2R - 58

REPORTS
DATE:

OCT 2006

ENVIRONMENTAL PLUS, INC.
CONSULTING AND REMEDIAL CONSTRUCTION

October 12, 2006

Mr. Gerry Guye, Deputy Field Inspector
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division Environmental Bureau
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: C-144 – Alternative Closure Proposal
Chevron USA (O-Grid #4323)
Pure Resources (O-Grid #150628) Catclaw Draw Unit #21 (Ref. #200078)
UL-C, Section 14, Township 21 South, Range 25 East, Eddy County, New Mexico
Latitude: N 32°29'05.59" and Longitude: W 104°22'08.83"

Dear Mr. Guye:

Environmental Plus, Inc. (EPI), on behalf of Chevron USA (Chevron) (Pure Resources) submits the enclosed New Mexico Oil Conservation Division (NMOCD) form C-144 and supporting information proposing an alternative closure at this site. The alternative closure proposes encapsulating the intact pit in place even though the bottom of the pit will be less than 50-feet from the groundwater, (i.e., the bottom of the existing pit is approximately 48-feet from the groundwater interface).

BACKGROUND
Initially, Chevron proposed closing the drill pit via encapsulation in accordance with the NMOCD Pit and Below-Grade Tank Guidelines, November 1, 2004 and the "ChevronTexaco Drilling and Reserve Pit Closure General Plan, December 2004" and was based on the following discussion and rationale.

The Chevron groundwater contour map indicates the groundwater underlying the Catclaw Draw #21 drill pit to be less than 50-feet bgs, however, after review of available water level information from the USGS and the New Mexico Office of the State Engineer (reference *Table 1*), the depth to groundwater at the site is calculated to be approximately 56-feet bgs and was derived as follows. The nearest water well to the Catclaw Draw #21 well site is down-gradient approximately 1,400-feet to the north northeast and has a 1992 USGS water level measurement of 34-feet below ground surface (bgs). On July 28, 2006, the groundwater level in this well was measured to be 35.0-feet bgs. The surface elevation of the windmill, as extrapolated from the USGS topographical map, is approximately 3,278-feet amsl. The calculated groundwater table elevation is 3,244-feet amsl, (i.e., 3,278 – 34 = 3,244). The surface elevation at the Catclaw Draw #21 well site, as extrapolated from the USGS topographical map, is 3,300-feet amsl. Reasonably assuming that the groundwater

P.O. BOX 1558 ••• 2100 AVENUE O ••• EUNICE, NEW MEXICO 88231
TELEPHONE 505•394•3481 FAX 505•394•2601

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table elevation under the well site is also 3,244-feet amsl, the calculated depth to groundwater is 56-feet amsl.

Mr. Van Barton, Compliance Officer, NMOCD Artesia Field Office, said that he would grant approval of the encapsulation proposal if the bottom of the pit was greater than 50-feet from groundwater. However, because the pit is approximately 8-feet deep and the groundwater is approximately 56-feet below the land surface where the drill pit was constructed, the bottom of the encapsulated pit is only 48-feet from the groundwater, negating local NMOCD approval. Mr. Barton said that encapsulation proposals of pits less than 50-feet from groundwater could be submitted to the Santa Fe office of the NMOCD for consideration and approved, if deemed technically acceptable. Mr. Wayne Price, NMOCD Santa Fe office, said that he could possibly approve the alternative closure proposal if the pit liner was intact and fluids had not been released from the pit, as evidenced by analysis of soil samples collected from perimeter locations adjacent to the pit at 4-feet to 8-feet bgs. Subsequently, on July 28, 2006, after timely notification of the Artesia and Santa Fe NMOCD offices, samples of the soil from the perimeter locations adjacent to the pit were collected and submitted to the laboratory for analysis. The laboratory reports are attached and the results summarized in *Table 2*.

PIT PERIMETER SAMPLES ANALYTICAL RESULTS

According to the analytical results, benzene, toluene, ethylbenzene and total xylenes (BTEX) and total petroleum hydrocarbon (TPH) are not an issue inside or outside the pit. Chloride results from analysis of the east perimeter, west perimeter and the north perimeter soil samples collected from 6-feet to 8-feet bgs were less than 250 mg/Kg. The chloride concentration in the south perimeter sample collected from 6-feet to 8-feet bgs beneath the caliche well pad was 864 mg/Kg and probably resulted from well pad activities rather than being from the pit. It can be concluded from the analytical results from the perimeter samples that the pit did not over-flow.

NORTH PIT SAMPLE ANALYTICAL RESULTS

A soil sample was collected from an unlined but fenced surface depression north of the lined drill pit to delineate/verify possible drilling fluid impact. Total petroleum hydrocarbon and benzene, toluene, ethylbenzene and total xylenes (BTEX) were not detected above the respective method detection limits. The chloride concentration was 1,280 mg/Kg. Given that the chloride concentration of the stiffened pit contents is 42,000 mg/Kg, it is not reasonable to conclude that the chloride residual in the north pit emanated from the drill pit, but will require remediation.

ALTERNATIVE CLOSURE PROPOSAL REQUEST

Given that the pit liner is intact and the laboratory results from analysis of the soil samples collected from locations adjacent to the perimeter of the pit support the conclusion that the pit did not over-flow into the surrounding environment, it is proposed that a geotextile cushion be installed in the west part of the lined pit to ensure the integrity of the under liner, that the stiffened pit contents be evenly distributed over the pit and that a 20-mil reinforced polyethylene liner, cushioned above and below with geotextile, be installed over the stiffened pit contents. The pit will then be brought to grade with local soil/rock and the surface reseeded with the desires of the landowner. It is furthermore proposed that the impacted soils in the north pit be placed in the pit and encapsulated along with the drill pit contents and the excavated are tested to

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verify achievement of the NMOCD remedial goals. A final C-144 and supporting documentation will be submitted to the NMOCD upon completion of the project.

This proposal will be implemented upon approval by the NMOCD and consensus with the New Mexico State Land Office.

Please direct all official communications to:

Chevron USA
Jim Duke, Construction Representative
PO Box 1949
Eunice, New Mexico 88231
Telephone: 505.394.1237
Email: LDuk@chevron.com

Should you have any questions or concerns, please call Iain Olness or myself at (505) 394-3481. Jim Duke can be contacted at (505) 394-1237 or via e-mail at LDuk@chevron.com.

Sincerely,

ENVIRONMENTAL PLUS, INC.

Pat McCasland
Environmental Consultant

cc: Wayne Price, NMOCD Santa Fe
Jim Duke, Chevron USA
Wayne Minchew, Chevron USA
Thaddeus Kostrubala, State of New Mexico
file

Enclosures: Topographical Map
Site Location Map
Site Map
Groundwater Map
Well Data - Table 1
Analytical Results Summary - Table 2
Photographs
NMOCD Form C-144

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Figure 1 Area Map Pure Resources Catclaw Draw Unit #21	Eddy County, New Mexico NE 1/4 of the NW 1/4, Sec. 14, T21S, R25E N 32° 29' 05.59" W 104° 22' 08.83" Elevation: 3,297 feet amsl	DWG By: Daniel Dominguez March 2006	REVISED: SHEET 1 of 1

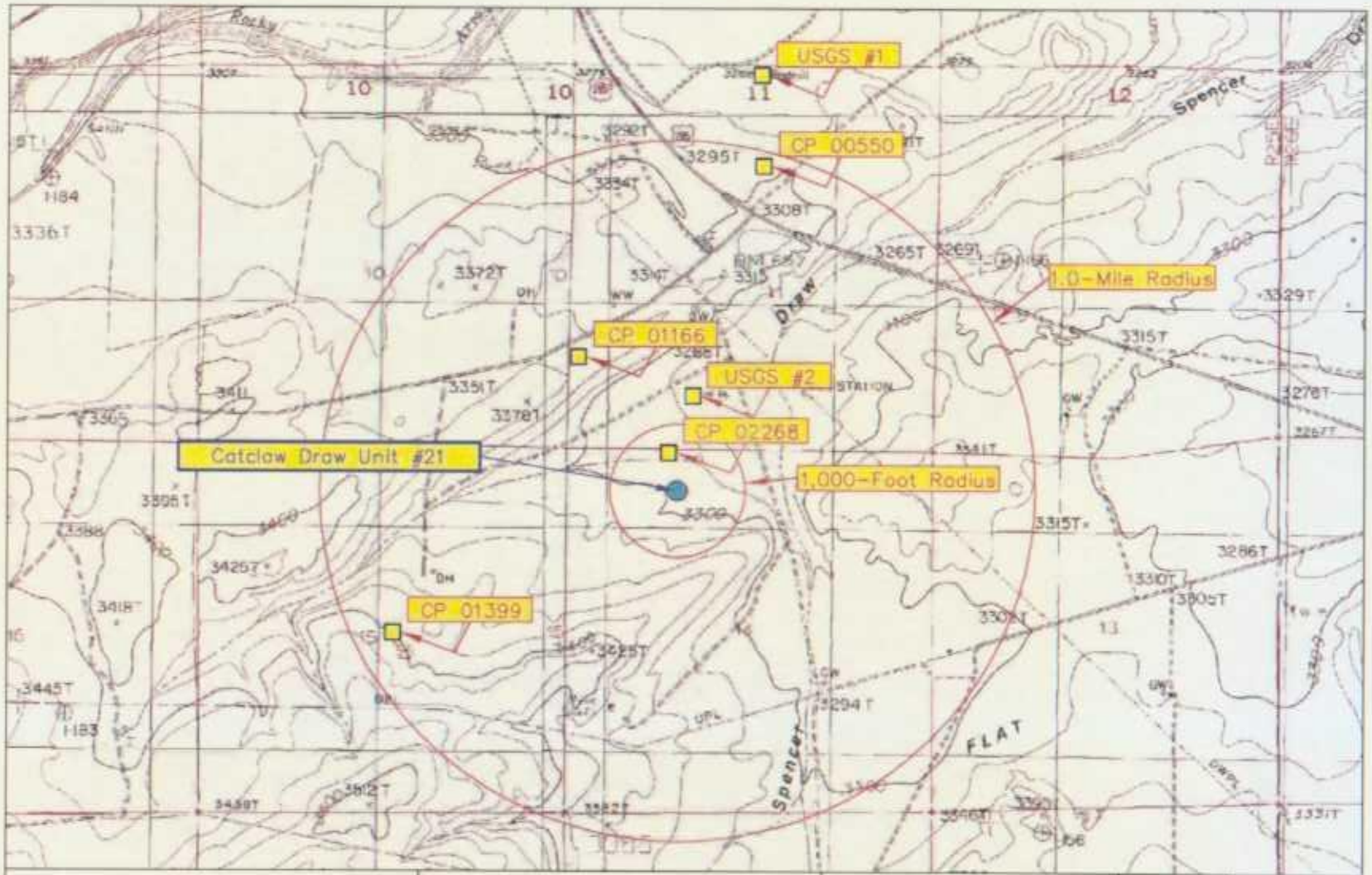
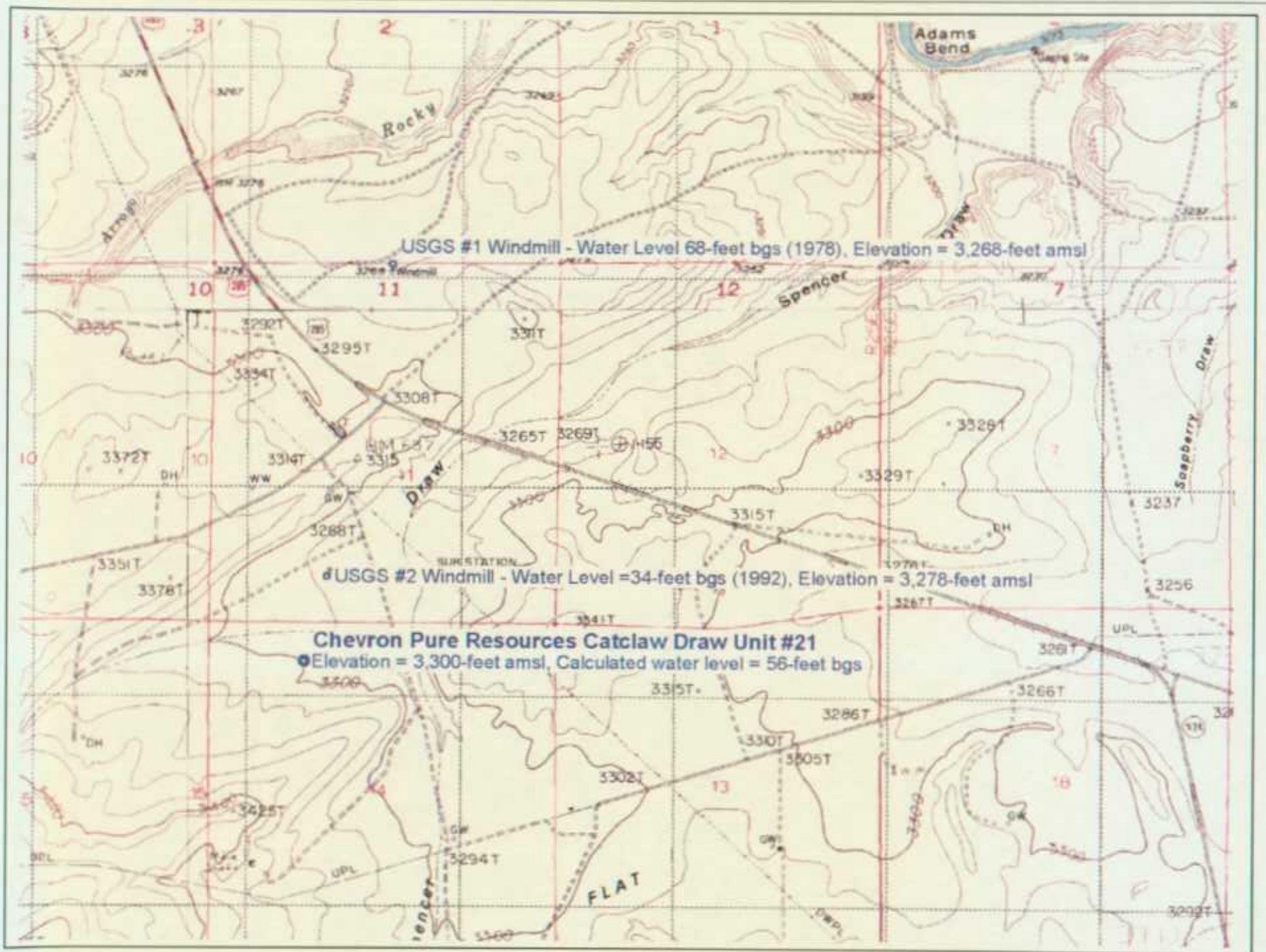


Figure 2 Site Location Map Pure Resources Catclaw Draw Unit #21	Eddy County, New Mexico NE 1/4 of the NW 1/4, Sec. 14, T21S, R25E N 32° 29' 05.59" W 104° 22' 08.83" Elevation: 3,297 feet amsl	DWG By: Daniel Dominguez March 2006 0 2000 4000 Feet	REVISED: SHEET 1 of 1


USGS #1 Windmill - Water Level 68-feet bgs (1978), Elevation = 3,268-feet amsl
USGS #2 Windmill - Water Level =34-feet bgs (1992), Elevation = 3,278-feet amsl
Chevron Pure Resources Catclaw Draw Unit #21
Elevation = 3,300-feet amsl, Calculated water level = 56-feet bgs
Adams Bend
Rocky
Spencer
Draw
Soapberry
FLAT
SUBSTATION

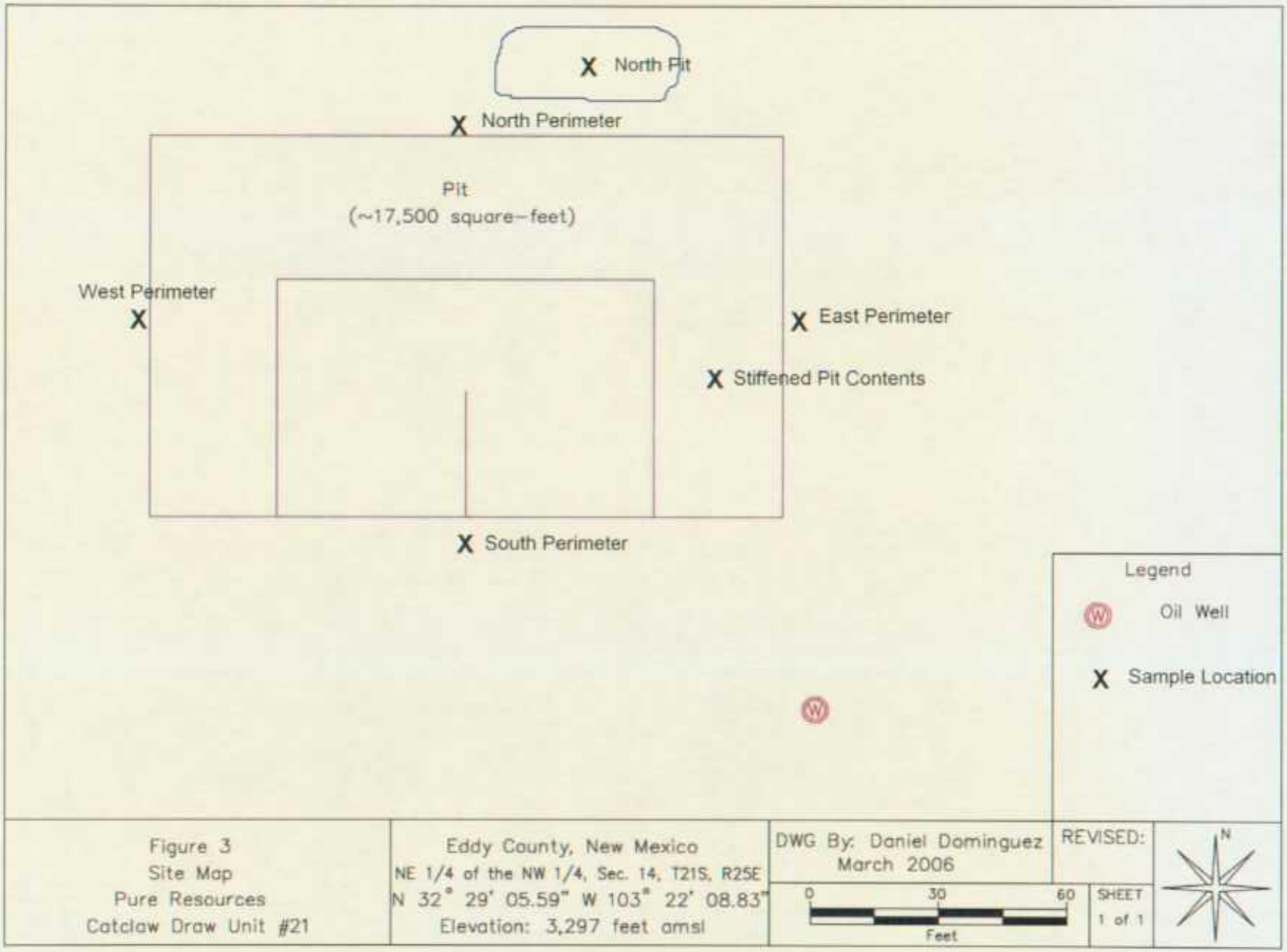


Figure 3 Site Map Pure Resources Catclaw Draw Unit #21	Eddy County, New Mexico NE 1/4 of the NW 1/4, Sec. 14, T21S, R25E N 32° 29' 05.59" W 103° 22' 08.83" Elevation: 3,297 feet amsl	DWG By: Daniel Dominguez March 2006	REVISED:	SHEET 1 of 1

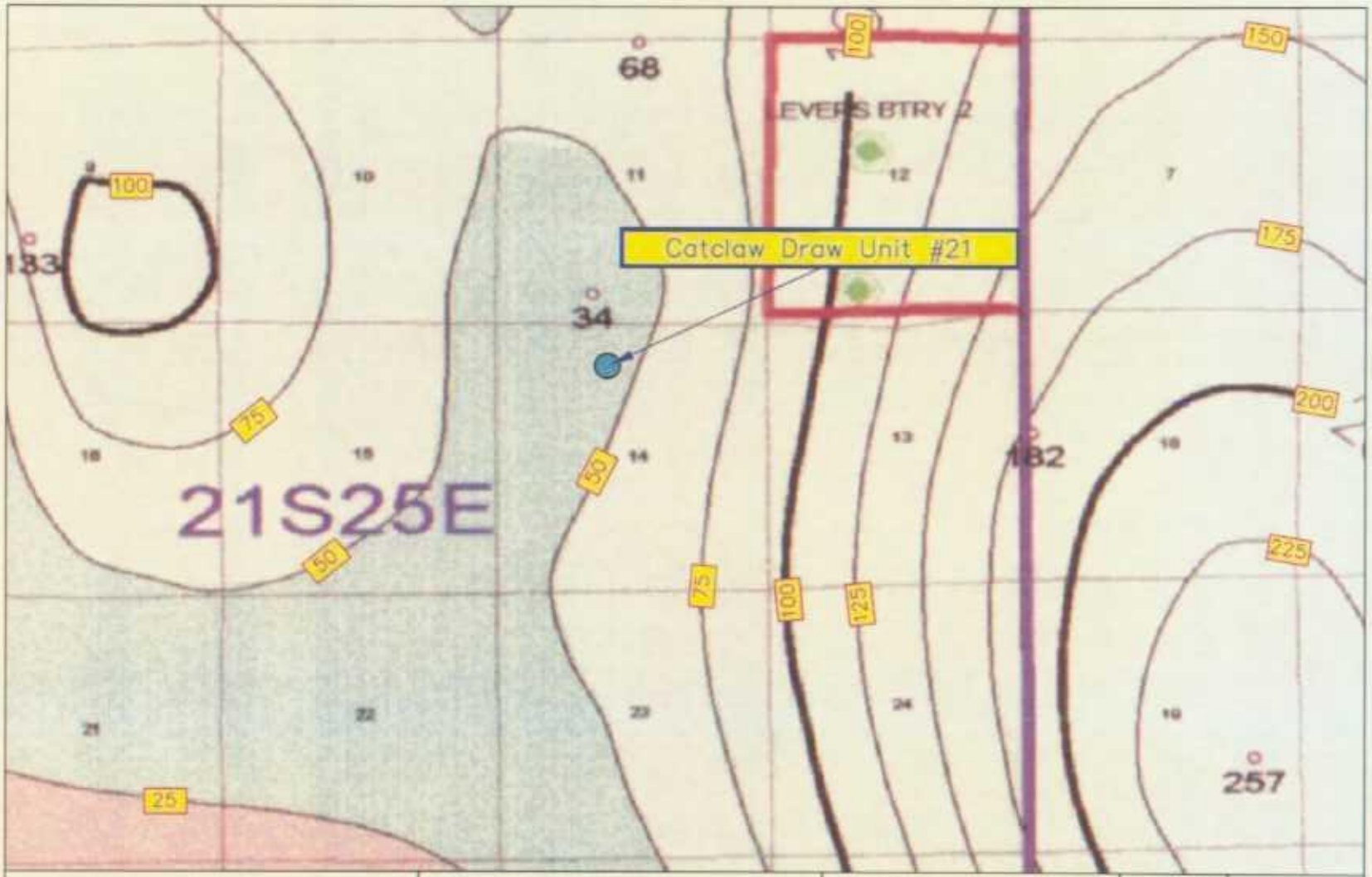


Figure 4 Groundwater Map Pure Resources Catclaw Draw Unit #21	Eddy County, New Mexico NE 1/4 of the NW 1/4, Sec. 14, T21S, R25E N 32° 29' 05.59" W 104° 22' 08.83" Elevation: 3,297 feet amsl	DWG By: Daniel Dominguez March 2006 REVISED:	SHEET 1 of 1

TABLE 1

WELL INFORMATION REPORT*

Pure Resources Catclaw Draw Unit #21 - Ref #200078

Well Number	Diversion[A]	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation[B]	Depth to Water (ft bgs)
C 00550	3	WILL TRUITT	STK	21S	25E	11 2 1 1	N32° 29' 53.01"	W104° 21' 54.62"	12-Apr-56	3,294	
C 01166	3	WILMA D. TRUITT	PRO	21S	25E	11 3 1	N32° 29' 25.22"	W104° 22' 25.95"		3,360	
C 02268[C]	0	WILMA D. TRUITT	STK	21S	25E	11 3 4 1	N32° 29' 11.43"	W104° 22' 10.66"	31-Dec-41	3,282	25
C 01399	3	MORAN OIL P.& D. CORP.	PRO	21S	25E	15 2 3 3	N32° 28' 45.23"	W104° 22' 57.13"		3,404	
USGS #1				21S	25E	11 2 1 1			12-Jan-78	3,268	67.99
USGS #2				21S	25E	11 3 4 3			20-Nov-92	3,278	34.09
C 01451	3	WATTS LAND & CATTLE	STK	21S	25E	22 3 3	N32° 27' 26.37"	W104° 23' 28.16"	06-Jun-71	3,404	260

* = Data obtained from the New Mexico Office of the State Engineer Website (http://iwaters.ose.state.nm.us:7001/iWATERS/wr_RegisServlet1) and USGS Database.
[A] = in acre feet per annum
[B] = Interpolated from USGS Topographical Map
[C] = Wells C-02268 and USGS #1 are probably the same well. Well C-02268 could not be located in the field.
STK = 72-12-1 Livestock watering
PRO = 72-12-1 Prospecting or development of natural resource
(quarters are 1=NW, 2=NE, 3=SW, 4=SE)
(quarters are biggest to smallest - X Y are in Feet - UTM are in Meters)
Shaded area indicates wells not shown on Figure 2

TABLE 2
Chevron USA
Catclaw Draw #21 Pit Analytical Results Summary

Sample Location	Sampling Interval (FT. BGS[1])	SAMPLE ID#	Date	Lithology	Status	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtylbenzene mg/Kg
East Perimeter	6-8	East Perimeter	7/28/2006	Caliche	in-situ	<10.0	<10.0	<10.0	<0.015	<0.005	<0.005	<0.005
West Perimeter	6-8	West Perimeter	7/28/2006	Caliche/Rock	in-situ	<10.0	<10.0	<10.0	<0.015	<0.005	<0.005	<0.005
South Perimeter	6-8	South Perimeter	7/28/2006	Caliche	in-situ	<10.0	<10.0	<10.0	<0.015	<0.005	<0.005	<0.005
North Perimeter	6-8	North Perimeter	7/28/2006	Caliche/Rock	in-situ	<10.0	<10.0	<10.0	0.010	<0.005	0.010	<0.005
Stiffened Pit Contents	4	Stiffened Pit Contents	7/28/2006	Sand	in-situ	<10.0	583	583	0.007	<0.005	0.007	<0.005
North Pit	0-1	North Pit	7/28/2006	Clayey Sand	in-situ	<10.0	<10.0	<10.0	<0.015	<0.005	<0.005	<0.005
New Mexico Oil Conservation Division Remedial Goals								1,000	50	*10*		

[2]VOC–Volatile Organic Contaminants/Constituents

[3]GRO-Gasoline Range Organics C_6-C_{10}

[4]DRO-Diesel Range Organics C_{10}-C_{28}

[5]TPH-Total Petroleum Hydrocarbon = GRO+DRO.

[6]Bolded values are in excess of the New Mexico Oil Conservation Division guideline threshold for the parameter

[7]Italicized values are < the instrument detection limit.

[8]na - Not Analyzed (--) indicates the sample was not collected due to refusal.

Reported detection limits are considered "de minimus" values and are included in the GRO/DRO and BTEX summations.

WQCC - (New Mexico Water Quality Control Commission) Chloride residuals cannot be capable of impacting local groundwater in excess of the 250 mg/L WQCC standard.

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 07/28/06
Reporting Date: 08/01/06
Project Owner: CHEVRON TEXACO (#200078)
Project Name: CATCLAW DRAW #21 PIT
Project Location: NOT GIVEN

Sampling Date: 07/28/06
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		07/31/06	07/31/06	07/31/06	07/31/06
H11395-1	EAST PERIMETER	<0.005	<0.005	<0.005	<0.015
H11395-2	WEST PERIMETER	<0.005	<0.005	<0.005	<0.015
H11395-3	SOUTH PERIMETER	<0.005	0.005	<0.005	<0.015
H11395-4	NORTH PERIMETER	<0.005	0.010	<0.005	<0.015
H11395-5	STIFFENED PIT CONTENTS	<0.005	0.007	<0.005	<0.015
H11395-6	NORTH PIT	<0.005	<0.005	<0.005	<0.015
Quality Control		0.100	0.105	0.106	0.299
True Value QC		0.100	0.100	0.100	0.300
% Recovery		99.6	105	106	99.7
Relative Percent Difference		<0.1	6.7	7.8	2.0

METHOD: EPA SW-846 8260

Chemist

8/1/06
Date

H11395B

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 07/28/06
Reporting Date: 08/01/06
Project Owner: CHEVRON TEXACO (#200078)
Project Name: CATCLAW DRAW #21 PIT
Project Location: NOT GIVEN

Sampling Date: 07/28/06
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AB

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		07/31/06	07/31/06	07/31/06
H11395-1	EAST PERIMETER	<10.0	<10.0	160
H11395-2	WEST PERIMETER	<10.0	<10.0	64
H11395-3	SOUTH PERIMETER	<10.0	<10.0	864
H11395-4	NORTH PERIMETER	<10.0	<10.0	62
H11395-5	STIFFENED PIT CONTENTS	<10.0	583	42000
H11395-6	NORTH PIT	<10.0	<10.0	1280
Quality Control		780	770	990
True Value QC		800	800	1000
% Recovery		97.5	96.2	99.0
Relative Percent Difference		0.9	7.2	1.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl^-: Std. Methods 4500-Cl^-B
*Analyses performed on 1:4 w:v aqueous extracts.

Burgess J. Cooke
Chemist

8/1/06
Date

H11395A

Cardinal Laboratories Inc.

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

2111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

Company Name	Environmental Plus, Inc.
EPI Project Manager	Pat McCasland
Billing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Chevron USA
Facility Name	Catclaw Draw #21 Pit
Project Reference	#200078
EPI Sampler Name	Pat McCasland

Bill To

Chevron USA
P. O. Box 1949
Eunice, NM 88231
Attention: Mr. Jim Duke

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CRUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE	PRESERV.: ICE/COOL	PRESERV.: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO_4^{-2})	pH	TCLP	OTHER >>
H11395-1 1	East Perimeter	G	2			X					X		7/28/06	10:00	X	X	X				
-2 2	West Perimeter	G	2			X					X		7/28/06	10:15	X	X	X				
-3 3	South Perimeter	G	2			X					X		7/28/06	10:30	X	X	X				
-4 4	Northt Perimeter	G	2			X					X		7/28/06	10:45	X	X	X				
-5 5	Stiffened Pit Contents	C	2			X					X		7/28/06	10:50	X	X	X				
-6 6	North Pit	G	1			X					X		7-28-06	11:00	X	X	X				
7																					
8																					
9																					
10																					

Sample Relinquished: [signature]
Relinquished by:
Delivered by:

Date 7-28-06 Time 2:20
Received By:
Date 7/28/06 Time 2:20PM
Received By: (lab staff) [signature]
Sample Cool & Intact: (Yes) No
Checked By:

Fax Results To Pat McCasland - EPI @ 505-394-2601
REMARKS: Chain of custody requested. Send original reports to Pat McCasland - EPI.

Please use at least 500 grams of sample for extraction for chloride test. water rock is present. PWM

Photograph #1- Lease sign.

Photograph #2 - Pit and berm looking southeast.

Photograph #3 - Pit and berm looking southeast.

Photograph #4 - Pit and berm looking southeast.

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-144
June 1, 2004
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: Chevron USA O-Grid #4323 (Pure Resources O-Grid #150628) Telephone: 505.394.1237 e-mail address: LDuk@chevron.com

Address: PO Box 1949 2401 Avenue O Eunice, New Mexico 88231

Facility or well name: Catclaw Draw Unit #21 API #: 30-025-33762 Unit Letter (UL): C Qtr/Qtr: NE¼ NW¼ Section: 14, T21S, R25E

County: Eddy Latitude: N 32°29'05.59" Longitude: W 104°22'08.83" NAD: 1927 ☐ 1983 ☐ WGS 84 ☒

Surface Owner: Federal ☐ State ☒ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐	Volume: bbl Type of fluid:	
Lined ☒ Unlined ☐	Construction material:	
Liner type: Synthetic ☒ Thickness 12 mil Clay ☐	Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Pit Volume: ~3,000 bbl		
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) ~56'bgs	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) ☐ (10 points) ☒ (0 points) ☐
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) ☐ (0 points) ☒
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1,000 feet 1,000 feet or more	(20 points) ☐ (10 points) ☐ (0 points) ☒
	Ranking Score (Total Points)	**10**

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: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility_____. (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.

Additional Comments: It is proposed to close this pit consistent with the "ChevronTexaco Drilling and Reserve Pit Closure General Plan, December 2004" and the NMOCD Pit and Below-Grade Tank Guidelines, November 1, 2004 as promulgated under NMOCD Rule 50 (19.15.2.50 NMAC).

Pit Status: Liner intact ☒ Liner punctured or torn ☐

Method of Closure: The contents of the pit will be stiffened and encapsulated on site. Encapsulation will consist of mixing earthen materials with the pit contents, as necessary to stiffen the pit contents sufficiently to provide physical stability and support the pit cover. Upon the pit contents being stiffened as required, the edges of the liner will be folded over the edges of the stiffened mud and cuttings and the pit will be covered with a 20-mil thick impervious, reinforced synthetic or fabricated liner meeting ASTM standards that is designed to be resistant to the material encapsulated. The liner will then be covered with a minimum of three feet of clean soil or like material that is capable of supporting native plant growth.

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 will be closed according to NMOCD guidelines ☒, a general permit ☒, or an (attached) alternative OCD-approved plan ☒.**

Date: 10.12.06 Printed Name/Title Jim Duke, Construction Representative Signature Jim Duke

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:

Printed Name/Title _____ Signature _____ Date: