



September 15, 2010

Mr. Glenn von Gonten, Acting Chief  
Environmental Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

RE: Monitoring Well Plugging Reports, Remediation Project No. 1RP-952  
Targa Midstream Services, L.P., North 10" Pipeline Release  
Unit B (NW/4, NE/4), Section 22, Township 21 South, Range 37 East  
Lea County, New Mexico

Dear Mr. Von Gonten:

Larson & Associates, Inc. (LAI), as consultant to Targa Midstream Services, L.P. (Targa), submits this letter to the New Mexico Oil Conservation Division (OCD) as a final report for the above-referenced release (No. 1RP-952) to document that monitoring wells MW-1 through MW-5 were plugged according to New Mexico State Engineer Rules and Regulations. Written notification of the proposed well plugging was submitted to the OCD on September 15, 2010 and the wells were plugged on September 28, 2010. Figure 1 presents a location and topographic map. Figure 2 and Figure 3 present monitoring well locations. Attachment A presents the monitoring well plugging records. Please contact Mr. Cal Wrangham with Targa at 432.688.0542 or myself at 432.687.0901 to discuss.

Sincerely,  
**LARSON & ASSOCIATES, INC.**

Mark J. Larson, PG  
Sr. Project Manager/President  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)

Attachments

CC Mr. Cal Wrangham – Targa, Midland, TX  
Mr. Gary Maricle – Targa, Eunice, New Mexico  
Mr. Larry Johnson – OCD District 1

RECEIVED OCD  
2010 NOV 17 P 4: 06

## Figures

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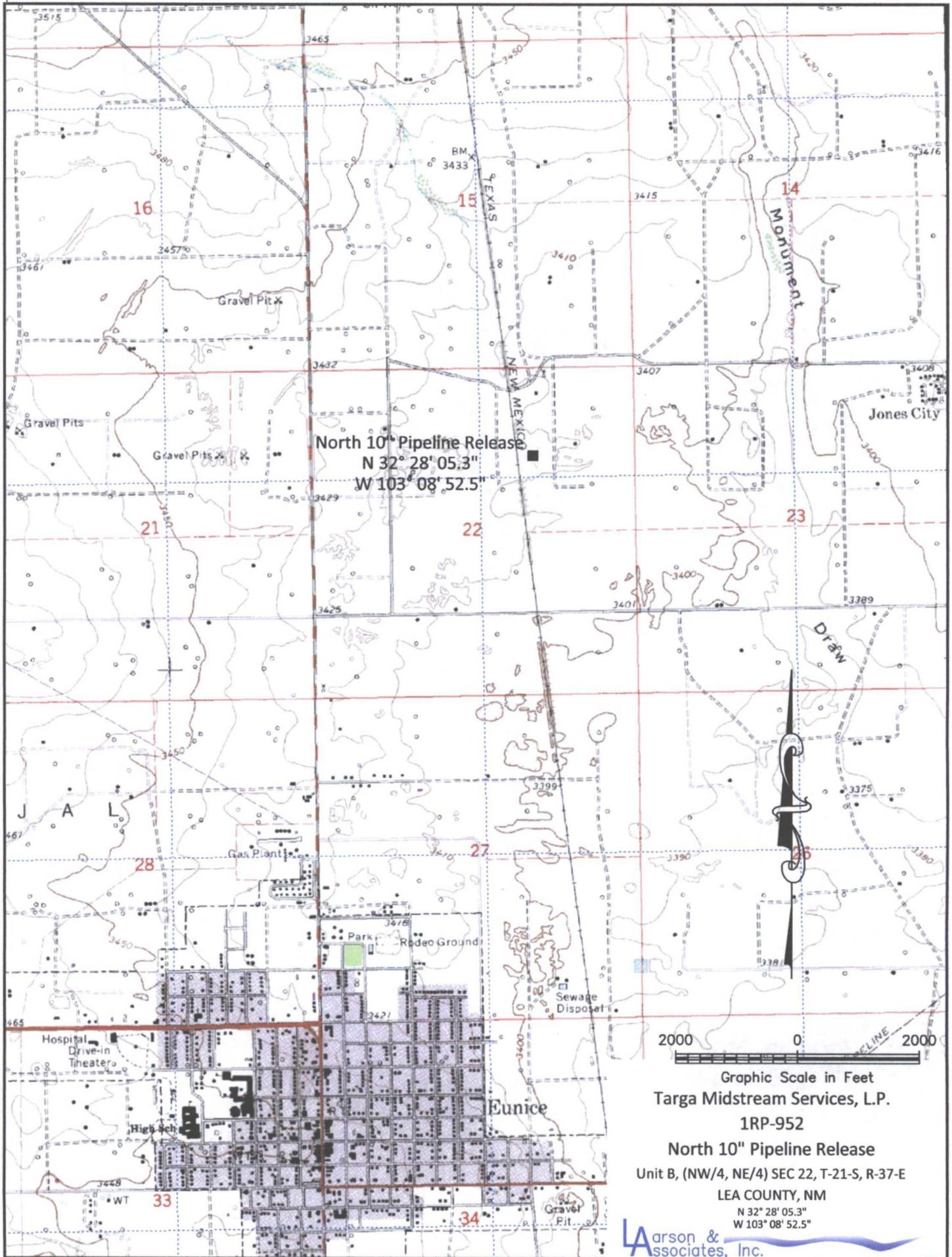


Figure 1- Topographic Map

Graphic Scale in Feet  
Targa Midstream Services, L.P.

1RP-952

North 10" Pipeline Release

Unit B, (NW/4, NE/4) SEC 22, T-21-S, R-37-E

LEA COUNTY, NM

N 32° 28' 05.3"  
W 103° 08' 52.5"

**L**arson &  
Associates, Inc.  
Environmental Consultants

JWW



Figure 2 - Aerial Map

Google Image 2004

Targa Midstream Services, L.P.  
 1RP-952  
 North 10" Pipeline Release  
 Unit B, (NW/4, NE/4) SEC 22, T-21-S, R-37-E  
 LEA COUNTY, NM  
 N 32° 28' 05.3"  
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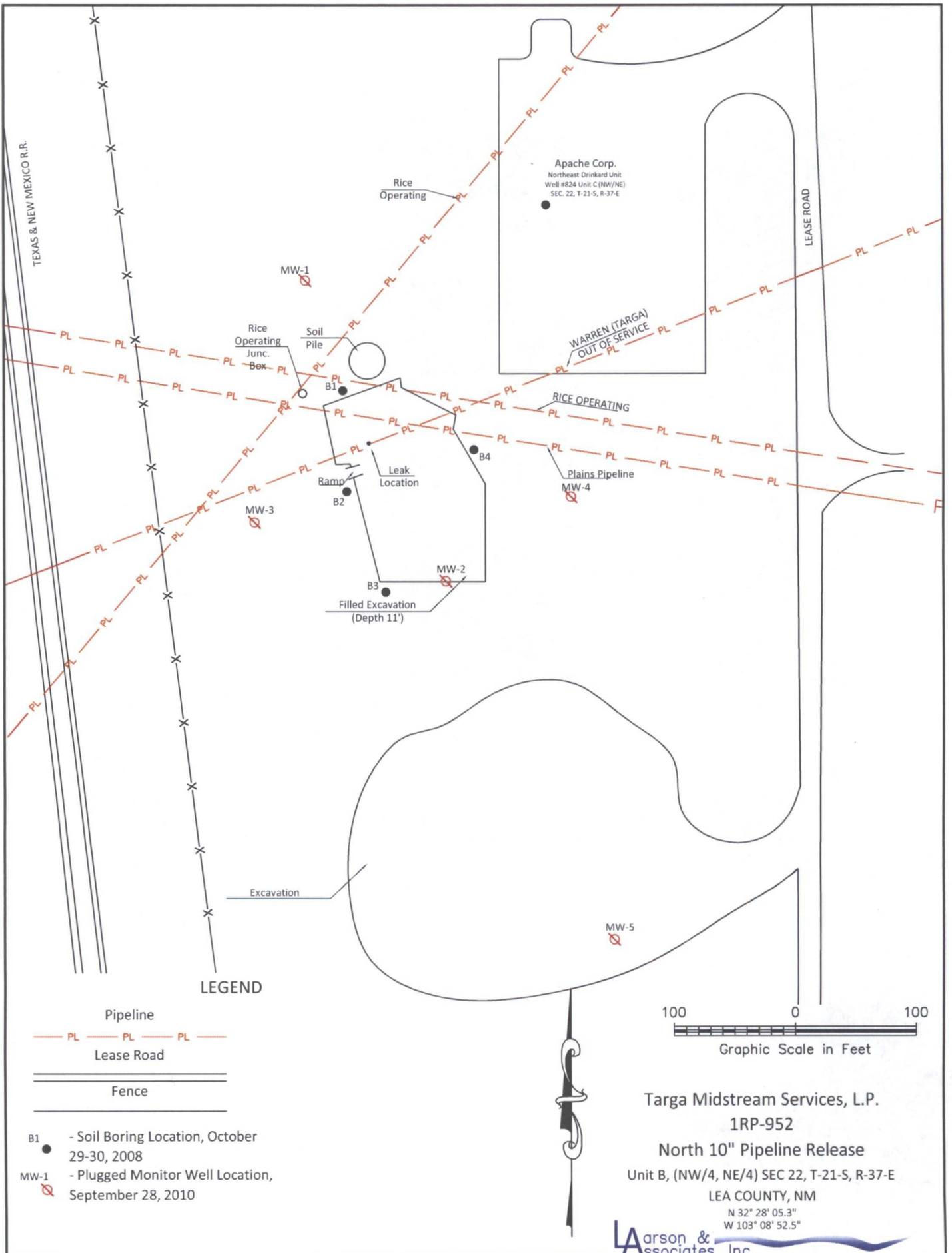


Figure 3- Site Map

**Attachment A**

**Monitoring Well Plugging Records**



10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0-3	Portland Cement	1 - 50 lb. bags		poured	
3-7.5	Bentonite	3 - 50 lb. bags		poured	

MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
cubic yards x	201.97	= gallons

**III. SIGNATURE:**

I, Scott Scarborough, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Scott Scarborough  
Signature of Well Driller

10/28/2010

Date



10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgt)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0-3	Portland Cement	1 - 50 lb. bags		poured	
3-45	Bentonite	3-50 lb bags		poured	

MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
cubic yards x	201.97	= gallons

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0-3	Portland Cement	1 - 50 lb. bags		poured	
3-70	Bentonite	3 - 50 lb bags		poured	

MULTIPLY	BY	AND OBTAIN
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0-3	Portland Cement	1 - 50 lb. bags		poured	
3-72	Bentonite	3-- 50 lb bags		poured	

MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
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Scott Scarborough  
Signature of Well Driller

10/28/2010

Date



# PLUGGING RECORD



**NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC**

### I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW5

Well owner: Targa Midstream Services, L.P. Phone No.: \_\_\_\_\_

Mailing address: 6 Desta Drive Suite 3300

City: Midland State: Tx Zip code: 79705

### II. WELL PLUGGING INFORMATION:

- 1) Name of well drilling company that plugged well: John Scarborough Drilling, Inc.
- 2) New Mexico Well Driller License No.: WD1188 Expiration Date: 03/31/2012
- 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):  
Scott Scarborough
- 4) Date well plugging began: 09/28/2010 Date well plugging concluded: 09/28/2010
- 5) GPS Well Location: Latitude: 32 deg, 28 min, 05.3 sec  
Longitude: 103 deg, 08 min, 52.5 sec, WGS 84
- 6) Depth of well confirmed at initiation of plugging as: 77 ft below ground level (bgl),  
by the following manner: \_\_\_\_\_
- 7) Static water level measured at initiation of plugging: 58.16 ft bgl
- 8) Date well plugging plan of operations was approved by the State Engineer: 09/24/2010
- 9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

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10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0-3	Portland Cement	1 - 50 lb. bags		poured	
3-77	Bentonite	3 - 50 lb bags		poured	

MULTIPLY	BY	AND OBTAIN
cubic feet x	7.4805	= gallons
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**III. SIGNATURE:**

I, Scott Scarborough, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Scott Scarborough  
Signature of Well Driller

10/28/2010  
Date

September 15, 2010

Mr. Glenn von Gonten, Acting Chief  
Environmental Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

RE: Notification of Monitoring Well Plugging, Remediation Project No. 1RP-952  
Targa Midstream Services, L.P., North 10" Pipeline Release  
Unit B (NW/4, NE/4), Section 22, Township 21 South, Range 37 East  
Lea County, New Mexico

Dear Mr. Von Gonten:

Larson & Associates, Inc. (LAI), on behalf of Targa Midstream Services, L.P. (Targa), submits notification to the New Mexico Oil Conservation Division (OCD) that Targa will plug five (5) monitoring wells (MW-1 through MW-5) at the above-referenced location. The monitoring wells were installed between October 30, 2008 and February 2009, to confirm that groundwater had not been impacted by light non aqueous phase liquid (condensate) released from a 10 inch natural gas pipeline. The release occurred on August 16, 2002, and was reported to the OCD District 1 Office located in Hobbs, New Mexico.

A groundwater sample from a temporary well (TMW-1) installed near the release reported benzene (0.221 mg/L) above the New Mexico Water Quality Control Commission (WQCC) human health standard of 0.01 mg/L and required Targa to confirm the possible impact. The temporary well was plugged to allow excavation of contaminated soil which was disposed at an OCD approved facility (Sundance Services). On January 6, 2009, the OCD Environmental Bureau approved installing a polyethylene liner and filling the excavation. The excavation closure and groundwater investigation was documented in a report, *Pipeline Release Delineation and Excavation Closure Report*, dated May 5, 2009 and submitted to the OCD.

Groundwater samples were collected from the monitoring wells on October 30, 2008, September 2, 2009 and December 23, 2009, and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), dissolved metals (antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, lead, manganese, magnesium, mercury, nickel, potassium, selenium, silver and sodium) and general chemistry parameters (alkalinity, chloride, sulfate and total dissolved solids). No BTEX was reported in the samples above SW-8021B method detection limits. All metals, except manganese (0.255 mg/L), were below WQCC human health and domestic water quality standards. Manganese was above the WQCC domestic water quality standard (0.2 mg/L) in monitoring well MW-1 which is located hydraulically upgradient (northwest) of the release. Chloride was above the WQCC domestic water quality standard (250 mg/L) in up gradient wells MW-1 (281 to 306 mg/L) and MW-3 (873 to 883 mg/L) and highest in well MW-4 (1,400 to 1,600 mg/L) located east of the release.

It is concluded that the benzene concentration in temporary well TMW-1 was from cross contamination of contaminated soil during drilling and well installation. Monitoring well completion and depth to

groundwater summary is presented in Table 1. BTEX, metals and general chemistry analytical summaries are presented in Tables 2, 3 and 4, respectively.

On March 25, 2010, during a meeting with OCD Environmental Bureau staff in Santa Fe, New Mexico, it was concluded that other sources for the chloride were present in the release area that included a closed drilling pit associated with the Apache Corporation Northeast Drinkard Unit Well #824, Rice Operating Company produced water injection lines and junction box, pipelines owned by others and upgradient sources. The Targa pipeline conveyed only natural gas liquids. A location and topographic map are presented in Figure 1. Figure 2 presents an aerial drawing. Figure 3 presents a Site drawing.

Targa will plug the monitoring wells according to New Mexico State Engineer rules and submit a final report to the OCD upon completion of the work. Please contact Mr. Cal Wrangham with Targa at 432.688.0542 or myself at 432.687.0901 to discuss.

Sincerely,  
**LARSON & ASSOCIATES, INC.**



Mark J. Larson, PG  
Sr. Project Manager/President  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)

#### Attachments

CC Mr. Cal Wrangham – Targa, Midland, TX  
Mr. Gary Maricle – Targa, Eunice, New Mexico  
Mr. Larry Johnson – OCD District 1

Table 1  
Monitoring Well Completion and Gauging Summary  
North 10 Inch Release Site (1RP-952) - Unit B, Sec 22, T21S, R37E  
Targa Midstream Services, L.P.  
Lea County, New Mexico

Well Information									Groundwater Data			
Well ID	Date Drilled	Drilled Depth (bgs)	Well Depth from TOC	Well Diameter (inches)	Surface Elevation	Screen Interval (bgs)	Casing Stickup	TOC Elevation	Date Gauged	Depth to Fluid	Depth to Water	Corrected Water Elevation
MW-01	10/29/2008	75	74.57	2	3,410.68	52 - 72	3.08	3,413.76	3/2/2009	--	58.66	3,355.10
									9/2/2009	--	58.41	3,355.35
									12/23/2009	--	58.46	3,355.30
MW-02	10/30/2008	75	74.25	2	3409.72	52 - 72	3.15	3,412.87	3/2/2009	--	58.34	3,354.53
									9/2/2009	--	58.16	3,354.71
									12/23/2009	--	58.21	3,354.66
MW-03	2/17/2009	70	70.81	2	3,410.54	50 - 70	2.49	3,413.03	3/2/2009	--	58.28	3,354.75
									9/2/2009	--	58.07	3,354.96
									12/23/2009	--	57.96	3,355.07
MW-04	2/17/2009	72	74.31	2	3,409.93	52 - 72	2.69	3,412.62	3/2/2009	--	58.46	3,354.16
									9/2/2009	--	58.23	3,354.39
									12/23/2009	--	58.29	3,354.33
MW-05	2/17/2009	77	77.66	2	3,403.35	57 - 77	2.59	3,405.94	3/2/2009	--	52.44	3,353.50
									9/2/2009	--	58.08	3,347.86
									12/23/2009	--	58.16	3,347.78

*Notes*

All values are in feet, unless otherwise noted.

bgs - below ground surface

TOC - top of casing

Elevations are above mean sea level referenced to 1984 Geodetic Datum.

Wells drilled and installed by Scarbrough Drilling, Inc., Lamesa, Texas. Schedule 40 threaded PVC casing and screen set.

Table 2  
 BTEX in Groundwater Summary  
 North 10 Inch Release Site (1RP-952) - Unit B, Sec 22, T21S, R37E  
 Targa Midstream Services, L.P.  
 Lea County, New Mexico

Sample ID	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes
WQCC:		0.01	0.75	0.75	1
MW-01	10/30/2008	<0.0010	<0.0020	<0.0010	<0.0010
	12/23/2009	<0.000800	<0.00200	<0.00200	<0.00300
MW-02	10/30/2008	<0.0010	<0.0020	<0.0010	<0.0010
	12/23/2009	<0.000800	<0.00200	<0.00200	<0.00300
MW-03	9/2/2009	<0.0008	<0.002	<0.002	<0.003
	12/23/2009	<0.000800	<0.00200	<0.00200	<0.00300
MW-04	9/2/2009	<0.0008	<0.002	<0.002	<0.003
	12/23/2009	<0.000800	<0.00200	<0.00200	<0.00300
MW-05	9/2/2009	<0.0008	<0.002	<0.002	<0.003
	12/23/2009	<0.000800	<0.00200	<0.00200	<0.00300

**Notes**

WQCC - Water Quality Control Commission action level

BTEX analyzed via EPA SW Method 8021B.

**Bold** indicates the analyte was detected.

**Bold and blue** indicates the value exceeds regulatory requirements.

Table 3  
 Groundwater Metals Summary  
 North 10-Inch Release (1RP-952) - Unit B, Sec 22, T21S, R37E  
 Targa Midstream Services, L.P.  
 Lea County, New Mexico

Sample ID	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Lead
WQCC:		---	0.1	1.0	---	0.01	---	0.05	0.05
MW-1	10/30/2008	<0.006	0.017	0.699	0.0012	<0.001	464	0.025	0.014
MW-2	10/30/2008	<0.006	0.016	0.409	0.001	<0.001	282	0.022	0.010
MW-3	3/2/2009	<0.0008	0.00628	0.114	<0.0003	<0.0003	220	<0.002	<0.0003
MW-4	3/2/2009	<0.0008	0.00678	0.0684	<0.0003	<0.0003	230	<0.002	<0.0003
MW-5	3/2/2009	<0.0008	0.011	0.0405	<0.0003	<0.0003	214	<0.002	<0.0003

Sample ID	Date	Manganese	Magnesium	Mercury	Nickel	Potassium	Selenium	Silver	Sodium
WQCC:		0.2	---	0.002	0.2	---	0.05	0.05	---
MW-1	10/30/2008	<b>0.255</b>	---	<0.0001	0.037	13.6	0.014	<0.002	183
MW-2	10/30/2008	0.198	---	<0.0001	0.027	12.9	0.018	<0.002	302
MW-3	3/2/2009	--	116	<0.00008	<0.003	9.90	0.018	<0.001	227
MW-4	3/2/2009	--	126	<0.00008	<0.003	12.4	0.0274	<0.001	644
MW-5	3/2/2009	--	121	<0.00008	<0.003	9.39	0.0555	<0.001	254

**Notes**

WQCC - Water Quality Control Commission action level

Metals except mercury analyzed via EPA SW Method 6020.

Mercury analyzed via EPA SW Method 7470A.

**Bold and blue indicates the value exceeds regulatory requirements.**

Table 4  
 Groundwater Anion TDS Summary  
 North 10 Inch Release Site (1RP-952) - Unit B, Sec 22, T21S, R37E  
 Targa Midstream Services, L.P.  
 Lea County, New Mexico

Sample ID	Date	Total Alkalinity	Chlorides	Sulfate	Total Dissolved Solids
WQCC:		--	250	600	1,000
TMW-1	2/10/2006	--	<b>3,799</b>	468	--
MW-1	10/30/2008	156	190	511	<b>1,330</b>
	9/2/2009	--	<b>281</b>	--	<b>1,740</b>
	12/23/2009	--	<b>306</b>	--	<b>1,840</b>
MW-2	10/30/2008	208	<b>824</b>	303	<b>1,800</b>
	9/2/2009	--	<b>1,090</b>	--	<b>2,600</b>
	12/23/2009	--	<b>1,130</b>	--	<b>2,700</b>
MW-3	3/2/2009	199	<b>883</b>	256	<b>2,270</b>
	9/2/2009	--	<b>883</b>	--	<b>2,210</b>
	12/23/2009	--	<b>873</b>	--	<b>2,330</b>
MW-4	3/2/2009	173	<b>1,600</b>	532	<b>4,440</b>
	9/2/2009	--	<b>1,510</b>	--	<b>3,820</b>
	12/23/2009	--	<b>1,410</b>	--	<b>3,640</b>
MW-5	3/2/2009	154	<b>618</b>	<b>855</b>	<b>2,440</b>
	9/2/2009	--	<b>572</b>	--	<b>1,990</b>
	12/23/2009	--	<b>580</b>	--	<b>2,060</b>

**Notes**

WQCC - Water Quality Control Commission action level

**Bold and blue** indicates the value exceeds regulatory requirements.

Samples collected after 10/29/2008 conducted by Larson & Associates, Inc.

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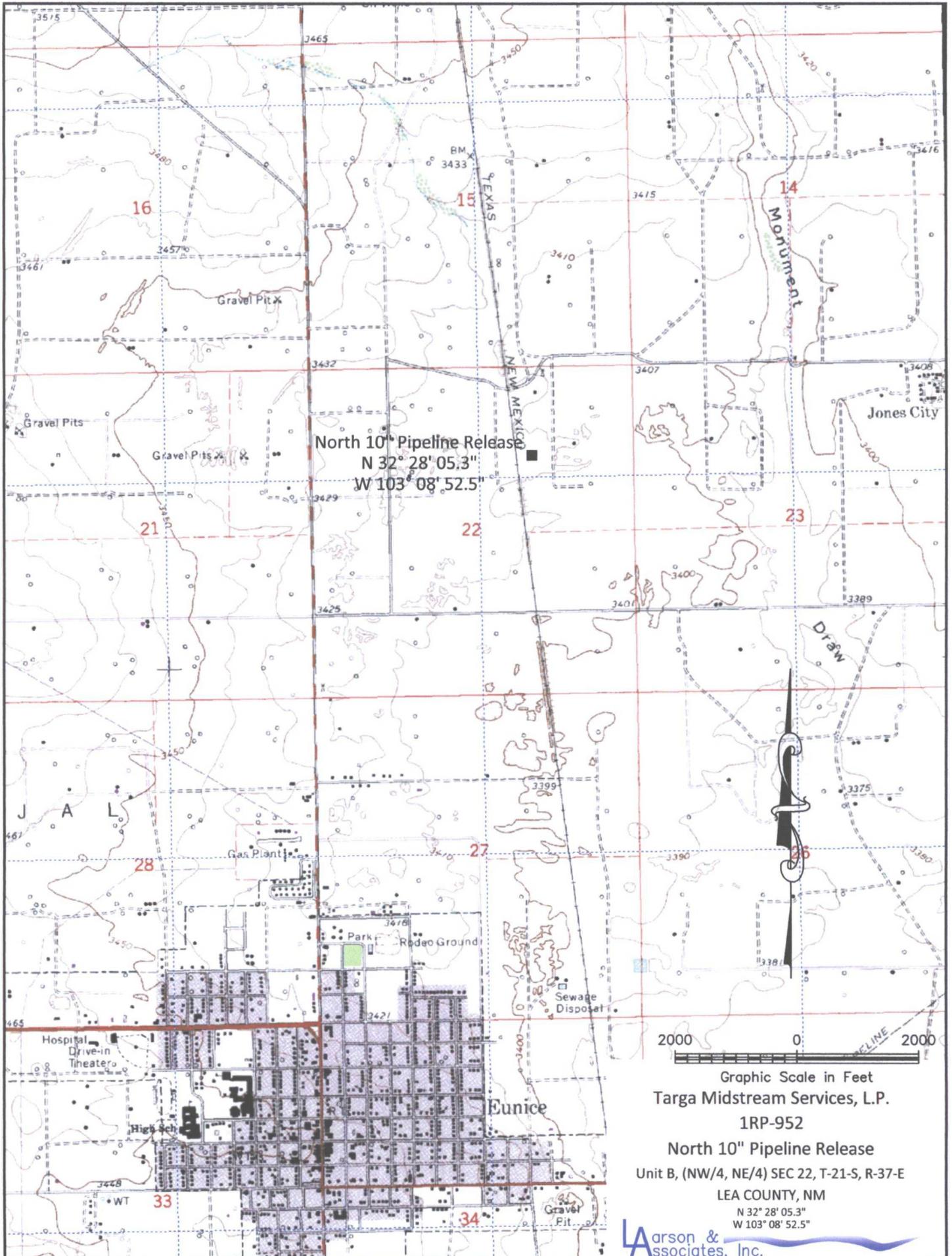


Figure 1- Topographic Map

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Figure 2 - Aerial Map

Google Image 2004

Targa Midstream Services, L.P.  
 1RP-952  
 North 10" Pipeline Release  
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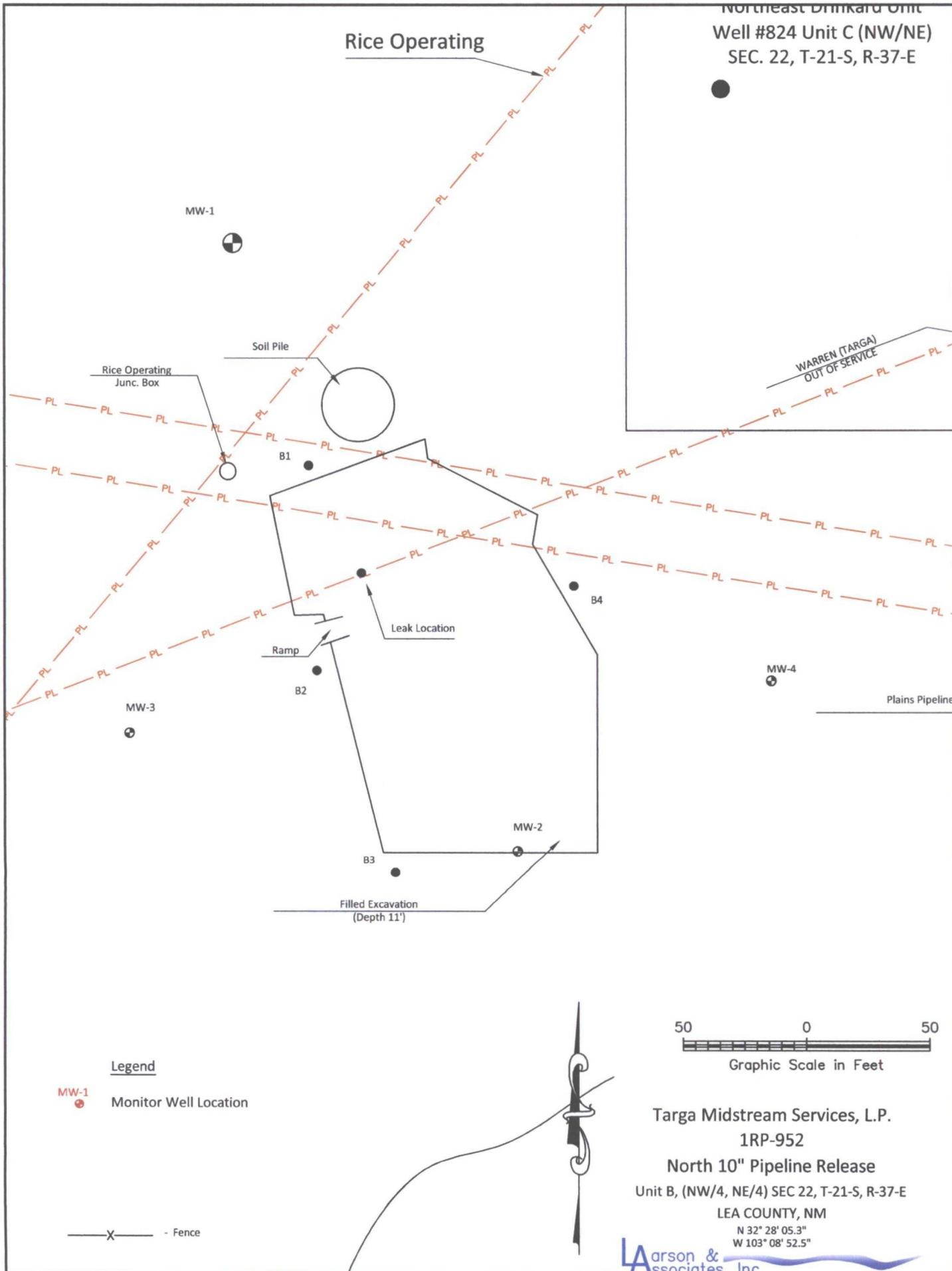


Figure 3- Site Map