

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-144  
June 1, 2004

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

For drilling and production facilities, submit to appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐

(WFS CLOSURE)

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: PATINA SAN JUAN INCORPORATED Telephone: \_\_\_\_\_ e-mail address: \_\_\_\_\_  
Address: 1625 BROADWAY DENVER, CO 80202  
Facility or well name: LADD #001E API #: 30-045-24544 U/L or Qtr/Qtr G SEC 19 T 25N R 9W  
County: SAN JUAN Latitude 36.38911 Longitude -107.82663 NAD: 1927 ☒ 1983 ☐  
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

**Pit**

Type: Drilling ☐ Production ☒ Disposal ☐

Workover ☐ Emergency ☐

Lined ☐ Unlined ☒

Liner Type: Synthetic ☒ Thickness \_\_\_\_\_ mil Clay ☐

Pit Volume 77 bbl

**Below-grade tank**

Volume: \_\_\_\_\_ bbl Type of fluid: \_\_\_\_\_

Construction Material: \_\_\_\_\_

Double-walled, with leak detection? Yes ☒ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet  
50 feet or more, but less than 100 feet  
100 feet or more

(20 points)  
(10 points) 0  
(0 points)

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes  
No

(20 points)  
(0 points) 0

Distance to surface water: (Horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet  
200 feet to 1,000 feet  
Greater than 1,000 feet

(20 points)  
(10 points) 0  
(0 points)

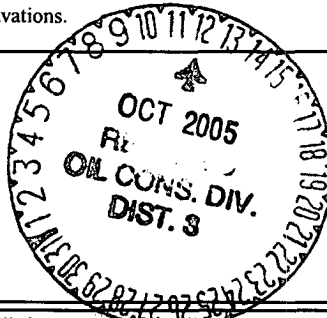
**Ranking Score (TOTAL POINTS):**

0

**If this is a pit closure:** (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☒ offsite ☐ If offsite, name of facility \_\_\_\_\_. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface \_\_\_\_\_ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

Meter: 35794



I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒

Date: 9/18/05

Printed Name/Title Mark Harvey for Williams Field Services Signature Mark Harvey

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval: DEPUTY OIL & GAS INSPECTOR, DIST. 8  
Printed Name/Title \_\_\_\_\_

Signature Denny Reedy

Date: OCT 12 2005

# ADDENDUM TO OCD FORM C-144

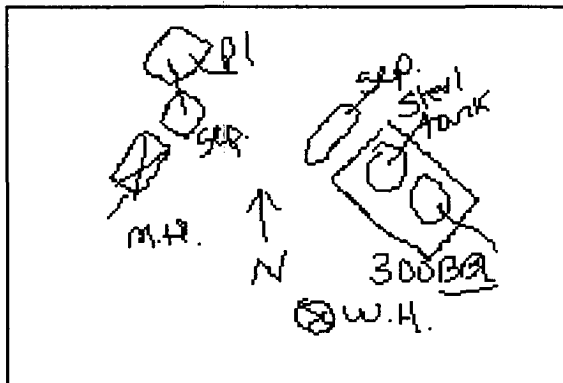
Operator: PATINA SAN JUAN INCORPORATED

API 30-045-24544

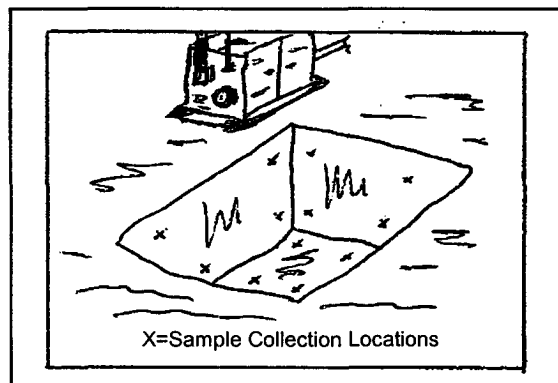
Well Name: LADD #001E

Meter: 35794

**Facility Diagram:**



**Sampling Diagram:**



**Pit Dimensions**

Length 12 Ft.

Width 12 Ft.

Depth 3 Ft.

**Location of Pit Center**

Latitude 36.38929

Longitude -107.82685

(NAD 1927)

**Pit ID**

357941

**Pit Type**

Separator

**Date Closure Started:** 12/14/04

**Date Closure Completed:** 12/14/04

**Closure Method:** Excavated, Blended, Treated Soil Returned

**Bedrock Encountered ?** ☒

**Cubic Yards Excavated:** 53

**Vertical Extent of Equipment Reached ?** ☐

**Description Of Closure Action:**

Contaminated soil was removed and treated then returned to the excavation following sampling of the walls and floor.

BEDROCK limited vertical excavation and/or prevented sampling. This condition limits deleterious environmental effects.

**Pit Closure Sampling:**

Sample ID	Sample Date	Head Space	BTEX Total (mg/kg)	Benzene (mg/kg)	TPH DRO (mg/kg)	Purpose	Location	Depth	
092314DEC04	12/14/04	373	0	0	0	EX Confirm	Walls	8	See Risk Analysis
092714DEC04	12/14/04	110	167	0	190	EX Confirm	Flr	10	See Risk Analysis
110211MAR04	3/11/04		1687	100	1900	ASSESS	Flr	3	

Lab Project Number: 6080365

Client Project ID: N.M. Pit Program/Spring 2004

Lab Sample No: 606913820  
Client Sample ID: 110211MAR04

Project Sample Number: 6080365-006  
Matrix: Soil

Date Collected: 03/11/04 11:02  
Date Received: 03/16/04 09:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
<b>GC Semivolatiles</b>									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/kg	12.		1.2 03/20/04 01:57	RMN1			
Jet Fuel	ND	mg/kg	12.		1.2 03/20/04 01:57	RMN1			
Kerosene	ND	mg/kg	12.		1.2 03/20/04 01:57	RMN1			
Diesel Fuel	1900	mg/kg	12.		1.2 03/20/04 01:57	RMN1	68334-30-5	11	
Fuel Oil	ND	mg/kg	12.		1.2 03/20/04 01:57	RMN1	68334-30-5		
Motor Oil	ND	mg/kg	12.		1.2 03/20/04 01:57	RMN1			
n-Tetracosane (S)	104	%			1.0 03/20/04 01:57	RMN1	646-31-1		
p-Terphenyl (S)	119	%			1.0 03/20/04 01:57	RMN1	92-94-4		
Date Extracted	03/18/04				03/18/04				

#### Organics Prep

Percent Moisture	Method: SM 2540G			
Percent Moisture	16.1	%	1.0 03/18/04	DPB

#### GC Volatiles

Aromatic Volatile Organics	Prep/Method: EPA 5030 Medium Soil / EPA 8021								
Benzene	100000	ug/kg	5900	118	03/18/04 21:12	ARF	71-43-2		
Ethylbenzene	77000	ug/kg	5900	118	03/18/04 21:12	ARF	100-41-4		
Toluene	830000	ug/kg	5900	118	03/18/04 21:12	ARF	108-88-3		
Xylene (Total)	680000	ug/kg	15000	118	03/18/04 21:12	ARF	1330-20-7		
a,a,a-Trifluorotoluene (S)	1140	%			1.0 03/18/04 21:12	ARF	98-08-8	3,4	

## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6090504  
Client Project ID: N. Mex. Pits Program

Lab Sample No: 607796331      Project Sample Number: 6090504-008      Date Collected: 12/14/04 09:27  
Client Sample ID: 092714DEC04      Matrix: Soil      Date Received: 01/04/05 08:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
<b>GC Semivolatiles</b>									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1			
Jet Fuel	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1			
Kerosene	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1			
Diesel Fuel	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1	68334-30-5		
Fuel Oil	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1	68334-30-5		
Motor Oil	ND	mg/kg	11.	1.1	01/06/05 20:10	RMN1			
Total Petroleum Hydrocarbons	190	mg/kg	11.	1.1	01/06/05 20:10	RMN1		1	
n-Tetracosane (S)	107	%		1.0	01/06/05 20:10	RMN1	646-31-1		
p-Terphenyl (S)	123	%		1.0	01/06/05 20:10	RMN1	92-94-4		
Date Extracted	01/05/05				01/05/05				

#### Organics Prep

Percent Moisture      Method: SM 2540G  
Percent Moisture      11.4      %      1.0 01/05/05      ALJ1

#### GC Volatiles

Aromatic Volatile Organics      Prep/Method: EPA 5030 Medium Soil / EPA 8021

Benzene	ND	ug/kg	1100	22.1	01/07/05 10:54	SHF	71-43-2		
Ethylbenzene	15000	ug/kg	1100	22.1	01/07/05 10:54	SHF	100-41-4		
Toluene	63000	ug/kg	1100	22.1	01/07/05 10:54	SHF	108-88-3		
Xylene (Total)	89000	ug/kg	2900	22.1	01/07/05 10:54	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	822	%		1.0	01/07/05 10:54	SHF	98-08-8	2,3	

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Lab Project Number: 6090504  
Client Project ID: N. Mex. Pits Program

Lab Sample No: 607796349      Project Sample Number: 6090504-009      Date Collected: 12/14/04 09:23  
Client Sample ID: 092314DEC04      Matrix: Soil      Date Received: 01/04/05 08:50

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
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### GC Semivolatiles

Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1			
Jet Fuel	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1			
Kerosene	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1			
Diesel Fuel	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1	68334-30-5		
Fuel Oil	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1	68334-30-5		
Motor Oil	ND	mg/kg	10.	1.1	01/06/05 20:27	RMN1			
n-Tetracosane (S)	101	%		1.0	01/06/05 20:27	RMN1	646-31-1		
p-Terphenyl (S)	108	%		1.0	01/06/05 20:27	RMN1	92-94-4		
Date Extracted	01/05/05				01/05/05				

### Organics Prep

Percent Moisture	Method: SM 2540G								
Percent Moisture	6.0	%		1.0	01/05/05	ALJ1			

### GC Volatiles

Aromatic Volatile Organics	Prep/Method: EPA 5030 Medium Soil / EPA 8021								
Benzene	ND	ug/kg	53.	1.1	01/07/05 11:23	SHF	71-43-2		
Ethylbenzene	ND	ug/kg	53.	1.1	01/07/05 11:23	SHF	100-41-4		
Toluene	ND	ug/kg	53.	1.1	01/07/05 11:23	SHF	108-88-3		
Xylene (Total)	ND	ug/kg	140	1.1	01/07/05 11:23	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	100	%		1.0	01/07/05 11:23	SHF	98-08-8	2	

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Environmental Services  
188 CR 4900  
Bloomfield, NM 8413

### **Pit Closure and Retirement Addendum- Risk Assessment**

This site is located in the NMOCD / USBLM defined "Non Vulnerable Area". These agencies have predetermined that historical use of unlined pits in this area have limited potential to adversely affect ground water. This is primarily due to the depth to ground water, lack of vertical migration of contaminants, and distant proximity to river drainages.

The sample analyzed for confirmation at this site exhibited elevated levels of total petroleum hydrocarbons (TPH) and / or BTEX. Toxicity information indicates that the measured levels pose little risk to human health and the environment. This conclusion is based in part on the information below:

#### **Toxicity Information**

Toxicity values for TPH have not been established due to the variability of the chemical makeup of TPH. Normally, the toxicity is based on the toxicity of particular constituents of concern that may be present and which are evaluated based on health-based standards. The most common constituents examined include benzene, ethylbenzene, toluene, and xylene.

In the absence of constituents of concern or when the concentrations of the constituents of concern are low, the acceptable level of TPH is established by considering the following:

- No liquid product should remain in the soil
- The TPH should not harm vegetation
- The TPH concentrations should not create an odor nuisance
- Hydrocarbon vapors which may emanate from the impacted soil should not generate harmful or explosive vapors
- Site monitoring should indicate that TPH levels are stable or declining

#### **Environmental and Site Conditions**

Based on an evaluation of site topography and available well data, this site is believed to have ground water greater than 100' below ground surface. The absence of continuous transport mechanisms limits continued migration of contaminants in soil. Notwithstanding, **bedrock** was discovered at the pit (i.e. excavation) bottom. This condition retards vertical migration of contaminants and serves to significantly limit potential groundwater impact.

While residual TPH and/or BTEX exists at this site, closure of this site is warranted for the following reasons:

1. The majority of soils that exhibited high levels of TPH and BTEX have been treated to enhance degradation in-situ.
2. Residual TPH concentrations are below levels considered problematic based on the criteria above.
3. Discharge at the site has been eliminated to prevent any future impacts to soils.
4. Depth to groundwater is estimated at greater than 100'.
5. Vertical migration of contamination is limited due to **bedrock**.
6. TPH / BTEX concentrations will not increase and will degrade over time from natural and enhanced processes occurring in-situ.
7. Further excavation at the site is not practicable due to bedrock.

Since there are no nearby receptors or domestic water sources, this site poses little risk to human health and the environment. Closure is justified based on the relatively low total petroleum hydrocarbon (TPH) concentration and the fact that all closure criteria cannot be practically attained. Additional information may be found in the Technical Background Document titled: *Risk Based Closure of Unlined Surface Impoundment Sites, San Juan Basin, New Mexico*.