

WATER CONTAMINATION

Price, Wayne

From: Price, Wayne
Sent: Friday, July 21, 2000 3:40 PM
To: Williams, Chris
Cc: Williams, Donna; Anderson, Roger; Olson, William
Subject: Conoco MCA unit Area Sensitivity Study for the Querecho Plains

This morning John Skopak of Conoco Inc. called to report that the recent monitor well drilled (inwhich water was encountered at 93 feet) in the MCA UNIT Maljamar Gas plant area has groundwater contamination. Preliminary results indicate high levels of benzene 1.8 mg/l. .

This morning a meeting was also held with Neal Goates of Conoco. Mr. Goates has withdrawn Conoco's request for OCD to classify the MCA unit area as a non-sensitive or non-vulnerable area. Mr. Goates indicated that Conoco will investigate and remediate contamination pursuant to OCD District requirements.

OCD FIELD TRIP- WAYNE PRICE MAY 9, 2000 4-5 PM
CONOCO MCA UNIT PRODUCTION AREA



Surveyed area for surface water, found MCA Playa Lake, located approximately in middle of MCA Unit and about 1 mile east-south-east of Conoco Maljamar Gas Plant.



Area Sensitivity Study for the Querecho Plains

Area Description

Immediately southwest and south of Mescarlero Ridge is a vast and dune area covering approximately 400 square miles. The western portion of this sand area, called Querecho Plains extends westward from the scarp to Nimeim Ridge, about 6 miles west of the Lea-Eddy County line. The continuation of this sandy area eastward is known as Laguna Valley. Querecho Plains is covered almost entirely by dune sand which is stable or semi-stable over most of the area, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of playas outlined in the topographic map (attachment 1). The sand forms topographic highs where it is underlain by a caliche surface. The thickness of the sand is predicted by New Mexico Bureau of Mines and Mineral Resources to be 20 feet. There are no playa lakes or water bearing formations known within 1 or generally 4 miles of Conoco's operations in T17S R32 E.

Reference to this summary can be found in Groundwater Report 6, **"Geology and Ground-Water Conditions in Southern Lea County, New Mexico"** State Bureau of Mines and Mineral Resources New Mexico Institute of Mining & Technology Campus Station Socorro, New Mexico

Precipitation/Evaporation Index (PEI)

Average annual rainfall is 12" for the study area (reference attachment 1-6). Average annual evaporation is 105" leaving a total deficit of 93" of water per year (reference attachment 1-10). A high negative PEI, indicative of much greater evaporation compared to precipitation, eliminates some remediation alternatives at the surface unless supplemental water is supplied. With that in mind, the residual liquid retained in the soil will continue to travel upward by capillary action during evaporative periods. In semiarid to arid areas (highly negative PEI), the salt must typically migrate to greater than 5 ft in depth to prevent capillary action from bringing it back to the root zone.

Reference to this summary can be found in, **"Remediation of Salt-Affected Soils at Oil and Gas Production Facilities"** API STEP Health and Environmental Sciences Department Publication # 4663 October, 1997

Groundwater Depth Sensitivity

Based on API STEPS manual entitled Salt Affected Soils at Oil and Gas Facilities, the critical distance to groundwater to consider for remedating soils in place would be that depths to seasonal high water table (groundwater or perched) is less than 6 feet. The reference is describing the extent when the salt has reached equilibrium after a spill. Burial techniques are described as; "Design of the burial activity begins by determining the volume of salt-affected soil, which must be buried. An ideal burial vault location is one where the bottom is at least 5 ft above the seasonal high water table, and the top of the salt-affected soil is at least 6 ft below the surrounding soil surface."

Reference to this summary can be found in, **"Remediation of Salt-Affected Soils at Oil and Gas Production Facilities"** API STEP Health and Environmental Sciences Department Publication # 4663 October, 1997

Risk Reduction Analysis

Please refer to attachment entitled, **"Conoco Monument Tank Battery Spill Assessment"** dated October, 1997. The attached reference includes an oil spill phase II assessment performed by Philip Services and a risk reduction analysis completed by Steve Danbom Ph.D Sr. Consultant for Conoco of the site using an appropriate risking tool entitled RISC. The soil conditions are very similar to those in Maljamar. The spill was merchantable oil in storage with a spill volume of 322 bbls and recovering only 50 bbls. Notice that even after losing 272 barrells of oil in very sandy soil, with a head pressure, the penetration rate was just 30 feet. In conclusion, the associated carcinogenic risk for soil ingestion, dermal contact, and outdoor air was 5×10^{-8} , 2×10^{-7} , and 1×10^{-7} respectively. The New Mexico guidelines for associated risk evaluation is 1×10^{-5} . In addition, the Hazard Index indicates for each respective route calculated a HI of less than 1 (HI less than one is acceptable risk for risk reduction analysis for any State). The only scenario that exceeded the threshold would be to use a conservative box model for a basement home. The basement home was unrealistic for the conditions of any Conoco sites in Lea County but was chosen for illustration that there are conditions that will limit the residual of hydrocarbon in soil.

Conclusion

Industry related technical references indicates that **groundwater depth sensitivity** specific to acute salt water spills would be those waters less than 10' from surface or from the static location of a salt spill. Understanding the nature of historic operations one can assume that possibly more than one spill has occurred previous to a new spill. But conservatively speaking waters that are greater than 50' from surface would likely not be impacted by surface spills where surveillance is maintained daily. According to public technical references, Conoco's MCA Unit and associated surface/subsurface soils are not vulnerable pathways for neighboring receptors, surface waters, perched waters, or aquifer waters. Therefore the production area should be classified as non-sensitive or non-vulnerable by NMOCD classification system.

**RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.**

2900 N. Big Spring, Midland, Texas 79705

Bus: (915) 682-7404 • (915) 570-REGS • Metro: (915) 570-6007 • Fax: (915) 682-7440

December 15, 1999

RETURN RECEIPT REQUESTED

Z 137 416 139

Ms. Donna Williams
Environmental Engineer Specialist
NMOCD, District 1
P.O. Box 1980
Hobbs, NM 88241

Re: Conoco, Inc. Lease #6987018
170-Barrel Salt Water Spill
Location: MCA Field, MCA Transfer Line

Dear Ms. Williams:

Ritter Environmental is currently acting as an agent on behalf of Conoco, Inc. (Conoco) in the matter of spills and accidental releases of crude oil and produced water. In the past, Conoco has been allowed by the NMOCD to cultivate the soil and add an amendment (Gypsum) to the soil in order to properly remediate or manage the salt from brine water. This method is an industry accepted standard and is applied throughout the oil and gas industry as well as other industries as an effective means of salt damage soil remediation and management. In fact, this methodology is one of, if not the best available technologies (BAT), available for remediation of the types of spills represented by the above referenced spill.

Conoco recognizes that the NMOCD does not currently have written guidelines or rules that specifically address the methods to be utilized to address produced salt water or brine spills. The current NMOCD "Guidelines for the Remediation of Leaks, Spills and Releases-1995" does not specify the methods for remediation of salt-water spills.

Conoco thus proposes the use of amendments such as Gypsum on the above referenced spill. Conoco proposes that the area be disked or cultivated and the amendment be added to the soil prior to the disturbance of the affected area.

As always, Conoco remains concerned and committed to the proper management of the land, subsurface and environmental quality of the areas in which it works.

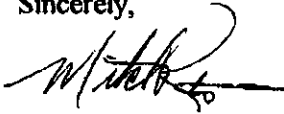
Ms. Donna Williams

December 15, 1999

Page 2

Thank you for your considerations in this matter. Should you have any questions or require additional information, please contact either myself at 915/682-7404 or Mr. Neal Goates with Conoco at 915/686-5550.

Sincerely,



Mitchell Ritter

MRR/br

**NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT**

OIL CONSERVATION DIVISION
DISTRICT I HOBBES
PO BOX 1988, Hobbs, NM 88241
(505) 393-6161
FAX (505) 393-6720

Jennifer A. Salisbury
CABINET SECRETARY

November 17, 1999

Conoco, Inc.
Attn: Betsy Ritter
10 Desta Drive
Suite 100W
Midland, Tx. 79705

Re: C-141: Submitted on September 24, 1999
UL D-Sec 28-Ts17S-R32E

Dear Mrs. Ritter:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of the C-141 referenced above that was submitted by Conoco. Enclosed within this packet is a copy of the C-141, and a copy of the leaks and spills guidelines. Please submit to NMOCD a corrective action plan and/or a remediation plan (using the guidelines to assist you in this matter) within 15 days from receipt of this letter. Please include Chlorides in the sampling activities. If you have any further questions, or need any assistance please do not hesitate to write or call me at (505)393-6161 ext...113.

Sincerely,

Donna Williams

Donna Williams
Environmental Engineer Specialist
cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor

12-2-99
*visited
w/ Betsy
will send
info. by 12-20-99

District 1 (505) 393-6161
1625 N. French Drive
Hobbs, NM 88241-1980
District 2 (505) 748-1283
811 South First
Artesia, NM 88210
District 3 (505) 334-6178
1000 N. Brazos Road
Aztec, NM 87410
District 4 (505) 827-7131

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

Form C-141
Originated 2/13/97

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 Conoco, Inc.	Contact Steve Wilson
Address 10 Desta Drive, Suite 100W, Midland, TX 79705	Telephone No (915) 686-5579
Facility Name Maljamar	Facility Type Injection Well

Surface Owner Caswell	Mineral Owner BLM	Lease No. 6987018
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LOCATION OF RELEASE/

Unit Letter D	Section 28	Township T17S	Range R32E	Feet from the 660	North/South Line North	Feet from the 660	East/West Line West	County Lea
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NATURE OF RELEASE

Type of Release Salt Water	Volume of Release 170 bbl	Volume Recovered 170 bbl
Source of Release Four inch fiberglass buried line.	Date and Hour of Occurrence	Date and Hour of Discovery 09/20/99 at 8:00 am
Was immediate notice given? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not Required	If YES, to whom? Silva Dicky	
By whom? Steven W. Cross	Date and Hour 09/21/99 at 1:35 pm	
Was a watercourse reached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	If YES, volume impacting the watercourse	
If a watercourse was impacted, describe fully. (Attach additional sheets if necessary).		
Describe cause of problem and remedial action taken. (Attach additional sheets if necessary). Cracked fiberglass line appeared to be from over tightening of dresser sleeve. Replaced dresser sleeve with different type.		
Describe area affected and cleanup action taken. (Attach additional sheets if necessary). Sandy bowl forty feet by forty-five feet. Picked up fluid and will remediate in place.		
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 of 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: 	OIL CONSERVATION DIVISION	
Printed Name: Betsy Ritter	Approved by District Supervisor:	
Title: Agent for Conoco	Approval Date:	Expiration Date:
Date: September 24, 1999	Phone: (915) 570-6007	Conditions of Approval: Attached <input type="checkbox"/>

1

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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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

Release Notification and Corrective Action

OPERATOR

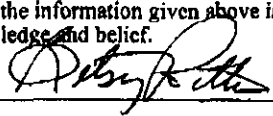
☐ Initial Report ☒ Final Report

Name: Conoco, Inc.	Contact: Steve Wilson
Address: 10 Desta Drive, Ste 100W, Midland, Texas 79705	Telephone No.: 915-686-5579
Facility Name: 100' WNW of MCA #252	Facility Type: Injection Well
Surface Owner: Caswell	Mineral Owner
Lease No.: LC057210	

LOCATION OF RELEASE

Unit Letter D	Section 28	Township 17S	Range 32E	Feet from the 1250'	North/South Line North	Feet from the 200'	East/West Line West	County Lea
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NATURE OF RELEASE

Type of Release: Salt Water	Volume of Release: 230 bbls	Volume Recovered: 205 bbls
Source of Release: Pipe (2.5 Steel, Buried)	Date and Hour of Occurrence: 12/16/99 at 10:00 AM +	Date and Hour of Discovery: 12/16/99 at 2:15 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD-Sylvia (via fax)	
By Whom? Larry Minnick	Date and Hour: 12/16/99 at 8:00 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* Internal corrosion to pipe / Replaced section of pipe with new I.P.C.		
Describe Area Affected and Cleanup Action Taken.* All drift sand - 25'x250' / Upon final drying will backdrag, cover and remediate in place		
Describe General Conditions Prevailing (Temperature, Precipitation, etc.)* Cool/Clear		
I hereby certify that the information given above is true and complete to the best of my knowledge and belief.		OIL CONSERVATION DIVISION
Signature: 	Approved by District Supervisor:	
Printed Name: Betsy Ritter	Approval Date:	Expiration Date:
Title: Consultant to Conoco, Inc.	Conditions of Approval:	
Date: 12/17/99	Phone: 915-682-7404	Attached <input type="checkbox"/>

* Attach Additional Sheets If Necessary

aw

STATE OF NEW MEXICO

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
BILL OLSON	DONNA WILLIAMS
FAX NUMBER:	DATE:
827-8177	12-29-99
COMPANY:	TOTAL NO. OF PAGES INCLUDING COVER:
OCD-ENVIRONMENTAL BUREAU	6
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
RE:	YOUR REFERENCE NUMBER:
CONOCO	505-393-6161 EXT...113

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT

☐ PLEASE REPLY

☐ PLEASE RECYCLE

NOTES/COMMENTS:

Bill,

This letter sounds a lot like the letter we recently had received from Texaco; may not be any link.? Nevertheless, here is a copy of the correspondence between us. And you have a copy of my response the letter was sent by email.

IF YOU HAVE ANY QUESTIONS PLEASE DON'T HESITATE TO CALL (505)- 393-6161 EXT...113

DONNA WILLIAMS