ppmLM#830331859

1910 N. Big Spring St.
Midland, Texas 79705
432-686-8081

TETRA TECH, INC.

September 30, 2010

Mr. Justin Wright & Mr. John Gates
ConocoPhillips Company
HC 60 Box 66
Lovington, NM 88260

RE: MCA Laguna Battery Work Plan
Lea County, New Mexico
Unit D, Sec. 28, T17S, R32E
1RP 1991

Dear Messer's Wright and Gates:

Owing to changing environmental conditions at the MCA Laguna Battery crude oil release location since Tetra Tech's meeting with the New Mexico Oil Conservation Division (NMOCD) and U.S. Bureau of Land Management (BLM) representatives in 2009, Tetra Tech submits this work plan for an additional subsurface investigation at the Battery (Site; Figure 1). This work is in support of ConocoPhillips efforts to delineate and remediate two separate crude oil releases from the Battery. The first C141 (64 bbls) was submitted on September 19, 2008 and the second (422 bbls) was submitted on October 25, 2008, to the NMOCD. The NMOCD approved the second C141 (attached). The battery is located approximately 0.3 miles southwest of the ConocoPhillips Maljamar office in Lea County, New Mexico (32.811074°N, 103.774583°W). The BLM is the land administrator. A findings report that included both releases was submitted to the NMOCD and to the BLM on April 2, 2009.

Site Setting

The MCA Laguna Battery is located in the Querecho Plains of eastern New Mexico. This area generally consists of a thin cover of Quaternary sand dunes overlying the undivided Triassic Upper Chinle Group[1]. The Kermit series soil at the Site is well drained, non-calcareous loose sands.[2]

Exposure Pathway Analysis

Depth to water in the vicinity of the Site is estimated to be approximately 74 feet below ground surface (fbgs). This interpretation is based on information gathered at monitoring well MW-8 that is described in ConocoPhillips' remediation project entitled "*Maljamar Gas Plant GW-020*" (well log was submitted in the 2009 Findings Report). The monitoring well is located approximately 570 feet northeast of the Site. The nearest playa is approximately 0.5 miles southwest of the Site.

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[1] U.S. Department of Agriculture, Natural Resources Conservation Services. Web Soil Survey Database.
[2] Turner, M.T., D.N. Cox, B.C Mickelson, A.J. Roath, and C.D Wilson, 1973. Soil Survey Lea County, New Mexico. U.S. Depart of Agr Soil Conser Ser, 89p.

Following the ranking criteria presented in "*Guidelines for Remediation of Leaks, Spills, and Releases*" promulgated on August 13, 1993 by the NMOCD, this Site has the following score:

Criteria		Ranking Score
Depth to groundwater	50 - 99 feet	10
Distance from water source	>1,000 feet	0
Distance from domestic water source	>200 feet	0
Distance from surface water body	>1,000 feet	0
Total Ranking Score		10

The Recommended Remediation Action Level (RRAL) for a ranking score of 10-19 is 10 parts per million (ppm) for benzene, 50 ppm for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 ppm for total petroleum hydrocarbons (TPH).

Summary of Findings

Findings Report dated April 2, 2009 - field screening results and laboratory analyses are presented in Table 1, the chloride impact to soil was below NMWQCC's MCL for chloride. According to laboratory analysis of soils collected during two separate investigations, except for BH-1, and BS-1, TPH and BTEX were either not detected or were reported in low concentrations in all "at depth" samples (Figure 2). Exposure pathway analysis indicated a ranking score of "10." Therefore, the site-specific remediation levels are 1,000 mg/kg for TPH, 50 mg/kg for BTEX and 10 mg/kg for benzene. Based on laboratory analyses presented in Tables 1 and 2, the impacts to soil were below the NMOCD RRAL for both TPH and BTEX in all "at depth" samples except for BH1 and BS-1. TPH and BTEX concentrations were above action levels in most near surface samples. A NORM survey in the area of BH-1 and BS-1 reported a gamma reading of 9 micro-Roentgens per hour (µR/hr). The background reading was 6 µR/hr.

Data for both investigations indicated soil excavated in the area of BH-1, and BS-1 appeared to include historic crude oil tank bottoms. TPH concentrations attenuated with depth but concentrations, below RRAL, were not achieved. Benzene and BTEX also attenuated with depth and concentrations were below the RRAL at a lower depth (BH-1 at 14 fbgs).

Scope of Work

The lateral extent of the release area is defined by soil discoloration (Figure 3). To re-delineate the vertical extent of the crude oil affected area, Tetra Tech will use a mobile air rotary boring unit to define the depth of a possible historic tank bottom disposal area and the affected zone at BS-4, and use a hand auger to define the outer boundary of the disposal area and along the length of the ephemeral flow path affected area (9 locations). A split-spoon sampler will be used to collect soil samples every ten feet in 40 foot borings (10 samples). Hand auger soil samples (27) will be collected every two feet. A photo-ionization detector (PID) will be used to screen soils for concentrations of volatile organic compounds (VOC).

Soil samples (37) from the borings and hand auger location will be submitted to a laboratory for confirmation analyses. The samples will be placed into glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation to an analytical laboratory where they will be analyzed for diesel and gasoline range total petroleum hydrocarbons (TPH_{DRO} and TPH_{GRO}, Method 8015), and benzene, toluene, ethylbenzene, and total xylenes (BTEX, Method 8021B). These analyses will be used to confirm clean vertical boundaries have been identified.

Hand augered soil will be returned to the boring for handling during site remediation. The soil borings will be backfilled with bentonite.

Tetra Tech will supervise and direct all subcontractor activities, and following the field activities, prepare a findings report describing and documenting what work was performed at the Site, including a site map, and recommendations. This report on activities and results will be submitted for NMOCD's and BLM's review.

Project Schedule

Tetra Tech is prepared to commence work on this project immediately following receipt of your notification to proceed.

Project Approach

Mr. Charles Durrett will serve as the Project Manager and will have the authority to commit whatever resources are necessary to support the project team. It will be Mr. Durrett's responsibility to ensure that the Client's needs are met in terms of scope of work and schedule. Mr. Durrett is located in Tetra Tech's Midland, Texas, office.

If the BLM, NMOCD, and you concur with this work plan, Tetra Tech will complete this work immediately following receipt of your notification to proceed. Please contact me (432-686-8081), if you have any questions or require additional information.

Sincerely,

Tetra Tech

Charles Durrett

Digitally signed by Charles Durrett
DN: cn=Charles Durrett, o=Tetra Tech, Inc., ou, email=charles.durrett@tetratech.com, c=US
Date: 2010.09.30 14:31:31 -05'00'

Charles Durrett
Sr. Project Manager

Table 1
ConocoPhillips
Laguna Battery
Analytical Soil Analysis
10/14/2008

Parameter	Units	Location								
		BH-1			BH-2		BH-3		BH-4	
Sample Depth	(ft)	0-0.5	4	14	0 - 0.5	2	0 - 0.5	4	0 - 0.5	4
Moisture	(%)	5.81	8.86	17.50	2.66	13.40	13.50	10.20	6.98	15.50
Chloride	(mg/Kg)	ND	95.10	195.00	ND	ND	ND	13.20	ND	85.70
Petroleum Hydrocarbons										
GRO	(mg/Kg)	450	190	1,600	40	ND	ND	ND	930	1.60
DRO	(mg/Kg)	3,000	4,300	9,600	4,400	ND	270	7.10	5,000	42.00
Total	(mg/Kg)	3,450	4,490	11,200	4,440	ND	270	7.10	5,930	43.60
Volatile Organic Compounds										
Benzene	(mg/Kg)	0.01	0.10	11.00	0.01	ND	ND	ND	0.03	ND
Ethyl-benzene	(mg/Kg)	1.90	4.10	48.00	0.26	ND	ND	ND	17.00	0.01
Toluene	(mg/Kg)	0.24	0.13	6.60	0.02	ND	ND	ND	4.10	ND
Xylenes Total	(mg/Kg)	2.39	5.19	46.00	0.69	ND	ND	ND	16.50	0.01
Total BTEX	(mg/Kg)	4.54	9.52	111.60	0.71	ND	ND	ND	37.63	0.02
Synthetic Precipitation Leaching Procedure										
Benzene	(mg/L)			0.61						
Ethyl-benzene	(mg/L)			0.40						
Toluene	(mg/L)			0.20						
Xylenes Total	(mg/L)			0.49						
Total BTEX	(mg/L)			1.70						

BH = Backhoe
TPH_{GRO} =Gasoline range petroleum hydrocarbons
TPH_{DRO} =Diesel range petroleum hydrocarbons
ft = Feet
% = Percent
mg/Kg = Milligrams per kilogram
mg/L = Milligrams per liter
Blank cells = No data
ND = Analyte not detected at or above the laboratory detection limits

Table 2
ConocoPhillips
Laguna Battery
Analytical Soil Analysis
1/29/2009

	Location	Sample Depth (ft)	Moisture (%)	Petroleum Hydrocarbons (mg/Kg)			Volatile Organic Compounds (mg/Kg)				
				DRO	GRO	Total	Benzene	Ethyl-benzene	Toluene	Xylenes Total	Total BTEX
Backhoe (BS) And Hand Auger (AH) Sampling Locations	BS 1	18.0	6.17	2,900	740	3,640	0.42	28.00	9.80	42.00	80.22
	BS-3	6.0	5.66	ND	ND	ND	ND	ND	ND	ND	ND
	AH-4	0.5	2.66	4,400	230	4,630	0.08	10.00	3.70	15.70	29.48
		6	14.20	31	ND	31	ND	ND	ND	ND	ND
	AH-5	0-0.5	3.74	2,600	600	3,200	0.56	11.00	5.90	20.40	37.86
		6	17.70	290.0	0.6	290.6	ND	ND	ND	ND	ND
	AH-6	0-0.5	6.25	3,900	260	4,160	0.04	0.90	0.20	7.70	8.84
		4	3.25	130.0	0.8	130.8	ND	0.002	ND	0.003	0.00
	AH-7	0-0.5	6.61	4,000	14	4,014	0.01	1.40	0.44	3.30	5.15
		2	3.65	360.0	4.8	364.8	ND	0.004	ND	0.03	0.03
	AH-8	0-0.5	1.37	3,200	0.4	3,200	ND	0.003	0.003	0.02	0.02
		2	3.39	14	ND	14	ND	ND	ND	ND	ND
	BS 9	3.0	10.20	ND	ND	ND	ND	ND	ND	ND	ND

TPH_{GRO} =Gasoline range petroleum hydrocarbons
TPH_{DRO} =Diesel range petroleum hydrocarbons
ft = Feet
% = Percent
mg/Kg = Milligrams per kilogram
mg/L = Milligrams per liter
Blank cells = No data
ND = Analyte not detected at or above the laboratory detection limits

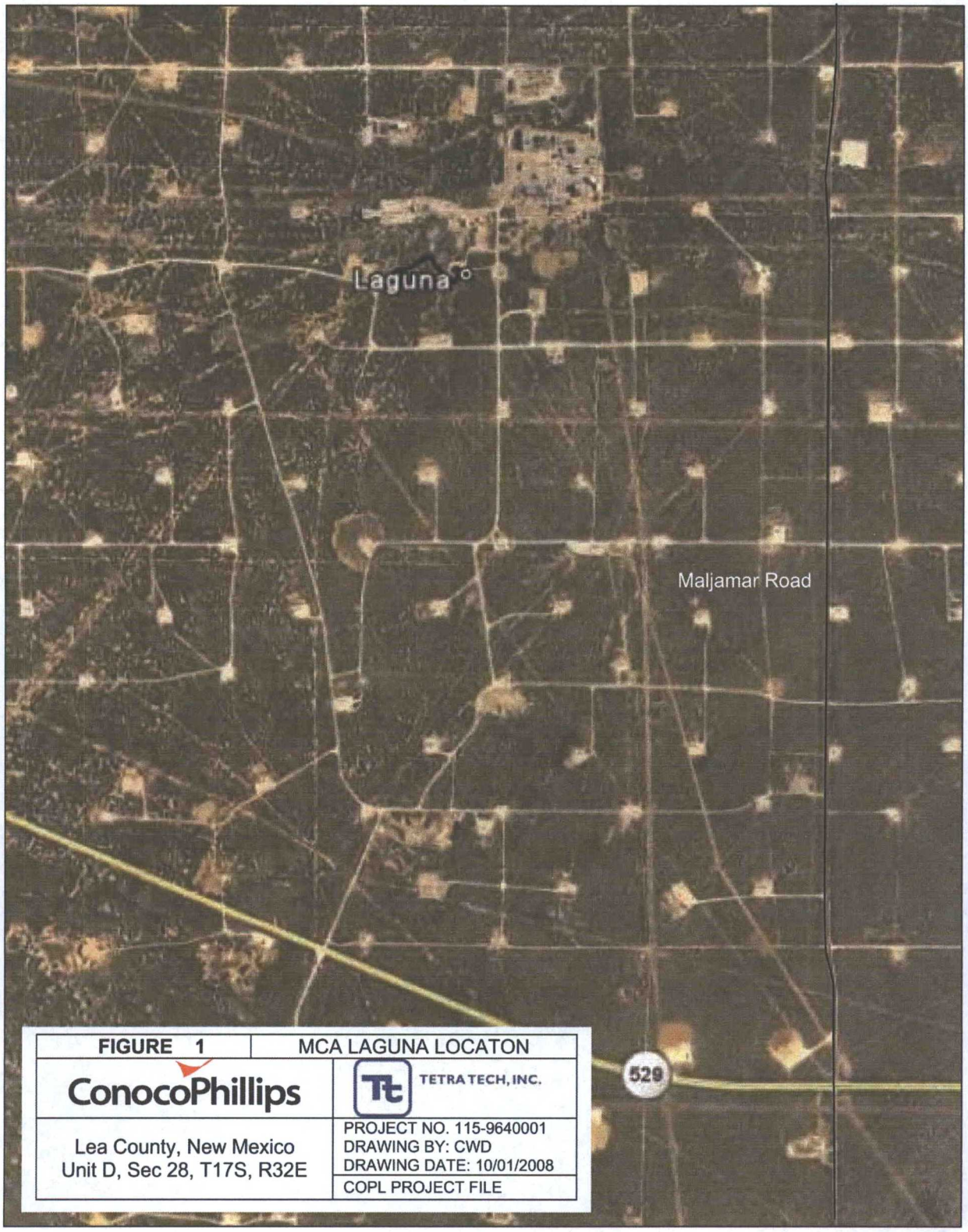

FIGURE 1	MCA LAGUNA LOCATON
ConocoPhillips	TETRA TECH, INC.
Lea County, New Mexico Unit D, Sec 28, T17S, R32E	PROJECT NO. 115-9640001 DRAWING BY: CWD DRAWING DATE: 10/01/2008
	COPL PROJECT FILE

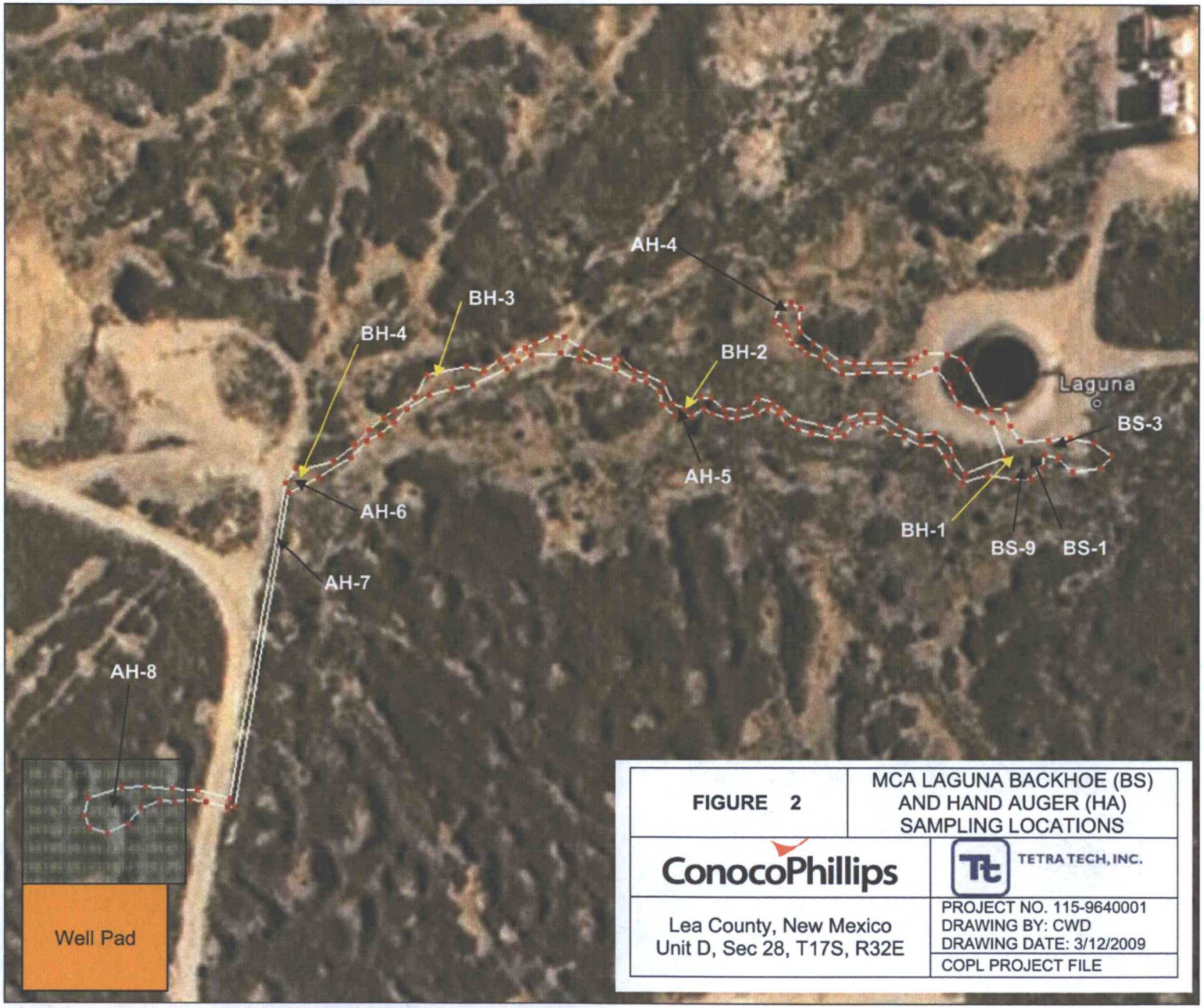

FIGURE 2	MCA LAGUNA BACKHOE (BS) AND HAND AUGER (HA) SAMPLING LOCATIONS
ConocoPhillips	TETRA TECH, INC.
Lea County, New Mexico Unit D, Sec 28, T17S, R32E	PROJECT NO. 115-9640001 DRAWING BY: CWD DRAWING DATE: 3/12/2009 COPL PROJECT FILE

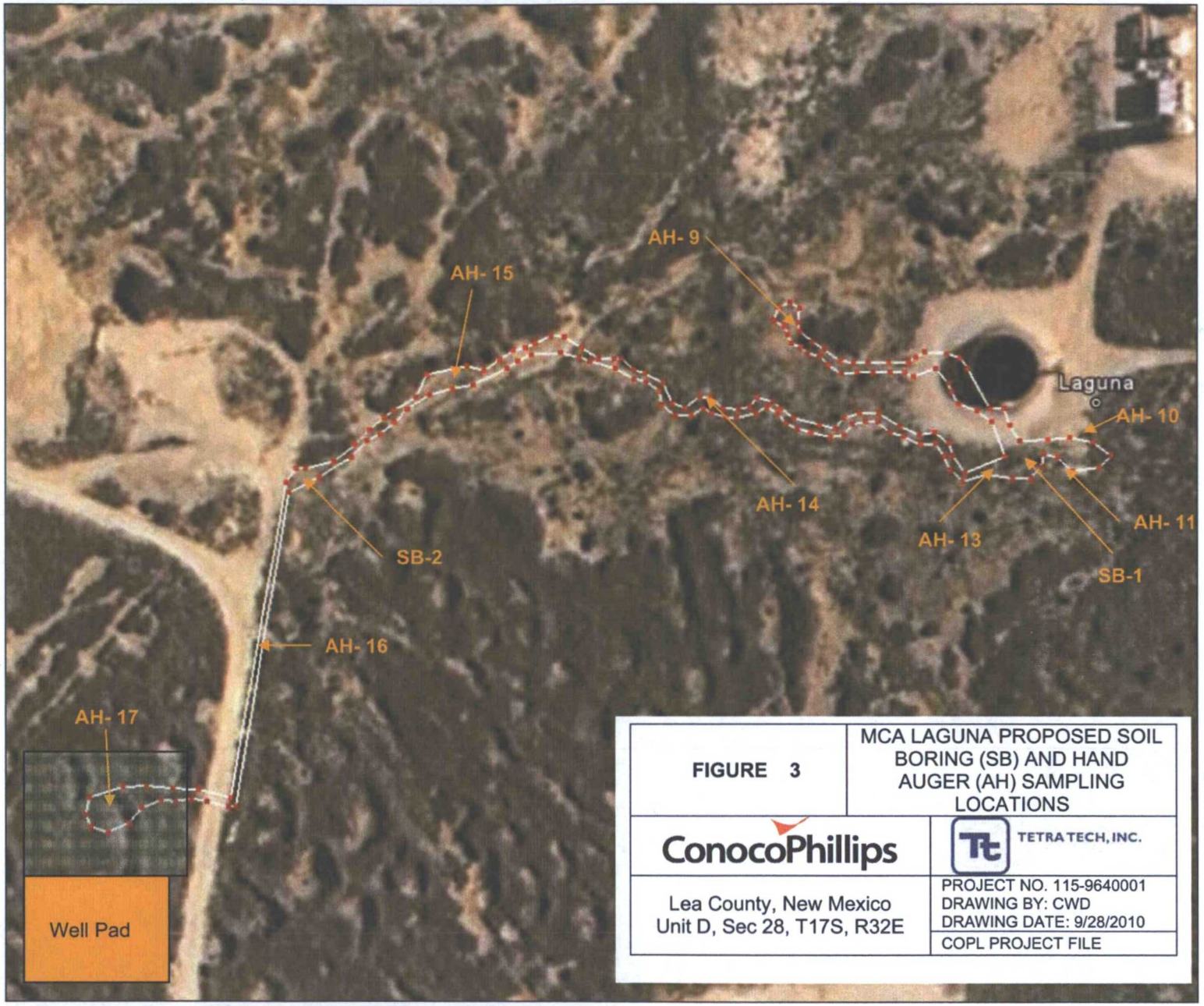

FIGURE 3	MCA LAGUNA PROPOSED SOIL BORING (SB) AND HAND AUGER (AH) SAMPLING LOCATIONS
ConocoPhillips	TETRA TECH, INC.
Lea County, New Mexico Unit D, Sec 28, T17S, R32E	PROJECT NO. 115-9640001 DRAWING BY: CWD DRAWING DATE: 9/28/2010
	COPL PROJECT FILE

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

RECEIVED
OCT 29 2008
HOBBS OCD

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 **ConocoPhillips Company**	Contact **John W. Gates**
Address **3300 North A St. Bldg 6, Midland, TX 79705-5406**	Telephone No. **505.391.3158**
Facility Name **MCA Station 2 Laguna**	Facility Type **Oil and Gas**

Surface Owner **BLM**	Mineral Owner **BLM**	Lease No API 300250073400

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	**21**	**17S**	**R32E**					**Lea**

Latitude N 32degrees 48.680 Longitude W 103degrees 46.484

NATURE OF RELEASE

Type of Release **Crude Oil**	Volume of Release **422bbl (422oil, 0water)**	Volume Recovered **(332oil, 0water)**
Source of Release **Tank**	Date and Hour of Occurrence **10-24-08 0330**	Date and Hour of Discovery **10-24-08 0630**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Geoffrey Leking NMOCD & Trishia Bad Bear BLM**	
By Whom?	Date and Hour **10-24-08 1600 hours**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Release was due to pump malfunction. Production was blocked. Tank was isolated and shut in.

Describe Area Affected and Cleanup Action Taken.*
Affected area was 2,800 feet long X 8 feet wide X 4 inches deep area of dry pasture land with no cattle present and a 70 feet long X 70 feet wide X 1/2" deep area of caliche pad and road. Spill site will be delineated and remediated in accordance with NMOCD and BLM guidelines Well number API 300250073400 is the closest well to the release site.

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: John W. Gates	OIL CONSERVATION DIVISION	
Printed Name: **John W. Gates**	Approved by District Supervisor: ENVIRONMENTAL ENGINEER	
Title: **HSER Lead**	Approval Date: 10.29.08	Expiration Date: 12.29.08
E-mail Address: **John.W.Gates@conocophillips.com**	Conditions of Approval:	Attached ☐ IRP-1991
Date: **10-25-08** Phone: **505.391.3158**		

- Attach Additional Sheets If Necessary

Leking, Geoffrey R, EMNRD

From: Wright, Justin (PAC) [Justin.Wright@contractor.conocophillips.com]
Sent: Thursday, August 26, 2010 2:25 PM
To: Leking, Geoffrey R, EMNRD; tbadbear@blm.gov
Cc: Deen, Larry E.; Gates, John W
Subject: FW: MCA 2A Header - Boring Data 1RP 2300
Attachments: 20100825.Xenco.Rpt_WO_384302_ver_1_000.pdf; C141.1RP2300.pdf

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From: Durrett, Charles [mailto:Charles.Durrett@tetratech.com]
Sent: Thursday, August 26, 2010 2:45 PM
To: Wright, Justin (PAC)
Cc: Gates, John W; Miller, Gary
Subject: MCA 2A Header - Boring Data 1RP 2300

Tetra Tech returned to the Site August 25, 2010 to re-bore location SB-4. Chloride data are presented below:

TRY TO MAKE CALL

Depth (ft)	Chloride (mg/Kg)
20	1,300
25	298
30	156
35	317
40	93.1
45	256

ft = Feet
mg/Kg = Milligrams per Kilogram

Laboratory report is attached. Reddish sand / gray clay stringers were observed around 30 then again around 40 feet below ground surface.

Charlie

Charles Durrett | Project Manager II
1910 N. Big Spring Midland, TX 79705
Main: 432.686.8081 | Fax: 432.682.3946
charles.durrett@tetratech.com