

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

ATTACHMENT 1

Form C-144
March 12, 2004

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

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: <u>ConocoPhillips</u> Telephone: <u>(505) 676-5565</u> e-mail address: <u>Ken.Anderson@conocophillips</u>		
Address: <u>P.O. Box 180 Maljamar, NM 88264 - 0180</u>		
Facility or well name: <u>State E-A1</u> API #: <u>30-015-02608</u> U/L or Qt/Qt: <u>SW 1/4 NW 1/4 Sec 5 T 18S R 28E</u>		
County: <u>Eddy</u> Latitude <u>N 32.7786°</u> Longitude <u>W 104.2051°</u> NAD: 1927 <input type="checkbox"/> 1983 <input checked="" type="checkbox"/> Surface Owner Federal <input type="checkbox"/> State <input checked="" type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>		
Pit Type: Drilling <input type="checkbox"/> Production <input type="checkbox"/> Disposal <input checked="" type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input type="checkbox"/> Unlined <input checked="" type="checkbox"/> Liner type: Synthetic <input type="checkbox"/> Thickness <u> </u> mil Clay <input type="checkbox"/> Volume <u> </u> bbl	Below-grade tank Volume: <u> </u> bbl Type of fluid: <u> </u> Construction material: <u> </u> Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. <u> </u>	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet	(20 points)
	50 feet or more, but less than 100 feet	(10 points)
	100 feet or more 225 feet	(0 points) 0
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes	(20 points)
	No <input checked="" type="checkbox"/>	(0 points) 0
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet	(20 points)
	200 feet or more, but less than 1000 feet	(10 points)
	1000 feet or more X	(0 points) 0
Ranking Score (Total Points)		0

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location:

onsite ☐ offsite ☒ If offsite, name of facility CRI Midway, NM. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 6/18/04

Printed Name/Title John McBEE /SR. ENGINEER Signature John M. McBee /MAXIM TECHNOLOGIES

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Date: 7/21/2004

Printed Name/Title Mike Stubblefield Environ Eng. Spec. Signature Mike Stubblefield



1703 W. Industrial Ave.
Midland, Texas 79701
(432) 686-8081

July 19, 2004

Mr. Mike Stubblefield
Environmental Engineering Specialist
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division
1301 W. Grand Avenue.
Artesia, New Mexico 87410

RE: 36-015-02608
State E-AI Tank Battery Sludge Pit
NW1/4, Section 5, T18S, R27E
Request for Closure

Dear Mike:

On behalf of ConocoPhillips, Maxim Technologies, Inc. (Maxim) is submitting this report and C 144 (Attachment) to describe the actions taken to remediate a sludge pit in Eddy County, New Mexico (Site). The Site is located approximately 6 miles southeast of Riverside, New Mexico; 1.3 miles south of US Highway 82; in the north central portion of Eddy County, New Mexico (32° 46.679N, 104° 12.318W; NAD27; Figures 1, 2 and 3). The State of New Mexico administers the land at the Site. This report describes the path forward for closure of the pit in accordance with New Mexico Oil Conservation Division's (NMOCD) standards, Guidelines for Remediation of Leaks, Spills and Releases.

BACKGROUND

An investigation by BBC International, Inc. was conducted on May 1, 2003 in an area which apparently is an abandoned flare pit 150 feet (ft) southwest of State E AI tank battery. A test pit was excavated and samples collected in the area of concern. Soil staining was evident at the surface and soil samples were collected from three different depths as the test pit was excavated. Total depth of the excavation was 11.5 ft and was stopped on a hard layer that could not be excavated with the backhoe and was presumed to be a caliche layer. Laboratory analyses indicated the stained soil contained elevated Total Petroleum Hydrocarbons (TPH) in sampled strata primarily Diesel Range Organics (DRO), and to a lesser extent, Gasoline Range Organics (GRO), and levels of benzene, toluene, ethylbenzene, and total xylenes (BTEX). The levels of the hydrocarbons decreased with depth, such as DRO which was 10,000 milligrams per kilogram (mg/kg) at 5 ft, 6,200 mg/kg at 10 ft and 3,900 mg/kg at 11.5 ft.

Following the ranking criteria (Section 2.a) presented in *Guidelines for Remediation of Leaks, Spills, and Releases* promulgated on August 13, 1993 by the New Mexico Oil Conservation Division (NMOCD) this site had a:

- 1) Depth to Groundwater -- greater than 100 feet;
- 2) Is not in a Wellhead Protection Area; and
- 3) the Distance to Surface Water Body -- greater than 1000 feet (horizontally).

SCOPE OF WORK

Remediation activities were conducted on the Site from July 9 through July 14, 2004 in accordance with the proposed plan and C-144 form submitted to NMOCD on June 19, 2004. These activities consisted primarily of removal of approximately 5 ft of hydrocarbon impacted soils, which were hauled to a NMOCD approved landfill for disposal, covering the excavated area with a polyethylene geo-membrane "liner," and backfilling with "clean" soils.

In order to document site remediation activities Maxim prepared a site drawing describing the excavated area that was excavated and covered with a 40-mil geo-membrane, and soil sampling locations (Figure 4). The map was used for control of construction activities (not done to an accuracy commensurate with a licensed surveyor). Maxim supervised and directed all subcontractor activities.

Approximately 5 ft of soil was excavated in the petroleum hydrocarbon impacted footprint at the site to remove the most highly contaminated soils (Figure 5). Preliminary clean soil sidewall conditions were determined using field screening of samples taken from the sidewall soils with a photo-ionization detector (PID; < 100 ppm TPH). Clean wall confirmation was determined by compositing soil collected along the face of each sidewall. These composite soil samples were analyzed for TPH (DRO & GRO, Method 8015) and BTEX (Method 8260). Approximately 223 cubic yards of impacted soils were excavated and hauled off site for disposal (CRI, Midway, New Mexico).

After the excavated sidewalls were confirmed, clean sand free of rocks was backfilled into the excavation to a depth of one foot on the sides and 1.5 ft in the center to slightly dome the surface and prevent contact of the membrane directly with petroleum hydrocarbon impacted soils (Figures 6 and 7). The slight doming of the sand beneath the "liner" material will promote lateral drainage off of the geo-membrane after placement. This fill material was hand groomed by removing large sticks and smoothing the surface. A one foot deep anchor trench was constructed around the inside perimeter of the excavation and a 40-mil medium density polyethylene geo-membrane was installed over the sand fill. The membrane was cut to fit into the perimeter trench and sand was backfilled around the perimeter to hold the geo-membrane in-place. An additional one foot of sand with no rocks or debris was backfilled over the membrane. Subsequently, clean caliche/soil was used to backfill the excavation to meet surrounding surface grades which completed the remediation (Figure 8). Four carsonite markers were set at the corners of the remediation area notifying interested parties that a subsurface structure was in-place (Figure 9). The inscription on each marker read "CAUTION,

SUBSURFACE STRUCTURE, Call Before Digging, MCA Unit 505-39300130.”

FINDINGS

A summary of sidewall soil conditions found during the excavation are presented in Table I. Soil encountered during excavation on the side limits of the excavation consisted of white caliche.

Clean wall confirmation sampling was performed on August 9, and 12, 2004 (Table I). The first set of samples indicated soil collected from the west, north and east walls were above NMOCD soil remediation action levels of 5,000 ppm for TPH. Benzene and BTEX concentrations in all first set of samples were below remediation action levels of 10 and 50 ppm, respectively, for all samples. As a result of these findings, the excavation was expanded one foot laterally to the west, north and east and each sidewall was re-sampled. Analysis of the second set of composited samples indicated TPH for these sidewalls were below the TPH action level.

Table 1
ConocoPhillips State E A1 Tank Battery Sludge Pit
Soil Analysis to Determine Clean Boundary

Parameter (mg/kg)	July 9, 2004 Wall Excavation Sampling				July 12, 2004 Wall Excavation Sampling		
	North	East	South	West	North	East	West
Total Petroleum Hydrocarbon (8015B)							
Diesel Range Organic	24,000	8,400	2,300	16,000	1,030	765	3,200
Gasoline Range Organic	41	0	2	15			
Total	24,041	8,400	2,302	16,015			
Volatile Organic Compounds (8260B)							
Benzene	0.008	ND	ND	ND			
Ethylbenzene	0.038	ND	0.004	ND			
Toluene	ND	ND	0.003	ND			
Xylenes (Total)	0.078	ND	0.011	ND			
Total BTEX	0.124	ND	0.018	ND			

ND = Concentration not present at or above laboratory detection limits
mg/kg = Milligrams per kilogram

CONCLUSIONS

Approximately 223 CY of contaminated soils were removed from sludge pit area to a depth of 5 ft and hauled to CRI – Midway for disposal. The 40-mil polyethylene geo-membrane “liner” was installed over the excavated footprint to prevent further migration of TPH and BTEX caused by precipitation over the area. This Site has been remediated.

Mr. Michael Stubblefield
July 19, 2004
Page 4 of 5

RECOMMENDATIONS

Based on the work performed at this Site, Maxim recommends no further action is required. Upon your review and approval of this report, Maxim on behalf of ConocoPhillips, requests closure for this sludge pit location. If you have any questions or need additional information, please call Mr. Ken Andersen (ConocoPhillips, 505-676-5569) or me.

Sincerely,

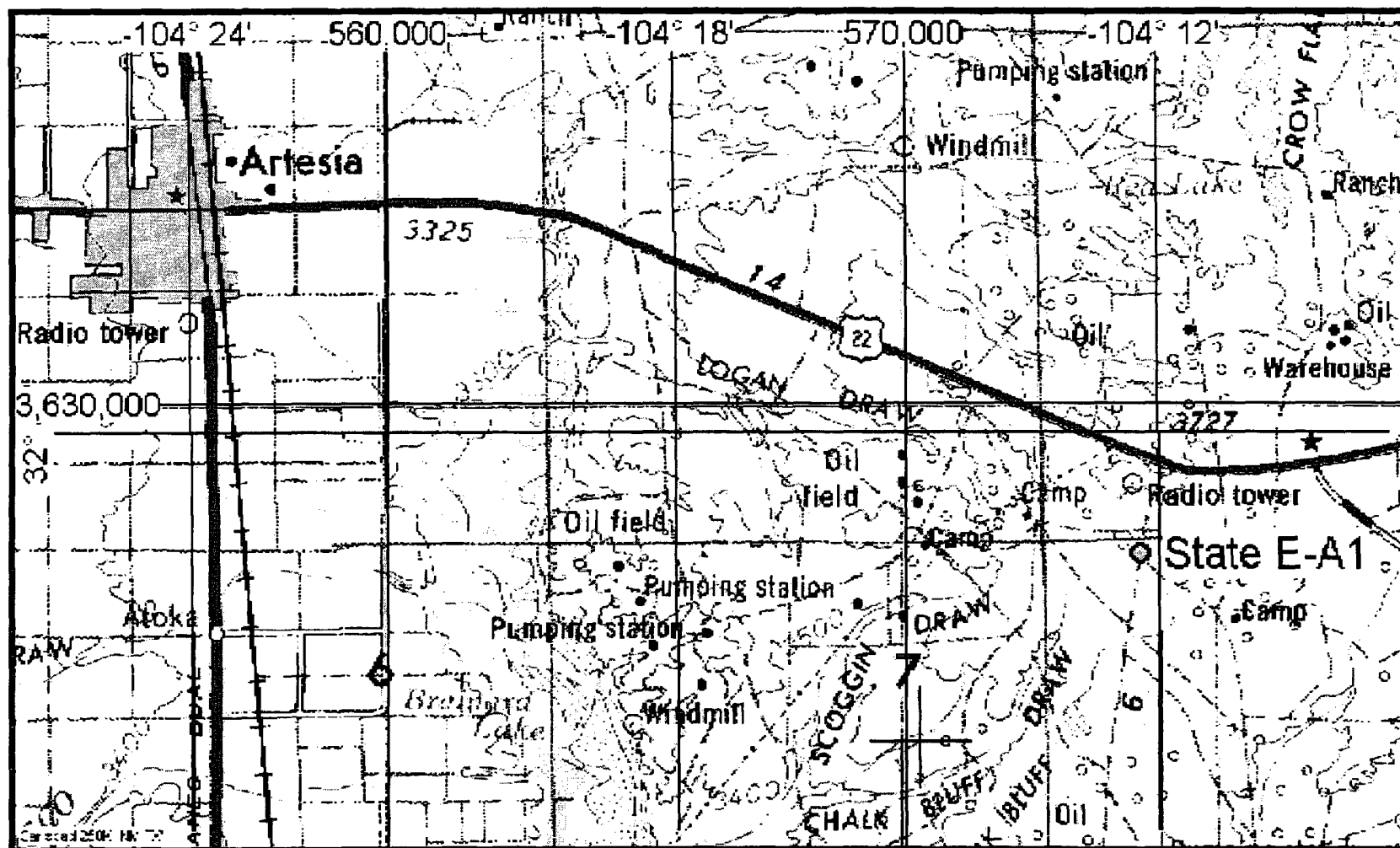
MAXIM TECHNOLOGIES

Charles Durrett

Digitally signed by Charles Durrett
DN: CN = Charles Durrett, C =
US, O = Maxim Technologies, Inc.
Date: 2004.07.19 11:44:26 -05'00'

Charles Durrett
Senior Project Manager

Cc: Mr. Ken Andersen, ConocoPhillips
Neal Goates, ConocoPhillips



Source: USGS, 1954. Carlsbad, New Mexico; Texas. 1:250,000 scale.

MAXIM Technologies

ConocoPhillips

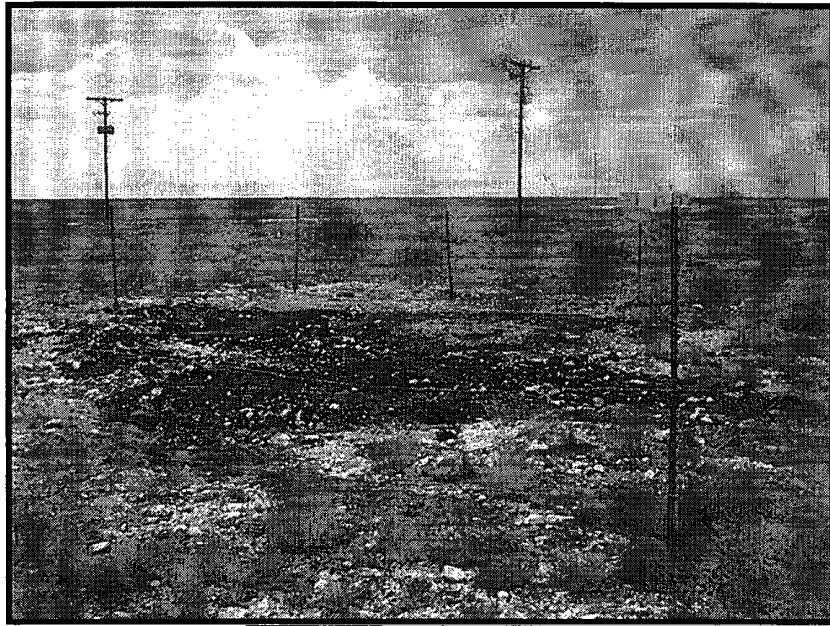
MCA, New Mexico

Figure I. State E A1 Site Location

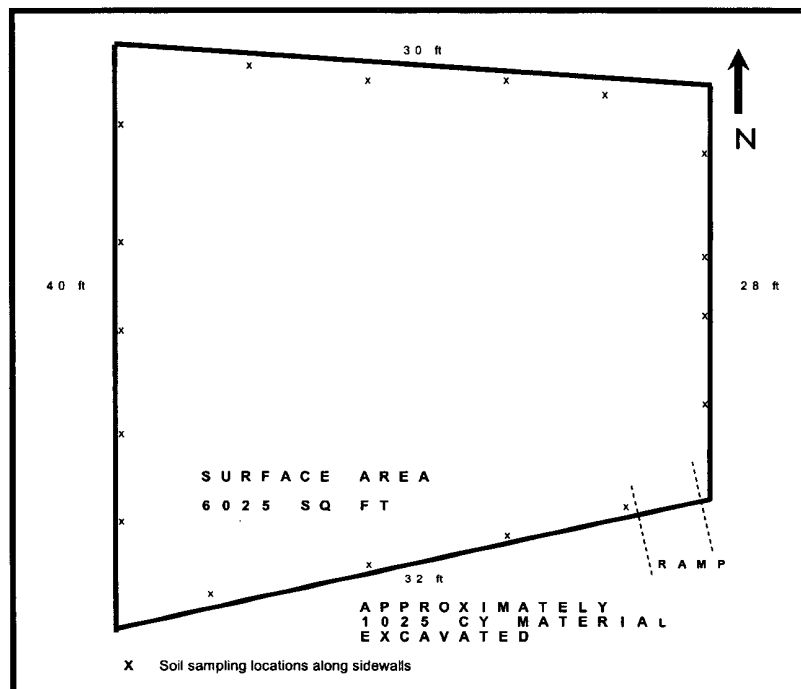


Image courtesy of the U.S. Geological Survey © 2004 Microsoft Corporation.
<http://terrasserverssa.com/>

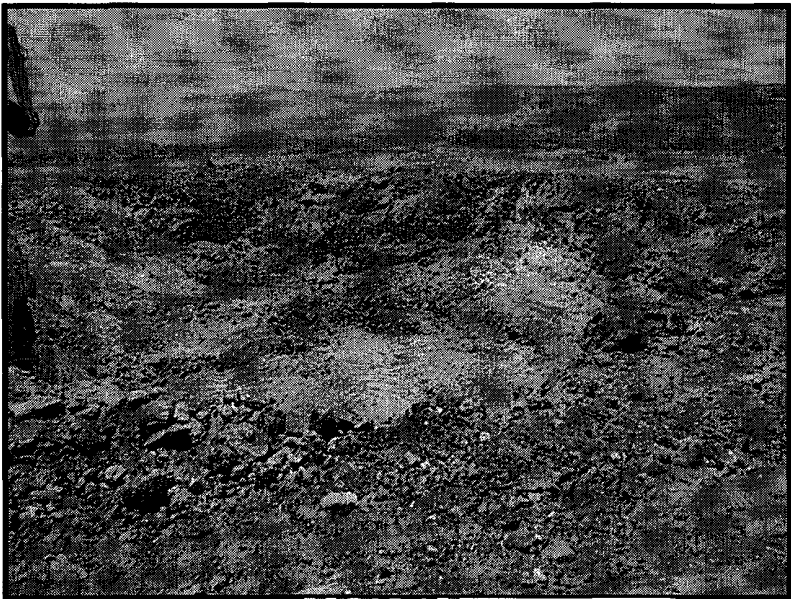
MAXIM Technologies	
ConocoPhillips	MCA, New Mexico
Figure 2. State E A1 Site Aerial Photo	



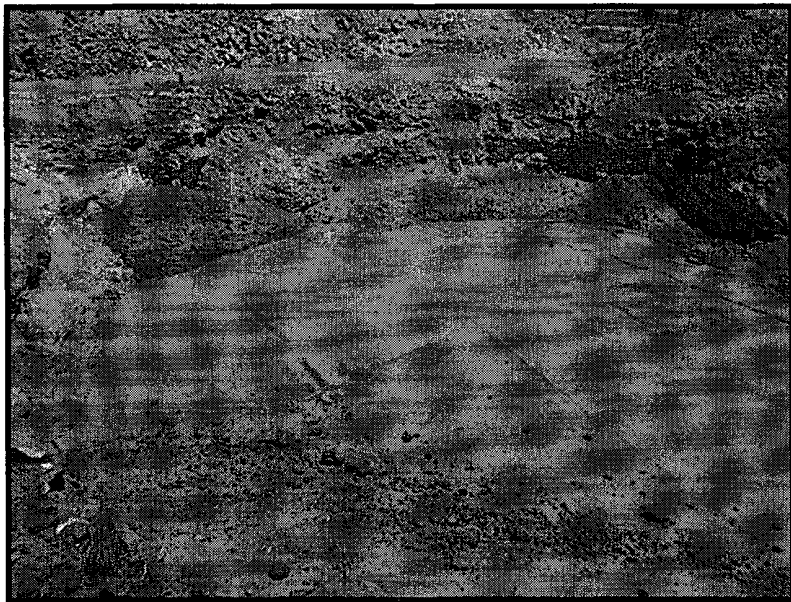
MAXIM Technologies <small>A DIVISION OF TERRA TECH INC.</small>	
ConocoPhillips	MCA, New Mexico
Figure 3. State E AI Sludge Pit Photo	



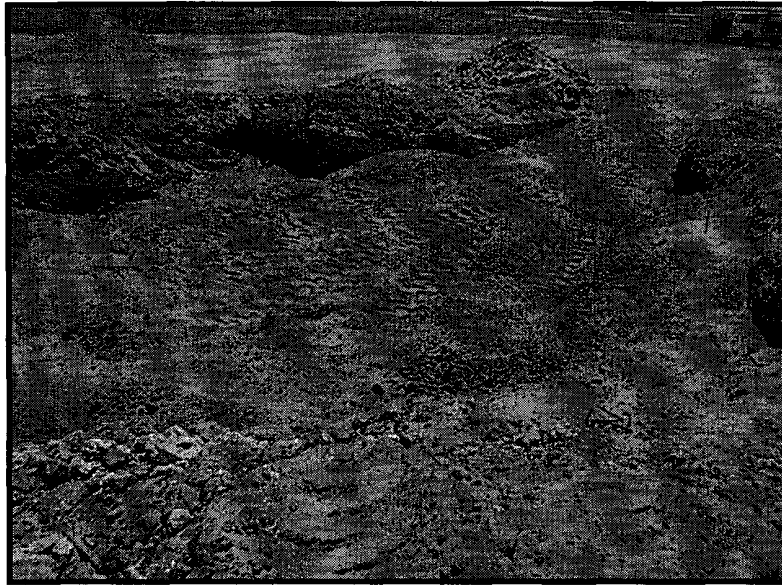
MAXIM Technologies <small>A DIVISION OF TERRA TECH INC.</small>	
ConocoPhillips	MCA, New Mexico
Figure 4. State E AI Sludge Pit Drawing	



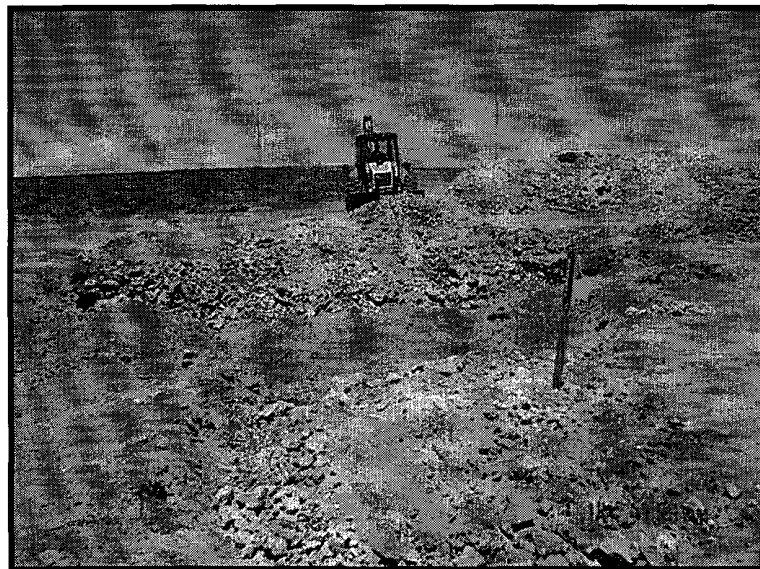
MAXIM Technologies <small>A DIVISION OF STETAS HOLDING CORP.</small>	
ConocoPhillips	MCA, New Mexico
Figure 5. State E AI Sludge Pit Excavation Photo	



MAXIM Technologies <small>A DIVISION OF STETAS HOLDING CORP.</small>	
ConocoPhillips	MCA, New Mexico
Figure 6. State E AI Sludge Pit 40-mill Plastic Sheeting Installation	



MAXIM Technologies	
ConocoPhillips	MCA, New Mexico
Figure 7. State E A1 Sludge Pit Sand Backfill over Plastic Sheeting	



MAXIM Technologies	
ConocoPhillips	MCA, New Mexico
Figure 8. State E A1 Sludge Pit Caliche Soil Backfill	



MAXIM Technologies <small>A DIVISION OF PETRA TECHNOLOGY</small>	
ConocoPhillips	MCA, New Mexico
Figure 9. State E AI Subsurface Structure Markers	

STATE E-A1 WORK PLAN CONOCOPHILLIPS

This work plan discusses remediation activities to be conducted for hydrocarbon impacts located adjacent to State E-A1 Battery (SW $\frac{1}{4}$, NW $\frac{1}{4}$, Section 5, T18S, R28E), approximately 13 miles southeast of Artesia, New Mexico (Eddy County).

Background

An investigation by BBC International, Inc. was conducted on May 1, 2003 in an area which apparently is an abandoned flare pit by the tank battery. A test pit was excavated and samples collected in the area of concern (approximately 75 by 80 feet). Soil staining was evident at the surface and soil samples were collected from three different depths as the test pit was excavated. Total depth of the excavation was 11.5 feet and was stopped on a hard layer that could not be excavated with the backhoe and was presumed to be a caliche layer. Laboratory analyses indicated the stained soil contained elevated Total Petroleum Hydrocarbons (TPH) in sampled strata primarily Diesel Range Organics (DRO), and to a lesser extent, Gasoline Range Organics (GRO), and levels of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX). The levels of the hydrocarbons decreased with depth, such as DRO which was 10,000 mg/kg at 5 feet, 6,200 mg/kg at 10 feet and 3,900 mg/kg at 11.5 feet. The analytical results are attached.

A database search of the area listed the nearest well to be approximately 3 miles to the southeast of the site. Groundwater level measurements taken four times over a thirteen year period from 1986 to 1999 showed an average elevation of about 225 feet below ground surface (see attached). Following the ranking criteria (Section 2.a) presented in *Guidelines for Remediation of Leaks, Spills, and Releases* promulgated on August 13, 1993 by the New Mexico Oil Conservation Division this site has a: 1) Depth to Groundwater -- greater than 100 feet; 2) Is not in a Wellhead Protection Area; and 3) the Distance to Surface Water Body -- greater than 1000 feet (horizontally).

Scope of Work

Initially, Maxim will prepare a Health and Safety Plan (HASP) for the work to be conducted at the site. In addition to defining Personal Protective Equipment (PPE) requirements, site access restrictions, emergency procedures, the HASP will detail handling of site specific concerns, including coordination with the Business Unit and its safety requirements, i.e., job safety analyses and initial site orientation as required. In order to document site remediation activities Maxim will prepare a site map which will be used as the basis for recording of:

- Area excavated and to be covered with the geomembrane/geotextile
- Sampling locations

The map will be used for control of construction activities with measurements taken from existing site features. Maxim will supervise and direct all subcontractor activities and following the construction activities, will prepare a report describing and documenting what was done for closure activities at the site to include environmental sampling results and site map. This report on activities and results will be submitted for ConocoPhillips review and dissemination to appropriate parties.

Approximately 5 feet of soil will be excavated above the hydrocarbon impacted footprint at the site to remove the mostly highly impacted soils and provide cover soils to protect the geomembrane. Excavation will be performed at Maxim's direction to remove hydrocarbon impacted soils and Maxim will perform field screening of samples of the overburden soils with a photoionization detector (PID). Confirmation sampling will be conducted at four locations. These soil samples will be analyzed for TPH and BTEX.

Construction Sequencing

1. Determine final excavation horizontal dimensions (areal extent) for cover materials (geomembrane). This effort will be done through test pits and/or trenching (with the use of a backhoe or suitable equipment) across the site at locations determined by the Maxim field representative on each side of the contaminated area.
2. Confirmation samples outside of footprint to be covered.
3. Excavate hydrocarbon impacted soils to a depth of 5 feet.
4. Haul impacted soils to offsite landfarm for disposal (CRI – Midway, NM).
5. Following excavation and removal of the impacted soils, the excavation bottom shall be cleaned of loose debris and disturbed soils. Grade surface of impacted soils (in excavation) for drainage.
6. Place minimum of six inches of "clean" soils over impacted area such as a silty sand. This soil shall be free from rocks and/or debris greater than 2 inches in size that could potentially damage the geomembrane. Coarse gravel size materials shall be limited to 10 percent by weight of the backfill soils. The center of the excavation will be slightly domed (approximately 6 inches) to promote lateral drainage over the geomembrane.
7. Prepare subgrade for placement of geomembrane, i.e., have a clean smooth surface.
8. Place polyethylene geomembrane (40 mil thickness) and anchor (trench).

9. Backfill excavated area with one foot of clean soils such as a silty sand free of rocks and debris greater than 2 inches. Coarse gravel size materials shall be limited to 10 percent by weight of the backfill soils. Finish backfilling with approved soil and regrade as needed to conform to existing site topography. Offsite soils will be used for backfill.
10. Place corner posts on opposite corners in the area over the geomembrane for appropriate signage for notification prior to digging (to be supplied later).

Overburden soils will be placed in the excavation by a dozer over the geomembrane layer in a way to prevent damage, i.e., the backfill soil will be pushed ahead of the dozer. No compaction is planned at the site other than will occur as a result of the dozer tracking over the soils.

ATTACHMENTS



PHONE (505) 673-7001 • 2111 BRECHWOOD • ABILENE, TX 79603

PHONE (505) 391-2326 • 101 E. MARLAND • HOBBS, NM 88240


ANALYTICAL RESULTS FOR
BBC INTERNATIONAL, INC.
ATTN: CLIFF BRUNSON
P.O. BOX 805
HOBBS, NM 88241
FAX TO: (505) 397-0397

Receiving Date: 05/01/03
Reporting Date: 05/05/03
Project Number: NOT GIVEN
Project Name: STATE E-A1
Project Location: RIVERSIDE, N.M.

Sampling Date: 05/01/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (C ₁₀ -C ₂₈) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		05/02/03	05/02/03	05/02/03	05/02/03	05/02/03	05/02/03
H7629-1	STATE E-A1-5'	1010	10000	6.79	2.67	40.5	86.9
H7629-2	STATE E-A1-10'	407	6200	1.05	0.102	16.9	36.2
H7629-3	STATE E-A1-11.5'	223	3900	0.665	0.512	11.0	23.0
Quality Control		790	813	0.098	0.098	0.103	0.290
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		98.8	102	98.1	87.5	103	96.5
Relative Percent Difference		0.3	1.2	4.0	6.0	8.7	4.4

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8260.


Burgess J. A. Cooke, Ph. D.

5/5/03
Date

H7629.XLS

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be covered without excess in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services furnished by Cardinal, regardless of whether such claims in based upon any of the above-stated causes of litigation.

Water Resources

Data Category:
Ground WaterGeographic Area: ...
New Mexico ... GO

Ground-water levels for New Mexico

Search Results — 1 sites found

Search Criteria

Agency code = usgs

site_no list = • 324424104103901

Save file of selected sites to local disk for future upload**USGS 324424104103901 18S.28E.21.21212**

Eddy County, New Mexico

Latitude 32°44'24", Longitude 104°10'39"

NAD27

Gage datum 3,580 feet above sea level NGVD29

The depth of the well is 250.00 feet below land surface.

This well is completed in ARTESIA GROUP (313ARTS)

Output formats

Table of dataTab-separated dataGraph of dataReselect period

Date	Time	Water level, feet below land surface	M Status
1986-05-21		225.77	Z
1990-09-19		225.70	R
1994-03-09		225.98	Z
1999-02-19		225.24	

Stubblefield, Mike

From: Cwdurrett1@aol.com
Sent: Tuesday, July 20, 2004 5:30 AM
To: MStubblefield@state.nm.us
Cc: ken.n.andersen@conocophillips.com; jmcbee@maximusa.com
Subject: ConocoPhillips State E A1

Mike, this is an update to the information in the report you received yesterday. The total TPH affected soil received by CRI at Midway, New Mexico from the State E A1 excavation was 462 CY. The estimate of 230 CY as stated in the report was just that, an estimate. Please let me know if you would like this value corrected in the report.

If you have any questions concerning this new information provided by CRI, please call me.

--

Charlie Durrett
Maxim Technologies
1703 W. Industrial Ave.
Midland, TX 79701
P 432-686-8081
F 432-686-8085

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