Larson & Associates, Inc.
Environmental Consultants

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April 1, 2008

VIA: HAND DELIVERY

Mr. Larry Johnson
Environmental Engineer
State of New Mexico – Department of Natural Resources
Oil Conservation Division – District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: 1RP-955 Final Report
John H. Hendrix Corporation, Toni #1 Tank Battery
Unit H (SE/4, NE/4), Section 22, Township 19 South, Range 38 East
Lea County, New Mexico

Dear Mr. Johnson:
This final report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of John H. Hendrix Corporation (JHHC) by Larson and Associates Inc. (LA), its consultant, and presents the results of groundwater samples collected from a monitoring well (MW-1) that was installed to assess conditions immediately down gradient (south-southeast) of the Toni #1 battery (Site). The Site is located in unit H (SE/4, NE/4), Section 22, Township 19 South, Range 38 East, in Lea County, New Mexico. The latitude and longitude is 32° 38' 50.4" north and longitude 103° 07' 41.1" west, respectively. Figure 1 presents a location and topographic map. Figure 2 presents a Site drawing. Contact information for JHHC is as follows:

Name:	Mr. Ron Westbrook
Title:	Vice President
	John H. Hendrix Corporation
Address:	110 N. Marienfeld Street, Suite 400
	Midland, Texas 79701
Telephone:	(432) 684-6631
Fax:	(432) 68407317
Email:	ronniew@jhhc.org

Chronology

On July 10, 2006, lightning struck a near-empty 210-barrel (bbl) oil tank that released approximately 15 barrels (bbl) of crude oil and 30 bbl of produced water. JHHC recovered approximately 10 bbl of oil and 20 bbl of water. The initial C-141 was submitted o the OCD on July 11, 2006. JHHC remediated the spill by excavating soil to approximately 17 feet below ground surface (bgs). Approximately 2,900 cubic yards of soil was hauled the JHHC Centralized Surface Waste Management Facility (NM-021-0021). On January 24, 2007, soil samples were collected from the sides and bottom the excavation and reported no total petroleum hydrocarbons (TPH). Chloride was less than 250 milligrams per kilogram (mg/Kg) in all samples, except GS-2 (715 mg/Kg)

and GS-3 (1,470 mg/Kg) collected from the east wall at 13 feet BGS and 17 feet bgs, respectively, GS-4 (1,950 mg/Kg) collected from the south wall at 15 feet bgs and GS-11 (339 mg/Kg) collected from the north wall at 10 feet bgs.

On February 1, 2007, LAI personnel collected delineation samples near the east (TH-1), southeast (TH-2) and south (TH-3) sides of the excavation. The samples were collected at 1,5,10 and 15 feet bgs and submitted under chain of custody control to Trace Analysis, Inc., which analyzed the samples for chloride using method 300. Chloride was 511 mg/Kg in the 15 foot sample from location TH-3. The remediation and delineation sample results were submitted to the OCD on February 22, 2007 in a report titled, *"1RP-955 - John H. Hendrix Corporation, Toni #1 Tank Battery, Unit H (SE/4, NE/4), Section 22, Township 19 South, Range 38 East, Lea County, New Mexico"*. The report contained form C-141 and a request to close the excavation. The OCD approved the request to close the excavation, which was filled with clean soil. However, the surface owner requested that JHHC install a monitoring well to assess potential impacts to groundwater.

Monitoring Well Installation

On May 25, 2007, Hungry Horse, LLC Environmental Services, under supervision from LAI, drilled monitoring well MW-1 immediately down gradient (south – southeast) of the excavation using an air rotary rig. The boring (6 1/8 inches) was advanced to about 70 feet bgs and split-spoon samples were collected at 0, 5, 10, 15, 20, 25, 30, 35, 40, 45 and 50 feet bgs. The samples were submitted under preservation and chain of custody control to DHL Analytical Laboratories, Inc., which analyzed the samples for chloride. DHL also analyzed the 20 foot sample for TPH, including DRO and GRO. Headspace samples were also collected and reported no organic vapor readings above background or zero parts per million (ppm). The highest chloride concentration was 231 mg/Kg in the 25 foot sample and decreased to 9.20 mg/Kg in the 50 foot sample. No TPH was reported in the 20 foot sample. Figure 2 presents the monitoring well location. Table 1 presents a summary of the soil sample analysis. Appendix A presents the laboratory reports.

The well was constructed with 2-inch diameter schedule 40 PVC screen and casing. The well screened was positioned between 51.80 and 66.39 feet bgs since groundwater stabilized at 56.48 feet bgs. The well screen was packed with 10 – 20 graded silica sand that extends to about 2 feet above the screen. The remainder of the annulus was filled with bentonite chips. The well is secured with a locking steel cover anchored in concrete. The well was developed by hand bailing with a disposable polyethylene bailer to remove suspended material. Appendix B presents the well completion and geologic log.

Groundwater Samples

On August 16, 2007 and December 20, 2007, LAI personnel collected groundwater samples after the well was purged of at least 3 casing volumes of groundwater using disposable polyethylene bailers. The purged water was contained in a portable tank and disposed at an OCD approved facility (Vista Services). The groundwater samples were carefully poured from the bailers into laboratory prepared containers, which were sealed, labeled, chilled in an ice chest and delivered

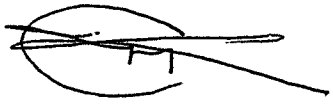
under chain of custody control to DHL. DHL analyzed the samples by EPA methods for benzene, toluene, ethylbenzene and xylene (BTEX), metals (arsenic, barium, cadmium, calcium, chromium, lead, magnesium, mercury, potassium, selenium, silver and sodium) and general water quality parameters chloride, sulfate, alkalinity (bicarbonate, carbonate and hydroxide) and total dissolved solids (TDS). Table 2 presents a summary of the laboratory analysis of groundwater samples. Appendix A presents the laboratory reports.

Referring to Table 2, no constituents were reported above the New Mexico Water Quality Control Commission (WQCC) human health and domestic water quality standards. Chloride was reported at 49.9 milligrams per liter (mg/L) and 49.3 mg/L on August 16, 2007 and December 20, 2007, respectively. The TDS was reported at 414 mg/L and 556 mg/L on August 16, 2007 and December 20, 2007, respectively.

JHHC requests final closure based on the soil remediation and groundwater sample results. JHHC also requests permission to plug the monitoring well according to New Mexico State Engineer regulations. Please contact Mr. Ron Westbrook or myself with questions (432) 684-6681 or (432) 687-0901. You may also email ronniew@jhhc.org mark@laenvironmental.com. Appendix C presents the final C-141.

Sincerely,

Larson & Associates, Inc.



Mark J. Larson, P.G., C.P.G., C.G.W.P.
Sr. Project Manager / President

Encl.

cc: Ron Westbrook/JHHC
Paige McNeill

TABLES

Table 1

Summary of Laboratory Analysis of Soil Samples from Monitoring Well

John H. Hendrix Corporation, Toni #1 Tank Battery

Unit H (SE/4,NE/4), Section 22, Township 19 South, Range 38 East

Lea County, New Mexico

Location	Depth (Feet BGS)	Date	PID (ppm)	Chloride (mg/Kg)	TPH - GRO (mg/Kg)	TPH - DRO (mg/Kg)	TPH - ORO (mg/Kg)	TPH - DRO + GRO (mg/Kg)
MW-1	0 - 1.5	02/01/2007	0.0	10.9	--	--	--	--
	5 - 6	02/01/2007	0.0	50	--	--	--	--
	10 - 10.5	02/01/2007	0.0	101	--	--	--	--
	15	02/01/2007	0.0	224	--	--	--	--
	20	02/01/2007	0.0	199	<0.0611	<2.88	<2.88	<8.7011
	25	02/01/2007	0.0	231	--	--	--	--
	30	02/01/2007	0.0	93.1	--	--	--	--
	35	02/01/2007	0.0	47.1	--	--	--	--
	40	02/01/2007	0.0	62.8	--	--	--	--
	45	02/01/2007	0.0	15.2	--	--	--	--
	50	02/01/2007	0.0	9.20	--	--	--	--

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

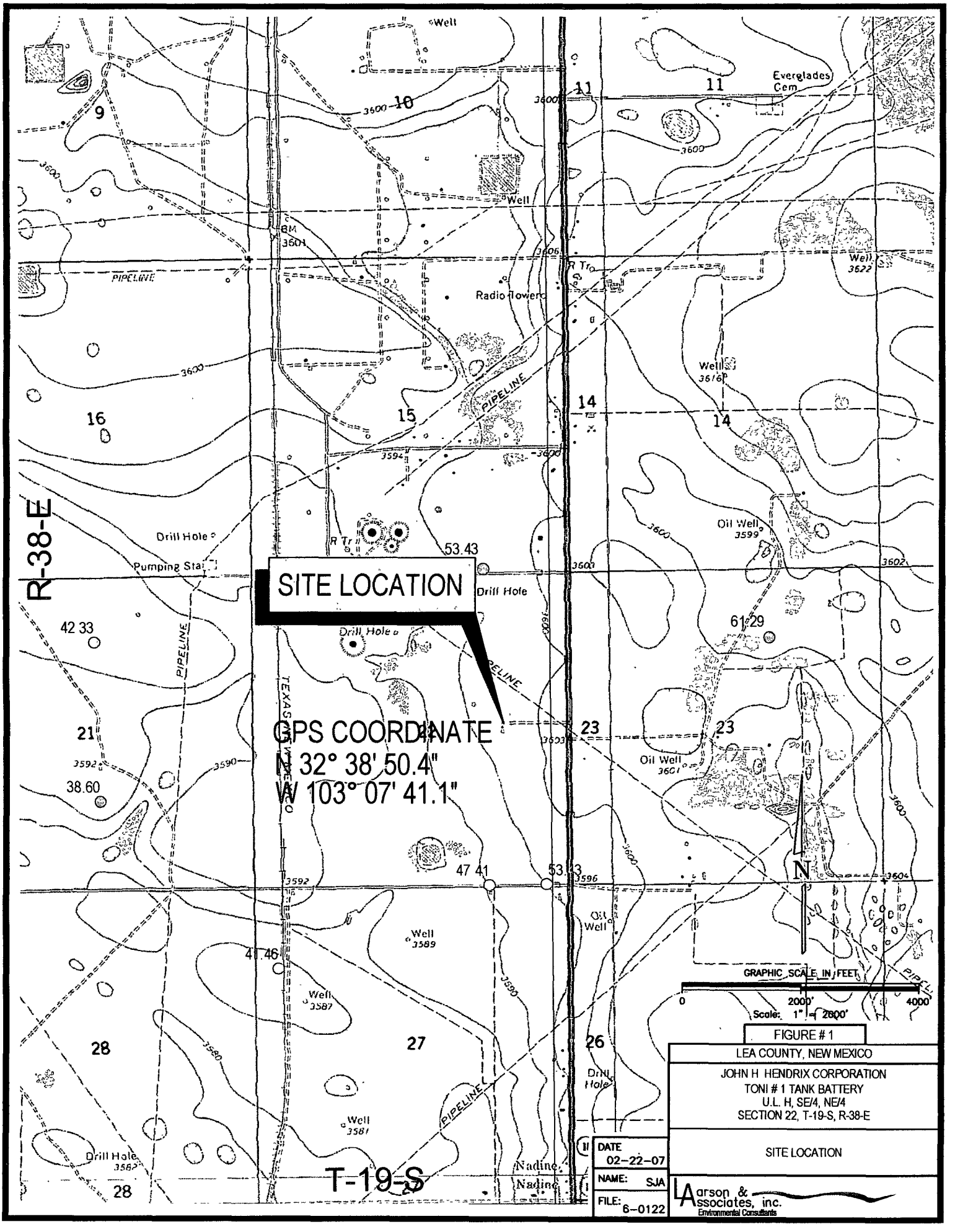
All results reported in milligrams/Kilogram (mg/Kg) or parts per million (ppm)

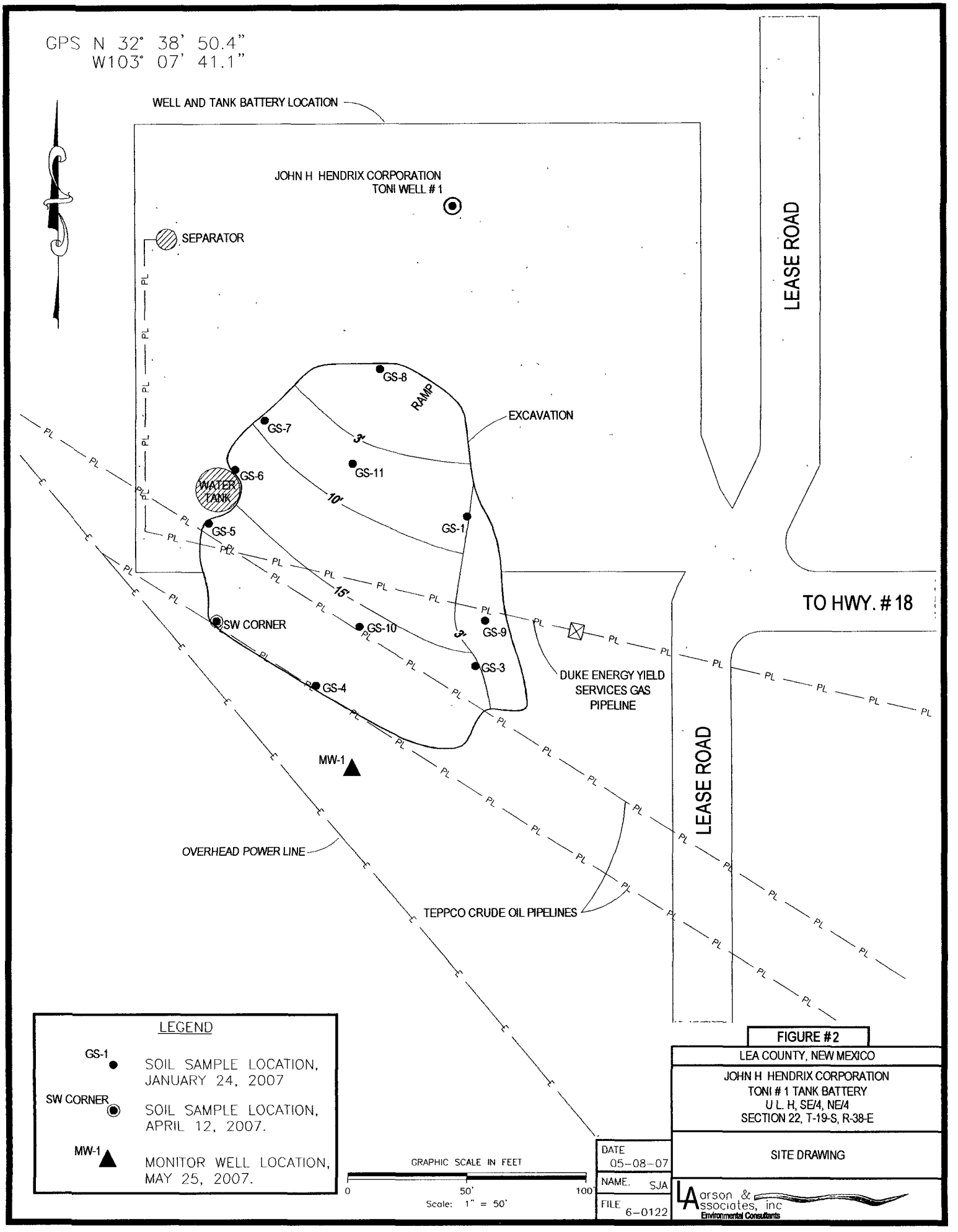
Table 2
Summary of Laboratory Analysis of Groundwater Samples from Monitor Well
John H. Hendrix Corporation, Toni #1 Tank Battery
Unit H (SE/4, NE/4), Section 22, Township 19 South, Range 38 East
Lea County, New Mexico

Parameter	Reporting Units	NMWQCC Human Health/Domestic Standard	MW-1 8/16/07	MW-1 12/20/07
Characteristics				
Chloride	mg/L	250	49.9	49.3
Sulfate	mg/L	600	73.4	122
Alkalinity, Bicarbonate	mg/L	--	194	188
Alkalinity, Carbonate	mg/L	--	<10	<10
Alkalinity, Hydroxide	mg/L	--	<10	<10
Alkalinity, Total	mg/L	--	194	188
Total Dissolved Solids	mg/L	1,000	414	556
Volatile Organics				
Benzene	mg/L	0.01	<0.0008	<0.0008
Ethylbenzene	mg/L	0.75	<0.002	<0.002
Toluene	mg/L	0.75	<0.002	<0.002
Total Xylenes	mg/L	0.62	<0.003	<0.003
Metals				
Arsenic	mg/L	0.1	0.00736	0.00769
Barium	mg/L	1.0	0.0759	0.0702
Cadmium	mg/L	0.01	<0.0003	<0.0003
Calcium	mg/L	--	59.2	59.5
Chromium	mg/L	0.05	<0.002	<0.002
Lead	mg/L	0.05	0.000554	0.000690
Magnesium	mg/L	--	11.7	19.8
Mercury	mg/L	0.002	<0.00008	<0.00008
Potassium	mg/L	--	2.41	2.29
Selenium	mg/L	0.05	0.0022	0.00275
Silver	mg/L	0.05	<0.001	<0.001
Sodium	mg/L	--	52.2	60.0

Notes: Analysis performed by DHL Analytical, Inc., Round Rock, Texas
All results are reported in milligrams per liter (mg/L)
1. <: Below method detection limit
2. --: No data available

FIGURES


SITE LOCATION
GPS COORDINATE
N 32° 38' 50.4"
W 103° 07' 41.1"
R-38-E
T-19-S
Everglades Cem
Radio Towers
Pumping Station
Drill Hole
Oil Well
Well
PIPELINE
TEXAS CANYON
Nadine
GRAPHIC SCALE IN FEET
0
2000'
4000'
Scale: 1" = 2000'
N
FIGURE # 1
LEA COUNTY, NEW MEXICO
JOHN H HENDRIX CORPORATION
TONI # 1 TANK BATTERY
U.L. H, SE/4, NE/4
SECTION 22, T-19-S, R-38-E
SITE LOCATION
DATE 02-22-07
NAME: SJA
FILE: 6-0122
Larson & Associates, inc.
Environmental Consultants


GPS N 32° 38' 50.4"
W103° 07' 41.1"
WELL AND TANK BATTERY LOCATION
JOHN H HENDRIX CORPORATION
TONI WELL # 1
SEPARATOR
LEASE ROAD
GS-8
RAMP
EXCAVATION
GS-7
3'
GS-11
GS-6
WATER TANK
10'
GS-1
GS-5
15'
SW CORNER
GS-10
3'
GS-9
GS-3
GS-4
DUKE ENERGY YIELD SERVICES GAS PIPELINE
TO HWY. # 18
MW-1
LEASE ROAD
OVERHEAD POWER LINE
TEPPCO CRUDE OIL PIPELINES
LEGEND
GS-1 SOIL SAMPLE LOCATION, JANUARY 24, 2007
SW CORNER SOIL SAMPLE LOCATION, APRIL 12, 2007.
MW-1 MONITOR WELL LOCATION, MAY 25, 2007.
GRAPHIC SCALE IN FEET
0
50'
100'
Scale: 1" = 50'
FIGURE #2
LEA COUNTY, NEW MEXICO
JOHN H HENDRIX CORPORATION
TONI # 1 TANK BATTERY
U L. H, SE/4, NE/4
SECTION 22, T-19-S, R-38-E
SITE DRAWING
DATE 05-08-07
NAME. SJA
FILE 6-0122
Larson & Associates, inc
Environmental Consultants

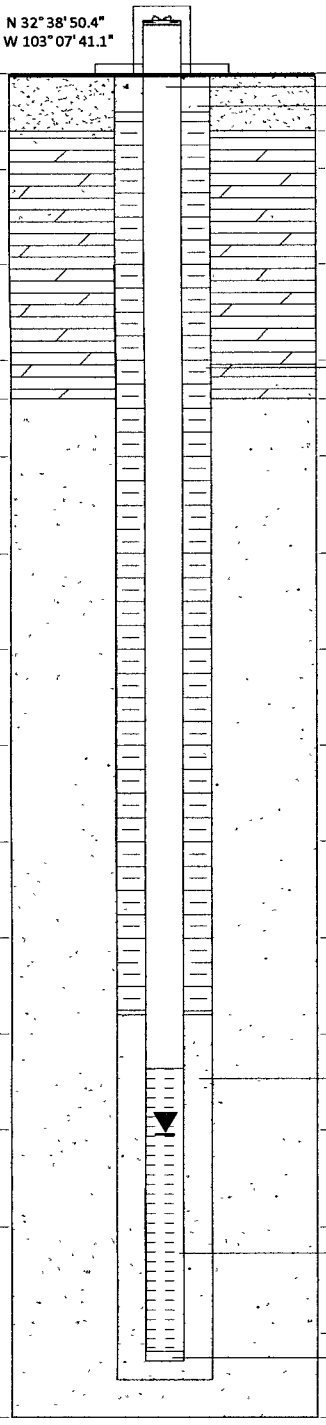
APPENDIX A

Laboratory Reports

APPENDIX B

Monitoring Well Record

Latitude N 32° 38' 50.4"
Longitude W 103° 07' 41.1"

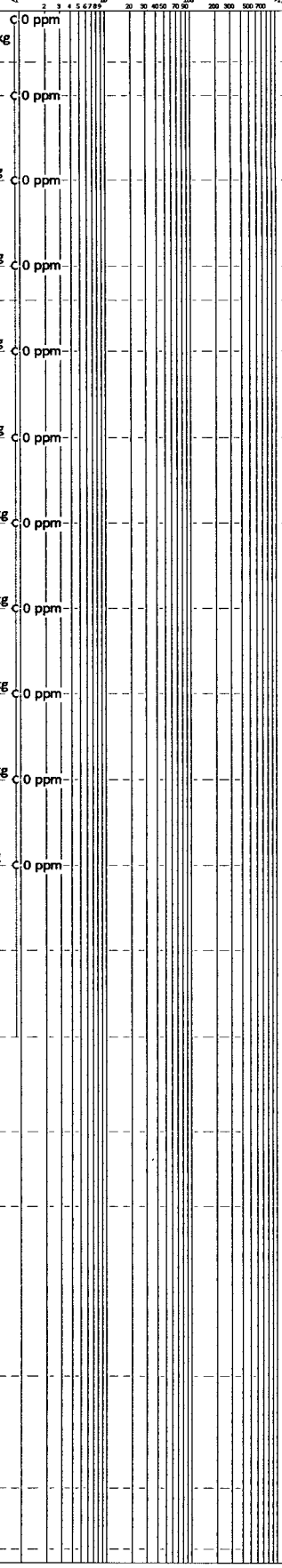


Well Completion Log

Well secured with above grade cover anchored in concrete.

- 2" Dia. Sch 40 PVC Riser Pipe
- Concrete Grout 0 ft. - 1 ft. bgs
- Bentonite Grout 10 ft. - 20 ft. bgs
- 10 - 20 Silica Sand 49.6 ft. - 70 ft. bgs
- Groundwater ~56.48' bgs 10/15/07
- 2" Dia. Sch 40 PVC 0.010" Slotted Screen 51.8 ft. - 66.39 ft. bgs
- 66.95' bgs. Threaded PVC End Cap

PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 5/25/2007, completed 5/25/2007.
Drilled with Air Rotary by Hungry horse 6 1/8" Borehole.

3' bgs	10.9 mg/kg Chloride	0 ppm	SM - Brown (7.5YR 5/4 to 7/4) Very fine grained quartz sand, Dry.
5' bgs	50 mg/kg Chloride	0 ppm	ML/CA - Pink (7.5YR 8/3) Sandy, Very fine grained quartz sand, Moderately Conslidated, Dry.
10' bgs	101 mg/kg Chloride	0 ppm	
15' bgs	224 mg/kg Chloride	0 ppm	
17' bgs			
20' bgs	199 mg/kg Chloride	0 ppm	SM - Pink to Light Brown (7.5YR 7/3 to 6/3) Fine grained quartz sand, Poorly sorted, Round to Subround, Moderatedely cemented with thin beds of very fine Silicas Sandstone.
25' bgs	231 mg/kg Chloride	0 ppm	
30' bgs	93.1 mg/kg Chloride	0 ppm	SM - Pink to Light Reddish Brown (5YR 7/4 to 6/4)
35' bgs	47.1 mg/kg Chloride	0 ppm	
40' bgs	62.8 mg/kg Chloride	0 ppm	
45' bgs	15.2 mg/kg Chloride	0 ppm	SM - Moderately well sorted.
50' bgs	9.2 mg/kg Chloride	0 ppm	SM - Fine to Medium grained quartz sand, Very cemented with Silica.
55' bgs			Split Spoon SM - Redish yellow to Yellowish red (5YR 6/6 to 5/6) Very frine to medium grained quartz sand, Poorly orted, Round.
60' bgs			Split Spoon
70' bgs			~70 ft. End of boring.

John Hendrix Corporation - TONI #1 Tank Battery

MW-1 Boring & Completion Log

Larson & Associates, inc.
Environmental Consultants

APPENDIX C

Form C-141

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

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

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Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

1RP-955

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☑ Final Report

Name of Company: John H. Hendrix Corporation	Contact: Marvin Burrows
Address: 1310 18th Street, Eunice, New Mexico 88231	Telephone No.: (505) 394-2649
Facility Name: Toni #1 Tank Battery	Facility Type: Production Tank Battery

Surface Owner: Paige McNeill	Mineral Owner	Lease No.: NN23777

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Lea
H	22	19S	38E					

Latitude: 32° 38' 50.4" North and Longitude: 103° 07' 41.1" West

NATURE OF RELEASE

Type of Release: Crude Oil and Produced Water	Volume of Release: 15 bbl oil / 30 bbl water	Volume Recovered: 10 bbl oil / 20 bbl water
Source of Release: Lightening	Date and Hour of Occurrence: 10:00 hrs on 07/10/2006	Date and Hour of Discovery: 10:00 hrs on 07/10/2006
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD On-Call Representative (Pager)	
By Whom? Marvin Burrows, Production Superintendent	Date and Hour: 08/10/2006 / 10:00 hrs.	
Was a Watercourse Reached? ☐ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

RECEIVED

If a Watercourse was Impacted, Describe Fully.* N/A

HOBBS OCD

Describe Cause of Problem and Remedial Action Taken.*
Lightening hit Toni #1 battery, firewall contained most of the fluid. Picked up fluid with vacuum truck.

Describe Area Affected and Cleanup Action Taken. Spill affected area approximately 40 x 20 feet outside of firewall. Samples were collected and area was excavated to reduce contaminant levels below NMOCD guidelines for benzene, BTEX and TPH. Installed monitoring well and analyzed water samples for WQCC, which were below human health and domestic water quality thresholds.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Mark J. Larson	Approved by District Supervisor: ENVIRONMENTAL ENGINEER	
Title: Sr. Project Manager / President, Larson and Associates, Inc. (agent for John H. Hendrix Corporation)	Approval Date: 4.17.08	Expiration Date: —
E-mail Address: mark@laenvironmental.com	Conditions of Approval:	Attached ☐
Date: April 1, 2008 Phone: (432) 687-0901		

* Attachment C to Report dated April 1, 2008