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April 19, 2012

Mr. Leonard Lowe **Environmental Engineer** New Mexico Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 87505

RE: 4th Quarter 2011 Groundwater Monitoring Results Hobbs Booster Station, Lea County New Mexico (GW-044) Unit C and D, Section 4, Township 19 South, Range 38 East

Dear Mr. Lowe:

DCP Midstream, LP (DCP), is pleased to submit for your review, a one copy of the 4th Quarter 2011 Groundwater Monitoring Report for the DCP Hobbs Booster Station located in Hobbs, New Mexico (Unit C and D Section 4, T19S, R38E (32.696 degrees North, 103.156 degrees West).

If you have any questions regarding the report, please call me at 303-605-1718 or email-me at swweathers@dcpmidstream.com. APR 20 A IO:

Sincerely

cc:

DCP Midstream, LP

Stephen Weathers, P.G. Principal Environmental Specialist

> Larry Johnson, OCD Hobbs District Office (Copy on CD) **Environmental Files**

Fourth Quarter 2011 Groundwater Monitoring and Activities Summary Report

Hobbs Booster Station Lea County, New Mexico GW-044

Prepared for:



370 17th St., Suite 2500 Denver, CO 80202

Prepared by:



5690 Webster, Ave Arvada, CO 80002

February 24, 2012



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1. Introduction

Tasman Geosciences, LLC (Tasman) is submitting to DCP Midstream (DCP) the results of the fourth quarter 2011 groundwater monitoring activities conducted December 6 and 8, 2011 at the Hobbs Booster Station (Site) in Lea County, New Mexico (Figure 1). The purpose of the field activities described herein were to: a) determine the presence of light non-aqueous phase liquid (LNAPL) hydrocarbons; b) measure groundwater levels; c) obtain groundwater samples for chemical analysis; and d) evaluate and present groundwater flow and quality conditions. The field data and laboratory analytical results collected during the reporting period were used to develop a groundwater elevation contour map and an analytical results map to evaluate current conditions at the Site.

2. Site Location and Background

The Site is located in New Mexico Oil Conservation Division (OCD) designated Units C and D, Section 4, Township 19 South, Range 38 East (Figure 1). The facility coordinates are 32.696 degrees north and 103.156 degrees west. This facility is no longer used as an active gas compression facility or product transfer Site, currently the Site is primarily used as a DCP field office and as an overhaul shop. All ancillary equipment and buildings associated with the former Booster Station have been decommissioned and/or demolished.

The Site currently has 30 groundwater monitoring wells which are illustrated on Figure 2. Twenty-seven of the wells are located on the Site property while the other three wells, MW-23, MW-24, and MW-25 are located to the southeast of the property boundary on land currently owned by Occidental Permian.

An LNAPL recovery and soil vapor extraction (SVE) system utilizing LNAPL "skimming" product recovery pumps and vacuum blower units is currently operated at the Site. There are 28 dual phase extraction wells (Figure 2) located on-Site including, MW-4, MW-8, MW-11, and MW-13 which were previously converted from monitoring wells due to the historically high levels of LNAPL observed in those wells. Additionally, the Site operates an air-sparge (AS) cut-off system that was installed along the south-central Site boundary and includes 21 AS injection wells connected in series (Figure 2). LNAPL, AS, and SVE system operation and performance is described in Section 4.



3. Groundwater Monitoring

This section describes the field groundwater monitoring activities as well as laboratory analyses performed during the fourth quarter 2011 monitoring event. Monitoring activities included Site-wide groundwater gauging, LNAPL measurements, groundwater purging and sampling, and subsequent packaging and shipping of the samples to the laboratory for chemical analyses. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at the Site.

3.1 Groundwater and LNAPL Elevation Monitoring

Groundwater and LNAPL levels were measured in order to evaluate hydraulic characteristics and provide information regarding fluctuations in groundwater and LNAPL elevations at the Site. In addition, wells that did not have LNAPL present were measured for total depth and recorded for subsequent use to estimate groundwater purge volumes. During the fourth quarter 2011 monitoring event, groundwater and LNAPL levels, if present, were measured at 24 monitoring well locations.

Groundwater and LNAPL levels were measured on the north side of the well casing to the nearest 0.01foot using an oil-water interface probe (IP). Groundwater levels were subsequently converted to elevations (feet above mean sea level [AMSL]).

Groundwater elevations collected during the fourth quarter 2011 monitoring event as well as groundwater elevations from previous monitoring events are presented in Table 1 and a groundwater elevation contour map is illustrated on Figure 3. Groundwater elevations ranged from 3577.46 feet AMSL at monitoring well MW-7 and 3568.38 feet AMSL in monitoring well MW-19D. As illustrated on Figure 3, groundwater flow at the Site generally trends to the east with a gradient of approximately 0.004 foot per foot between monitoring wells MW-6 and MW-21.

LNAPL was detected in eight of the measured groundwater monitoring wells with thicknesses ranging between 0.13-feet in MW-18 to 8.02-feet in MW-12. Calculated groundwater elevation in these wells was corrected to account for LNAPL thickness and density.

3.2 Groundwater Quality Monitoring

Prior to collecting groundwater samples, groundwater levels, the presence of LNAPL, and the total depth of the wells (in wells without LNAPL) were measured as previously described. Subsequently, a minimum of three well casing volumes of groundwater (calculated from total depth of the well and groundwater level measurements) were purged using dedicated polyethylene bailers from the subject well prior to collecting groundwater samples. Groundwater samples were collected using dedicated polyethylene bailers, placed in clean laboratory supplied containers for the selected analytical methods and packed in an ice-filled cooler and maintained at approximately four (4) degrees Celsius (⁰C) for transportation. Groundwater samples were then shipped under chain-of-custody procedures to Accutest Laboratories (Accutest) in Wheat Ridge, Colorado, for analysis.



Water quality samples were collected from 11 monitoring wells during the fourth quarter 2011 monitoring event. MW-1, MW-2, MW-9, MW-12, MW-17, MW-18, TW-K, and TW-N were not sampled due to the presence of measurable LNAPL detected in these wells. Water quality samples were submitted to Accutest for benzene, toluene, ethylbenzene, and xylene (BTEX) analyses by United States Environmental Protection Agency (USEPA) Method 8260B.

Table 2 summarizes BTEX concentrations in groundwater samples collected during the December 2011 event. Laboratory analytical reports for the event are included in Appendix A and analytical results are summarized on Figure 4.

Water quality parameters were collected during the fourth quarter 2011 monitoring event and were used to confirm groundwater stabilization prior to sample collection. The Site monitoring wells did not require collection of more than three (3) purge volumes to achieve parameter stabilization. As such, the analytical data are considered to be representative of Site conditions in that a minimum 3 purge volumes were evacuated from all sampled monitoring wells during the fourth quarter 2011 event.

4. Remediation System Performance

Remediation system activities are described in this section. The performance sections for the LNAPL, SVE, and AS systems are based on historic data as well as data collected during the reporting period.

4.1 Remediation System Layout

The remediation system consists of 28- dual phase extraction wells that can be configured to operate in SVE, LNAPL recovery, or combined SVE and LNAPL recovery. The recovery well array spans an area that is approximately 1,000 feet east to west and 800 feet north to south (estimated 15 acres of surface area). In addition to the extraction well network, there are 22 AS wells aligned west and east to create an 870-foot long dissolved phase hydrocarbon boundary control feature.

4.2 SVE Performance Evaluation

SVE operation was re-initiated on December 8, 2011. SVE blower unit lubricant fluid levels, air filter condition, valve positions, and moisture level in the knock-out (KO) tanks were verified to be in good condition prior to making the equipment operational. Each SVE well was inspected for piping connection to the well head and associated valve position. SVE was initiated at 18 recovery well locations including TW-O, TW-M, TW-I, TM-S, PW-AA, PW-FF, PW-HH, TW-A, TW-C, TW-R, PW-BB, PW-JJ, MW-11, PW-II, PW-EE, MW-8, MW-4, and PW-G. Subsequent to SVE operation, a significant amount of water was pulled through the conveyance lines to the knockout tanks. During initial SVE system operation, approximately 300 gallons of water was removed from the conveyance lines and subsequently discharged to the 100-barrel (bbl) LNAPL collection tank.

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On December 8, 2011, a tedlar bag was utilized to collect effluent air samples from each SVE unit. The samples were submitted to Accutest Laboratories for BTEX and total petroleum hydrocarbons gasoline range organics (TPH-GRO) analysis using USEPA Method TO-3. Based on the operational and analytical data the SVE system removed an estimated 50 pounds of volatile organic compounds (VOCs) from the Site subsurface this reporting period. The laboratory analytical report is included in Appendix A.

4.3 LNAPL Recovery Performance Evaluation

The LNAPL recovery portion of the system is active at 10 of the 28 wells at the Site (PW-KK, TW-B, PW-DD, MW-13, TW-D, TW-C, PW-CC, TW-L, TW-P and TW-J). Recovery well LNAPL and groundwater elevations are gauged on a bi-weekly basis to ensure the LNAPL recovery pumps are operating properly. LNAPL recovery pumps discharge through recovery system transfer lines to a 100-bbl welded steel holding tank located on-Site. The 100-bbl tank is also gauged on a bi-weekly basis for LNAPL and water volumes.

During the fourth quarter 2011, the LNAPL recovery system extracted 477.47 gallons of LNAPL. The tank gauging data indicates that 988.77 gallons of water was generated this reporting period, however, the water recovery value includes approximately 800-gallons of water removed by the SVE moisture knock out tank. Incremental and cumulative recovery volumes for 2011 are summarized in the table and figures below.

Quarter	Water Recovery (gallons)	Product Recovery (gallons)
1st Quarter 2011	146.62	1,225.63
2nd Quarter 2011	214.30	1,297.06
3rd Quarter 2011	0	1,018.85
4th Quarter 2011	977.49	[\] 789.52
Annual Total	1,338.41	4,331.06





Notes:

The steep declines in water and LNAPL volumes indicate evacuation of the tank contents.

4.3.1 LNAPL Recovery System Modifications

A new model product recovery pump (QED Combo Pump - Model #AP4/SPG4) and cycle counter was installed into well TW-GG on December 8, 2011. The recovery well, with the new pump installed, reduced the LNAPL thickness from 7.48 feet to 0.31 feet. The cycle counter reading as of January 4 was 4,179 which is the equivalent volume of approximately 2,553.85 gallons. The high reading indicates that the pump has cycled both groundwater and product or may have cycled air but not discharged liquid. This may be an issue with pump position or pump malfunction. Further monitoring and assessment of the pump performance will be conducted during the first quarter of 2012.





4.4 Air Sparge Performance Evaluation

The AS system has continued to operate on a 24-hour per day basis with minor down time due to routine scheduled equipment maintenance. The primary evaluation criteria for AS performance is tied to the dissolved phase hydrocarbon concentrations present in groundwater downgradient to the AS well alignment. The three monitoring wells, MW-14, MW-15, and MW-23, located immediately downgradient from the sparge curtain provide ideal monitoring locations for observing effects the AS system has on impacted groundwater as it passes through the treatment zone. On the east end of the AS system, monitoring well MW-14 continues to exhibit low dissolved benzene concentrations, however, MW-23 which is located immediately downgradient to MW-14, continues to have no detectable concentrations of benzene or other dissolved petroleum hydrocarbons. On the west end of the AS system, lab data indicates that no dissolved phase hydrocarbon impacts are present in the vicinity of MW-15.



5. Conclusions

This section of the report presents conclusions from the findings of fourth quarter 2011 groundwater monitoring and remediation system O&M activities.

- Of the eleven monitoring wells sampled this quarter, one (MW-14) had dissolved phase petroleum hydrocarbon impacts in exceedence of the New Mexico Water Quality Control Commission Standards. In addition, point of compliance wells located downgradient to the source area are clean and continue to indicate that LNAPL and/or dissolved phase impacts have not migrated beyond the historic area of impact. As evidenced by the information cited above, it can be concluded that the remedial approach at the Site is effectively addressing the hydrocarbon impacts in the historic release area and preventing the hydrocarbon plume from expanding downgradient;
- LNAPL distribution and thickness at the Site appears to be stable and/or decreasing;
- The SVE system removed 50-pounds of VOC mass during the month of December. The current mass removal rate in the vapor phase supports continued SVE operation;
- A significant volume of water is being generated by the SVE system which likely being caused by the temperature differential between the extracted soil vapor and the ambient air;
- LNAPL recovery rates have declined over the last two quarters indicating that re-positioning of recovery pumps may be warranted during the upcoming quarter;
- The QED combo pump has operated continuously since installation in PW-GG with some downtime due to necessary adjustments to the intake depth. It appears that this style of pump can be effective at removing LNAPL from the subsurface, and;
- Based on groundwater concentrations in the vicinity of the AS trench, the cut off system appears to be effectively addressing dissolved phase hydrocarbon concentrations in groundwater along the eastern alignment of the trench.

6. Recommendations

Based on evaluation of current and historical groundwater and LNAPL data as well as remediation system performance data, recommendations have been developed for future activities, as described below:

- Ongoing quarterly groundwater monitoring and sampling activities will provide for continued monitoring of dissolved phase BTEX concentration and LNAPL trends;
- Continue AS, SVE, and LNAPL recovery system operation and maintenance;



- Continue product pump evaluation, and;
- Initiate quarterly recovery well rotation to enhance product recovery rates.

Tables

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TABLE 1 FOURTH QUARTER SAMPLING 2011 SUMMARY OF GROUNDWATER ELEVATION DATA HOBBS BOOSTER STATION LEA COUNTY, NEW MEXICO

	1							Change in
		Depth to		Free Phase				Groundwater
		Groundwater	Depth to	Hydrocarbon	Total Depth		Groundwater	Elevation Since
	· D. C.	(1)	Product (1)	Thickness	(2)	TOC Elevation	Elevation	Previous Event (3)
Location	Date	(leet)	(feet)	(leet)	(leet)	(leet amsi)	(leet amsi)	(leet)
MW-1*	6/21/2011	54.35	49.99 50.22	4.30			3575.27	
	9/16/2011	54.68	50.33	4.00	NM	3626.06	3573.00	0.51
	12/8/2011	55 57	50.11	5.01	NM	3626.06	3574.70	-0.51
	12/0/2011	10.40	30.31	3.01	14144		3374.30	-0.47
MW-2*	6/21/2011	48.42	45.13	3.29			3577.41	
MW-2*	9/16/2011	46.18	45.48	2.70	NIM	3623.14	3577.10	0.20
MW-2*	12/8/2011	49.10	45.69	3.41	NM	3623.14	3576.60	-1.02
MIN 2	2/20/2011	45.40		4			2577.50	
MW-3	6/21/2011	45.42	,		· · · · ·		3577.16	
MW-3	9/16/2011	46.37		· · · · · · · · · · · · · · · · · · ·	55.80	3623.01	3576.64	-0.95
MW-3	12/8/2011	46.78			55.80	3623.01	3576.23	-0.41
NOV 5	2/20/2011		પ્રયુપ્ય કરે કે				0.556 40	
MW-5	5/29/2011	52.74	· ·				3576.42	
MW 5	0/21/2011	52.40			50.20	2620-16	3575.76	0.66
MW-5	12/8/2011	54.11			59.20	3629.10	3575.05	-0.00
	12/0/2011	34.11		. Market at a subscript	37,40	5027.10	3373.03	-0.71
MW-6	3/29/2011	48.65		,	ļ		3578.28	
<u>MW-6</u>	0/21/2011	49.02			EC AC	2626.02	3577.91	0.07
IVIVV-0	9/10/2011	49.52			50.40	3626.93	3577.41	-0.87
14144-0	12/0/2011	47.85	معيد مندوع الأوار	مريحه والمسترجع	30.40	3020.93	35/7.08	-0.33
MW-7	3/29/2011	41.64					3579.76	
MW-7	6/21/2011	41.80	· · · · · · · · · · · · · · · · · · ·			2691.40	3579.60	
MW-7	9/10/2011	NM			NM	3621.40	NM	NM
1 V1 VV - /	12/0/2011	43.94				3621.40	35/7.40	INIVI
MW-9*	3/29/2011	57.60	51.54	6.06			3572.56	•
MW-9*	6/21/2011	57.91	51.82	6.09			3572.27	
MW-9*	9/16/2011	58.02	51.74	6.28	NM	3625.21	3571.90	-0.66
INIW-9*	12/8/2011	58.44	52.16	0.28	NM	3625.21	35/1.48	-U.42
MW-10	3/29/2011	46.14					3574.93 ,	
MW-10	6/21/2011	46.49					3574.58	
MW-10	9/16/2011	46.99			58.28	3621.07	3574.08	-0.85
<u>MW-10</u>	12/8/2011	46.92		م م مع هم م	58.28	3621.07	3574.15	0.07
MW-12*	3/29/2011	28.33	51.75	6.58			3573.64	
MW-12*	6/21/2011	59.20	51.84	7.36			3573.41	
MW-12*	9/16/2011	59.86	51.58	8.28	NM	3626.60	3572.95	-0,69
MW-12*	12/8/2011	60.02	52.00	8.02		3626.60	3572.60	-0,36
MW-14	3/29/2011	48.35					3573.07	
MW-14	6/21/2011	48.37					3573.05	
MW-14	9/16/2011	49.25	i		62.94	3621.42	3572.17	-0.90
MW-14	12/6/2011	49.52		AT ALL THAN SET IN A COM	62.94	3621.42	3571.90	-0.27
MW-15	3/29/2011	44.09		•			3575.30	
MW-15	6/21/2011	44.51					3574.88	
MW-15	9/16/2011	45.02	-		58.17	3619.39	3574.37	-0.93
MW-15	12/6/2011	45.30	- 874 A. 10 Mar 1900	standing of a large state	58.17	3619.39	3574.09	-0.28
MW-16	3/29/2011	44.37					3577.50	
MW-16	6/21/2011	44.79					3577.08	
MW-16	9/16/2011	45.31			56.35	3621,87	3576.56	-0.94
MW-16	12/6/2011	45.55		linger was readed and	56.35	3621.87	3576.32	-0.24
MW-17*	3/29/2011	54.25	53.46	0.79			3570.35	
MW-17*	6/21/2011	54.46	53.71	0.75			3570.09	
MW-17*	9/16/2011	53.66	54.47	0.81	NM	3623.94	3570.89	0.54
MW-17*	12/8/2011	54.82	54.10	0.72	NM	3623.94	3569.66	-0.42

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TABLE 1 FOURTH QUARTER SAMPLING 2011 SUMMARY OF GROUNDWATER ELEVATION DATA HOBBS BOOSTER STATION LEA COUNTY, NEW MEXICO

		Depth to	Donth to	Free Phase	Total Danth	、	Constant	Change in Groundwater
Location	Date	(1) (feet)	Product (1) (feet)	Thickness (feet)	(2) (feet)	TOC Elevation (feet amsl)	Elevation (feet amsl)	Elevation Since Previous Event (3) (feet)
MW-18*	3/29/2011	54 53	<u> </u>	()		(1000 11100)	3569.77	()
MW-18*	6/21/2011	54.83	54,77	0.06			3569.52	
MW-18*	9/15/2011	54.51	54,71	0.20	NM	3624.30	3569.94	0.17
MW-18*	12/8/2011	55.21	55.08	0.13	NM	3624.30	3569,19	-0.55
MW-19	3/29/2011	54 42	ir yeerin , urgint hegindi	من حرك الم وجل المارية المارية المارية المراجع المارية المراجع المارية المراجع المراجع المراجع المراجع	1775 2016 (H ² 14 71 14 2)	■ P Strate and the strategy of the strateg	3569 70	an i a an ann ann ann an ann an ann an
MW-19	6/21/2011	54.75	•				3569.37	
MW-19	9/15/2011	55,18	· · · · ·		65.15	3624.12	3568.94	-0.76
MW-19	12/6/2011	55.46			65.15	3624.12	3568.66	-0.28
MW-19D	3/29/2011	54.33	1. 197 P. (840 P.)	and the second second	anoniase, s i rier	47	3569 46	1
MW-19D	6/21/2011	54.74					3569.05	
MW-19D	9/15/2011	55.15			78.75	3623.79	3568.64	-0.82
MW-19D	12/6/2011	55.41			78.75	3623.79	3568.38	-0.26
MW-20	3/29/2011	51.97		in the same is by the test theory	in a second the second		3569 52	And the second
MW-20	6/21/2011	52.32					3569.17	
MW-20	9/16/2011	52.75			60.80	3621.49	3568.74	-0.78
MW-20	12/6/2011	53.00			60,80	3621.49	3568.49	-0.25
MW-21	3/29/2011	53 72	***** * <u>1</u> ** *		ere and an	22.55. <u>7.5</u>	3570 53	in the second stands of the second
MW-21	6/21/2011	54.19					3570.05	
MW-21	9/15/2011	54.59			62.75	3624.25	3569.66	-0.87
MW-21	12/6/2011	54.84			62.75	3624.25	3569.41	-0.25
MW-22	3/29/2011	55.40	ารสาราชรัฐรัฐรัฐรัฐรัฐรัฐรัฐรัฐรัฐรัฐ	2	an a san i kana a s	· · · · · · ·	3569.67	1973 S. 1985 S. 2000 S. 19
MW-22	6/21/2011	55.76					3569.40	
MW-22	9/15/2011	56.23			62.00	3625.16	3568.93	-0.74
MW-22	12/6/2011	56.51			62.00	3625.16	3568.65	-0.28
MW-23	3/29/2011	47 94	Alter of the set of th	were then the but the			3573.22	
MW-23	6/21/2011	48.34					3572.82	
MW-23	9/15/2011	48.84			56.21	3621.16	3572.32	-0.90
MW-23	12/6/2011	49.15			56.21	3621.16	3572.01	-0.31
MW-24	3/29/2011	45.98	<u></u>	and I Tanin' Y 'S ANDARAN' AND I - A	n, , , , , , , , , , , , , , , , , , ,	······································	3573.29	රස් වරාසය බොහැසි පසාන් යම්මාන්තියේ.
MW-24	3/11/2011	46.36					3572.91	
MW-24	9/15/2011	46,90			56.77	3619.27	3572.37	-0.92
MW-24	12/6/2011	47.21			56.77	3619.27	3572.06	-0.31
MW-25	3/29/2011	47 04	2 - 1835, 952 Mers. 1938, 1946, 19 1	ಗಾ ರೇಖೆ ನಿಯಮಿಸಿ ಅಂತಿ ಎಂದಿ ಹೇಳಿದೆ. ನೇಜಿ ರಿ		8 - 9 - 2 - 4 - 4 - 7 - 7 - 6 - 4 	3572.60	a national and a strain and a
MW-25	6/21/2011	47,40					3572.33	
MW-25	9/15/2011	47.91		·····	56.29	3619.73	3571.82	-0.87
MW-25	12/6/2011	48.15			56.29	3619.73	3571.58	-0.24
TW-H	3/29/2011	46.02		ారతర్ దివార్ కు తిర్రాలు నా	- 1-96 - 97 - 2 - 2 -	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3576.28	ನ್ನು ಕ್ರಮಿಸಿಕೊಂಡ ಅಧಿಕರ್ಷ್ಮಿತ
TW-H	6/21/2011	46.42		·			3575.88	· · · · · · · · · · · · · · · · · · ·
Т₩-Н	9/15/2011	NM	· ·	· · · ·	NM	3622.3	NM	NM
TW-R	12/8/2011	NM			NM	3622,30	NM	NM
TW-K*	3/29/2011	62.66	55.51	7.15	101	The Reader Production	3572 13	an a ser clara a se gerre and second
TW-K*	6/21/2011	62.47	55.71	6.76			3572.00	
TW-K*	9/16/2011	62.10	55.67	6.43		3628.95	3571.67	-0,46
TW-K*	12/8/2011	62.15	56.04	6.11		3628.95	3571.38	-0.29

TABLE 1 FOURTH QUARTER SAMPLING 2011 SUMMARY OF GROUNDWATER ELEVATION DATA HOBBS BOOSTER STATION LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (1) (feet)	Depth to Product (1) (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (2) (feet)	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)	Cnange m Groundwater Elevation Since Previous Event (3) (feet)
TW-N*	3/29/2011	55.60	54.48	1.12			3577.29	
TW-N*	6/21/2011	57.24	54.30	2.94			3577.14	
TW-N*	9/16/2011	59.13	53.71	5.42		3631.98	3576.92	-0.38
TW-N*	12/8/2011	59.30	53.95	5.35		3631.98	3576.69	-0.22
			Av	erage Change in gro	oundwater elevat	ion since the previo	us monitoring event	-0.35

Notes:

1- Depths measured from the north edge of the well casing.

2- Total depths were collected and recorded during the fourth quarter 2011 monitoring event. Total depths were not collected in wells that contained LNAPL.

3- Changes in groundwater elevation calculated by subtracting the measurement collected during the previous monitoring event from the measurement collected during the most recent monitoring event.

Data presented includes previous sampling event. Historic groundwater elevation data for these locations are available upon request.

Sample locations are shown on Figure 2 and and a groundwater elevation contour map is shown on Figure 3.

amsl - feet above mean sea level.

TOC - top of casing.

NM - Not Measured.

* Groundwater elevation was corrected for product thickness using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water) + (LNAPL Thickness in Well * LNAPL Density)

LNAPL density was assumed to be approximately 0.75 grams per cubic centimeter

TABLE 2 FOURTH QUARTER 2011 SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER HOBBS BOOSTER STATION LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/l)		0.01	0.75	0:75	0.62	
MW-3	3/29/2011	NS	NS	NS	NS	
MW-3	9/16/2011	< 0.001	< 0.002	0.0246	0.0135	
MW-3	12/6/2011	NS	NS	NS	NS	
MW-5	03/29/11	NS	NS	NIC	NC	αι την από την βουτοργαγίας την του
	9/15/2011	<0.001	<0.002	<0.002	<0.004	
	12/6/2011	NS	NS	NS	NS	· · · · · · · · · · · · · · · · · · ·
	02/20/11	NIC	1.24° &	NIC	NO	1. X. S. S. S. M. C. S. S. S. S.
MW 6	0/16/2011	NS <0.001	NS	NS <	NS <0.004	
MW-6	12/6/2011	<u> </u>	NS	<0.002 NS	~0.004 NS	
MIW-U				IND In here: I have a service and	LANDARD TO BE THE	K
<u>MW-10</u>	03/29/11	<u>NS</u>	NS	NS	NS	
MW-10	9/16/2011	0.213	<0.01	0.135	<0.02	Duplicate sample collected
IVI W-10	12/6/2011	INS No. 10 The Los	IND XIAMAA AAAAA	INS CONTRACTOR	IND Alternational Anna	a a se a a company a company a second a
MW-14	03/29/11	0.0901	0.0041	<0.002	< 0.002	
MW-14	06/21/11	0.187	<0.002	<.0043	< 0.004	····
MW-14	09/16/11	0.15	< 0.002	0.0024	< 0.004	·
MW-14	12/6/2011	0.0787	<0.002	0.0017	<0.004	Duplicate sample collected
MW-15	03/29/11	< 0.001	<0.002	0.0039	< 0.002	
MW-15	06/21/11	0.0048	< 0.002	0.0012	< 0.004	
MW-15	09/16/11	0.0054	<0.002	0.0124	<0.004	·
MW-15	12/6/2011	0.0053	<0.002	0.0106	<0.004	
MW-16	03/29/11	< 0.001	<0.002	<0.002	<0.002	 За т. т. и цалента пости до 2000. 19 ст. 19 ст. 2000.
MW-16	06/21/11	< 0.001	< 0.002	< 0.002	< 0.004	· · · · · · · · · · · · · · · · · · ·
MW-16	09/16/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-16	12/6/2011	<0.001	<0.002	<0.002	<0.004	
MW 10	02/20/11	<0.001	<0.000	<0.002	<0.002	
MW-19	05/29/11	<0.001	<0.002	<0.002	<0.002	
MW-19	09/15/11	<0.001	<0.002	<0.002	<0.004	· · · · · · · · · · · · · · · · · · ·
MW-19	12/6/2011	<0.001	<0.002	<0.002	<0.004	
The second s	02/20/11		**************************************	-0.000	1000 - 1000 AND P 1	L
MW-19D	03/29/11	<0.001	<0.002	<0.002	< 0.002	······
MW-19D	00/21/11	0.0014	<0.002	<0.002	<0.004	
	12/6/2011	0.0014		<0.002	<0.004	
	12/0/2011	0.0015	-0.002	-0.002	-0.004	and a state of the
MW-20	03/29/11	<0.001	< 0.002	< 0.002	< 0.002	
MW-20	06/21/11	< 0.001	<0.002	<0.002	< 0.004	
MW-20	09/15/11	< 0.001	<0.002	<0.002	< 0.004	
MW-20	12/6/2011	<0.001	<0.002	<0.002	<0.004	an an an an ar an an article and an
MW-21	03/29/11	< 0.001	< 0.002	< 0.002	< 0.002	
MW-21	06/21/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-21	09/15/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-21	12/6/2011	<0.001	<0.002	<0.002	<0.004	

TABLE 2 FOURTH QUARTER 2011 SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER HOBBS BOOSTER STATION LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	Comments
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	
MW-22	03/29/11	0.0034	< 0.002	<0.002	0.0022	
MW-22	06/21/11	0.0041	<0.002	.0005 J	< 0.004	
MW-22	09/15/11	0.0037	<0.002	< 0.002	< 0.004	
MW-22	12/6/2011	0.0028	<0.002	<0.002	<0.004	
MW-23	03/29/11	<0.001	< 0.002	<0.002	<0.002	PM 1249月,由你想要给你的帮助给上?RAYHPPANAP 数据 4 7537年48月 1877年7月19日4月,2379年4月,2379
MW-23	06/21/11	< 0.001	<0.002	< 0.002	< 0.004	
MW-23	09/15/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-23	12/6/2011	<0.001	<0.002	<0.002	<0.004	
MW-24	03/29/11	<0.001	<0.002	<0.002	<0.002	an an analysis and an arrest sub-division is an all the second states and the second second second second second
MW-24	06/21/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-24	09/15/11	< 0.001	< 0.002	< 0.002	< 0.004	
MW-24	12/6/2011	<0.001	<0.002	<0.002	<0.004	
MW-25	03/29/11	<0.001	<0.002	<0.002	<0.002	and and the second of the seco
MW-25	06/21/11	<0.001	<0.002	<0.002	<0.002	· · · · · · · · · · · · · · · · · · ·
MW-25	09/15/11	< 0.001	<0.002	<0.002	<0.004	
MW-25	12/6/2011	< 0.001	<0.002	<0.002	< 0.004	

Notes:

1.) The environmental cleanup standards for groundwater that are applicable to this Site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards.

2.) Data presented for all other well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations are available upon request.

Red values indicate an exceedance of the NMWQCC groundwater standards for the Site.

Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

LNAPL = Light Non-Aqueous Phase Liquid

NS = Not sampled.

mg/L = milligrams per liter.

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Figures







	 Monitoring Well LNAPL/SVE Recovery Well Air Sparge Point Air Sparge System Equipment Platform LNAPL/SVE Recovery System Equipment Platform and Holding Tanks Groundwater Elevation Contour Line (feet AMSL), Dashed Where Inferred 3,710.33 Measured Groundwater Elevation (feet AMSL) Groundwater Flow Direction 	
	Notes: AMSL - Above Mean Sea Level	
NTOUR MA MBER 6 & 8	EVATION FIGURE AP 3 , 2011)	



		Monitoring Well
		LNAPL/SVE Recovery Well
1.	N. Inch	Air Sparge Point
		Air Sparge Puntern Environment Diotform
1	ाल म	Equipment Platform and Holding Tanks
1-22		
5/2011	12/6/2011	
ng/L)	(mg/L)	
0037	0.0028	
0.002	< 0.002	
0.002	< 0.002	
0.004	< 0.004	
1.00		
-20		
/2011	12/6/2011	
g/L)	(mg/L)	
.001	< 0.001	
.002	< 0.002	5.
.002	< 0.002	
.004	< 0.004	
011 1	2/6/2011	
)	(mg/L)	
01	<0.001	Notes:
2	< 0.002	DCP - DCP Midstream
12	< 0.002	
14	< 0.004	BPL - Buried Pipeline
		NS - Not Sampled
	12/6/2011	All aqueous analytical results are presented in
)	(mg/L)	milligrams per liter (mg/L)
)1	<0.001	
2	<0.001	
)2	<0.002	
)4	< 0.004	0 125 250
	and the second	Feet
	A CONTRACTOR OF	
TIC	CAL RE MAP	SULTS FIGURE

Appendix A

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Laboratory Analytical Report

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