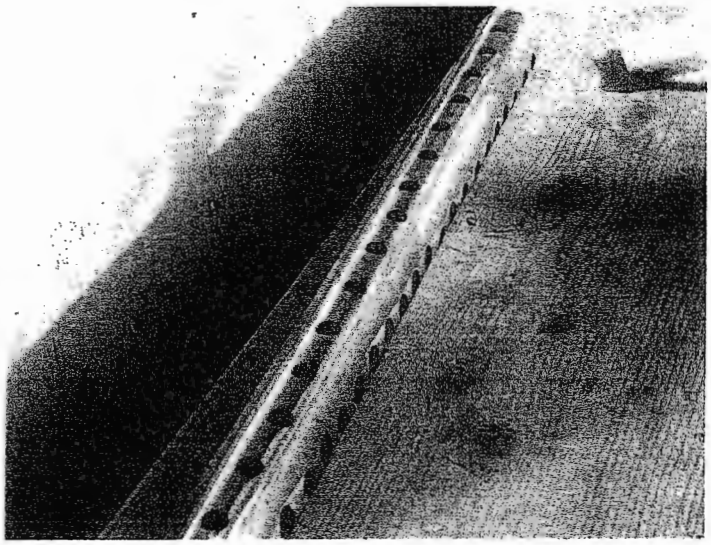

Figure 10: Perforated pipe that has been constructed

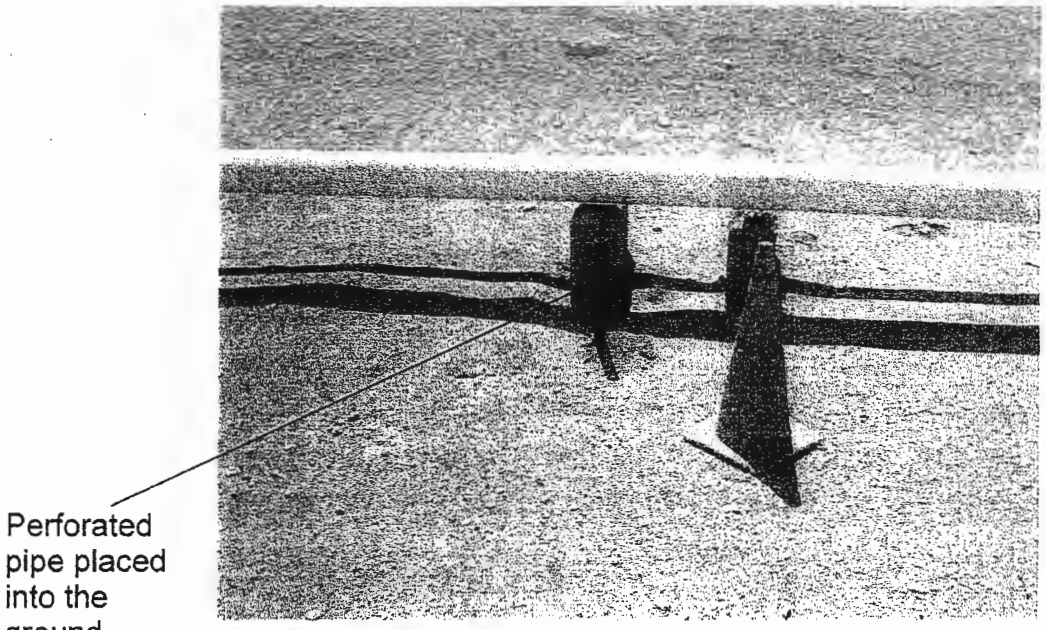

Figure 11: Photograph of emplaced pipe – the section with holes is inside the ground

Over time, vapor concentrations found within the pipe varied considerably. To monitor these concentrations we used a sensitive hydrocarbon vapor detection system based on a flame ionization detector. The concentrations could have been varying because microbial activity within the ground was being enhanced by virtue of the perforated pipe allowing increased air to breathe into the soil. These changing levels could also be from diurnal variations in the flow of soil gases as the ground heats and cools. We monitored these levels for a period of 12 months. Then, we collected a soil sample from this location which was previously known to be at 4700 ppm of DRO. **This level is now 190 ppm**. Details of this set of samples are provided in Figure 12. (We were confident that the entire road surface and buried valve area had been entirely cleaned up – however, as confirmatory samples had not been taken we have collected these and results are also provided.) We will now place more such pipes with OCD's concurrence to reduce contamination that is known to exist within the ground. We also seek OCD's concurrence to postpone further excavation until an opportune time arises in the future, and/or the area is taken out of service.

Sampling Plan – Tank 116

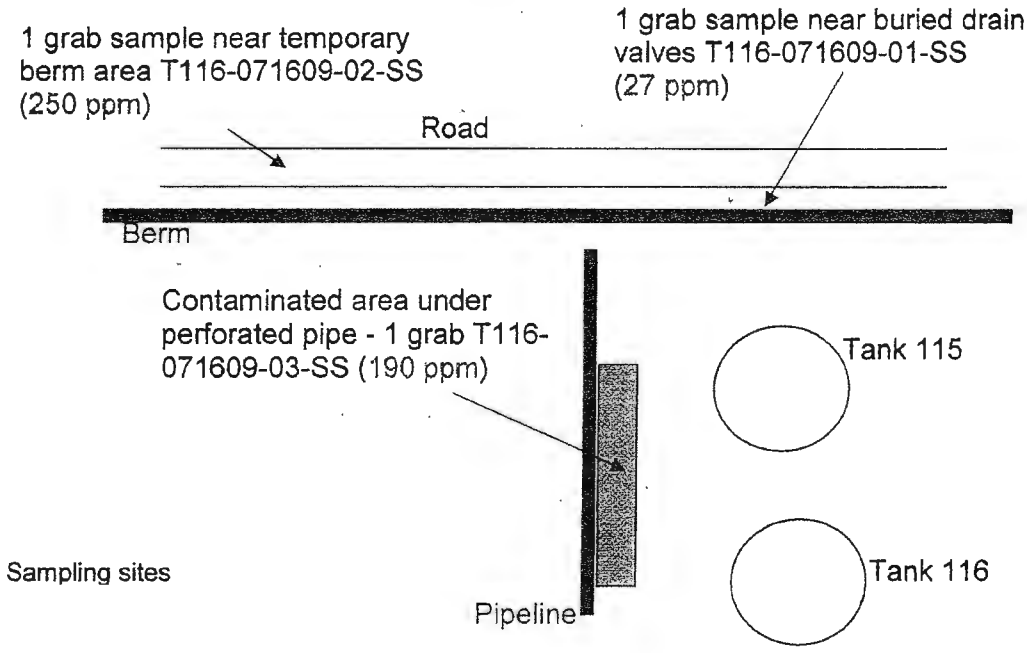

Figure 12: Last set of data from a third sampling event

4.0 Conclusions

As the spill site is an active work area, and because of the close proximity of functioning pipelines, we have been compelled to fill in the excavated areas (excavated to 2 feet) after having removed known contaminated dirt. We request the Oil Conservation Division (OCD) to allow us to add more perforated pipes at the location and continue to reduce the DRO levels that were found to exist at the site (of the order of 4000 – 5000 ppm). When this area is removed from service, we will clean up all contaminated soils to required levels if any are found.

APPENDIX A

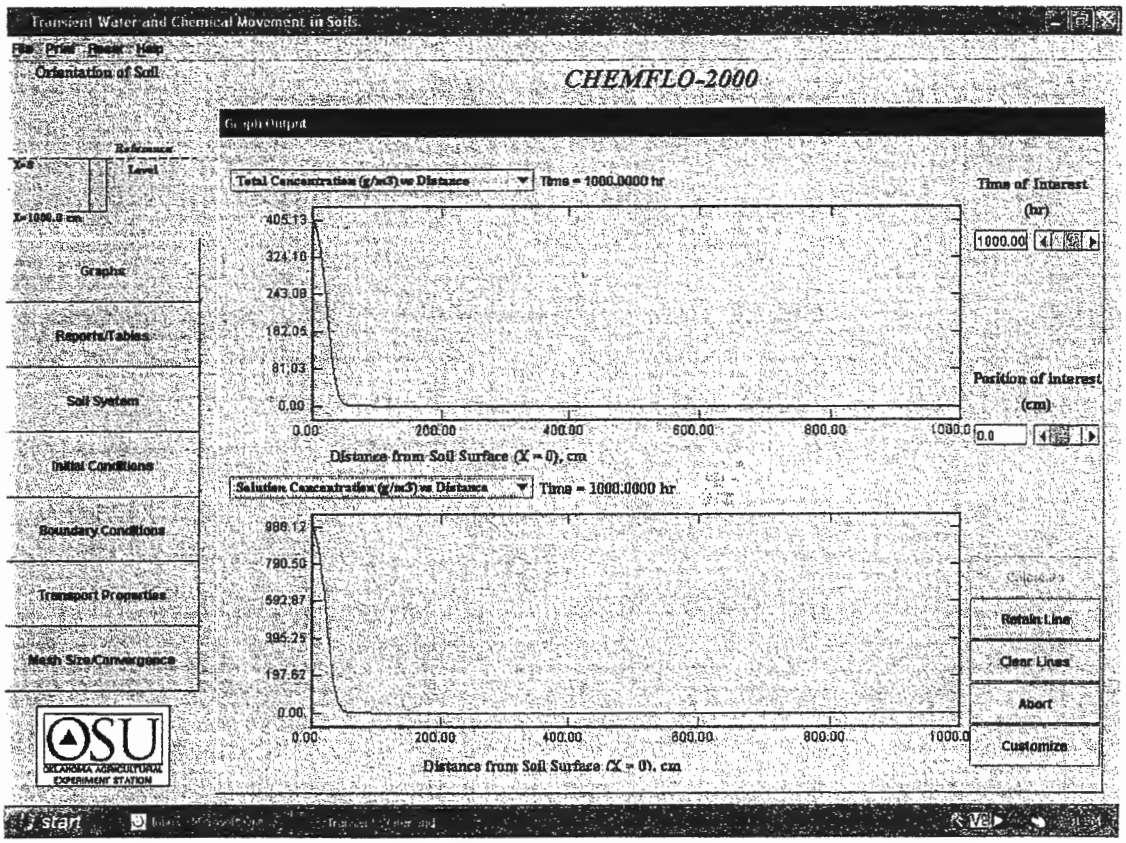

Figure A.1: Likely migration of contaminants into the subsurface – as can be seen, even after 1000 hours, no contamination is expected deeper than about 50 cm (1.6 feet). Therefore, it is extremely likely that contamination found deeper than 2 feet was from previous spills.

Assumptions in the model –

Figure A.2 presents details of the soil parameters built into the model. We assumed a sandy clay loam. Figure A.3 presents assumed chemical transport parameters.

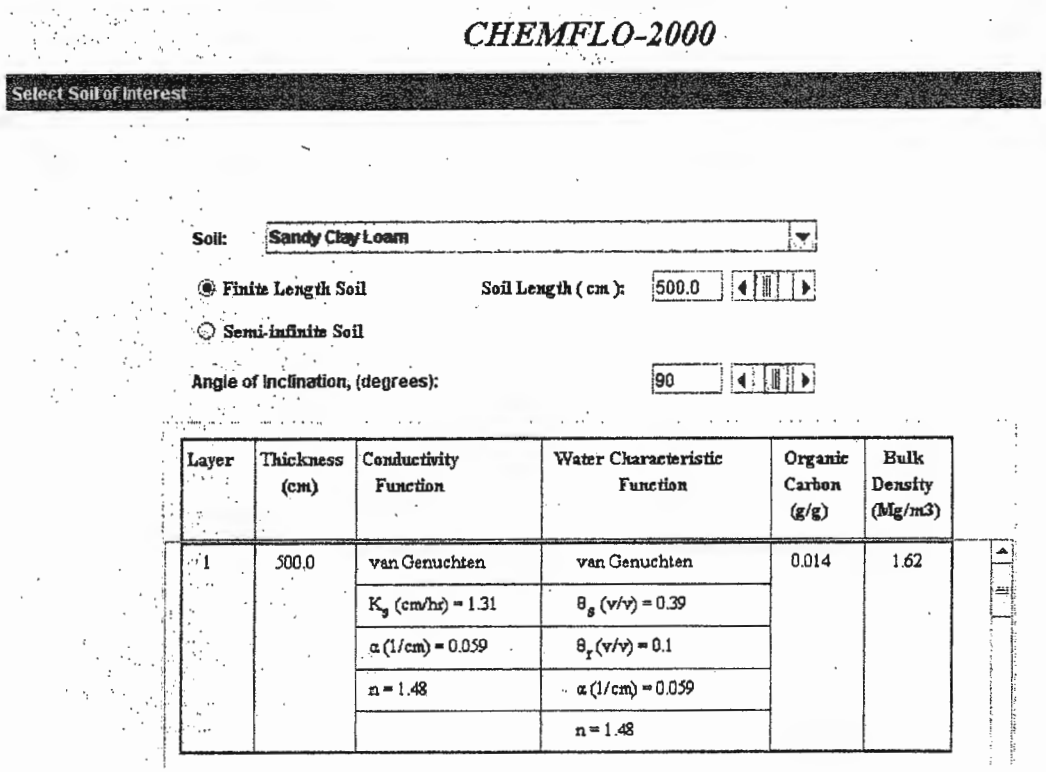

Figure A.2: Assumed soil parameters

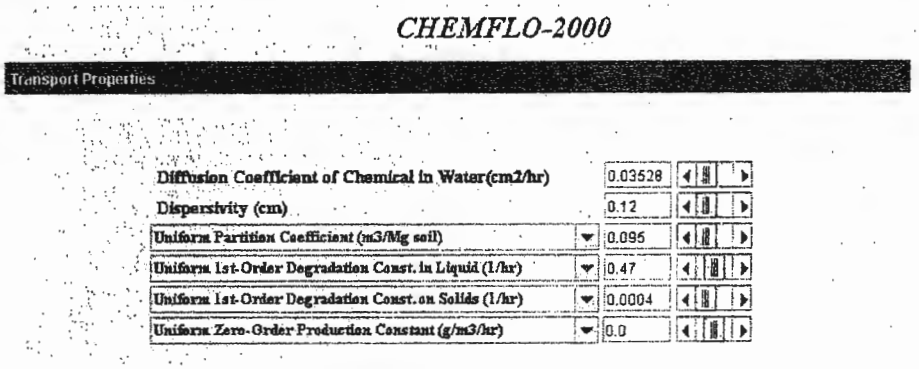

Figure A.3: Assumed chemical transport properties

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Wednesday, September 08, 2010 3:28 PM
To: Smith, Coleman, NMENV
Cc: Van Horn, Kristen, NMENV; VonGonten, Glenn, EMNRD
Subject: RE: GW-32 AQB ?s about Tk 116 ULSD Remediation

Thanks Cole.

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

From: Smith, Coleman, NMENV
Sent: Wednesday, September 08, 2010 1:47 PM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV
Subject: RE: GW-32 AQB ?s about Tk 116 ULSD Remediation

Carl,

We are still thinking about it. The T-116 cleanup showed 50,000 ppm VOC at the start. The AQB exemption Western is asking for applies to petroleum liquids with vapor pressure less than 0.2 psia. A simple calculation tells me that at the elevation of the Gallup refinery, 0.2 psia translates roughly to about 65,000 ppm. So I would be more inclined to approve such exemptions on a case-by-case basis, rather than a sweeping exemption for all future diesel spills.

The T-116 report shows that the VOC emission rate dropped from 50,000 ppm before excavation, to 4700 ppm after excavation of 2' of soil, to 190 ppm after 1 year of the "passive bioremediation". Certainly this final VOC level is well within air quality standards, but the decrease in air emission rate doesn't necessarily mean that the diesel has been remediated. I could also mean that the spill has migrated below or away from the perforated pipe system.

I will try to get a decision on the exemption from our management by the end of this week.

Cole

Coleman A. Smith, Ph.D.
Permit Specialist, Major Source Unit
Air Quality Bureau
New Mexico Environment Department
1301 Siler Road, Bldg. B
Santa Fe, NM 87507
voice: (505) 476-5550
fax: (505) 476-4375
AQB main: (505) 476-4300

From: Chavez, Carl J, EMNRD
Sent: Wednesday, September 08, 2010 8:35 AM

To: Smith, Coleman, NMENV
Cc: Van Horn, Kristen, NMENV
Subject: FW: GW-32 AQB ?s about Tk 116 ULSD Remediation

Coleman:

Good morning. Any update on AQB's position on corrective action on ULSD contaminated soils at Tk 116? Thanks.

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

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 26, 2010 4:57 PM
To: Van Horn, Kristen, NMENV
Subject: FW: Gallup Refinery (GW-032)- Re: Tank 116 Ultra-Low sulfur Diesel; Release and Air Quality Approval for Corrective Action (Letter of October 14, 2010) using a Passive Bioremediation (Ventilation) System

Kristen:

Could you please give me a call to discuss tomorrow.

In an e-mail dated 9/21/2009 from Raj Gaurav, they had already excavated 2 ft. of soil (see C-141 file on OCD Online at http://ocdimage.emnrd.state.nm.us/Imaging/FileStore/SantaFeAdmin/AO/63592/pENV000GW00033_115_AO.tif (pages 21 – 37). This was proposed based on the inability to get under structures.

I think we need a diagram to scale in the TK 116 area to show what the system will look like. They will need to get below the 2 ft. backfill level and not sure why they would propose to bore only 2 ft. bgl? This is within the backfill and not into the contamination. The link above shows Figure 8 and the two contaminated areas between TKs 115 and 116 and west of them adjacent to the pipeline.

They will leave the system in place until the tanks are removed and then plan to readdress under SWMU later? Seems to me a quarterly monitoring schedule with details on how they will sample and monitor the standpipes is needed....

Thanks.

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

From: Larsen, Thurman [mailto:Thurman.Larsen@wnr.com]
Sent: Tuesday, October 26, 2010 4:08 PM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV; Riege, Ed
Subject: Gallup Refinery (GW-032)- Re: Tank 116 Ultra-Low sulfur Diesel; Release and Air Quality Approval for Corrective Action (Letter of October 14, 2010) using a Passive Bioremediation (Ventilation) System

Dear Mr. Chavez,

Installation:
As per your e-mail and the recently approved NSR Permit # (0633-M8-R3, A214 A.), Western Refining (Gallup) will proceed with installation of the Passive Bioremediation (Ventilation) System for Tank 116 area is estimated to be within the next thirty to forty-five days. This should allow enough time for the fabrication and installation of the ventilation network There will be approximately 10 to 15 ventilation or perforated pipes that will be installed at 6 to 8 ft centers. The exact quantity of perforated pipe will vary depending on the extent of the contaminated area (1000 sq ft) as required. These pipes will be inserted to a depth of approximately one to two feet.

Fabrication:
The pipe will be as specified and manufactured as follows: Piping: ID: 2 inch X 2 ft long, Holes: 24 holes drilled at 90 °apart with 2 inch spacing between rows.

Monitoring and Recordkeeping Requirements:
The NSR Permit No (0633-M8-R3, Section A.214 A. 3) specifies the monitoring requirements for passive bioremediation system at any ULSD spill sites. An estimate of the quantity of VOC and HAP compounds will be reported on an annual basis. Records shall be maintained for each petroleum liquid spilled. Such records will include date, time, and quantity of any unrecovered liquids. Analysis will be performed initially to determine the presence of benzene. Records shall be maintained for each ULSD Passive Network installed. Vapor monitoring will be conducted by an outside contractor (EMS) that will be using a vapor detection instrument (TVA-1000B), a flame ionization detector (FID). It is expected that microbial activity will reduce the VOC concentration over time. Monitoring of these standpipes will initially be conducted upon installation of these ventilation pipes in order to establish a monitoring baseline. Upon establishing a baseline, VOC monitoring will first be conducted on a quarterly schedule for several quarters. Western will then modify the monitoring schedule in order to monitory VOC concentrations on a semi-annual timeframe.

If you should have any questions concerning this matter, please feel free to contact me at the number listed below or Mr. Ed Riege at (505) 722-0217.

Sincerely,

Beck Larsen; CHMM, REM, RPG
Environmental Engineer

Western Refining Company- Gallup Refinery
Route 3, Box 7
Gallup, NM 87301
Office:(505) 722-0258
Fax: (505) 722-0210
Cell: (505) 862-1749
Email: thurman.larsen@wnr.com

Safety starts with "S", but always begins with YOU"!

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 28, 2010 4:05 PM
To: Larsen, Thurman
Cc: Van Horn, Kristen, NMENV; Riege, Ed; VonGonten, Glenn, EMNRD
Subject: RE: Gallup Refinery (GW-032)- Re: Tank 116 Ultra-Low sulfur Diesel; Release and Air Quality Approval for Corrective Action (Letter of October 14, 2010) using a Passive Bioremediation (Ventilation) System

Beck:

Good afternoon. I discussed the schedule for implementation of the above subject corrective action with the NMED. The corrective action is taken due to the infrastructure present in the area of the original release(s).

The agencies have the following comments and/or requirements:

1) The placement of pipe 2 ft. below ground seems to position the vent pipe in the former excavation backfill. A deeper depth into the contaminated soils to facilitate more efficient venting is needed. Based on this, the agencies request the most efficient depth from Western and will there be peastone backfilled around the pipe?
2) A diagram(s) to scale with the pipe design and construction layout is requested to assess the actual aerial extent of the passive vent system and orientation of piping. Will there be vertical and radial and horizontal orientation of pipes from vertical?
3) At least 72 hr. notification when construction work and/or FID monitoring is performed.
4) A report submitted within 30 days of construction and/or activation of the system which should contain a brief summary of work with photos of the installation and field analytical FID monitoring results should be included for the baseline and rationale for establishment of contamination levels with table of monitoring data and rationale for derivation. The agencies would expect concentrations to increase during the warmer summer months.
5) The agencies request a summary of how the FID monitoring will be conducted. I believe you provided the model, but we need to make sure there will be QA/QC with calibration documentation before monitoring, where exactly the sample will be taken and how? Will there also be ambient downwind monitoring close to ground level with a description of weather conditions (10 mph winds toward the SE and temperature during each sample events?
6) Once the contamination level is established from the initial installation report, monitoring will need to occur, especially in the warm season months to help document the success of the passive vent system. The agencies are not comfortable with the language provided in the e-mail about monitoring to some point. Western will need to describe in the report a proposed end of monitoring or verification of remediation, i.e., monthly monitoring during the summer months that confirm FID concentrations have diminished to an acceptable level. Perhaps Western at the appropriate time it feels remediation is complete, may submit the data with concentration charts supporting a request to stop monitoring. Also, the monitoring results should be submitted to the agencies with a chart within 30 days of monitoring. This can be done via e-mail. The agencies should be notified when monitoring will be performed in order to witness the monitoring with the FID, etc. and the agencies may upon site inspection or request for suspension of monitoring visit the corrective action area in the summer months to witness Western's determination.

The agencies will expect to receive notification of install the system within the next 30 days or by 11/25/2010. A report within 30 days of install or by 12/23/2010 with documentation as described above. Please contact me if you have questions. Thank you.

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

From: Larsen, Thurman [mailto:Thurman.Larsen@wnr.com]
Sent: Tuesday, October 26, 2010 4:08 PM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV; Riege, Ed
Subject: Gallup Refinery (GW-032)- Re: Tank 116 Ultra-Low sulfur Diesel; Release and Air Quality Approval for Corrective Action (Letter of October 14, 2010) using a Passive Bioremediation (Ventilation) System

Dear Mr. Chavez,

Installation:
As per your e-mail and the recently approved NSR Permit # (0633-M8-R3, A214 A.), Western Refining (Gallup) will proceed with installation of the Passive Bioremediation (Ventilation) System for Tank 116 area is estimated to be within the next thirty to forty-five days. This should allow enough time for the fabrication and installation of the ventilation network There will be approximately 10 to 15 ventilation or perforated pipes that will be installed at 6 to 8 ft centers. The exact quantity of perforated pipe will vary depending on the extent of the contaminated area (1000 sq ft) as required. These pipes will be inserted to a depth of approximately one to two feet.

Fabrication:
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Monitoring and Recordkeeping Requirements:
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If you should have any questions concerning this matter, please feel free to contact me at the number listed below or Mr. Ed Riege at (505) 722-0217.

Sincerely,

Beck Larsen; CHMM, REM, RPG
Environmental Engineer

Western Refining Company- Gallup Refinery
Route 3, Box 7
Gallup, NM 87301
Office:(505) 722-0258
Fax: (505) 722-0210
Cell: (505) 862-1749
Email: thurman.larsen@wnr.com

Safety starts with "S", but always begins with YOU"!

VanHorn, Kristen, NMENV

From: Larsen, Thurman [Thurman.Larsen@wnr.com]
Sent: Friday, December 03, 2010 3:52 PM
To: Chavez, Carl J, EMNRD
Cc: Van Horn, Kristen, NMENV; Monzeglio, Hope, NMENV; Riege, Ed; beckl@q.com
Subject: FW: Gallup Refinery GW-032 - Tank 116 ULSD - Passive Bioremediation System

Dear Carl et all;
Fabrication was completed as scheduled Pipe installation for the bio-venting project was initiated on Tuesday, November 30. Fifteen 6 inch hole was drilled in a radial display from a common point. Fifteen (15) (2 inch) carbon steel pipes were installed at a three foot depth in each hole. A gravel pack was used to fill the annular capacity between the hole wall and the pipe. The installation project was completed on Thursday, December 2, 2010. As stated in the e-mail from the agency of October 28, 2010, a Final Report will be due 30 days from the date of installation or by December 23, 2010.
Sincerely,

Beck Larsen
Environmental Engineer

From: Morgan, Loretta
Sent: Wednesday, November 24, 2010 12:59 PM
To: CarlJ.Chavez@state.nm.us
Cc: Larsen, Thurman; Riege, Ed
Subject: Gallup Refinery GW-032 - Tank 116 ULSD - Passive Bioremediation System

Hi Carl

Just wanted to let you know what our work schedule is for installing the vents.

Our mechanics are currently fabricating the piping with estimated completion date of Tuesday (November 30, 2010). And we have scheduled Bonaguidi Construction in for Wednesday (December 1, 2010) to drill the holes and install the vents (pipes).

Beck is out on vacation until Monday and he will send you a report for follow-up on your comments.

Thanks
Loretta Morgan
Environmental Specialist

Western Refining
Route 3 Box 7
Gallup, NM 87301
Phone: (505) 722-0242
Fax: (505) 722-0268
loretta.morgan@wnr.com

VanHorn, Kristen, NMENV

From: Chavez, Carl J, EMNRD
Sent: Tuesday, April 05, 2011 4:03 PM
To: Larsen, Thurman
Cc: VanHorn, Kristen, NMENV; VonGonten, Glenn, EMNRD
Subject: Western Refining SW, Inc.- Gallup Refinery (GW-032) Tank 116 ULSD Release and Passive Venting Remediation Plan (3/11/2011)

Beck:

The tank farm is part of RCRA SWMU #6 and RCRA corrective action will be complete when the entire SWMU is cleaned up.

The OCD has the following observations and/or requirements:

Under the OCD Discharge Permit point at which Western feels the baseline or graphical representation of analytical monitoring data shows the effectiveness of the passive venting system. The proposed semi-annual progress reports that Western indicates it is prepared to submit in July and January of each year forms a good starting point for the first two years. The agencies will need to see charts with trend observations (max, min and average VOC readings) from each vent well with an associated schematic displaying each vent well. Any isocon representation of monitoring results may also be helpful in supporting when corrective action is complete or a consistent baseline is established to leave the passive system in place until the SWMU is addressed under RCRA. I think Western would agree it is better to leave the vent wells in place as long as possible. The operator should mound the borehole around the well to facilitate drainage away from the wellbore.

That's it. Please let the agencies know if you agree and/or any concerns or questions that you may have. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)