NM2 - 12

MONITORING REPORTS YEAR(S):

2008

Hansen, Edward J., EMNRD

From: Hansen, Edward J., EMNRD
Sent: Friday, March 06, 2009 9:48 AM
To: 'bailerg@chevron.com'
Cc: 'michelle@laenvironmental.com'
Subject: 2008 Annual Report for Chevron SWMF NM-02-0012 - Additional Sampling Required

Dear Mr. Bailey:

The New Mexico Oil Conservation Division (OCD) has received the cell closure report the above-referenced site, dated January 16, 2009, and has conducted a review of the report. The closure report, received February 3, 2009, indicates that Chevron has not completed the cell closure requirements. Therefore, the OCD cannot approve the request for closure for above-referenced site, in accordance with 19.15.36 NMAC (Part 36).

> Chevron must collect soil samples in the treatment zone (0 – 1') and analyze the samples from each cell proposed to be closed for all 12 metals listed (excluding U) in Subsections A and B of 20.6.2.3103 NMAC (WQCC rule) in accordance with 19.15.36.15.F.(5) NMAC. This will necessitate the collection of background samples for the four metals listed in Subsection B of 20.6.2.3103 NMAC (copper, iron, manganese, and zinc) since background have not been established for these constituents. Please submit the results of the treatment zone sampling and background sampling to the OCD for review and approval. Chevron may be required to propose alternative closure standards in accordance with 19.15.36.15.F.(5) NMAC.

In addition to the matter of cell closure, since vadose zone monitoring results indicated that Cells 18, 21, 25, 26 have exceeded the background concentrations for TPH and Cells 19, 21, 25 have exceeded the background concentration for chloride during the last sampling event, Chevron must submit a response action plan by March 20, 2009, in accordance with 19.15.36.15.E.(5) NMAC.

Please keep in mind that Chevron must follow the conditions of their permit even if the conditions differ from Part 36. In particular, the TPH performance standard for "soils to be left in place" (see condition #8 under Landfarm Operation of the Permit NM-02-0012) at your facility is 500 mg/Kg, not 2500 mg/Kg as stated in Part 36. However, the benzene performance standard for these same soils is 10 mg/Kg, not 0,2 mg/Kg as stated in Part 36. Also, WQCC standards are not to be used for initial performance standards in lieu of Part 36 performance standards.

If you have any questions regarding these matters, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

Larson & Associates, Inc.
Environmental Consultants

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January 16, 2009

VIA CERTIFIED MAIL

Mr. Brad A. Jones
Environmental Engineer
State of New Mexico – Department of Natural Resources
Oil Conservation Division – Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2008 Annual Report for Chevron North America Exploration and Production Co., Centralized Surface Waste Management Facility (Permit Number NM-2-0012), W/2 of Section 17, Township 24 South, Range 36 East, NMPM Lea County, New Mexico

Dear Mr. Jones:

Larson and Associates, Inc. (LAI), as consultant to Chevron North America Exploration and Production Company (Chevron), submits this annual report to the New Mexico Oil Conservation Division (OCD) for the above referenced centralized surface waste management facility (NM-2-0012). This report presents a summary of laboratory analytical results for the vadose zone and treatment (tilled) soil samples. Figure 1 presents a location map. Figure 2 presents a facility drawing.

Background Samples

A background sample of native soil for approximately 2 to 3 feet below native ground surface was collected before construction of the facility on June 24, 1998. This sample was analyzed for total petroleum hydrocarbons (TPH), total metals (arsenic, barium, calcium, cadmium, chromium, lead, magnesium, mercury, potassium, selenium, silver and sodium), and general chemistry parameters (alkalinity, chloride, sulfate, fluoride and nitrate).

On September 12, 2007, LAI personnel collected a background sample from Cell 27 approximately 2 to 3 feet below native ground surface. This sample was analyzed according to New Mexico Oil Conservation Division (NMOCD) requirements for Volatile Organic Compounds (VOC), Semi-volatile Organic Compounds (SVOC), Polychlorinated biphenyl (PCB), total metals, general chemistry and radioactivity parameters.

Treatment Zone Samples

On March 19, 2008, LAI collected a random five (5) part soil composite samples from Cells 17 through 21. The soil samples were collected using a stainless steel hand auger. The samples were collected between 0-1 feet of the tilled zone, placed in pre-cleaned 4-ounce jars, properly labeled and placed on ice upon collection. The samples were submitted to DHL Analytical, Inc. (DHL) located in Round Rock, Texas under custody seals and chain of custody.

The treatment samples were analyzed for the following constituents:

- Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) by EPA method SW8021B,
- Total Petroleum Hydrocarbons (TPH) by EPA method SW8015 for gasoline range organics (GRO) and diesel range organics (DRO), and
- TRPH by EPA method 418.1.

The results of the March 19, 2008 composite treatment samples (Cells 17 through 21) were below the remediation standards for TPH by method 8015M (500 ppm) and method 418.1 (2500 ppm), BTEX (50 ppm) and Benzene (0.2 ppm) as specified in Subsection F of Section 15 of 19.15.36 NMAC.

On August 25, 2008, LAI collected random 5-part composite soil samples from Cells 17 through 21, 25 and 26 using a stainless steel hand auger. The samples were collected between 0-1 feet of the treatment zone, placed in pre-cleaned 4-ounce jars, properly labeled and placed on ice upon collection. The samples were submitted to DHL.

The results of the August 25, 2008 composite treatment samples (Cells 17 through 21, 25 and 26) were below the remediation standards for TPH by method 8015M (500 ppm) and method 418.1 (2500 ppm), BTEX (50 ppm) and Benzene (0.2 ppm) as specified in Subsection F of Section 15 of 19.15.36 NMAC.

Sampling for the fourth quarter was performed on December 9, 2008. LAI collected random 5-part composite soil samples from Cells 17 through 21, 25 and 26 using a stainless steel hand auger. The samples were collected between 0-1 feet of the treatment zone, placed in pre-cleaned 4-ounce jars, properly labeled and placed in ice upon collection. The samples were submitted to DHL under chain of custody.

The results of the December 9, 2008 composite treatment samples (Cells 17 through 21, 25 and 26) were below the remediation standards for TPH by method 8015M (500 ppm) and method 418.1 (2500 ppm), BTEX (50 ppm), Benzene (0.2 ppm) and Chloride (500 ppm) as specified in Subsection F of Section 15 of 19.15.36 NMAC.

Treatment zone sample analyses are presented in Tables 1 and 2.

Vadose Zone Samples

Samples for the vadose zone, Cells 17 through 21, were collected by LAI personnel on March 19, 2008. The samples were collected from approximately 2 to 3 feet below native ground surface near the center of each cell. The samples were collected using direct-push technology and dual-tube system. The direct push and dual tube system involves hydraulically pushing or percussion hammering a stainless steel core barrel into the subsurface. The stainless steel core barrel is housed inside an outer steel casing that is simultaneously pushed into the subsurface. Overlying soil is removed to prevent caving and minimizing the possibility of cross-contamination between sample collections. The core barrel is equipped with dedicated polyethylene liners to reduce cross-contamination between samples. Samples were placed in pre-cleaned 4-ounce jars, properly labeled and placed on ice upon collection. The samples were submitted to DHL.

The treatment (vadose) zone samples were analyzed for the following constituents:

- Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) by EPA method SW8021B,
- Total Petroleum Hydrocarbons (TPH) by EPA method SW8015 for gasoline range organics (GRO) and diesel range organics (DRO),
- TRPH by EPA method 418.1,
- Metals and Mercury analyses by EPA methods SW6020 and SW7471A, respectively, and
- Anions by EPA method 300.

The TPH, TRPH, BTEX and benzene results of the vadose zone samples for Cells 17 and 20 were below the method detection limits. The TRPH and TPH results from Cell 18, (16.5 ppm and 1.725 ppm, respectively) and Cell 19 (TPH 2.15 ppm) may be attributed to possible cross-contamination with the treatment soil. The analytical results for TPH, by methods SW8015M and EPA method 418.1, BTEX and Benzene were below background and WQCC levels. The vadose samples confirm that migration of contaminants has not occurred in the 2 to 3 foot monitoring zone.

Cells 17, 18 and 20 were above background but below the Water Quality Control Commission (WQCC) level for chloride.

Arsenic, barium and selenium were detected above background levels for Cells 17, 18, 19, 20 and 21. Cadmium was detected in Cells 18, 19 and 21 slightly above background levels. This may be due to normal variation in the soil.

On August 25 and 26, 2008, LAI personnel collected samples from Cells 17 through 21, 25 and 26. The samples were collected from approximately 2 to 3 feet below native ground surface near the center of each of the vadose zone cells. Samples were placed in pre-cleaned 4-ounce jars, properly labeled and placed on ice upon collection. The samples were submitted to DHL.

Cells 17, 19, 20 and 25 were below method detection limits for TPH and BTEX. TPH was detected in samples from Cells 18, 21 and 26 above background but below WQCC levels. This may be attributed to possible cross-contamination with the treatment zone. On September 25, 2008 a TPH confirmation sample for Cell 26 was collected. The sample results were below detection limits for TPH.

Samples from Cells 17, 19, 21, 25 and 26 were below detection limits for chloride. Cells 18 and 20 were above background but below WQCC levels for chloride.

Arsenic, Barium, Cadmium and/or Selenium were above background levels for Cells 17, 18, 21, 25 and 26. Chromium was detected in Cells 21, 25 and 26 above background levels. Lead was detected above background level (5.40 ppm) for Cell 21 and Cell 26. This may be due to the natural variation in the soil.

Sampling for the fourth quarter vadose zone was performed on December 8, 2008. Cells 17 through 21, 25 and 26 were below detection limits for BTEX and benzene. TPH was detected above background and below the WQCC levels in samples Cells 17, 19, 20, 21, 25 and 26. Cell 18 was above the WQCC level for TPH by method 418.1. This may be attributed to possible cross-contamination with the treatment zone.

A TPH confirmation sample was collected on January 20, 2009 for Cell 18. TPH by method 418.1 was detected at 23.0 ppm and TPH by EPA method 8015M was reported at 54.5 ppm. The TPH results were above the background level of 6.97 ppm. The additional sample confirmed cross-contamination during the previous sampling event for Cell 18.

Samples for Cells 17, 18, 20 and 26 were below detection limits for chloride. Cells 19, 21 and 25 were above background (<5.51 ppm) and below WQCC levels for chloride.

Vadose zone analyses are presented in Tables 3, 4, 5 and 6.

Laboratory analytical reports are presented in Appendix A.

Summary

Treatment soil in Cells 17, 18, 19, 20, 21, 25 and 26 were below action levels referenced in Subsection F of Section 15 of 19.15.36 NMAC for TPH (methods 8015M and 418.1), BTEX, benzene and chloride.

Results for vadose zone sampling for BTEX and benzene were below detection limits. TPH was detected above background but below WQCC levels for Cells 18, 21, 25 and 26. This may be attributed to possible cross-contamination with the treatment zone during sample collection. Additional samples collected for Cell 26 (September 25, 2008) and Cell 18 (January 20, 2009) confirmed cross-contamination during sampling. TPH results were below detection limits for TPH (methods 8015M and 418.1). Chloride was below the WQCC level (250 ppm) for all of the vadose zone samples. Metals results appear to be within normal variation of the soil. Results indicate that the vadose zone has not been impacted.

Chevron has performed bi-weekly tilling as per the permit requirements. Treatment vadose zone sample results indicate that remediation has been achieved. Chevron requests the NMOCD to grant closure for Cells 17 through 21, 25 and 26.

If you have any questions or require additional information please contact Mr. Rodney Bailey with Chevron at (432) 894-3519 or via email bailerg@chevron.com. I can be reached at (432) 687-0901 or via email michelle@laenvironmental.com.

Sincerely,
Larson and Associates, Inc.

Michelle L. Green
Environmental Scientist

Enclosure

cc: Rodney Bailey, Chevron
Larry Johnson, OCD District 1

Table 1

Summary of BTEX Analyses of Tilled Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Sample Depth (Feet)	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX
Action Level (mg/Kg):				0.2 (10 permit)				50
Cell 17 (0-1')	17	05/21/07	0 - 1	<0.00304	<0.00506	<0.00506	<0.00506	<0.01822
		09/11/07	0 - 1	<0.00106	<0.00106	<0.00106	<0.00106	<0.00106
		03/13/08	0 - 1	<0.00282	<0.00470	<0.00470	<0.00470	<0.01692
		03/19/08	0 - 1	<0.00264	<0.00440	<0.00440	<0.00440	<0.01584
		08/25/08	0 - 1	<0.00301	<0.00501	<0.00501	<0.00501	<0.01804
		12/09/08	0 - 1	<0.00280	<0.00467	<0.00467	<0.00467	<0.01681
Cell 18 (0-1')	18	05/21/07	0 - 1	<0.00311	<0.00519	<0.00519	<0.00519	<0.01868
		09/11/07	0 - 1	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
		03/19/08	0 - 1	<0.00288	<0.00480	<0.00480	<0.00480	<0.01728
		08/25/08	0 - 1	<0.00268	<0.00447	<0.00447	<0.00447	<0.01609
		12/09/08	0 - 1	<0.00299	<0.00498	<0.00498	<0.00498	<0.01793
Cell 19 (0-1')	19	05/21/07	0 - 1	<0.00292	<0.00486	<0.00486	<0.00486	<0.0175
		09/11/07	0 - 1	<0.00114	<0.00114	<0.00114	<0.00114	<0.00114
		03/19/08	0 - 1	<0.00267	<0.00444	<0.00444	<0.00444	<0.01599
		08/25/08	0 - 1	<0.00312	<0.00520	<0.00520	<0.00520	<0.01872
		12/09/08	0 - 1	<0.00265	<0.00441	<0.00441	<0.00441	<0.01588
Cell 20 (0-1')	20	05/21/07	0 - 1	<0.00312	<0.00520	<0.00520	<0.00520	<0.01872
		09/11/07	0 - 1	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
		03/19/08	0 - 1	<0.00270	<0.00450	<0.00450	<0.00450	<0.0162
		08/25/08	0 - 1	<0.00293	<0.00488	<0.00488	<0.00488	<0.01757
		12/09/08	0 - 1	<0.00294	<0.00489	<0.00489	<0.00489	<0.0176

Table 1

Summary of BTEX Analyses of Tilled Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Sample Depth (Feet)	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX
Action Level (mg/Kg):				**0.2**				**50**
Cell 21 (0-1')	21	05/21/07	0 - 1	<0.00293	<0.00489	<0.00489	<0.00489	<0.0176
		09/11/07	0 - 1	<0.00113	<0.00113	<0.00113	<0.00113	<0.00113
		03/19/08	0 - 1	<0.00263	<0.00438	<0.00438	<0.00438	<0.01577
		08/25/08	0 - 1	<0.00308	<0.00513	<0.00513	<0.00513	<0.01847
		12/09/08	0 - 1	<0.00290	<0.00483	<0.00483	<0.00483	<0.01739
Cell 25 (0-1')	25	05/21/07	0 - 1	<0.00302	<0.00503	<0.00503	<0.00503	<0.01811
		09/11/07	0 - 1	<0.00103	<0.00103	<0.00103	<0.00103	<0.00103
		08/25/08	0 - 1	<0.00278	<0.00463	<0.00463	<0.00463	<0.01667
		12/09/08	0 - 1	<0.00308	<0.00513	<0.00513	<0.00513	<0.01847
Cell 26 (0-1')	26	02/21/07	0 - 1	<0.01	<0.01	<0.01	<0.02	<0.05
		09/11/07	0 - 1	<0.00118	<0.00118	<0.00118	<0.00118	<0.00118
		05/21/07	0 - 1	<0.00323	<0.00539	<0.00539	<0.00539	<0.0194
		08/25/08	0 - 1	<0.00358	<0.00597	<0.00597	<0.00597	<0.02149
		12/09/08	0 - 1	<0.00301	<0.00501	<0.00501	<0.00501	<0.01804

Notes:

Samples were analyzed by DHL Analytical, Inc., Round Rock, TX

BTEX analysis was performed by SW846 method 8021B

Results are reported in milligram per Kilograms (mg/Kg).

1. <: Less than method detection limit

Table 2

Summary of TPH Analysis of Tilled Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	TRPH 418.1	TPH - GRO C6-C10	TPH - DRO C10-C28	Total TPH	Chloride
Action Level (mg/Kg):				**2500**	500 (permit)		**500**	**250**
Cell 17 (0-1')	17	05/21/07	0 - 1	108	<0.0635	27.7	27.7	--
		09/11/08	0 - 1	--	<0.0645	233	233	361
		03/13/08	0 - 1	216	--	--	--	42.4
		03/19/08	0 - 1	**1090**	<0.0519	470	470	--
		08/25/08	0 - 1	68.1	<0.0609	210	210	--
		12/09/08	0 - 1	169	<0.0578	206	206	34.7
Cell 18 (0-1')	18	05/21/07	0 - 1	456	<0.0594	418	418	--
		09/11/07	0 - 1	--	<0.0615	695	**695**	<5.78
		03/19/08	0 - 1	787	<0.0546	422	422	--
		08/25/08	0 - 1	219	<0.0587	167	167	
		12/09/08	0 - 1	525	<0.0576	207	207	<4.99
Cell 19 (0-1')	19	05/21/07	0 - 1	109	<0.0597	11.7	11.7	--
		09/11/07	0 - 1	--	<0.0620	272	272	5.91
		03/19/08	0 - 1	512	<0.0552	401	401	--
		08/25/08	0 - 1	85.8	<0.0552	96.6	96.6	--
		12/09/08	0 - 1	159	<0.0552	52.6	52.6	20.2
Cell 20 (0-1')	20	05/21/07	0 - 1	527	<0.0567	30.2	30.2	--
		09/11/07	0 - 1	--	<0.0614	403	403	14.6
		03/19/08	0 - 1	169	<0.0541	171	171	--
		08/25/08	0 - 1	39.2	<0.0593	64.3	64.3	--
		12/09/08	0 - 1	126	<0.0620	44.3	44.3	35.8

Table 2

Summary of TPH Analysis of Tilled Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	TRPH 418.1	TPH - GRO C6-C10	TPH - DRO C10-C28	Total TPH	Chloride
Action Level (mg/Kg):				**2500**			**500**	**250**
Cell 21 (0-1')	21	05/21/07	0 - 1	389	<0.0611	15.4	15.4	--
		09/11/07	0 - 1	--	<0.0638	838	**838**	<5.67
		03/19/08	0 - 1	434	<0.0564	359	359	--
		08/25/08	0 - 1	157	<0.0599	210	210	--
		12/09/08	0 - 1	1780	<0.0567	271	271	<5.06
Cell 25 (0-1')	25	05/21/07	0 - 1	85.9	<0.0607	2.97	2.97	--
		09/11/07	0 - 1	--	<0.0618	166	166	128
		08/25/08	0 - 1	115	<0.0557	96.5	96.5	--
		12/09/08	0 - 1	107	<0.0555	66.2	66.2	<5.13
Cell 26 (0-1')	26	02/21/07	0 - 1	**3450**	<1	726	**726**	--
		05/21/07	0 - 1	59.3	<0.0591	4.98	4.98	--
		09/11/07	0 - 1	--	<0.0696	455	455	<5.92
		08/25/08	0 - 1	16.7	<0.0663	116	116	--
		12/09/08	0 - 1	226	<0.0543	32.0	32.0	<5.07

Notes:

Samples were analyzed by DHL Analytical, Inc., Round Rock, TX

Results are reported in milligram per Kilograms (mg/Kg).

GRO and DRO analyses were performed by SW846 method 8015

TRPH analysus was performed by EPA method 418.1

1. <: Less than method detection limit

Table 3

Summary of BTEX Analyses of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Sample Depth (Feet)	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX
Background Level (9/12/07):				**<0.000974**	**<0.000974**	**<0.000974**	**<0.000974**	**<0.003896**
WQCC Level:				**0.2**				**50**
Cell 17 (2-3')	17	05/22/07	2 - 3	<0.00354	<0.00590	<0.00590	<0.00590	<0.02124
		09/13/07	2 - 3	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112
		03/19/08	2 - 3	<0.00319	<0.00531	<0.00531	<0.00531	<0.01912
		08/26/08	2 - 3	<0.00318	<0.00530	<0.00530	<0.00530	<0.01908
		12/08/08	2 - 3	<0.00386	<0.00643	<0.00643	<0.00643	<0.02315
Cell 18 (2-3')	18	05/22/07	2 - 3	<0.00306	<0.00510	<0.00510	<0.00510	<0.01836
		09/13/07	2 - 3	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101
		03/19/08	2 - 3	<0.00302	<0.00503	<0.00503	<0.00503	<0.01811
		08/25/08	2 - 3	<0.00305	<0.00509	<0.00509	<0.00509	<0.01832
		12/08/08	2 - 3	<0.00286	<0.00477	<0.00477	<0.00477	<0.01717
Cell 19 (2-3')	19	05/22/07	2 - 3	<0.00294	<0.00491	<0.00491	<0.00491	<0.01767
		09/13/07	2 - 3	<0.00107	<0.00107	<0.00107	<0.00107	<0.00107
		03/19/08	2 - 3	<0.00282	<0.00470	<0.00470	<0.00470	<0.01692
		08/25/08	2 - 3	<0.00307	<0.00512	<0.00512	<0.00512	<0.01843
		12/08/08	2 - 3	<0.00311	<0.00519	<0.00519	<0.00519	<0.01868
Cell 20 (2-3')	20	05/22/07	2 - 3	<0.00326	<0.00543	<0.00543	<0.00543	<0.01955
		09/13/07	2 - 3	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
		03/19/08	2 - 3	<0.00302	<0.00503	<0.00503	<0.00503	<0.01811
		08/25/08	2 - 3	<0.00264	<0.00440	<0.00440	<0.00440	<0.01584
		12/08/08	2 - 3	<0.00311	<0.00518	<0.00518	<0.00518	<0.04664

Table 3

Summary of BTEX Analyses of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell *Number*	Date	Sample Depth *(Feet)*	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total BTEX
Background Level (9/12/07):				**<0.000974**	**<0.000974**	**<0.000974**	**<0.000974**	**<0.003896**
WQCC Level:				**0.2**				**50**
Cell 21 (2-3')	21	05/22/07	2 - 3	<0.00346	<0.00577	<0.00577	<0.00577	<0.02077
		09/13/07	2 - 3	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
		03/19/08	2 - 3	<0.00311	<0.00519	<0.00519	<0.00519	<0.01868
		08/26/08	2 - 3	<0.00318	<0.00530	<0.00530	<0.00530	<0.01908
		12/08/08	2 - 3	<0.00303	<0.00505	<0.00505	<0.00505	<0.01818
Cell 25 (2-3')	25	05/22/07	2 - 3	<0.00281	<0.00468	<0.00468	<0.00468	<0.01685
		09/13/07	2 - 3	<0.000928	<0.000928	<0.000928	<0.000928	<0.000928
		08/25/08	2 - 3	<0.00302	<0.00504	<0.00504	<0.00504	<0.01814
		12/08/08	2 - 3	<0.00326	<0.00543	<0.00543	<0.00543	<0.01955
Cell 26 (2-3')	26	05/22/07	2 - 3	<0.00295	<0.00492	<0.00492	<0.00492	<0.01771
		09/13/07	2 - 3	<0.00108	<0.00108	<0.00108	<0.00108	<0.00108
		08/26/08	2 - 3	<0.00315	<0.00525	<0.00525	<0.00525	<0.0189
		09/25/08	2 - 3	<0.00295	<0.00492	<0.00492	<0.00492	<0.01771
		12/08/08	2 - 3	<0.00309	<0.00515	<0.00515	<0.00515	<0.01854

Notes: Analysis performed by DHL Analytical, Inc., Round Rock, TX.

Results are reported in milligram per Kilograms (mg/Kg).

Background analysis was performed by SW846 method 8260B

BTEX analysis was performed by SW846 method 8021B

1. <: Less than method detection limit

Table 4

Summary of TPH Analysis of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	TRPH	TPH - GRO C6-C10	TPH - DRO C10-C28	Total TPH
Background Level (9/17/07):				--	**6.97**	**<0.0666**	**6.97**
WQCC Level:				**500**			**500**
Cell 17 (2-3')	17	05/22/07	2 - 3	**149**	<0.0161	**60.4**	**60.4**
		03/19/08	2 - 3	<5.82	<0.0604	<1.69	<1.75
		08/26/08	2 - 3	<5.49	<0.0633	<9.10	<9.1633
		12/08/08	2 - 3	<6.11	<0.0772	**3.49**	**3.49**
Cell 18 (2-3')	18	05/22/07	2 - 3	<5.84	<0.0608	<3.09	<6.1508
		03/19/08	2 - 3	**16.5**	<0.0561	**1.72**	**1.72**
		08/25/08	2 - 3	<5.43	<0.0575	**16.7**	**16.7**
		12/08/08	2 - 3	**730**	<0.0646	**111**	**111**
		01/20/09	2 - 3	**23.0**	<0.0557	**54.5**	**54.5**
Cell 19 (2-3')	19	05/22/07	2 - 3	**47.5**	<0.0614	<3.14	<3.2014
		03/19/08	2 - 3	<5.30	<0.0595	**2.15**	**2.15**
		08/25/08	2 - 3	<5.21	<0.0602	<9.29	<9.3502
		12/08/08	2 - 3	<5.38	<0.0597	**3.61**	**3.61**
Cell 20 (2-3')	20	05/22/07	2 - 3	<5.59	<0.0598	<2.98	<3.0398
		03/19/08	2 - 3	<5.79	<0.0636	<1.68	<1.71
		08/25/08	2 - 3	<5.07	<0.0558	<8.50	<8.5558
		12/08/08	2 - 3	<5.35	<0.0603	**3.24**	**3.24**

Table 4

Summary of TPH Analysis of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	TRPH	TPH - GRO C6-C10	TPH - DRO C10-C28	Total TPH
Background Level (9/17/07):				--	**6.97**	**<0.0666**	**6.97**
WQCC Level:				**500**			**500**
Cell 21 (2-3')	21	05/22/07	2 - 3	<5.73	<0.0633	<3.23	<3.2933
		03/19/08	2 - 3	<5.57	<0.0579	**1.87**	**1.87**
		08/26/08	2 - 3	**15.5**	<0.0611	**44.5**	**44.5**
		12/08/08	2 - 3	**65.2**	<0.0585	**24.5**	**24.5**
Cell 25 (2-3')	25	05/22/07	2 - 3	<5.50	<0.0574	<3.04	<3.0974
		08/25/08	2 - 3	<5.25	<0.0565	<9.36	<9.4165
		12/08/08	2 - 3	<5.61	<0.0657	**9.58**	**9.58**
Cell 26 (2-3')	26	05/22/07	2 - 3	<5.81	<0.0609	<3.41	<3.4709
		08/26/08	2 - 3	**386**	<0.0619	**175**	**175**
		09/25/08	2 - 3	<5.2	<0.0617	<3.27	<3.3317
		12/08/08	2 - 3	**12.4**	<0.0664	**18.6**	**18.6**

Notes: Analysis performed by DHL Analytical, Inc., Round Rock, TX

Results are reported in milligram per Kilograms (mg/Kg).

GRO and DRO analyses were performed by SW846 method 8015

TRPH analysus was performed by EPA method 418.1

1. <: Less than method detection limit

Table 5

Summary of Metals Analysis of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	Arsenic	Barium	Cadmium	Calcium	Chromium	Lead	Magnesium	Mercury	Potassium	Selenium	Silver	Sodium
Background Level (9/17/07):				**2.04**	**52.6**	**0.113**	--	**8.53**	**5.40**	--	**<0.0161**	--	**0.192**	**<0.11**	--
WQCC Level:				**0.1**	**1.0**	**0.01**	--	**0.05**	**0.05**	--	**0.002**	--	**0.05**	**0.05**	--
Cell 17 (2-3')	17	05/22/07	2 - 3	**3.30**	**164**	**0.188**	153,000	7.90	4.360	2,230	**0.0171**	1,820	**0.866**	<0.107	607
		03/19/08	2 - 3	**5.22**	**356**	<0.113	279,000	1.09	0.591	2,480	<0.0180	251	**0.407**	<0.113	174
		08/26/08	2 - 3	**2.87**	**213**	**0.138**	319,000	3.19	1.67	1,970	<0.0155	617	**0.716**	<0.109	136
Cell 18 (2-3')	18	05/22/07	2 - 3	**4.70**	**717**	**0.183**	335,000	3.41	1.75	2,180	<0.0186	725	**0.635**	<0.104	205
		03/19/08	2 - 3	**3.18**	**139**	**0.168**	220,000	4.53	3.08	1,800	<0.0167	982	**0.987**	<0.0911	117
		08/25/08	2 - 3	**3.91**	**149**	**0.172**	229,000	3.97	3.48	1,980	<0.0164	919	**0.897**	<0.109	127
Cell 19 (2-3')	19	05/22/07	2 - 3	**2.29**	**61**	**0.135**	10,500	**9.69**	4.82	1,720	<0.0162	2,090	**1.03**	<0.0912	95.5
		03/19/08	2 - 3	**2.35**	**89.8**	**0.166**	79,900	7.83	4.42	1,540	<0.0162	1,650	**1.50**	<0.0965	40.3
		08/25/08	2 - 3	1.72	40.9	<0.101	1,660	6.83	4.20	1,040	<0.0162	1,550	**1.28**	<0.101	16.9
Cell 20 (2-3')	20	05/22/07	2 - 3	**2.98**	**96.1**	**0.202**	112,000	7.16	4.65	1,230	<0.0169	1,490	**1.140**	<0.104	36.2
		03/19/08	2 - 3	**3.30**	**247**	0.099	259,000	2.45	1.35	2,080	<0.0158	530	**0.459**	<0.0989	150
		08/25/08	2 - 3	1.43	29.6	<0.0990	8,070	5.11	3.08	720	<0.0154	1,050	**0.865**	<0.0990	12.9
Cell 21 (2-3')	21	05/22/07	2 - 3	**3.6**	**230**	**0.151**	307,000	4.29	2.18	2,490	<0.0177	1,020	**0.626**	<0.117	118
		03/19/08	2 - 3	**4.53**	**736**	**0.125**	311,000	2.15	1.21	2,660	<0.0158	432	**0.460**	<0.108	137
		08/26/08	2 - 3	**2.67**	**73.1**	**0.141**	6,440	**9.52**	**6.55**	1,840	<0.0149	2,210	**2.41**	<0.102	20.0
Cell 25 (2-3')	25	05/22/07	2 - 3	**2.96**	**76.7**	**0.197**	6,820	**11.70**	**6.13**	1,970	<0.0171	3,020	**1.39**	<0.103	94.4
		08/25/08	2 - 3	**2.88**	**60.8**	**0.155**	17,000	**8.91**	**5.51**	1,600	<0.0154	1,920	**1.41**	<0.105	<13.1
Cell 26 (2-3')	26	05/22/07	2 - 3	**2.96**	**121**	**0.197**	83,700	**9.20**	4.79	1,930	<0.0177	2,060	**1.23**	<0.109	93
		08/26/08	2 - 3	**2.58**	**85.1**	**0.115**	43,700	6.73	4.77	1,500	<0.0149	1,610	**1.64**	<0.103	50.8
		09/25/08	2 - 3	**4.25**	**128**	**0.271**	2,370	**14.60**	**9.17**	2,370	<0.0172	2,860	**2.20**	0.109	62.7

Notes: Analysis performed by DHL Analytical, Inc., Round Rock, TX

Results are reported in milligram per Kilograms (mg/Kg).

Metals analysis was performed by SW846 method 6020

Mercury analysis was performed by SW846 method 7471A

1. <: Less than method detection limit

Table 6

Summary of Anion Analyses of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	Alkalinity	Chloride	Sulfate
Background Level (9/17/07):				--	**<5.51**	**<11**
WQCC Level:				--	**250**	**600**
Cell 17 (2-3')	17	05/22/07	2 - 3	--	**304**	**202**
		03/19/08	2 - 3	11,100	**61.2**	**71.4**
		08/26/08	2 - 3	5,780	<5.41	**46.4**
		12/08/08	2 - 3	--	<6.50	--
Cell 18 (2-3')	18	05/22/07	2 - 3	--	**18.9**	**150**
		03/19/08	2 - 3	700	**6.37**	**217**
		08/25/08	2 - 3	2,600	**9.94**	**123**
		12/08/08	2 - 3	--	<5.52	--
Cell 19 (2-3')	19	05/22/07	2 - 3	--	<5.06	**205**
		03/19/08	2 - 3	210	<5.36	**300**
		08/25/08	2 - 3	123	<5.14	**152**
		12/08/08	2 - 3	--	**10.8**	--
Cell 20 (2-3')	20	05/22/07	2 - 3	--	<5.57	**39.8**
		03/19/08	2 - 3	152	**15.3**	**561**
		08/25/08	2 - 3	126	**7.02**	**199**
		12/08/08	2 - 3	--	<5.23	--
Cell 21 (2-3')	21	05/22/07	2 - 3	--	**7.17**	**286**
		03/19/08	2 - 3	523	**13.0**	**320**
		08/26/08	2 - 3	204	<5.32	**23.9**
		12/08/08	2 - 3	--	**17.7**	--

Table 6

Summary of Anion Analyses of Treatment (Vadose) Zone Soil Samples

Chevron North America Exploration and Production Company, Landfarm (Permit NM-2-0012)

W/2 of Section 17, Township 24 South, Range 36 East

Lea County, New Mexico

Sample	Cell Number	Date	Depth	Alkalinity	Chloride	Sulfate
Background Level (9/17/07):				--	**<5.51**	**<11**
WQCC Level:				--	**250**	**600**
Cell 25 (2-3')	25	05/22/07	2 - 3	--	**6.05**	**45.6**
		08/25/08	2 - 3	211	<5.20	**52.3**
		12/08/08	2 - 3	--	**7.20**	--
Cell 26 (2-3')	26	05/22/07	2 - 3	--	3.9	**152**
		08/26/08	2 - 3	1,430	<5.33	**91**
		09/25/08	2 - 3	106	<5.65	--
		12/08/08	2 - 3	--	<5.48	--

Notes: Analysis performed by DHL Analytical, Inc., Round Rock, TX

Results are reported in milligram per Kilograms (mg/Kg).

Anion analysis was performed by SW846 method 9056

1. <: Less than method detection limit

JWW

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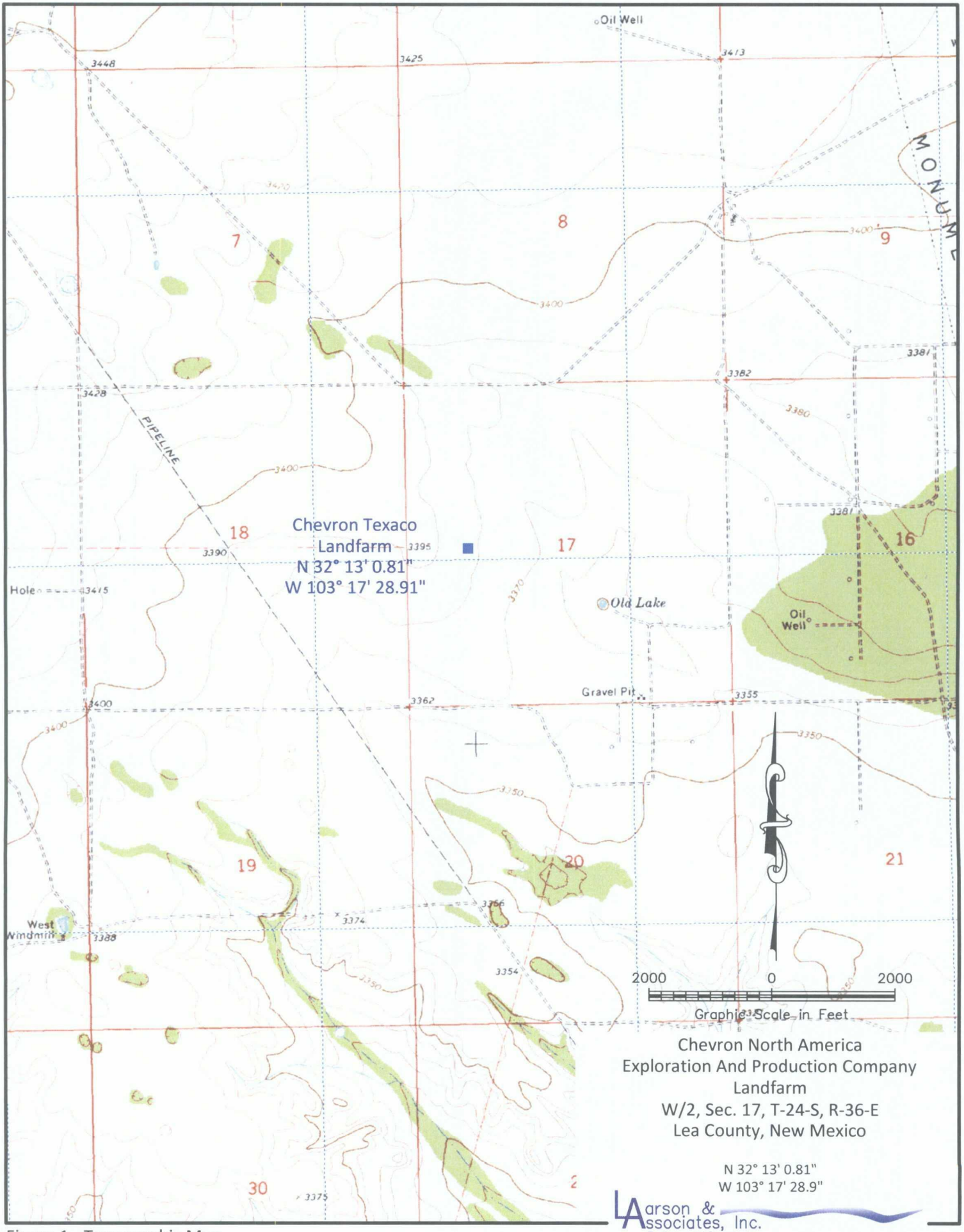

Chevron North America
Exploration And Production Company
Landfarm
W/2, Sec. 17, T-24-S, R-36-E
Lea County, New Mexico

N 32° 13' 0.81"
W 103° 17' 28.9"

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

POWER LINE

56	55	54	53	GALLERY 7
52	51	50	49	
48	47	46	45	GALLERY 6
44	43	42	41	
40	39	38	4	GALLERY 5
36	35	34	33	
32	31	30	29	GALLERY 4
28	27	26	25	
24	23	22	21	GALLERY 3
20	19	18	17	
16	15	14	13	GALLERY 2
12	11	10	9	
8	7	6	5	GALLERY 1
4	3	2	1	

SECTION 18

SECTION 17

1 MILE

E/2 SECTION 17
TOWNSHIP 24 SOUTH
RANGE 36 EAST

TREATMENT CELL 330' X 650'

POWER LINE

TO GATE

0.5 MILE

SECTION 19

SECTION 20

NOTE: ALL ROADS ARE 20' WIDE
EACH CELL IS 650' x 330'

500 0 500

Graphic Scale in Feet

Chevron North America
Exploration And Production Company
Landfarm
W/2, Sec. 17, T-24-S, R-36-E
Lea County, New Mexico

N 32° 13' 0.81"
W 103° 17' 28.9"

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Site Drawing