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AGWMR

11/26/2012

**2011 ANNUAL GROUNDWATER
MONITORING REPORT AND
CLOSURE REQUEST**

**PENROSE 'A' LEASE
(WINNIE KENNAN RANCH)
CASE NUMBER: 1R299
INCIDENT NUMBER: 300108**

**SW¹/₄ SE¹/₄, SEC. 3, T23S, R37E
LEA COUNTY, NEW MEXICO**

**Prepared for:
SHELL OIL PRODUCTS US**

**URS Job No. 49233381
26 November 2012**

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1.0 **INTRODUCTION**

This *Annual Report* has been prepared to document the results of groundwater monitoring, sampling and remediation activities conducted during 2011 at the Penrose 'A' Lease (Winnie Kennan Ranch) located approximately seven miles southeast of Eunice, off New Mexico State Highway 18, in Lea County, New Mexico (reference Figures 1 and 2). The subject-property is located in the SW¼ of the SE¼ of Section 3, Township 23 South, Range 37 East. A review of the New Mexico Office of the State Engineer website in 2007 and the United States Geological Survey (USGS) database revealed the presence of ten water supply wells within a one-mile radius of the point of release (reference Figure 2 and Table 1). No wells were found to be located within a 1,000-foot radius of the point of release, with the nearest wells being located approximately 1,800 feet northwest of the point of release.

This report complies with the New Mexico Oil Conservation Division (NMOCD) requirements and addresses all activities performed during the annual period of 2011. Groundwater and light non-aqueous phase liquid (LNAPL) level measurements were collected approximately quarterly throughout 2011. In addition, the LNAPL skimmer pump that was reinstalled in groundwater monitoring well MW-1 on May 30, 2010 was used for LNAPL abatement activities. The monitoring events were performed by H₂A Environmental, Ltd. (H₂A), under the direction of URS Corporation (URS).

2.0 CHRONOLOGY OF EVENTS

A summary of significant events and activities performed at the site is presented below.

March 2000	Shell and Enercon perform a site walk of the property in an area of historic crude oil releases of an unknown amount.
October to November 2000	Enercon was onsite to excavate approximately 10,800 cubic yards of soil, which were transported and landfarmed offsite. The site was excavated to a depth of 40 feet below ground surface (bgs) with TPH exceeding NMOCD standards at that depth. The NMOCD agreed with Shell that for safety purposes further excavation should be halted.
May 2001	Enercon submits the excavation report to the NMOCD.
November 2001	NMOCD requests installation of a soil boring/monitor well in center of excavation to determine amount of remaining hydrocarbon impacts to the soils/groundwater.
January 2002	Enercon was onsite to advance one soil boring within the open excavation from a depth of 40 feet bgs to groundwater located at approximately 75 feet bgs. The soil boring was converted to temporary monitor well TMW-1. Soils exceeded NMOCD standards of 1,000 milligrams per kilogram (mg/Kg) TPH. LNAPL in the form of crude oil was measured in TMW-1.
April 2002	Enercon submits <i>Workplan for Soil Remediation and Monitor Well Installation</i> to NMOCD. The Work Plan included installation of clay liner over remaining hydrocarbon impacted soils.
May 2002	Enercon submits <i>Report Detailing the Installation of Temporary Monitor Well TMW-1</i> to NMOCD.
April 2004	NMOCD agrees to work plan design and installation of additional monitor wells to delineate site groundwater impacts.
June 2004	Enercon places a 4-foot clay liner above remaining hydrocarbon impacted soils and backfills excavation with soils from surrounding sand dunes. Temporary monitor well TMW-1 is converted to monitor well MW-1.
July 2004	Enercon advances four soil borings to approximately 80-feet bgs and converts soil borings to monitor wells (MW-2 through MW-5). Monthly LNAPL recovery from MW-1 initiated.
November 2004	Enercon submits <i>Phase II Backfilling Activities with Site Groundwater/Soil Characterization</i> to NMOCD.
January 2005	Continued monthly LNAPL recovery from MW-1.
March 2005	Enercon submits <i>2004 Annual Groundwater Monitoring Report</i> to the NMOCD.
September 2005	Enercon installs one Clean Environments CEE® Product Only Pump in monitor well MW-1.

January 2006	Site maintenance and environmental management of property transitioned from Enercon to Conestoga-Rovers and Associates (CRA). Continued monthly LNAPL recovery from MW-1.
April 2006	CRA submits <i>2005 Annual Groundwater Monitoring Report</i> to Shell Oil Products US (SOPUS) and the NMOCD.
October 10, 2006	Site maintenance and environmental management of property transitioned from CRA to URS Corporation.
January 2007	Continued monthly LNAPL recovery from MW-1.
March 2007	URS Corporation submits <i>2006 Annual Groundwater Monitoring Report</i> to SOPUS and the NMOCD, recommending the sampling schedule be reduced from quarterly to semi-annual.
March 23, 2007	H ₂ A conducts semi-annual sampling activities.
November 2, 2007	H ₂ A conducts semi-annual sampling activities.
January 2008	Continued monthly LNAPL recovery from MW-1.
March 2008	URS submits <i>2007 Annual Groundwater Monitoring Report</i> to SOPUS and the NMOCD.
March 14, 2008	H ₂ A conducts semi-annual sampling activities.
November 17, 2008	H ₂ A conducts semi-annual sampling activities.
January 2009	Continued monthly LNAPL recovery from MW-1.
March 2009	URS submits <i>2008 Annual Groundwater Monitoring Report</i> to SOPUS and the NMOCD.
May 7, 2009	H ₂ A conducts semi-annual sampling activities.
July 2009	The LNAPL skimmer pump is removed from groundwater monitoring/recovery well MW/RW-1 in an attempt to monitor for LNAPL rebound.
December 12, 2009	H ₂ A conducts semi-annual sampling activities.
March 2010	URS submits <i>2009 Annual Groundwater Monitoring Report</i> to SOPUS and the NMOCD. Groundwater sampling activities terminated.
May 2010	The LNAPL skimmer pump is reinstalled in groundwater monitoring/recovery well MW/RW-1.
August 2010	Representatives from NMOCD, SOPUS, URS Corporation, and H ₂ A meet to discuss the status of the site and develop a plan to move the site toward closure.
March 2011	H ₂ A conducts semi-annual sampling activities of MW-1 and background well MW-4.

August 2011

H₂A conducts semi-annual sampling activities of MW-1 and background well MW-4.

3.0 2011 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

3.1 FIELD PROCEDURES

Groundwater monitoring events were performed on March 1, March 13, April 30, June 12, June 28, July 31, August 26, and September 28, 2011. Groundwater monitoring well locations and site details are illustrated in Figure 3. During these events, fluid levels were measured in each well and the information documented on field monitoring forms. Groundwater samples were collected from monitoring wells MW-1 and MW-4 during the March 13 and August 26, 2011, monitoring events.

3.2 GROUNDWATER GAUGING DATA

During 2011, depth to groundwater across the site ranged from 70.76 feet to 73.61 feet below the top of the casing, with an average groundwater gradient of approximately 0.0053 ft/ft to the southwest. Groundwater gauging data are summarized in Table 2 and illustrated in Figure 4. These observations are consistent with historical data collected at the site. Average groundwater elevations at the site, adjusted for LNAPL, during the March 1 and September 28, 2011 gauging events were 3,226.12 feet, and 3,226.02 feet above mean sea level, respectively. These data indicate the average groundwater elevation at the site decreased approximately 0.1 feet between December 31, 2010 and September 28, 2011. Groundwater gradient maps for the March 13 and September 28, 2011 monitoring events are illustrated on Figures 5 and 7, respectively.

3.3 ANALYTICAL RESULTS

Groundwater sampling activities during 2011 were limited only to monitoring wells MW-1 and MW-4 as outlined during the NMOCD Facility Meeting on August 10, 2010. MW-1 was monitored for benzene, toluene, ethylbenzene and total xylenes (BTEX) via EPA Method 8260B as well as total dissolved solids (TDS) via Standard Method (SM) 2540C, pH via SM4500H B, and chlorides via EPA Method E300.0. MW-4 was sampled as a background well and was analyzed for TDS only via SM 2540C.

Analytical results for the sample collected from groundwater monitoring well MW-1 on March 13, 2011 indicated the presence of benzene (3.9 micrograms per liter [$\mu\text{g/L}$]), ethylbenzene (29.2 $\mu\text{g/L}$) and total xylenes (38.2 $\mu\text{g/L}$). Analytical results for this sample reported toluene as non-detectable at or above the laboratory reporting limit (LRL) of 1.0 $\mu\text{g/L}$. Concentrations were all below the respective New Mexico Water Quality Control Commission (NMWQCC) standards. The analytical results also reported TDS at a concentration of 2,310 milligrams per liter (mg/L) and chlorides at a concentration of 863 mg/L. The sample was not analyzed for pH due to holding time limitations. The

concentrations for TDS and chloride were both reported above the respective NMWQCC standard of 1,000 mg/L (TDS) and 250 mg/L (chloride).

Analytical results for the sample collected from groundwater monitoring well MW-4 on March 13, 2011 reported TDS concentrations of 3,930 mg/L, above the NMWQCC standard of 1,000 mg/L.

Analytical results for the sample collected from groundwater monitoring well MW-1 on August 26, 2011 indicated the presence of benzene (1.9 µg/L), toluene (1.0 µg/L), ethylbenzene (44.0 µg/L), and total xylenes (59.9 µg/L). Concentrations were all below the respective NMWQCC standards. The analytical results also reported TDS at a concentration of 3,560 mg/L, chlorides at a concentration of 382 mg/L, and pH was reported at 7.32. The concentrations for TDS and chloride were both reported above the respective NMWQCC standard of 1,000 mg/L (TDS) and 250 mg/L (chloride).

Analytical results for the sample collected from background groundwater monitoring well MW-4 on August 23, 2011 reported TDS concentrations of 4,110 mg/L, above the NMWQCC standard of 1,000 mg/L.

Historic data are presented in Table 3.

4.0 LNAPL RECOVERY ACTIVITIES

During the 2011 monitoring period, measurable LNAPL in the form of crude oil was present in groundwater monitoring well MW-1 with an average thickness of 0.16 feet (reference Table 2). Historically, from July 2004 through December 2009, the LNAPL thickness averaged 0.58 feet in MW-1. LNAPL abatement activities were performed by utilizing a Clean Environments CEE® Product Only Pump, installed in groundwater monitoring/recovery well MW/RW-1. LNAPL recovery from the onsite remediation system is summarized on Table 2. As of September 28, 2011, an approximate total of 44.5 gallons of LNAPL has been recovered at the site. Of this, approximately 9.5 gallons of LNAPL have been recovered by hand bailing, and 35 gallons by the onsite remediation system. Recovered LNAPL is stored in a 55-gallon steel drum within a fiberglass secondary containment adjacent to groundwater monitoring well MW-1, situated within a poly lined earthen berm.

5.0 NMOCD FACILITY MEETING

On August 10, 2010, representatives from the NMOCD, SOPUS, URS Corporation and H₂A met to discuss the status of the site and define a path moving towards closure. Representatives from the NMOCD, Mr. Glenn Von Gonten and Mr. Jim Griswold, agreed that SOPUS had aggressively remediated the site and that these activities would be beneficial when proposing alternative abatement standards. Results of the meeting included the development of a plan to move the site toward closure, under either a *Technical Infeasibility* option as outlined in Subsection F of 19.15.30.9 of the New Mexico Administrative Code (NMAC) or providing alternative abatement standards. The plan included the following:

- Determine the TDS in the source well (i.e. MW-1) and a background well (i.e., MW-3 or MW-4);
- Collect a water sample from groundwater monitoring well MW-1 to determine petroleum constituent concentrations, if present. The sample should be submitted for quantification of the following constituents:
 - Benzene, toluene, ethylbenzene and total xylenes via EPA Method 8260B; and,
 - Total Dissolved Solids (TDS) via Standard Method (SM) 2540C, pH via SM4500H B, and chlorides via EPA Method E300.0.
- Should analytical results indicate no detectable concentrations of petroleum constituents or levels below the water quality standards as set forth in 20.6.2.3103 NMAC, then an additional sample should be collected to confirm results. If the second round confirms no petroleum constituents are present at or above the water quality standards, the site may be eligible for closure although LNAPL is present on the water table.
- Prepare and submit a closure request package;
- Should analytical results indicate detectable concentrations of petroleum constituents at levels exceeding water quality standards as set forth in 20.6.2.3103, continue site monitoring to confirm stable/declining trends in samples collected from groundwater monitoring well MW-1 to ensure a stable / declining overall trend exists.

In addition to the aforementioned plan, discussions included looking at the option of completing a *Stage II Abatement Plan* and proposing alternative abatement standards. A *Stage II Abatement Plan* would have to be submitted for public review; however, the NMOCD representatives indicated they could support alternative abatement standards based on work previously completed by SOPUS.

6.0 **SUMMARY OF FINDINGS**

Key findings based on the assessment/remediation activities conducted during 2011 are presented below:

- The groundwater gradient remains relatively constant at approximately 0.0053 ft/ft to the southwest.
- LNAPL was present throughout 2011 in groundwater monitoring well MW-1 with an average thickness of 0.16 feet.
- A CEE® Product Only Pump was installed in groundwater monitoring well MW-1 in September 2005 to enhance recovery of LNAPL and has recovered approximately 35 gallons since installation.
- Groundwater sampling activities in MW-2 through MW-5 were terminated at the end of 2009 due to the absence of constituents of concern in these groundwater monitoring wells.
- Analytical results for the groundwater samples collected from monitoring well MW-1 on March 13 and August 23, 2011 indicated constituents of concern were below NMWQCC standards for both sampling events.
- These results clearly show that the residual NAPL is not contributing to dissolved impacts.

7.0 RECOMMENDATIONS

Based on field and analytical data collected during the past year and analytical results for samples collected previously from the groundwater monitoring well network and results of the NMOCD facility meeting held on August 10, 2010, the following recommendations are made:

- 1) The case be closed by the NMOCD; and,
- 2) The groundwater monitoring wells be abandoned and the site restored as close to original condition as practical.

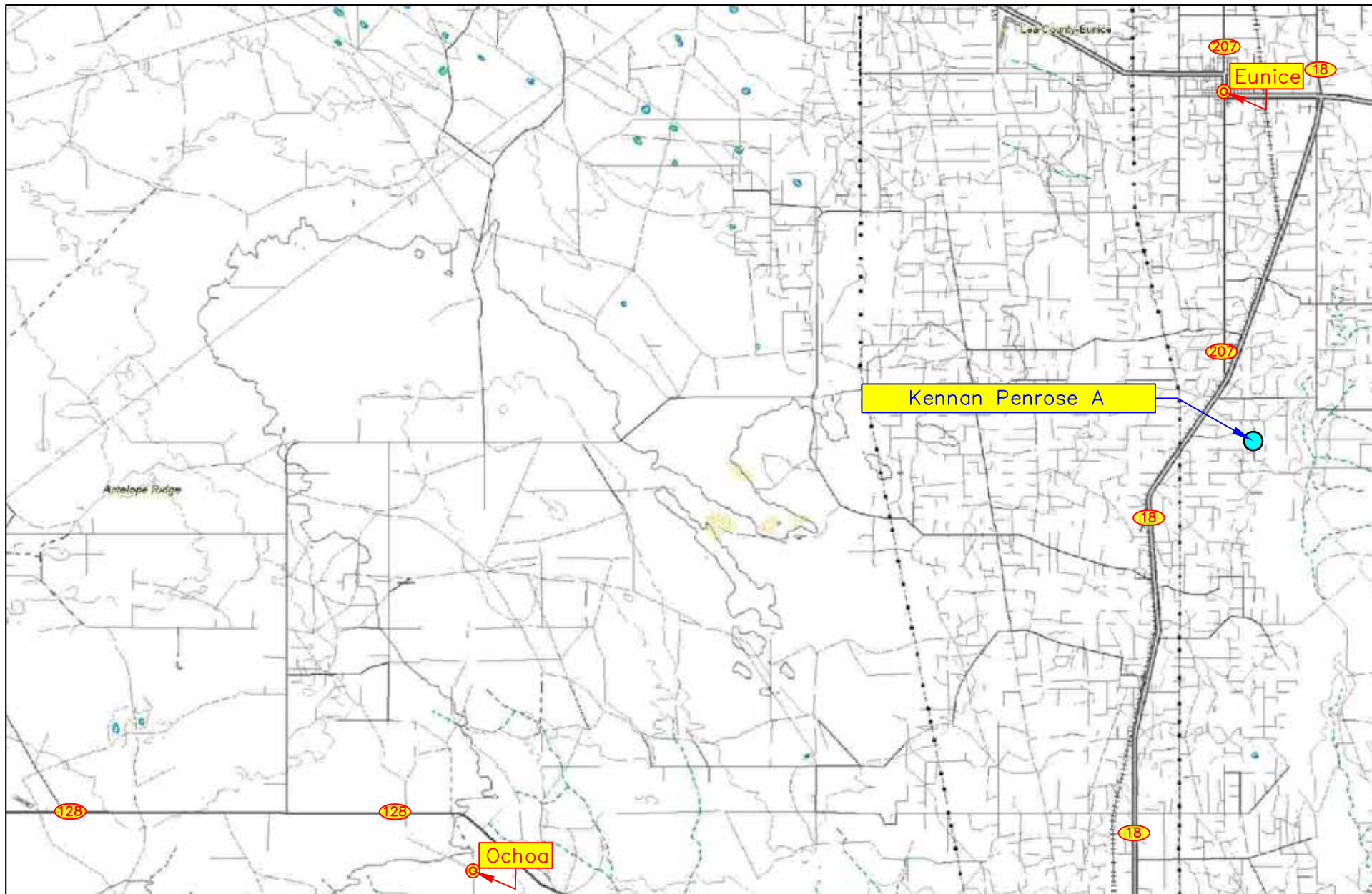
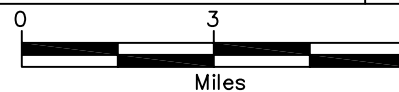


Figure 1
Area Map
URS
Kennan Penrose A

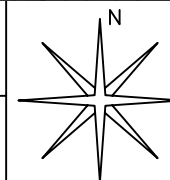
Lea County, New Mexico
SW 1/4 of the SE 1/4, Sec. 3, T23S, R37E
N 32° 19' 36.39" W 103° 08' 54.31"
Elevation: 3,300 feet amsl

DWG By: Daniel Dominguez
October 2006

REVISED:



SHEET
1 of 1



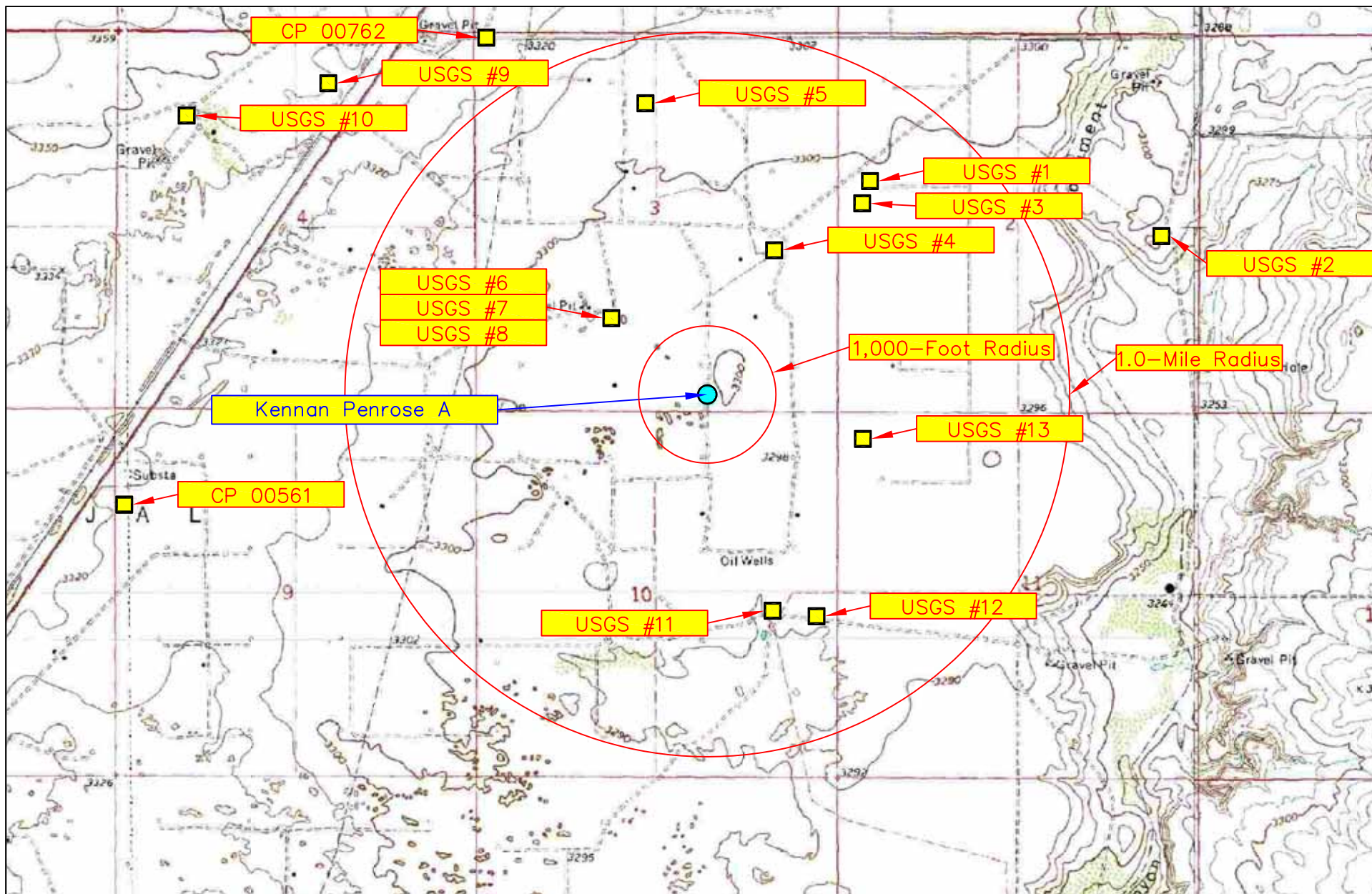
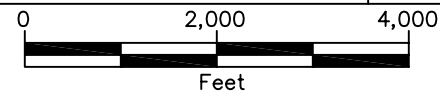


Figure 2
Site Location Map
URS
Kennan Penrose A

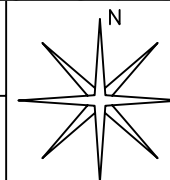
Lea County, New Mexico
SW 1/4 of the SE 1/4, Sec. 3, T23S, R37E
N 32° 19' 36.39" W 103° 08' 54.31"
Elevation: 3,300 feet amsl

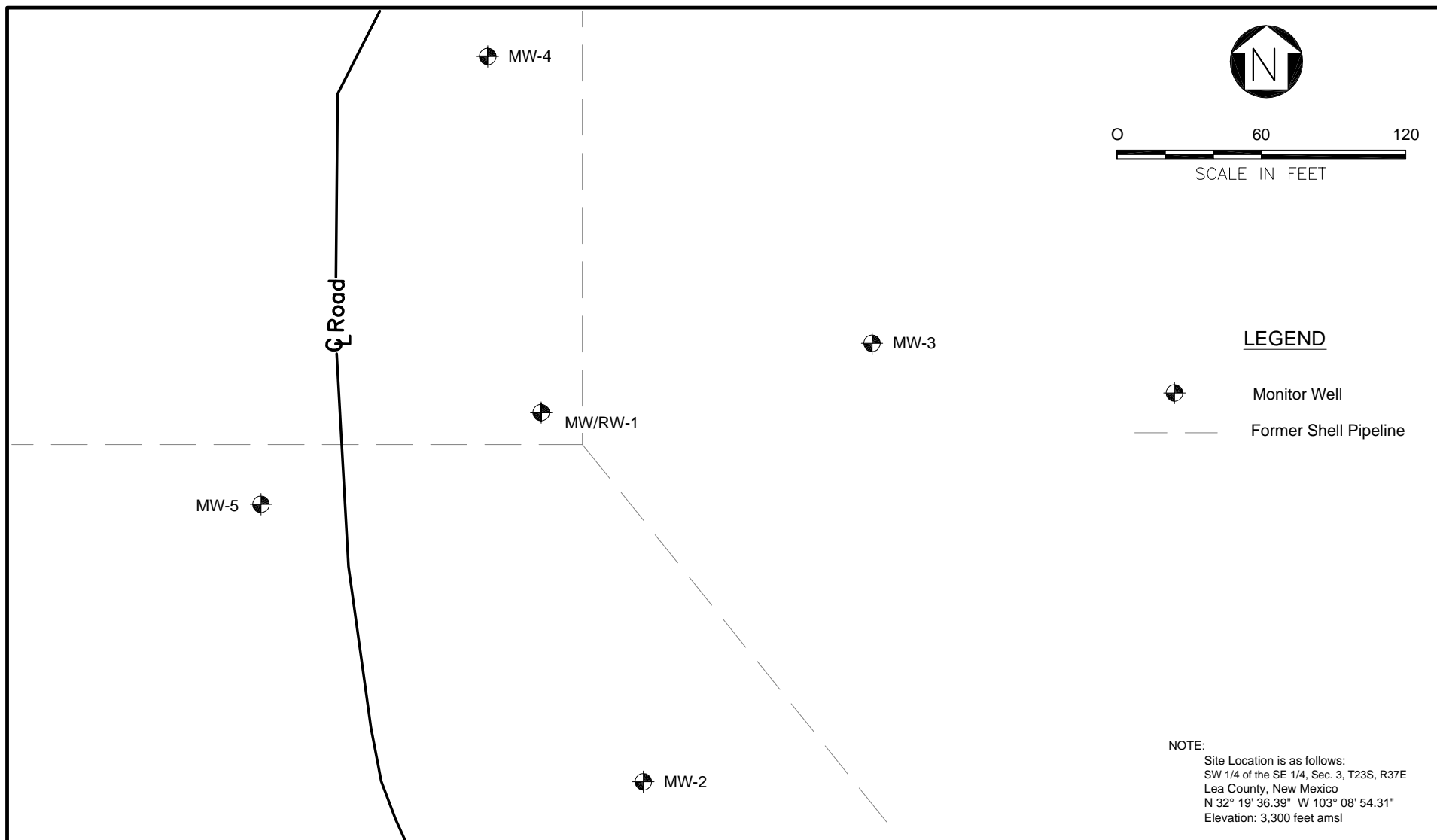
DWG By: Daniel Dominguez
October 2006

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SITE MAP
KENNAN PENROSE "A"
28 FEBRUARY 2006

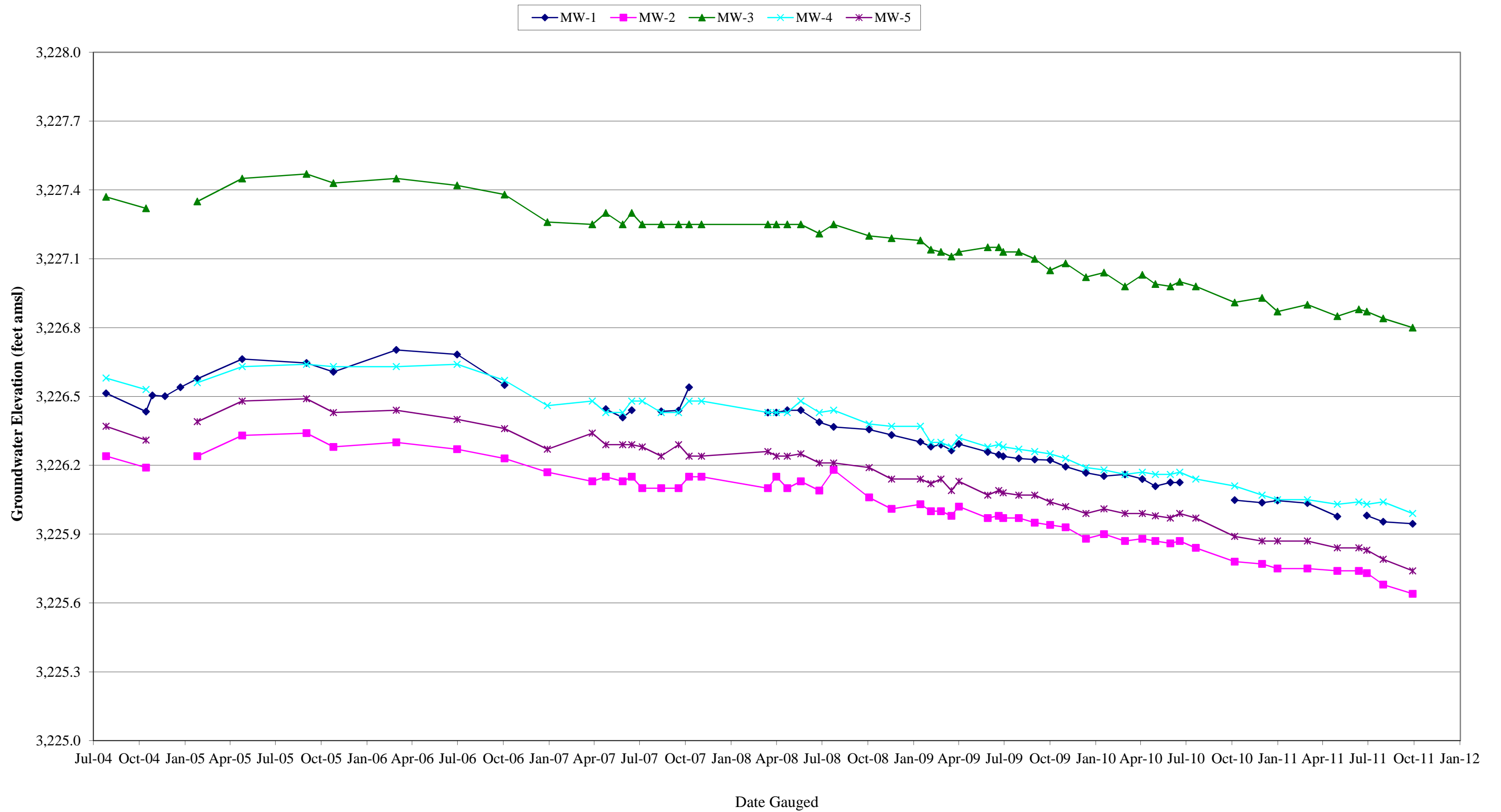
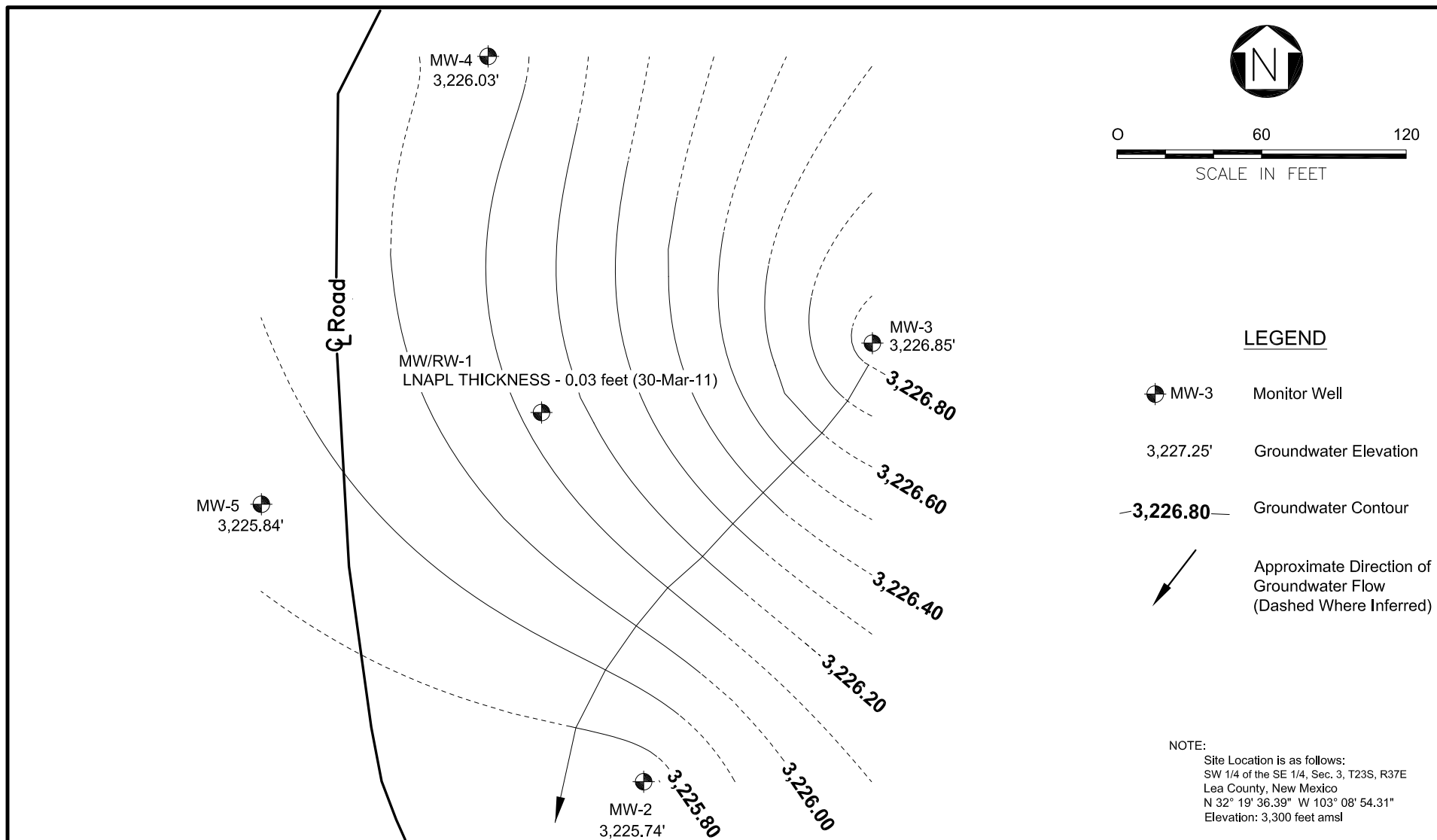
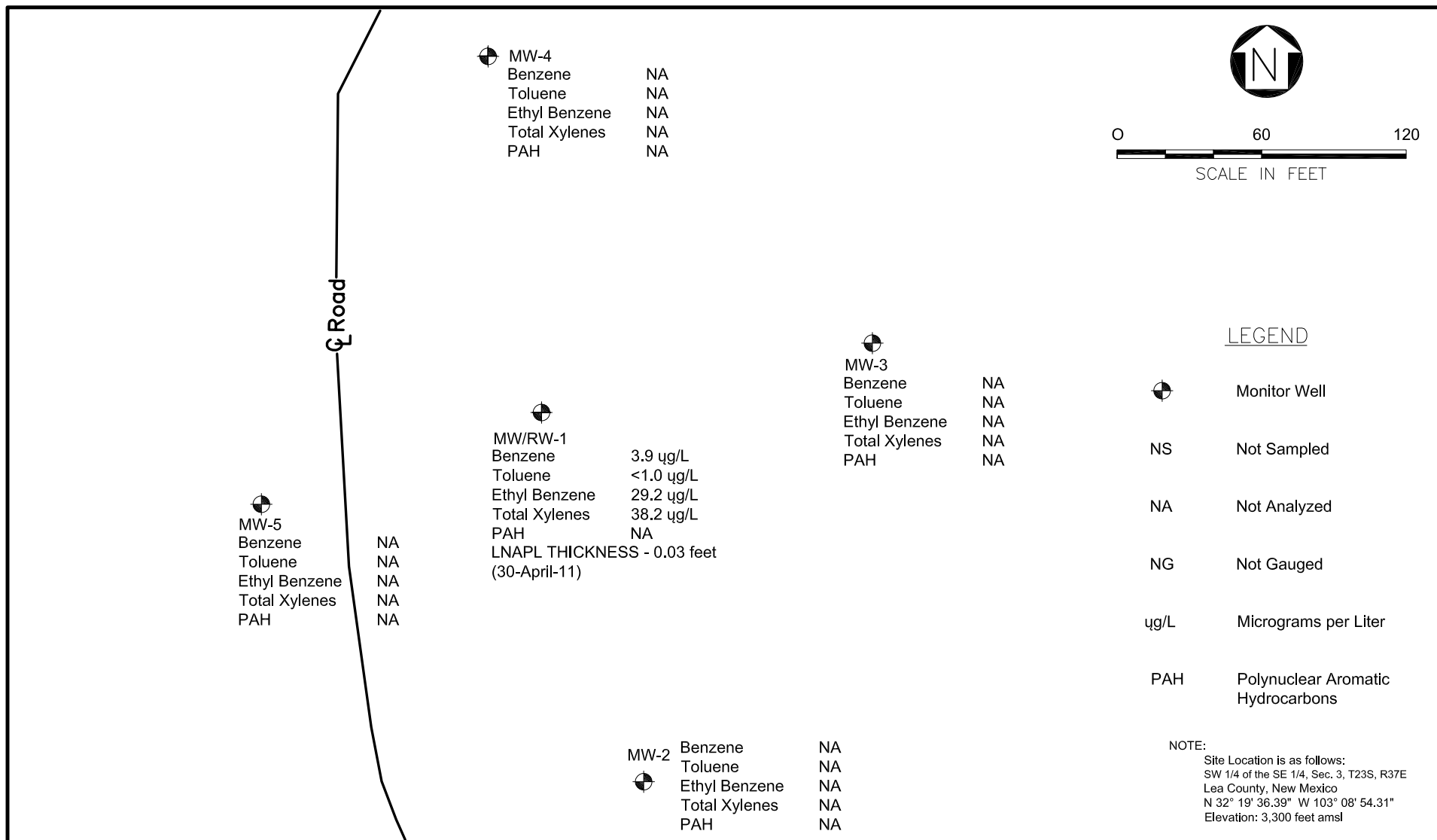


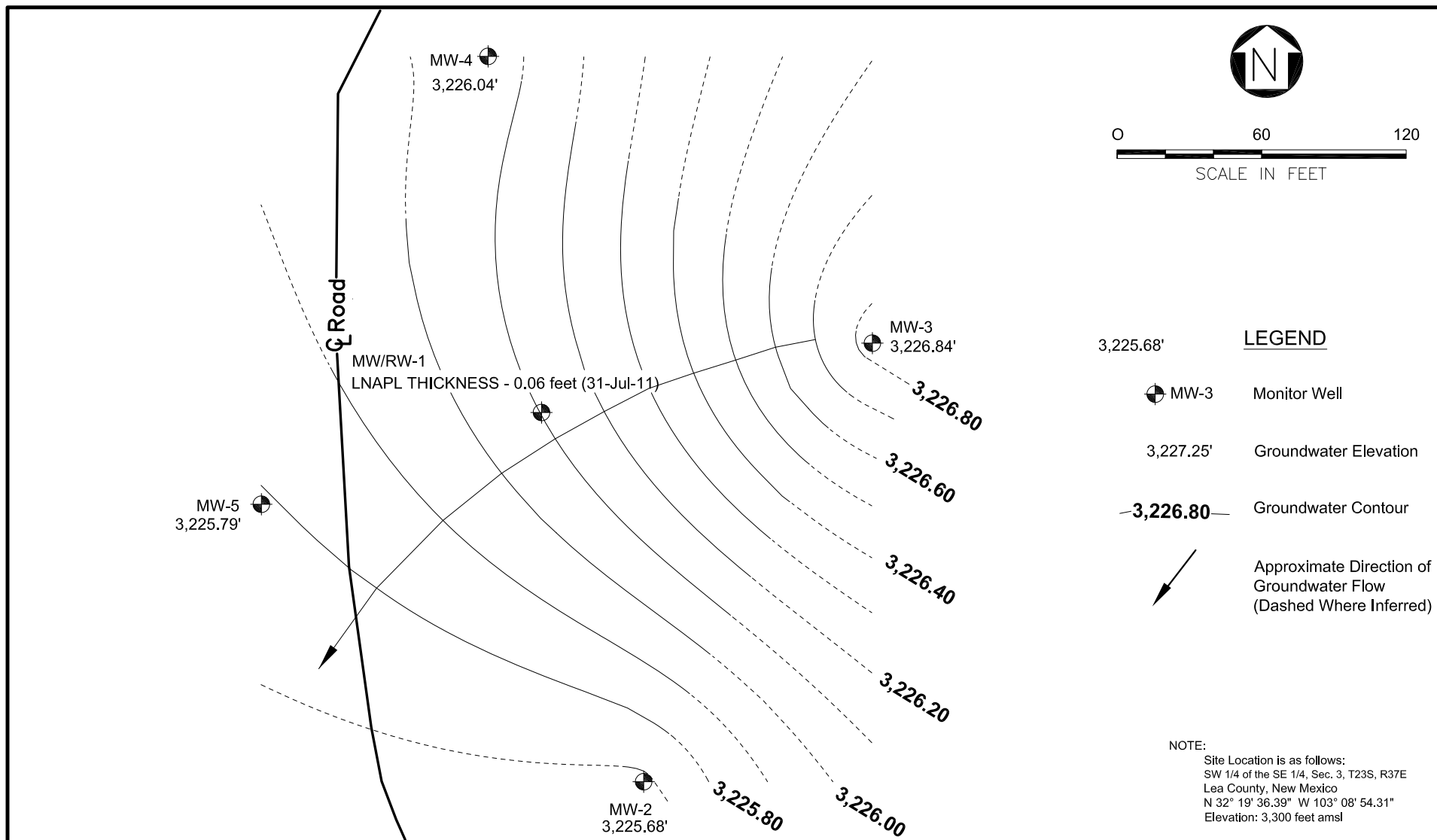
Figure 4: Hydrograph for Groundwater Monitoring Wells MW-1 through MW-5, Shell Oil Products US Kennan Penrose "A" Lease, Lea County, New Mexico, from 07-26-04 through 09-28-11.



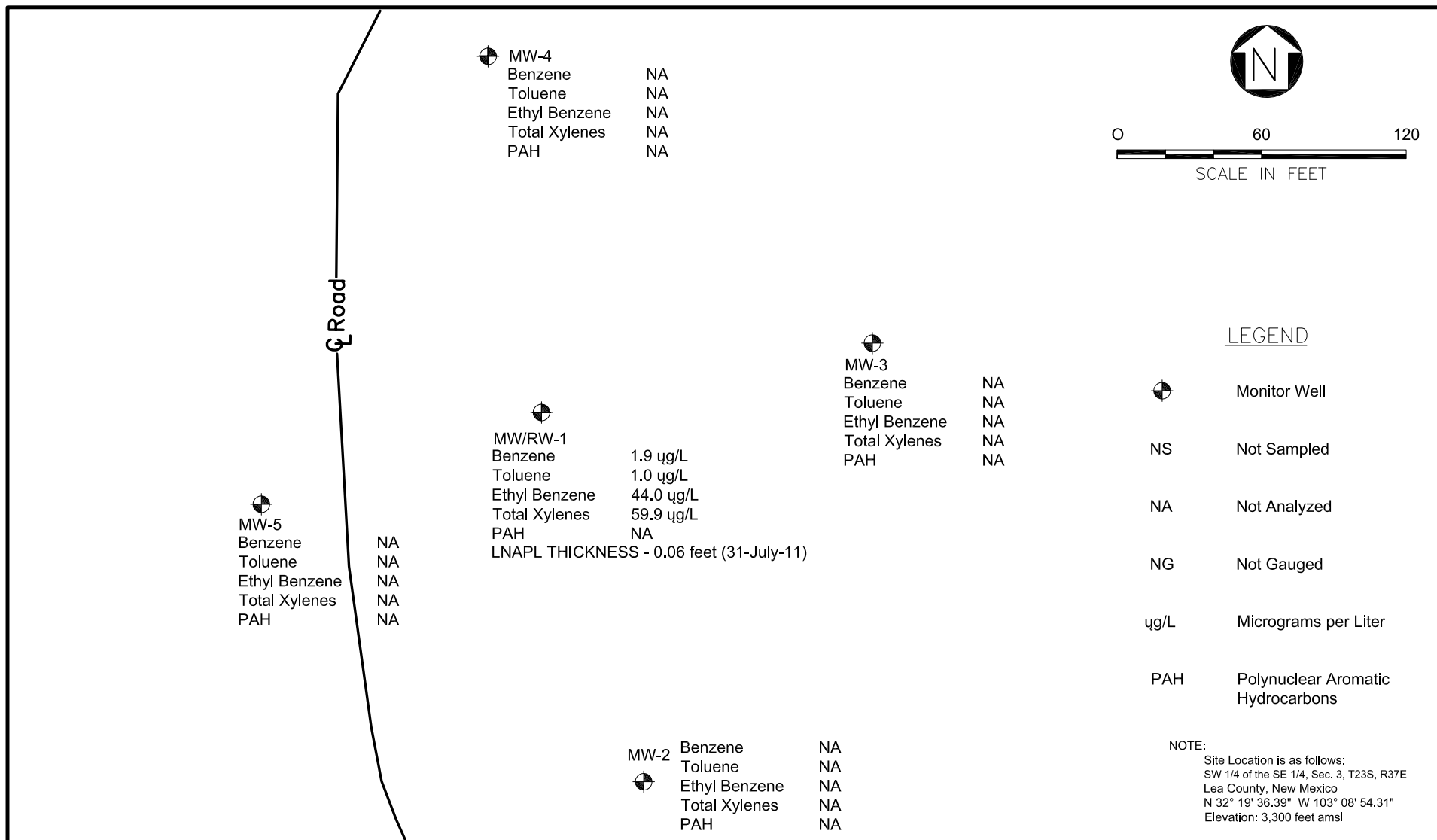
Groundwater Elevation Contour Map - 30 April 2011
 Kennan Penrose "A"



Groundwater BTEX and PAH Analytical Results - 13 March 2011
 Kennan Penrose "A"



Groundwater Elevation Contour Map - 31 July 2011
 Kennan Penrose "A"



Groundwater BTEX and PAH Analytical Results - 26 August 2011
 Kennan Penrose "A"

TABLE 1

Well Data

URS - Kennan Penrose A (EPI Ref. #350001)

Well Number	Diversion ^A	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation ^B	Depth to Water
											(ft bgs)
CP 00762	0	TEXACO	PRO	23S	37E	09 1 1	N32° 19' 20.79"	W103° 10' 33.43"	09-May-91	3,319	100
CP 00561	3	DELLA M. FERGUSON	STK	22S	37E	34 3 3 3	N32° 20' 27.50"	W103° 09' 31.85"	29-Dec-76	3,325	60
USGS #1				23S	37E	2 1 3 3			18-Dec-70	3,299	71.18R
USGS #2				23S	37E	2 4 2 2			29-Feb-96	3,300	63.09
USGS #3				23S	37E	2 1 3 3			19-Mar-81	3,298	64.34
USGS #4				23S	37E	3 4 2 1			16-Jan-76	3,296	70.56
USGS #5				23S	37E	3 1 2 4			21-Feb-96	3,305	69.85
USGS #6				23S	37E	3 3 2 3			19-Mar-81	3,297	107.85
USGS #7				23S	37E	3 3 4 1			27-Oct-65	3,297	66.20
USGS #8				23S	37E	3 3 4 2			16-May-91	3,297	70.52
USGS #9				23S	37E	4 2 1 1			20-Mar-86	3,340	78.90
USGS #10				23S	37E	4 1 1 4			19-Mar-86	3,340	83.25
USGS #11				23S	37E	10 4 2 1			21-Feb-96	3,291	65.93
USGS #12				23S	37E	10 4 2 2			21-Mar-86	3,291	68.74
USGS #13				23S	37E	11 1 1 1			21-Feb-96	3,298	68.55
USGS #14				22S	37E	33 2 2 3			14-Feb-96		72.97
USGS #15				22S	37E	34 4 1 1			19-Mar-81		51.01
USGS #16				22S	37E	34 1 2 1			26-Apr-91		48.47
USGS #17				22S	37E	35 1 4 4			05-Mar-86		54.49
USGS #18				22S	37E	35 1 4 2			19-Mar-81		57.43
USGS #19				22S	37E	35 2 3 2			25-Apr-91		48.28

* = 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 = Elevation interpolated from USGS topographical map based on referenced location.

PRO = 72-12-1 Prospecting or development of natural resource

STK = 72-12-1 Livestock watering

quarters are 1=NW, 2=NE, 3=SW, 4=SE; quarters are biggest to smallest

Shaded area indicates wells not shown in Figure 2

Well information data provided by EPI Consultants in December 2006

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-1 3,296.75	26-Jul-04	2	69.94	72.90	3,226.51	2.96	0.50	0.50	Hand Bail
	14-Oct-04		70.10	72.26	3,226.43	2.16	0.00	0.50	Hand Bail
	27-Oct-04		69.99	72.54	3,226.51	2.55	2.00	2.50	Hand Bail
	21-Nov-04		69.98	72.67	3,226.50	2.69	1.50	4.00	Hand Bail
	22-Dec-04		70.01	72.01	3,226.54	2.00	1.50	5.50	Hand Bail
	25-Jan-05		69.89	72.72	3,226.58	2.83	2.00	7.50	Hand Bail
	25-Apr-05		69.91	71.68	3,226.66	1.77	2.00	9.50	Hand Bail
	01-Sep-05		69.91	71.85	3,226.65	1.94	2.00	11.50	System installed
	25-Oct-05		70.08	70.71	3,226.61	0.63	7.00	18.50	Adjusted pump
	28-Feb-06		69.83	72.00	3,226.70	2.17	NR		Skimmer Pump
	30-Jun-06		69.88	71.75	3,226.68	1.87	NR		Skimmer Pump
	03-Oct-06		70.11	71.01	3,226.55	0.90	0.83	19.33	Skimmer Pump
	28-Dec-06		NOT GAUGED				NO		None
	28-Mar-07		NOT GAUGED				NR		Skimmer Pump
	24-Apr-07		70.20	71.25	3,226.45	1.05	NR		Skimmer Pump
	28-May-07		70.33	70.45	3,226.41	0.12	2.68	22.01	Skimmer Pump
	15-Jun-07		70.30	70.40	3,226.44	0.10	1.03	23.05	Skimmer Pump
	06-Jul-07		NOT GAUGED - Bird Nest in Vault Cap				0.41	23.46	Skimmer Pump
	13-Aug-07		70.30	70.45	3,226.44	0.15	5.16	28.62	Skimmer Pump
	17-Sep-07		70.30	70.41	3,226.44	0.11	2.06	30.68	Skimmer Pump
	08-Oct-07		70.20	70.30	3,226.54	0.10	1.03	31.71	Skimmer Pump
	02-Nov-07		NOT GAUGED				0.62	32.33	Skimmer Pump
	14-Mar-08		70.31	70.41	3,226.43	0.10	2.06	34.40	Skimmer Pump
	31-Mar-08		70.30	70.50	3,226.43	0.20	1.03	35.43	Skimmer Pump
	22-Apr-08		70.30	70.40	3,226.44	0.10	0.62	36.05	Skimmer Pump
	19-May-08		70.30	70.40	3,226.44	0.10	0.00	36.05	Skimmer Pump
	25-Jun-08		70.36	70.38	3,226.39	0.02	0.41	36.46	Skimmer Pump
	24-Jul-08		70.38	70.41	3,226.37	0.03	1.03	37.49	Skimmer Pump
	03-Oct-08		70.38	70.52	3,226.36	0.14	0.00	37.49	Skimmer Pump
	17-Nov-08		70.40	70.58	3,226.33	0.18	0.00	37.49	Skimmer Pump
	14-Jan-09		70.42	70.70	3,226.30	0.28	0.00	37.49	Skimmer Pump
	04-Feb-09		70.46	70.55	3,226.28	0.09	0.00	37.49	Skimmer Pump
	24-Feb-09		70.45	70.55	3,226.29	0.10	0.00	37.49	Skimmer Pump
	17-Mar-09		70.48	70.53	3,226.27	0.05	0.00	37.49	Skimmer Pump
	01-Apr-09		70.45	70.52	3,226.29	0.07	0.00	37.49	Skimmer Pump
	29-May-09		70.49	70.51	3,226.26	0.02	0.00	37.49	Skimmer Pump
	20-Jun-09		70.50	70.54	3,226.25	0.04	0.42	37.91	Skimmer Pump
	29-Jun-09		70.51	70.52	3,226.24	0.01	0.00	37.91	Skimmer Pump
	30-Jul-09		70.51	70.61	3,226.23	0.10	0.00	37.91	Pump Removed
	31-Aug-09		70.50	70.75	3,226.23	0.25	0.00	37.91	Pump Removed
	01-Oct-09		70.51	70.68	3,226.22	0.17	0.00	37.91	Pump Removed
	01-Nov-09		70.54	70.70	3,226.19	0.16	0.00	37.91	Pump Removed
	12-Dec-09		70.56	70.79	3,226.17	0.23	0.00	37.91	Pump Removed
	17-Jan-10		70.58	70.75	3,226.15	0.17	0.00	37.91	Pump Removed
	28-Feb-10		70.57	70.77	3,226.16	0.20	0.00	37.91	Pump Removed
	04-Apr-10		70.59	70.79	3,226.14	0.20	0.00	37.91	Pump Removed
	30-Apr-10		70.62	70.83	3,226.11	0.21	0.00	37.91	Pump Removed

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-1 (cont.) 3,296.75	30-May-10	2	70.60	70.85	3,226.13	0.25	0.00	37.91	Pump Reinserted
	18-Jun-10		70.60	70.85	3,226.13	0.25	0.62	38.53	Skimmer Pump
	20-Jul-10		NOT GAUGED - Wasps Around Well Head				NR	38.53	Skimmer Pump
	06-Oct-10		70.70	70.72	3,226.05	0.02	4.15	42.68	Skimmer Pump
	30-Nov-10		70.71	70.74	3,226.04	0.03	NR	42.68	Skimmer Pump
	31-Dec-10		70.70	70.74	3,226.05	0.04	NR	42.68	Skimmer Pump
	01-Mar-11		70.71	70.76	3,226.04	0.05	0.10	42.78	Skimmer Pump
	30-Apr-11		70.77	70.80	3,225.98	0.03	0.42	43.20	Skimmer Pump
	12-Jun-11		NOT GAUGED - Interface Probe Malfunction				NR	43.20	Skimmer Pump
	28-Jun-11		70.76	70.85	3,225.98	0.09	0.42	43.62	Skimmer Pump
	31-Jul-11		70.79	70.85	3,225.95	0.06	0.00	43.62	Skimmer Pump
	28-Sep-11		70.75	71.30	3,225.95	0.55	0.83	44.45	Skimmer Pump
MW-2 3,299.25	26-Jul-04	4	---	73.01	3,226.24	0.00	---	---	---
	14-Oct-04		---	73.06	3,226.19	0.00	---	---	---
	27-Oct-04		NOT GAUGED						
	21-Nov-04		NOT GAUGED						
	22-Dec-04		NOT GAUGED						
	25-Jan-05		---	73.01	3,226.24	0.00	---	---	---
	25-Apr-05		---	72.92	3,226.33	0.00	---	---	---
	01-Sep-05		---	72.91	3,226.34	0.00	---	---	---
	25-Oct-05		---	72.97	3,226.28	0.00	---	---	---
	28-Feb-06		---	72.95	3,226.30	0.00	---	---	---
	30-Jun-06		---	72.98	3,226.27	0.00	---	---	---
	03-Oct-06		---	73.02	3,226.23	0.00	---	---	---
	28-Dec-06		---	73.08	3,226.17	0.00	---	---	---
	28-Mar-07		---	73.12	3,226.13	0.00	---	---	---
	24-Apr-07		---	73.10	3,226.15	0.00	---	---	---
	28-May-07		---	73.12	3,226.13	0.00	---	---	---
	15-Jun-07		---	73.10	3,226.15	0.00	---	---	---
	06-Jul-07		---	73.15	3,226.10	0.00	---	---	---
	13-Aug-07		---	73.15	3,226.10	0.00	---	---	---
	17-Sep-07		---	73.15	3,226.10	0.00	---	---	---
	08-Oct-07		---	73.10	3,226.15	0.00	---	---	---
	02-Nov-07		---	73.10	3,226.15	0.00	---	---	---
	14-Mar-08		---	73.15	3,226.10	0.00	---	---	---
	31-Mar-08		---	73.10	3,226.15	0.00	---	---	---
	22-Apr-08		---	73.15	3,226.10	0.00	---	---	---
	19-May-08		---	73.12	3,226.13	0.00	---	---	---
	25-Jun-08		---	73.16	3,226.09	0.00	---	---	---
	24-Jul-08		---	73.07	3,226.18	0.00	---	---	---
	03-Oct-08		---	73.19	3,226.06	0.00	---	---	---
	17-Nov-08		---	73.24	3,226.01	0.00	---	---	---
	14-Jan-09		---	73.22	3,226.03	0.00	---	---	---
	04-Feb-09		---	73.25	3,226.00	0.00	---	---	---
	24-Feb-09		---	73.25	3,226.00	0.00	---	---	---
	17-Mar-09		---	73.27	3,225.98	0.00	---	---	---
	01-Apr-09		---	73.23	3,226.02	0.00	---	---	---
	29-May-09		---	73.28	3,225.97	0.00	---	---	---

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-2 (cont.) 3,299.25	20-Jun-09	4	---	73.27	3,225.98	0.00	---	---	---
	29-Jun-09		---	73.28	3,225.97	0.00	---	---	---
	30-Jul-09		---	73.28	3,225.97	0.00	---	---	---
	31-Aug-09		---	73.30	3,225.95	0.00	---	---	---
	01-Oct-09		---	73.31	3,225.94	0.00	---	---	---
	01-Nov-09		---	73.32	3,225.93	0.00	---	---	---
	12-Dec-09		---	73.37	3,225.88	0.00	---	---	---
	17-Jan-10		---	73.35	3,225.90	0.00	---	---	---
	28-Feb-10		---	73.38	3,225.87	0.00	---	---	---
	04-Apr-10		---	73.37	3,225.88	0.00	---	---	---
	30-Apr-10		---	73.38	3,225.87	0.00	---	---	---
	30-May-10		---	73.39	3,225.86	0.00	---	---	---
	18-Jun-10		---	73.38	3,225.87	0.00	---	---	---
	20-Jul-10		---	73.41	3,225.84	0.00	---	---	---
	06-Oct-10		---	73.47	3,225.78	0.00	---	---	---
	30-Nov-10		---	73.48	3,225.77	0.00	---	---	---
	31-Dec-10		---	73.50	3,225.75	0.00	---	---	---
	01-Mar-11		---	73.50	3,225.75	0.00	---	---	---
	30-Apr-11		---	73.51	3,225.74	0.00	---	---	---
	12-Jun-11		---	73.51	3,225.74	0.00	---	---	---
	28-Jun-11		---	73.52	3,225.73	0.00	---	---	---
	31-Jul-11		---	73.57	3,225.68	0.00	---	---	---
	28-Sep-11		---	73.61	3,225.64	0.00	---	---	---
MW-3 3,299.25	26-Jul-04	4	---	71.88	3,227.37	0.00	---	---	---
	14-Oct-04		---	71.93	3,227.32	0.00	---	---	---
	27-Oct-04		NOT GAUGED						
	21-Nov-04		NOT GAUGED						
	22-Dec-04		NOT GAUGED						
	25-Jan-05		---	71.90	3,227.35	0.00	---	---	---
	25-Apr-05		---	71.80	3,227.45	0.00	---	---	---
	01-Sep-05		---	71.78	3,227.47	0.00	---	---	---
	25-Oct-05		---	71.82	3,227.43	0.00	---	---	---
	28-Feb-06		---	71.80	3,227.45	0.00	---	---	---
	30-Jun-06		---	71.83	3,227.42	0.00	---	---	---
	03-Oct-06		---	71.87	3,227.38	0.00	---	---	---
	28-Dec-06		---	71.99	3,227.26	0.00	---	---	---
	28-Mar-07		---	72.00	3,227.25	0.00	---	---	---
	24-Apr-07		---	71.95	3,227.30	0.00	---	---	---
	28-May-07		---	72.00	3,227.25	0.00	---	---	---
	15-Jun-07		---	71.95	3,227.30	0.00	---	---	---
	06-Jul-07		---	72.00	3,227.25	0.00	---	---	---
	13-Aug-07		---	72.00	3,227.25	0.00	---	---	---
	17-Sep-07		---	72.00	3,227.25	0.00	---	---	---
	08-Oct-07		---	72.00	3,227.25	0.00	---	---	---
	02-Nov-07		---	72.00	3,227.25	0.00	---	---	---
	14-Mar-08		---	72.00	3,227.25	0.00	---	---	---
	31-Mar-08		---	72.00	3,227.25	0.00	---	---	---

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-3 (cont.) 3,299.25	22-Apr-08	4	---	72.00	3,227.25	0.00	---	---	---
	19-May-08		---	72.00	3,227.25	0.00	---	---	---
	25-Jun-08		---	72.04	3,227.21	0.00	---	---	---
	24-Jul-08		---	72.00	3,227.25	0.00	---	---	---
	03-Oct-08		---	72.05	3,227.20	0.00	---	---	---
	17-Nov-08		---	72.06	3,227.19	0.00	---	---	---
	14-Jan-09		---	72.07	3,227.18	0.00	---	---	---
	04-Feb-09		---	72.11	3,227.14	0.00	---	---	---
	24-Feb-09		---	72.12	3,227.13	0.00	---	---	---
	17-Mar-09		---	72.14	3,227.11	0.00	---	---	---
	01-Apr-09		---	72.12	3,227.13	0.00	---	---	---
	29-May-09		---	72.10	3,227.15	0.00	---	---	---
	20-Jun-09		---	72.10	3,227.15	0.00	---	---	---
	29-Jun-09		---	72.12	3,227.13	0.00	---	---	---
	30-Jul-09		---	72.12	3,227.13	0.00	---	---	---
	31-Aug-09		---	72.15	3,227.10	0.00	---	---	---
	01-Oct-09		---	72.20	3,227.05	0.00	---	---	---
	01-Nov-09		---	72.17	3,227.08	0.00	---	---	---
	12-Dec-09		---	72.23	3,227.02	0.00	---	---	---
	17-Jan-10		---	72.21	3,227.04	0.00	---	---	---
	28-Feb-10		---	72.27	3,226.98	0.00	---	---	---
	04-Apr-10		---	72.22	3,227.03	0.00	---	---	---
	30-Apr-10		---	72.26	3,226.99	0.00	---	---	---
	30-May-10		---	72.27	3,226.98	0.00	---	---	---
	18-Jun-10		---	72.25	3,227.00	0.00	---	---	---
	20-Jul-10		---	72.27	3,226.98	0.00	---	---	---
	06-Oct-10		---	72.34	3,226.91	0.00	---	---	---
	30-Nov-10		---	72.32	3,226.93	0.00	---	---	---
	31-Dec-10		---	72.38	3,226.87	0.00	---	---	---
	01-Mar-11		---	72.35	3,226.90	0.00	---	---	---
	30-Apr-11		---	72.40	3,226.85	0.00	---	---	---
	12-Jun-11		---	72.37	3,226.88	0.00	---	---	---
	28-Jun-11		---	72.38	3,226.87	0.00	---	---	---
	31-Jul-11		---	72.41	3,226.84	0.00	---	---	---
	28-Sep-11		---	72.45	3,226.80	0.00	---	---	---
MW-4 3,297.43	26-Jul-04	4	---	70.85	3,226.58	0.00	---	---	---
	14-Oct-04		---	70.90	3,226.53	0.00	---	---	---
	27-Oct-04		NOT GAUGED						
	21-Nov-04		NOT GAUGED						
	22-Dec-04		NOT GAUGED						
	25-Jan-05		---	70.87	3,226.56	0.00	---	---	---
	25-Apr-05		---	70.80	3,226.63	0.00	---	---	---
	01-Sep-05		---	70.79	3,226.64	0.00	---	---	---
	25-Oct-05		---	70.80	3,226.63	0.00	---	---	---
	28-Feb-06		---	70.80	3,226.63	0.00	---	---	---
	30-Jun-06		---	70.79	3,226.64	0.00	---	---	---
	03-Oct-06		---	70.86	3,226.57	0.00	---	---	---
	28-Dec-06		---	70.97	3,226.46	0.00	---	---	---

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-4 (cont.) 3,297.43	28-Mar-07	4	---	70.95	3,226.48	0.00	---	---	---
	24-Apr-07		---	71.00	3,226.43	0.00	---	---	---
	28-May-07		---	71.00	3,226.43	0.00	---	---	---
	15-Jun-07		---	70.95	3,226.48	0.00	---	---	---
	06-Jul-07		---	70.95	3,226.48	0.00	---	---	---
	13-Aug-07		---	71.00	3,226.43	0.00	---	---	---
	17-Sep-07		---	71.00	3,226.43	0.00	---	---	---
	08-Oct-07		---	70.95	3,226.48	0.00	---	---	---
	02-Nov-07		---	70.95	3,226.48	0.00	---	---	---
	14-Mar-08		---	71.00	3,226.43	0.00	---	---	---
	31-Mar-08		---	71.00	3,226.43	0.00	---	---	---
	22-Apr-08		---	71.00	3,226.43	0.00	---	---	---
	19-May-08		---	70.95	3,226.48	0.00	---	---	---
	01-Jun-08		---	71.00	3,226.43	0.00	---	---	---
	24-Jul-09		---	70.99	3,226.44	0.00	---	---	---
	03-Oct-08		---	71.05	3,226.38	0.00	---	---	---
	17-Nov-08		---	71.06	3,226.37	0.00	---	---	---
	14-Jan-09		---	71.06	3,226.37	0.00	---	---	---
	04-Feb-09		---	71.13	3,226.30	0.00	---	---	---
	24-Feb-09		---	71.13	3,226.30	0.00	---	---	---
	17-Mar-09		---	71.15	3,226.28	0.00	---	---	---
	01-Apr-09		---	71.11	3,226.32	0.00	---	---	---
	29-May-09		---	71.15	3,226.28	0.00	---	---	---
	20-Jun-09		---	71.14	3,226.29	0.00	---	---	---
	29-Jun-09		---	71.15	3,226.28	0.00	---	---	---
	30-Jul-09		---	71.16	3,226.27	0.00	---	---	---
	31-Aug-09		---	71.17	3,226.26	0.00	---	---	---
	01-Oct-09		---	71.18	3,226.25	0.00	---	---	---
	01-Nov-09		---	71.20	3,226.23	0.00	---	---	---
	12-Dec-09		---	71.24	3,226.19	0.00	---	---	---
	17-Jan-10		---	71.25	3,226.18	0.00	---	---	---
	28-Feb-10		---	71.27	3,226.16	0.00	---	---	---
	04-Apr-10		---	71.26	3,226.17	0.00	---	---	---
	30-Apr-10		---	71.27	3,226.16	0.00	---	---	---
	30-May-10		---	71.27	3,226.16	0.00	---	---	---
	18-Jun-10		---	71.26	3,226.17	0.00	---	---	---
	20-Jul-10		---	71.29	3,226.14	0.00	---	---	---
	06-Oct-10		---	71.32	3,226.11	0.00	---	---	---
	30-Nov-10		---	71.36	3,226.07	0.00	---	---	---
	31-Dec-10		---	71.38	3,226.05	0.00	---	---	---
	01-Mar-11		---	71.38	3,226.05	0.00	---	---	---
	30-Apr-11		---	71.40	3,226.03	0.00	---	---	---
	12-Jun-11		---	71.39	3,226.04	0.00	---	---	---
	28-Jun-11		---	71.40	3,226.03	0.00	---	---	---
	31-Jul-11		---	71.39	3,226.04	0.00	---	---	---
	28-Sep-11		---	71.44	3,225.99	0.00	---	---	---

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-5 3,299.34	26-Jul-04	4	---	72.97	3,226.37	0.00	---	---	---
	14-Oct-04		---	73.03	3,226.31	0.00	---	---	---
	27-Oct-04		NOT GAUGED						
	21-Nov-04		NOT GAUGED						
	22-Dec-04		NOT GAUGED						
	25-Jan-05		---	72.95	3,226.39	0.00	---	---	---
	25-Apr-05		---	72.86	3,226.48	0.00	---	---	---
	01-Sep-05		---	72.85	3,226.49	0.00	---	---	---
	25-Oct-05		---	72.91	3,226.43	0.00	---	---	---
	28-Feb-06		---	72.90	3,226.44	0.00	---	---	---
	30-Jun-06		---	72.94	3,226.40	0.00	---	---	---
	03-Oct-06		---	72.98	3,226.36	0.00	---	---	---
	28-Dec-06		---	73.07	3,226.27	0.00	---	---	---
	28-Mar-07		---	73.00	3,226.34	0.00	---	---	---
	24-Apr-07		---	73.05	3,226.29	0.00	---	---	---
	28-May-07		---	73.05	3,226.29	0.00	---	---	---
	15-Jun-07		---	73.05	3,226.29	0.00	---	---	---
	06-Jul-07		---	73.06	3,226.28	0.00	---	---	---
	13-Aug-07		---	73.10	3,226.24	0.00	---	---	---
	17-Sep-07		---	73.05	3,226.29	0.00	---	---	---
	08-Oct-07		---	73.10	3,226.24	0.00	---	---	---
	02-Nov-07		---	73.10	3,226.24	0.00	---	---	---
	14-Mar-08		---	73.08	3,226.26	0.00	---	---	---
	31-Mar-08		---	73.10	3,226.24	0.00	---	---	---
	22-Apr-08		---	73.10	3,226.24	0.00	---	---	---
	19-May-08		---	73.09	3,226.25	0.00	---	---	---
	25-Jun-08		---	73.13	3,226.21	0.00	---	---	---
	24-Jul-08		---	73.13	3,226.21	0.00	---	---	---
	03-Oct-08		---	73.15	3,226.19	0.00	---	---	---
	17-Nov-08		---	73.20	3,226.14	0.00	---	---	---
	14-Jan-09		---	73.20	3,226.14	0.00	---	---	---
	04-Feb-09		---	73.22	3,226.12	0.00	---	---	---
	24-Feb-09		---	73.20	3,226.14	0.00	---	---	---
	17-Mar-09		---	73.25	3,226.09	0.00	---	---	---
	01-Apr-09		---	73.21	3,226.13	0.00	---	---	---
	29-May-09		---	73.27	3,226.07	0.00	---	---	---
	20-Jun-09		---	73.25	3,226.09	0.00	---	---	---
	29-Jun-09		---	73.26	3,226.08	0.00	---	---	---
	30-Jul-09		---	73.27	3,226.07	0.00	---	---	---
	31-Aug-09		---	73.27	3,226.07	0.00	---	---	---
	01-Oct-09		---	73.30	3,226.04	0.00	---	---	---
	01-Nov-09		---	73.32	3,226.02	0.00	---	---	---
	12-Dec-09		---	73.35	3,225.99	0.00	---	---	---
	17-Jan-10		---	73.33	3,226.01	0.00	---	---	---
	28-Feb-10		---	73.35	3,225.99	0.00	---	---	---
	04-Apr-10		---	73.35	3,225.99	0.00	---	---	---
	30-Apr-10		---	73.36	3,225.98	0.00	---	---	---

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Well ID TOC Elevation	Date	Casing Diameter (in)	Depth to LNAPL (ft BTOC)	Depth to Groundwater (ft BTOC)	Groundwater Elevation ¹ (ft amsl)	LNAPL Thickness (ft)	LNAPL Recovery (gallons)	LNAPL Cumulative Recovery (gallons)	Type of Recovery
MW-5 (cont.) 3299.34	30-May-10	4	---	73.37	3,225.97	0.00	---	---	---
	18-Jun-10		---	73.35	3,225.99	0.00	---	---	---
	20-Jul-10		---	73.37	3,225.97	0.00	---	---	---
	06-Oct-10		---	73.45	3,225.89	0.00	---	---	---
	30-Nov-10		---	73.47	3,225.87	0.00	---	---	---
	31-Dec-10		---	73.47	3,225.87	0.00	---	---	---
	01-Mar-11		---	73.47	3,225.87	0.00	---	---	---
	30-Apr-11		---	73.50	3,225.84	0.00	---	---	---
	12-Jun-11		---	73.50	3,225.84	0.00	---	---	---
	28-Jun-11		---	73.51	3,225.83	0.00	---	---	---
	31-Jul-11		---	73.55	3,225.79	0.00	---	---	---
	28-Sep-11		---	73.60	3,225.74	0.00	---	---	---

Total Recovered LNAPL is 44.45 gallons

Notes:

1. Corrected groundwater elevations. Calculated using an LNAPL specific gravity of 0.90 per previously reported data.

TOC - Top of Casing.

BTOC - Below Top of Casing.

LNAPL - Light non-aqueous phase liquid.

amsl = above mean sea level

NR - Not Recorded

NO - Not Operating

Shaded cells include data for reporting period.

Data collected prior to December 2006 by Enercon and Conestoga-Rovers and Associates (CRA)

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX
SHELL OIL PRODUCTS US
PENROSE "A" LEASE
LEA COUNTY, NEW MEXICO

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
		NMWQCC Standard 20.6.2.3103.A,B.				
		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	--- (µg/L)
MW-1	26-Jul-04	LNAPL Present				
	14-Oct-04	LNAPL Present				
	25-Jan-05	LNAPL Present				
	25-Apr-05	LNAPL Present				
	01-Sep-05	LNAPL Present				
	25-Oct-05	LNAPL Present				
	28-Feb-06	LNAPL Present				
	30-Jun-06	LNAPL Present				
	03-Oct-06	LNAPL Present				
	28-Dec-06	LNAPL Present				
	28-Mar-07	LNAPL Present				
	02-Nov-07	LNAPL Present				
	14-Mar-08	LNAPL Present				
	17-Nov-08	LNAPL Present				
	07-May-09	No Sample Submitted Due to LNAPL Present				
	12-Dec-09	No Sample Submitted Due to LNAPL Present				
	13-Mar-11	3.9	<1.0	29.2	38.2	<72.3
	26-Aug-11	1.9	1.0	44.0	59.9	106.8
MW-2	26-Jul-04	<1.0	<1.0	<1.0	<1.0	<1.0
	14-Oct-04	<5.0	<5.0	<5.0	<5.0	<5.0
	25-Jan-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Apr-05	<1.0	<1.0	<1.0	<1.0	<1.0
	01-Sep-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Oct-05	<1.0	<1.0	<1.0	<1.0	<1.0
	28-Feb-06	<0.440	<0.540	<0.410	<1.23	<2.62
	30-Jun-06	0.510	0.730	2.32	4.63	8.19
	03-Oct-06	NOT ANALYZED				
	28-Dec-06	11	<2.0	<2.0	<3.0	<18
	28-Mar-07	<1.0	<2.0	<2.0	<3.0	<8.0
	02-Nov-07	<1.0	<2.0	<2.0	<3.0	<8.0
	14-Mar-08	<1.0	<1.0	<1.0	<3.0	<6.0
	17-Nov-08	<1.0	<1.0	<1.0	<3.0	<6.0
	07-May-09	<1.0	<1.0	<1.0	<1.0	<1.0
	12-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0
	13-Mar-11	NOT ANALYZED				
	26-Aug-11	NOT ANALYZED				
MW-3	26-Jul-04	<1.0	<1.0	<1.0	<1.0	<1.0
	14-Oct-04	<5.0	<5.0	<5.0	<5.0	<5.0

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX
SHELL OIL PRODUCTS US
PENROSE "A" LEASE
LEA COUNTY, NEW MEXICO

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
		NMWQCC Standard 20.6.2.3103.A,B.				
		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	--- (µg/L)
MW-3 (cont.)	25-Jan-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Apr-05	<1.0	<1.0	<1.0	<1.0	<1.0
	01-Sep-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Oct-05	<1.0	<1.0	<1.0	<1.0	<1.0
	28-Feb-06	<0.440	<0.540	<0.410	<1.23	<2.62
	30-Jun-06	0.320	<0.280	<0.340	<0.820	0.320
	03-Oct-06	NOT ANALYZED				
	28-Dec-06	4.8	<2.0	<2.0	<3.0	4.8
	28-Mar-07	<1.0	<2.0	<2.0	<3.0	<8.0
	02-Nov-07	<1.0	<2.0	<2.0	<3.0	<8.0
	14-Mar-08	<1.0	<1.0	<1.0	<3.0	<6.0
	17-Nov-08	<1.0	<1.0	<1.0	<3.0	<6.0
	07-May-09	<1.0	<1.0	<1.0	<1.0	<1.0
	12-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0
	13-Mar-11	NOT ANALYZED				
	26-Aug-11	NOT ANALYZED				
MW-4	26-Jul-04	<1.0	<1.0	<1.0	<1.0	<1.0
	14-Oct-04	<5.0	<5.0	<5.0	<5.0	<5.0
	25-Jan-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Apr-05	<1.0	<1.0	<1.0	<1.0	<1.0
	01-Sep-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Oct-05	<1.0	<1.0	<1.0	<1.0	<1.0
	28-Feb-06	<0.440	0.710	<0.410	<1.23	<2.79
	30-Jun-06	<0.290	<0.280	<0.340	<0.820	<1.73
	03-Oct-06	NOT ANALYZED				
	28-Dec-06	<1.0	<2.0	<2.0	<3.0	<8.0
	28-Mar-07	<1.0	<2.0	<2.0	<3.0	<8.0
	02-Nov-07	<1.0	<2.0	<2.0	<3.0	<8.0
	14-Mar-08	<1.0	<1.0	<1.0	<3.0	<6.0
	17-Nov-08	<1.0	<1.0	<1.0	<3.0	<6.0
	07-May-09	<1.0	<1.0	<1.0	<1.0	<1.0
	12-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0
	13-Mar-11	NOT ANALYZED				
	26-Aug-11	NOT ANALYZED				
MW-5	26-Jul-04	<1.0	<1.0	<1.0	<1.0	<1.0
	14-Oct-04	<5.0	<5.0	<5.0	<5.0	<5.0
	25-Jan-05	<1.0	<1.0	<1.0	<1.0	<1.0
	25-Apr-05	<1.0	<1.0	<1.0	<1.0	<1.0
	01-Sep-05	<1.0	<1.0	<1.0	<1.0	<1.0

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX
SHELL OIL PRODUCTS US
PENROSE "A" LEASE
LEA COUNTY, NEW MEXICO

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
		NMWQCC Standard 20.6.2.3103.A,B.				
		10 (µg/L)	750 (µg/L)	750 (µg/L)	620 (µg/L)	--- (µg/L)
MW-5 (cont.)	25-Oct-05	<1.0	<1.0	<1.0	<1.0	<1.0
	28-Feb-06	<0.440	<0.540	<0.410	<1.23	<2.62
	30-Jun-06	<0.290	0.710	<0.340	4.59	4.59
	03-Oct-06	NOT ANALYZED				5.300
	28-Dec-06	4.0	<2.0	<2.0	<3.0	4.0
	28-Mar-07	<1.0	<2.0	<2.0	<3.0	<8.0
	02-Nov-07	<1.0	<2.0	<2.0	<3.0	<8.0
	14-Mar-08	<1.0	<1.0	<1.0	<3.0	<6.0
	17-Nov-08	<1.0	<1.0	<1.0	<3.0	<6.0
	07-May-09	<1.0	<1.0	<1.0	<1.0	<1.0
	12-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0
	13-Mar-11	NOT ANALYZED				
	26-Aug-11	NOT ANALYZED				

Notes:

- NMWQCC - New Mexico Water Quality Control Commission Standard 20.6.2.3103.A,B.
- BTEX analysis by EPA Method 8260B.
- LNAPL - Light non-aqueous phase liquids.
- Data prior to December 2006 collected by Enercon and Conestoga-Rovers and Associates (CRA).
- Analytical results for samples collected on 28-Dec-06 are anomolous as the ydo not correspond to either historical or subsequent analytical results and could be the result of either field and /or laboratory contaminants.
- Shaded cells include data for reporting period.

TABLE 4

SUMMARY OF ANALYTICAL RESULTS-Chloride, TDS, and pH
SHELL OIL PRODUCTS US
PENROSE "A" LEASE (WINNIE KENNAN RANCH)
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Chloride	Total Dissolved Solids	pH
NMWQCC Standard 20.6.2.3103 A.B.		250.0	1,000.0	6 - 9
		(mg/L)	(mg/L)	pH
MW-1	3/13/2011	863	2,310	Not Analyzed
	8/26/2011	382	3,560	7.32
MW-2	3/13/2011	Not Analyzed		
	8/26/2011	Not Analyzed		
MW-3	3/13/2011	Not Analyzed		
	8/26/2011	Not Analyzed		
MW-4	3/13/2011	Not Analyzed	3,930	Not Analyzed
	8/26/2011	Not Analyzed	4,110	Not Analyzed
MW-5	3/13/2011	Not Analyzed		
	8/26/2011	Not Analyzed		

Notes:

TDS - Total Dissolved Solids

NMWQCC - New Mexico Water Quality Control Commission Standard 20.6.2.3103.A,B.

mg/L - milligrams per Liter.

APPENDIX A

CERTIFIED LABORATORY REPORTS

&

CHAIN-OF-CUSTODY DOCUMENTATION

Technical Report for

Shell Oil Products

URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Accutest Job Number: C15071

Sampling Date: 03/13/11

Report to:

**URS Corporation
7720 North 16th Avenue, Suite 100
Phoenix, AZ 85020
Iain_Olness@urscorp.com**

ATTN: Iain Olness

Total number of pages in report: 18



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Laurie Glantz-Murphy".

**Laurie Glantz-Murphy
Laboratory Director**

Client Service contact: Simon Hague 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Test results relate only to samples analyzed.

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Sample Summary

Shell Oil Products

Job No: C15071

URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C15071-1	03/13/11	11:15 JS	03/15/11	AQ	Ground Water	MW-01
C15071-2	03/13/11	10:27 JS	03/15/11	AQ	Ground Water	MW-04

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-01	Date Sampled:	03/13/11
Lab Sample ID:	C15071-1	Date Received:	03/15/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q940.D	1	03/18/11	BD	n/a	n/a	VQ32
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.9	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	29.2	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	38.2	2.0	0.70	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		60-130%
2037-26-5	Toluene-D8	104%		60-130%
460-00-4	4-Bromofluorobenzene	110%		60-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-01	Date Sampled:	03/13/11
Lab Sample ID:	C15071-1	Date Received:	03/15/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	863	50	mg/l	100	03/16/11 17:30	RL	EPA 300/SW846 9056A
Solids, Total Dissolved	2310	10	mg/l	1	03/16/11	MF	SM18 2540C

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-04	Date Sampled:	03/13/11
Lab Sample ID:	C15071-2	Date Received:	03/15/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	3930	10	mg/l	1	03/16/11	MF	SM18 2540C

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest NC Job #: C15071	
Requested Analysis			
Matrix Codes			
WW- Wastewater GW- Ground Water SW- Surface Water SO- Soil OI/OI WP-Wipe LIQ - Non-aqueous Liqu AIR DW- Drinking Water (Perchlorate Only)			
LAB USE ONLY			
3/14/2011 250ml pol NIP 250ml pol NIP			
Comments / Remarks			
courier delivery.			
Date Time: 3/14/2011 1340		Received By: 2 Fed Ex	
Date Time:		Received By:	
Appropriate Bottle / Pres. (Y) N		On Ice (Y) N	
Labels match Coc (Y) N		Cooler Temp. 4.9 + 0.5 = 5.4 °C	
Separate Receiving Check List used: (Y) N			

3.13

Page 1 of 2

Review Chain of Custody

Chain of Custody is to be complete and legible.

- ☒ Are these regulatory (NPDES) samples? GWA Yes / ~~No~~
☒ Is pH requested? Yes / ~~No~~
☐ Was Client informed that hold time is 15 min? Yes / No Continue Yes / No
☐ Was ortho-Phosphate filtered with in 15 min? Yes / No Continue Yes / No
☒ Are sample within hold time? Yes / No
Are sample in danger of exceeding hold-time Yes / ~~No~~
☒ Existing Client? Yes / No Existing Project? Yes / ~~No~~
If No: Is Report to info complete and legible, including;
☒ deliverable ☒ Name ☒ Address ☒ phone ☒ e-mail
Is Bill to info complete and legible, including;
☐ PO# ☐ Credit card ☐ Contact caddress ☐ phone ☐ e-mail
Is Contact and/or Project Manager Identified, including;
☒ phone ☒ e-mail
☒ Project name / number
☒ Special requirements? Yes / ~~No~~
☒ Sample IDs / date & time of collection provided? Yes / No
☒ Is Matrix listed and correct? Yes / No
☒ Analyses listed, we do, or client has authorized a subcontract? Yes / No
☒ Chain is signed and dated by both client and sample custodian? Yes / No
☒ TAT requested available? Yes / No Approved by pm

Review Coolers:

- ✓ Were all Coolers temperatures measured at $\leq 6^{\circ}\text{C}$? 5.4°C Yes/ No
 ✓ If cooler is outside the $\leq 6^{\circ}\text{C}$; note down the affected bottles in that cooler on the left
 ✓ Are samples on Ice? Yes/ No
 Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)

Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)

- ☒ Shipment Received Method FedEx
☒ Custody Seals: Present: Yes / No If Yes; Unbroken: Yes / No

Review of Sample Bottles: If you answer no, explain to the side

- ✓ Chain matches bottle labels? (Yes / No) Sample bottle intact? (Yes / No)
✓ Is there enough sample volume in proper bottle for requested analyses? (Yes / No)
✓ Proper Preservatives? (Yes / No)

Check pH on preserved samples except 1664, 625, 8270 and VOAs; make notes on left.

- ✓ Headspace-VOAs? Greater than 6mm in diameter
List sample ID and affected container Yes / No

[illegible]

Non-Compliance issues and discrepancies on the COC are forwarded to Project Management

\\Accunca.accutest.com\dept\lqalsops\sop_completest_2010\current_active_sop_oct_2010\sc001f1_0_form1_samplecontrol_samplerceivingchecklist_2009-01-01.doc

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: C15071

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ32-MB	Q927.D	1	03/18/11	BD	n/a	n/a	VQ32

The QC reported here applies to the following samples:

Method: SW846 8260B

C15071-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	98% 60-130%
2037-26-5	Toluene-D8	102% 60-130%
460-00-4	4-Bromofluorobenzene	98% 60-130%

Method Blank Summary

Page 1 of 1

Job Number: C15071

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ32-MB2	Q955.D	1	03/21/11	BD	n/a	n/a	VQ32

The QC reported here applies to the following samples:

Method: SW846 8260B

C15087-1MS, C15087-1MSD

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	96% 60-130%
2037-26-5	Toluene-D8	103% 60-130%
460-00-4	4-Bromofluorobenzene	100% 60-130%

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

Job Number: C15071

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VQ32-BS	Q928.D	1	03/18/11	BD	n/a	n/a	VQ32
VQ32-BSD	Q929.D	1	03/18/11	BD	n/a	n/a	VQ32

The QC reported here applies to the following samples:

Method: SW846 8260B

C15071-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	18.8	94	17.9	90	5	60-130/30
100-41-4	Ethylbenzene	20	18.3	92	17.8	89	3	60-130/30
108-88-3	Toluene	20	17.7	89	17.3	87	2	60-130/30
1330-20-7	Xylene (total)	60	53.5	89	52.0	87	3	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	103%	100%	60-130%
2037-26-5	Toluene-D8	98%	98%	60-130%
460-00-4	4-Bromofluorobenzene	99%	97%	60-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: C15071

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C15087-1MS	Q961.D	5	03/21/11	BD	n/a	n/a	VQ32
C15087-1MSD	Q962.D	5	03/21/11	BD	n/a	n/a	VQ32
C15087-1	Q956.D	5	03/21/11	BD	n/a	n/a	VQ32

The QC reported here applies to the following samples:

Method: SW846 8260B

C15071-1

CAS No.	Compound	C15087-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	185		100	279	94	283	98	1	60-130/25
100-41-4	Ethylbenzene	3.6	J	100	103	99	107	103	4	60-130/25
108-88-3	Toluene	ND		100	97.3	97	101	101	4	60-130/25
1330-20-7	Xylene (total)	ND		300	297	99	312	104	5	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C15087-1	Limits
1868-53-7	Dibromofluoromethane	100%	99%	97%	60-130%
2037-26-5	Toluene-D8	94%	100%	104%	60-130%
460-00-4	4-Bromofluorobenzene	97%	100%	104%	60-130%

General Chemistry

5

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C15071
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP2481/GN5470	0.50	0.0	mg/l	5	5.01	100.2	90-110%
Nitrogen, Nitrate	GP2481/GN5470	0.10	0.0	mg/l	5	4.95	99.0	90-110%
Solids, Total Dissolved	GN5466	10	0.0	mg/l				
Sulfate	GP2481/GN5470	0.50	0.0	mg/l	5	4.77	95.4	90-110%

Associated Samples:

Batch GN5466: C15071-1, C15071-2

Batch GP2481: C15071-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C15071
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN5466	C15089-1	mg/l	3970	3970	0.0	0-%

Associated Samples:

Batch GN5466: C15071-1, C15071-2
(*) Outside of QC limits

5.2

5



09/15/11

Technical Report for

Shell Oil Products

URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Accutest Job Number: C17659

Sampling Date: 08/26/11

Report to:

URS Corporation
7720 North 16th Avenue, Suite 100
Phoenix, AZ 85020
iain_olness@urscorp.com

ATTN: Iain Olness

Total number of pages in report: **21**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Kesavalu M. Bagawandoss'.

Kesavalu M. Bagawandoss,
Ph.D., J.D., Lab Director

Client Service contact: Laurie Glantz-Murphy 408-588-0200

Certifications: CA (08258CA) AZ (AZ0762) DoD/ISO/IEC 17025:2005 (L2242)

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Test results relate only to samples analyzed.

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Sample Summary

Shell Oil Products

Job No: C17659

URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C17659-1	08/26/11	07:57 JS	08/27/11	AQ	Ground Water	MW-1
C17659-2	08/26/11	07:24 JS	08/27/11	AQ	Ground Water	MW-4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	08/26/11
Lab Sample ID:	C17659-1	Date Received:	08/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L10436.D	1	09/07/11	TF	n/a	n/a	VL326
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.9	1.0	0.30	ug/l	
108-88-3	Toluene	1.0	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	44.0	1.0	0.30	ug/l	
1330-20-7	Xylene (total)	59.9	2.0	0.70	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		60-130%
2037-26-5	Toluene-D8	106%		60-130%
460-00-4	4-Bromofluorobenzene	99%		60-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1	Date Sampled:	08/26/11
Lab Sample ID:	C17659-1	Date Received:	08/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	382	25	mg/l	50	08/29/11 17:15	RL	EPA 300/SW846 9056A
Solids, Total Dissolved	3560	10	mg/l	1	08/29/11	AC	SM18 2540C

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW-4	Date Sampled:	08/26/11
Lab Sample ID:	C17659-2	Date Received:	08/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	URSAZP:INC#300108, Kennan Penrose A, Eunice, NM		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	4110	10	mg/l	1	08/29/11	AC	SM18 2540C

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

1 SHELLWIC3434

FED-EX Tracking #

Bottle Order Control #	
------------------------	--

Accutest Quote #

Accutest NC Job #: C

^c C17659

[illegible]

3.1

C17659: Chain of Custody

Page 1 of 2

Chain of Custody is to be complete and legible.

[illegible]

- | | | |
|---|---|-----------------|
| <input checked="" type="checkbox"/> Headspace-VOAs? | Greater than 6mm in diameter
List sample ID and affected container | Yes / <u>No</u> |
|---|---|-----------------|

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: C17659

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL326-MB	L10423.D	1	09/07/11	TF	n/a	n/a	VL326

The QC reported here applies to the following samples:

Method: SW846 8260B

C17659-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.30	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.70	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 60-130%
2037-26-5	Toluene-D8	103% 60-130%
460-00-4	4-Bromofluorobenzene	97% 60-130%

Blank Spike Summary

Job Number: C17659
Account: SHELLWIC Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL326-BS1	L10427.D	1	09/07/11	TF	n/a	n/a	VL326

The QC reported here applies to the following samples: Method: SW846 8260B

C17659-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
---------	----------	---------------	-------------	----------	--------

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	60-130%
2037-26-5	Toluene-D8	104%	60-130%
460-00-4	4-Bromofluorobenzene	98%	60-130%

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

Job Number: C17659

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL326-BS	L10425.D	1	09/07/11	TF	n/a	n/a	VL326
VL326-BSD	L10426.D	1	09/07/11	TF	n/a	n/a	VL326

The QC reported here applies to the following samples:

Method: SW846 8260B

C17659-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.7	99	17.9	90	10	60-130/30
100-41-4	Ethylbenzene	20	21.0	105	19.1	96	9	60-130/30
108-88-3	Toluene	20	20.9	105	19.2	96	8	60-130/30
1330-20-7	Xylene (total)	60	63.5	106	58.0	97	9	60-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	104%	103%	60-130%
2037-26-5	Toluene-D8	104%	105%	60-130%
460-00-4	4-Bromofluorobenzene	99%	99%	60-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: C17659

Account: SHELLWIC Shell Oil Products

Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C17677-2MS	L10442.D	1	09/07/11	TF	n/a	n/a	VL326
C17677-2MSD	L10443.D	1	09/07/11	TF	n/a	n/a	VL326
C17677-2	L10432.D	1	09/07/11	TF	n/a	n/a	VL326

The QC reported here applies to the following samples:

Method: SW846 8260B

C17659-1

CAS No.	Compound	C17677-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	18.1	91	17.7	89	2	60-130/25
100-41-4	Ethylbenzene	ND	20	18.5	93	18.2	91	2	60-130/25
108-88-3	Toluene	ND	20	18.5	93	18.2	91	2	60-130/25
1330-20-7	Xylene (total)	ND	60	56.2	94	55.3	92	2	60-130/25

CAS No.	Surrogate Recoveries	MS	MSD	C17677-2	Limits
1868-53-7	Dibromofluoromethane	106%	105%	101%	60-130%
2037-26-5	Toluene-D8	101%	103%	103%	60-130%
460-00-4	4-Bromofluorobenzene	99%	99%	99%	60-130%

General Chemistry

5

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C17659
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP2964/GN6504	0.50	0.0	mg/l	5	4.64	92.8	90-110%
Solids, Total Dissolved	GN6497	10	0.0	mg/l				

Associated Samples:
Batch GN6497: C17659-1, C17659-2
Batch GP2964: C17659-1
(*) Outside of QC limits

5.1
5

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C17659
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chloride	GP2964/GN6504	mg/l	5	4.71	1.5	25%

Associated Samples:
Batch GP2964: C17659-1
(*) Outside of QC limits

5.2
5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C17659
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN6497	C17659-2	mg/l	4110	4010	2.5	0-%

Associated Samples:
Batch GN6497: C17659-1, C17659-2
(*) Outside of QC limits

5.3

5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C17659
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP2964/GN6504	C17623-1	mg/l	25.7	20	46.3	103.0	80-120%

Associated Samples:

Batch GP2964: C17659-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

5.4

5

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: C17659
Account: SHELLWIC - Shell Oil Products
Project: URSAZP:INC#300108, Kennan Penrose A, Eunice, NM

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP2964/GN6504	C17623-1	mg/l	25.7	20	46.2	0.2	

Associated Samples:
Batch GP2964: C17659-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.5

5

Analytical Report 426568

for
URS Corporation

Project Manager: Iain Olness

Kennan Penrose "A"

31-AUG-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
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Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



31-AUG-11

Project Manager: **Iain Olness**

URS Corporation

7720 N. 16th St. Suite100

Phoenix, AZ 85020

Reference: XENCO Report No: **426568**

Kennan Penrose "A"

Project Address: Eunice, NM

Iain Olness:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426568. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426568 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron II

Odessa Laboratory Manager

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Sample Cross Reference 426568



URS Corporation, Phoenix, AZ

Kennan Penrose "A"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	08-26-11 07:57		426568-001



CASE NARRATIVE

Client Name: URS Corporation
Project Name: Kennan Penrose "A"



Project ID:
Work Order Number: 426568

Report Date: 31-AUG-11
Date Received: 08/26/2011

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 426568

URS Corporation, Phoenix, AZ

Project Name: Kennan Penrose "A"



Project Id:

Contact: Iain Olness

Project Location: Eunice, NM

Date Received in Lab: Fri Aug-26-11 11:40 am


Report Date: 31-AUG-11

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	426568-001					
	Field Id:	MW-1					
	Depth:						
	Matrix:	WATER					
	Sampled:	Aug-26-11 07:57					
pH, Electrometric by EPA 150.2	Extracted:						
	Analyzed:	Aug-30-11 14:00					
	Units/RL:	SU RL					
pH*		7.32 2.00					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi


Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Project Name: Kennan Penrose "A"

Work Order # 426568

Lab Batch #: 868763

Project ID:

Date Analyzed: 08/30/2011 14:00

Date Prepared: 08/30/2011

Analyst: BBH

QC- Sample ID: 426568-001 D

Batch #: 1

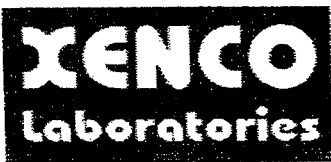
Matrix: Water

Reporting Units: SU

SAMPLE / SAMPLE DUPLICATE RECOVERY

pH, Electrometric by EPA 150.2		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte						
pH		7.32	7.33	0	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
 All Results are based on MDL and validated for QC purposes.
 BRL - Below Reporting Limit



XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist.
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: URS Corporation
Date/Time: 8/26/11 11:40
Lab ID #: 426568
Initials: AH

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 5.2°C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
☐ Initial and Backup Temperature confirm out of temperature conditions
☐ Client understands and would like to proceed with analysis