#### Electronic Filing: Received, Clerk's Office 07/24/2024 BEFORE THE POLLUTION CONTROL BOARD OF THE STATE OF ILLINOIS

HENSON OIL COMPANY, INC.	)	
Petitioner,	)	
v.	) PCB 2024-06 <sup>-</sup> ) (LUST Appeal	
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
Respondent.	)	

#### **NOTICE**

Don Brown, Clerk Illinois Pollution Control Board 60 Van Buren St., Ste. 630 Chicago, IL 60605 don.brown@illinois.gov Carol Webb, Hearing Officer Illinois Pollution Control Board 1021 North Grand Avenue East P.O. Box 19274 Springfield, IL 62794-9274 carol.webb@illinois.gov

Patrick D. Shaw Law Office of Patrick D. Shaw 80 Bellerive Road Springfield, IL 62704 pdshaw1law@gmail.com

PLEASE TAKE NOTICE that I have today filed with the office of the Clerk of the Pollution Control Board an APPEARANCE, the ADMINISTRATIVE RECORD, and a CERTIFICATE OF RECORD ON APPEAL, copies of which are herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent

Rich Kim

Assistant Counsel - Division of Legal Counsel

Special Assistant Attorney General

1021 North Grand Avenue, East

P.O. Box 19276

Springfield, Illinois 62794-9276

217/782-5544

866/273-5488 (TDD)

Dated: July 24, 2024

# OF THE STATE OF ILLINOIS

HENSON OIL COMPANY, INC.	)	
	)	
Petitioner,	)	
	)	
v.	j	PCB 2024-069
	)	(LUST Appeal)
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
Respondent.	)	

#### **APPEARANCE**

The undersigned, as one of its attorneys, hereby enters his Appearance on behalf of the Respondent, the Illinois Environmental Protection Agency.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent

Rich Kim

Assistant Counsel - Division of Legal Counsel

Special Assistant Attorney General

1021 North Grand Avenue, East

P.O. Box 19276

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richard.kim@illinois.gov

Dated: July 24, 2024

# BEFORE THE POLLUTION CONTROL BOARD OF THE STATE OF ILLINOIS

HENSON OIL COMPANY, INC.	)
Petitioner,	)
V.	) PCB 2024-069 ) (LUST Appeal)
ILLINOIS ENVIRONMENTAL	)
PROTECTION AGENCY,	)
Respondent.	)

#### **CERTIFICATE OF RECORD ON APPEAL**

Pursuant to 35 Ill. Adm. Code 105.116(b) and 105.410, the following constitutes an index of documents comprising the record:

PAGES	DOCUMENT(S)	DATE
AR000001	Illinois HazMat Report	October 6, 2000
AR000002-AR000160	Corrective Action Plan & Budget	May 6, 2022
AR000161-AR000162	IEPA Technical Review Notes	August 24, 2022
AR000163-AR000166	IEPA CAP acceptance letter	September 6, 2022
AR000167-AR000380	CAP and Budget Amendment	November 16, 2023
AR000381-AR000395	IEPA Technical Review Notes	March 4, 2024
AR000396-AR000409	IEPA/CWM emails with attachment	March 6-8, 2024
AR000410-AR000415	IEPA/CWM emails with attachment	March 15-26, 2024
AR000416-AR000421	IEPA decision letter	March 19, 2024

I, Becky Fiedler, certify on information and belief that the entire record of the Respondent's decision, as defined in 35 Ill. Adm. Code 105.410(b), is hereby enclosed.

Bv:

Becky Fiedler

Leaking Underground Storage Tank Section Illinois Environmental Protection Agency

Date: 23 July 2024

# Electronic Filing: Received, Clerk's Office 07/24/2024 CERTIFICATE OF SERVICE

I, the undersigned attorney at law, hereby certify that on July 24, 2024, I served true and correct copies of an APPEARANCE, the ADMINISTRATIVE RECORD, and a CERTIFICATE OF RECORD ON APPEAL, via the Board's COOL system and email, upon the following named persons:

Don Brown, Clerk Illinois Pollution Control Board 60 E. Van Buren St., Suite 630 Chicago, IL 60605 don.brown@illinois.gov Carol Webb, Hearing Officer Illinois Pollution Control Board 1021 North Grand Avenue East P.O. Box 19274 Springfield, IL 62794-9274 carol.webb@illinois.gov

Patrick D. Shaw Law Office of Patrick D. Shaw 80 Bellerive Road Springfield, IL 62704 pdshaw1law@gmail.com

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent

Rich Kim

Assistant Counsel - Division of Legal Counsel Special Assistant Attorney General 1021 North Grand Avenue, East P.O. Box 19276 Springfield, Illinois 62794-9276 217/782-5544 866/273-5488 (TDD) richard.kim@illinois.gov



1131055007-Mclean
Henson Oil6
Luggi Incident Recon

EM/2000 Incident Recorder

## Illinois HazMat Report Incident #: H 2000 1913

Entered by Jack DeHeve on 10/06 at 08:30 AM

Incident Type:

Illinois HazMat Report

Data Input Status:

Open Close

incident Level:

Main Incident ( ) Sub-Incident

1. Caller: MELINDA PAGE	14. On Scene Contact: N/A
2. Call back phone#: 618/735-2411	On Scene Phone #: N/A
3. Caller Represents: UNITED SCIENCE	15. No. Injured: NONE
INDUSTRIES	
4. Type of Incident: LEAK OR SPILL	Where Takch:
5. Incident Location	16. Public health risks and/or precautions taken,
Street: OLD HWY 66	including # evacuated: NONE
Street: OLD HWY 66 City: TOWANDA IN County: MCLEAN	17. Assistance needed from State Agencies: NONE
County: MCLEAN	
Milepost:	
Scc.: Twp.: Range:	
6. Area Involved: FIXED FACILITY	
7. Material (s) Involved: GASOLINE	18. Containment/cleanup actions and plans: #3 IS THE
	CLEAN UP CONTRACTOR.
Material Type: LIQUID	19. Weather: NONE
CAS#:	Temp.: deg. f/ Wind Dir. / Speed m.p.h.
UN/NA#:	
Is this a 302 (a) Extremely Hazardous Substance?	
Is this a RCRA Hazardous Waste?	
Is this a RCRA regulated facility?	
8. Container: UNDERGROUND TANK	20. Responsible Party: HENSON OIL CO.
Container Size: 3-8,000 GALS	Contact Person: GENE HENSON
	Phone #: 309/829-8915
9. Amount Released: UNKNOWN	Mailing Address: P.O. BOX 712,
Rate of Release: N/A/min.	BLOOMINGTON, IL. 61702
10. Cause of Release: UNKNOWN	
11. Estimated Spill Extent: N/A	Notifications: IEPA, OSFM, REG 7
12. Occurred - Date: Time:	
Discovered - Date: 10/05/2000 Time: 15:00	·
13. Emergency Units Contacted - NO	On Scene - NO
Fire: -	Fire: -
Police: -	Police: -
Sheriff: -	Sheriff: -
BSDA: -	ESDA: -
Other: -	Other: - RELEASAB

OCT 2 4 2000

# CORRECTIVE ACTION PLAN & BUDGET AMENDMENT

1131055007 – McLean County Henson Oil Company Incident # 20001913 Leaking UST Technical File

May 2022

# CW M Company

Environmental Consulting Services

701 W. South Grand Avenue Springfield, IL 62704

> Phone: (217) 522-8001 Fax: (217) 522-8009

May 6, 2022

Mr. Scott Rothering

LUST Section, Bureau of Land Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, Illinois 62794-9276 1131055007 – McLean County Henson Oil Company Incident # 20001913 Leaking UST Technical File

RE:

LPC #0190805029—McLean County

Henson Oil Co. - Towanda

Old Highway 66, Towanda, Illinois Incident Number: 2000-1913

LUST Technical Reports—Corrective Action Plan Amendment & Budget

Dear Mr. Rothering:

On behalf of Mr. Henson, of Henson Oil Company, we are submitting the attached Corrective Action Plan (CAP) and Budget Amendment.

If you have any questions or require additional information, please contact us at (217) 522-8001.

Sincerely.

Carol L. Rowe, P.G.

Senior Environmental Geologist

TEPA-DIVISION OF RECORDS MANAGEMENT

DEC 01 2022

REVIEWER: SAB

Enclosure

xc:

Mr. Henson, Henson Oil Co.

Mr. William T. Sinnott, CW<sup>3</sup>M Company, Inc.

RECEIVED

MAY. 0 9 2022

**IEPA/BOL** 

# CORRECTIVE ACTION PLAN & BUDGET AMENDMENT

# **HENSON OIL COMPANY**

Towanda, Illinois LPC #1131055007— McLean County Incident Number 2000-1913

Submitted to:

### ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Leaking Underground Storage Tank Section, Bureau of Land 1021 North Grand Avenue East Springfield, Illinois 62794-9276

Prepared by: CW<sup>3</sup>M COMPANY, INC.

RECEIVED

MAY 0 9 2022

701 South Grand Avenue West Springfield, Illinois (217) 522-8001 400 West Jackson, Spite A/BOL Marion, Illinois (618) 997-2238

**May 2022** 

IEPA-DIVISION OF RECORDS MANAGEMENT RELEASABLE

DEC 01 2022

**REVIEWER: SAB** 

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

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## **ACRONYMS AND ABBREVIATIONS**

BETX	Benzene, Ethylbenzene, Toluene, Total Xylenes
CACR	Corrective Action Completion Report
CAP	Corrective Action Plan
COC	Chemical Oxidation Compound
CUOs	Clean-up Objectives
$CW^3M$	CW <sup>3</sup> M Company, Inc.
CWS	Community Water Supply
Ill. Adm. Code	Illinois Administrative Code
IDOT	Illinois Department of Transportation
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
ISGS	Illinois State Geological Survey
ISWS	Illinois State Water Survey
mg/kg	Milligrams per kilogram (parts per million)
mg/L	Milliliters per kilogram (parts per million)
OSFM	Office of the State Fire Marshal
ORC	Oxygen Releasing Compound
PVC	Polyvinyl Chloride
SCCR .	Site Classification Completion Report
SWAP	Source Water Assessment Program
TACO	Tiered Approach to Corrective Action Objectives
USTs	Underground Storage Tanks
USI	United Science Industries

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#### 1. SITE HISTORY/EXECUTIVE SUMMARY

#### 1.1 GENERAL

This proposed Corrective Action Plan (CAP) and Budget has been prepared in accordance with the requirements of the 35 Illinois Administrative Code (Ill. Adm. Code) 734. The Illinois Environmental Protection Agency (IEPA) Corrective Action Plan Form is included in this document as Appendix A.

Mr. Jerry Henson of Henson Oil Company., the owner of the underground storage tanks (UST) at its Towanda, Illinois facility, reported a release to the Illinois Emergency Management Agency (IEMA). Incident Number 2000-1913 was assigned to the notification on October 6, 2000. Mr. Henson at the time requested United Science Industries (USI) to proceed with the reporting and early action requirements in accordance with 35 Ill. Adm. Code § 734.

The 20-Day Certification was submitted to the IEPA on October 24, 2000 (USI, 2000a). An early action extension request was submitted on November 2, 2000 (USI, 2000) and approved on November 20, 2000 (IEPA, 2000b). The 45 Day Report was submitted to the IEPA on January 30, 2001 (USI, 2001) and was approved on February 21, 2001 (IEPA, 2001).

A Site Classification Work Plan and Budget was submitted to the IEPA on November 22, 2002 (USI, 2002) and approved with modifications on March 12, 2003 (IEPA, 2003a). This plan was also considered as the Site Classification Completion Report (SCCR). A High Priority Corrective Action Plan and Budget was submitted to the IEPA on August 11, 2003 (USI, 2003) and was approved with modifications on December 9, 2003 (IEPA, 2003b). A High Priority Corrective Action Plan Budget was submitted on July 12, 2004 (USI, 2004) and was denied on October 8, 2004 (IEPA, 2004).

A High Priority Corrective Action Plan and Budget was submitted to the IEPA on June 17, 2005 (USI, 2005a) and was approved on July 18, 2005 (IEPA, 2005a). A High Priority Corrective Action Plan Budget was submitted to the IEPA on August 19, 2005 (USI, 2005b) and was approved on October 7, 2005 (IEPA, 2005b). A High Priority Corrective Action Plan and Budget was submitted on February 24, 2006 (USI, 2006a) and was approved on March 2, 2006 (IEPA, 2006). A High Priority Corrective Action Plan and Budget was submitted to the IEPA on December 15, 2006 (USI, 2006b). The Plan was approved but the Budget was submitted to the IEPA on April 26, 2007 (USI, 2007) and was approved on July 26, 2007 (IEPA, 2007b).

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Corrective Action Plan and Budget Amendment
Henson Oil Co. - Towanda
LPC # 1131055007 –Incident Number 2000-1913

CW<sup>3</sup>M Company, Inc (CW<sup>3</sup>M) recently became the environmental consultant for the Henson Oil Company site since the April 26, 2007 High Priority Corrective Action Plan and Budget by USI.

This CAP and Budget is being prepared in response to Incident Number 2000-1913.

This report is certified by an Illinois Licensed Professional Engineer. The geological investigation and site investigation were performed under the direction of an Illinois Licensed Professional Geologist and completed in accordance with the Professional Geologist Licensing Act and its Rules for Administration.

#### 1.2 SITE LOCATION

The site, known as Henson Oil Company also known as Towanda Mini Mart is located on Old Highway 66, Towanda, IL 61776, at the current location of Kicks Bar and Grill. The site is located in the SW ¼ of the SW ¼ of the NE ¼ of Section 5 Township 24 North of the Centralia Baseline and Range 3 East of the Third Principle Meridian.

#### 1.3 UNDERGROUND STORAGE TANK INFORMATION

A permit for the removal of three USTs was approved by the Office of the State Fire Marshal (OSFM) on October 24, 2000 (OSFM, 2000).

Tank removal and early action activities were conducted and coordinated by United Science Industry in conjunction with All-American Environmental personnel on December 12, 2000. OSFM Tank Specialist Doug Kirk was on site to oversee the UST removal.

Tank 1: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

Tank 2: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

Tank 3: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

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Table 1-1. Underground Storage Tank Summary

Tank Number	Tank Volume (gallons)	Tank Contents	Incident Number	Release Information	Current Status
1	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000
2	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000
3	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000

#### 1.4 EARLY ACTION SUMMARY

On October 26, 2000, three USTs along with the 400 gallons of off-spec fuel and water present inside the tanks were removed by All-American Environmental. Thirteen soil samples were taken from the walls and floor of the tank hold excavation and former pump island locations. All soil samples were collected and analyzed for benzene, ethylbenzene, toluene, and total xylenes (BETX). The analytical results indicated that the most stringent Tier 1 Clean-up Objectives (CUOs) had been exceeded for various indicator contaminants.

On December 28, 2000 one 55-gallon drum of sludge and absorbents and one 55-gallon drum of water and off-spec fuel was taken off the site. Between December 28 and 29, 2000, approximately 622.77 tons (415.18 cubic yards) of contaminated backfill was removed from the former tank pit and taken to the ADS McClean County Landfill Facility in Bloomington, Illinois.

The map for these samples and their respective values are located in Appendix B and the lab results are located in Appendix E. Details of the results and location can be found in the 45 Day Report (USI, 2001)

#### 1.5 SITE INVESTIGATION SUMMARY

#### 1.5.1 First Round of Sampling

On March 29, 2001, USI personnel were on site to conduct site classification activities. Three monitoring wells with soil borings and one monitoring well without a soil boring were advanced as part of the plume delineation activities. All soil samples were analyzed for

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BETX indicator contaminants. A table summarizing the results is included in Appendix E. Soil analytical results from the site investigation indicated that the most stringent Tier 1 CUOs for the site had been exceeded at multiple locations. Groundwater analytical results from the investigation indicated that samples exceeded the Class I Groundwater CUOs for multiple indicator contaminants.

#### 1.5.2 Second Round of Sampling

On May 17, 2001, USI returned to the site and advanced five monitoring wells with soil borings to further define the extent of the soil and groundwater contamination. USI personnel sampled and survey the newly installed monitoring wells and all samples were analyzed for BETX indicator contaminants. A table summarizing the results is included in Appendix E. Soil analytical results from the site investigation indicated that the most stringent Tier 1 CUOs for the site had been exceeded at multiple locations.

#### 1.5.3 Third Round of Sampling

On September 18, 2002, USI returned to the site and advanced one monitoring well with a soil boring, two monitoring wells without soil borings, and three soil borings to further define the vertical and horizontal extent of the soil and groundwater contamination. All soil samples were analyzed for BETX indicator contaminants. A table summarizing the results is included in Appendix E.

#### 1.5.4 Fourth Round of Sampling

Between April 11, 2003 and April 28, 2003, USI personnel installed additional groundwater monitoring wells at the site. On April 22, 2004, USI returned to the site to advance three more monitoring wells. On May 5, 2004, USI personnel sampled monitoring wells on the east side of the site and the three monitoring wells advanced on April 22, 2004, to reassess groundwater contamination following the soil excavation and disposal activities. On May 24, 2004, USI personnel sampled monitoring wells on the south side of the site and five other wells on site to further determine the groundwater contamination plume.

#### 1.5.5 On-site Activities

CAP that approved sampling, On March 4, 2022, CW<sup>3</sup>M personnel visited the site with the intention to locate all the groundwater monitoring wells installed and potentially resample the five contaminated monitoring wells that were most recently sampled by USI on May 5, 2004 and May 24, 2004. 16 of the 21 monitoring wells were located. The five monitoring wells could not be resampled due to being damaged or destroyed.

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#### 1.5.6 Off-site Access Activities

A request to access the neighboring properties to define the extent of the contamination plume was sent to the Illinois Department of Transportation (IDOT), Union Pacific Railroad, and the Weaver property, the commercial property to the west by USI. Only James Jereb of IDOT granted access. Once property access was acquired, the investigation continued to identify soil and groundwater contaminants potentially associated with Incident Number 2000-1913. USI, on behalf of the client, fulfilled all requirements for off-site access to the Union Pacific Railroad and Weaver properties. Affidavits describing the access efforts will be prepared and submitted with the Corrective Action Completion Report (CCAR).

USI determined soil contamination existed from the incident and had determined that the soil plume was defined by the remediation efforts at which they to address the contamination. The soil plume had been defined by restrictions such as water use restrictions. The results from site investigations conducted to date dictate that groundwater contamination is partially defined.

#### 1.6 CORRECTIVE ACTION SUMMARY

On August 11, 2003, IEPA received the CAP and Budget submitted by USI. The CAP proposed an excavation and disposal to remediate the soil contamination along with proposed Chemical Oxidation Compound (COC) injections in order to remediate the groundwater contamination. The CAP was approved with modifications, but the was budget denied. The groundwater remediation activities within the CAP were not approved. IEPA required the groundwater contamination to be reassessed following the excavation and disposal of the contaminated soil.

From April 5, 2004 through April 19, 2004, the excavation and disposal of contaminated soil was completed. A total of 3,219.71 tons (2,146.47 cubic yards) of contaminated soil was disposed of at ADS McClean County Landfill in Bloomington, Illinois. On April 8, 2004 a total of 767.95 tons (511.96 cubic yards) of sand was hauled to the site to backfill the excavation. The clean soil stockpiled at the site was used as backfill as well. On April 9, April 15, and April 20, 2003, the excavated area was capped off with 435.15 tons (290.1 cubic yards) of CA-6.

On June 17, 2005, the IEPA received the CAP Amendment and Budget to resample seven monitoring wells in order to obtained up-to-date analytical results. The plan included a proposal to request a groundwater ordinance from the City of Towanda and utilize the ordinance as an institutional control. The CAP amendment and budget was approved. The initial plan to obtain a City of Towanda groundwater ordinance failed.

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On December 13, 2006, a CAP was proposed to utilize Oxygen Releasing Compounds (ORC) injections in order to adequately remediate the groundwater contamination located at the Henson Oil Company site. The compound proposed was Permeox Plus form FMC Chemical.

In a letter dated March 28, 2007 the IEPA decided to modify the December 13, 2006 Corrective Action Plan. The IEPA's reasoning for the modification, was that due to contamination concentrations declining after soil excavation, removal and sampling for biofeasibility, two additional groundwater monitoring wells were needed. The most recent High Priority Corrective Action Plan Budget (USI, 2007) was submitted and approved by the IEPA (IEPA, 2007), but was not implemented.

On March 4, 2022, CW<sup>3</sup>M personnel visited the site with the intention to locate all 21 of the groundwater monitoring wells installed and potentially resample the five contaminated monitoring wells that were most recently sampled by USI on May 5, 2004 and May 24, 2004. The five monitoring wells could not be resampled due to being damaged or destroyed. 16 of the 21 monitoring wells were located.

### 2. REMEDIATION OBJECTIVES

#### 2.1 DETERMINATION OF CLEAN-UP OBJECTIVES

In accordance with 35 Ill. Adm. Code 734.410, remediation objectives were determined in accordance with 35 Ill. Adm. Code § 742. One of the clean soil boring locations, ST-1 was sampled during the site classification sampling activities, for the Tiered Approach to Corrective Action Objectives (TACO) parameters during corrective action activities. The site-specific physical parameters were determined as follows:

Hydraulic Conductivity (K),  $3.57 \times 10^{-4}$  cm/sec Soil bulk density ( $\rho_b$ ), 1.65 g/cm<sup>3</sup> Soil particle density ( $\rho_s$ ), 2.65 g/cm<sup>3</sup> Moisture content (w), 25.2% Organic carbon content ( $f_{oc}$ ), 0.0360 g/g

In order to determine the hydraulic conductivity, a slug test was performed during site classification activities at MW-4 on April 9, 2001. The test was performed by lowering a "slug" constructed of polyvinyl chloride (PVC) into a monitoring well. When the slug was lowered into the well, the groundwater was displaced by the volume of the slug. As the water within the well equilibrates, water depth changes were recorded in relation to the time interval that had passed since the test was initiated.

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The hydraulic conductivity calculations were based on the total well depth, screen length and radius, initial water depth, and the water depth change over time. The depth-to-water changes over time were plotted on a semi-logarithmic graph and the curve was evaluated. The slope of the straight-line portion of the curve, along with the other slug test data, was used to calculate the hydraulic conductivity.

Velocity was calculated using the hydraulic conductivity results determined at the site, as well as the hydraulic gradient. The hydraulic gradient was found by calculating the change in gradient between the most up-gradient well and the most down-gradient well, then dividing this answer by the distance in feet between the two wells. Formula R24,  $(U_{glv} = K \bullet i)$  of 35 III. Adm. Code § 742 Appendix C, Table C.

#### 2.2 SOIL AND GROUNDWATER OBJECTIVES

Soil analytical results were compared to the TACO Residential Tier 1 and TACO residential Tier 1 CUOs with the groundwater pathway removed, in milligrams per kilogram (parts per million) (mg/kg). The calculations of the Tier 1 CUOs are included in Appendix G of this CAP.

**TACO Residential Tier 1 CUOs** (W/ Groundwater Pathway **TACO Residential Tier 1** Removed) (mg/kg) CUOs (mg/kg) Parameter 0.03 0.8 Benzene 58.0 Ethylbenzene 13.0 42.0 12.0 Toluene 5.6 5.6 **Total Xylenes** 

**Table 2-1. Soil Remediation Objectives** 

CW<sup>3</sup>M will consider the groundwater at this site to be Class I unless demonstrated otherwise pursuant to 35 III. Adm. Code § 620.210. According to the Illinois Pollution Control Board, three Class III Groundwater contributing areas exist; however, they are located in McHenry, Monroe and St. Clair Counties in northern and western Illinois. Groundwater investigation sample results would be compared to the TACO Residential Tier 1 CUOs in milligrams per liter (mg/L).

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

Table 2-2. Groundwater Remediation Objectives

Parameter	TACO Tier 1 CUOs (mg/L)
Benzene	0.005
Ethylbenzene	0.7
Toluene	1.0
Total Xylenes	10.0

#### 3. CORRECTIVE ACTION PLAN

The following CAP and Budget has been prepared by CW<sup>3</sup>M Company, Inc., as their recommendation for the most appropriate and economical approach to the remediation of the contamination at the Henson Oil Company site in Towanda, Illinois.

Based upon the analytical data from the soil samples collected to date, it is apparent that soil contamination exceeds Tier 1 CUOs. All contaminated soil that exceeded Tier 1 CUOs has not all been removed from site and will need to be addressed with Tier 2 CUOs, HAA, or with additional sampling. Analytical results also show groundwater contamination exceeds Tier 1 CUOs for various locations on site.

Groundwater contamination is conditionally defined due to denied access from Union Pacific Railway and the Weaver Property to the west and south of the site, respectively. The soil contamination plume was not correctly defined by USI at the time.

Since some of the groundwater monitoring wells previously installed by USI have been located but were damaged or destroyed, CW<sup>3</sup>M is proposing to install replacement wells for MW-5, MW-6, MW-8, MW-10, MW-14, which recorded groundwater contamination as part of the most recent sampling event by USI.

CW<sup>3</sup>M proposes drill soil borings at locations F-1, F-2, F-3, W-2, W-4, W-11, W-13, W-14, W-15. and W-17 to reassess the soil contamination on site. CW<sup>3</sup>M also proposes drilling six new soil borings further from the source of W-2, W-11, W-13, W-14, W-15, W-17 to help define the extent of the soil plume.

Following the vapor intrusion assessment flow chart, a soil-gas vapor sample will also be required on-site for this incident at the highest contaminated location (F-3) as part of corrective action. According to 35 III. Adm. Code § 734, the sample will be required at the location of highest contamination.

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Sampling at the newly installed wells and soil boring locations will allow for more accurate modeling and assessment of current soil and groundwater contamination levels.

In summary, a total of 5 monitoring wells at a depth of 15 feet are proposed to be installed, and sampled to more accurately define the groundwater contamination. The advancement of 13 soil borings at a depth of 10 feet and 3 soil borings at a depth of 15 feet are also being proposed to define the soil contamination plume and obtain a more accurate contamination assessment. A soil gas vapor sample will be obtained to assess the vapor intrusion pathway

#### In summary:

- Install replacement wells at the locations MW-5, MW-6, MW-8, MW-10, and MW-14, which previously recorded contamination during the most recent sampling event.
- Advance and sample soil borings at locations F-1, F-2, and F-3.
- Drill soil borings at W-2, W-4, W-11, W-13, W-14, W-15. and W-17, to reassess the soil contamination plume in regard to previously recorded data.
- Advance an additional 6 soil borings to more accurately define the soil contamination plume.
- Obtain a soil gas vapor sample to assess potential for the vapor intrusion pathway.

#### 3.1 CURRENT AND PROJECTED USES OF THE SITE

The site is bordered to the south by East Jackson Street (N 1960 East Rd) and a railway beyond it, to the west by a vacant lot considered to be commercial property (Weaver Property), to the north by the Old Route 66 Highway and to the east by Jackson Steet and a State-owned property beyond that. A bar, Kicks Bar and Grill, is currently operating on site and is expected to continue to do so.

#### 3.2 INSTITUTIONAL CONTROLS PROPOSED

The need for any further institutional controls will be addressed following corrective action sampling.

#### 3.3 WATER SUPPLY WELL SURVEY

A survey of water supply wells for the purpose of identifying and locating all community water supply (CWS) wells within 2,500 feet of the UST systems and all potable water supply





Agency ID: 170000675909

Media File Type: LAND

Bureau ID: 1131055007

Site Name: Henson Oil Co

Site Address1: Rte 66

Site Address2:

Site City: Towanda

State: IL

Zip: 61776-

# This record has been determined to be partially or wholly exempt from public disclosure

# **Exemption Type:**

# Redaction

Exempt Doc #: 7

**Document Date:** 5 /9 /2022

Staff: SAB

**Document Description:** CORRECTIVE ACTION PLAN & BUDGET

Category ID: 21A

**Category Description:** 

LEAKING UST TECHNICAL

Exempt Type: Redaction

Permit ID: 20001913

Date of Determination:

12/1 /2022

CW<sup>3</sup>M Company, Inc.
Corrective Action Plan and Budget Amendment
Henson Oil Co. - Towanda
LPC # 1131055007 —Incident Number 2000-1913

wells within 200 feet of the UST systems has been completed. The Illinois State Water Survey (ISWS), the Illinois State Geological Survey (ISGS) and the IEPA Division of Public Water Supplies were contacted via the Source Water Assessment Program (SWAP) online.

The ISGS, ISWS, and IEPA Division of Public Water Supplies were accessed online on March 9, 2021 (EPA.STATE.IL.US, 2021). The response indicated five ISGS wells are located within 2,500 feet of the site.

No wells are located within the setback zone located for the site.

Table 3-1. Water Supply Well Information

Well ID	Owner	Туре	Distance From USTs - (feet)	Depth (feet)	Setback Zone (feet)
121132435700		Private Well	1994	120	200
121132241700	Towanda Auger Test	Water Well Test Hole	1182	0	200
121130020100	Towanda City Test	Water Well Test Hole	892	197	200
121132241500	Village of Towanda	Water Well Test Hole	1553	188	· 200
121132241600	Village of Towanda	Water Well Test Hole	1920	63	200

#### 3.4 CLOSURE

Once the proposed monitoring well installation and sampling is completed, a report will be submitted to the IEPA detailing the new analytical results. This report will either be a CAP and Budget Amendment or a CACR, dependent on the corrective action needed, if any. This future document will be accompanied by a certification from an Illinois Registered Professional Engineer.

. IEPA DIVISION OF RECORDS MANAGEMENT EXEMPT IN PART

DEC 01 2022

**REVIEWER: SAB** 



CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

# **INDEX OF DRAWINGS**

Drawing Description		File Name	
Number			
0001a	Site Location Map	SITEMAP.dwg	
0001b	Topographic Map	TOPOMAP.dwg	
0001c	Community Water Supply Well Map	WellMAP.dwg	
0002	Site Map	SITE.dwg	
0003	Early Action Sample Location and Value Map	EALOCVAL.dwg	
0004a	Site Inv. Soil Borings Locations Map	SG1_SBLOC.dwg	
0004b	Site Inv. Soil Borings Values Map (0-5ft)	SG1_SBLOC(0-5).dwg	
0004c	Site Inv. Soil Borings Values Map (5-10ft)	SG1_SBLOC(5-10).dwg	
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CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

Sampling at the newly installed wells and soil boring locations will allow for more accurate modeling and assessment of current soil and groundwater contamination levels.

In summary, a total of 5 monitoring wells at a depth of 15 feet are proposed to be installed, and sampled to more accurately define the groundwater contamination. The advancement of 13 soil borings at a depth of 10 feet and 3 soil borings at a depth of 15 feet are also being proposed to define the soil contamination plume and obtain a more accurate contamination assessment. A soil gas vapor sample will be obtained to assess the vapor intrusion pathway

#### In summary:

- Install replacement wells at the locations MW-5, MW-6, MW-8, MW-10, and MW-14, which previously recorded contamination during the most recent sampling event.
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CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

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IEPA
DIVISION OF RECORDS MANAGEMENT
EXEMPT IN PART

DEC 01 2022

**REVIEWER: SAB** 



CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

#### 4. REFERENCES

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USI, 2000b. United Science Industries, Inc., Early Action Extension Request, Henson Oil Co., Towanda, Illinois, November 2, 2000.

USI, Inc, 2001. United Science Industries, Inc. 45-Day Report. Henson Oil Co., Towanda, Illinois, January 30, 2001.

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CW<sup>3</sup>M Company, Inc.
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# APPENDIX A CORRECTIVE ACTION PLAN FORM

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.19). Failure to disclose this information may result in a civil penalty of not to exceed \$50,000.00 for the violation and an additional civil penalty of not to exceed \$10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false, fictitious, or fraudulent material statement or representation, orally or in writing, to the Agency, or to a unit of local government to which the Agency has delegated authority under subsection (r) of Section 4 of this Act, related to or required by this Act, a regulation adopted under this Act, any federal law or regulation for which the Agency has responsibility, or any permit, term, or condition thereof, commits a Class 4 felony, and each such statement or writing shall be considered a separate Class 4 felony. A person who, after being convicted under paragraph 415 ILCS 5/44 (h)(8), violates paragraph 415 ILCS 5/44 (h)(8) a second or subsequent time, commits a Class 3 felony. (415 ILCS 5/44). This form has been approved by the Forms Management Center.

# Leaking Underground Storage Tank Program Corrective Action Plan

A. Site Ider	ntification					
IEMA Incident # (6- or 8-digit): 20001913		IEPA LPC# (10-digit): 0190805029				
Site Name	e: Henson Oil Co.	•	·			
Site Addre	ess (Not a P.O. Box): Old	Hwy. 66		<u>.</u>		
City: Tow	anda		· Count	y: <u>McLean</u>	Z	P Code: 61776
B. Site Info	rmation					
1. Will the	owner or operator seek re	imbursement	from the l	Jnderground S	Storage Tank Fund?	
2. If yes, is	s the budget attached?	✓ Yes	○ No	)		
3. Is this a	n amended plan?	✓ Yes	○ No			
4. Identify	the material(s) released:	Gasoline				
5. This Co	orrective Action Plan is sub	mitted pursua	int to:			
<b>○</b> a	. 35 III. Adm. Code 731.16	5				
○ b	. 35 III. Adm. Code 732.40	4			•	RECEIVED
<b>⊘</b> c.	. 35 III. Adm. Code 734.33	5				MAY. 0 9 2022
C. Propose	ed Methods of Remed	liation				IEPA/BOL
1. Soil	Soil excavation and	disposal com	pleted			
2. Ground	dwater <u>To be determined a</u>	fter well insta	llation and	sampling acti	vties	
	Groundwater Invest	•				
(for incided)		Code 731 on	ly or 732 ti	hat were class	ified using Method (	One or Two, if not previously
Provide to	he following:					
1. Descr	iption of investigation activ	ities performe	d to define	e the extents o	of soil and/or ground	water contamination;
2. Analyl	tical results, chain-of-custo	dy forms, and	l laborator	y certifications		
3. Tables	s comparing analytical res	ults to applica	ble remed	iation objective	es;	

- Boring logs;
- 5. Monitoring well logs; and
- 6. Site maps meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440 and showing:
  - a. Soil sample locations;
  - b. Monitoring well locations; and
  - c. Plumes of soil and groundwater contamination.

#### E. Technical Information - Corrective Action Plan

Provide the following:

- 1. Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives;
  - a. The major components (e.g., treatment, containment, removal) of the corrective action plan;
  - b. The scope of the problems to be addressed by the proposed corrective action; and
  - c. A schedule for implementation and completion of the plan;
- 2. Identification of the remediation objectives proposed for the site;
- 3. A description of the remedial technologies selected:
  - a. The feasibility of implementing the remedial technologies;
  - b. Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved; and
  - c. A schedule of when the technologies are expected to achieve the applicable remediation objectives;
- 4. A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after their completion;
- 5. A description of the current and projected future uses of the site;
- 6. A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives:
  - a. an assessment of their long-term reliability;
  - b. operating and maintenance plans;
  - c. maps showing area covered by barriers and institutional controls;
  - d. copies of the complete application(s) for planned Highway Authority Agreement(s); and
  - e. draft groundwater ordinance(s) and Environmental Land Use Controls.
- 7. The water supply well survey:
  - a. Map(s) showing locations of community water supply wells and other potable wells and the setback zone for each well:
  - b. Map(s) showing regulated recharge areas and wellhead protection areas;
  - c. Map(s) showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
  - d. Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
  - e. Tables listing the setback zone for each community water supply well and other potable water supply wells;
  - f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified; and
  - g. A certification from a Licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement);



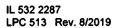
#### 8. Appendices:

- a. References and data sources report that are organized; and
- b. Field logs, well logs, and reports of laboratory analyses;
- 9. Site map(s) meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440;
- 10. Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.;
- 11. A description of bench/pilot studies;
- 12. Cost comparison between proposed method of remediation and other methods of remediation;
- 13. For the proposed Tier 2 or 3 remediation objectives, provide the following:
  - a. The equations used;
  - b. A discussion of how input variables were determined;
  - c. Map(s) depicting distances used in equations; and
  - d. Calculations; and
- 14. Provide documentation to demonstrate the following for alternative technologies:
  - a. The proposed alternative technology has a substantial likelihood of successfully achieving compliance with all applicable regulations and remediation objectives;
  - b. The proposed alternative technology will not adversely affect human health and safety or the environment;
  - c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of the alternative technology;
  - d. The owner or operator will implement a program to monitor whether the requirements of subsection (14)(a) have been met:
  - e. Within one year from the date of Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (14)(a); and
  - f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology and is not substantially higher than at least two other alternative technologies, if available and technically feasible.

#### F. Exposure Pathway Exclusion

Provide the following:

- 1. A description of the tests to be performed in determining whether the following requirements will be met:
  - a. Attenuation capacity of the soil will not be exceeded for any of the organic contaminants;
  - b. Soil saturation limit will not be exceeded for any of the organic contaminants;
  - c. Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 III. Adm. Code 721.123;
  - d. Contaminated soils do not exhibit a pH ≤ 2.0 or ≥ 12.5; and
  - e. Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35 III. Adm. Code 721.124.
- 2. A discussion of how any exposure pathways are to be excluded.



#### G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator	Consultant
Name	Company CWM Company, Inc.
Contact Jerry Henson	Contact Carol Rowe, P.G.
Address PO Box 712	Address 701 West South Grand Avenue
City Bloomington	City Springfield
State Illinois	State Illinois
Zip Code 61702	Zip Code 62704
Phone	Phone 217-522-8001
Email	Email cwm@cwmcompany.com
Signature A #	Signature
Date 4123122	Date
	V

I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 III. Adm. Code 731, 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Licensed Professional Engineer or Geologist	L.P.E. or L.P.G. Seal
Name Vince E. Smith	
Company CWM Company, Inc.	RECEIVED
Address 701 West South Grand Avenue	MAY 0 9 2022 CE E. SA
City Springfield	NAY 09 ZUZZ CE E. SAL
State Illinois	EPAISO E
Zip Code 62704	PROFESSION I
Phone 217-522-8001	- Green
III. Registration No. 062-046118	
License Expiration Date ///3/23	14LINOIS
Signature Et St	The second of th
Date <u>5/5/22</u>	

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# APPENDIX B SITE MAPS AND ILLUSTRATIONS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

# **INDEX OF DRAWINGS**

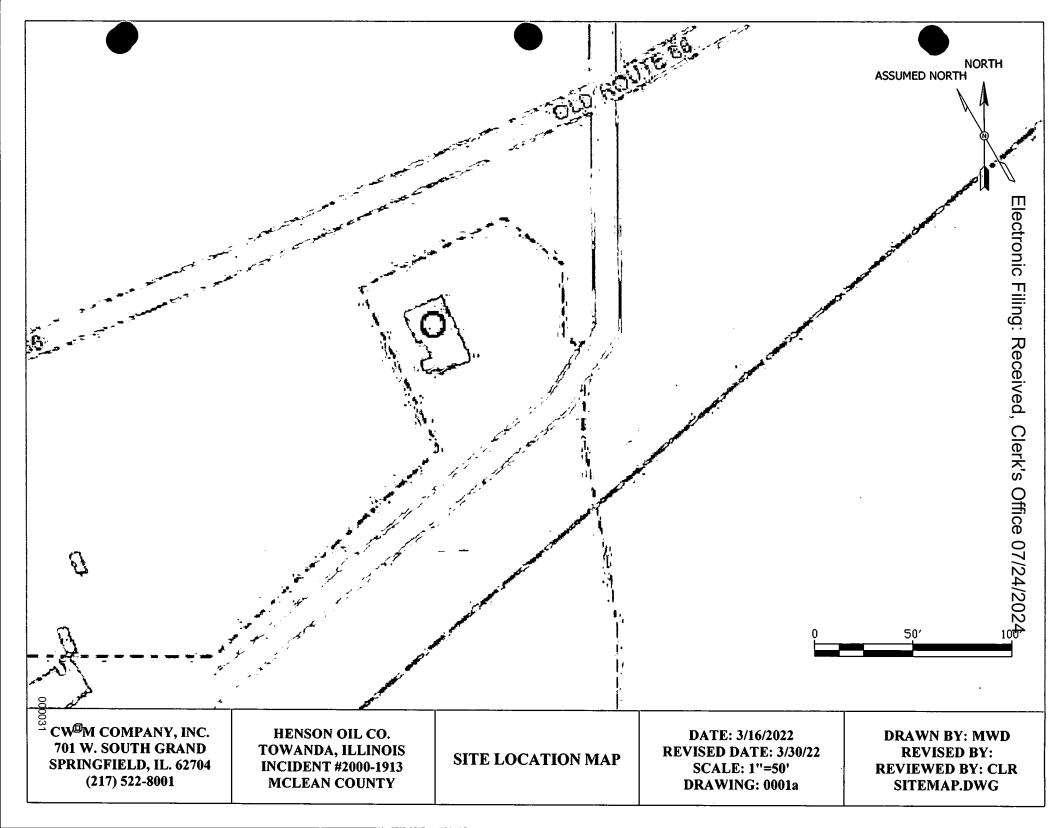
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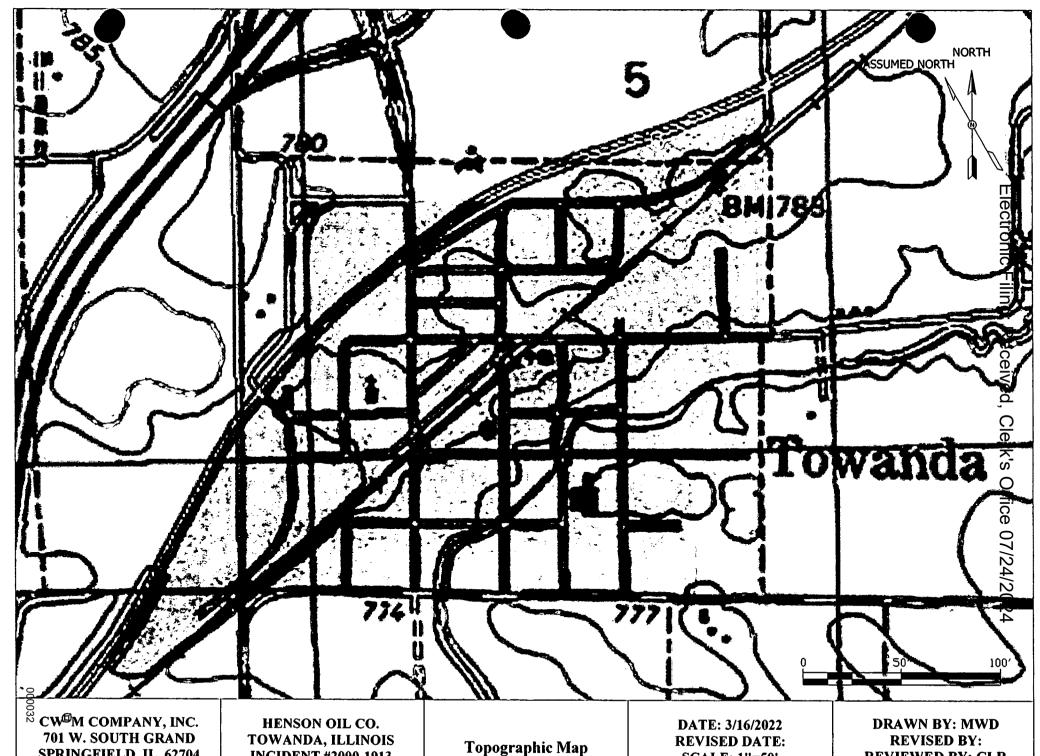
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# **Poor Quality Original Documents**

and not the scanning or filming processes.

Com Microfilm Company (217) 525-5860



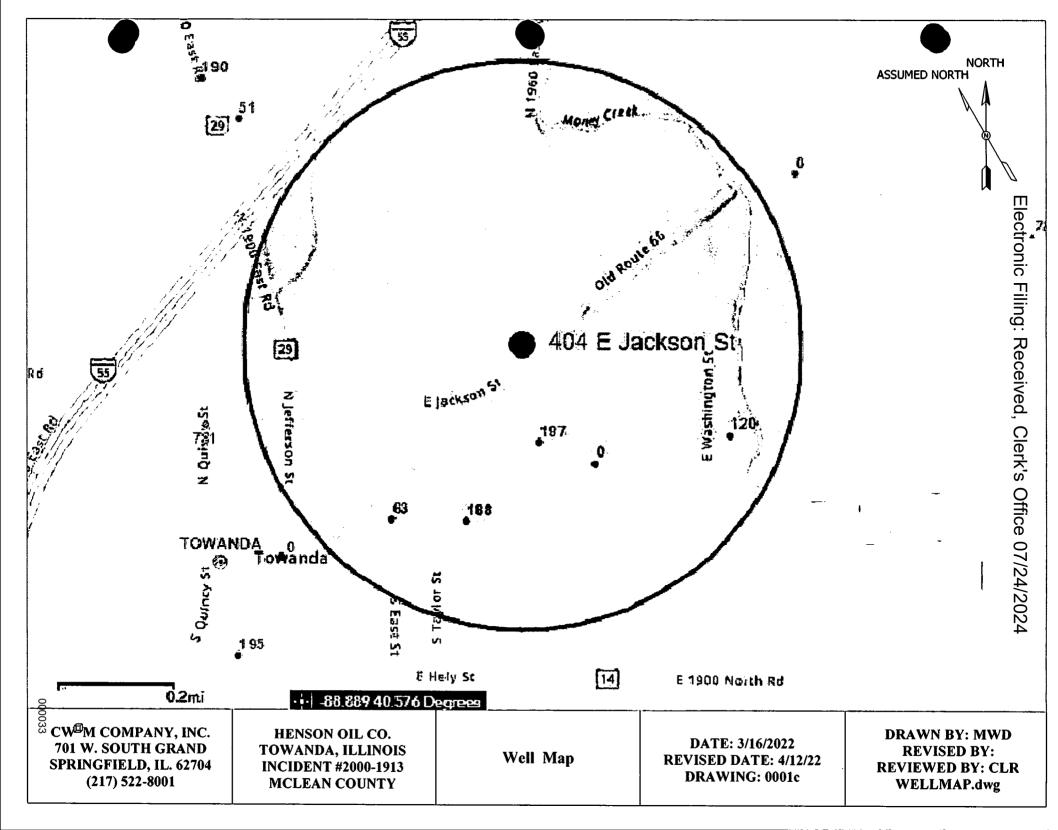


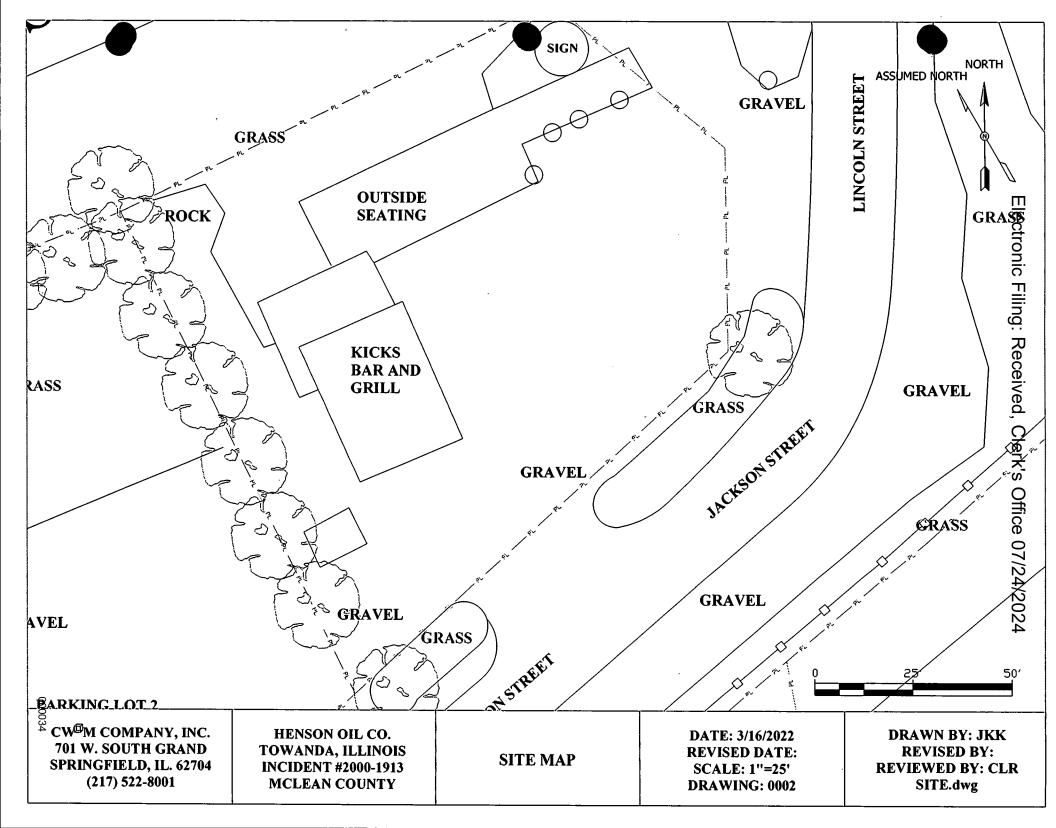
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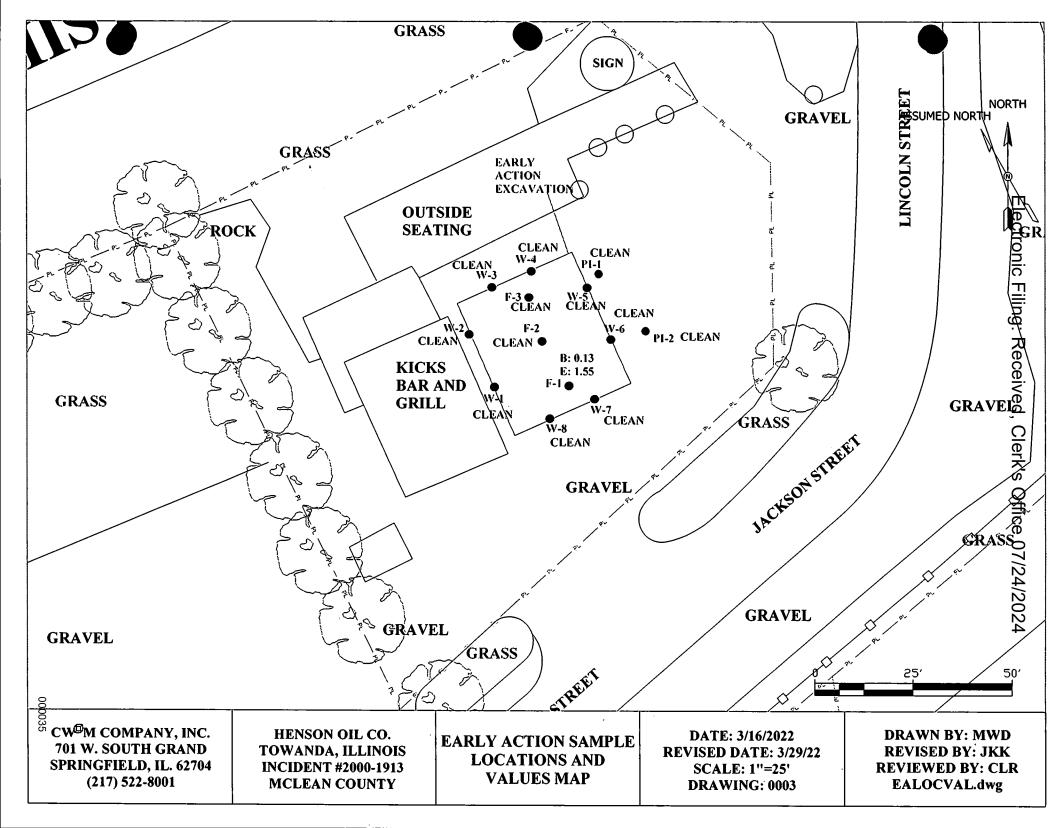
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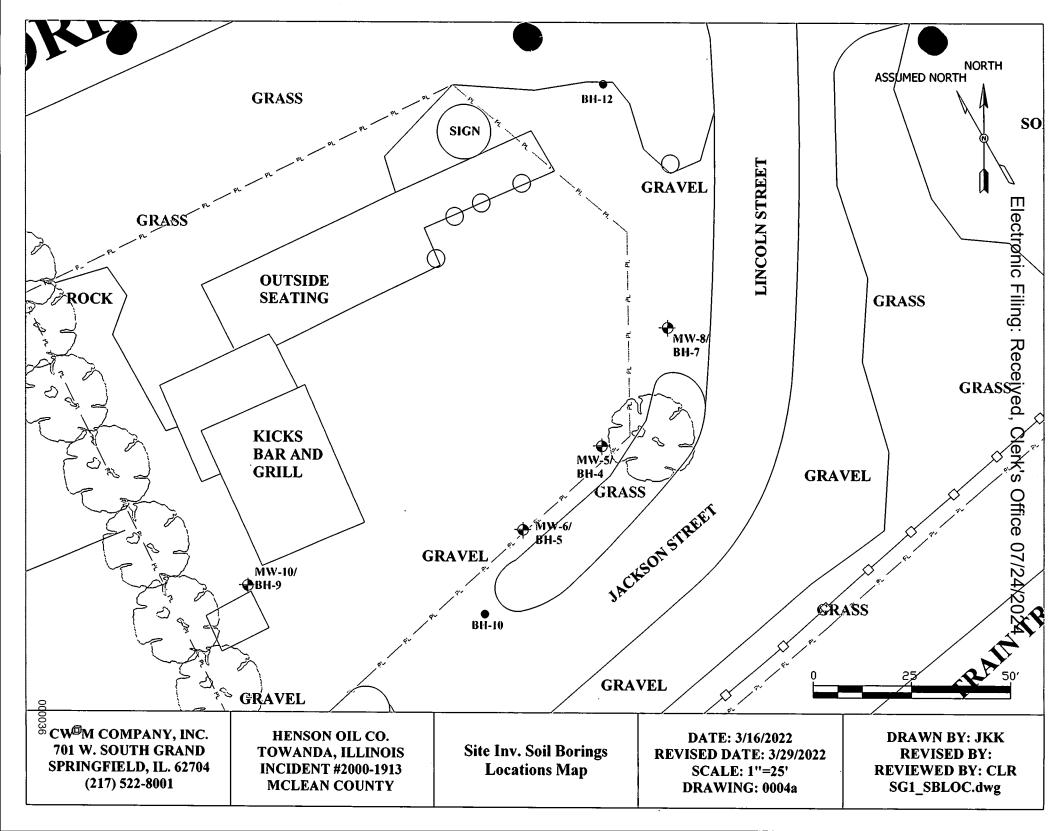
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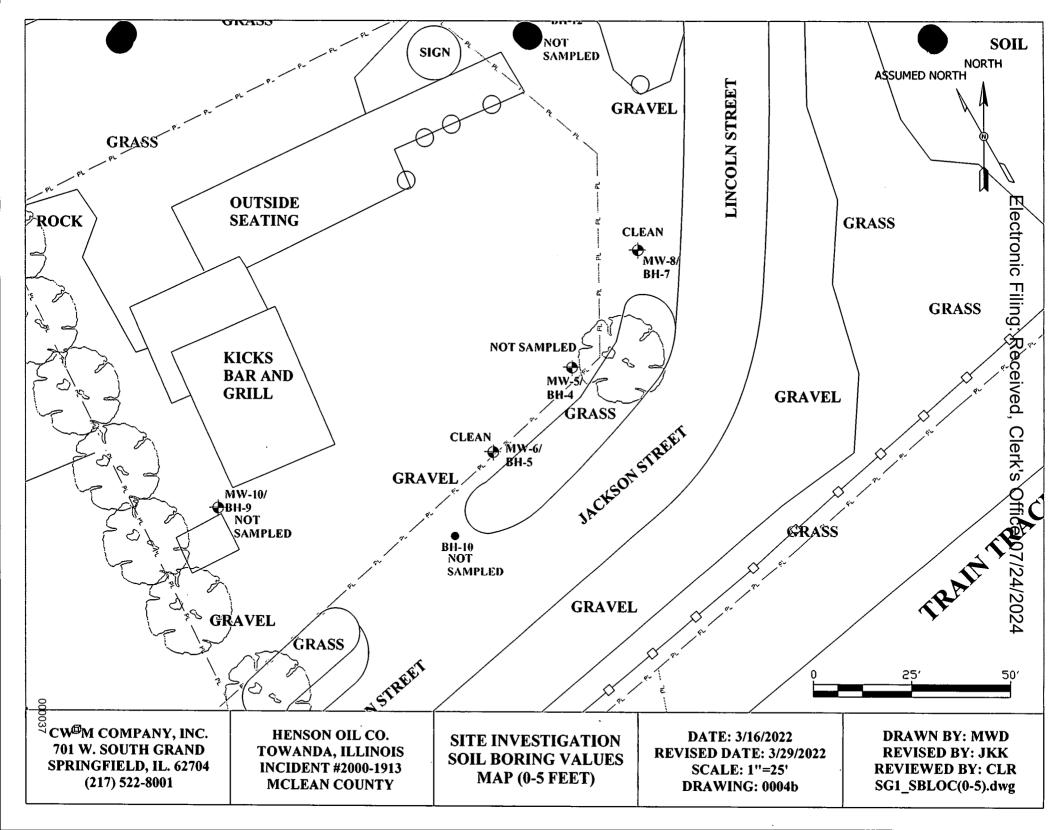
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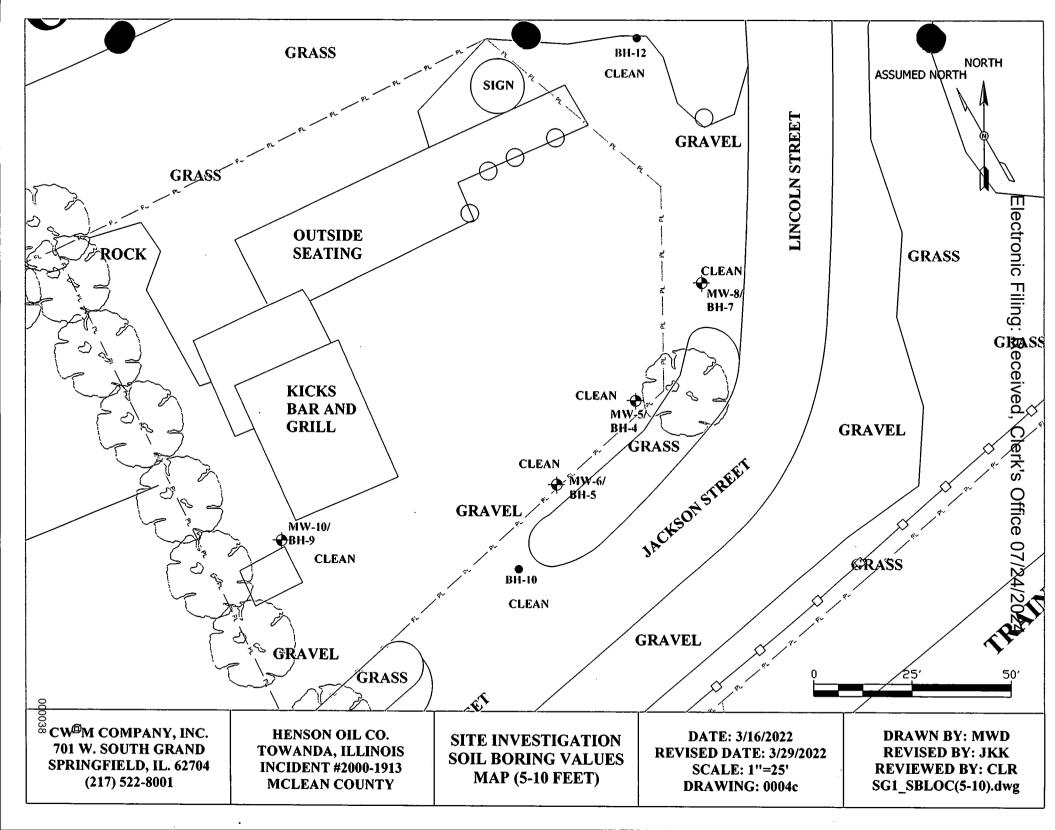


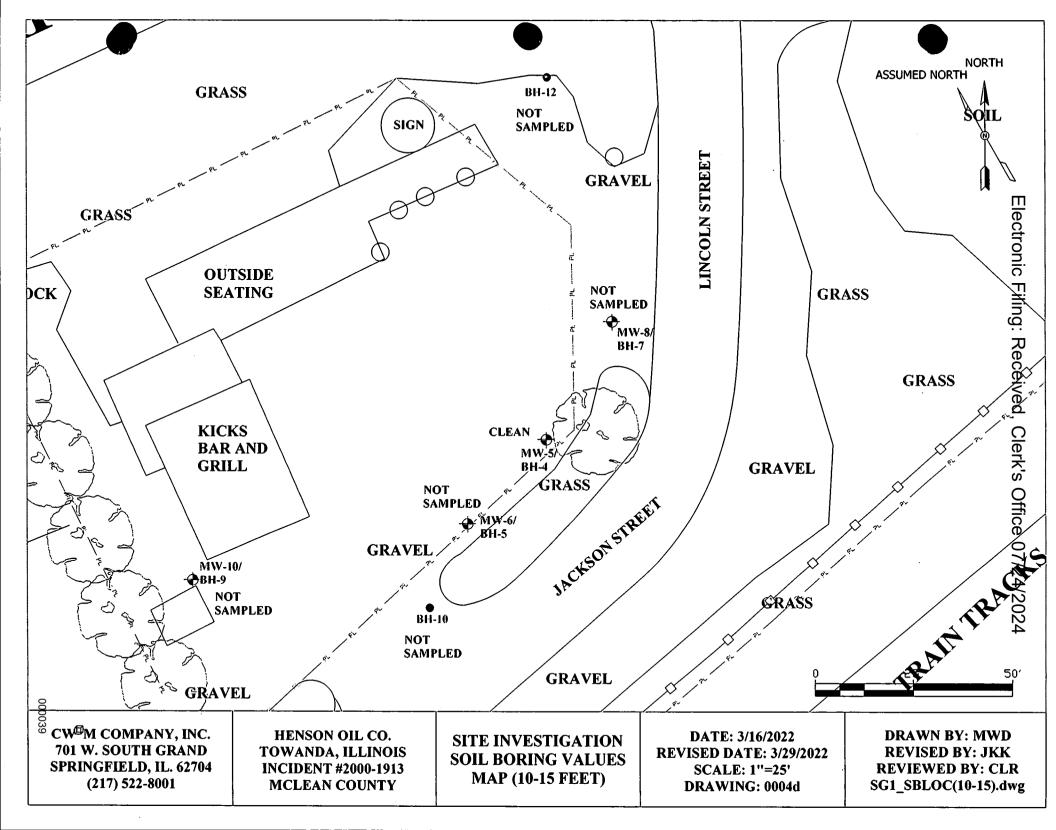


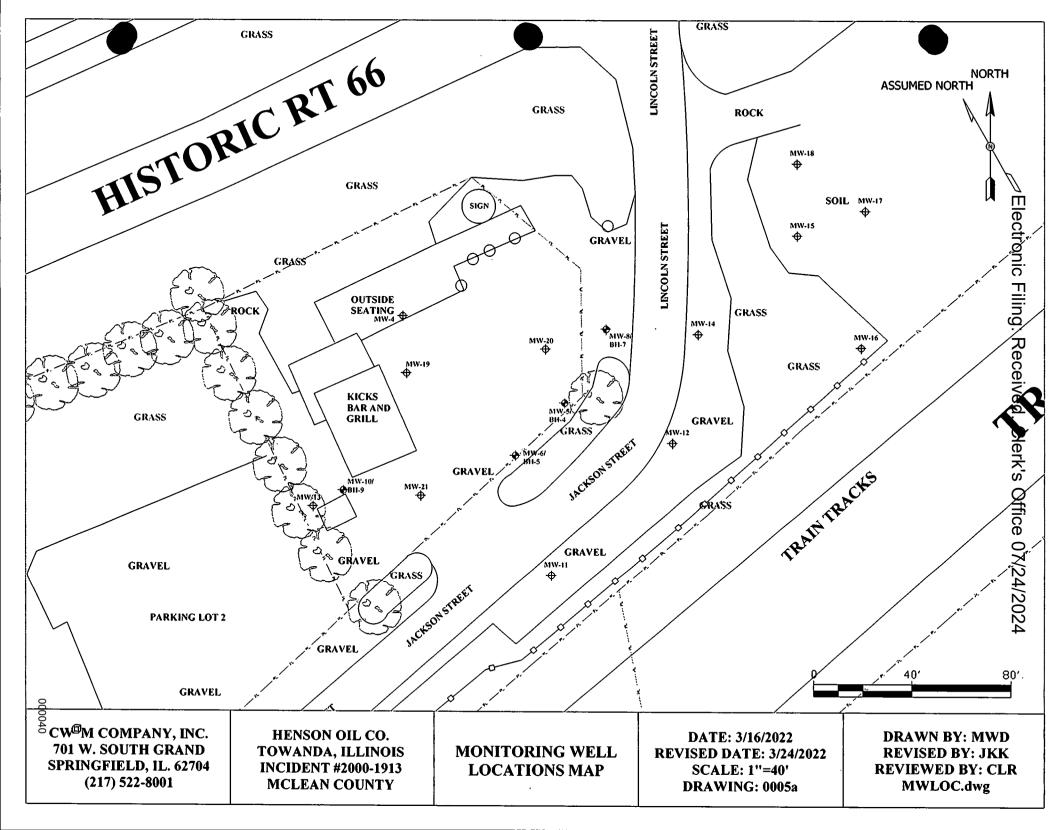


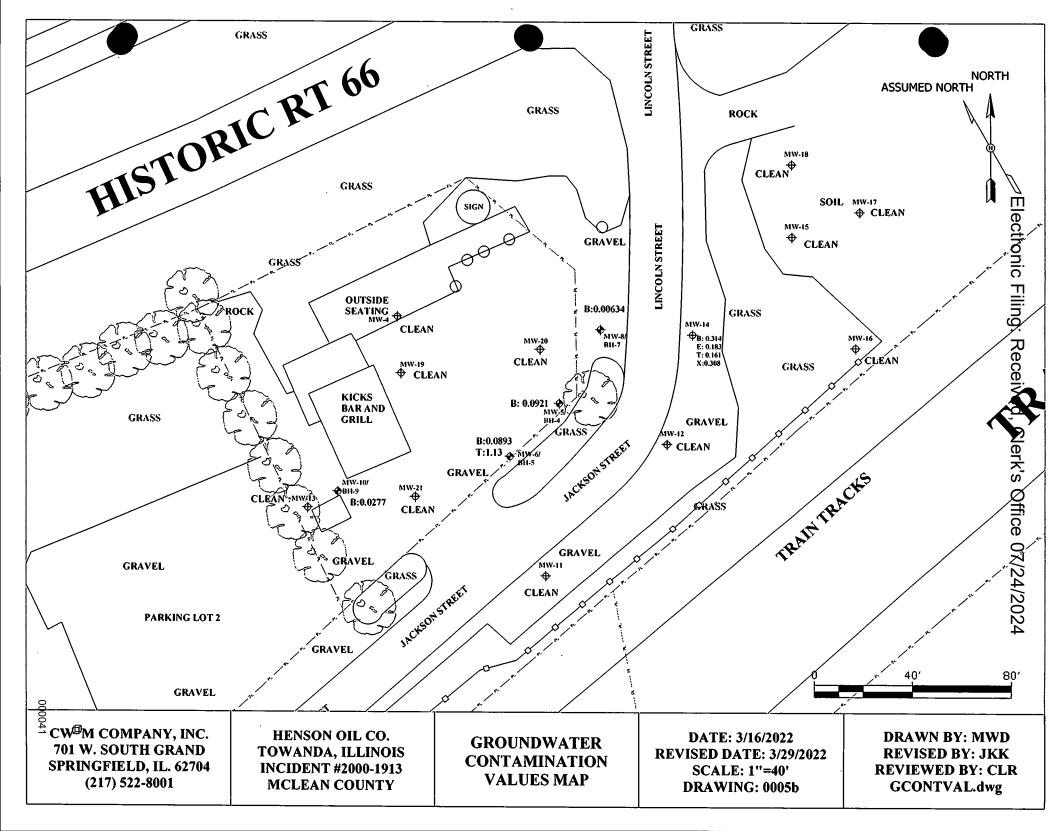


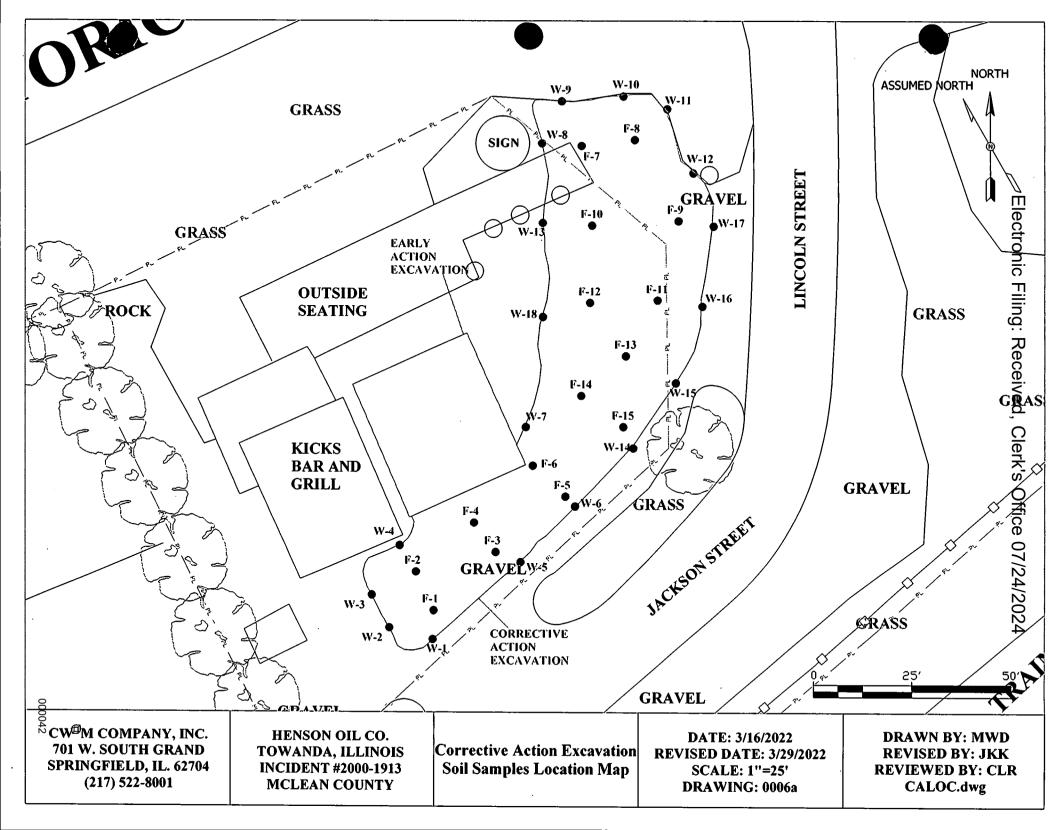


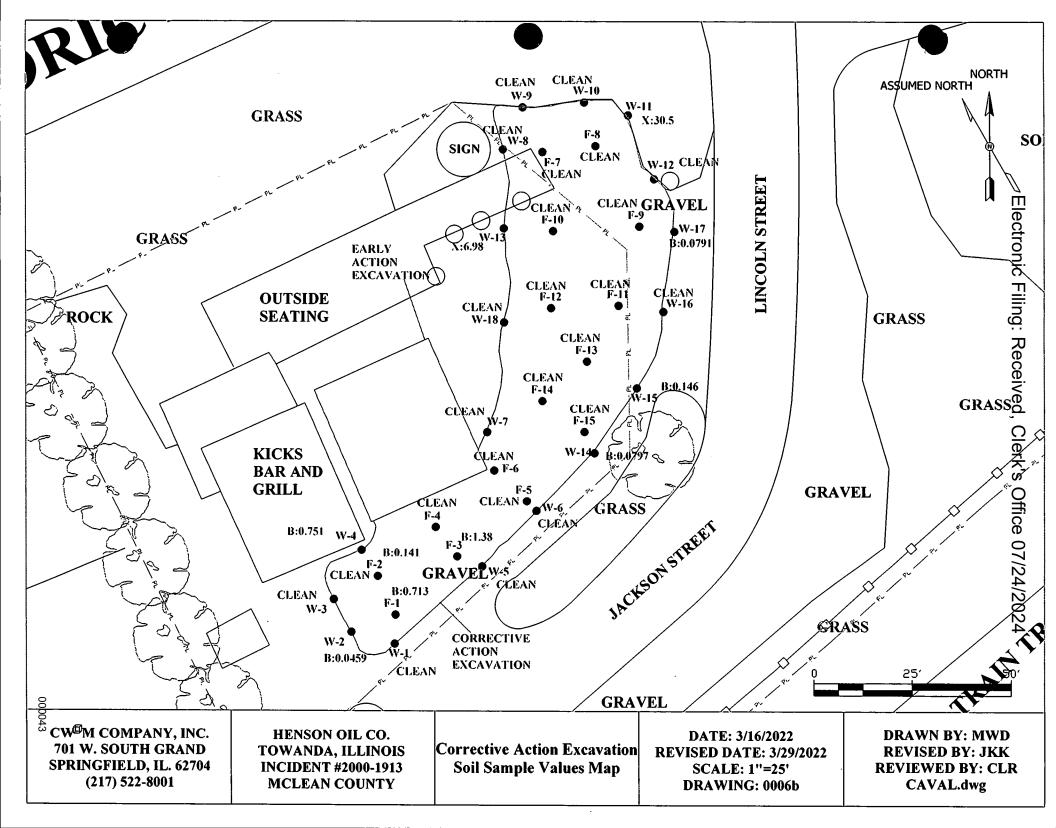


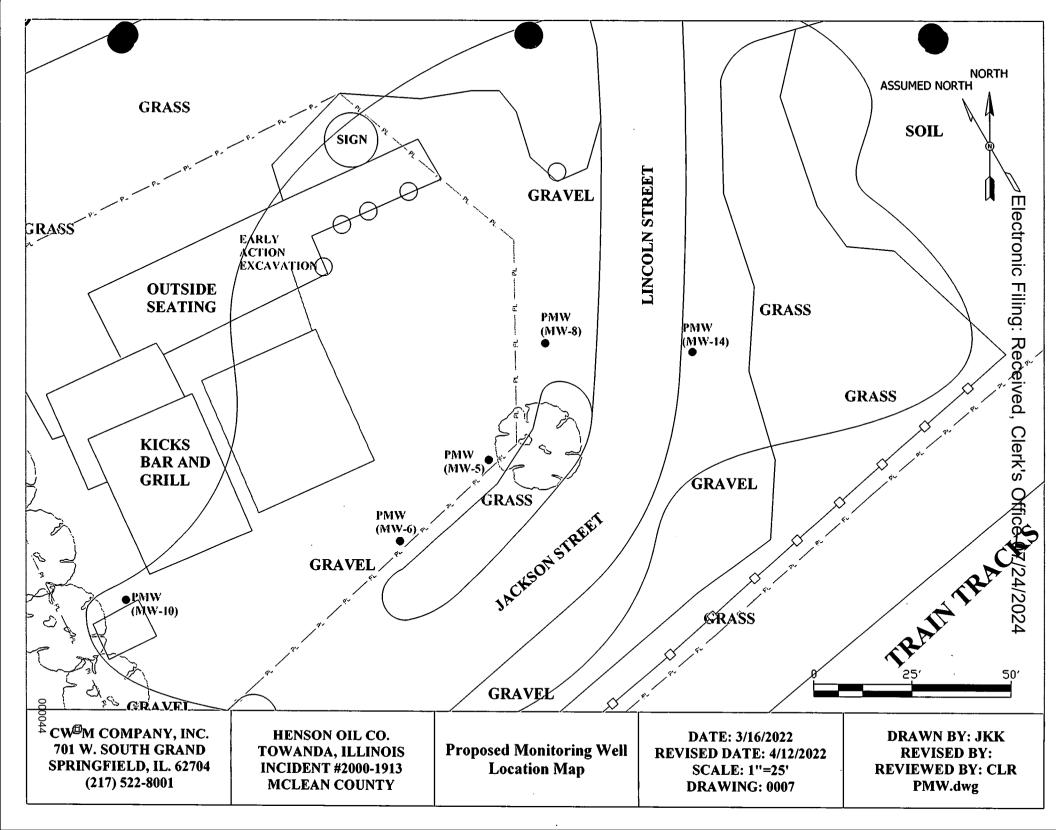


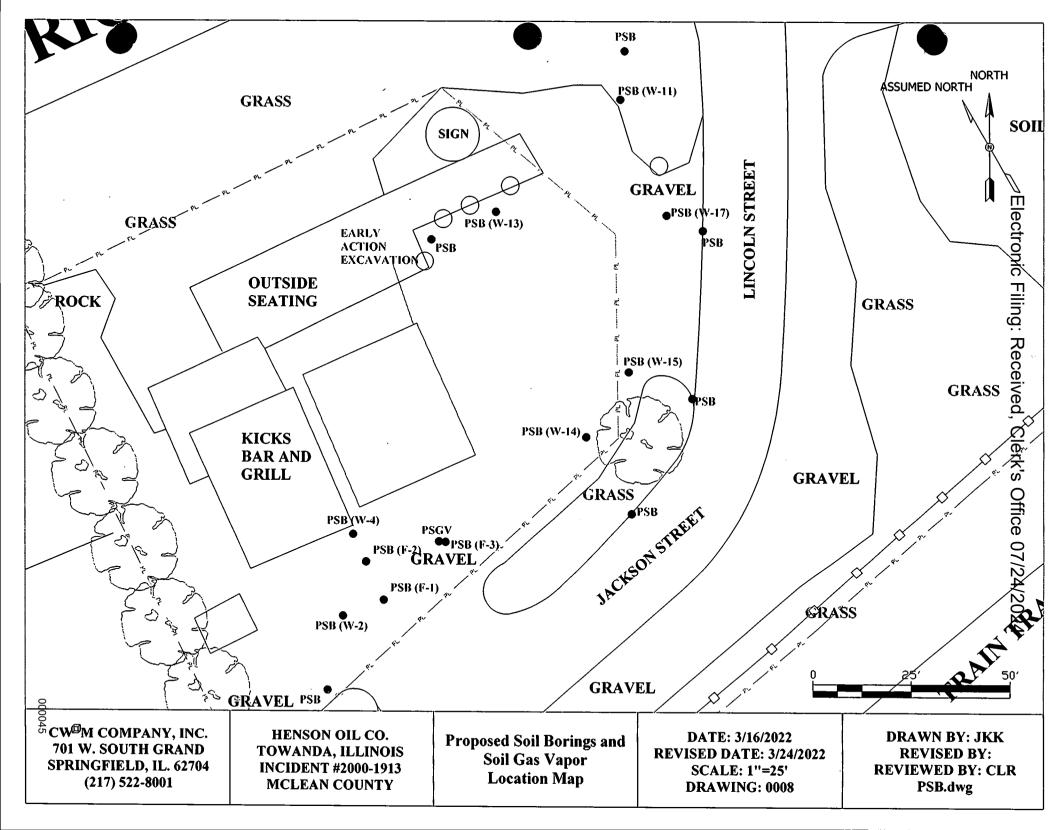


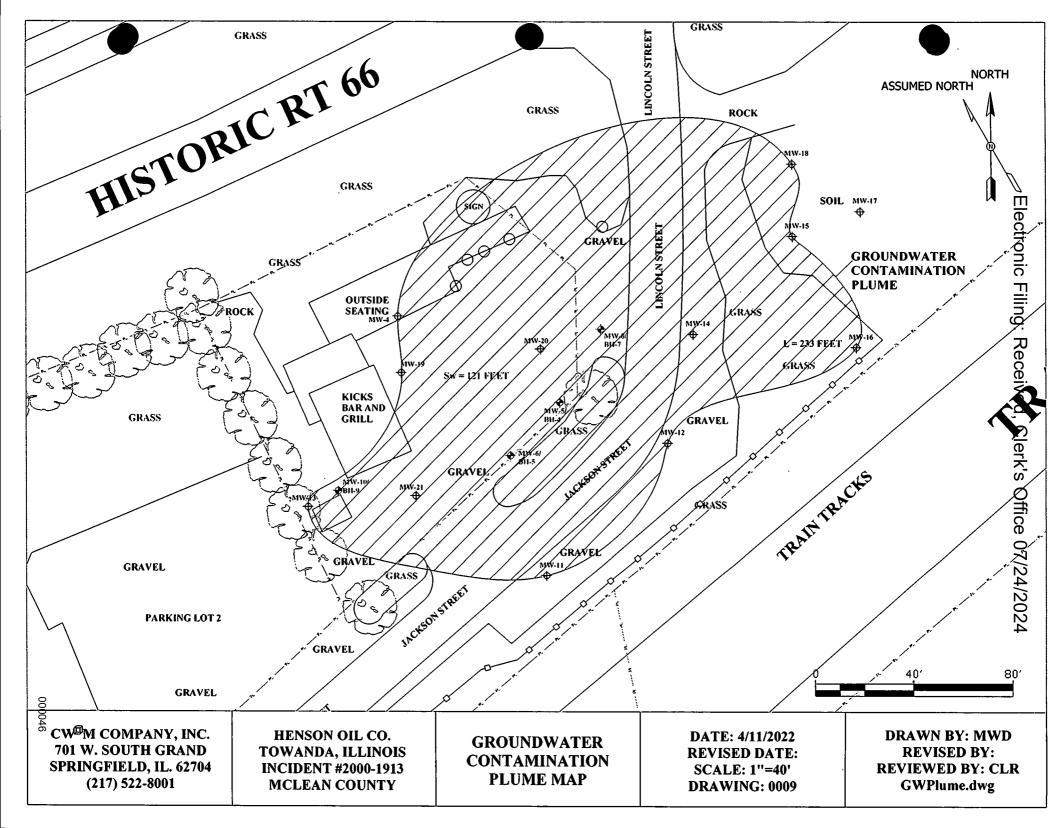


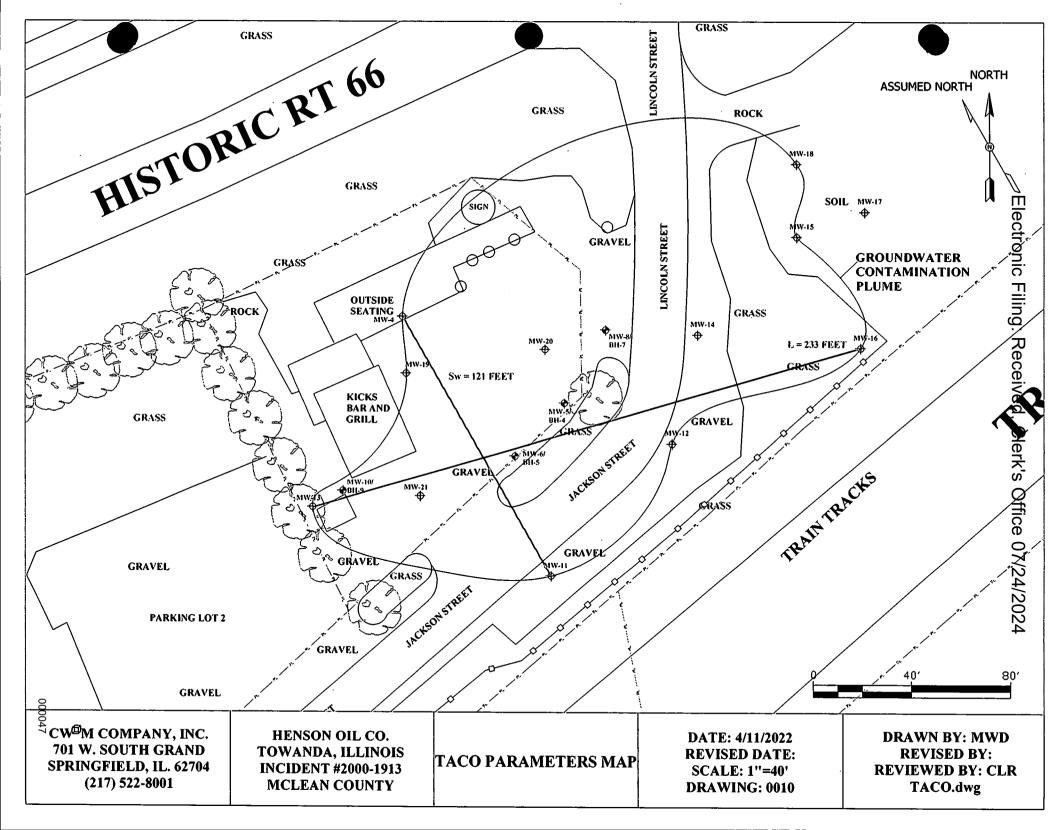








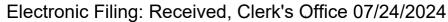




## **APPENDIX C**

# ILLINOIS OFFICE OF THE STATE FIRE MARSHAL ELIGIBILITY DETERMINATION

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS





### Office of the Illinois State Fire Marshal

**General Office** 217-785-0969 FAX 217-782-1062 Olvisions

ARSON INVESTIGATION 217-762-0116 **BOILER and PRESSURE** VESSEL SAFETY 217-762-2696 FIRE PREVENTION 217-785-4714

MANAGEMENT SERVICES 217-782-9689 DFR3 217-786-6826 **FUMAN RESOURCES** 217-785-1028 **SONNEL STANDARDS** and EDUCATION 217-782-4642 STETROLEUM and CHEMICAL BAFETY 217-785-6878 PUBLIC INFORMATION 217-785-1021 WEB SITE

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e A

CERTIFIED MAIL - RECEIPT REQUESTED # Z 082 411 101

November 2, 2000

Henson Oil Company, Inc. 1105 Croxton Avenue Bloomington, IL 61701

In Re:

Facility No. 4-012241 IEMA Incident No. 00-1913 Towanda Mini Mart Old Hwy 66.

Towanda, McLean Co., IL

#### Dear Applicant:

The Reimbursement Eligibility and Deductible Application received on October 23, 2000 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek payment of costs in excess of \$10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank 1 8,000 gallon Gasoline Tank 2 8,000 gallon Gasoline Tank 3 8,000 galion Gasoline

You must contact the Illinois Environmental Protection Agency to receive a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

- 1. Neither the owner nor the operator is the United States Government.
- 2. The tank does not contain fuel, which is exempt from the Motor Fuel Tax Law,
- 3. The costs were incurred as a result of a confirmed release of any of the following substances:

"Fuel", as defined in Section 1.19 of the Motor Fuel Tax Law

Aviation fuel

Heating oil

#### Kerosene

Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

- The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.
- 5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.
- The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.
- 7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. We reserve the right to change the deductible determination should additional information that would change the determination become available. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision, (35 Illinois Administrative Code 105.102(a) (2)).

For information regarding the filing of an appeal, please contact:

Dorothy Gunn, Clerk Illinois Pollution Control Board State of Illinois Center 100 West Randolph, Suite 11-500 Chicago, Illinois 60601 (312) 814-3620

Melvin X & th

If you have any questions regarding the eligibility or deductibility determinations, please contact our Office at (217) 785-1020 or (217) 785-5878 and ask for Vicki Cox-Fraase.

Sincerely.

Melvin H. Smith Division Director

Division of Petroleum and Chemical Safety

MHS: vlcf

cc:

IEPA

Facility File

## **APPENDIX D**

# BORE LOGS AND WELL COMPLETION REPORTS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

## Electronic Filing: Received, Clerk's Office 07/24/2024

			750		<u> </u>	<u></u>		
		UNI	TED SCIENCE	INDUSTRIES	J	ſ	BOREHOL	JE NO: BH-1
BORIN	NG LOCATION: See Site Map			TOTAL DEP	TH:	15		
	ING COMPANY: UNITED SCI	ENCE IN		DRILLER:		<del>-</del>		
	ING SAMPLING/METHOD: 4.25							
	TIME STARTED: 3/29/2001			DATE/TIME			3/29/2	001
		9'	AFTER DR			TYPE OF I	BACKFILL	: MW-1
	ED BY: Josh Blair			MONITORI	NG EQUIP:		Model 580	B PID
DEPT		USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS
(FEE		CLASS	INTERVAL	RECOVERY	READING	TYPE	NUMBER	
1								
2	no recoverly do to equipment used							
3	Black Silty Clay  Moisture Increases Down	CL	2.5'-4'	30%	100			Slight Odor/Not
5	no recoverly do to equipment used							Discolored
6	Black Silty Clay w/mottled Gray	CL	5'-6.5'	100%	265			Odor/Slightly Discolored
7	no recoverly do to equipment used							
9	Wet at 9'	CL	7.5'-9'	100%	242	Chemical at 5'	BH-1A	Odor/Stightly Discolored
10	no recoverly do to equipment used				_		 	
11	Brown Silty Clay w/mottled Gray, w/pebbles	CL	10'-11.5'	100%	4	Chemical at 9'	BH-1B	No Odor/Not Discolored
12	no recoverly do to equipment used							
13 14	Tighter	CL	12.5'-14'	40%	2			No Odor/Not Discolored
15	no recoverly do to equipment used							
16	15' E.O.B.							
	ECT NAME: Towanda			Logged By:	Josh Blair	<del>-</del>		

			12.				-	
		(IN	TED SCIENCE	NDUSTRIES	1			
		(014)	<u> </u>	У	,		BOREHOL	E NO: BH-2
				TOTAL DEP	TU.	15'	BOKEHOL	LE NU: BR-2
	OCATION: See Site Map COMPANY: UNITED SCII	DICE DI		DRILLER:				· · · · · · · · · · · · · · · · · · ·
	G COMPANY: UNITED SCII G SAMPLING/METHOD: 4.25					<u> </u>		
	ME STARTED: 3/29/2001	Honow	Stelli / tage	DATE/TIME	ENDED:	_	3/29/2	001
		9'	AFTER DR			TYPE OF	BACKFILL	: MW-2
	BY: Josh Blair			MONITORI	NG EQUIP:		Model 580	B PID
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY	READING	TYPE	NUMBER	
2	no recoverly do to equipment used							
3 	Brown Silty Clay		2.5'-4'	60%	0			No Odor/Not Discolored
5_	no recoverly do to equipment used							
6 _	Moisture Increases Down	CL	5'-6.5'	50%	0	Chemical at 5'	BH-2A	No Odor/Not Discolored
7_	no recoverly do to equipment used							
8	Brown Silty Clay w/mottled	CL	7.5'-9'	80%	27	Chemical at 9'	вн-2в	No Odor/Not Discolored
10	no recoverly do to equipment used							
11_	Brown Silty Clay w/mottled	CL	10'-11.5'	100%	19			Slight Odor/Slightly Discolored
12	no recoverly do to equipment used							
13 14	Brown Silty Clay w/pebbles, Tighter	CL	12.5'-14'	60%	16			No Odor/Not Discolored
15	no recoverly do to बद्धांकृतालार used							
16	15' E.O.B.							
	NAME: Towanda NO.: 1800118			Logged By:	Josh Blair			

		UN	/ 人)  TED SCIENC	EINDUSTRIES	)			
				y		1	BOREHOI	E NO: BH-3
BORING	LOCATION: See Site Map			TOTAL DEF	TH:	15'		
	G COMPANY: UNITED SCI	ENCE IN	DUSTRIES	DRILLER:				
	G SAMPLING/METHOD: 4.25			r, 2" x 1.5' Sp	lit Spoon			
	ME STARTED: 3/29/2001			DATE/TIME	ENDED:		3/29/2	2001
GW DEP1	TH WHILE DRILLING:	8.5-9'	AFTER DR				BACKFILL	
LOGGED	BY: Josh Blair			MONTTORI			Model 580	
HTqac	SAMPLE	USCS	SAMPLE	% SAMPLE RECOVERY	PID	SAMPLE TYPE	SAMPLE NUMBER	REMARKS
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERT	KEADING	TILE	MOMBER	
1	no recoverly do to equipment used							
3 <u>-</u>	Black Silty Clay	CL	2.5'-4'	40%	2			No Odor/Not Discolored
5_	no recoverly do to equipment used							
6	Brown Silty Clay w/mottled Gray Moisture Increases Down	CL	5'-6.5'	100%	146	Chemical at 5'	ВН-ЗА	Odor/Slightly Discolored
7_	no recoverly do to equipment used							
8 <u>-</u>	Olive Gray Silty Clay w/pebbles Wet	CL	7.5'-9'	50%	224	Chemical at 9'	вн-зв	Slight Odor/Slightly Discolored
10	no recoverly do to equipment used							
11	Brown Silty Clay ::/ abbles Tighter	CL	10'-11.5'	80%	15			No Odor/Slightly Discolored
12	no recoverly do to equipment used							
13	Brown Silty Clay	CL	12.5'-14'		10			No Odor/Not Discolored
15	no recoverly do to equipment used							
16	15' E.O.B.							
PROJECT	NAME: Towand	l	<u> </u>	Logged By:	Josh Blair			

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-4 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING COMPANY: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DRILLING SAMPLING/METHOD: 0845 DATE/TIME ENDED: 5/17/2001 0905 DATE/TIME STARTED: 5/17/2001 MW-5 AFTER DRILLING: TYPE OF BACKFILL: NA GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Scott Hertel SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS USCS SAMPLE DEPTH CLASS INTERVAL RECOVERY READING TYPE NUMBER DESCRIPTION (FEET) Topsoil No Odor/Stain 0'-5' 100% CL 0 ppm Brown Silty Clay Medium Stiff, Moist CL Green Soft Silty Clay, Moist BH-4A Obvious Odor/Stain 5'-10' 100% 75 ppm Chemical Groundwater at 7' at 6' Saturated Below 7' Slight Odor BH-4B 10-15' 80% Chemical 48 ppm Obvious Stain at 12' 15' E.O.B. 18 20 26 28 Scott Hertel LOGGED BY PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO: BH-5** TOTAL DEPTH: 15' BORING LOCATION: See Site Map DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Sieve Pavelitch DRILLING SAMPLING/METHOD: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler 5/17/2001 0935 0920 DATE/TIME ENDED: 5/17/2001 DATE/TIME STARTED: TYPE OF BACKFILL: MW-6 GW DEPTH WHILE DRILLING: 7' AFTER DRILLING: Model 580B PID MONITORING EQUIP: PID LOGGED BY: Scott Hertel SAMPLE SAMPLE REMARKS SAMPLE % SAMPLE PID USCS DEPTH SAMPLE RECOVERY READING **TYPE** NUMBER INTERVAL **DESCRIPTION CLASS** (FEET) Topsoil No Odor/Stain BH-5A Chemical 0'-5' 100% 0 ppm Brown Silty Clay Medium CL at 3' Stiff, Moist CL Green Soft Silty Clay, Moist Odor/Stain at 6'+ BH-5B 100% 25 ppm Chemical 5'-10' Groundwater at 7' at 6' 10 Brown Soft Silty Clay CL No Odor/Stain 10-15' 100% 12 ppm After 11' 14 15' E.O.B. 26 28 LOGGED BY Scott Hertel Towanda PROJECT NAME: PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

		UNITI		NCE INDU G BOREHO		INC.		
							BOREHOL	E NO: BH-6
BORING	LOCATION: See Site Map			TOTAL DEP	TH: 15'		•	
		IENCE IN	DUSTRIES	DRILLER:	Steve Pevelite	ch		
	G SAMPLING/METHOD:							
	ME STARTED: 5/17/2			DATE/TIME		5/17/	2001	1005
	TH WHILE DRILLING:	7'	AFTER DR	LLING:	NA	TYPE OF B	ACKFILL:	MW-7
	BY: Scott Hertel			MONITORI	NG EQUIP:	PID	Model 580B	PID
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY	READING	TYPE	NUMBER	
0							<u> </u>	
	Topsoil			•				
2	Brown Soft Silty Clay, Moist	CL	0'-5'	100%	35 ppm	Chemical	BH-6A	Obvious Odor/Stain
						at 3'		
4		'			1			
6								
							<b>!</b>	
8			5'-10'	100%	22 ppm	Chemical	вн-6в	No Odor/Stain
						at 6'		Groundwater at 7'
10								•
~~	Brown Soft Silty Clay w/rocks	CL						
12	2,0 m 201 211, 210, m 2011						1	,
'-			10-15'	100%	18 ppm		1	No Odor/Stain
			10-13	100%	10 pput			
14				•				
	15' E.O.B.							
16	13 E.O.B.			}				
_								
18								
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_	'							
22								
24								
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26								
28					}		<u> </u>	
			•			•		
ROJECT				LOGGED BY	Scott H	ertel		
ROJECT	NO.: 1800118			<u> </u>				
		Œ	NITED SCIEN	NCE INDUSTR	IES			

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-7 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING COMPANY: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DRILLING SAMPLING/METHOD: 1015 DATE/TIME ENDED: 5/17/2001 1035 5/17/2001 DATE/TIME STARTED: TYPE OF BACKFILL: MW-8 AFTER DRILLING: GW DEPTH WHILE DRILLING: 7' MONITORING EQUIP: PID Model 580B PID LOGGED BY: Scott Hertel SAMPLE REMARKS % SAMPLE PID SAMPLE SAMPLE USCS DEPTH SAMPLE READING TYPE NUMBER RECOVERY INTERVAL DESCRIPTION CLASS (FEET) Topsoil BH-7A No Odor/Stain 0'-5' 100% 14 ppm Chemical Brown Soft Silty Clay, Moist CL at 3' CL Green Soft Silty Clay, Moist Obvious Odor/Stain BH-7B 100% Chemical 5'-10' 350 ppm Groundwater at 7 at 6' 10 Brown Soft Silty Clay w/rocks CL 12 No Odor/Stain 10-15' 100% 0 ppm 15' E.O.B. 18 20 26 28 LOGGED BY Scott Hertel PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO: BH-8** TOTAL DEPTH: 15' BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING COMPANY: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DRILLING SAMPLING/METHOD: 1045 DATE/TIME ENDED: 5/17/2001 1105 5/17/2001 DATE/TIME STARTED: MW-9 TYPE OF BACKFILL: AFTER DRILLING: GW DEPTH WHILE DRILLING: Model 580B PID MONITORING EQUIP: PID LOGGED BY: Scott Hertel % SAMPLE SAMPLE SAMPLE REMARKS USCS SAMPLE DEPTH SAMPLE INTERVAL RECOVERY READING TYPE NUMBER CLASS **DESCRIPTION** (FEET) Topsoil Obvious Odor/Stain Chemical BH-8A 0'-5' 100% 350 ppm CL Brown Soft Silty Clay, Moist at 4' After 3' CL Green Soft Silty Clay, Moist BH-8B Obvious Odor/Stain 5'-10' 100% 850 ppm Chemical Groundwater at 7' at 6' 10 Brown Soft Silty Clay CL 12 No Odor/Stain 10-15 100% 0 ppm After 12' 15' E.O.B. 16 26 28 LOGGED BY Scott Hertel PROJECT NAME: Towanda 1800118 PROJECT NO.: UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO: BH-9** TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee :ILLING COMPANY: NILLING SAMPLING/METHOD: 3.25" 1.D. auger w/ 3" x 5' continuous sampler DATE/TIME ENDED: 9/18/2002 DATE/TIME STARTED: 9/18/2002 TYPE OF BACKFILL: MW-10 AFTER DRILLING: GW DEPTH WHILE DRILLING: 8' MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood SAMPLE SAMPLE REMARKS % SAMPLE PID USCS SAMPLE DEPTH SAMPLE RECOVERY READING TYPE NUMBER INTERVAL DESCRIPTION **CLASS** (FEET) Concrete CL Olive Brown Silty Clay No Stain/No Odor 0'-5' 75% 6 ppm Chem @ Slight Stain/No Odor 7 BH-9 100% 5'-10' 50 ppm CL Gray Soft Silty Clay 10 No Stain/No Odor 10-15' 100% 8 ppm **EOB 15**' 20 26 28 LOGGED BY Tarrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-10 TOTAL DEPTH: BORING LOCATION: S: Site Map UNITED SCIENCE INDUSTRIES DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME ENDED: 9/18/2002 DATE/TIME STARTED: 9/18/2002 AFTER DRILLING: TYPE OF BACKFILL: GW DEPTH WHILE DRILLING: 8, MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood SAMPLE REMARKS USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE DEPTH RECOVERY READING **TYPE** NUMBER INTERVAL **DESCRIPTION CLASS** (FEET) Concrete CL Olive Brown Silty Clay Softer No Stain/No Odor 0'-5' 50% with Depth 2 ppm Chem @ BH-10 No Stain/Slight Odor 50% 7' 5'-10' 17 ppm **EOB** 10' 12 26 28 PROJECT NAME: LOGGED BYlarrod Yearwood Towanda 1800118 PROJECT NO.: UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-11 TOTAL DEPTH: BORING LOCATION: See Site Map DRILLING COMPANY: \_\_UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING SAMPLING/METHOD: 3.25" 1.D. auger w/ 3" x 5' continuous sampler DATE/TIME ENDED: 9/18/2002 DATE/TIME STARTED: 9/18/2002 TYPE OF BACKFILL: AFTER DRILLING: cuttings GW DEPTH WHILE DRILLING: 8, Model 580B PID MONITORING EQUIP: PID LOGGED BY: Jarrod Yearwood SAMPLE SAMPLE REMARKS USCS SAMPLE % SAMPLE SAMPLE DEPTH INTERVAL RECOVERY READING **TYPE** NUMBER CLASS DESCRIPTION (FEET) Concrete CL Olive Gray Brown Silty Clay Obvious Stain & Odor 0'-5' 60% 173 ppm Chem @ Obvicus Stain & Odor 100% 7' BH-11 5'-10' 110 ppm Gray Silty Clay CL 10 EOB 10' 12 28 LOGGED BYlarrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

UNITED SCIENCE INDUSTRIES, INC.  DRILLING BOREHOLE LOG									
							BOREHOL	E NO: BH-12	
BORING	LOCATION: See Site Map			TOTAL DEP	TH: 10'				
DRILLING	G COMPANY: UNITED SO	CIENCE IN	DUSTRIES	DRILLER:	Jason McKee	<u> </u>			
DRILLING	G SAMPLING/METHOD:	3.25" I.D.	auger w/ 3" x	5' continuous s	ampler				
DATE/TI	ME STARTED: 9/18/2	2002		DATE/TIME	ENDED:	9/18	2002		
GW DEPTH WHILE DRILLING: 8' AFTER DRILLING: NA TYPE OF BACKFILL: cuttings									
LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID									
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS	
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY	READING	TYPE	NUMBER		
0	Grass							ı	
2	Black Silty Clay	CL	0'-5'	100%	6 ppm			No Stain/No Odor	
4_	Brown Silty Clay	CL							
6_						Chem @		N. G. ' A. G.	
8	Brown Soft Silty Clay	CL	5'-10'	100%	8 ррга	7'	BH-12	No Stain/No Odor	
10	EOB 10'	<u> </u>							
14									
16						:			
18									
20									
22						<b>,</b>			
24		:	i.						
<sup>26</sup> —								•	
PROJECT	PROJECT NAME: Towanda LOGGED BY Tarrod Yearwood								
PROJECT NO.: 1800118  UNITED SCIENCE INDUSTRIES									

			(F)						
		[IN	TED SCIENCI	NDUSTRIES	1				
}	a	COIN	7 7	y	,	1			
						4.01	BOREHOL	E NO: MW-4	
	LOCATION: See Site Map			TOTAL DEPTH: 15'					
	G COMPANY: UNITED SCI			DRILLER:		· · · · · · · · · · · · · · · · · · ·			
	SAMPLING/METHOD: 4.25	" Hollow		DATE/TIME			3/29/2	001	
	ME STARTED: 3/29/2001	8,	AFTER DR		ENDED.	TYPE OF	BACKFILL		
	H WHILE DI S: BY: Josh Blair	8		MONITORII	AC EOI IID.		Model 580		
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS	
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY		TYPE	NUMBER		
1									
2	no recoverly do to equipment used								
3	Brown Silty Clay	CL	2.5'-4*	60%	5	No Samples		No Odor/Not Discolored	
5	no recoverly do to equipment used								
6 _	Brown Silty Sandy Clay w/mottled Gray w/p:bbles	CL	5'-6.5'	100%	0	No Samples		Slight Odor/Slightly Discolored	
<sup>7</sup> _	no recoverly do to equipment used								
8 <u>—</u> 9	Brown Silty Clay w/pebbles Wet	CL	7.5'-9'	100%	0	No Samples		No Odor/Not Discolored	
10	no recoverly do to equipment used								
11_	Brown Silty Clay w/pebbles	CL	10'-11.5'	80%	. 0	No Samples		No Odor/Not Discolored	
12	no recoverly do to equipment used								
13	Brown Silty Clay w/pobbles	CL	12.5'-14'	60%	0	No Samples		No Odor/Not Discolored	
15	no recoverly do to equipment used								
16	15' E.O.B.								
	NAME: Towanda			Logged By:	Josh Blair				
PROJECT I	NO.: 1800118			<u> </u>					

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-11 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKec DRILLING COMPANY: 3.25" I.D. auger w/ 3" x 5' continuous sampler DRILLING SAMPLING/METHOD: DATE/TIME ENDED: 9/18/2002 DATE/TIME STARTED: 9/18/2002 AFTER DRILLING: TYPE OF BACKFILL: MW-11 GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood USCS SAMPLE % SAMPLE **SAMPLE** SAMPLE REMARKS SAMPLE DEPTH DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER (FEET) NO NO Topsoil SAMPLES SAMPLES Olive Brown Silty Clay Softer CL No Stain/Slight Odor **TAKEN** 0'-5' 50% TAKEN 2 ppm with Depth No Stain/No Odor 5'-10' 50% 3 ppm CL Gray Silty Soft Clay 12 No Stain/No Odor 10-15' 100% 10 ppm EOB 15' 18 20 26 28 PROJECT NAME: LOGGED BYlarrod Yearwood Towanda PROJECT NO.: 1870118

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-12 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: 3.25" I.D. auger\_w/ 3" x 5' continuous sampler DRILLING SAMPLING/MET. IOD: 9/18/2002 DATE/TIME ENDED: 9/18/2002 DATE/TIME STARTED: AFTER DRILLING: TYPE OF BACKFILL: MW-12 GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood REMARKS SAMPLE SAMPLE USCS SAMPLE % SAMPLE SAMPLE DEPTH RECOVERY READING TYPE NUMBER INTERVAL DESCRIPTION **CLASS** (FEET) NO NO Top Soil **SAMPLES** SAMPLES CL Black Silty Clay No Stain/No Odor **TAKEN** TAKEN 0'-5' 75% 0 ppm 2 CL Brown Silty Sticky Clay CL Brown Silty Soft Clay No Stain/No Odor 100% 5'-10' 1 ppm Gray Soft Silty Car CL 10 12 No Stain/No Odor 10-14' 100% 3 ppm **EOB 14**' 16 20 26 28 LOGGED BY I arrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-13 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES DRILLER: Jason McKee DRILLING COMPANY: Geoprobe 6600 w/1.5" x 5' Sample Tube DRILLING SAMPLING/METHOD: DATE/TIME ENDED: 4/11/2003 4/11/2003 DATE/TIME STARTED: TYPE OF BACKFILL: MW-13 8, AFTER DRILLING: GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks SAMPLE REMARKS SAMPLE USCS % SAMPLE PID DEPTH SAMPLE SAMPLE **READING TYPE** NUMBER RECOVERY (FEET) DESCRIPTION **CLASS** INTERVAL NO NO CL Brown silty clay - moist SAMPLES **SAMPLES** TAKEN No Stain/No Odor 100% TAKEN 0'-5' 0 ppm at 4 - 4.5' CL Olive green silty clay - moist Discolored/Odor 100% 5'-10' 83 ppm at 7 - 7.5' GW @ 8' 10 12 Discolored/Odor 100% 10-14' 20 ppm at 13 - 13.5' **EOB 14'** 16 18 26 28 Ron Minks PROJECT NAME: LOGGED BY Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-14 TOTAL DEPTH: BORING LOCATION: See Site Map 14' UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube DATE/TIME ENDED: 4/11/2003 4/11/2003 DATE/TIME STARTED: TYPE OF BACKFILL: GW DEPTH WHILE DRILLING: AFTER DRILLING: LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID USCS SAMPLE % SAMPLE PLD SAMPLE SAMPLE REMARKS SAMPLE DEPTH RECOVERY READING **TYPE** NUMBER CLASS INTERVAL **DESCRIPTION** (FEET) NO NO Gravel SAMPLES SAMPLES CL Brown silty clay - moist No Stain/No Odor 0'-5' TAKEN 100% **TAKEN** 0 ppm at 4 - 4.5' CL Olive green silty clay - moist 100% Discolored/Odor 5'-10' 9 ppm GW @ 8' at 7 - 7.5' 10 12 Discolored/Odor 100% 10-14' 53 ppm at 13 - 13.5' **EOB 14**' 16 18 20 26 28 PROJECT NAME: Ron Minks Towanda LOGGED BY PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-15 TOTAL DEPTH: 15' BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DPJLLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1330 DATE/TIME ENDED: 4/28/2003 1415 4/28/2003 DATE/TIME STARTED: TYPE OF BACKFILL: MW-15 GW DEPTH WHILE DRILLING: AFTER DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood % SAMPLE SAMPLE SAMPLE REMARKS USCS SAMPLE SAMPLE DEPTH RECOVERY **READING** TYPE NUMBER DESCRIPTION INTERVAL CLASS (FEET) NO NO Topsoil SAMPLES **SAMPLES** No Stain/No Odor TAKEN TAKEN 0'-5' 80% 0 ppm Rock till at 4' CL Brown soft silty clay CL Brown & gray soft silty clay Slight odor/stained 5'-10' 90% 0 ppm GW @ 8' below GW at 7' Gray soft silty clay CL GW @ 8' 10 Brown wet silty clay CL 12 Slight odor/no stain 100% 10-15 39 ppm at 12 EOB 15' 16 18 26 28 LOGGED BYlarrod Yearwood PROJECT NAME: Townda 1800118 PROJECT NO.: UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-16 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: Geoprobe 6600 w/1.5" x 5' Sample Tube DRILLING SAMPLING/METHOD: 1420 DATE/TIME ENDED: 4/28/2003 1500 DATE/TIME STARTED: 4/28/2003 MW-16 TYPE OF BACKFILL: AFTER DRILLING: GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID L'IGGED BY: Jarrod Yearwood SAMPLE SAMPLE REMARKS SAMPLE % SAMPLE PID SAMPLE USCS **JEPTH** RECOVERY READING TYPE NUMBER INTERVAL (FEET) CLASS DESCRIPTION NO NO Topsoil SAMPLES **SAMPLES** TAKEN No Stain/No Odor TAKEN 0'-5' 75% CL 0 ppm Dark brown silty clay at 4' Brown silty clay CL No Stain/No Odor CL 5'-10' 100% 0 ppm Brown & gray wet silty clay at 7' GW @ 7' 10 Brown silty stiff clay CL with pebbles 12 No Stain/No Odor 10-15 75% 0 ppm at 14' EOB 15' 16 22 26 28 LOGGED BY Iarrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-17 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1510 DATE/TIME ENDED: 4/28/2003 1540 DATE/TIME STARTED: 4/28/2003 MW-17 TYPE OF BACKFILL: AFTER DRILLING: GW DEPTH WHILE DR'L'.!\'G: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood SAMPLE SAMPLE REMARKS SAMPLE SAMPLE % SAMPLE PID USCS RECOVERY READING TYPE NUMBER INTERVAL DESCRIPTION CLASS (FEET) NO NO Topsoil SAMPLES SAMPLES TAKEN No Stain/No Odor 0'-5' 70% TAKEN CL 0 ppm Dark brown stiff silty clay at 4' CL Brown & gray soft silty clay No Stain/No Odor 5'-10' 100% 0 ppm GW @8' at 7' GW @ 8' 10 Brown stiff silty clay CL with pebbles 12 No Stain/No Odor 10-15 100% 0 ppm at 14' 14 EOB 15' 16 18 22 26 28 LOGGED BY arrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIFNCE INDUSTRIES

### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-18 TOTAL DEPTH: 15' BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1540 DATE/TIME ENDED: 4/28/2003 1610 4/28/2003 DATE/TIME STARTED: TYPE OF BACKFILL: MW-18 AFTER DRILLING: GW DEPTH WHILE DRILLING: 8, MONITORING EQUIP: PID Model 580B PID LOGGED BY: Jarrod Yearwood REMARKS % SAMPLE PID SAMPLE SAMPLE SAMPLE USCS DEPTH SAMPLE **READING** NUMBER RECOVERY **TYPE** DESCRIPTION **CLASS** INTERVAL (FEET) NO NO Topsoil SAMPLES **SAMPLES** No Stain/No Odor **TAKEN TAKEN** Dark brown stiff silty clay CL 0'-5' 70% 0 ppm at 4' Brown silty soft clay CL CL Brown & gray soft silty clay No Stain/No Odor 100% 5'-10' 140 ppm at 8' GW @8' GW @ 8' 10 Brown stiff silty clay CL 12 with pebbles No Stain/No Odor 100% 10-15" 35 ppm at 14' 14 16 EOB 15' 18 20 22 24 26 28 LOGGED BYlarrod Yearwood PROJECT NAME: Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-19 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Greg Liggett DRILLING COMPANY: Geoprobe 6600 w/1.5" x 5' Sample Tube with 8" augers DRILLING SAMPLING/METHOD: 1430 DATE/TIME ENDED: 4/22/2004 DATE/TIME STARTED: 4/22/2004 AFTER DRILLING: TYPE OF BACKFILL: GW DEPTH WHILE DRILLING: 12' MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks REMARKS SAMPLE % SAMPLE SAMPLE SAMPLE PID USCS **SAMPLE** READING NUMBER **TYPE** INTERVAL RECOVERY (FEET) DESCRIPTION **CLASS** NO NO Gravel SAMPLES **SAMPLES** SW Sand backfill TAKEN No odor 0'-5' 100% 0 ppm TAKEN no stain No odor 5'-10' 100% 0 ppm no stain No odor Brown silty sand \$W 10-15' 100% 0 ppm no stain with pebbles at 14' 16 15' End of boring 18 20 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-20 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Greg Liggett DRILLING COMPANY: Geoprobe 6600 w/1.5" x 5' Sample Tube with 8" augers DRILLING SAMPLING/ML: HOD: 1525 DATE/TIME ENDED: 4/22/2004 1600 4/22/2004 DATE/TIME STARTED: TYPE OF BACKFILL: MW-20 GW DEPTH WHILE DRILLING: 12' AFTER DRILLING: MONITORING EQUIP: PID Model 580B PID OGGED BY: Ron Minks REMARKS SAMPLE SAMPLE SAMPLE % SAMPLE PID USCS DEPTH SAMPLE NUMBER RECOVERY READING TYPE **DESCRIPTION CLASS** INTERVAL (FE::1) NO NO Gravel **SAMPLES SAMPLES** SW Sand backfill No odor TAKEN TAKEN 0'-5' 100% 0 ppm no stain No odor 100% 5'-10' 0 ppm no stain 10 12 Odor 10-15' 100% Brown silty sand SW 55 ppm no stain at 14' with pebbles 15' End of boring 18 20 22 26 28 Ron Minks PROJECT NAME: Towanda LOGGED BY PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** MW-21 TOTAL DEPTH: BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Greg Liggett .:LLING COMPANY: Geoprobe 6600 w/1.5" x 5' Sample Tube with 8" augers 'ILLING SAMPLING/METHOD: 1630 1605 DATE/TIME ENDED: 4/22/2004 4/22/2004 DATE/TIME STARTED: TYPE OF BACKFILL: MW-21 AFTER DRILLING: GW DEPTH WHILE DRILLING: 12' MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks SAMPLE SAMPLE REMARKS USCS SAMPLE % SAMPLE PID SAMPLE DEPTH RECOVERY READING **TYPE** NUMBER **CLASS** INTERVAL DESCRIPTION (FEET) NO NO Gravel **SAMPLES** SW SAMPLES Sand backfill **TAKEN** TAKEN No odor 0'-5' 100% 0 ppm no stain No odor 5'-10' 100% 0 ppm no stain No odor \$W 10-15" 100% Brown silty sand 0 ppm )r <sub>14</sub> no stain at 14' with pebbles 16 15' End of boring 18 28 Ron Minks PROJECT NAME: LOGGED BY Towanda PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** WC-1 TOTAL DEPTH: 15' BORING LOCATION: See Site Map UNITED SCIENCE INDUSTRIES | DRILLER: Hertel DRILLING COMPANY: DRILLING SAMPLING/METHOD: hand auger 2/18/2004 1430 DATE/TIME ENDED: 2/18/2004 1500 DATE/TIME STARTED: AFTER DRILLING: TYPE OF BACKFILL: GW DEPTH WHILE DRILL ... G: soil cuttings LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DEPTH SAMPLE DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER (FEET) topsoil 0'-5' No Stain/No Odor 100% brown soft silty clay 17 ppm at 4' Brown silty soft clay CL 100% WC-1 No Stain/No Odor 5'-10' 84 ppm chem @ 10' CL gray soft silty clay 12 18 28 PROJECT NAME: Towanda LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BF-I TOTAL DEPTH: 15' BORING LOCATION: See Site Map DRILLER: Henel UNITED SCIENCE INDUSTRIES DRILLING COMPANY: DRILLING SAMPLING/MLTHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 DATE/TIME STARTED: 3/27/2006 AFTER DRILLING: TYPE OF BACKFILL: soil cuttings GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks SAMPLE SAMPLE REMARKS SAMPLE USCS SAMPLE % SAMPLE PID DEPTH READING **TYPE** NUMBER CLASS INTERVAL RECOVERY DESCRIPTION (FEET) asphalt PID No Stain/No Odor 0'-5' 80% 13 ppm @ brown rocky to 3' at 4' 4' sandy clay discolored 3-5' olive green silty clay CŁ discolored BF-1A 5'-10' 100% 400 ppm chem @ to 12' at 8' 9' olive brown/groun 10 silty, sandy, clay 12 BF1-B no stain brown silty clay 10'-15' 90% 0 ppm at chem @ no odor 12' 14 13' 12'-15' brown/gray silty clay end of boring 16 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-2 TOTAL DEPTH: BORING LOCATION: See Site Map DRILLEK: Hertel DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLING SAMPLING/METHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 DATE/TIME STARTED: 3/27/2006 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: soil cuttings MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks REMARKS SAMPLE % SAMPLE PID SAMPLE SAMPLE USCS SAMPLE **READING** TYPE NUMBER RECOVERY **CLASS** INTERVAL (FEET) DESCRIPTION gravel PID No Stain/No Odor brown soft 0'-5' 80% 0 ppm @ to 7' at 4' silty clay discolored CL discolored 5'-10' 100% BF-2A 400 ppm chem @ olive brown/green 7'-12' 9' silty clay at 8' 10 (moist) 12 no stain brown soft silty clay 10'-15' 100% BF2-B 5 ppm at chem @ no odor 12' 13' 12'-15' end of boring 16 18 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-3 BORING LOCATION: S. Sie Map TOTAL DEPTH: 15' UNITED SCIENCE INDUSTRIES | DRILLER: Heriei DRILLING COMPANY: DRILLING SAMPLING/METHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 3/27/2006 DATE/TIME STARTED: soil cuttings TYPE OF BACKFILL: AFTER DRILLING: NA GW DEPTH WHILE DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks REMARKS SAMPLE % SAMPLE SAMPLE SAMPLE SAMPLE USCS DE:/TH INTERVAL **RECOVERY** READING TYPE NUMBER CLASS DESCRIPTION CET) gravel PID No Stain/No Odor 0'-5' 80% 0 ppm @ brown to 6' at 4' 4 silty clay discolored CL discolored BF-3A 5'-10' 90% 120 ppm chem @ olive brown/green 6'-13' at 8' 9' silty clay 10 (moist) 12 BF-3B no stain 100% 10'-15' 0 ppm at chem @ 12' 14' no odor brown silty clay 13-15' end of boring 16 . 18 26 28 Ron Minks LOGGED BY PROJECT NAME: Towanda Darin DeNeal 1800118 TRANSCRIBED BY: PROJECT NO.: UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-4 TOTAL DEPTH: 15' TORING LOCATION: See Site Map DRILLER: Hertel DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLING SAMPLING/METHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 DATE/TIME STARTED: 3/27/2006 TYPE OF BACKFILL: GW DEPTH WHILE DRILLING: AFTER DRILLING: soil cuttings MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks % SAMPLE SAMPLÉ REMARKS USCS SAMPLE PLD SAMPLE **SAMPLE** DEPTH RECOVERY READING **TYPE** NUMBER INTERVAL CLASS (FEET) DESCR!"!! > V gravel PID No Stain/No Odor 90% 0'-5' 0 ppm @ black to 3' at 4' silty clay discolored 3-14' olive brown/green silty clay shelby CL tube 7.5-9' BF-4A 5'-10' 100% chem @ 300 ppm Shelby Tube 9' at 8' ST-1 10 nd stain 10'-15' 100% 2 ppm at chem @ BF-4B ndodor 12' 15' brown silty clay 14-15' soft brown silty clay end of boring 16 18 22 26 28 LOGGED BY Ron Minks PROJECT NAME: Towanda 1800118 TRANSCRIBED BY: **Darin DeNeal** PROJECT NO.: UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-5 TOTAL DEPTH: 15' BORING LOCATION: See Site Map DRILLER: Henel DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLING SAMPLING/METHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 DATE/TIME STARTED: 3/27/2006 TYPE OF BACKFILL: soil cuttings GW DEPTH WHILE DRILLING: 7 AFTER DRILLING: MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks SAMPLE SAMPLE REMARKS USCS SAMPLE % SAMPLE PID DEPTH SAMPLE NUMBER RECOVERY **READING** TYPE INTERVAL :rEET) **DESCRIPTION CLASS** gravel PID No Stain/No Odor 0'-5' 80% @ black 0 ppm to 7' at 4' silty clay brown silty clay CL discolored 90% BF-5A 5'-10' 106 ppm chem@ 7-13' 9' at 8' olive brown/green silty clay 10 12 discolored 10'-15' 100% chem @ BF-5B 0 ppm at no odor 13-15' 12' 14' 14-15 16 end of boring 18 26 28 PROJECT NAME: LOGGED BY Ron Minks Towanda PROJECT NO.: 1800118 TRANSCRIBED BY: **Darin DeNeal** UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-6 TOTAL DEPTH: BORING LOCATION: See Site Map 10. UNITED SCIENCE INDUSTRIES | DRILLER: Henei DRILLING COMPANY: DRILLING SAMPLING/METHOD: hand auger DATE/TIME ENDED: 3/27/2006 1500 DATE/TIME STARTED: 3/27/2006 AFTER DRILLING: TYPE OF BACKFILL: soil cuttings GW DEPTH WHILE DELLERGE MONITORING EQUIP: PID Model 580B PID LOGGED BY: Ron Minks % SAMPLE SAMPLE SAMPLE REMARKS USCS SAMPLE SAMPLE DEPTH INTERVAL RECOVERY READING **TYPE** NUMBER CLASS DESCRIPTION (FEET) grass PID No Stain/No Odor 100% 0'-5' 0 ppm @ brown at 4' silty clay CL chem @ 100% 5'-10' 0 ppm 8' at 8' end of boring 12 28 PROJECT NAME: LOGGED BY Ron Minks Towanda PROJECT NO.: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report 2000-1913 Well Number: MW-1 Incident Number: Towanda Mini Mart Date Drill Started: 3/29/2001 Site Name: **Drilling Contractor:** USI Date Completed: 3/29/2001 Driller: Laren Evans Technician: Josh Blair **Drilling Method:** 3.25 H.S.A. Drilling Fluids: NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 **Ground Surface** Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials PVC Top of Seal Stainless -1.00 2.50 Total Seal Interval Steel Type Type 2" -3.50 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt -4.80 Top of Screen Sch. 40 Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.50 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 13.05 **Elevation of Water** N/A Free Product Depth N/A Gal Removed Devel 1.69 Gal Removed Purge N/A -14.80 Bottom of Screen -15.10 Bottom of Borehole Completed By: Josh Blair

UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: MW-2 Site Name: Towanda Mini Mart Date Drill Started: 3/29/2001 **Drilling Contractor:** USI Date Completed: 3/29/2001 Laren Evans Technician: Driller: Josh Blair **Drilling Method:** 3.25 H.S.A. Drilling Fluids: NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials PVC Top of Seal Stainless: -1.20 2.30 Total Seal Interval Steel Type 2" Type -3.50 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.95 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.65 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 2.23 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 12.40 Gal Removed Purge N/A -14.95 Bottom of Screen -15.25 Bottom of Borehole Completed By: Josh Blair UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report MW-3 Incident Number: 2000-1913 Well Number: Towanda Mini Mart Site Name: Date Drill Started: 3/29/2001 **Drilling Contractor:** USI Date Completed: 3/29/2001 Driller: Laren Evans Technician: Josh Blair **Drilling Method:** 3.25 H.S.A. **Drilling Fluids:** NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials PVC Stainless -1.90 Top of Seal 2.50 Total Seal Interval Steel Type Type 2" -4.40 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.70 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.40 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" **Prot Casing Length** Depth to Water 8.10 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 6.40 Gal Removed Purge N/A -14.70 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: **MW-4** Site Name: Towanda Mini Mart Date Drill Started: 3/29/2001 **Drilling Contractor:** USI Date Completed: 3/29/2001 Driller: Laren Evans Technician: Josh Blair **Drilling Method:** 3.25 H.S.A. **Drilling Fluids:** NA Annular Space Details Elevations - 0.01' Type of Surface Seal: Concrete 0.00 **Ground Surface** Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless **PVC** -1.00 Top of Seal Steel 2.40 Total Seal Interval Type 2" Type -3.40 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.75 Top of Screen Screen Sch. 40 Screen to Riser Threaded **Protective Casing** Flush Mnt To 0.01' Measurements Riser Pipe Length 4.45 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 14.78 Elevation of Water N/A Free Product Depth N/A Gai Removed Devel 11.60 Gal Removed Purge N/A -14.75 Bottom of Screen -15.05 **Bottom of Borehole** Completed By: Josh Blair UNITED SCIENCE INDUSTRIES

#### Illinois Environmental Protection Agency **LUST Well Completion Report** Well Number: Incident Number: 2000-1913 **MW-5** Date Drill Started: 5/17/2001 Site Name: Towanda Mini Mart **Drilling Contractor:** USI Date Completed: 5/17/2001 Driller: Laren Evans Scott Hertel Technician: Drilling Method: 3.25 H.S.A. **Drilling Fluids:** NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 **Ground Surface** Type of Annular Seal: Bentonite -0.18 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials PVC Stainless -1.00 Top of Seal 3.00 Steel Type Total Seal Interval 2" -4.00 Type Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.71 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.53 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 4.23 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 10.00 Gal Removed Purge N/A -14.71 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair

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## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: **MW-6** Site Name: Towanda Mini Mart Date Drill Started: 5/17/2001 **Drilling Contractor:** USI Date Completed: 5/17/2001 Driller: Laren Evans Technician: Scott Hertel Drilling Method: 3.25 H.S.A. **Drilling Fluids:** NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 **Ground Surface** Type of Annular Seal: Bentonite -0.21 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials PVC Stainless -0.80 Top of Seal Steel 3.00 Total Seal Interval Type Type 2" -3.80 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.70 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.49 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 3.00 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 11.00 Gal Removed Purge N/A -14.70 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Well Number: Incident Number: 2000-1913 **MW-7** Towanda Mini Mart Date Drill Started: 5/17/2001 Site Name: **Drilling Contractor:** USI Date Completed: 5/17/2001 Driller: Laren Evans Technician: Scott Hertel Drilling Method: 3.25 H.S.A. Drilling Fluids: NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete **Ground Surface** 0.00 Type of Annular Seal: Bentonite -0.25 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless PVC Top of Seal -0.11 3.00 Total Seal Interval Steel Type Type 2" -3.11 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt -4.68 Top of Screen Sch. 40 Sch. 40 Screen Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.43 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 13.62 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 1.00 Gai Removed Purge N/A -14.68 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Well Number: 8-WM Incident Number: 2000-1913 Date Drill Started: 5/17/2001 Site Name: Towanda Mini Mart **Drilling Contractor:** USI Date Completed: 5/17/2001 Scott Hertel Driller: Laren Evans Technician: **Drilling Method:** 3.25 H.S.A. **Drilling Fluids:** NA Elevations - 0.01' **Annular Space Details** Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.20 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials Stainless PVC -1.20 Top of Seal Total Seal Interval Steel 3.00 Type 2" -4.20 Top of Sand Type Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.88 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.68 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" **Prot Casing Length** Depth to Water 9.15 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 6.00 Gal Removed Purge N/A -14.88 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair

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## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: MW-9 Site Name: Towanda Mini Mart Date Drill Started: 5/17/2001 **Drilling Contractor:** USI Date Completed: 5/17/2001 Driller: Laren Evans Technician: Scott Hertel **Drilling Method:** 3.25 H.S.A. **Drilling Fluids:** NA **Annular Space Details** Elevations - 0.01 Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.20 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless PVC -0.50 Top of Seal Steel Type 1.50 Total Seal Interval Type 2" -2.00 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.60 Top of Screen Screen Sch. 40 Screen to Riser Threaded **Protective Casing** Flush Mnt Measurements To 0.01' Riser Pipe Length 4.40 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 6.00 Elevation of Water N/A Free Product Depth N/A Gal Removed Devel 8.00 Gal Removed Purge N/A -14.60 Bottom of Screen -15.00 Bottom of Borehole Completed By: Josh Blair UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: MW-10 Towanda Mini Mart Site Name: Date Drill Started: 9/18/2002 9/18/2002 **Drilling Contractor:** USI Date Completed: Driller: Jason McKee Jarrod Yearwood Technician: 3.25 H.S.A. **Drilling Method: Drilling Fluids:** NA Annular Space Details Elevations - 0.01' **Ground Surface** Type of Surface Seal: Concrete 0.00 Type of Annular Seal: Bentonite -0.20 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials Stainless **PVC** -2.00 Top of Seal Steel Type 1.10 Total Seal Interval Type 2° -3.90 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -4.95 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 4.75 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" Prot Casing Length Depth to Water NA Elevation of Water NA Free Product Depth NA Gal Removed Devel NA Gal Removed Purge NA -14.95 Bottom of Screen -15.00 Bottom of Borehole Completed By: Jarrod Yearwood

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#### Illinois Environmental Protection Agency **LUST Well Completion Report**

Incident Number:

2000-1913

Site Name:

Towanda Mini Mart

**Drilling Contractor:** 

USI

Driller: Drilling Method: Jason McKee 3.25 H.S.A.

Well Number:

MW-11

Date Drill Started: 9/18/2002

Date Completed:

9/18/2002

Technician:

Jarrod Yearwood

Drilling Fluids:

# **Annular Space Details**

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Pellet

Type of Bentonite: Type of Sand Pack:

Filtration Sand

# Well Construction Materials

	Stainless	PVC
	Steel	Type
	Type	2"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

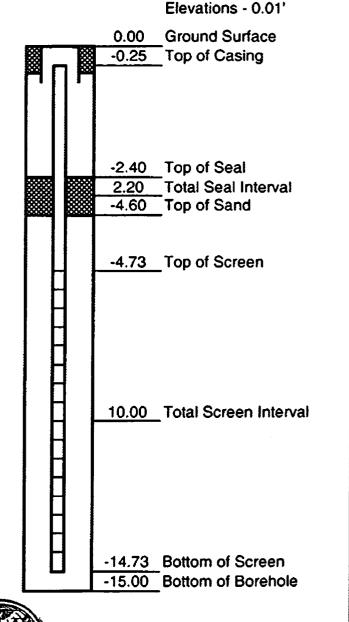
## Measurements

To 0.01'

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Riser Pipe Length	4.48
Screen Length	10.00
Screen Slot Size	0.01"
Prot Casing Length	6"
Depth to Water	NA
Elevation of Water	NA
Free Product Depth	NA
Gal Removed Devel	NA
Gal Removed Purge	NA

Completed By: Jarrod Yearwood



Driller:

## Illinois Environmental Protection Agency LUST Well Completion Report

Incident Number:

2000-1913

Towanda Mini Mart Site Name:

Drilling Contractor:

USI

Jason McKee

3.25 H.S.A.

Well Number:

MW-12

Date Drill Started: 9/18/2002

Date Completed:

9/18/2002

Technician:

Jarrod Yearwood

Drilling Fluids:

NA

## **Annular Space Details**

**Drilling Method:** 

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite Type of Bentonite:

Pellet

Type of Sand Pack:

Filtration Sand

## Well Construction Materials

	Stainless	PVC
	Steel	Туре
	Type	2"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

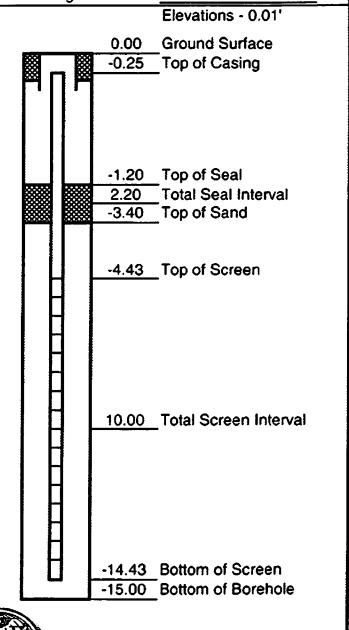
## Measurements

To 0.01'

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Riser Pipe Length	4.18	
Screen Length	10.00	
Screen Slot Size	0.01"	
Prot Casing Length	6"	
Depth to Water	NA	
Elevation of Water	NA	
Free Product Depth	NA	
Gal Removed Devel	NA	
Gal Removed Purge	NA	
		_

Completed By: Jarrod Yearwood



## Illinois Environmental Protection Agency **LUST Well Completion Report** Incident Number: 2000-1913 Well Number: **MW-13** Towanda Mini Mart Date Drill Started: 4/11/2003 Site Name: USI Date Completed: 4/11/2003 **Drilling Contractor:** Jason McKee **Ron Minks** Driller: Technician: Drilling Method: Geoprobe 6600 **Drilling Fluids:** NA **Annular Space Details** Elevations - 0.01' 0.00 **Ground Surface** Type of Surface Seal: Concrete Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless **PVC** -1.30 Top of Seal 1.20 Steel Total Seal Interval Type -2.50 Top of Sand Type 1.5" Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -3.90 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 3.60 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 64 Depth to Water NΑ Elevation of Water NA Free Product Depth NA 3.25 Gal Removed Devel Gal Removed Purge NA -13.90 Bottom of Screen -14.10 **Bottom of Borehole** Completed By: Ron Minks

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## Illinois Environmental Protection Agency LUST Well Completion Report Well Number: Incident Number: 2000-1913 MW-14 Site Name: Towanda Mini Mart Date Drill Started: 4/11/2003 Drilling Contractor: USI Date Completed: 4/11/2003 Driller: Jason McKee Technician: Ron Minks **Drilling Method:** Geoprobe 6600 **Drilling Fluids:** NA Annular Space Details Elevations - 0.01' Type of Surface Seal: Concrete Ground Surface 0.00 Type of Annular Seal: Bentonite -0.30 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials Stainless **PVC** -1.10 Top of Seal Steel 1.40 Total Seal Interval Type Type 1.5" -2.50 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -3.80 Top of Screen Screen Sch. 40 Screen to Riser Threaded **Protective Casing** Flush Mnt Measurements To 0.01' Riser Pipe Length 3.50 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" Prot Casing Length Depth to Water NA Elevation of Water NA Free Product Depth NA Gal Removed Devel 3.25 Gal Removed Purge NA -13.80 Bottom of Screen -14.00 Bottom of Borehole Completed By: Ron Minks UNITED SCIE **INDUSTRIES**

#### Illinois Environmental Protection Agency **LUST Well Completion Report** Incident Number: 2000-1913 Well Number: MW-15 Site Name: Towanda Mini Mart Date Drill Started: 4/28/2003 USI **Drilling Contractor:** Date Completed: 4/28/2003 Jason McKee Driller: Technician: Jarrod Yearwood Geoprobe 6600 **Drilling Method: Drilling Fluids:** NA Annular Space Details Elevations - 0.01' Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.25 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials Stainless **PVC** -1.00 Top of Seal Steel 1.60 Total Seal Interval Type -2.60 Type 1.5" Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -3.55 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 3.30 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water 5.1 Elevation of Water NA Free Product Depth NA Gal Removed Devel 2.25 Gal Removed Purge NA -13.55 Bottom of Screen -15.00 Bottom of Borehole

Completed By: Jarrod Yearwood

## Illinois Environmental Protection Agency LUST Well Completion Report 2000-1913 Well Number: MW-16 Incident Number: Site Name: Towanda Mini Mart Date Drill Started: 4/28/2003 4/28/2003 **Drilling Contractor:** USI Date Completed: Driller: Jason McKee Technician: Jarrod Yearwood **Drilling Method:** Geoprobe 6600 Drilling Fluids: NA Elevations - 0.01' **Annular Space Details** Type of Surface Seal: Concrete Ground Surface 0.00 Type of Annular Seal: Bentonite -0.15 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials PVC **Stainless** -1.00 Top of Seal 2.00 Total Seal Interval Steel Type Type 1.5" -3.00 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -3.40 Top of Screen Sch. 40 Screen Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 3.25 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" Prot Casing Length Depth to Water 3.98 Elevation of Water NA Free Product Depth NA Gal Removed Devel 2.50 Gal Removed Purge NA -13.40 Bottom of Screen -15.00 Bottom of Borehole Completed By: Jarrod Yearwood INDUSTRIES

# Illinois Environmental Protection Agency LUST Well Completion Report

Incident Number:

2000-1913

Site Name:

Towanda Mini Mart

**Drilling Contractor:** 

USI

Driller:

Jason McKee

**Drilling Method:** 

Geoprobe 6600

Well Number:

MW-17

Date Drill Started: 4/28/2003

Date Completed:

4/28/2003

Technician:

Jarrod Yearwood

Drilling Fluids:

NA

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Type of Bentonite:

Pellet

Type of Sand Pack:

Filtration Sand

## Well Construction Materials

	Stainless	PVC
	Steel	Type
	Туре	1.5"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

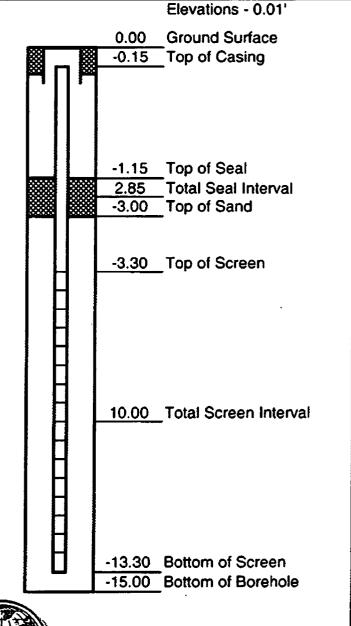
## Measurements

To 0.01'

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Riser Pipe Length	3.15
Screen Length	10.00
Screen Slot Size	0.01"
Prot Casing Length	6"
Depth to Water	4.95'
Elevation of Water	NA
Free Product Depth	NA
Gal Removed Devel	2.25
Gal Removed Purge	NA

Completed By: Jarrod Yearwood



## **LUST Well Completion Report** Illinois Environmental Protection Agency Well Number: MW-18 Incident Number: 2000-1913 Site Name: Towanda Mini Mart Date Drill Started: 4/28/2003 USI Date Completed: 4/28/2003 **Drilling Contractor:** Jarrod Yearwood Driller: Jason McKee Technician: Drilling Method: Geoprobe 6600 **Drilling Fluids:** NA Elevations - 0.01' Annular Space Details Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.25 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless PVC Top of Seal -0.60 Steel 2.00 Total Seal Interval Type 1.5" -2.60 Top of Sand Type Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -3.50 Top of Screen Screen Sch. 40 Screen to Riser Threaded Protective Casing Flush Mnt Measurements To 0.01' Riser Pipe Length 3.25 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" 4.42' Depth to Water Elevation of Water NA Free Product Depth NA Gal Removed Devel 2.50 Gal Removed Purge NA -13.50 Bottom of Screen -15.00 Bottom of Borehole Completed By: Jarrod Yearwood

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## **LUST Well Completion Report** Illinois Environmental Protection Agency

Incident Number:

2000-1913

Site Name:

Towanda Mini Mart

Drilling Contractor:

USI

Driller:

**Greg Liggett** 

Drilling Method:

Geoprobe 6600 w/augers

Well Number:

MW-19

Date Drill Started: 4/22/2004

Date Completed:

4/22/2004

Elevations - 0.01'

Technician:

Ron Minks

**Drilling Fluids:** 

NA

**Annular Space Details** 

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Type of Bentonite:

Pellet

Type of Sand Pack:

Filtration Sand

## Well Construction Materials

	Stainless	PVC
	Steel	Type
	Туре	2" Upack
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

## Measurements

To 0.01'

Riser Pipe Length	5.30	
Screen Length	10.00	
Screen Slot Size	0.01"	
Prot Casing Length	6"	
Depth to Water	NA	
Elevation of Water	NA	
Free Product Depth	NA	
Gal Removed Devel	NA	
Gal Removed Purge	NA	

Completed By: Ron Minks

	0.00	Ground Surface
	-0.30	Top of Casing
	-1.50	Top of Seal
<b>****</b>	2.10	Total Seal Interval
- <b>                 </b>	-3.60	Top of Sand
	-5.60	_Top of Screen
		_Total Screen Interval
		Bottom of Screen
	-15.90	Bottom of Borehole



## Illinois Environmental Protection Agency LUST Well Completion Report Incident Number: 2000-1913 Well Number: MW-20 Site Name: Towanda Mini Mart Date Drill Started: 4/22/2004 **Drilling Contractor:** USI Date Completed: 4/22/2004 Driller: Greg Liggett Technician: Ron Minks Drilling Method: Geoprobe 6600 w/augers Drilling Fluids: NA **Annular Space Details** Elevations - 0.01' Type of Surface Seal: Concrete 0.00 Ground Surface Type of Annular Seal: Bentonite -0.20 Top of Casing Type of Bentonite: Pellet Filtration Sand Type of Sand Pack: Well Construction Materials Stainless **PVC** -2.30 Top of Seal Steel Total Seal Interval Type 2.30 Type 2" Upack -4.60 Top of Sand Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt Sch. 40 -5.40 Top of Screen Screen Sch. 40 Screen to Riser Threaded **Protective Casing** Flush Mnt Measurements To 0.01' Riser Pipe Length 5.20 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" Prot Casing Length 6" Depth to Water NA Elevation of Water NA Free Product Depth NA Gal Removed Devel NA Gal Removed Purge NA -15.40 Bottom of Screen -15.60 Bottom of Borehole Completed By: Ron Minks UNITED SCIENCE INDUSTRIES

## Illinois Environmental Protection Agency LUST Well Completion Report Well Number: MW-21 Incident Number: 2000-1913 Date Drill Started: 4/22/2004 Towanda Mini Mart Site Name: USI Date Completed: 4/22/2004 **Drilling Contractor:** Ron Minks Driller: Grea Liggett Technician: Drilling Fluids: Drilling Method: Geoprobe 6600 w/augers NA Elevations - 0.01' Annular Space Details Ground Surface 0.00 Type of Surface Seal: Concrete Type of Annular Seal: Bentonite -0.50 Top of Casing Type of Bentonite: Pellet Type of Sand Pack: Filtration Sand Well Construction Materials Stainless **PVC** Top of Seal -2.10 Total Seal Interval 2.60 Steel Type Top of Sand 2" Upack -4.70 Type Riser Coupling Joint Threaded Riser Pipe Above wt Sch. 40 Riser Pipe Below wt -5.50 Top of Screen Sch. 40 Sch. 40 Screen Screen to Riser Threaded **Protective Casing** Flush Mnt Measurements To 0.01' Riser Pipe Length 5.00 Screen Length 10.00 10.00 Total Screen Interval Screen Slot Size 0.01" 6" **Prot Casing Length** Depth to Water NA Elevation of Water NA Free Product Depth NA Gal Removed Devel NA Gal Removed Purge NA -15.50 Bottom of Screen -15.70 Bottom of Borehole Completed By: Ron Minks UNITED SCIEN E INDUSTRIES

# APPENDIX E ANALYTICAL RESULTS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

Henson Oil - Towanda Early Action Data Soil Sampling - USI

	Location	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	F-1	F-2	F-3	PI-1	PI-2
	Date	12/29/2000	12/28/2000	12/28/2000	12/28/2000	12/28/2000	12/29/2000	12/29/2000	12/29/2000	12/29/2000	12/29/2000	12/28/2000	12/28/2000	12/29/2000
	Depth	6'	6'	6'	6'	6'	6'	6'	6'	12'	12'	12'	3'	3'
Parameter	Tier I CUO													
Benzene	0.03	ND	ND	ND	ND	ND	0.003	ND	0.006	0.13	0.003	ND	ND	0.009
Ethylbenzene	13.0	ND	ND	ND	ND	ND	0.006	ND	ND	1.55	ND	ND	0.007	0.012
Toluene	12.0	ND	0.016	ND	ND	ND	0.062	ND	0.003	0.033	0.027	ND	0.118	0.112
Total Xylenes	5.6	ND	0.011	ND	ND	ND	0.111	ND	0.022	0.135	0.008	ND	0.048	0.217
Numbers not bold indica	te actual quanti	ties, but are be	elow the TAC	Tier 1 Most	Stringent Soil	Clean-up Ob	ective.			000	0.000		0.010	0.217
BOLD & SHADING														
ND Not Detected (mg/			l											

Henson Oil - Towanda Site Assessment Data Soil Sampling -USI

	Location	BH-1A	BH-1B	BH-2A	BH-2B	BH-3A	BH-3B	BH-4A	BH-4B	BH-5A	BH-5B	BH-6A	BH-6B	BH-7A
	Date	3/29/2001	3/29/2001	3/29/2001	3/29/2001	3/29/2001	3/29/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001
	Depth	5'	9'	5'	9'	5'	9'	6'	12'	3'	6'	3'	6'	3'
Parameter	Tier I CUO													
Benzene	0.03	1.9	0.524	ND	ND	0.43	0.192	ND	0.015	ND	ND	0.021	0.613	ND
Ethylbenzene	13.0	3.69	4.36	ND	ND	0.809	0.58	ND	0.046	ND	ND	0.014	21.	0.019
Toluene	12.0	0.362	0.226	ND	ND	0.02	0.018	ND	0.003	ND	ND	0.002	1.84	ND
Total Xylenes	5.6	13.	8.29	ND	ND	0.677	0.222	ND	0.047	ND	ND	0.012	61.1	0.028
Numbers not bold indica							up Objectiv	e.						
BOLD & SHADING	Exceeds the TA	CO Tier 1 N	1ost Stringen	t Soil Clean-	up Objective									
ND Not Detected (mg/	(kg)													

Henson Oil - Towanda Site Assessment Data Soil Sampling -USI

	Location	BH-7B	BH-8A	BH-8B	BH-9	BH-10	BH-11	BH-12
	Date	5/17/2001	5/17/2001	5/17/2001	5/17/2001	9/18/2002	9/18/2002	9/18/2002
	Depth	6'	4'	6'	7'	7'	7'	7'
Parameter	Tier I CUO							
Benzene	0.03	ND	ND	ND	0.0072	ND	ND	ND
Ethylbenzene	13.0	0.167	2.35	17.	0.0821	ND	1.52	0.0045
Toluene	12.0	0.013	0.009	0.029	ND	ND	ND	ND
Total Xylenes	5.6	0.136	7.26	51.8	0.038	ND	0.158	ND
Numbers not bold indica	te actual quanti	t						
BOLD & SHADING	Exceeds the TA	ı						
ND Not Detected (mg	kg)							

#### Henson Oil-Towanda Site Assessment Data Groundwater Sampling -USI

	Location	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
	Date	4/9/2001	4/9/2001	4/9/2001	4/9/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001	5/17/2001	9/24/2002	9/24/2002	9/24/2002	4/16/2003
Parameter	Tier I CUO													
Benzene	0.005	3.47	ND	3.35	ND	0.24	0.234	2.43	0.46	ND	0.171	0.00236	ND	0.259
Ethylbenzene	0.7	1.23	ND	0.134	ND	0.88	1.1	1.89	4.24	0.061	0.0164	0.001	ND	0.954
Toluene	1.0	0.379	ND	0.071	ND	0.065	0.193	0.521	0.366	ND	0.109	0.0784	ND	0.0393
Total Xylenes	10.0	3.94	ND	0.194	ND	0.665	2.85	5.8	4.76	0.215	0.136	ND	ND	2.45
Numbers not bold indicat	e actual quanti	ties, but are	below the	TACO Tier	1 Most Str	ingent Grou	ndwater Clea	m-up Object	ive.					
BOLD & SHADING I	Exceeds the Mo	st Stringen	t Groundwa	ater Clean-u	p Objectiv	e.								
ND Not Detected (mL/	L)													

#### Henson Oil-Towanda Site Assessment Data Groundwater Sampling -USI

Location	MW-14	MW-15	MW-16	MW-17	MW-18
Date	4/16/2003	4/16/2003	4/28/2003	4/28/2003	4/28/2003
Tier I CUO					
0.005	0.29	ND	ND	ND	ND
0.7	0.331	0.168	ND	ND	ND
1.0	0.0207	ND	ND	ND	ND
10.0	0.0834	0.102	ND	ND	ND
te actual quantit					
Exceeds the Mo					
/L)					
	Date Tier I CUO 0.005 0.7 1.0 10.0	Date   4/16/2003   Tier   CUO	Date   4/16/2003   4/16/2003   Tier I CUO	Date   4/16/2003   4/16/2003   4/28/2003     Tier I CUO	Date   4/16/2003   4/16/2003   4/28/2003   4/28/2003     Tier I CUO

Henson Oil-Towanda Corrective Action Data Soil Sampling -USI

	Location	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	W-10	W-11	W-12	W-13	W-14	W-15	W-16	W-17	W-18
	Date	4/6/2004	4/6/2004	4/6/2004	4/6/2004	4/7/2004	4/7/2004	4/7/2004	4/13/2004	4/14/2004	4/14/2004	4/13/2004	4/13/2004	4/14/2004	4/16/2004	4/16/2004	4/19/2004	4/19/2004	4/19/2004
	Depth	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'	6'
Parameter	Tier I CUO								- "										
Benzene	0.03	0.0073	0.0459	0.0215	0.751	0.0051	0.0089	0.0036	0.0031	0.0073	0.0058	0.0283	0.0073	0.0052	0.0797	0.146	0.029	0.0791	0.0046
Ethylbenzene	13.0	ND	0.0062	0.0066	2.77	0.0046	0.0043	ND	0.0538	0.0156	0.0095	8.06	0.428	3.04	0.472	3.99	1.2	4.03	0.0047
Toluene	12.0	0.0035	0.00771	0.0062	0.0113	0.0107	0.00678	0.00867	0.00604	0.0167	0.0122	0.0556	0.0107	0.00773	0.0155	0.0577	0.0141	0.0467	0.00998
Total Xylenes	5.6	ND	0.0184	0.0113	0.0327	ND	0.0115	ND	0.0312	0.0249	0.0198	30.5	0.283	6.98	0.106	4.29	ND	ND	0.011
			SHADING	Exceeds					Most Stringen -up Objective		up Objective								

Henson Oil-Towanda Corrective Action Data Soil Sampling -USI

	Location	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-14	F-15	
	Date	4/6/2004	4/6/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/13/2004	4/13/2004	4/13/2004	4/14/2004	4/19/2004	4/19/2004	4/19/2004	4/19/2004	4/19/2004	
	Depth	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	
Parameter	Tier I CUO																
Benzene	0.03	0.713	0.141	1.38	ND	ND	ND	ND	ND	0.0033	ND	ND	ND	ND	ND	ND	
Ethylbenzene	13.0	2.08	0.901	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	12.0	0.0427	0.0266	0.00617	ND	0.00355	0.0032	0.00434	0.00435	0.00547	0.00493	0.00379	0.00328	0.00337	0.00331	0.00414	
Total Xylenes	5.6	0.147	0.0241	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
								Numbers no	t bold indica	ite actual qua	intities, but a	re below the	TACO Tier	1 Most Strin	gent Soil Cle	an-up Object	ive.
								BOLD & S	HADING	Exceeds the	TACO Tier	1 Most String	gent Soil Cle	an-up Objec	tive.		
								ND Not I	Detected (mg	/kg)							

#### Henson Oil-Towanda Corrective Action Data Groundwater Sampling - USI

	Location	MW-5	MW-6	MW-8	MW-10	MW-13	MW-14	MW-19	MW-20	MW-21	
	Date	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/5/2004	5/5/2004	5/5/2004	
Parameter	Tier I CUO										
Benzene	0.005	0.167	0.156	0.261	0.176	0.144	0.314	ND	0.00642	ND	
Ethylbenzene	0.7	0.345	1.3	0.818	0.179	0.426	0.183	ND	0.0106	ND	
Toluene	1.0	0.0212	0.208	0.0384	0.0119	0.0142	0.0161	ND	ND	ND	
Total Xylenes	10.0	0.123	2.47	0.287	0.0509	0.59	0.0308	ND	0.0842	ND	
Numbers not bold indicate	e actual quantit	ies, but are b	elow the TA	CO Tier 1 N	lost Stringen	t Groundwat	er Clean-up (	Objective.			
BOLD & SHADING I	Exceeds the Mo	st Stringent	Groundwater	r Clean-up O	bjective.						
ND Not Detected (mL/I	L)										

## **APPENDIX F**

## CORRECTIVE ACTION BUDGET AND CERTIFICATIONS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

#### Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 2000-1913. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 III. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 III. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:
Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).  Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.  Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.
Owner/Operator: Henson Oil Company
Authorized Representative: Jerry Henson Title: Representative
Signature: Date: 4/23/DECENIE
Subscribed and sworm to before me the 3 day of the state
OFFICIAL SEAL  A DOLL BOWE
NOTARY PUBLIC, STATE OF ILLINOIS
(Notary Public)  MY COMMISSION EXPIRES 03-18-2025
In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer
or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget,
or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 III. Adm. Code
732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations
to the Illinois EDA, including but not limited to fines, imprisonment, or both as provided in Sections William 57, 17 of the
to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].
L.P.E./L.P.G.: Vince E. Smith  L.P.E./L.P.G. Seal: 46118
L.P.E./L.P.G. Signature: Date: 12 Company Date: 12 Compan
SH M
Subscribed and sworn to before me the OFFICIAL SEAL OFFICIAL SEAL
CAROL L. ROWE
(Notary Public) NOTARY PUBLIC: STATE OF ILLINOIS }
MY COMMISSION EXPIRES 03-18-2025 } The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is
The minute Elittle damping to require the minute and the record of the blooks of the minute and the

required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

000114



## Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

#### General Information for the Budget and Billing Forms

LPC #: 0190805029		Coi	unty:		McLean
City: Towanda		Site N	ame:		Henson Oil Co.
Site Address: Old Hig	jhway 66				
Date this form was pro	epared: Apr 12, 2022	<del></del>			
List all IEMA Incident	numbers associated w	ith this pac	kage:		<u>.                                    </u>
2000-1913					
List all other incidents	s associated with this s	ite that are	not associated	with this packa	ige:
This form is being sul	bmitted as a (check one	e, if applical	ble):		
○ Billing Package					
OBudget Amendm	nent (Budget amendment	ts must inclu	de only the costs	s over the previo	us budget.)
⊗ Budget Proposal	J				
Please provide t	he name(s) and date(s) o	of report(e) d	ocumenting the	costs requested	
·			-		
					RECEIVE
Date(s):					MAY 0 9 2022
	submitted for the site	activities in	dicated below:		
35 III. Adm. Code 7	34:				IEPA/BC
☐ Early Action	moval after Early Action				
<del></del>	1 S	tage 1:	Stage 2:	Stage 3:	
✓ Corrective Action			v L	v _	
35 III. Adm. Code 7	7 <b>2</b> 2•				
Early Action	, <b>42.</b>	,			
	moval after Early Action				
☐ Site Classification					
Low Priority Corr					
High Priority Cor	rective Action				
35 III. Adm. Code 7	731:				
Site Investigation	1				·
Corrective Action	1				

#### Electronic Filing: Received, Clerk's Office 07/24/2024 General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund for this package.

Pay to the order of:	Henson Oil Compa	ny		•			
Send in care of:	CWM Company, In	C.					
Address:	701 South Grand A	venue West					
City:	Springfield			State:	IL .	Zip: 6270	4
The payee is the:	Owner 🗌	Operator	(Check one	or both.)			
	A 32				4/2	3/22	• . •
Signature of	the owner or operate	or of the UST(s)	(required)	,	Date	) ————	
JER	RY A. HENS	37				st be submitte	ed. <u>a W-9 Form</u> .
Printed name of	of the owner or opera	ator of the UST(	s) (required)	(	Click Her	e to print on	a vv-5 FUIII).
Email:	· · · · · · · · · · · · · · · · · · ·					•	
Number of petroleur parent or joint stock joint stock company	company of the ow	ner or operator					
		Fewer	than 101: (	101 o	r more: (		

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST		Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
gasoline	8000	Yes 💭	No 🔾	2000-1913	TK & Pipe Leak/ Overfills
gasoline	8000	Yes 💭	No 🔾	2000-1913	Overfill
gasoline	8000	Yes 💭	No 🔾	2000-1913	TK & Pipe Leak/ Overfill
		Yes 🔾	No 🔾		
		Yes 🔾	No 🔾		
.e.	•	Yes 🔾	No 🔾		
		Yes 🔾	No 🔾		
		Yes 🔾	No 🔾		

#### **Budget Summary**

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Correc Actio	
					Propo	sed
Drilling and Monitoring Well Costs Form	\$	\$	\$	\$	\$ 8,	,404.20
Analytical Costs Form	\$	\$	\$	\$	<b>\$</b> 3,	,968.54
Remediation and Disposal Costs Form	\$	\$	\$	\$	\$	
UST Removal and Abandonment Costs Form	\$	\$	\$	\$	\$	
Paving, Demolition, and Well Abandonment Costs Form	\$	\$	\$	\$	\$	
Consulting Personnel Costs Form	\$	\$	\$	\$	<b>\$</b> 16,	,894.26
Consultant's Materials Costs Form	\$ .	\$	\$	\$	\$	339.20
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.					
Total	\$	\$	\$	\$	\$ 29,	606.20

### **Drilling and Monitoring Well Costs Form**

#### 1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
5	HSA	15.00	75.00	Replacement MWs (MW-5,MW-6,MW-8,MW-10,MW-14)
1	PUSH	5.00	5.00	Soil Gas Vapor sample
7	PUSH	10.00	70.00	drilling (W2, W4, W11, W13, W14, W15, W17)
6	PUSH	10.00	60.00	Proposed SBs to accurately define extent of soil plume
3	PUSH	15.00	45.00	drilling (F1, F2, F3)
				,

Subpart H minimum payment amount applies.

	Total Feet	Rate per Foot (\$)	Total Cost (\$)
Total Feet via HSA:	75.00	31.16	2,337.00
Total Feet via PUSH:	180.00	24.39	4,390.20
Total Feet for Injection via PUSH:			
		Total Drilling Costs:	6,727.20

#### 2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed (\$)
5_	HSA	2.00	15.00	75.00
	•	· · · · · · · · · · · · · · · · · · ·		

Well Installation	Total Feet	Rate per Foot (\$)	Total Cost (\$)
Total Feet via HSA:	75.00	22.36	1,677.00
Total Feet via PUSH:		16.94	
Total Feet of 4" or 6" Recovery:		33.87	
Total Feet of 8" or Greater Recovery:		55.55	
		Total Well Costs:	1,677.00

Total Drilling and Monitoring Well Costs:	\$8,404.20
---	------------

## **Analytical Costs Form**

Chemical Analysis  BETX Soil with MTBE EPA 8260  BETX Water with MTBE EPA 8260  COD (Chemical Oxygen Demand)	22 5	X										
BETX Water with MTBE EPA 8260 COD (Chemical Oxygen Demand)		Х	•									
COD (Chemical Oxygen Demand)	5		115.16	=	\$2,533.52							
		X	109.74	=	\$548.70							
A		X		=								
Согтоѕіvіtу		X		=								
Flash Point or Ignitability Analysis EPA 1010		X		=								
Fraction Organic Carbon Content (foc) ASTM-D 2974-00		X		=								
Fat, Oil, & Grease (FOG)		X		=	_							
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x		=								
Dissolved Oxygen (DO)		X		=								
Paint Filter (Free Liquids)		Х		=								
PCB / Pesticides (combination)		Х		=								
PCBs		Х		=								
Pesticides		Х		=								
рН		X		=								
Phenol	_	Х		=								
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270		X		=								
Polynuclear Aromatics PNA, or PAH WATER EPA 8270		X		=								
Reactivity		X		=								
SVOC - Soil (Semi-Volatile Organic Compounds)		X		=								
SVOC - Water (Semi-Volatile Organic Compounds)		Х		=	<u>,</u>							
TKN (Total Kjeldahl) "nitrogen"		X		=								
TPH (Total Petroleum Hydrocarbons)		X		=								
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		Х		=								
VOC (Volatile Organic Compounds) - Water		X		=	•							
Vapor Intrusion Sampling	1	X	315.00	=	\$315.00							
Air Canister Rental	1	X	45.00	=	\$45.00							
Regulator Rental	1	X	25.00	=	\$25.00							
		<u>X</u>		=								
		X		=								
Geo-Technical Analysis			1	=								
Soil Bulk Density (pb) ASTM D2937-94		<u> </u>	<del>                                     </del>	-								
Ex-situ Hydraulic Conductivity / Permeability		X										
Moisture Content (w) ASTM D2216-92 / D4643-93		X	<del> </del>	=								
Porosity 5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1	X		=								
Rock Hydraulic Conductivity Ex-situ	<del>                                     </del>											
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		X	<del> </del>	=								
Soil Classification ASTM D2488-90 / D2487-90		X	<del> </del>	-								
Soil Particle Density (p <sub>s</sub> ) ASTM D854-92		X		=								
		<u>X</u>		-								
		X		=								

#### **Analytical Costs Form**

Metals Analysis					
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)		X		=	
Soil preparation fee for Metals Total Soil (one fee per soil sample)		x		=	
Water preparation fee for Metals Water (one fee per soil sample)		X	<del> </del>	╽┋	
vvaler preparation lee for inletals vvaler (one lee per water sample)		<del>  ^</del>		<del>-</del>	
Arsenic TCLP Soil		Х		=	
Arsenic Total Soil		Х		=	
Arsenic Water		X		=	
Barium TCLP Soil		X		=	
Barium Total Soil		X		=	
Barium Water		Х		=	
Cadmium TCLP Soil		X		=	
Cadmium Total Soil		X		=	
Cadmium Water		Х		=	
Chromium TCLP Soil		Х		=	
Chromium Total Soil		X		=	
Chromium Water		Х		=	
Cyanide TCLP Soil		Х		=	
Cyanide Total Soil		Х		=	
Cyanide Water		X		=	
Iron TCLP Soil		X		=	
Iron Total Soil		х		=	
Iron Water		X		=	
Lead TCLP Soil		X		=	
Lead Total Soil		X		=	
Lead Water		X		=	
Mercury TCLP Soil		Х		=	
Mercury Total Soil		х		=	
Mercury Water		X		=	
Selenium TCLP Soil		X		=	
Selenium Total Soil	-	x	<del>                                     </del>	=	
Selenium Water		X		=	
Silver TCLP Soil		X		=	
Silver Total Soil		X		=	
Silver Water		X		=	
Metals TCLP Soil (a combination of all metals) RCRA		X			
Metals Total Soil (a combination of all metals) RCRA		X		┢┋	
Metals Water (a combination of all metals) RCRA		x	-	=	
model visite (a combination of all metals) Notos		X		=	
		X	1	=	
		X		=	
		X			
Other			L		<u> </u>
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	22	X	13.55	=	\$298.10
Sample Shipping per sampling event <sup>1</sup>	3	Х	67.74		\$203.22
Cample Omphing her sampling event	<u> </u>		U1.17		Ψ200,22

<sup>&</sup>lt;sup>1</sup>A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day.

Total Analytical Costs: \$ 3,968.54

## **Consulting Personnel Costs Form**

Employee Name	<b>e</b>	Personnel Title	Hours	Rate* (\$)	Total Cost		
Remediation Category		Task					
		<del>,</del>	<u> </u>	1 1			
		Senior Project Manager	30.00	135.48	\$4,064.40		
CCAP	Corrective Action	n Plan Design and Preparation					
		Senior Prof. Engineer	2.00	176.13	\$352.26		
CCAP	Corrective Actio	n Plan Review and Certification					
·		Senior Admin. Assistant	2.00	60.97	\$121.94		
CCAP	Corrective Actio	n Plan Compilation, Assembly and					
		Senior Draftperson/CAD	6.00	81.28	\$487.68		
CCAP							
		T		<u> </u>			
					<del>-</del>		
	<del></del>						
			<u> </u>				
<u> </u>	<u> </u>		<u> </u>				
	1						

Employee Name	•	Personnel Title	Hours	Rate* (\$)	Total Cost	
Remediation Category		Task				
			<del>1</del>	· · · · · · · · · · · · · · · · · · ·		
		Senior Project Manager	8.00	135.48	\$1,083.84	
CCAP-Budget	Corrective Actio	n Budget Design, Calculations and	Inputs			
			· · · · · · · · · · · · · · · · · · ·			
		Senior Prof. Engineer	2.00	176.13	\$352.26	
CCAP-Budget	Corrective Actio	n Budget Review and Certification				
		L				
	<u></u>					
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			<u>-</u>			
	<u> </u>					
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Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task			<u>-</u> .
	· · · · · · · · · · · · · · · · ·	1		1	
		Senior Project Manager	6.00	135.48	\$812.88
CCA-Field	Office Prep, Sch	neduling, Drilling Arrangements/JUL	IE/		
	<del></del>	T			
	<del></del>	Senior Technician	10.00	88.06	\$880.60
CCA-Field	Drilling/Samplin	g for Soil-Gas Vapor Sample, Instal	lation of MWs		
	·	Engineer III	12.00	135.48	\$1,625.76
CCA-Field	Drilling/Sampling/Field Preparation for Soil-Gas Vapor Sample & Installation of MWs				
		1		1	
		Senior Project Manager	10.00	135.48	\$1,354.80
CCA-Field	Field Prep/ Sam	pling Delivery Arrangements/Sampl	ing Newly Instal	led Monitoring V	/ells
		Senior Technician	8.00	88.06	\$704.48
CCA-Field	Sampling Newly	Installed Monitoring Wells			
		T			
		Engineer III	6.00	135.48	\$812.88
.TACO 2 or 3	TACO Tier 2 CL	JO Development			
		Senior Project Manager	5.00	135.48	\$677.40
TACO 2 or 3	Contaminant Tra	ansport Modeling / Assessment of C	ontamination Le	evels/Plume	
		C D			<del>-</del> -
		Senior Project Manager	6.00	135.48	\$812.88
CCA-Field	Boring Logs / Fig	eld Reports			
		Senior Project Manager	8.00	135.48	\$1,083.84
CCA-Field	Agency Corr/Dis	cussion/Document/Review/Tabulate	e Analytical Res	ults for GW/Soil-	Gas Sampling

Employee Name	<u> </u>	Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task			
		1	· · · · · · · · · · · · · · · · · · ·	<del></del>	
		Senior Prof. Engineer	2.00	176.13	\$352.26
CA-Pay	Corrective Actio	n Reimbursements Certification		•	
		T		1	
		Senior Acct. Technician	16.00	74.51	\$1,192.16
CA-Pay	Corrective Actio	n Reimbursements Preparation, Ca	Iculations and Ir	puts	
		Senior Admin. Assistant	2.00	60.97	\$121.94
CA-Pay	Corrective Actio	n Reimbursements Compilation, As	sembly and Dist	ribution	
	T				
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<sup>\*</sup>Refer to the applicable Maximum Payment Amounts document.

Total of Consulting Personnel Costs \$16,894.26
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#### **Consultant's Materials Costs Form**

Materials, Equipment	, or Field Purchase	Time or Amount Used	Rate (\$)	Unit	Total Cost
Remediation Category		Description	Justification	_	
Postage		2.00	12.00	/each	\$24.00
CCAP	Distribution of Correctiv	e Action Forms / Plan			
PID		1.00	75.00	/day	\$75.00
CCA-Field	Monitoring During Soil I	Boring Drilling/Samplin	ng Activities		
Sampling Supplies		1.00	25.00	/day	\$25.00
CCA-Field	Disposable latex gloves	s, bags, deionized wat	er, measuring wh	neel, sampli	ng supplies
Mileage		296.00	.57	/mile	<b>\$170.20</b>
· CCA-Field	2 Drilling/Sampling Rou		l		·
Water Indicator		1.00	24.00	. /day	\$24.00
CCA-Field	Depth to GW during dril	lling			
Postage		2.00	10.50	/each	\$21.00
CA-Pay	Distribution of Correctiv	e Action Reimbursem	ent Packages / D	)rafts / Form	15
		<u></u>	I	<b>_</b>	

Total of Consultant Materials Costs

## APPENDIX G

# TACO VARIABLES AND EQUATIONS & HYDRAULIC CONDUCTIVITY CALCULATIONS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity

				or Calcul	anng	_	Conductivity
Projec	et Name:	Towanda Mi	ini Mart			Project No.:	1800118
Clier	nt Name:	Henson Oil	Company		Ic	dentification:	MW-4
Use	r Name:	JB					
	un Date:	<del>/-</del>			10.00	THIBLE	
		ipe Diameter:	0.167	feet			
1		ake Diameter:					
					1.00		
_		ntake Length:		feet			
Satu		lumn Length:		feet			
1	Water	Table Depth:	2.64	feet	0.10		
	Aquit	fer Thickness:	10	feet			
	Line Fit	Starting No.:	1	Min 1 to			
		t Ending No.:		Max 81	0.01	0.00 =2.00	4:00 6:00 6:00
		Output Units:		1 to 9		0.00 = = = :2:00 =	= :4:00= = = :6:00= = = :8:00
	эрссиу (	•		· i			
	<b>.</b>	K(h):		CIII./ Sec.	0.00	<b>_</b>	
		n Coefficient:	0.9808			- XC14 OD	
Meas.	Time		Drawdown/up		L	ine Fit To LN(Yt)	Regression On LN(Yt)
# 1\1	minutes 0.08	feet 1.07	feet 1.57			0.449	-0.079
2)	0.08	1.13	1.51			0.409	-0.088
3)	0.10	1.26	1.38			0.322	-0.096
4)	0.11	1.37	1.27			0.238	-0.105
5)	0.12	1.12	1.52			0.421	-0.114
6)	0.13	1.45	1.19			0.173	-0.123
7)	0.15	1.70	0.94		_	-0.061 0.216	-0.132 -0.140
8)	0.16 0.17	1.40	1.24		_	0.105	-0.149
9)	0.17	1.53	1.11			0.107	-0.158
11)	0.19	1.56	1.08			0.077	-0.167
12)	0.20	1.56	1.09			0.082	-0.176
13)	0.21	1.63	1.01			0.013	-0.185
14)	0.22	1.64	1.00			0.003	-0.193
15)	0.24	1.63	1.01			0.006 -0.033	-0.203 -0.212
16)	0.25 0.26	1.67 1.73	0.97 0.91			-0.093	-0.223
18)	0.25	1.77	0.87	-	<del></del>	-0.139	-0.234
19)	0.29	1.68	0.96			-0.044	-0.246
20)	0.31	1.67	0.97			-0.029	-0.258
21)	0.32	1.82	0.82			-0.202	-0.271
22)	0.34	1.85	0.79			-0.237	-0.285
23)	0.36	1.87	0.77			-0.267	-0.300 -0.315
24)	0.38	1.90 1.92	0.74 0.72	-		-0.300 -0.334	-0.315
25) 26)	0.40 0.42	1.95	0.72	<del>  </del>		-0.370	-0.352
27)	0.42	1.97	0.67	<del>                                     </del>		-0.403	-0.368
28)	0.47	2.00	0.64		·	-0.442	-0.388
29)	0.50	2.01	0.63			-0.465	-0.408
30)	0.52	2.05	0.59			-0.533	-0.431
31)	0.55	2.08	0.56			-0.573	+0.454 0.470
32)	0.58	2.10	0.54		_	-0.616	-0.479 -0.505
33)	0.62	2.13 2.15	0.52 0.49	<b></b>		-0.664 -0.707	-0.533
35)	0.65	2.17	0.49			-0.755	-0.562
337	<b>U.</b> ∪∋		Ų. <u>Ψ/</u>		_	<del></del>	

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity

				r Calcul			Conductivity
Proje	ct Name:	Towanda Mi	ni Mart		Pro	oject No.:	1800118
Clie	nt Name:	Henson Oil C	Company		Ident	tification:	MW-4
Use	er Name:	JB					
	un Date:	<u></u>			10.00		
		ipe Diameter:	0.167	feet	Ē		
		ike Diameter:	0.67				+
		ntake Length:		feet	1.00		
١		•		feet			
San		lumn Length:			0.10		
		Table Depth:	2.64		0.10		
	-	er Thickness:		feet	ŀ		
		Starting No.:		Min 1 to	0.01		
	Line Fi	t Ending No.:	<i>7</i> 5	Max 81	0.01	2.00	4:00 6:00 8:00
	Specify (	Output Units:	7	1 to 9			
	- •	K(h):	3.57E-04	cm./sec.	0.00		
1 (	Correlatio	n Coefficient:	0.9808		0.00		
Meas.	Time		Drawdown/up		Line I	Fit To	Regression On
#	minutes	feet	feet		LN		LN(Yt)
36)	0.73	2.19	0.45			-0.801	-0.593
37)	0.77	2.21	0.43			-0.851	-0.626 -0.661
38)	0.82	2.23	0.41 0.39			-0.899 -0.955	-0.698
39) 40)	0.86	2.27	0.37		<del></del>	-1.005	-0.738
41)	0.97	2.30	0.35			-1.064	-0.779
42)	1.02	2.31	0.33			-1.115	-0.823
43)	1.08	2.33	0.31			-1.171	-0.870
44)	1.14	2.35	0.29			-1.228	-0.920 -0.972
45)	1.21	2.36	0.28 0.26			-1.284 -1.343	-1.027
46)	1.28 1.35	2.40	0.24	<del></del>		-1.411	-1.086
48)	1.43	2.41	0.23			-1.465	-1.149
49)	1.52	243	0.22			-1.537	-1.215
50)	1.61_	2.44	0.20			-1.599	-1.285
51)	1.70	2.45	0.19		-	-1.666 -1.737	-1.359 -1.437
52)	1.80 1.90	2.46 2.48	0.18 0.16			-1.808	-1.520
53) 54)	2.02	2.49	0.15			-1.890	-1.608
55)	2.13	2.50	0.14			-1.959	-1.701
56)	2.26	2.51	0.13			-2.048	-1.800
57)	2.39	2.52	0.12			-2.129	-1.905 -2.016
58)	2.53 2.68	2.53 2.54	0.11 0.10			-2.207 -2.293	-2.016
59) 60)	2.84	2.55	0.10			-2.354	-2.258
61)	3.01	2.55	0.09			-2.453	-2.389
62)	3.17	2.56	0.08			-2.551	-2.521
63)	3.34	2.57	0.07			-2.659	-2.652
64)	3.51	2.58	0.06			-2.765 -2.830	-2.784 -2.915
65)	3.67 3.84	2.58	0.06 0.05			-2.830 -2.919	-3.047
66)	4.01	2.59	0.05			-3.037	-3.178
68)	4.17	2.60	0.04	-		-3.170	-3.310
69)	4.34	2.60	0.04			-3.270	-3.442
70)	4.51	2.61	0.03			-3.381	-3.573

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity

D*-				n Caica	_	Project No.:	1000110
•	ct Name:	Towanda Mi				•	
		Henson Oil	Company		ide	entification:	MVV-4
	er Name:	JB			10.00		
R	lun Date:		· · · · · · · · · · · · · · · · · · ·		10.00		
	Riser Pi	ipe Diameter:	0.167	feet			
	Inta	ke Diameter:	0.67	feet	1.00	\$	
	Īı	ntake Length:	10	feet	2.00		
Sat		lumn Length:		feet			
		Table Depth:		feet	0.10		
		er Thickness:		feet			
	-			Min 1 to		<u> </u>	
		Starting No.:		.	0.01		****
		Ending No.:		Max 81	(	0.00 2.00	4:00 = 6:00 = 8:00
	Specify (	Output Units:		1 to 9		ļ::::::::	
		K(h):		cm./sec.	0.00	1	
		n Coefficient:	0.9808				
Meas.	Time		Drawdown/up	•		ne Fit To	Regression On
#	minutes	feet	feet	,		LN(Yt)	LN(Yt)
71)	4.67	2.61	0.03			-3.474 -3.650	-3.705 -3.836
72) 73)	4.84 5.01	2.61 2.62	0.03		<del></del>	•3.689	-3.968
74)	5.17	2.62	0.02			-3.817	-4.099
75)	5.34	2.62	0.02			-3.963	-4.231
76)	5.51	2.63	0.02			-4.200	-4.363
77)	5.67	2.63	0.01			-4.343	-4.494
78)	5.84	2.63	0.01			<b>-4.605</b>	4.626
79) 80)	6.01	2.63 2.64	0.01			-4.962 -5.521	-4.757 -4.889
81)	6.17 6.34	2.64	0.00			-6.908	-5.020
1 017	0.51	201	0.00			0.500	
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#### R-26 Input/Summary Sheet

ı ver	sion: 3/26/2018	1				
IEMA Incident # (6		2000-1913			·	
IEPA LPC # (10 di		1131055007				
Site Name:	3.11	Henson Oil Company				
Site Address:		Old Hwy 66				
City:		Towanda				
County:		McLean			···	
Zip Code:		61776				
SSL Equations Us	ed.	S5.6,7,8,9,10,17,18,19,20,21	22.24			
RBCA Equations		R-1, R-2, R3	,,_			
	r Individual who Performed Calcula					
Land Use:	Tillet Todat Wile I Cite I lice Gallery	Residential & Constructi	on Worker	1		
Objective from S1	7 used in R26:	No	1			
Groundwater:			I			
Standard or Mass	Limit Equations:		i	If Mass Lin	nit, then Specifiy Acres: \	
	ume for Mass Limit Eq.:	0.00	,			use this # above
Date Data is Enter		February 25, 2020				
Entry	Description					•
	Holcomb Bulk Density (pcf),	or	Shelby Tub	e Location:		
1.65		or kg/L): 1.5, or Gravel =2.0,			, or site specific	
	, , , , , ,				·	
2.65	ps - Soil Particle Density		Reference			
0.377	Total Soil Porosity		0.377	0.377		
0.328	Water Filled Porosity		0.328	0.328		
0.049	Air Filled Porosity		0.049	0.049		
0.346	87 - Total Soil Porosity (RBC	(A)	0.43 or, Gravel -	0.25; Sand = 0.32	; Silt = 0.40; Clay = 0.36	
0.252	w - Average Soil Moisture Co	ontent	0.1, or: Subsurface	Soil (top 1m) = 0.1;	Subsurface Soil (below 1 m) =(	).2; or Site Specific
Silt Clay	USDA Soil Classification (Pid				· · · · · · · · · · · · · · · · · · ·	Entry
		·			Occasio Matter (94):	
					Organic Made (70).	
0.03600	Fractional Organic Carbon	(foc) in a/a			Organic Matter (%):	
0.03600	Fractional Organic Carbon	(foc) in g/g			Organic Matter (mg/kg):	0.036
						0.036
3.57E-04	Average Hydraulic Conductivity	(cm/sec) Well Name			Organic Matter (mg/kg):	0.036
	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c	(cm/sec) Well Name m/sec) t MW-4		Tota	Organic Matter (mg/kg): I Organic Carbon (g/g):	
3.57E-04 3.57E-04	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c	(cm/sec) Well Name cm/sec) t MW-4 m/sec) i	Meters	Tota Hydra	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations	s
3.57E-04 3.57E-04 0.02140	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for site	(cm/sec) Well Name cm/sec) t MW-4 m/sec) i	Meters	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations  21	97.35
3.57E-04 3.57E-04 0.02140	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>0</sub> - Aquifer Thickness (ft)	(cm/sec) Well Name cm/sec) t MW-4 m/sec) t es with no groundwater)	3.048 m	Tota Hydra	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for site d <sub>a</sub> - Aquifer Thickness (ft) d <sub>4</sub> - Depth of Source (ft) (Vertical Th	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination)		Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations  21	97.35
3.57E-04 3.57E-04 0.02140	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (ft) d <sub>4</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to	3.048 m 3.048 m	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140	Average Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (fi) d <sub>a</sub> - Depth of Source (fi) (Vertical Th X - Distance along the centerline of setback zone or surface water from	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to	3.048 m	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>0</sub> - Aquifer Thickness (ft) d <sub>x</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA)	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to the source in the direction of	3.048 m 3.048 m 0 cm	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (ft) d <sub>a</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA) L - Source Length Parallel to	(cm/sec) Well Name (cm/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft)	3.048 m 3.048 m 0 cm 39.3192 m	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>0</sub> - Aquifer Thickness (ft) d <sub>x</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA)	(cm/sec) Well Name (cm/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft)	3.048 m 3.048 m 0 cm	Tota Hydra MW	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (ft) d <sub>a</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA) L - Source Length Parallel to	(cm/sec) Well Name (cm/sec) t MW-4 m/sec) t es with no groundwater) ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft)	3.048 m 3.048 m 0 cm 39.3192 m	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (ft) d <sub>a</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA) L - Source Length Parallel to	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft) I plane (ft) (RBCA)	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g):  ulic Gradient Calculations 21	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit da - Aquifer Thickness (fi) d Depth of Source (fi) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (fi) (RBC) L - Source Length Parallel to Sw: Source Width -horizonta tition of Contaminant in groundwater	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft) I plane (ft) (RBCA)	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>a</sub> - Aquifer Thickness (fi) d <sub>4</sub> - Depth of Source (fi) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (fi) (RBC) L - Source Length Parallel to Sw: Source Width -horizonta	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft) I plane (ft) (RBCA)  water at distance X from the so	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for six da - Aquifer Thickness (ft) d Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA) L - Source Length Parallel to Sw: Source Width -horizonta 1 Ition of Contaminant in groundy Benzene Toluene	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft) I plane (ft) (RBCA)  water at distance X from the so	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Falling Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit d <sub>0</sub> - Aquifer Thickness (ft) d <sub>4</sub> - Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (RBCA) L - Source Length Parallel to Sw: Source Width -horizonta 1 stion of Contaminant in groundw Benzene Toluene Ethylbenzene	(cm/sec) Well Name m/sec) t MW-4 m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of  Groundwater Flow (ft) I plane (ft) (RBCA)  water at distance X from the so	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
3.57E-04 3.57E-04 0.02140 10 10	Average Hydraulic Conductivity Falling Hydraulic Conductivity (c Rising Hydraulic Conductivity (c Hydraulic Gradient (0.02 for sit da - Aquifer Thickness (ft) d Depth of Source (ft) (Vertical Th X - Distance along the centerline of setback zone or surface water from groundwater flow (ft) (R8CA) L - Source Length Parallel to Sw: Source Width -horizonta 1 Ittion of Contaminant in groundw Benzene Toluene Ethylbenzene - Total Xylenes	(cm/sec) Well Name m/sec) t MW-4 m/sec) t m/sec) t es with no groundwater)  ickness of Contamination) the groundwater plume emanating to the source in the direction of Groundwater Flow (ft) I plane (ft) (RBCA)  water at distance X from the so	3.048 m 3.048 m 0 cm 39.3192 m 2743.2 cm	Hydra MVV MVV	Organic Matter (mg/kg): I Organic Carbon (g/g): Ulic Gradient Calculations 21 14 Distance:	97.35 94.59
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Mass Limit Equations

SSL Equations Needed

☑ Inhalation Equations

▼ Groundwater Ingestion Equations

Csat Equations

☐ Fugitive Dust Equations

☑ Ingestion Equations

#### Text discussion for "i", L, da, ds, Sw, Sd The Hydraulic Gradient (i) was determined from an onsite survey of each of the groundwater monitoring wells. The riser elevations were determined and the depth to groundwater was noted in each well. This data was used to generate a Hydraulic Gradient potentiometric flow map with contour lines which show potentiometric head. A corresponding flow line, perpendicular to the contour lines, was determined between two known points of groundwater elevation. The hydraulic gradient was determined by the difference in elevation divided by the length of flow between the points. The Source Length Parallel to Groundwater Flow (L) was determined from the site map and analytical results. A value of Source Length 45.1104 m was used to encompass the length of contamination parallel to groundwater flow. This value is the distance between soil borings BH-1 and BH-2. Aquifer Thickness The Aquifer Thickness (da) is a site specific value determined by the length of the monitoring well screen. The Aquifer 4Thickness value used in the modeling equations was 3.048 meters. The Depth of Source (d,) was determined from the analytical results and soil boring logs. A value of 3.048 m was used to Depth of Source encompass the vertical thickness of contamination based upon a clean soil sample at BH-1A, "hot" samples at BH-2B and BH-2C, and a clean soil sample at BH-2D. Thus the vertical thickness of soil contamination has been determined to be 3.048 m. The source width perpendicular to groundwater flow direction in the Horizontal Plane (S<sub>n</sub>) was determined from the site Source Width map and analytical results. A value of 3566.16 cm was used to encompass the width of contamination in the horizontal plane. This value is the distance between clean wells MW-4 and and MW-6. The source width perpendicular to groundwater flow direction in the Vertical Plane (Sd) was determined from the soil Source Depth boring logs and analytical results. A value of 304.8 cm was used to encompass the width of contamination in the vertical plane based on the depths of contamination present and the PID readings from the bore logs. Distance (X)

			BEN	ZENE				
	Soil Exceed	lances			L	Groundwater Exceed	ances	
	Soil	X	Gw <sub>obj</sub> (mg/L)	C(x)		Groundwater	X	C(x
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location	Concentration (mg/L)	(ft)	(mg/
W2	0.0459	1	0.001	0.0011	MW5	0.092	155	0.00
W4	0.751	81	0.019	0.0050	MW6	0.089	154	0.00
W14	0.0797	1	0.002	0.0020	MW8	0.006	17	0.00
W15	0.146	1	0.004	0.0036	MW10	0.028	99	0.00
W17	0.0791	1	0.002	0.0019	MW14	0.314	220	0.00
F1	0.173	1	0.004	0.0043	MW13	0.144	178	0.00
F2	0.141	1	0.004	0.0035	MW1	3.47	380	0.00
F3	1.38	109	0.034	0.0050	MW3	3.35	378	0.005
EA-F1	0.13	1	0.003	0.0032	MW7	2.43	354	0.009
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			Tolu	iene				
	Soil Exceed	lances				Groundwater Exceed	lances	
	Soil	X	Gw <sub>obj</sub> (mg/L)	C(x)	l	Groundwater	X	C(x)
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location	Concentration (mg/L)	(ft)	(mg/L)
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			Ethylb	enzene								
	Soil Exceed	lances				Groundwater Exceed	lances					
	Soil	Х	Gw <sub>obj</sub> (mg/L)	C(x)		Groundwater	X	C(x)				
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location	Concentration (mg/L)	(ft)	(mg/L)				
					MW 6	1.300	14	0.6916				
					MW 8	0.818	4	0.6777				
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GROUND	WATER CLEAN-UP	OBJECTIVE	S	
	(mg/L)			
	Most Stringent	Class I	Class II	ADLs
Parameter	CUO	GW	GW	(U)
Benzene	0.005	0.005	0.025	<0.002
Ethylbenzene	0.7	0.7	1	<0.002
MTBE	0.07	0.07	0.07	<0.005
Toluene	1.0	1.0	2.5	<0.002
Total Xylenes	10.0	10.0	10.0	<0.005
Acenaphthene	0.42	0.42	2.1	<0.018
Acenaphthylene <sup>^</sup>	0.21	0.21	1.05	<0.010
Anthracene	2.1	2.1	10.5	<0.0066
Benzo(a)anthracene	0.00013	0.00013	0.00065	<0.00013
Benzo(a)pyrene	0.0002	0.0002	0.002	<0.0002
Benzo(b)fluoranthene	0.00018	0.00018	0.0009	<0.00018
Benzo(g,h,i)perylene^	0.21	0.21	1.05	<0.00076
Benzo(k)fluoranthene	0.00017	0.00017	0.00085	<0.00017
Chrysene	0.0015	0.0015	0.0075	<0.0015
Dibenz(a,h)anthracene	0.0003	0.0003	0.0015	<0.0003
Fluoranthene	0.28	0.28	1.4	<0.0021
Fluorene	0.28	0.28	1.4	<0.0021
ndeno(1,2,3-cd)pyrene	0.00043	0.00043	0.00215	< 0.00043
Naphthalene	0.14	0.14	0.22	<0.010
Phenanthrene^	0.21	0.21	1.05	<0.0064
Pyrene	0.21	0.21	1.05	< 0.0027

#### Summary of Tier 2 Calculations Henson Oil Company 2000-1913 02/25/20

Table 3

Tier 1 Objectives

	Ben	zene	Toluene		Ethylbenzen	ie	Total Xylene	s	Naphthalen	е	MTBE	
Residential Ingestion	12	mg/kg	16,000	mg/kg	7,800	mg/kg	16,000	mg/kg	1,600	mg/kg	780	mg/kg
Inhalation	0.8	mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	170	mg/kg	8,800	mg/kg
Migration Class 1	0.0	3 mg/kg	12	mg/kg	13	mg/kg	150	mg/kg	12	mg/kg	0.32	mg/kg
Migration Class 2	0.1	7 mg/kg	29	mg/kg	19	mg/kg	150	mg/kg	18	mg/kg	0.32	mg/kg
ndustrial/Commercial Ingestion	100	mg/kg	410,000	mg/kg	200,000	mg/kg	410,000	mg/kg	41,000	mg/kg	20,000	mg/kg
Inhalation	1.60	mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	270	mg/kg	8,800	mg/kg
Construction Worker Ingestion	2,30	0 mg/kg	410,000	mg/kg	20,000	mg/kg	41,000	mg/kg	4,100	mg/kg	2,000	mg/kg
Inhalation	2.20	mg/kg	42	mg/kg	58	mg/kg	5.6	mg/kg	1.80	mg/kg	140	mg/kg
Soil Saturation	580	mg/kg	290	mg/kg	150	mg/kg	110	mg/kg	564.18	mg/kg	8,400	mg/kg

Tier 2 SSL Objectives

	Benzene	Equation	Toluene	Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthalene	Equation	MTBE	
Residential Ingestion	11.64	S-2	6,257.14	S-1	7,821	S-1	15,643	S-1	1,564	S-1	782.1	S-1
Inhalation	22.93	S-6	628,180.04	S-4	164.61	S-6	20,986.40	S-4	1,521.65	S-4	220.518.93	S-4
Migration Mass-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28	7.02	S-28	3.51	S-28
Migration Class 1	0.201	S-17	117.90	S-17	164.20	S-17	2,906.97	S-17	50.96	S-17	0.86	S-17
Industrial-Commercial Ingestion	104.06	S-2	1,635,200	S-1	204,400	S-1	408,800	S-1	40,880	S-1	20,440	S-1
Inhalation	43.80	S-6	1,000,115.72	S-4	314.49	S-6	33,412.13	S-4	2,422.60	S-4	351,084.77	S-4
Migration Mass-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28	7.02	S-28	3.51	S-28
Migration Class 1	0.201	S-17	117.90	S-17	164.20	S-17	2,906.97	S-17	50.96	S-17	0.86	S-17
Construction Worker Ingestion	2,258.21	S-3	163,236	S-1	10,202.26	S-1	81,618	S-1	122,427	S-1	61,214	S-1
Inhalation	61.60	S-7	6,470.00	S-5	442.28	S-7	864.61	S-5	15.67	S-5	1,892.71	S-5
Soil Saturation	3,610.11	S-29	3,124.26	S-29	1,993.83	S-29	1,598.83	S-29	564.18	S-29	31,288,68	S-29

all values are in mg/kg

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Site Specific Value cannot exceed Soil Saturation Limit, otherwise Tier 2 Inhalation or Tier 2 Migration objectives are the Soil Saturation objective Calculated value is less than Tier 1 Objective

Groundwater Contaminate Concentration Exceedances at Surface Water or Set Back Zone (mg/L)

	Benzene	Equation	Toluene	Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthalene	Equation	MTBE	
Result	#DIV/0!	R-26	#DIV/0!	R-26	#DIV/0!	R-26	#DIV/0!	R-26			#DIV/0!	R-26
Surface Water Objective	0.86		0.6		0.014		0.36			1	200-2016 18 16 18 18	

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	** ** ********************************
	1157 N 11

#### Illinois Enviromental Protection Agency Leaking Underground Storage Tank Program SSL Input Parameters for Use with Tier 2 Calculations

Site Identification				
IEMA Incident # (6- or 8-digit):	2000	)-1913	IEPA LPC # (10-digit):	1131055007
Site Name: Henson Oil Compar	ny			
Site Address (not a P.O. Box):	Old Hwy 66			
City: Towanda	County:	McLean	Zip Cod	le: <u>61776</u>
Leaking UST Technical File				
Tier 2 Calculation Information				
Equation(s) Used (ex: \$12,\$17,\$	28): <u>\$5,6,</u> 7	7,8,9,10,17,18,19	,20,21,22,24	·
Contact Information for Individual	Who Perforn	ned Calculations:		
0			· · · · · · · · · · · · · · · · · · ·	
Land Use: Residential		Soil Type	: Silt Clay	
Groundwater: X Class I		Class II		
Mass Limit: Yes X	No	if Yes, then Spe	cify Acreage:	
Mass Limit Acreage other than control - Failure to use site-specific pararely - Maps depicting source width, plus - Inputs must be submitted in the	neters where ume dimensio	allowed could afons, distance, etc	fect payment from the UST	Fund

AT (ingestion)	=	Residential = 6	yr
		Con. Worker = 0.115	уг
AT (inhalation)	=	Residential = 30	yr
		Con. Worker = 0.115	уr
AT <sub>c</sub>	=	70	yr
BW	=	Res. (NonCarcinogen) = 15	kg
		Res. (Carcinogen) = 70	kg
		Con. Worker = 70	kg
C <sub>sat</sub> =		Benzene = 3610.112	mg/kg
		Toluene = 3124.262	mg/kg
		Ethylbenzene = 1993.829	mg/kg
		Total Xylenes = 1598.831	mg/kg
		MTBE = 31288.682	mg/kg
		Naphthalene = 564.18	mg/kg
Ì			mg/kg
			mg/kg
			mg/kg
			mg/kg

d₃		=	3.048	m
ds		=	3.048	m
DA	=	Benzen	e = 2.40104065763145E-06	cm²/s
		Folu	uene = 8.93613811684789E-07	cm²/s
		Ethylbena	zene = 4.53467102908054E-07	cm²/s
		IХу	rienes = 3.2025960669178E-07	cm <sup>2</sup> /s
		М	TBE = 2.61053129659003E-06	cm²/s
		Naphtha	lene = 5.48265279537481E-08	cm <sup>2</sup> /s
				cm²/s
				cm <sup>2</sup> /s
				cm²/s
				cm²/s

Incident # 2000-19	13		
C <sub>w</sub>	=	Benzene = 0.1	mg/L
		Toluene = 20	mg/L
		Ethylbenzene = 164.197	mg/L
		Total Xylenes = 2906.967	
		MTBE = 0.858	٠
		Naphthalene = 50.958	· · · ·
		Napiralaierio - 00.300	mg/L
			mg/L
			mg/L
			mg/L
	_	6 507	
d		6.597	m
ED (inhalation of	=	Residential = 30	yr
carcinogens)		Con. Worker = 1	уr
ED (ingestion of	=	Residential = 6	yr
noncarcinogens)		Con. Worker = 1	yr
ED (inhalation of	=	Residential = 30	yr
noncarcinogens)		Con. Worker = 1	yr_
ED (ingestion of	=	Residential = 30	yr
groundwater)		Con. Worker = 1	уr
ED <sub>M-L</sub>	=	70	уr
EF	=	Residential = 350	d/yr
		Con. Worker = 30	d/yr_
F(x)	=	0.194	unitless
f <sub>oc</sub>	=	0.036	g/g
GW <sub>obj</sub>	=	Benzene = 0.005	mg/L
- · · · · · · · · · · · · · · · · · · ·		Toluene = 1	mg/L
		Ethylbenzene = 0.7	mg/L
		Total Xylenes = 10	mg/L
		MTBE = 0.07	mg/L
		Naphthalene = 0.14	mg/L
			mg/L
H'	=	Benzene = 0.23	unitless
		Toluene = 0.271	unitless
		Ethylbenzene = 0.324	unitless
		Total Xylenes = 0.271	unitless
		MTBE = 0.0241	unitless
		Naphthalene = 0.0198	unitless
			unitless
			unitless
			unitless
			unitless unitless
<u> </u>	=	0.021395349	unitless unitless m/m
	=	0.3	unitless unitless m/m m/yr
l I <sub>M-L</sub>	=======================================	0.3 0.18	unitless unitless m/m
	=	0.3	unitless unitless m/m m/yr
l I <sub>M-L</sub>	=	0.3 0.18	unitless unitless m/m m/yr m/yr
I I <sub>M-L</sub> IF <sub>soi⊦adj</sub>	=	0.3 0.18 114	unitless unitless m/m m/yr m/yr (mg-yr)/(kg-d)

Di	=	Benzene = 0.088	cm²/s
		Toluene = 0.087	cm²/s
		Ethylbenzene = 0.075	cm²/s
		Total Xylenes = 0.0735	cm²/s
		MTBE = 0.102	cm²/s
		Naphthalene = 0.0000075	cm²/s
			cm²/s
D <sub>w</sub>	=	Benzene = 0.0000102	cm²/s
		Toluene = 0.0000086	cm²/s
		Ethylbenzene = 0.0000078	cm²/s
		Total Xylenes = 0.00000923	
		MTBE = 0.000011	cm²/s
		Naphthalene = 0.0000075	cm²/s
			cm²/s
DF	=	2.347317985	unitless
ED (ingestion of	=	0 10/	уr
carcinogens	_	Con. Worker = 1	yr cm³/g or L/kg
K <sub>oc</sub>	=	Benzene = 50	
		Toluene = 158	cm <sup>3</sup> /g or L/kg
		Ethylbenzene = 320 Total Xylenes = 398	cm <sup>3</sup> /g or L/kg cm <sup>3</sup> /g or L/kg
		MTBE = 11.5	cm <sup>3</sup> /g or L/kg
		Naphthalene = 500	cm <sup>3</sup> /g or L/kg
			cm <sup>3</sup> /g or L/kg
			cm³/g or L/kg
			cm³/g or L/kg
			cm <sup>3</sup> /g or L/kg
K <sub>s</sub>	=	8	m/yr
L	=	39.3192	m 2
PEF	=		m³/kg
PEF'	=	D	m³/kg
Q/C (VF equations)	=	Residential = 68.81 Con. Worker = 85.81	(g/m²-s)/(kg/m³)
Q/C (PEF equations)	=	OUII. VVUIKEI - 00.01	(g/m²-s)/(kg/m³) (g/m²-s)/(kg/m³)
RfC (mg/m <sup>3</sup> )	_	Chronic Sub	chronic
Benzene	=		0.08
Toluene	=	5	5
Ethylbenzene	=	1	9
Total Xylenes	=	0.1	0.4
MTBE	=		2.5
Naphthalene	=		.003
	=		NA
1	=		NA
	=		NA
	=		NA

#### Incident # 2000-1913

IR <sub>w</sub>	=	Residential = 2	Γď
K	=	112.58352	m/yr
K <sub>d</sub> (non-ionizing	=	Benzene = 1.8	cm²/g or L/kg
organcis)		Toluene = 5.688	cm²/g or L/kg
		Ethylbenzene = 11.52	cm²/g or L/kg
	•	Total Xylenes = 14.328	cm²/g or L/kg
		MTBE = 0.414	cm²/g or L/kg
		Naphthalene = 18	cm²/g or L/kg
			cm²/g or L/kg

RfD <sub>o</sub> mg/(kg-d)		Chronic	Subchronic
Benzene	=	0.004	0.012
Toluene	=	0.08	0.8
Ethylbenzene	=	0.1	0.05
Total Xylenes	=	0.2	0.4
MTBE	=	0.01	0.3
Naphthalene	=	0.02	0.6
·	=		0.2
	=		NA
	=		NA

			cm <sup>2</sup> /g or L/kg
			cm²/g or L/kg
			cm²/g or L/kg
K <sub>d</sub> (ionizing organ	nics) =		cm²/g or L/kg
K <sub>d</sub> (inorganio	cs) =		cm²/g or L/kg
VF' =	= в	enzene = 5642.093	m³/kg
	Tolue	ene = 9248.367	m³/kg
	Ethylbe	enzene = 12982.763	m³/kg
	Total X	lylenes = 15448.593	m³/kg
	MTE	BE = 5410.975	m <sup>3</sup> /kg
ı	Naphthale	ne = 37337.45	m <sup>3</sup> /kg
	·		m³/kg
			m³/kg
			m <sup>3</sup> /kg
			m³/kg
VM <sub>M-L</sub>	=	#VALUE!	m³/kg
		#VALUE!	
		#VALUE!	m³/kg
			m³/kg
VF'M-L =	•	#VALUE!	m³/kg
			m³/kg
ŋ	=	0.377	L <sub>pore</sub> /L <sub>soil</sub>
θ <sub>a</sub>	=	0.049	L <sub>air</sub> /L <sub>soil</sub>

=		NA
S =	Benzene = 1800	mg/L
	Toluene = 530 Ethylbenzene = 170	mg/L mg/L
	•	•
	Total Xylenes = 110	mg/L
	MTBE = 51000	mg/L
	Naphthalene = 31	mg/L
		mg/L
		mg/L
•		mg/L
		mg/L
SF <sub>o</sub> =	Benzene = 0.055	
	Toluene = NA	
	Ethylbenzene = 0.011	
	Total Xylenes = NA	
	MTBE = NA	,
	Naphthalene = NA	(mg/kg-d) <sup>-1</sup>
		(mg/kg-d) <sup>-1</sup>
T =	Residential = 9.5E08	s
	Con. Worker = 3.6 x 10 <sup>6</sup>	\$
T <sub>M-L</sub> =	30	yr
THQ =	1	unitless
TR =	1.00E-06	unitless
U <sub>e</sub> =	4.69	m/s
URF =	Benzene = 7.8 x 10 <sup>-6</sup>	(µg/m³) <sup>-1</sup>
U <sub>t</sub> =	11.32	m/s
V =	0.5	unitless
VF =	Benzene = 73496.132	m³/kg
	Toluene = 120472.884	m³/kg
	Ethylbenzene = 169118.59	m³/kg
	Total Xylenes = 201239.468	m³/kg
	MTBE = 70485.501	m³/kg
	Naphthalene = 486372.344	m³/kg
		m³/kg
		m³/kg
		m³/kg m³/kg

Incident # 2000-1913

IIICIGCIII # 2000-1	3.0				
θ,,	=	0.328	L <sub>water</sub> /L <sub>soil</sub>		
ρ <sub>b</sub>	=	1.65	kg/l or g/cm <sup>3</sup>		
ρ <sub>s</sub>	=	2.65	g/cm <sup>3</sup>		
Pw	=	1	g/cm <sup>3</sup>		
1/(2b+3)	=	0.042	unitless		

# Illinois Enviromental Protection Agency Leaking Underground Storage Tank Program RBCA Input Parameters for Use with Tier 2 Calculations

IEMA Incident # (6- or 8-digit	2000	)-1913	IEPA LPC # (10-digit):	1131055007
Site Name: Henson Oil Co	mpany			
Site Address (not a P.O. Box	c): Old Hwy 66			
City: Towanda	County:	McLean	Zip Code:	61776
Leaking UST Technical File				
Tier 2 Calculation Informat	ion			
Tier 2 Calculation Informat				
Tier 2 Calculation Informat Equation(s) Used (ex: R12,F		17, R18,R19, R21, R22	. R23, R24,R26	
	R14,R26): <u>R16, R</u> 1		. R23, R24,R26	
Equation(s) Used (ex: R12,F	R14,R26): <u>R16, R</u> 1		. R23, R24,R26	
Equation(s) Used (ex: R12,F Contact Information for Indiv	R14,R26): <u>R16, R</u> 1	d Calculations:		
Equation(s) Used (ex: R12,F	R14,R26): <u>R16, R</u> 1			
Equation(s) Used (ex: R12,F Contact Information for Indiv	t14,R26): R16, R16, R16, R16, R16, R16, R16, R16,	d Calculations:		
Equation(s) Used (ex: R12,F Contact Information for Indiv D Land Use: Residential	k14,R26): R16, R16, R16, R16, R16, R16, R16, R16,	d Calculations: Soil Type:	Silt Ctay	
Equation(s) Used (ex: R12,F Contact Information for Indiv D Land Use: Residential Groundwater: X Clas	R14,R26): R16, R16, R16, R16, R16, R16, R16, R16,	Soil Type:  Class II  If Yes, then Specify	Silt Ctay	

- Failure to use site-specific parameters where allowed could affect payment from the UST
   Maps depicting source width, plume dimensions, distance, etc. must also be submitted.
   Inputs must be submitted in the designated unit.

AT <sub>c</sub>	AT <sub>n</sub> = Residential = 30 Con. Worker = 0.115 BW = 70	70	yr
ΔΤ	-	Residential = 30	уr
l ''.'		Con. Worker = 0.115	yr
BW	=	70	уг
Csource	=	See Attached	mg/L
C(x)	=	See Attached	mg/L
d	=	100	cm

erf	=	See Attached	unitless
f∞	=	0.036	9/9
GW <sub>comp</sub>	=	See Attached	mg/L
GW <sub>source</sub>	=	See Attached	mg/L
H'	=	See Attached	cm3 <sub>mm</sub> /cm <sup>3</sup> <sub>m</sub>
i	=	0.021395349	cm/cm
ı	=	30	cm/yr
IR <sub>er</sub>	=	20	m³/d
	_	Residential = 100	mg/d
(R <sub>soil</sub>	-	Con. Worker = 480	mg/d
IR <sub>w</sub>	=	Residential = 2	Ud
К	_	30.845	cm/d
	-	11258.352	cm/yr
K <sub>oc</sub>	=	See Attached	cm <sup>3</sup> /g or L/kg
K <sub>e</sub> (non-ionizing organics)	Ξ	See Attached	cm³ <sub>water</sub> /g <sub>soil</sub>
K <sub>e</sub> (ionizing organics)	=	Not Applicable	cm³ <sub>water</sub> /g <sub>sol</sub>
K <sub>8</sub> (inorganics)	=	Not Applicable	cm³ <sub>water</sub> /g <sub>soil</sub>
L,	=	100	cm
LF <sub>sw</sub>	=	See Attached	(mg/L)/(mg/kg)
M	=	0.5	mg/cm <sup>2</sup>
Pe	=	6.9 · 10 <sup>·14</sup>	g/cm <sup>2</sup> -s
RAF	=	0.5	unitless
O <sub>x</sub>	=	See Attached	cm
a <sub>y</sub>	=	See Attached	cm
a <sub>z</sub>	=	See Attached	cm
λ	=	See Attached	q.1
π	=	3.1416	
1	Ŧ	9.46 · 10 <sup>8</sup>	\$

D <sup>ar</sup>	=	See Attached	cm²/s
D <sub>water</sub>	=	See Attached	cm²/s
D, eff	=	See Attached	cm²/s
ED	_	Residential = 30	yr
EU		Con. Worker = 1	yr
EF	=	Residential = 350	d/yr
		Con. Worker = 30	d/yr

RAF <sub>d</sub> (PNAs)	=	0.05	unitless
RAF <sub>d</sub> (inorganics)	=	0	unitless
RAF <sub>o</sub>	Ξ	1	unitless
RBSL <sub>sir</sub> (carcinogínic)	=	See Attached	µg/m³
RBSL <sub>oir</sub> (noncarcinoginic)	=	See Attached	µg/m³
RfD <sub>i</sub>	=	See Attached	mg/kg-d
SA	=	3,160	cm²/d
S <sub>d</sub>	=	200.0	cm
S.,	=	2,743.2	cm
SFı	=	See Attached	(mg/kg-d) <sup>-1</sup>
SF.	=	See Attached	(mg/kg-d) <sup>-1</sup>
THQ	=	1	unitless
TR	=	1.00E-06	unitless
U	=	1.9078	cm/d
U <sub>air</sub>	=	225	cm/s
Ugw	=	11258.373	cm/y
VF <sub>p</sub>	=	3.97133E-12	kg/m³
VF <sub>samb</sub>	=	See Attached	(mg/m³_)/mg/kg_a or kg/m
VF <sub>65</sub>	=	See Attached	kg/m3
W	=		cm
w	=	0.252	9water/9soil
δ <sub>air</sub>	=	200	cm
δ <sub>gw</sub>	=	200	cm
θ <sub>α9</sub>	=	-0.0699	cm <sup>3</sup> <sub>sir</sub> /cm <sup>3</sup> <sub>soil</sub>
θ <sub>ws</sub>	=	0.4158	cm³ <sub>wpa</sub> /cm³ <sub>sos</sub>
θτ	=	0.3459	cm³/cm³
Рь	=	1.65	g/cm³
ρ,,	=	1	g/cm <sup>3</sup>

· · · · · ·	H'	λ	Koc
Benzene	0.23	0.0009	50
Toluene	0.271	0.011	158
Ethylbenzene	0.324	0.003	320_
Total Xylenes	0.271	0.0019	398
MTBE	0.0241	0	11.5
Naphthalene	0.0198	0.0027	500
	<u> </u>		
	1		

		Benzene R26	Modeled G	roundwater fi	rom Vertical N	Modeled Soil	S	
Location	C <sub>source</sub> from S17 (mg/L)	C(x) (mg/L)	X (cm)	a <sub>x</sub> (cm)	a <sub>y</sub> (cm)	a <sub>z</sub> (cm)	enf: S <sub>w</sub> / (4 ⋅ √(α, · X))	erf: S <sub>w</sub> /(2· √[a₂·X])
W2	0.001	0.001	30.48	3.048	1.016	0.1524	1	1
W4	0.019	0.005	2468.88	246,888	82.296	12.3444	0.96857565	0.7830086
W14	0.002	0.002	30.48	3.048	1.016	0.1524	1	1
W15	0.004	0.004	30.48	3.048	1.016	0.1524	1	1
W17	0.002	0.002	30.48	3.048	1.016	0.1524	1	1
F1	0.004	0.004	30.48	3.048	1.016	0.1524	1	1
F2	0.004	0.003	30.48	3.048	1.016	0.1524	1	- 1
F3	0.034	0.005	3322.32	332.232	110.744	16.6116	0.89016564	0.6410832
EA-F1	0.003	0.003	30.48	3.048	1.016	0.1524	1	1
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Location (	C(x) (mg/L) 0.092	X (cm)	Benzene R	26 Modeled C	roungwater		
		X (cm)					
		X (cm)				erf: کی/ (4۰	erf: \$_/(2 ·
MW5	0.002	,, (۵)	ax (cm)	a <sub>y</sub> (cm)	az (cm)	√[a,·X])	√[o²·X])
	0.032	4724.4	472.44	157.48	23.622	0.73916278	0.48117733
MW6	0.089	4693.92	469.392	156.464	23.4696	0.74224611	0.48388825
MW8	0.006	518.16	51.816	17.272	2.5908	1	1
MW10	0.028	3017.52	301.752	100.584	15.0876	0.92166795	0.6875531
MW14	0.314	6705.6	670.56	223.52	33.528	0.5717566	0.35056372
MW13	0.144	5425.44	542.544	180.848	27.1272	0.67248178	0.42574618
MW1	3.470	11582.4	1158.24	386.08	57.912	0.35350928	0.20757112
MW3	3.350	11521.44	1152.144	384.048	57.6072	0.35525122	0.20864406
MW7	2.430	10789.92	1078.992	359.664	53.9496	0.37751279	0.22242902
				, i			

	E	hylbenzene l	R26 Modeled	Groundwate	er from Vertic	al Modeled S	oils	
Location	C <sub>source</sub> from S17 (mg/L)	C(x) (mg/L)	X (cm)	a <sub>x</sub> (cm)	a <sub>y</sub> (cm)	a <sub>z</sub> (cm)	erf: S <sub>w</sub> /(4· √(α,·X))	erf: S <sub>w</sub> /(2· √[a₂·X])
Location	311 (mg/L)	O(x) (mgc)	/ (G)	- σ <sub>χ</sub> (σ)	-y (a,		1(-4, 1/1)	(G <u>r</u> ////
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			Ethylbenzene	R26 Modele	d Groundwate	er	
Location	C(x) (mg/L)	X (cm)	ax (cw)	a <sub>y</sub> (cm)	a <sub>z</sub> (cm)	√(a, x))	√[a₂ · X])
MW 6	1.300	426.72	42.672	14.224	2.1336	1	1
MW 8	0.818	121.92	12.192	4.064	0.6096	1	1
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#### Tier 2 Residential Calculations for Benzene Henson Oil Company 2000-1913

SSL SSL & RBCA

Date Compiled:

02/25/20

RBCA IRIS/HEAS

	o's Bulk Density> 0	Converted	Value to be used in o	calculation	sheet>		-	USI	DA Soil Classification:	Silt Clay				
Orga	anic Matter (%)> 0	FOC % (0.58 conversion	0.000	Org	anic Matter (mg	ı/kg)	0	FOC	mg/kg (0.58 conversion)	0.000	foc conversion	to g/g:	0.000	
1.650	ρ <sub>b</sub> - Dry Soil Bulk Density			1.5 or; C	Gravel = 2.0; S	and = 1.8; Silt	= 1.6; Clay	/= 1.7; or	Site Specific					
2.65	ρs - Soil Particle Density			2.65 or;	Site Specific									
0.049	O <sub>a</sub> - Air Filled Soil Porosity	0.049	Value from S-21	Top 1 m	neter = 0.28; b	elow 1 meter =	0.13; Grav	/el = 0.05;	Sand = 0.14; Silt =0.3	24; Clay = 0.19; o	r Calculated Value (S21)			
0.328	Ow - Water Filled Soil Porosity	0.328	Value from S-20	Top 1 m	neter = 0.15; b	elow 1 meter =	0.30; Grav	/el = 0.20	Sand = 0.18; Silt =0.	16; Clay = 0.17; o	r Calculated Value (S20)			
0.377	η - SSL: Total Soil Porosity	0.377	Value from S-24						36; or Calculated Valu		A CONTRACTOR OF THE PARTY OF TH			_
	i - Hydraulic Gradient			Site Spe										
	foc - Total Organic Carbon (g/g)					Subsurface So								
	DF - Dilution Factor	2.347	Value from S-22				20, then 2	20 default	is used, else calculate	d value is used				
6.598	d - Mixing Zone (m)	6.598	Value from S-25		lculated value									
	d <sub>s</sub> - Depth of source (m)		feet = 10			ical thickness of	ter and all the second of the							
112.58	K - Hydraulic Conductivity (m/yr)		3.57E-04	Site Spe		30.84	C	cm/d	11258.35 cm/yr	Use cm/d for R1	5, R19, & R26. cm/yr for f	₹24		
39.319	L - Source Length Parallel to Groun	ndwater Flow (m)	feet = 129		ecific (m)									
3.048	d <sub>a</sub> - Aquifer Thickness (m)		feet = 10		ecific (m)									
0.3	I - Infiltration Rate (m/yr)			0.3 for I										
8	K <sub>s</sub> - Saturated Hydraulic Conductiv			See Tal	ble K for Input	CONTRACTOR CONTRACTOR								
0.005	GW <sub>obj</sub> - Groundwater Remediation	Objective Class 1			0.025		ndwater Re	emediation	Objective Class 2					
	1/(2b+3) - Exponent for S20				ble K for Input									
70	BW - Body Weight			Resider	ntial = 70 (carc	inogenic); 15 (r	non-carcino	ogenic); In	dustrial/Commercial =	70; Construction	Worker = 70; RBCA = 70			
114	IF <sub>soil-adj</sub> -Age Adjusted Soil Ingestio	n Factor for Carcinogens		114										
200	IR <sub>soil</sub> -Soil Ingestion Rate			Residen	ntial = 200; Ind	lustrial/Commer	cial = 50; (	Constructi	on Worker = 480					
0.055	SF <sub>a</sub> -Oral Slope Factor			Banzene = 0.055										
2	IR <sub>w</sub> -Daily Water Ingestion Rate			Residential = 2; Industrial/Commercial = 1										
1800	S - Solubility in Water			BEETE TOO STORY OF THE STORY	e = 1750									
	TR - Target Cancer Risk					lustrial/Comme	cial = 10 <sup>-6</sup> .	Construc	tion Worker = 10 <sup>-6</sup> at	noint of human ex	mosure			
70	AT, -Average Time for Carcinogen	9		70	nual 10 , ma		0.01	Donottu	Mon Worker 10 dt	point of ridition ex	podure			
7.80E-06	URF - Inhalation Unit Risk Factor				e = 7.8 x 10 8									
350	EF - Exposure Frequency						rial = 250	Construc	tion Worker = 30					
30	ED - Exposure Duration for Inhalat	ion fo Carcinogens				strial/Commerc								
68.81	Q/C - Inverse of the mean concent		re source						truction Worker = 85.	31: or Table H				
9.50E+08	T - Exposure Interval		- AAAAAAAAAA						Construction Worker					
30	T <sub>M-L</sub> - Exposure Interval for Mall Lir	nit Volatilization Factor Equat	ion S26	30										
70	ED <sub>M-1</sub> - Exposure Duration for Migratio			70										
0.18	I <sub>M-1</sub> - Infiltration Rate for Migration	TO THE RESIDENCE OF THE PARTY O	C. C	0.18										
0.088	D, & D <sup>air</sup> - Diffusivity in Air		F - 21 - 20 -	11965.40.00	e = 0.088									
0.230	H' - Henry's Law Constant			and the second	e = 0.228									
	Dw & Dwater - Diffusivity in Water				$e = 9.8 \times 10^{-6}$			_						
50.00	K <sub>oc</sub> - Organic Carbon Partition Coe	fficient			e = 58.9									
30.00	Noc - Organic Carbon Partition Coe	moent		Denzen	e - 30.9									_
esidential	Ingestion Tier II Benzene Objecti		W42 25											
S-2 =		AT <sub>c</sub> 365	1.0E-06	16	70		865				= 2.6E-02	=	11.643	mg
	Sf <sub>o</sub> · 10	<sup>6</sup> · EF · IF <sub>soll-adj</sub>	0.055		1.00E-06	3	350	12	114		2.19E-03			8
onstructio	on Worker Ingestion Tier II Benzer		72.00		2222		5963		F 55%					
6-3 =		W x AT <sub>c</sub> x 365	1.0E-06		70	*	70	38	365		= 1.8E+00		2258.21	mg
	Cf v 10	16 x EF x IRsoil	0.055		1.00E-06	190	30		480		7.92E-04			6

# Tier 2 Residential Calculations for Benzene Henson Oll Company

							— He	nson Oll C 2000-19	Company 913					_				
	Inhalation	Tier II Benze	ne Objective TR x ATc x 365		1.0E-06		70		365						0.00555			
S-6 =			JRF x 1000 x EF x ED x 1/VF	— = <b>–</b>	7.80E-06	•	1000	•			30	. (1/	73,496.13	<del>=</del>	0.02555 1.11E-03	=	22.928	mg/k
onstructio	on Worker (	nhalation Tie	er II Benzene Objective TR x ATc x 365		1.0E-06		. 70		365						0.02555		61.605	mg/l
			JRF x 1000 x EF x ED x 1/VF'		7.80E-06	·	1000	٠	30	•	1	. (1/	564.21	)	4.15E-04			
ESIDENTI	AL OR CO	MMERCIAL																
S-8 =	VF =	<u> </u>	(3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 <sup>-4</sup>		68.81	_١.	3,14	×	2.40E-06	×	9.50E+08	) 1/2 ×	0.0001	<b>-</b>	0.5823	=	73496.133	
<b>,-0</b> –	•• -	c ^	$(2 \times \rho_b \times D_A)$	•	00.01	^(	2	×	1.65	×	2.40E-06	)			0.0000	-	73490.133	
onstructio	n Worker	-																
S-8 =	VF =	<u>Q</u> x	(3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 <sup>-4</sup>	=	85.81	×(	3.14	x	2.40E-06	×	3.60E+06	) <sup>1/2</sup> x	0.0001	=	0.0447	=	5642.0935	
		<u>с</u>	(2 × ρ <sub>b</sub> × D <sub>A</sub> )			(	2	x	1.65	x	2.40E-06	)			0.0000		5542.5555	
quation fo	or Derivatio	n of Volatiliz	ation Factor - Construction Worke	er							<u> </u>							
S-9 =	VF' =		VF	= .	5642.0935											=	564.2094	
			. 10		10												00 1.200 1	
iquation fo	r Derivatio	n of Apparen	at Diffusivity															
S-10 =	D. =		(θ <sub>e</sub> <sup>3 33</sup> x D <sub>i</sub> x H') + (θ <sub>w</sub> <sup>3 33</sup> x D <sub>w</sub> )		•	1												
	-4		η²		(ρ <sub>b</sub> x K	d) + θ <sub>w</sub> +	(θ <sub>ο</sub> x H')											
				,						) + (								
				= 7	4.35E+05	<u> </u>	0.088	x	0.230 0.1421	<del>) + (</del>	0.0244	×	1.02E-05	×				
				τ	1.65	x	1.8	)+	0.33	+ (	0.049	×	0.230			=	2.40E-06	
				<u> </u>														
		Migration to	Groundwater Cleanup Objective	(Class 1) + θ <sub>a</sub> x H')				Г		,	0.000	+	2010			ר.		
S-17 =	C <sub>w</sub>	* [	K <sub>4</sub> +	ρb	=		0.1	×	1.8	+ '	0.328	<del>T</del>	0.049 1.65	X	0.230	=	0.201	mg
agent Sall	L cachate	Concentration	n (Clase 1)								<u>.</u>						•	
aryet 3011	reacusts (	-oncountation	n (01888 1)															

# Tier 2 Residential Calculations for Benzene Henson Oil Company 2000-1913

							2000-10										
Soil-Water F S-19 =		pefficient K <sub>∞</sub> x f <sub>∞</sub>	=	50.00	x	0.036							•		=	1.8	
Water-Filled S-20 =		η X—— t- (220+3)	=	0.38	×[-	0.300 8.000									=	0.3284	-
Air-Filled Po S-21 =		η · Θ <sub>w</sub>	=	0.38	•	0.33					•••		-		=	0.0490	
Dilution Fac S-22 =		1 +Kxixd	_ = .	112.58 0.300	×	0.0214	x	6.598	- +	1					=	2.3473	
GW Ingestic	on	TR x BW x AL x 365 SF <sub>o</sub> x IR <sub>w</sub> x EF x ED	_ = .	1.0E-06 0.055	x x	70 2.000	x	70 350	x x	365 30	_		= -	1.8E+00 1155	_ =	0.0015	mg/L
Total Soil P		1 - P <sub>b</sub> P <sub>e</sub>	=	1		1.65 2.65	_								=	0.3774	
Estimation of S-25 =	of Mixing Z	Cone Depth (0.0112 x L <sup>2</sup> ) <sup>0.5</sup> + d <sub>0</sub> 1 -exp (K x i	_	0.0112	x	39.319	²) <sup>0.5</sup> +										
Soil Saturat S-29 =		$\frac{S}{2} \times [(K_d \times \rho b) + \Theta w + (H' \times \theta a)]$	= .	1800	- × f (	3.048	* <u></u>		} +	-39.319 112.584 0.328	* + (	0.3 0.0214 0.230	) × x	···	- <u>]</u> =	6.598 3,610.11	m
Soil Gas Ou S-30 =	ıtdoor inha	ilation	_ = .	22.928 0.230	x	0.230	x	1.650 0.328	× +	1000	x	1.650		0.043	=	2,629.37	

# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913

SSL SSL & RBCA Date Compiled: 02/25/20

	is														
	o's Bulk Density -> 0		Value to be used in				-		SDA Soil Clas						
	anic Matter (%) -> 0	FOC % (0.58 conversion	1) -> 0.000		c Matter (mg/		0		C mg/kg (0.58		0.000	foc conversion	to g/g:	0.000	
1.650 2.65	ρ <sub>b</sub> - Dry Soil Bulk Density						8; Silt =	1.6; Clay	= 1.7; or Site	Specific					
0.049	ps - Soil Particle Density  Oa - Air Filled Soil Porosity	0.049	Value from S-21		Site Specific			10.0	1 005 0					0.	
0.328	Ow - Water Filled Soil Porosity	0.049	Value from S-21									19; or Calculated Va			
0.326	n - SSL: Total Soil Porosity											17; or Calculated Va	lue (S20)	)	
	i - Hydraulic Gradient	0.377	Value from S-24	Site Spe		5; Sand =	0.32; 51	t = 0.40;	Clay = 0.36; or	Calculated	Value (S24)				
0.036	foc - Total Organic Carbon (g/g	Λ				S. Subeurfe	nce Sail	- 0.002: 4	or Site Specific						
20.000	DF - Dilution Factor	2.347	Value from S-22								culated value is u	rad			
6.598	d - Mixing Zone (m)	6.598	Value from S-25		culated valu		ou man a	o, mon a	o delada is de	ou, elbe ou	iodiated value is a	300			
3.048	ds - Depth of source (m)		feet = 10	Depth of	Source (Ve	ertical thick	cness of	contamin	ation)						
112.58	K - Hydraulic Conductivity (m/y	r) cm/sec =	3.57E-04	Site Spe	cific	3.08E+	01	cm/d	1.13E+0	4 cm/vr	Use cm/d for R15.	R19, & R26, cm/yr	for R24		3437-W
39.319	L - Source Length Parallel to G	roundwater Flow (m)	feet = 129	Site Spe	cific (m)			T 2 1 27							
3.048	d <sub>a</sub> - Aquifer Thickness (m)		feet = 10	Site Spe	cific (m)										
0.3	I - Infiltration Rate (m/yr)			0.3 for III	linois										
8	K <sub>s</sub> - Saturated Hydraulic Condu	ctivity		See Tab	le K for Inpu	ut Values									
0.700	GW <sub>obj</sub> - Groundwater Remediat	ion Objective Class 1			1 G	Wobj - Gro	undwate	r Remedi	ation Objectiv	e Class 2					
0.042	1/(2b+3) - Exponent for S20			See Tab	le K for Inpu	ut Values									
15	BW - Body Weight				tial = 70 (ca	rcinogenic	; 15 (no	n-carcino	genic); Indust	rial/Comme	rcial = 70; Constr	uction Worker = 70;	RBCA =	70	
114	IF <sub>soil-adj</sub> -Age Adjusted Soil Inge	stion Factor for Carcinogens		114											
200	IR <sub>soil</sub> -Soil Ingestion Rate			Resident	tial = 200; Ir	ndustrial/C	ommerc	ial = 50; 0	Construction V	/orker = 48	0				
2	IR, -Daily Water Ingestion Rate			Resident	tial = 2; Indu	ustrial/Con	nmercial	= 1					-		
170	S - Solubility in Water			Ethylben	zene = 169	Ø									
1.0E-06	TR - Target Cancer Risk										0 <sup>-6</sup> at point of hum	nan exposure			
350	EF - Exposure Frequency								Construction		0				
30 68.81	ED - Exposure Duration for Inha								onstruction We						
9.50E+08	Q/C - Inverse of the mean cond T - Exposure Interval	centration at the center of a squ	are source								= 85.81; or Table	н	_		_
30	T <sub>M.1</sub> - Exposure Interval for Mai	0 1 1 F F F F F F-	-V 000	30	liai = 9.5 X 1	u ; industr	ial/Com	nercial =	7.9 x 10"; Con	struction V	forker = 3.6 x 10 <sup>6</sup>				21
70	ED <sub>M-L</sub> - Exposure Interval for Mar			70											
0.18	IM Infiltration Rate for Migrati			0.18				_							
		on to Groundwater Mass-Limit	Equation S28												
0.075	D <sub>i</sub> - Diffusivity in Air				zene = 0.07										
0.324 7.80E-06	H' - Henry's Law Constant Dw - Diffusivity in Water				zene = 0.32										
6					zene = 7.8			25.0							
	AT - Average Time for Non-Car	remogens in ingestion Equation							nstruction Wo						
		reinogens In Inhalation Equation	n			ductin I/Co	mmarcia								
30		rcinogens In Inhalation Equation	n	1	uai - 30, inc	dustrial/Co	mmercia	al = 25; C		Jikei = U. I	J				
30	THQ - Target Hazard Quotient		n/	1	= 1: Subchr		mmercia	al = 25; C	*	orker = 0.1	5				
30			n/	1 Chronic	= 1; Subchr	ronic = 9		al = 25; C		orker = 0.1					*****
30 1	THQ - Target Hazard Quotient RfC - Inhalation Reference Cor	ncentration	n	1 Chronic Chronic		ronic = 9 thronic = 0.		al = 25; C		orker = 0.1					***************************************
30 1 1 0.1 320.00	THQ - Target Hazard Quotient RfC - Inhalation Reference Cor RfD <sub>o</sub> - Oral Reference Dose K <sub>oc</sub> - Organic Carbon Partition (	ncentration Coefficient		1 Chronic Chronic	= 1; Subchr = 0.1; Subc	ronic = 9 thronic = 0.		al = 25; C		orker = 0.1		***			*****
30 1 1 0.1 320.00	THQ - Target Hazard Quotient RIC - Inhalation Reference Cor RID <sub>o</sub> - Oral Reference Dose K <sub>oc</sub> - Organic Carbon Partition (Ingestion Remediation Object	centration  Coefficient  ives for Non-Carcinogenic Co		1 Chronic Chronic	= 1; Subchr = 0.1; Subc nzene = 363	ronic = 9 thronic = 0.	.05	al = 25; C		siker = 0.1					*****
30 1 1 0.1 320.00	$ \begin{split} & THO - Target Hazard Quotient \\ & RIC - Inhalation Reference Cor \\ & RID_o - Oral Reference Dose \\ & K_{oc} - Organic Carbon Partition (Ingestion Remediation Object THQ) \\ & THQ \\ & TH$	ncentration  Coefficient  lives for Non-Carcinogenic Co x BW x AT x 365	ontaminants	Chronic Chronic Ethylben	= 1; Subchr = 0.1; Subc izene = 363	ronic = 9 chronic = 0	6	x	365	orer = 0.1		_ 32850		7024	malk
30 1 1 0.1 320.00 esidential	$ \begin{split} & THO - Target Hazard Quotient \\ & RIC - Inhalation Reference Cor \\ & RID_o - Oral Reference Dose \\ & K_{oc} - Organic Carbon Partition (Ingestion Remediation Object THQ) \\ & THQ \\ & TH$	centration  Coefficient  ives for Non-Carcinogenic Co	ontaminants 1	Chronic Chronic Ethylben	= 1; Subchr = 0.1; Subc nzene = 363	ronic = 9 chronic = 0	.05	x x		X	200	= 32850 4.2	=	7821	mg/k
30 1 1 0.1 320.00	$ \begin{split} & THO - Target Hazard Quotient \\ & RIC - Inhalation Reference Cor \\ & RID_o - Oral Reference Dose \\ & K_{oc} - Organic Carbon Partition (Ingestion Remediation Object THQ) \\ & THQ \\ & TH$	ncentration  Coefficient  lives for Non-Carcinogenic Co x BW x AT x 365	ontaminants	Chronic Chronic Ethylben	= 1; Subchr = 0.1; Subc izene = 363	ronic = 9 chronic = 0	6	x	365			= -	=	7821	mg/k
30 1 1 0.1 320.00 desidential	$ \begin{aligned} & \text{THQ} - \text{Target Hazard Quotient} \\ & \text{RC} - \text{Inhalation Reference Cor} \\ & \text{RID}_{\circ} - \text{Oral Reference Dose} \\ & \text{K}_{\infty} - \text{Organic Carbon Partition} \end{aligned} $	Coefficient ives for Non-Carcinogenic Co x BW x AT x 365 RTD <sub>0</sub> ) x EF x ED x IR <sub>sol</sub>	ontaminants 1 0.000001	Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc izene = 363	ronic = 9 chronic = 0	6	x	365			= -	=	7821	mg/k
30 1 1 0.1 320.00 residential S-1 =	$ \begin{aligned} & THQ - Target Hazard Quotient \\ & R(C - Inhalation Reference Cor \\ & R(D_o - Oral Reference Dose \\ & K_{\infty} - Organic Carbon Partition (Ingestion Remediation Object THQ  & 10^{\%} \times (1/F) \end{aligned}  on Worker Ingestion Remediation Remediation Object Remediation Object Remediation Object Remediation Object Remediation R$	Coefficient ives for Non-Carcinogenic Co x BW x AT x 365 RTD <sub>0</sub> ) x EF x ED x IR <sub>sol</sub>	ontaminants 1 0.000001	Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc izene = 363	ronic = 9 hronic = 0 x x	6	x	365			4.2			
30 1 1 0.1 320.00 esidential 5-1 =	$ \begin{aligned} & THQ - Target Hazard Quotient \\ & R(C - Inhalation Reference Cor \\ & R(D_0 - Oral Reference Dose \\ & K_{\infty} - Organic Carbon Partition (                                   $	Coefficient  iives for Non-Carcinogenic Co x BW x AT x 365 RID <sub>o</sub> ) x EF x ED x IR <sub>sol</sub>	ontaminants  = 1 0.000001  ogenic Contaminan	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc izene = 363 15 0.1	ronic = 9 shronic = 0 x x	6 350	x x	365 6	×	200		=	7821	300 <b>-</b>
30 1 1 0.1 320.00 esidential 5-1 =	$ \begin{aligned} & THQ - Target Hazard Quotient \\ & R(C - Inhalation Reference Cor \\ & R(D_0 - Oral Reference Dose \\ & K_{\infty} - Organic Carbon Partition (                                   $	Coefficient  ives for Non-Carcinogenic Co x BW x AT x 365  RD <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> on Objectives for Non-Carcin x BW x AT x 365	ontaminants 1 0.000001	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc izene = 363 15 0.1	ronic = 9 shronic = 0 x x	6 350	x	365 6			4.2			300 <b>-</b>
30 1 1 0.1 320.00 desidential S-1 =	$ \begin{aligned} & THQ - Target Hazard Quotient \\ & RIC - Inhalation Reference Cor \\ & RIO_o - Oral Reference Dose \\ & K_{\infty} - Organic Carbon Partition Oral \\ & Ingestion Remediation Object \\ & THQ \\ & 10^{\%}x (1/F) \end{aligned} $	Coefficient  ives for Non-Carcinogenic Co x BW x AT x 365  RD <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> ion Objectives for Non-Carcin x BW x AT x 365  RD <sub>o</sub> ) x EF x ED x IR <sub>sol</sub>	ontaminants  = 1 0.000001  ogenic Contaminan	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc izene = 363 15 0.1	ronic = 9 shronic = 0 x x	6 350	x x	365 6	×	200				300 <b>-</b>
30 1 1 0.1 320.00 Residential S-1 =	THQ - Target Hazard Quotient RC - Inhalation Reference Cor RID <sub>2</sub> - Oral Reference Dose	Coefficient  Coeff	ontaminants  = 1 0.000001  ogenic Contaminan	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subchr zene = 363 15 0.1	ronic = 9  x  x  x  x	6 350 0.115 30	x x	365 6	×	200	= 4.2 = 2938.25 0.288			
30 1 1 0.1 320.00 esidential 6-1 =	THQ - Target Hazard Quotient RfC - Inhalation Reference Cor RfD <sub>0</sub> - Oral Reference Dose	Coefficient  Coefficient  iives for Non-Carcinogenic Co x BW x AT x 365  RID <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> con Objectives for Non-Carcin x BW x AT x 365  RID <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> e Objective HO x AT x 365	ontaminants - = \frac{1}{0.000001}  ogenic Contaminan - = \frac{1}{0.000001}	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc zzene = 363 15 0.1	ronic = 9  shronic = 0.	6 350	x x	365 6 365 1	x	200	= 4.2 = 2938.25 0.288			mg/k
30 1 1 0.1 320.00 esidential i-1 =	THQ - Target Hazard Quotient RfC - Inhalation Reference Cor RfD <sub>0</sub> - Oral Reference Dose	Coefficient  Coeff	ontaminants  = 1 0.000001  ogenic Contaminan	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc zzene = 363 15 0.1	ronic = 9  x  x  x  x	6 350 0.115 30	x x	365 6 365 1	x x	200	= 4.2 = 2938.25 0.288 = 10950 0.0620866	=	10202 176366.531	mg/k
30 1 1 0.1 320.00 esidential 6-1 =	THQ - Target Hazard Quotient RfC - Inhalation Reference Cor RfD <sub>0</sub> - Oral Reference Dose	Coefficient  Coefficient  iives for Non-Carcinogenic Co x BW x AT x 365  RID <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> con Objectives for Non-Carcin x BW x AT x 365  RID <sub>o</sub> ) x EF x ED x IR <sub>sol</sub> e Objective HO x AT x 365	ontaminants - = \frac{1}{0.000001}  ogenic Contaminan - = \frac{1}{0.000001}	1 Chronic Chronic Ethylben x x 1/	= 1; Subchr = 0.1; Subc zzene = 363 15 0.1	ronic = 9  shronic = 0.	6 350 0.115 30	x x	365 6 365 1	x x	200	= 4.2 = 2938.25 0.288	=	10202 176366.531	mg/k
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# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913

Constru	uction Worker Inhalation Objective					-						_	$\overline{}$
S.5 =	THQ x AT x 365	<u> </u>	x	0.115	x	365				41.975	- 4	C240 E4E	
5-5 -	EF x ED x (1/RIC x 1/VF)	30	x	1	x 1/	9	x 1/	1298.276342		0.0025675	- 1	6348.545	mg/kg
								Tier 2 in	nhalation Objective can	not exceed So	il Satur	ation Limit	t

(Ethylbenzene)

2

					Tier 2 f	Resid	ential (	Calcula nson Oil 2000-1	Company	r Ethyl	benzene							
RESIDENT S-8 =	VF =	OMMERCIAL C X	(3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 (2 x <sub>10</sub> x D <sub>A</sub> )	.4 =	68.81	* <del>(</del>	3.14	x	4.53E-07 1.65	x	9.50E+08 4.53E-07	) 1/2 x	0.0001		0.2531 1.50E-06	=	169118.5909	
Constructi S-8 =	on Worker	<u> </u>	(3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 (2 x <sub>Pb</sub> x D <sub>A</sub> )	-4 =	85.81	× (	3.14	x x	4.53E-07 1.65	x x	3.60E+06 4.53E-07	) 1/2 x	0.0001	_ =	0,0194 1.50E-08	=	12982.7634	
Equation fo	or Derivati		ation Factor - Construction  VF  10	n Worker =	12882.7634	-										=	1298.2763	_
Equation for S-10 =		ion of Apparen	ot Diffusivity 1) 3 33 x D <sub>1</sub> x H) + (it., 333 x D <sub>4</sub> 1) 3 7 x D <sub>1</sub> x H) + (it., 333 x D <sub>4</sub>	x =	(Љ x Kd				0.324	) + (	0.024	14 x	7.80E-06					
					( 1.65	x	11.52	)+	0.1	421 1 + (	0.049	x	0.324	<del></del>		=	4.53E-07	
Soil Comp S-17 =	onent of th	Г	Groundwater Cleanup Ol	bjective (Class 1) (θ <sub>w</sub> + θ <sub>a</sub> x H) ρb	.] =		14	×	11.52	+ (_	0.328	•	0.049 1.65	x	0.324	]=	164.198	mg
Target Soil S-18 =		Concentratio	DF x GW <sub>o(1</sub>	=	20.00	x	0.700									=	14	
Soll-Water S-19 =		Coefficient	K <sub>oc</sub> x I <sub>oc</sub>	=	320.00	×	0.036									-	11.52	
Water-Fille S-20 =	•	η x	J 14(20+3)	· =	0.38	×[-	0.300									_	0.3284	

0.38

0.33

= 0.0490

S-21 =  $\Theta_0 = \eta - \Theta_w$ 

# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913

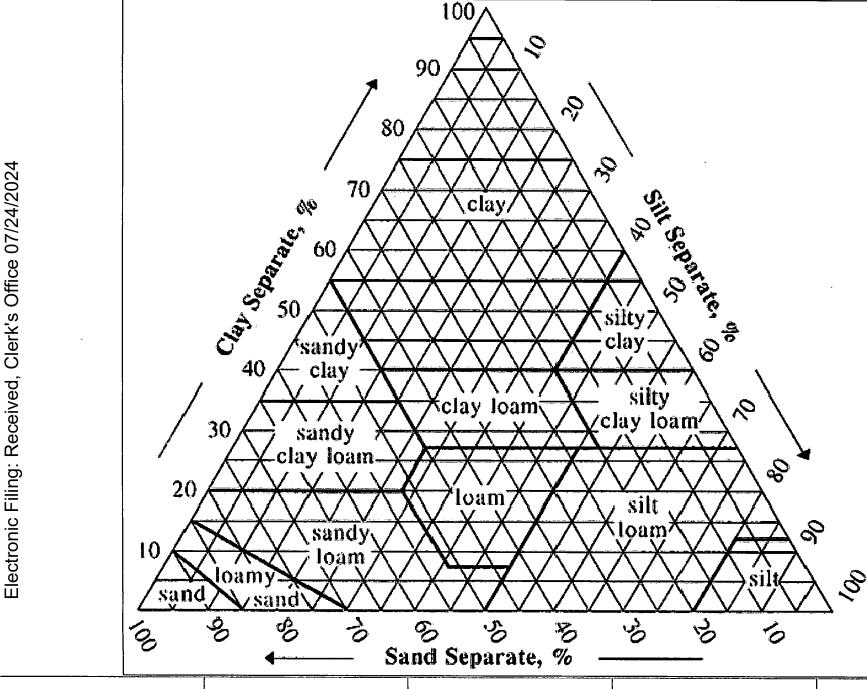
Dilution Facto	OF .																
S-22 =	DF = 1	+Kxixd	_ = _	112.58	x	0.0214	x	6.598	- +	1						= 2.3473	
		IxL		0.300		39.319										2.0 0	
GW Ingestion										"-	-						
S-23 =	_	TR x BW x At, x 365 SF <sub>o</sub> x IR <sub>w</sub> x EF x ED	- = -	1.0E-06 0.000	x	2.000	x	350	x	365	-		=	0.0E+00	<u>.</u> :	= #DIV/01	mg/L
Total Soil Por	rosity			-													
S-24 =	η = 1	- P <sub>6</sub>	=	1	٠ -	1.65 2.65	-								•	= 0.3774	
S-25 =	<b>d</b> = (0.0	112 x L <sup>2</sup> ) <sup>05</sup> + d <sub>0</sub> 1 -exp (K x i	_	0.0112	×	39.319	2)05+										
						3.048	×	1 - exp	{-	-39.319 112.584	×	0.3 0.0214	) *	3.048	-]]:	= 6.598	m
Soil Saturatio	n Limit			-										-			
S-29 =	$C_{sat} = \frac{s}{\rho_b}$	-x [(K <sub>d</sub> x pb) + 9w + (H' x 9a)]	= -	1.65	* [ (	11.52	×	1.65	) +	0.328	+ , (	0.324	×	0.049	)]:	= 1,993.83	mg/kg
	loor Inhalation	ROsoil X H X pb X 1000		1993.830	x	0.324	×	1.650	r	1000						= 55,080	mg/m <sup>3</sup>
		HT X Oa + Ow + Kd X pb		0.324		0.049		0.328		11.520							

## Henson Oil Company 2000-1913

# Appendix C - Table K Parameter Estimates for Calculating Water - Filled Soil Porosity (Ow)

Soil Texture	Saturated Hydraulic Conductivity (Ks) (m/yr)	1/ (2b+3)
Sand	1830	0.09
Loamy Sand	540	0.085
Sandy Loam	230	0.08
Silt Loam	120	0.074
Loam	60	0.073
Sandy Clay Loam	40	0.058
Silt Clay Loam	13	0.054
Clay Loam	20	0.05
Sandy Clay	10	0.042
Silt Clay	8	0.042
Clay	5	0.039

Version: 3/26/2018



CW<sup>®</sup>M COMPANY, INC. 701 W. SOUTH GRAND SPRINGFIELD, IL. 62704 2-8001 (217

**HENSON OIL CO.** TOWANDA, ILLINOIS **INCIDENT #2000-1913 MCLEAN COUNTY** 

Soil Triangle

DATE: 3/16/2022 **REVISED DATE:** 

**REVISED BY:** REVIEWED BY: CLR

**DRAWN BY: JKK** 

# **APPENDIX H**

# PLA DOCUMENTATION

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

## SCREENING CRITERIA

With the lack of detailed screening criteria from the IEPA for deciding which projects require the use of a PLA, CW³M has followed screening criteria that IDOT uses for government funded programs in their department as that State Agency follows the executive orders of Illinois Governor Pritzker and President Trump. Attached at the end of this appendix is a copy of the IDOT PLA Determination screening criteria and it lists twelve seemingly ubiquitous standards used to determine the applicability of PLA for construction projects. It has been included for your reference but will be used herein as a systematic way to show how each criterion has been evaluated for applicability for 'yes/no' answers and whether or not the use of a PLA should be considered. CW³M recognizes that these standards may not be the same standards IEPA uses to determine the applicability of PLA for LUST sites, but IEPA correspondence issuing PLA for various sites appears to have very closely matched various IDOT screening criterion as determined in LUST Incidents 2002-0851, 2006-0366, 2009-1397, 2009-0202, 2009-0203, 2011-0859, 2012-0382, 2012-0695, 2013-0906, and 2013-1123.

1. The project is being awarded and administered by a governmentally funded program.

The "project" is privately contracted, a similar means as when a party secures legal counsel and other services. A contract is in place between a private company or citizen and a consultant or contractor who may also serve as a general contractor. That consultant will interface with governmental agencies on their behalf. They will submit claims for reimbursement after the completion of work, budgets and plan approval, and review of claims. The LUST Fund is a motor fuel tax collected by petroleum distributors, for reimbursement of LUST claims managed by the IEPA, so the answer to this question is "no". The IEPA administers the LUST Program to process claims and review technical plans and budgets not to award or administer the actual work done. As indicated on the PLA documents, the prime contractor is to secure the PLA. There is no "award" or "payment guarantee".

2. The project is being constructed using state or local funds.

The project is constructed using private funds, which ultimately may or may not be reimbursed with state funds. The current rates that the IEPA grants for LUST work have not been modified to reflect the recent changes regarding mandated payment of prevailing wages. That disport is placed on the owner/operator and their contractors. UST owners/operators collect sales tax into the LUST Fund for reimbursement of remediation work; thus it is no longer a clear "yes" answer and the owner/operator pays a

deductible and is then reimbursed for "eligible" costs. The legislative intent of Public Act was for the IPCB to remedy rates to pay prevailing wages and rectify costs of PLAs and attorney fees.

3. The overall size, scope, sequencing, logistics, or other aspects of the project make it particularly challenging to manage, and use of a PLA is expected to help assure that the construction work is performed properly and efficiently under the circumstances.

As stated, PLAs were first used in Illinois for large scale, large cost, and long duration highway development projects. All LUST work, no matter size or scope, is deemed small in comparative size to work normally prescribed a PLA, therefore disqualifying it from any PLA consideration. Collective bargaining agreements are unneeded as the number of facets required for any work does not reach a quantity warranting these agreements.

Specifically, the Henson Oil Company site located in the Village of Towanda, requires a minimal amount of work to be completed during the corrective action stage. Installing and drilling monitoring wells and drilling soil borings will comprise the entirety of work needed to be completed. This can and will be done within one to two weeks.

4. The duration of construction activity on the project is expected to exceed one construction season (110 or more working days), or the nature of the project results in a heightened need for labor force continuity and stability over a substantial period of time.

The timetable for the work to be performed at the Henson Oil Company site located in the Village of Towanda is less than a working day; not exceeding or coming remotely close to 110 days in duration. On a scale of a few days to a few weeks, labor force continuity and stability does not arise as an issue to complete the project as it does not span the duration of collective bargaining agreements. Simply put, the scale of time and scope of work is so small that a labor agreement would not expire, causing workers to walk out of the job.

5. There is a firm construction completion date established for the project thereby increasing the adverse consequences of any work stoppage or other labor disruption.

It is on the discretion of the consultant as to how quickly a plan is implemented once it is approved. With the Agency having 120 days to approve, modify, or deny a plan,

consultants cannot pre-plan or schedule the work until approved. Once approved, they coordinate with owners/operators and any subcontractors necessary with weather contingencies. Therefore, adverse consequences of labor disruptions or work stoppage are non-existent on a corrective action job lasting a few weeks, non-concurrently for actual remediation to complete. Many contractors can perform remediation services inhouse or from a pool of reliable subcontractors, with easily adjustable start dates; however, it is fiscally advantageous for the consultant to complete the work as quickly as possible with fewer workers. Once started, the field portion of the project will be completed in approximately three weeks.

The norm on small projects like this is to solicit contractors who provide estimates as to how much the cost to complete each individual task after the contract is awarded. Because this process cannot be completed, prices will ultimately change and push the project into being "stuck" as the costs cannot be met.

6. The time required to complete the project is expected to extend beyond the expiration date of one or more existing collective bargaining agreements covering trades likely to be involved in the project, thereby increasing the likelihood of work stoppages or other labor disruptions during construction of the project.

With only its consultant and local contractors present at the Henson Oil Company site located in the Village of Towanda during the "construction event", which lasts no more than a day, there are not multiple trades with closely or paralleled functions to create a work stoppage. The time required to complete the project will in no way come close to extending beyond the expiration of any existing collective bargaining agreements covering any of the trades.

7. In the absence of a PLA, there is an increased likelihood of jurisdictional disputes among unions or of conflict between unionized and non-unionized workers on the project that could have a potentially material adverse effect on the time, cost, or quality of work performed on the project.

As stated, the original intent of PLAs were for large scale construction projects. These projects would include multiple trades working together or in conjunction with one another and could make disputes between parties a potential liability as the project might last a few years. However, LUST sites differ in that one to two trades are typically necessary to complete the work. The "teams" that work together on hazardous sites, such as LUST sites, train together and develop cohesive relationships. Only a handful of

workers are necessary to conduct the work; jurisdictional disputes are non-existent as the parties work in harmony.

Even at the Henson Oil Company site located in the Village of Towanda, drilling and installing of monitoring wells and the drilling of soil borings comprise the entirety of work required. The trades, union or non-union, required are not on site at the same time, as the work is phased by its nature and does not overlap further limiting jurisdictional disputes. Further, the number of trades on this work is minimal as well; the work will be done by separate contractors without a mix of union and non-unionized work force.

8. The project presents specific safety concerns to the travelling public and a PLA will ensure labor force continuity and stability, decreasing the length of the safety concern.

LUST sites do not typically involve roads unless the Corrective Action is within rights-of-way, on ingress / egress creates roadway issues which is not commonplace. Specifically, the Henson Oil Company site located in the Village of Towanda is on a lightly traveled roadway. As stated, construction activities will take at most a few days to complete and therefore the length of time that safety of the traveling public as an issue is null. As for safety, consultants co-train teams in OSHA HAZWOPER to ensure not only worker safety, but safety for those who may enter or be near the work environment.

9. Use of the PLA is expected to result in improved access to skilled labor, improved efficiency, or improved safety performance on the project.

Attracting workers from a union hall for only a partial day or a few days of work puts them at a disadvantage for the bulk of the time, and is not an enticing option to union workers. Simply put, small LUST projects are not going to attract the workforce that would conduct "efficient" and "safe" work. A PLA, then, does not guarantee skilled workers.

Because of the small scope of work, the bidding process would significantly increase the cost of activities at the site. This would only increase the hardship of the owner and solely be detrimental to the efficiency of the project, which is the opposite of the objective put in place to push the project along towards closure.

10. Use of the PLA on the project is not expected to have a material adverse effect on the competitive bidding process.

The use of a PLA on the project does have a material adverse effect on bidding, financing and completion of the project. The contract award process takes place long before the work or construction ever begins. As stated, budgets are approved or modified at the discretion of the IEPA Project Managers and pre-approved IEPA rates. Competitive bidding is an option when work cannot be performed at the Agency's approved rates. The key factor here is financing. No owner can afford to pay cash for work that is bid on that they would pay double, wait months or even years to get paid for nominal handling charges, no payment guarantee (below what contractors outside of LUST get paid), and be responsible for the extra business costs of the PLA. They are not banks and NATLUST realized very quickly that having an approved budget meant nothing for security of payment, folded its tent, leaving owner/operators no other option than to pay or let contractors carry the burden. The legislative intent was to adjust the rates paid every day to the mandated prevailing wage rate and make the use of PLA's limited in scope.

11. Use of a PLA on the project is not expected to have an adverse material effect on the ability of the Department to achieve other Departmental goals, (e.g. utilization of disadvantaged business, utilization of Illinois domiciled businesses, development of competitive vendor alternatives over time, etc.).

By applying a PLA to a project, the Agency may in fact directly negate one of its primary objectives, as stated to advance disadvantaged businesses. The Agency has provided no basis or discussion as to how the PLA will actually increase WBE participation. We believe that the opposite effect will occur.

Furthermore, IEPA correspondence approving PLAs for various projects states that a "PLA will advance the State's interest of advancing minority-owned and women-owned business and minority and female employment". A PLA only requires that if a minority or woman employee or business is used for the project, then additional reports are required. In the competitive bidding process, it is unlikely that all bidders are female or minority; or it is far-fetched to think that all two-day construction projects with one to two workers will have either a female or minority represented in the workforce on site. There are no incentives to entice disadvantaged business participation.

In this instance, the box should not be checked if there are no incentives to hire minority workers, for example, the apprenticeship program offers \$10.00/hour back to prime contractors when minority participation is required. Use of this screening criteria needs

understood and not used loosely. If in fact any disadvantaged businesses are utilized under a PLA, their reporting costs are increased, increasing the project costs.

- 12. There are other material considerations favoring or disfavoring use of a PLA on this project as follows:
  - The total cost for corrective action activities totals an estimate no than \$8,404.20 in costs, not warranting a PLA in any program.
  - The site's location and small project will easily more than double the cost of the project with a PLA required, contradicting the idea to minimize site remediation cost.
  - No reason was given by the IEPA for the implementation of a PLA on what may and should be the final step to gain closure on site; this will only further delay the goal of the Agency: closing the project, which the client is eager to finish.
  - The common goal of the Agency and owner/operators is closure. A PLA on an extremely small plan will delay or indefinitely stall closure when closure is within the grasp of all parties involved.

#### LEAKING UST TECHNICAL REVIEW NOTES

Reviewed by: Scott Rothering

Date Reviewed: 8/24/22

Re: 1131055007 -- McLean County

Towanda / Henson Oil Company

Old Highway 66

Leaking UST Incident 20001913 Leaking UST Technical File

Document(s) Reviewed:

Corrective Action Plan and Budget

#### **General Site Information:**

Site subject to: 734

IEMA date(s): 10/6/00	Payment from the Fund? (Y/N/unknown): yes
UST system removed? (Y/N): yes	OSFM Fac. ID #: 4-012241
Encountered groundwater? (Y/N/unknown): yes	SWAP mapping and evaluation completion date: 8/24/22
Free product? (Y/N/unknown): no	Site placement correct in SWAP? (Y/N): yes
Current/past land use: commercial	Inspection Required? (Date/Plan):
Size & product of USTs: 3 8,000 gallon gasol	ine
Is site located in EJ area? yes	Is investigation of indoor inhalation exposure route required? yes
Has enough sampling been completed to perform a Right-to-Know Evaluation? no	PLA Checklist Complete? yes

# BOL File Information:(optional) (Arranged chronologically):

The tanks were removed, and a release reported on 10/6/00. The site was classified as high priority. Originally, the consultant at the site was United Science Industries. There was a lot of investigation at the site. The last correspondence with the site was on March 28, 2007. This was approved additional wells which the consultant stated were necessary during injecting of oxygen releasing compounds. Nothing was done since 2007 until March 4, 2022. On this date, the current consult went to the site after being contacted by the owner to remediation the site. The purpose of this visit was to locate any wells still present on site and whether they would be able to be used for resampling. 16 of the monitoring wells were found

The current consultant then prepared the corrective action plan currently being reviewed. This corrective action plan was based in large part on the previous data collected from the site. They have determined that all contaminated soil on site exceeding Tier 1 ROs have not been removed

## Page 2

and they will have to perform Tier 2 calculations. Additionally, they want to collect more groundwater sampling both on and off site, and to perform new soil borings to determine the current condition of the contamination since the soil has not been sampled at the site since 2007. Additionally, they used the VI checklist and determined VI will have to be investigated on site – so they are including a VI sample.

They are requesting 10 soil borings to determine the current condition of soil contamination, on boring for vapor sample, a d installing 5 monitoring ells to 15 feet bgs.

The collection of new samples can be approved. They are correct on VI and it will have to be investigated as well. The plan can be approved. It should be noted that they are claiming off site access denial on the southern and western property boundaries. This will have to be proven, along with a sample on the "next property over".

They performed TACO calculations for the site (R26) and Tier 2 numbers. However, I am not convinced this is needed yet, and will cut these costs from the budget. Additionally, they performed Hydraulic conductivity calculations which I can accept at this time. I would like to see the new levels of contamination prior to approving costs for doing the TACO modeling as it my not be necessary.

## Budget:

There was a question on one line item of the budget which was not answered. This was for Agency correspondence/discussion/document/review/tabulate analytical results for GW, soil and vapor sampling. I waited 2 weeks and still not get an answer on why these hours are needed so I am going to cut them. This is a cut of \$1,083.40.

Since TACO has been approved once, it is unlikely it will need to be run again. For further budgets, this should be noted. Soil and groundwater sampling are approved as part of this CAP. However, soil contamination which has been found on site is below Tier 2 remediation objectives. However, it is above Tier one and is widespread and, in some locations, deep enough that it could influence groundwater contamination and therefore the R26 modeling. His is the reasoning behind the approval of soil sampling in this amended CAP.



1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

(217) 524-3300

**CERTIFIED MAIL** 

7021 2720 0002 0464 1071

SEP 06 2022

Re:

Jerry Henson Henson Oil Company PO Box 712 Bloomington, IL 61702

1131055007 -- McLean County

Towanda / Henson Oil Company

Old Highway 66

Leaking UST Incident 20001913 Leaking UST Technical File .

.

REVIEWER: RDH

OCT: 3 0 2022

IEPA - DIVISION OF RECORDS MANAGEMENT

RELEASABLE

Dear Mr. Henson:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Plan (plan) submitted for the above-referenced incident. This plan, dated May 6, 2022, was received by the Illinois EPA on May 9, 2022. Citations in this letter are from the Environmental Protection Act (415 ILCS 5) (Act) and Title 35 of the Illinois Administrative Code (35 Ill. Adm. Code).

Pursuant to Sections 57.7(b)(2) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(a), the plan is approved. The activities proposed in the plan are appropriate to demonstrate compliance with Title XVI of the Act. Please note that all activities associated with the remediation of this release proposed in the plan must be executed in accordance with all applicable regulatory and statutory requirements, including compliance with the proper permits.

In addition, the budget is modified pursuant to Sections 57.7(b)(3) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(b). Based on the modifications listed in Section 2 of Attachment A, the amounts listed in Section 1 of Attachment A have been approved. Please note that the costs must be incurred in accordance with the approved plan. Be aware that the amount of payment from the Fund may be limited by Sections 57.7(c), 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655.

Further, pursuant to 35 Ill. Adm. Code 734.145, it is required that the Illinois EPA be notified of field activities prior to the date the field activities take place. This notice must include a description of the field activities to be conducted; the name of the person conducting the activities; and the date, time, and place the activities will be conducted and shall be made to EPA. Field Notifications @illinois.gov. This notification of field activities must be provided at least two weeks prior to the scheduled field activities.

Pursuant to Sections 57.7(b)(5) and 57.12(c) and (d) of the Act and 35 Ill. Adm. Code 734.100 and 734.125, the Illinois EPA requires that a Corrective Action Completion Report that achieves compliance with applicable remediation objectives be submitted within 30 days after completion of the plan to:

Page 2

Illinois Environmental Protection Agency Bureau of Land - #24 Leaking Underground Storage Tank Section 1021 North Grand Avenue East Post Office Box 19276 Springfield, IL 62794-9276

Please submit all correspondence in duplicate and include the Re: block shown at the beginning of this letter.

If within four years after the approval of this plan, compliance with the applicable remediation objectives has not been achieved and a Corrective Action Completion Report has not been submitted, the Illinois EPA requires the submission of a status report pursuant to Section 57.7(b)(6) of the Act.

An underground storage tank system owner or operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need further assistance, please contact the undersigned at (217) 785-1858 or at Scott.Rothering@illinois.gov.

Sincerely,

**Scott Rothering** 

Project Manager

Special Projects and Financial Unit

Leaking Underground Storage Tank Section

Bureau of Land

JR:BB

Attachments:

Attachment A

Appeal Rights

c:

Carol Rowe, CWM Company (electronic copy)

**BOL File** 

#### Attachment A

Re:

1131055007 -- McLean County Towanda / Henson Oil Company Old Highway 66 Leaking UST Incident 20001913 Leaking UST Technical File

#### **SECTION 1**

As a result of Illinois EPA's modification(s) in Section 2 of this Attachment A, the following amounts are approved:

\$8,404.20	Drilling and Monitoring Well Costs
\$3,968.54	Analytical Costs
\$0.00	Remediation and Disposal Costs
\$0.00	UST Removal and Abandonment Costs
\$0.00	Paving, Demolition, and Well Abandonment Costs
\$15,810.42	Consulting Personnel Costs
\$339.20	Consultant's Materials Costs

Handling charges will be determined at the time a billing package is reviewed by the Illinois EPA. The amount of allowable handling charges will be determined in accordance with Section 57.1(a) of the Environmental Protection Act (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.635.

## **SECTION 2**

#### 1 Personnel Lacking Supporting Documentation

\$1,083.84 for costs for personnel hours requested under the Senior Project Manager title (Agency Correspondence/Discussion/Document/Review/Tabulate Analytical Results for GW/Soil – Gas sampling), that lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities exceeding the minimum requirements of the Act. Therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(o).

In addition, without supporting documentation, the personnel hours for Senior Project Manager are unreasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd). Furthermore, the request appears to be for activities and related services or materials that are unnecessary. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(aa).

An email was sent August 10, 2022 to CWM Company requesting clarification on the number of hours to perform the tasks for Senior Project Manager. In an email received August 24, 2022 from John Kveton the question was not adequately addressed to approve the number of hours for the tasks.

This results in a deduction of \$1,083.84 from the Consulting Personnel Costs Form.

#### Appeal Rights

An underground storage tank owner or operator may appeal this final decision to the Illinois Pollution Control Board pursuant to Sections 40 and 57.7(c)(4) of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period not to exceed 90 days by written notice from the owner or operator and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the filing of an appeal, please contact:

Clerk of the Board Illinois Pollution Control Board James R. Thompson Center 100 West Randolph, Suite 11-500 Chicago, IL 60601 (312) 814-3620

For information regarding the filing of an extension, please contact:

Illinois Environmental Protection Agency Division of Legal Counsel 1021 North Grand Avenue East PO Box 19276 Springfield, IL 62794-9276 (217) 782-5544

Henson Oil Company
Incident # 20001913
LUST Tech File

Phone: (217) 522-8001 Fax: (217) 522-8009

November 16, 2023

Mr. Scott Rothering

LUST Section, Bureau of Land Illinois Environmental Protection Agency 1021 North Grand Avenue East Springfield, Illinois 62794-9276

GEA-DIVISION OF RECORDS MANAGEMENT

MAY 0 8 2024

REVIEWER: SAB

RE: LPC #0190805029—McLean County

Henson Oil Co. - Towanda

Old Highway 66, Towanda, Illinois Incident Number: 2000-1913

LUST Technical Reports—Corrective Action Plan Amendment & Budget

Dear Mr. Rothering:

On behalf of Mr. Henson, of Henson Oil Company, we are submitting the attached Corrective Action Plan (CAP) and Budget Amendment.

If you have any questions or require additional information, please contact us at (217) 522-8001.

Sincerely,

Carol L. Rowe, P.G.

Senior Environmental Geologist

**Enclosure** 

xc: Mr. Henson, Henson Oil Co.

RECEIVED

NOV 2 0 2023

IEPA/BOL

1131055007 - McLean County Henson Oil Company Incident # 20001913 LUST Tech File

# CORRECTIVE ACTION PLAN & BUDGET AMENDMENT

# **HENSON OIL COMPANY**

Towanda, Illinois LPC #1131055007— McLean County Incident Number 2000-1913

CEPA-DIVISION OF RECORDS MANAGEMENT

MAY 0 8 2024

REVIEWER: SAB

Submitted to:

# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Leaking Underground Storage Tank Section, Bureau of Land 1021 North Grand Avenue East Springfield, Illinois 62794-9276

Prepared by: CW<sup>3</sup>M COMPANY, INC.

701 South Grand Avenue West Springfield, Illinois (217) 522-8001

400 West Jackson, Suite C Marion, Illinois (618) 997-2238

November 2023

RECEIVED

NOV 2 0 2023

IEPA/BOL

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

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CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

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# **ACRONYMS AND ABBREVIATIONS**

BETX	Benzene, Ethylbenzene, Toluene, Total Xylenes
CACR	Corrective Action Completion Report
CAP	Corrective Action Plan
COC	Chemical Oxidation Compound
CUOs	Clean-up Objectives
$CW^3M$	CW <sup>3</sup> M Company, Inc.
CWS	Community Water Supply
Ill. Adm. Code	Illinois Administrative Code
IDOT	Illinois Department of Transportation
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
ISGS	Illinois State Geological Survey
ISWS	Illinois State Water Survey
mg/kg	Milligrams per kilogram (parts per million)
mg/L	Milliliters per kilogram (parts per million)
OSFM	Office of the State Fire Marshal
ORC	Oxygen Releasing Compound
PVC	Polyvinyl Chloride
SCCR	Site Classification Completion Report
SWAP	Source Water Assessment Program
TACO	Tiered Approach to Corrective Action Objectives
USTs	Underground Storage Tanks
USI	United Science Industries

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

#### 1. SITE HISTORY/EXECUTIVE SUMMARY

## 1.1 GENERAL

This proposed Corrective Action Plan (CAP) and Budget has been prepared in accordance with the requirements of the 35 Illinois Administrative Code (Ill. Adm. Code) 734. The Illinois Environmental Protection Agency (IEPA) Corrective Action Plan Form is included in this document as Appendix A.

Mr. Jerry Henson of Henson Oil Company, the owner of the underground storage tanks (UST) at its Towanda, Illinois facility, reported a release to the Illinois Emergency Management Agency (IEMA). Incident Number 2000-1913 was assigned to the notification on October 6, 2000. Mr. Henson at the time requested United Science Industries (USI) to proceed with the reporting and early action requirements in accordance with 35 Ill. Adm. Code § 734.

The 20-Day Certification was submitted to the IEPA on October 24, 2000 (USI, 2000a). An early action extension request was submitted on November 2, 2000 (USI, 2000) and approved on November 20, 2000 (IEPA, 2000b). The 45 Day Report was submitted to the IEPA on January 30, 2001 (USI, 2001) and was approved on February 21, 2001 (IEPA, 2001).

A Site Classification Work Plan and Budget was submitted to the IEPA on November 22, 2002 (USI, 2002) and approved with modifications on March 12, 2003 (IEPA, 2003a). This plan was also considered as the Site Classification Completion Report (SCCR). A High Priority Corrective Action Plan and Budget was submitted to the IEPA on August 11, 2003 (USI, 2003) and was approved with modifications on December 9, 2003 (IEPA, 2003b). A High Priority Corrective Action Plan Budget was submitted on July 12, 2004 (USI, 2004) and was denied on October 8, 2004 (IEPA, 2004).

A High Priority Corrective Action Plan and Budget was submitted to the IEPA on June 17, 2005 (USI, 2005a) and was approved on July 18, 2005 (IEPA, 2005a). A High Priority Corrective Action Plan Budget was submitted to the IEPA on August 19, 2005 (USI, 2005b) and was approved on October 7, 2005 (IEPA, 2005b). A High Priority Corrective Action Plan and Budget was submitted on February 24, 2006 (USI, 2006a) and was approved on March 2, 2006 (IEPA, 2006). A High Priority Corrective Action Plan and Budget was submitted to the IEPA on December 15, 2006 (USI, 2006b). The Plan was approved but the Budget was denied on March 28, 2007 (IEPA, 2007a). A High Priority Corrective Action Plan and Budget was submitted to the IEPA on April 26, 2007 (USI, 2007) and was approved on July 26, 2007 (IEPA, 2007b).

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 —Incident Number 2000-1913

CW<sup>3</sup>M Company, Inc (CW<sup>3</sup>M) became the environmental consultant for the Henson Oil Company site after the April 26, 2007 High Priority Corrective Action Plan and Budget by USI was approved.

CW<sup>3</sup>M Company, Inc submitted a Corrective Action Plan and Budget Amendment on May, 9, 2022 (CW<sup>3</sup>M, 2022). The plan was approved and the budget was modified by the IEPA on September 6, 2022 (IEPA, 2022).

This CAP and Budget is being prepared in response to Incident Number 2000-1913.

This report is certified by an Illinois Licensed Professional Engineer. The geological investigation and site investigation were performed under the direction of an Illinois Licensed Professional Geologist and completed in accordance with the Professional Geologist Licensing Act and its Rules for Administration.

#### 1.2 SITE LOCATION

The site, known as Henson Oil Company also known as Towanda Mini Mart is located on Old Highway 66, Towanda, IL 61776, at the current location of Kicks Bar and Grill. The site is located in the SW ¼ of the SW ¼ of the NE ¼ of Section 5 Township 24 North of the Centralia Baseline and Range 3 East of the Third Principle Meridian.

#### 1.3 UNDERGROUND STORAGE TANK INFORMATION

A permit for the removal of three USTs was approved by the Office of the State Fire Marshal (OSFM) on October 24, 2000 (OSFM, 2000).

Tank removal and early action activities were conducted and coordinated by United Science Industry in conjunction with All-American Environmental personnel on December 12, 2000. OSFM Tank Specialist Doug Kirk was on site to oversee the UST removal.

Tank 1: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

Tank 2: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

Tank 3: OSFM Tank Specialist Kirk in conjunction with CW<sup>3</sup>M personnel determined the release was a combination of tank leaks, overfills, and piping leaks.

CW<sup>3</sup>M Company, Inc.
Corrective Action Plan and Budget Amendment
Henson Oil Co. - Towanda
LPC # 1131055007 –Incident Number 2000-1913

Table 1-1. Underground Storage Tank Summary

Tank Number	Tank Volume (gallons)	Tank Contents	Incident Number	Release Information	Current Status
1	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000
2	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000
3	8,000	Gasoline	2000-1913	Tank Leak / Overfills / Piping Leak	Removed 12/12/2000

#### 1.4 EARLY ACTION SUMMARY

On October 26, 2000, three USTs along with the 400 gallons of off-spec fuel and water present inside the tanks were removed by All-American Environmental. Thirteen soil samples were taken from the walls and floor of the tank hold excavation and former pump island locations. All soil samples were collected and analyzed for benzene, ethylbenzene, toluene, and total xylenes (BETX). The analytical results indicated that the most stringent Tier 1 Clean-up Objectives (CUOs) had been exceeded for various indicator contaminants.

On December 28, 2000 one 55-gallon drum of sludge and absorbents and one 55-gallon drum of water and off-spec fuel was taken off the site. Between December 28 and 29, 2000, approximately 622.77 tons (415.18 cubic yards) of contaminated backfill was removed from the former tank pit and taken to the ADS McClean County Landfill Facility in Bloomington, Illinois.

The map for these samples and their respective values are located in Appendix B and the lab results are located in Appendix E. Details of the results and location can be found in the 45 Day Report (USI, 2001)

#### 1.5 SITE INVESTIGATION SUMMARY

#### 1.5.1 First Round of Sampling

On March 29, 2001, USI personnel were on site to conduct site classification activities. Three monitoring wells with soil borings and one monitoring well without a soil boring were advanced as part of the plume delineation activities. All soil samples were analyzed for

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Corrective Action Plan and Budget Amendment
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BETX indicator contaminants. A table summarizing the results is included in Appendix E. Soil analytical results from the site investigation indicated that the most stringent Tier 1 CUOs for the site had been exceeded at multiple locations. Groundwater analytical results from the investigation indicated that samples exceeded the Class I Groundwater CUOs for multiple indicator contaminants.

#### 1.5.2 Second Round of Sampling

On May 17, 2001, USI returned to the site and advanced five monitoring wells with soil borings to further define the extent of the soil and groundwater contamination. USI personnel sampled and survey the newly installed monitoring wells and all samples were analyzed for BETX indicator contaminants. A table summarizing the results is included in Appendix E. Soil analytical results from the site investigation indicated that the most stringent Tier 1 CUOs for the site had been exceeded at multiple locations.

#### 1.5.3 Third Round of Sampling

On September 18, 2002, USI returned to the site and advanced one monitoring well with a soil boring, two monitoring wells without soil borings, and three soil borings to further define the vertical and horizontal extent of the soil and groundwater contamination. All soil samples were analyzed for BETX indicator contaminants. A table summarizing the results is included in Appendix E.

#### 1.5.4 Fourth Round of Sampling

Between April 11, 2003 and April 28, 2003, USI personnel installed additional groundwater monitoring wells at the site. On April 22, 2004, USI returned to the site to advance three more monitoring wells. On May 5, 2004, USI personnel sampled monitoring wells on the east side of the site and the three monitoring wells advanced on April 22, 2004, to reassess groundwater contamination following the soil excavation and disposal activities. On May 24, 2004, USI personnel sampled monitoring wells on the south side of the site and five other wells on site to further determine the groundwater contamination plume.

#### 1.5.5 On-site Activities

A High Priority Corrective Action Plan Budget (USI, 2007) was submitted and approved by the IEPA (IEPA, 2007), but was not implemented. With this in mind, on March 4, 2022, CW<sup>3</sup>M personnel visited the site with the intention to locate all the groundwater monitoring wells installed and potentially resample the five contaminated monitoring wells that were most recently sampled by USI on May 5, 2004 and May 24, 2004. Eleven of the 21 monitoring wells were located. The five monitoring wells that were planned to be resampled could not be resampled due to being damaged or destroyed.

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

#### 1.5.6 Off-site Access Activities

A request to access the neighboring properties to define the extent of the contamination plume was sent to the Illinois Department of Transportation (IDOT), Union Pacific Railroad, and the Weaver property, the commercial property to the west by USI in 2001 and 2002. Only James Jereb of IDOT granted access. Once property access was acquired, the investigation continued to identify soil and groundwater contaminants potentially associated with Incident Number 2000-1913. USI, on behalf of the client, fulfilled all requirements for off-site access to the Union Pacific Railroad and Weaver properties. USI determined soil contamination existed from the incident and had determined that the soil contamination plume was defined by the remediation efforts completed. The results from site investigations conducted at this time dictated that groundwater contamination was partially defined.

After the recent soil and groundwater resampling by CW<sup>3</sup>M personnel both the soil and groundwater contamination plume have been redefined. The soil and groundwater contamination plumes do not cross into the adjacent properties. Therefore, offsite access was not needed.

# 1.6 CORRECTIVE ACTION SUMMARY

On August 11, 2003, IEPA received the CAP and Budget submitted by USI. The CAP proposed an excavation and disposal to remediate the soil contamination along with proposed Chemical Oxidation Compound (COC) injections in order to remediate the groundwater contamination. The CAP was approved with modifications, but the was budget denied. The groundwater remediation activities within the CAP were not approved. IEPA required the groundwater contamination to be reassessed following the excavation and disposal of the contaminated soil.

From April 5, 2004 through April 19, 2004, the excavation and disposal of contaminated soil was completed. A total of 3,219.71 tons (2,146.47 cubic yards) of contaminated soil was disposed of at ADS McClean County Landfill in Bloomington, Illinois. On April 8, 2004 a total of 767.95 tons (511.96 cubic yards) of sand was hauled to the site to backfill the excavation. The clean soil stockpiled at the site was used as backfill as well. On April 9, April 15, and April 20, 2003, the excavated area was capped off with 435.15 tons (290.1 cubic yards) of CA-6.

On June 17, 2005, the IEPA received the CAP Amendment and Budget to resample seven monitoring wells in order to obtained up-to-date analytical results. The plan included a proposal to request a groundwater ordinance from the City of Towanda and utilize the ordinance as an institutional control. The CAP Amendment and Budget was approved. The initial plan to obtain a City of Towanda groundwater ordinance failed.

On December 13, 2006, a CAP was proposed to utilize Oxygen Releasing Compounds (ORC) injections in order to adequately remediate the groundwater contamination located at

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

the Henson Oil Company site. The compound proposed was Permeox Plus form FMC Chemical.

In a letter dated March 28, 2007, the IEPA decided to modify the December 13, 2006 Corrective Action Plan. The IEPA's reasoning for the modification was that due to contamination concentrations declining after soil excavation, removal and sampling for biofeasibility, two additional groundwater monitoring wells were needed. The most recent High Priority Corrective Action Plan Budget (USI, 2007) was submitted and approved by the IEPA (IEPA, 2007), but was not implemented.

On March 4, 2022, CW<sup>3</sup>M personnel visited the site with the intention to locate all 21 of the groundwater monitoring wells installed and potentially resample the five contaminated monitoring wells that were most recently sampled by USI on May 5, 2004 and May 24, 2004. The five monitoring wells that were to be resampled could not be resampled due to being damaged or destroyed. Eleven of the 21 monitoring wells were located.

On September 11, 2023, CW<sup>3</sup>M personnel visited the site to install five replacement wells to reassess the groundwater contamination plume and advanced soil borings to reassess the soil contamination plume. A soil gas vapor sample was also obtained to assess potential for the vapor intrusion pathway. The analytical results indicated that the vapor intrusion pathway was clean, so the vapor intrusion pathway can be excluded. On October 2, 2023, CW<sup>3</sup>M personnel returned to the site to sample the replacement monitoring wells. In the most recent analytical results, a decline in groundwater contamination was observed. Boring logs and well completion reports can be found in Appendix D. Maps containing the locations and values of monitoring wells and soil borings can be found in Appendix B. Analytical results as well as tables summarizing the results can be found in Appendix E.

#### 2. REMEDIATION OBJECTIVES

#### 2.1 DETERMINATION OF CLEAN-UP OBJECTIVES

In accordance with 35 Ill. Adm. Code 734.410, remediation objectives were determined in accordance with 35 Ill. Adm. Code § 742. One of the clean soil boring locations, ST-1 was sampled during the site classification sampling activities, for the Tiered Approach to Corrective Action Objectives (TACO) parameters during corrective action activities. The site-specific physical parameters were determined as follows:

Hydraulic Conductivity (K),  $3.57 \times 10^{-4}$  cm/sec Soil bulk density ( $\rho_b$ ),  $1.65 \text{ g/cm}^3$  Soil particle density ( $\rho_s$ ),  $2.65 \text{ g/cm}^3$  Moisture content (w), 25.2% Organic carbon content ( $f_{oc}$ ), 0.0360 g/g

CW<sup>3</sup>M Company. Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

In order to determine the hydraulic conductivity, a slug test was performed during site classification activities at MW-4 on April 9, 2001. The test was performed by lowering a "slug" constructed of polyvinyl chloride (PVC) into a monitoring well. When the slug was lowered into the well, the groundwater was displaced by the volume of the slug. As the water within the well equilibrates, water depth changes were recorded in relation to the time interval that had passed since the test was initiated.

The hydraulic conductivity calculations were based on the total well depth, screen length and radius, initial water depth, and the water depth change over time. The depth-to-water changes over time were plotted on a semi-logarithmic graph and the curve was evaluated. The slope of the straight-line portion of the curve, along with the other slug test data, was used to calculate the hydraulic conductivity.

Velocity was calculated using the hydraulic conductivity results determined at the site, as well as the hydraulic gradient. The hydraulic gradient was found by calculating the change in gradient between the most up-gradient well and the most down-gradient well, then dividing this answer by the distance in feet between the two wells. Formula R24,  $(U_{gw} = K \bullet i)$  of 35 Ill. Adm. Code § 742 Appendix C, Table C.

#### 2.2 SOIL AND GROUNDWATER OBJECTIVES

Soil analytical results were compared to the TACO Residential Tier 1 and TACO residential Tier 1 CUOs with the groundwater pathway removed, in milligrams per kilogram (parts per million) (mg/kg). The calculations of the Tier 1 CUOs are included in Appendix G of this CAP.

**TACO Residential Tier 1 CUOs** (W/ Groundwater Pathway **TACO Residential Tier 1** Removed) (mg/kg) **Parameter** CUOs (mg/kg) Benzene 0.03 0.8 Ethylbenzene 13.0 58.0 Toluene 12.0 42.0 **Total Xylenes** 5.6

Table 2-1. Soil Remediation Objectives

CW<sup>3</sup>M will consider the groundwater at this site to be Class I unless demonstrated otherwise pursuant to 35 Ill. Adm. Code § 620.210. According to the Illinois Pollution Control Board, three Class III Groundwater contributing areas exist; however, they are located in McHenry, Monroe and St. Clair Counties in northern and western Illinois. Groundwater investigation

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

sample results would be compared to the TACO Residential Tier 1 CUOs in milligrams per liter (mg/L).

Table 2-2. Groundwater Remediation Objectives

Parameter	TACO Tier 1 CUOs (mg/L)
Benzene	0.005
Ethylbenzene	0.7
Toluene	1.0
Total Xylenes	10.0

## 3. CORRECTIVE ACTION PLAN

The following CAP and Budget has been prepared by CW<sup>3</sup>M Company, Inc., as their recommendation for the most appropriate and economical approach to the remediation of the contamination at the Henson Oil Company site in Towanda, Illinois. The contaminated soil locations that previously exceeded Tier 1 CUOs were addressed with additional sampling and were found to be below Tier 1 CUOs. Based upon the analytical results from the soil samples collected, it is apparent that soil contamination exceeds Tier 1 CUOs in a limited area and has been defined. Analytical results show groundwater contamination exceeded Tier 1 CUOs, also in a limited area. After the most recent sampling event, the groundwater contamination plume is defined. The soil contamination plume is defined on site.

The following are all the soil and groundwater samples that exceed the most stringent CUOs.

Soil exceedance of EA-F1 is 0.13 mg/kg for Benzene. With the acceptance of a groundwater use restriction for the property or a groundwater ordinance, no soil contamination above Tier 1 CUOs remains.

Groundwater exceedance of MW-1 is 3.470 mg/L for benzene Groundwater exceedance of MW-3 is 3.350 mg/L for benzene Groundwater exceedance of MW-7 is 2.430 mg/L for benzene

Groundwater exceedance of MW-1 is 1.230 mg/L for ethylbenzene Groundwater exceedance of MW-7 is 1.890 mg/L for ethylbenzene

The groundwater contamination will be addressed with the implementation of a groundwater ordinance.



SID: 17712

Agency ID: 170000675909

Media File Type: LAND

Bureau ID: 1131055007 Site Name: Henson Oil Co

Site Address1: Rte 66

Site Address2:

Site City: Towanda

State: IL

Zip: 61776-

# This record has been determined to be partially or wholly exempt from public disclosure

## **Exemption Type:**

## Redaction

Exempt Doc #: 8

**Document Date:** 11/20/2023

Staff: SAB

**Document Description:** CORRECTIVE ACTION PLAN & BUDGET

Category ID: 21A

**Category Description:** 

LEAKING UST TECHNICAL

Exempt Type: Redaction

Permit ID: 20001913

**Date of Determination:** 

5 /8 /2024

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

#### 3.1 CURRENT AND PROJECTED USES OF THE SITE

The site is bordered to the south by East Jackson Street (N 1960 East Rd) and a railway beyond it, to the west by a vacant lot considered to be commercial property (Weaver Property), to the north by the Old Route 66 Highway and to the east by Jackson Steet and a State-owned property beyond that. A bar, Kicks Bar and Grill, is currently operating on site and is expected to continue to do so.

### 3.2 INSTITUTIONAL CONTROLS PROPOSED

The proposed institutional control for this incident will be a groundwater ordinance put in place by the Village of Towanda.

#### 3.3 WATER SUPPLY WELL SURVEY

A survey of water supply wells for the purpose of identifying and locating all community water supply (CWS) wells within 2,500 feet of the UST systems and all potable water supply wells within 200 feet of the UST systems has been completed. The Illinois State Water Survey (ISWS), the Illinois State Geological Survey (ISGS) and the IEPA Division of Public Water Supplies were contacted via the Source Water Assessment Program (SWAP) online.

The ISGS, ISWS, and IEPA Division of Public Water Supplies were accessed online on March 9, 2021 (EPA.STATE.IL.US, 2021). The response indicated five ISGS wells are located within 2,500 feet of the site.

No wells are located within the setback zone located for the site.

Table 3-1. Water Supply Well Information

Well ID	Owner	Type	Distanc e From USTs (feet)	Depth (feet)	Setback Zone (feet)
121132435700		Private Well	1994	120	200
121132241700	Towanda Auger Test	Water Well Test Hole	1182	0	200
121130020100	Towanda City Test	Water Well Test Hole	892	197	200
121132241500	Village of Towanda	Water Well Test Hole	1553	188	200
121132241600	Village of Towanda	Water Well Test Hole	1920	63	200

IEPA
DIVISION OF RECORDS MANAGEMENT
EXEMPT IN PART

MAY **0 8** 2024

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 —Incident Number 2000-1913

## **3.4 CLOSURE**

Once the proposed groundwater ordinance is completed, a CACR report will be submitted to the IEPA. This future document will be accompanied by a certification from an Illinois Registered Professional Engineer.

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 —Incident Number 2000-1913

## 4. REFERENCES

CW<sup>3</sup>M, 2022. CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment. Henson Oil Co., Towanda, Illinois, Illinois, May 9, 2022.

USI, 2000a. United Science Industries, Inc. 20-Day Certification. Henson Oil Co., Towanda, Illinois, October 24, 2000.

USI, 2000b. United Science Industries, Inc., Early Action Extension Request, Henson Oil Co., Towanda, Illinois, November 2, 2000.

USI, Inc, 2001. United Science Industries, Inc. 45-Day Report. Henson Oil Co., Towanda, Illinois, January 30, 2001.

USI. Inc, 2002. United Science Industries, Inc. Site Classification Completion Report. Henson Oil Co., Towanda, Illinois, November 22, 2002.

USI, 2003. United Science Industries, Inc., High Priority Corrective Action Plan and Budget, Henson Oil Co., Towanda, Illinois, August 11, 2003.

USI, 2004. United Science Industries, Inc., High Priority Corrective Action Plan and Budget, Henson Oil Co., Towanda, Illinois, July 12, 2004.

USI, 2005a. United Science Industries, Inc., High Priority Corrective Action Plan and Budget, Henson Oil Co., Towanda, Illinois, June 17, 2005.

USI, 2005b. United Science Industries, Inc., High Priority Corrective Action Plan and Budget, Henson Oil Co., Towarda, Illinois, August 19, 2005.

USI, 2006a. United Science Industries, Inc., High Priority Corrective Action Plan Budget, Henson Oil Co., Towarda, Illinois, February 24, 2006.

USI, 2006b. United Science Industries, Inc., High Priority Corrective Action Plan and Budget, Henson Oil Co., Towarda, Illinois, December 15, 2006.

USI, 2007. United Science Industries, Inc., High Priority Corrective Action Plan Budget, Henson Oil Co., Towanda, Illinois, April 26, 2007.

IEPA, 2000. Illinois Environmental Protection Agency, *Early Action Extension Correspondence*, Henson Oil Co., Towanda, Illinois, November 20, 2000.

IEPA, 2001. Illinois Environmental Protection Agency. 45-Day Report Correspondence. Henson Oil Co., Towanda, Illinois, -February 21, 2001.

IEPA, 2003a. Illinois Environmental Protection Agency. Site Classification Completion Report. Henson Oil Co., Towanda, Illinois, March 12, 2003.

CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Amendment Henson Oil Co. - Towanda LPC # 1131055007 –Incident Number 2000-1913

IEPA, 2003b. Illinois Environmental Protection Agency, *High Priority Correction Action Plan and Budget Correspondence*, Henson Oil Co., Towanda, Illinois, December 9, 2003.

IEPA, 2004. Illinois Environmental Protection Agency, High Priority Correction Action Plan and Budget Correspondence, Henson Oil Co., Towanda, Illinois, October 8, 2004.

IEPA, 2005a. Illinois Environmental Protection Agency, *High Priority Correction Action Plan and Budget Correspondence*, Henson Oil Co., Towanda, Illinois, July 18, 2005.

IEPA, 2005b. Illinois Environmental Protection Agency, *High Priority Correction Action Plan and Budget Correspondence*, Henson Oil Co., Towanda, Illinois, October 7, 2005.

IEPA, 2006. Illinois Environmental Protection Agency, *High Priority Correction Action Plan Budget Correspondence*, Henson Oil Co., Towanda, Illinois, March 2, 2006.

IEPA, 2007a. Illinois Environmental Protection Agency, *High Priority Correction Action Plan and Budget Correspondence*, Henson Oil Co., Towanda, Illinois, March 28, 2007

IEPA, 2007b. Illinois Environmental Protection Agency, *High Priority Correction Action Plan Budget Correspondence*, Henson Oil Co., Towanda, Illinois, July 26, 2007.

IEPA, 2022. Illinois Environmental Protection Agency, Corrective Action Plan and Budget Amendment Correspondence, Henson Oil Co., Towanda, Illinois, September 6, 2022.

EPA.STATE.IL.US, 2021. Source Water Assessment Program, Water Well Survey Map. www.maps.epa.state.il.us, accessed March 9, 2021.

## APPENDIX A CORRECTIVE ACTION PLAN FORM

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS



## Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 -57.19). Failure to disclose this information may result in a civil penalty of not to exceed \$50,000.00 for the violation and an additional civil penalty of not to exceed \$10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false, fictitious, or fraudulent material statement or representation, orally or in writing, to the Agency, or to a unit of local government to which the Agency has delegated authority under subsection (r) of Section 4 of this Act, related to or required by this Act, a regulation adopted under this Act, any federal law or regulation for which the Agency has responsibility, or any permit, term, or condition thereof, commits a Class 4 felony. and each such statement or writing shall be considered a separate Class 4 felony. A person who, after being convicted under paragraph 415 ILCS 5/44 (h)(8), violates paragraph 415 ILCS 5/44 (h)(8) a second or subsequent time, commits a Class 3 felony. (415 ILCS 5/44). This form has been approved by the Forms Management Center.

## **Leaking Underground Storage Tank Program Corrective Action Plan**

A.	Site Identification											
IEMA Incident # (6- or 8-digit): 20001913 Site Name: Henson Oil Co.				IEPA LPC# (10-digit): 1131055007								
									-			
	Site Address (Not a P.O. Bo	ox): Old Hw	y. 6	6								
	City: Towanda				Co	ounty	: McLean		ZIP Co	de: <u>617</u>	76	
В.	Site Information											
	1. Will the owner or operator	r seek reimb	urs	ement	from t	he U	nderground Stora	age Tank Fur	nd?	✓ Yes	O No	
	2. If yes, is the budget attac	hed?	<b>Ø</b>	Yes	0	No						
	3. Is this an amended plan?	•	Ø	Yes	0	No						
	4. Identify the material(s) re	leased: C	3as	oline								
	5. This Corrective Action Pl	an is submitt	ed į	oursua	int to:							
	a. 35 III. Adm. Code	e <b>73</b> 1.166										
	O b. 35 III. Adm. Code	e 732.404										
		734.335										
<b>C</b> . I	Proposed Methods of	Remediat	ior	1								
	1. Soil Groundwat	er Ordinance	Э							_		
	2. Groundwater Groundwat	er Ordinance	Э									
D. \$	Soil and Groundwater	Investiga	tio	n Res	sults					_	1 1	
	(for incidents subject to 35	III. Adm. Cod	de 7	31 on	ly or 7	32 tha	at were classified	using Metho	od One o	or Two, if	not previously	y

provided)

Provide the following:

- Description of investigation activities performed to define the extents of soil and/or groundwater contamination;
- 2. Analytical results, chain-of-custody forms, and laboratory certifications;
- 3. Tables comparing analytical results to applicable remediation objectives;

- 4. Boring logs;
- 5. Monitoring well logs; and
- 6. Site maps meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440 and showing:
  - a. Soil sample locations;
  - b. Monitoring well locations; and
  - c. Plumes of soil and groundwater contamination.

### E. Technical Information - Corrective Action Plan

### Provide the following:

- 1. Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives;
  - a. The major components (e.g., treatment, containment, removal) of the corrective action plan;
  - b. The scope of the problems to be addressed by the proposed corrective action; and
  - c. A schedule for implementation and completion of the plan;
- 2. Identification of the remediation objectives proposed for the site:
- 3. A description of the remedial technologies selected:
  - a. The feasibility of implementing the remedial technologies;
  - b. Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved; and
  - c. A schedule of when the technologies are expected to achieve the applicable remediation objectives;
- 4. A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after their completion;
- 5. A description of the current and projected future uses of the site;
- 6. A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives:
  - a. an assessment of their long-term reliability;
  - b. operating and maintenance plans;
  - c. maps showing area covered by barriers and institutional controls;
  - d. copies of the complete application(s) for planned Highway Authority Agreement(s); and
  - e. draft groundwater ordinance(s) and Environmental Land Use Controls.
- 7. The water supply well survey:
  - a. Map(s) showing locations of community water supply wells and other potable wells and the setback zone for each well:
  - b. Map(s) showing regulated recharge areas and wellhead protection areas;
  - c. Map(s) showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
  - d. Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
  - e. Tables listing the setback zone for each community water supply well and other potable water supply wells;
  - f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified; and
  - g. A certification from a Licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement);

- 8. Appendices:
  - a. References and data sources report that are organized; and
  - b. Field logs, well logs, and reports of laboratory analyses;
- 9. Site map(s) meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440;
- 10. Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.;
- 11. A description of bench/pilot studies;
- 12. Cost comparison between proposed method of remediation and other methods of remediation;
- 13. For the proposed Tier 2 or 3 remediation objectives, provide the following:
  - a. The equations used;
  - b. A discussion of how input variables were determined;
  - c. Map(s) depicting distances used in equations; and
  - d. Calculations; and
- 14. Provide documentation to demonstrate the following for alternative technologies:
  - a. The proposed alternative technology has a substantial likelihood of successfully achieving compliance with all applicable regulations and remediation objectives;
  - b. The proposed alternative technology will not adversely affect human health and safety or the environment:
  - c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of the alternative technology;
  - d. The owner or operator will implement a program to monitor whether the requirements of subsection (14)(a) have been met;
  - e. Within one year from the date of Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (14)(a); and
  - f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology and is not substantially higher than at least two other alternative technologies, if available and technically feasible.

## F. Exposure Pathway Exclusion

Provide the following:

- 1. A description of the tests to be performed in determining whether the following requirements will be met:
  - a. Attenuation capacity of the soil will not be exceeded for any of the organic contaminants;
  - b. Soil saturation limit will not be exceeded for any of the organic contaminants;
  - Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 III. Adm. Code 721.123;
  - d. Contaminated soils do not exhibit a pH ≤ 2.0 or ≥ 12.5; and
  - e. Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35 III. Adm. Code 721.124.
- 2. A discussion of how any exposure pathways are to be excluded.

## G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

	ner or Operator	Consultant
Name	Heison Oil Co.	Company CWM Company, Inc.
Contact	Jerry Henson	Contact Carol Rowe, P.G.
Address	PO Box 712	Address 701 West South Grand Avenue
City	Bloomington	City Springfield
State	Illinois	State Illinois
Zip Code	61702	Zip Code 62704
Phone		Phone 217-522-8001
Email		Email cwm@cwmeompany.com
Signatüre Date	11/13/23	Signature
	· •	

I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 III. Adm. Code 731, 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Licensed Professional Engineer or Geologist  Name Vince E. Smith	L.P.E. or L.P.G. Seal
Company CWM Company, Inc.	and the state of t
Address 701 West South Grand Avenue	
City Springfield	
State Illinois	
Zip Code 62704	
Phone 217-522-8001	
III. Registration No. 062-046118	
License Expiration Date i(/3 o /2)	- KLINOIS
Signature	
Date <u>1// 8/2-3</u>	

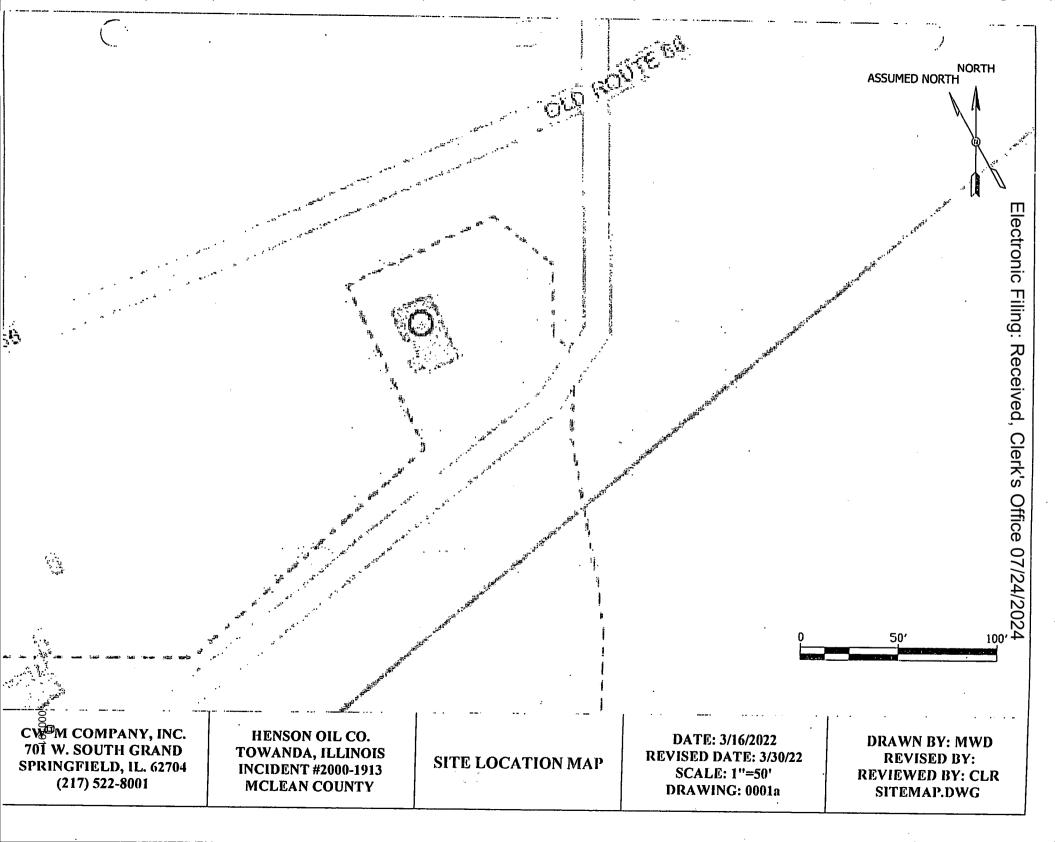
## APPENDIX B SITE MAPS AND ILLUSTRATIONS

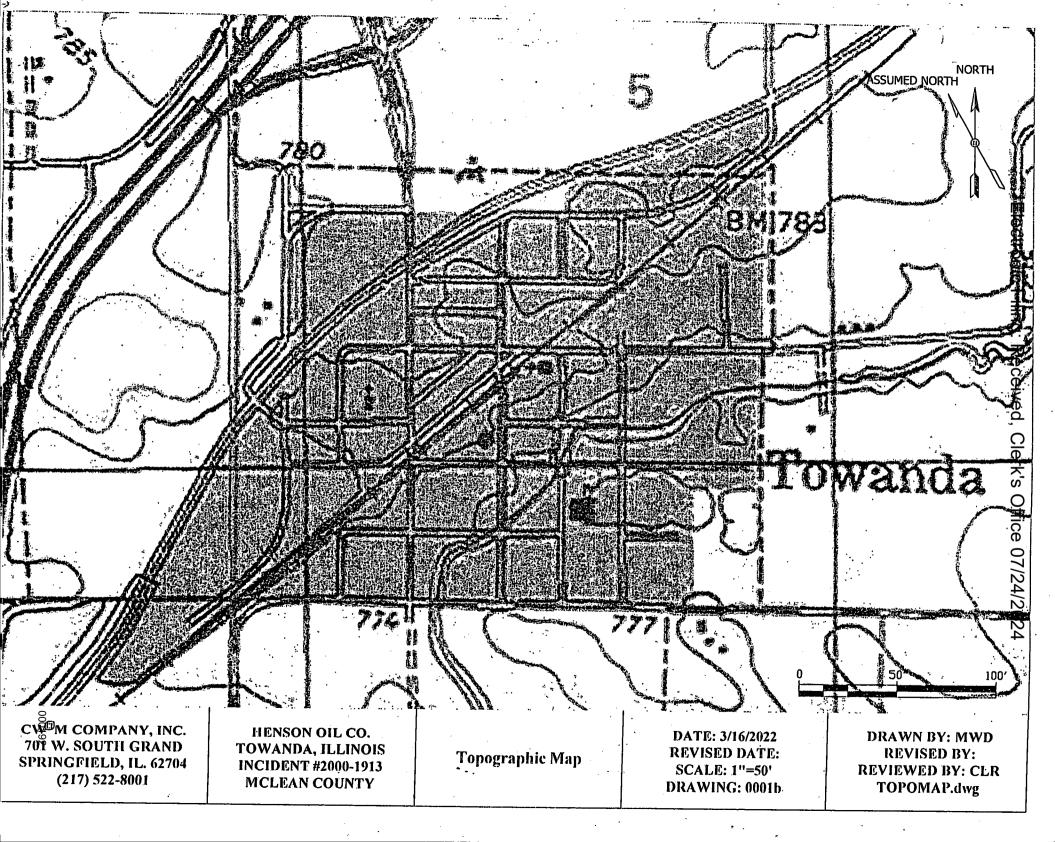
CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

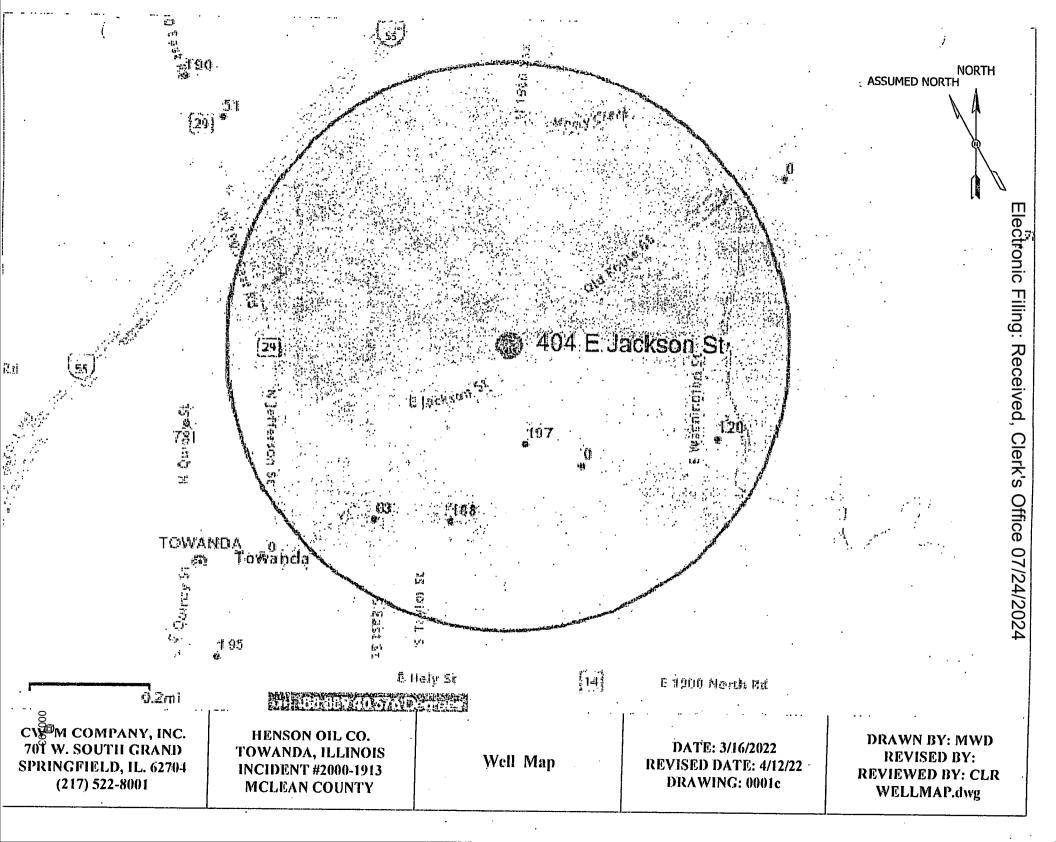
CW<sup>3</sup>M Company, Inc. Corrective Action Plan and Budget Henson Oil Co. - Towanda LPC # 1131055007 -Incident Number 2000-1913

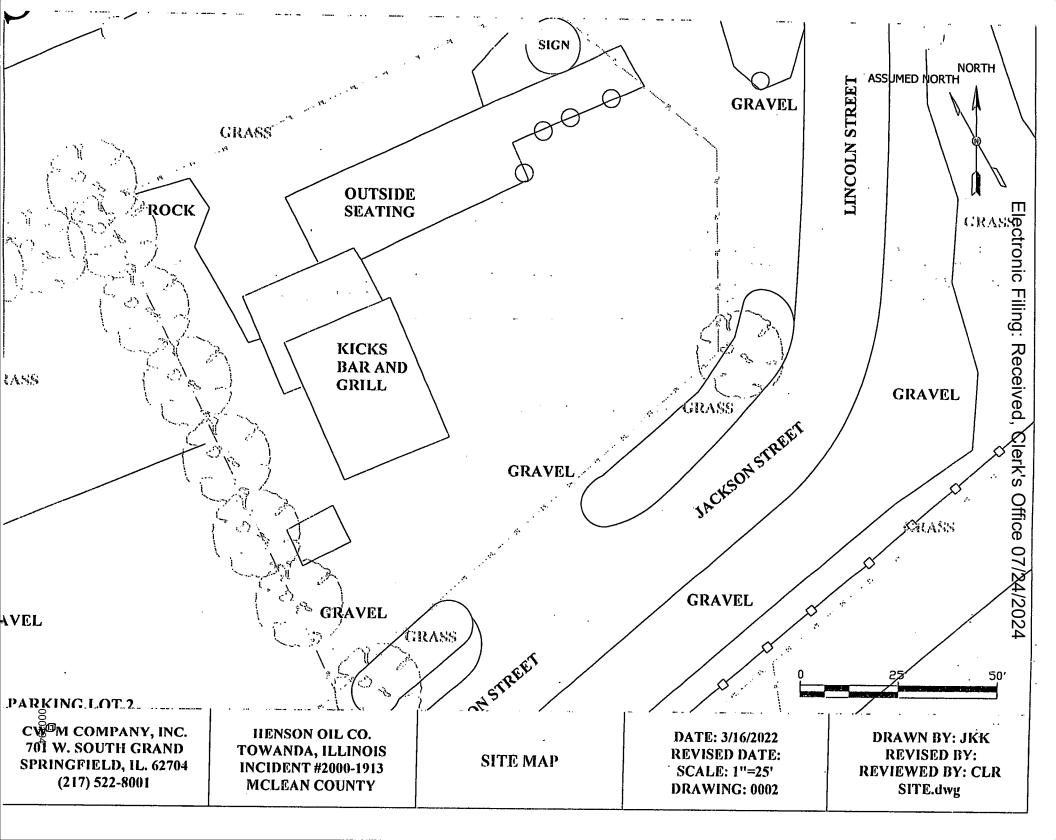
## **INDEX OF DRAWINGS**

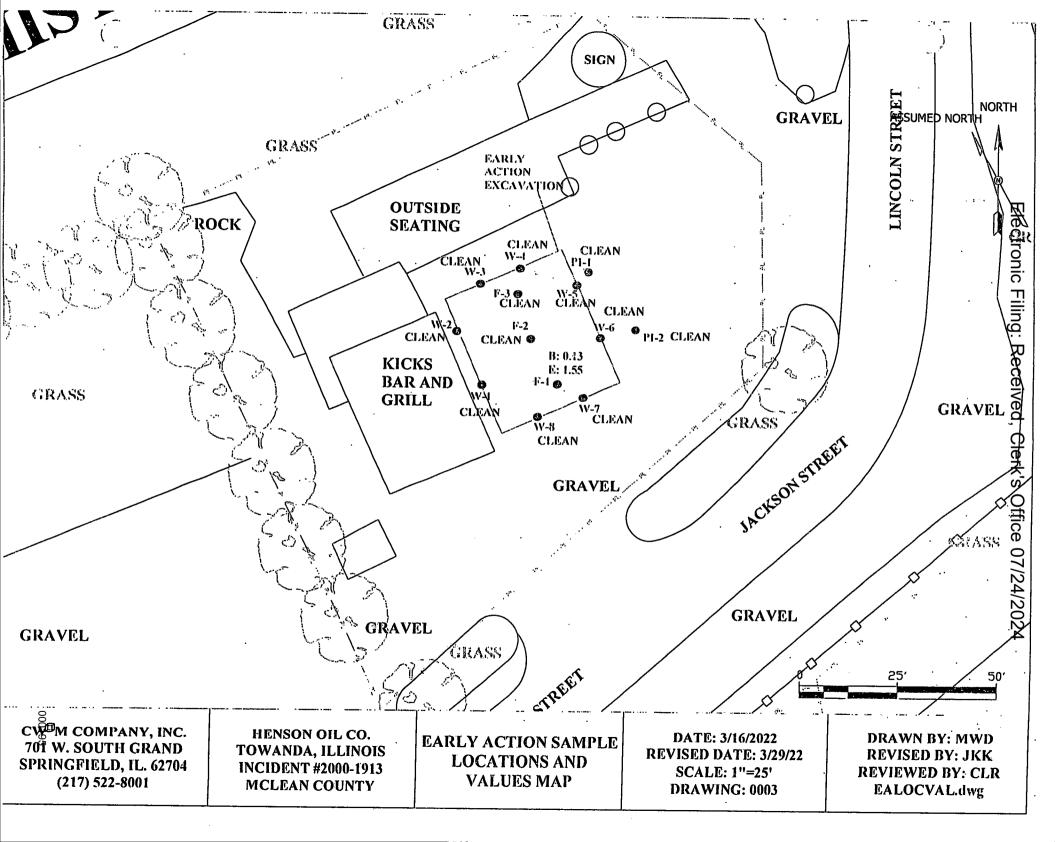
Drawing Number	Description	File Name
0001a	Site Location Map	SITEMAP.dwg
0001b	Topographic Map	TOPOMAP.dwg
0001c	Well Map	WELLMAP.dwg
0002	Site Map	SITE.dwg
0003	Early Action Sample Location and Value Map	EALOCVAL.dwg
0004a	Site Inv. Soil Borings Locations Map	SG1_SBLOC.dwg
0004b	Site Inv. Soil Borings Values Map (0-5ft)	SG1 SBLOC(0-5).dwg
0004c	Site Inv. Soil Borings Values Map (5-10ft)	SG1_SBLOC(5-10).dwg
0004d	Site Inv. Soil Borings Values Map (10-15ft)	SG1_SBLOC(10-15).dwg
0005a	Monitoring Well Locations Map	MWLOC.dwg
0005b	Groundwater Contamination Values Map	GCONTVAL.dwg
0006a	Corrective Action Excavation Soil Samples Locations Map	CALOC.dwg
0006ь	Corrective Action Excavation Soil Samples Values Map	CAVAL.dwg
0006aa	Corrective Action soil Samples Location Map	CA_sbLOC.dwg
0006c	Corrective Action soil Samples Values Map (0-5')	CAsb val0-5.dwg
0006d	Corrective Action soil Samples Values Map (5-10')	CAsb val5-10.dwg
0006e	Corrective Action soil Samples Values Map (10-15')	CAsb val10-15.dwg "
0009	Groundwater Contamination Plume Map	GWPlume.dwg
0010	Soil Contamination Plume Map	SoilPlume.dwg
0013	Groundwater Modeling Map	Model.dwg
0014	Proposed Groundwater Ordinance Map	GWOrd.dwg

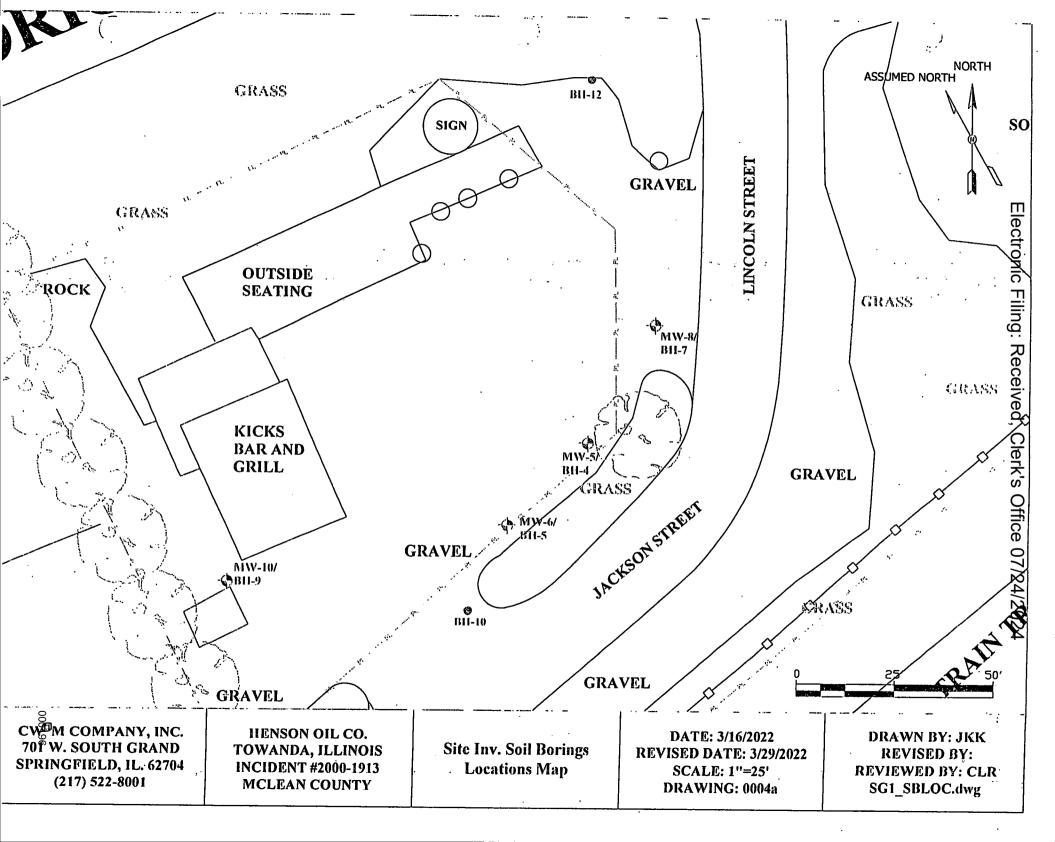


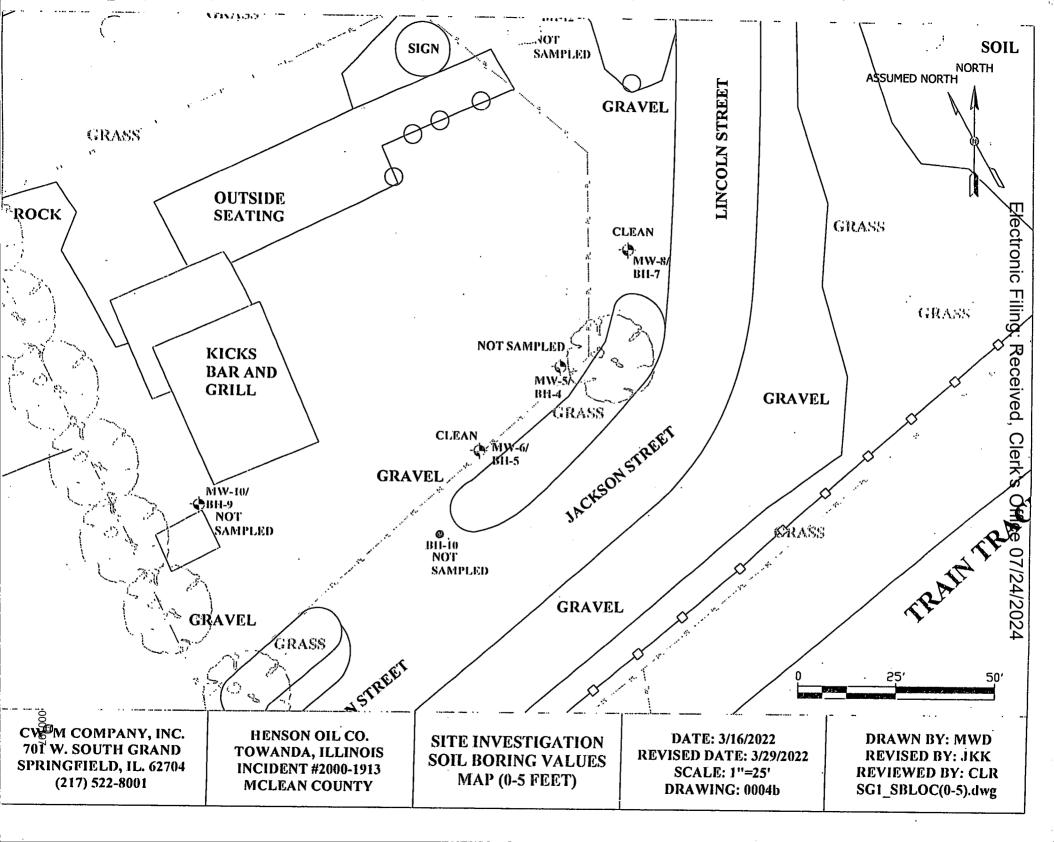


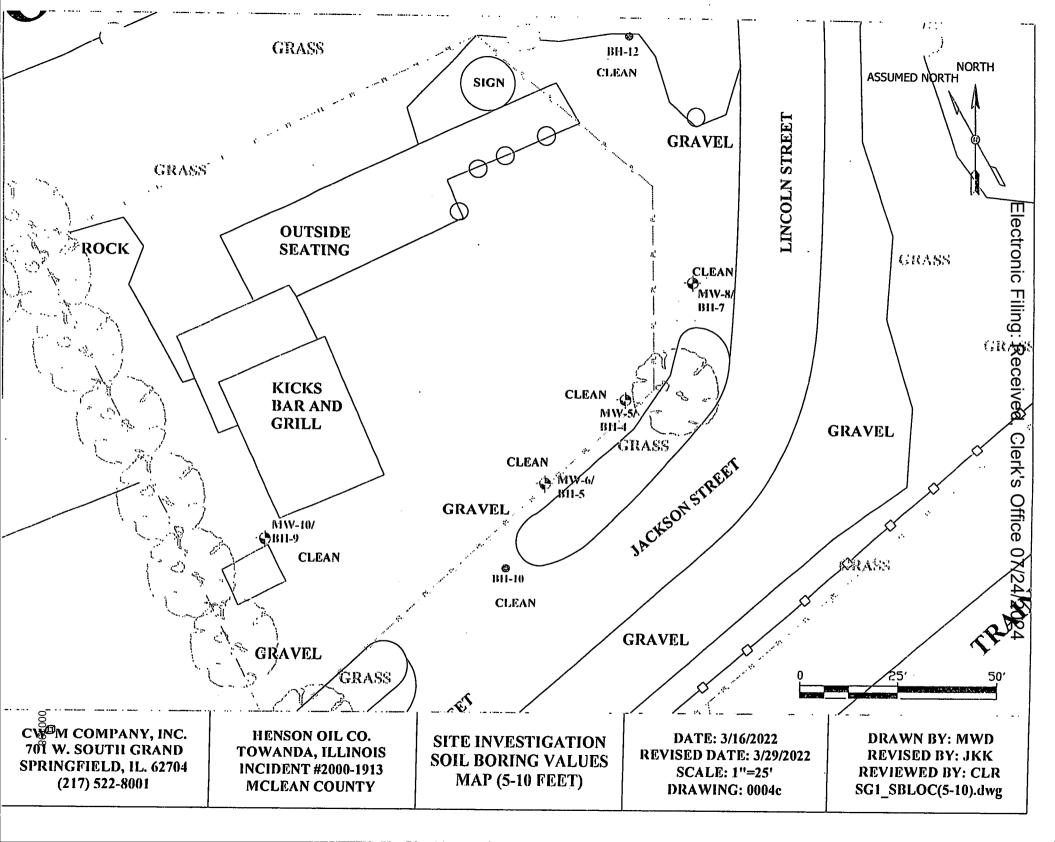


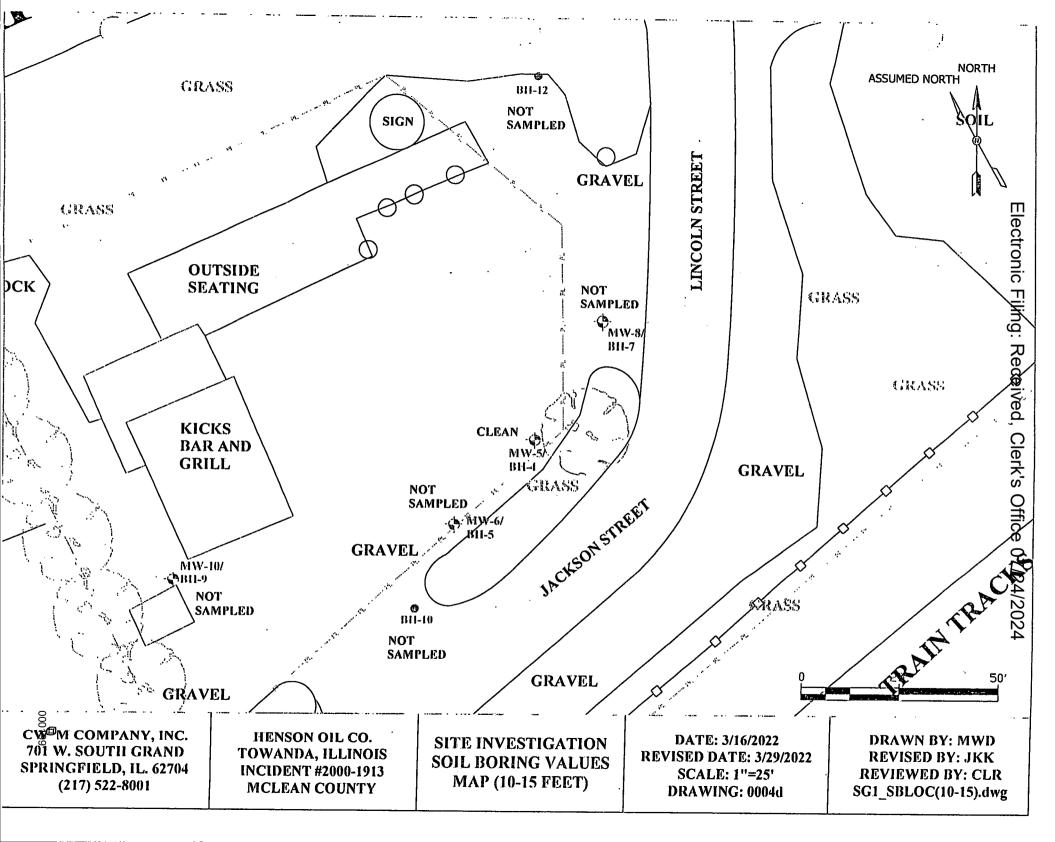


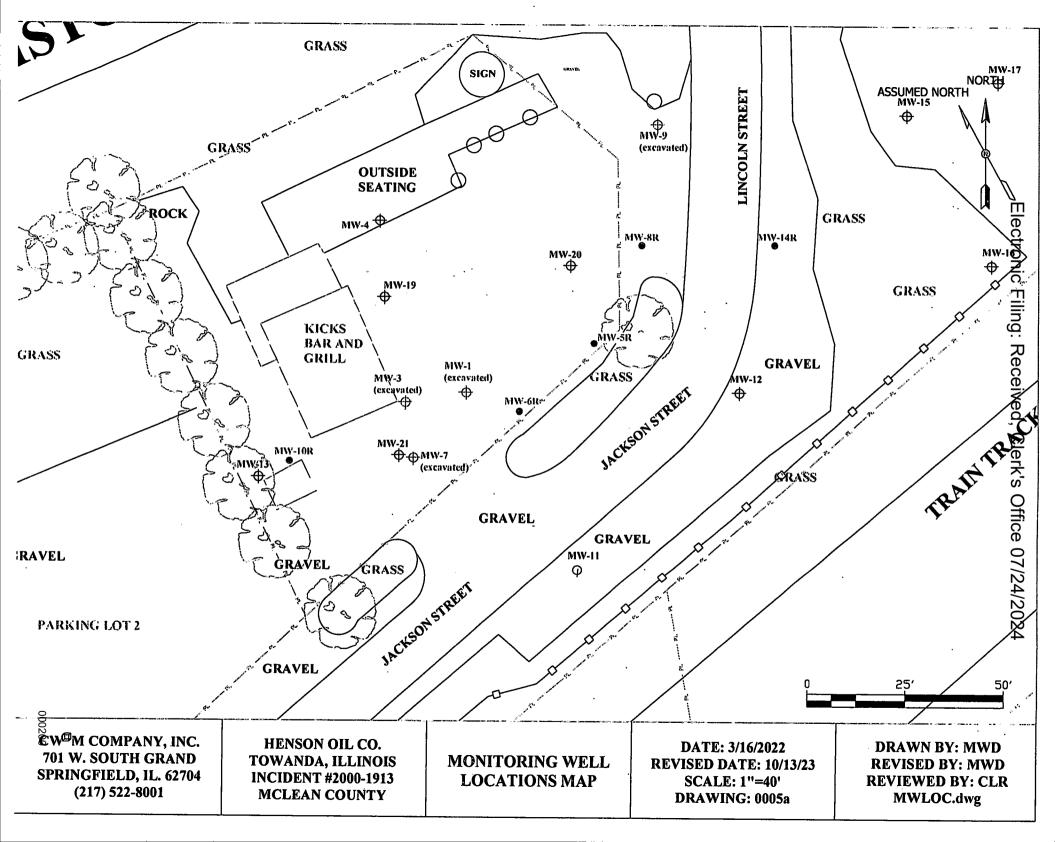


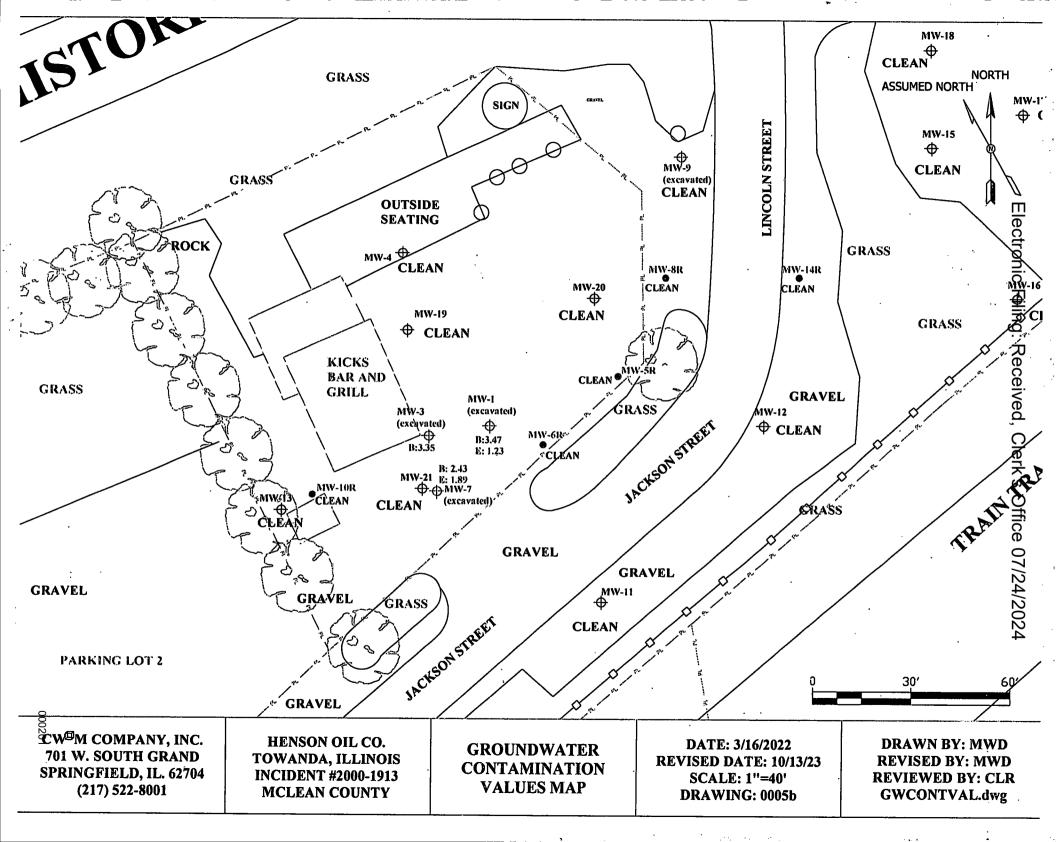


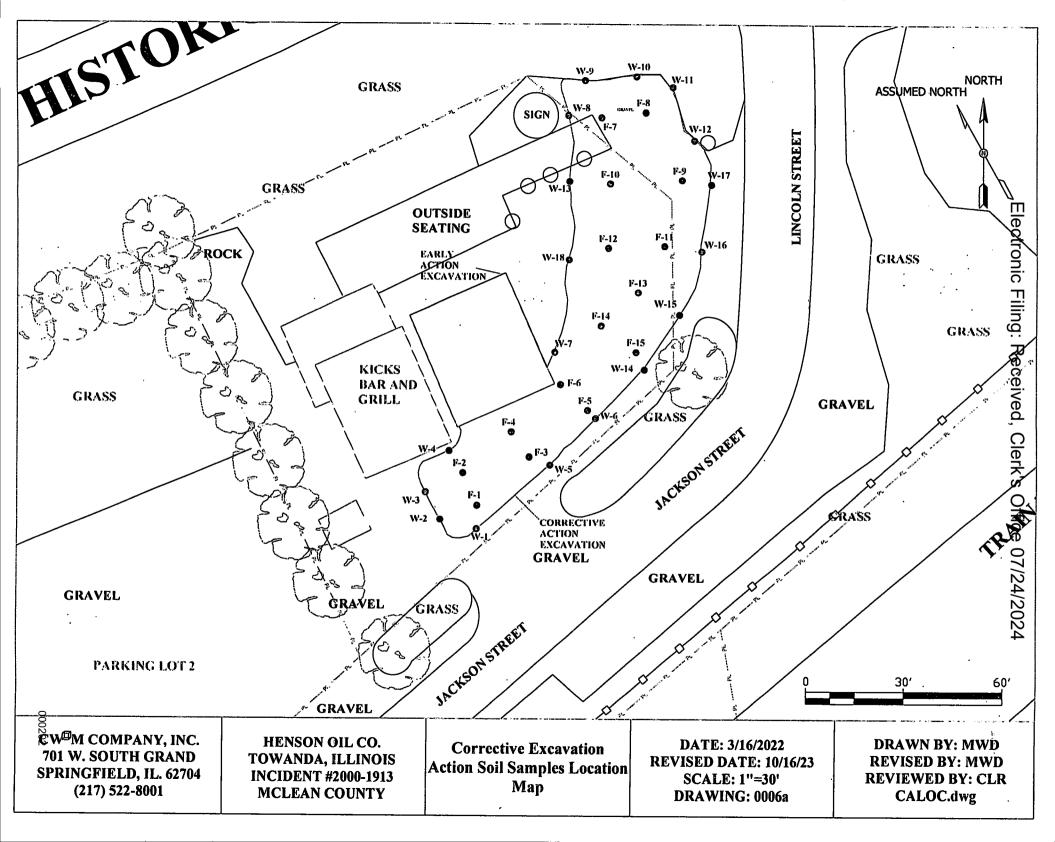


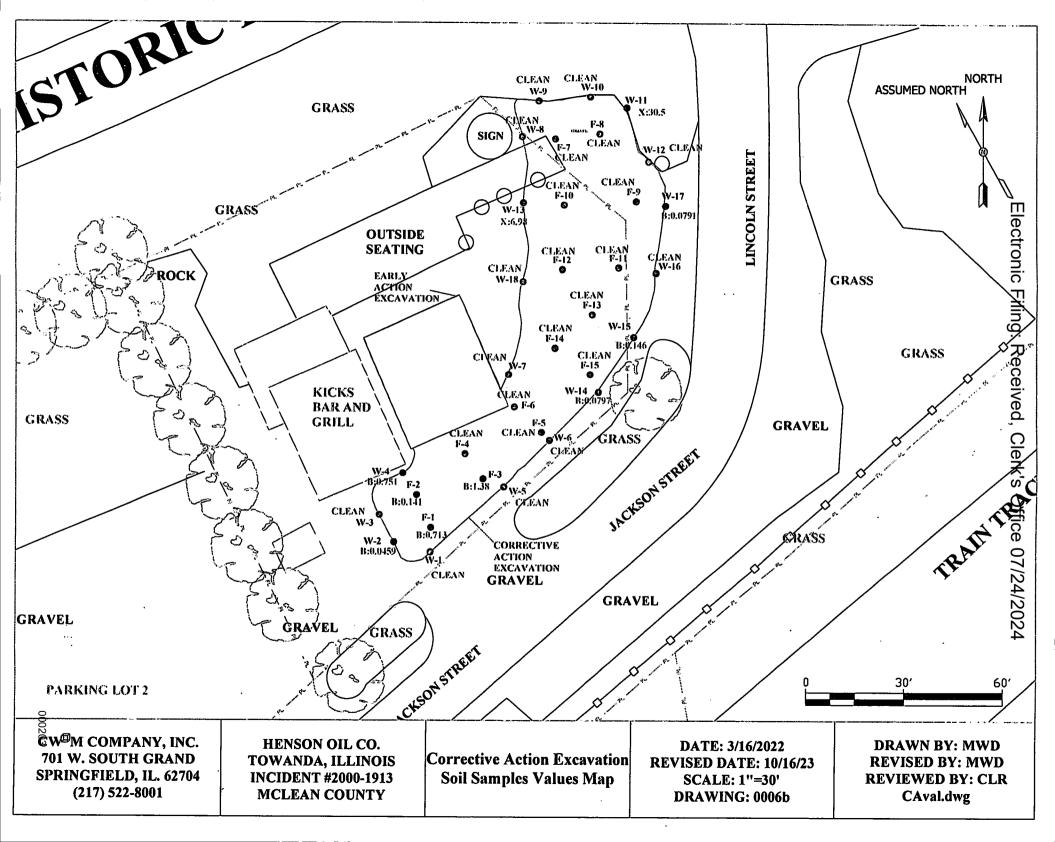


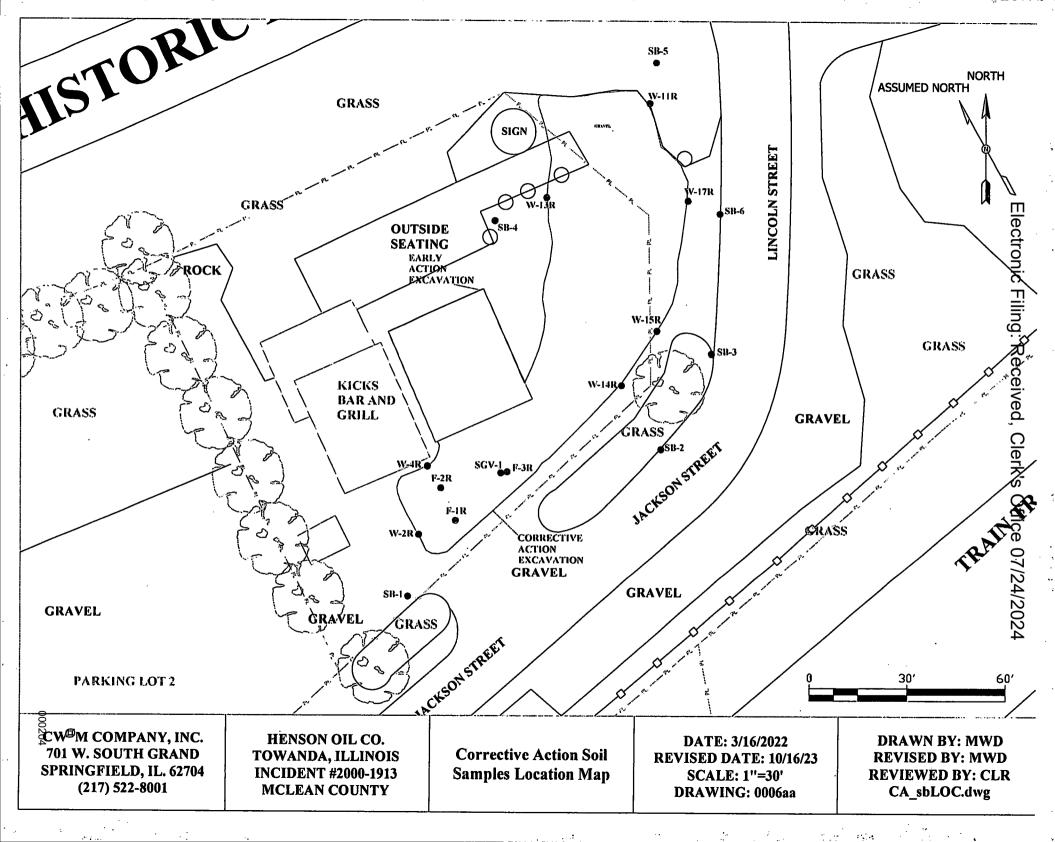


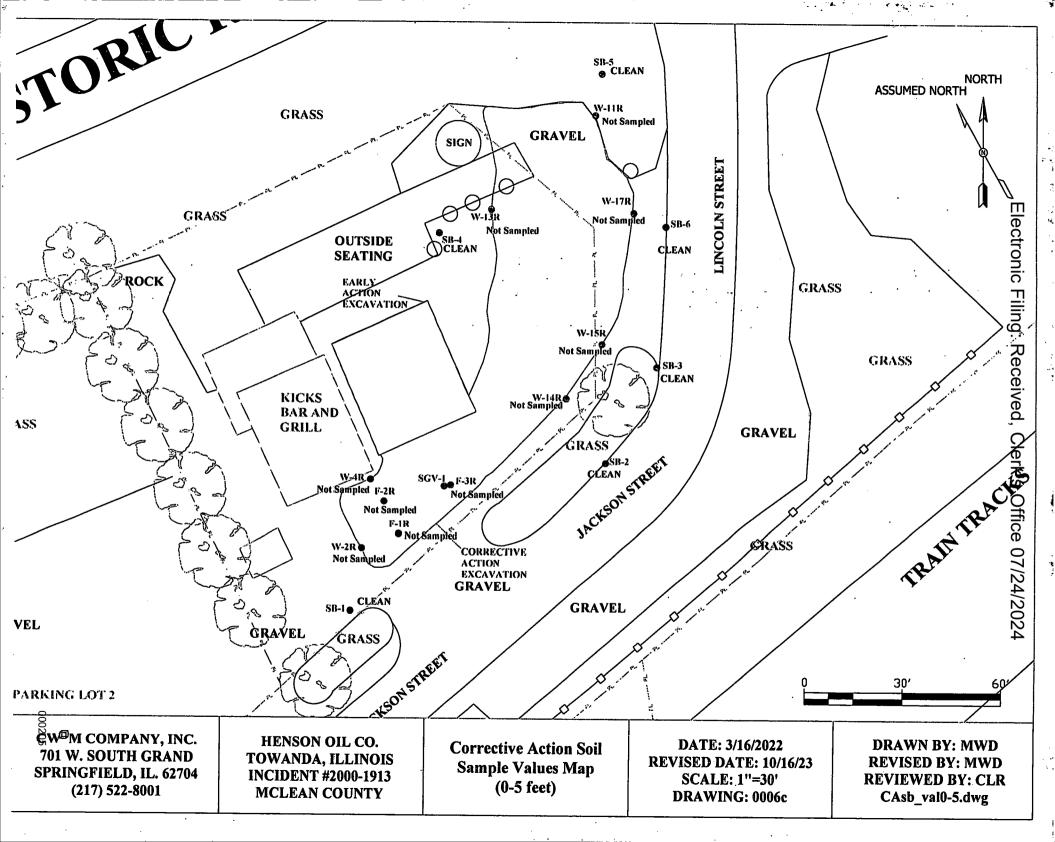


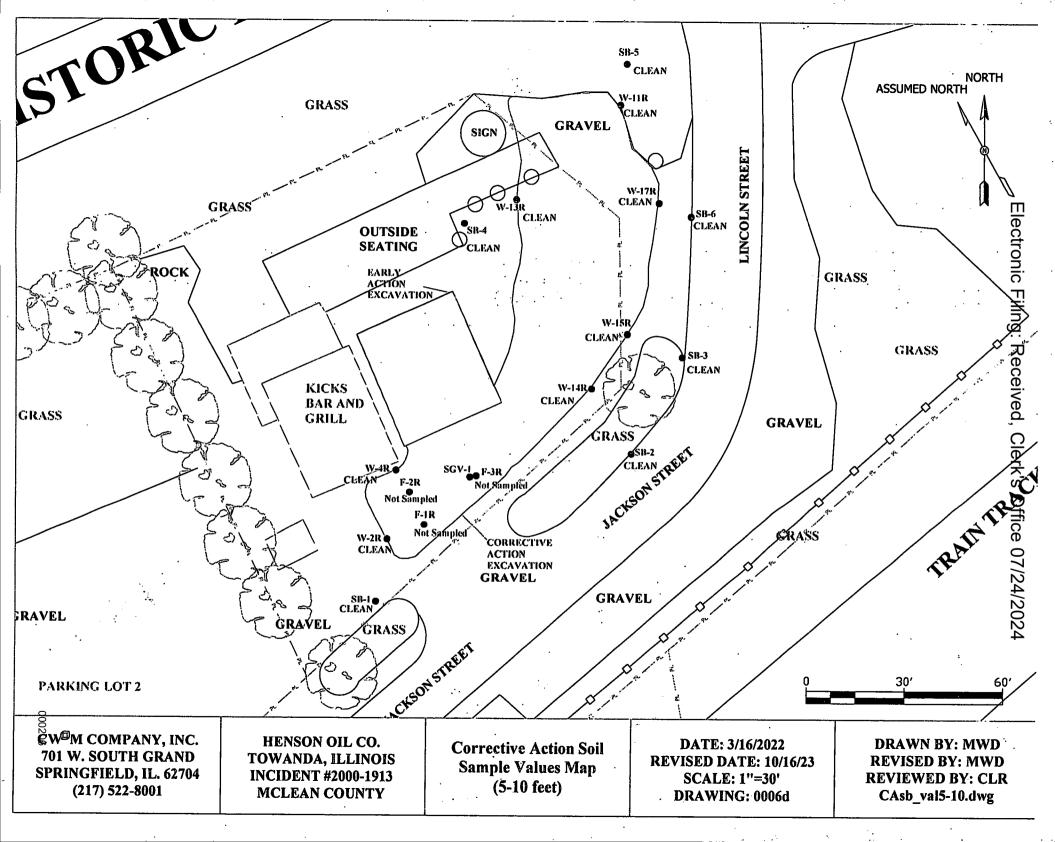


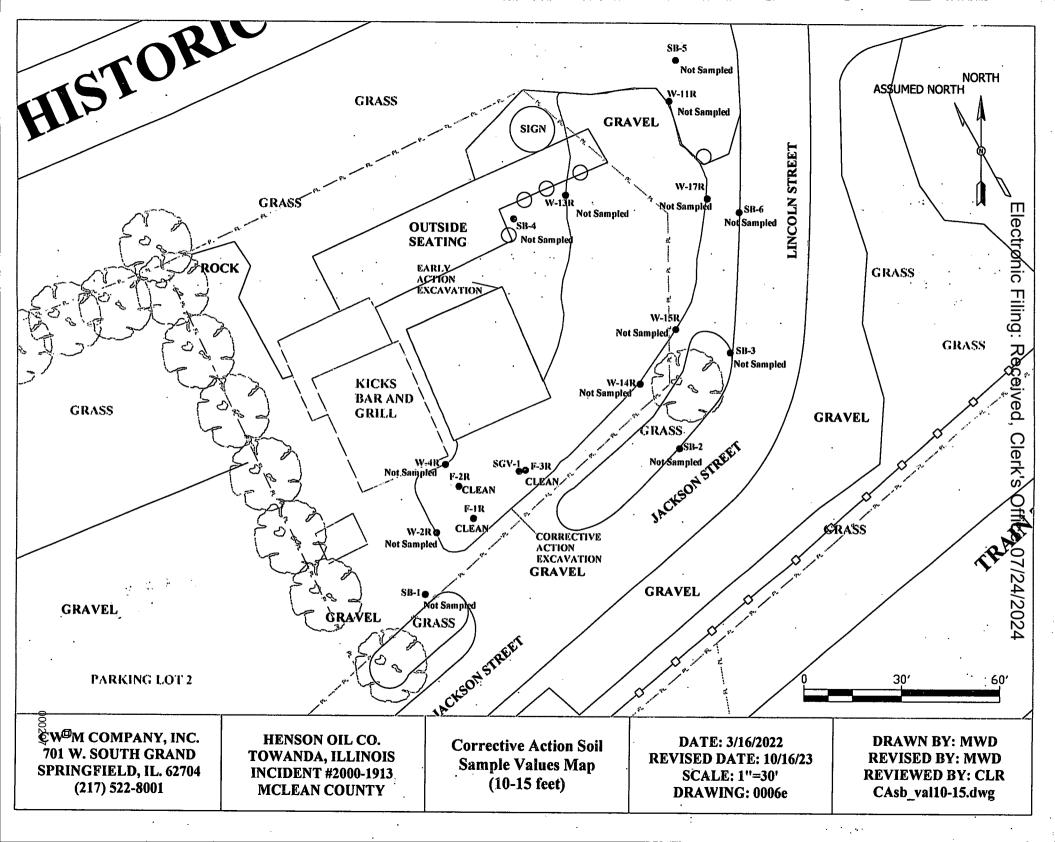


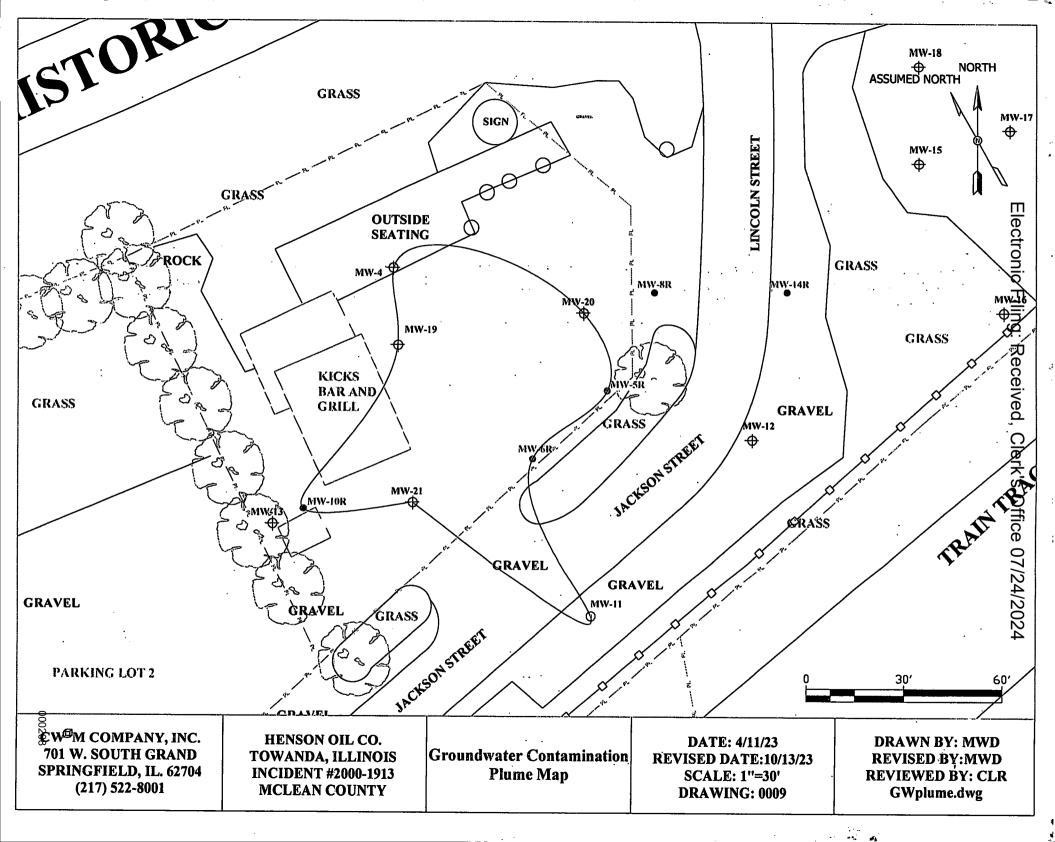


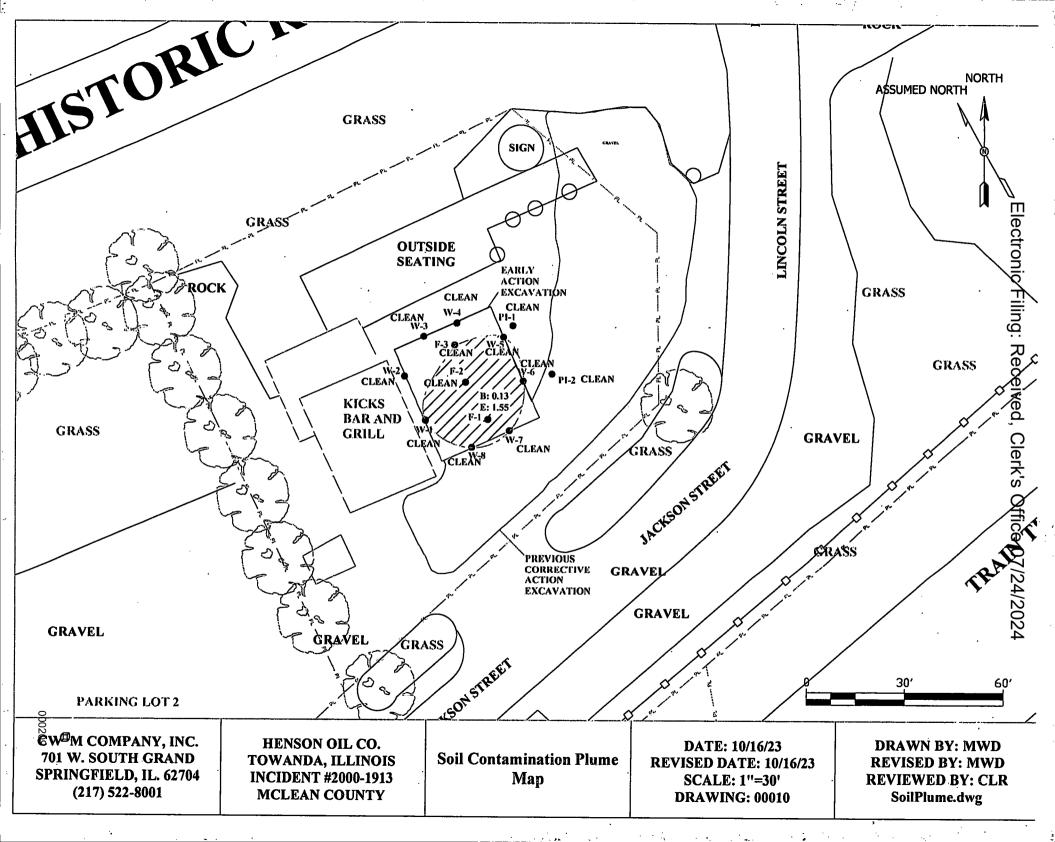


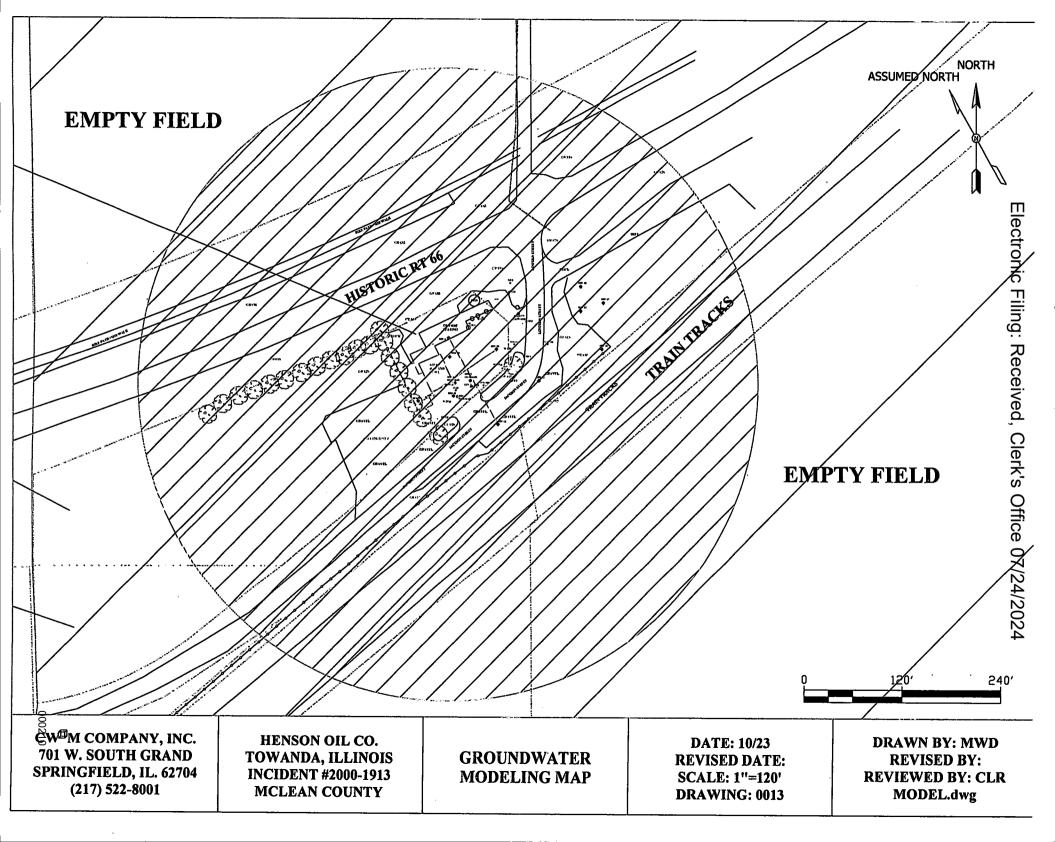


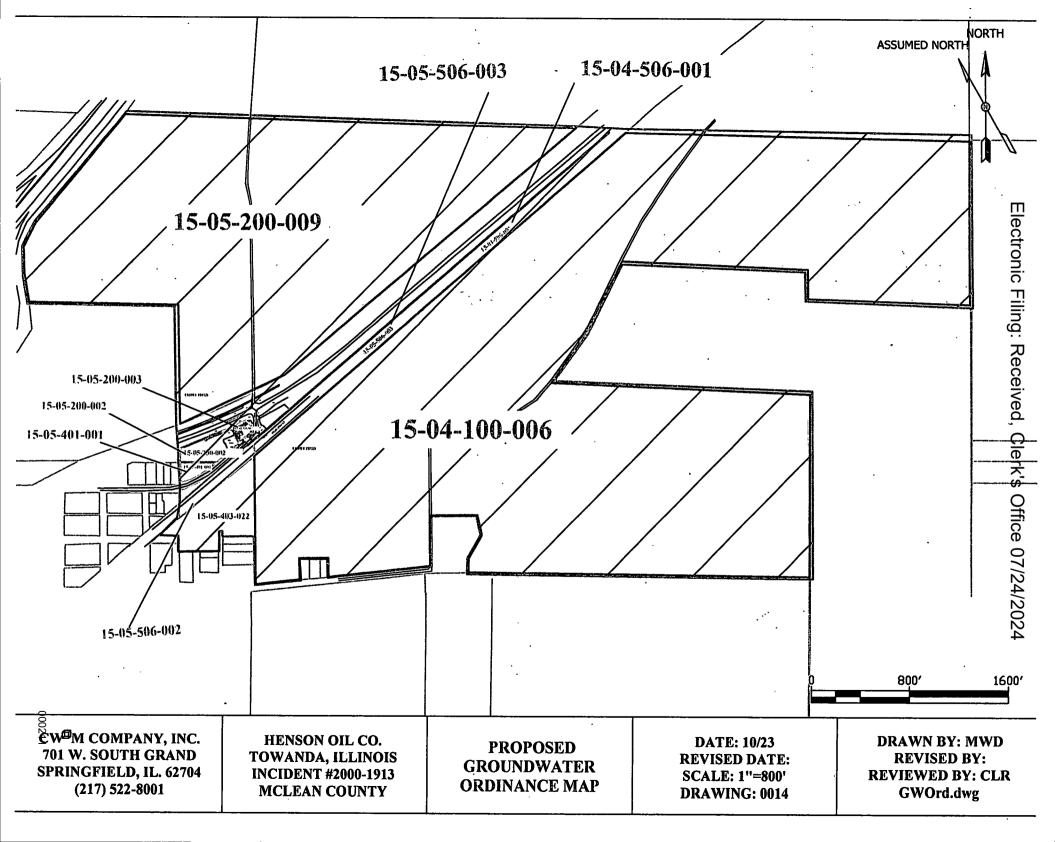












## **APPENDIX C**

## ILLINOIS OFFICE OF THE STATE FIRE MARSHAL ELIGIBILITY DETERMINATION

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS



### Office of the Illinois State Fire Marshal

**General Office** 217-785-0969 217-782-1062 Divisions 217-732-2118

RSCM INVESTIGATION BOILER and PRESSURE VESSEL SAFETY 217-752-2696 FIRE PREVENTION 217-785-4714 217-782-0683 **INFRS** 217-785-5825 **CUMPN RESCURCES** 217-785-1025

ANAGEMENT SERVICES SONNEL STANCARCS and EDUCATION 217-782-4642 PETRICLEUM and CHEMICAL SAFETY 217-765-5878 PUBLIC INFORMATION 217-795-1021

WEB SITE

CERTIFIED MAIL - RECEIPT REQUESTED # Z 082 411 101

November 2, 2000

Herson Oil Company, Inc. 1105 Croxton Avenue Bloomington, IL 61701

In Re:

Facility No. 4-012241 IEMA Incident No. 00-1913 Towarda Mini Mart Old Hwy 66 Towarda, McLean Co., IL

#### Dear Applicant:

The Reimbursement Eligibility and Deductible Application received on October 23, 2000 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek payment of costs in excess of \$10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank 1 8,000 gallon Gasoline Tank 2 8,000 gallon Gasoline Tank 3 8,000 gallon Gasoline

You must contact the Illinois Environmental Protection Agency to receive a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

- 1. Neither the owner nor the operator is the United States Government,
- The tank does not contain fuel, which is exempt from the Motor Fuel Tax Law, 2.
- The costs were incurred as a result of a confirmed release of any of the following substances: 3.

"Fuel", as defined in Section 1.19 of the Motor Fuel Tax Law

Aviation fuel

Heating oil

#### Keresene

Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

- The owner or operator registered the tank and paid all fees in accordance with the stammary and regulatory requirements of the Gasoline Storage Act.
- 5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.
- The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.
- The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. We reserve the right to change the deductible determination should additional information that would change the determination become available. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision, (35 Illinois Administrative Code 105.102(a) (2)).

For information regarding the filing of an appeal, please contact:

Dorothy Gunn, Clerk Illinois Pollution Control Board State of Illinois Center 100 West Randolph, Suite 11-500 Chicago, Illinois 60601 (312) 814-3620

Melin H Swith

If you have any questions regarding the eligibility or deductibility determinations, please contact our Office at (217) 785-1020 or (217) 785-5878 and ask for Vicki Cox-Frasse.

Sincerely,

Melvin H. Smith Division Director

Division of Petroleum and Chemical Safety

MHS: vlcf

cc:

EPA

Facility File

## APPENDIX D

# BORE LOGS AND WELL COMPLETION REPORTS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

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4.7		LOCATION: See Site Map G COMPANY: UNITED SCI	<del> </del>	V				BOREHOL	LE NO: BH-1
6	BORING	LOCATION: See Site Map			TOTAL DEI		15		
					DRILLER:				
	DRILLIN	G SAMPLING/METHOD: 4.2 ME STARTED: 3/29/2001	Hollov	v Stem Auge	r, 2" x 1.5' Sp	lit Spoon			
92						ENDED:		3/29/2	
	GW DEP	TH WHILE DRILLING:	9'	AFTER DR		VIO FOLOR		BACKFILL	
4	DEPTH	BY: Josh Blair SAMPLE	USCS	SAMPLE	MONITORI % SAMPLE	PID	SAMPLE	Model 580	
ı	(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY			SAMPLE NUMBER	REMARKS
Sec.	1								
63	_	no recoverly do to equipment used							
1	2 -								
, F. C. (4)		1							
Đ	3 -	Black Silty Clay							
_	· -	Moisture Increases Down	CL	2.5'-4'	30%	100			Slight Odor/Not
€ • •	4 -		<b>V</b> -		3070	.00			Discolored
	`	no recoverly do to equipment used							Discolored
	5 -	no recoverty do to equipment asea							
2. 2.	<b>'</b> —	Plack Silv Clauss/monled		_					
-		Black Silty Clay w/mottled	CL	61.6.61	1000/	266		,	
:	· 6 _	Gray	CL	5'-6.5'	100%	265			Odor/Slightly Discolored
4	·								
-1	7	no recoverly do to equipment used							
2	_								
3	8	Brown Silty Clay w/pebbles	CL				,		
		Wet at 9'		7.5'-9'	100%	242	Chemical	BH-1A	Odor/Slightly Discolored
	9			•			at 5'		_ ,
		no recoverly do to equipment used							
-	10								
		Brown Silty Clay w/mottled	CL						
	11	Gray, w/pebbles	j	10'-11.5'	100%	4	Chemical	BH-1B	No Odor/Not Discolored
١		• •	Ī		,,,	·	at 9'	}	THE COOMMON DISCONDIED
	12	no recoverly do to equipment used					4()		
3 [	٠٠-	no receivery us to equipment uses	ļ					·	
П	13	Brown Silty Clay w/pebbles,							
H	13—	, , ,	~	12.5'-14'	4004				
1		Tighter ·	CL	12.5'-14'	40%	2			No Odor/Not Discolored
ď	14								
	_	no recoverly do to equipment used							ĺ
•	15								
, [	-	15' E.O.B.	ŀ	İ					
	16	1							
ز <b>1</b> 1									
1	ROJECT N	IAME: Towanda			Logged By:	Josh Blair			
F	ROJECT N	IO.: 1800118							
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									•

an orecoverly do to equipment used  Moisture Increases Down  CL 5'-6.5' 50% 0 Chemical at 5'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'-9' 80% 27 Chemical at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'-9' 100% 19 Slight Odor/Not Discolor at 9'  It 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  Brown Silty Clay w/mottled  Brown Silty Clay w/mottled  Brown Silty Clay w/mottled  CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored			(IN	120 SC 120 SC	E NOVEMBE	<u> </u>		<del></del>	
BORING LOCATION: See Site Mep TOTAL DEPTH: 15'  DRILLING COMPANY: UNITED SCIENCE INDUSTRES DRILLING COMPANY: UNITED SCIENCE INDUSTRES DRILLING COMPANY: UNITED SCIENCE INDUSTRES DRILLING COMPANY: UNITED SCIENCE INDUSTRES DRILLING SAMPLING/METHOD: 425' Hollow Stem Auger, 2" x 1.5' Split Spoon  DATE/TIME STARTED: 3/29/2001 DATE/TIME ENDED: 3/29/2001  GW DEPTH WHILE DRILLING: 9' AFTER DRILLING: 1TYPE OF BACKFILL: MW-2  LOGGED BY: Josh Blair  DEFTR SAMPLE USCS SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE NAMPLE REMARKS  FEET DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER REMARKS  Brown Silty Clay 2.5'-4' 60% 0 Chemical BH-2A No Odor/Not Discolor at 5'-6.5' 50% 0 Chemical BH-2A No Odor/Not Discolor at 5'-6.5' 50% 10 Chemical BH-2B No Odor/Not Discolor at 9' an recoverly do to equipment used  Brown Silty Clay w/montled  CL 7.5'-9' 80% 27 Chemical BH-2B No Odor/Not Discolor at 9' Slight Odor/Not Discolor at 9' Discolored  Brown Silty Clay w/montled  CL 10'-11.5' 100% 19 Slight Odor/Not Discolored  Brown Silty Clay w/montled  CL 12.5'-14' 60% 16 No Odor/Not Discolored  Brown Silty Clay w/montled  CL 12.5'-14' 60% 16 No Odor/Not Discolored  13 Brown Silty Clay w/montled  14 No Odor/Not Discolored  15 No Odor/Not Discolored  16 No Odor/Not Discolored  17 No Odor/Not Discolored  18 No Odor/Not Discolored  19 No Odor/Not Discolored  19 No Odor/Not Discolored  10 No Odor/Not Discolored  11 No Odor/Not Discolored  12 No Occoverly do to equipment used  13 Brown Silty Clay w/montled  14 No Odor/Not Discolored  15 No Odor/Not Discolored  16 No Odor/Not Discolored  17 No Odor/Not Discolored  18 No Odor/Not Discolored			(UN	TED SCENC	Y INDUSTRIES	ر.		DODELLO	ENO
DRILLING COMPANY: UNITED SCIENCE INDUSTRIES   DRILLER: Laren Evans    DRILLING SAMPLING/METHOD: 4.25° Hollow Stem Auger, 2" x 1.5° Split Spoon    DATE-TIME STARTED: 3/29/2001   DATE-TIME ENDED: 3/29/2001    GW DEPTH WHILE DRILLING: 9' AFTER DRILLING: TYPE OF BACKFILL: MW-2    LOGGED BY: Josh Bilar   MONITORING EQUIP: Model \$30B PID    DEPTH SAMFLE   SA	RORING	OCATION: See Site Man	<u></u>		TOTAL DE	ידווי	15'	BOKEHOI	LE NU: BH-2
DRILLING SAMPLING/METHOD: 4.25" Hollow Stem Auger, 2" x 1.5" Split Spoon DATE/TIME STARTED: 3/29/2001  DATE/TIME STARTED: 3/29/2001  DATE/TIME STARTED: 3/29/2001  DATE/TIME STARTED: 3/29/2001  DATE/TIME STARTED: 3/29/2001  MOST SAMPLE STARTED: 1/29/2001  DESCRIPTION CLASS SAMPLE WEARDING PID SAMPLE SAMPLE REMARKS  OFFETD DESCRIPTION CLASS DATE: NAMPLE RECOVERY READING TYPE NO. Odor/Not Discolor Started Pid Sample Remarks  Brown Silty Clay 2.5".4" 60% 0 Chemical at 5'  Moisture Increases Down CL 5"-6.5" 50% 0 Chemical at 5'  Moisture Increases Down CL 7.5".9" 80% 27 Chemical at 5'  Brown Silty Clay w/mortifed CL 7.5".9" 80% 27 Chemical at 9'  and recoverly do to equipment used CL 7.5".9" 80% 27 Chemical at 9'  Brown Silty Clay w/mortifed CL 10"-11.5" 100% 19 Silight Odor/Not Discolor at 9'  and recoverly do to equipment used CL 10"-11.5" 100% 19 Silight Odor/Not Discolor at 9'  Brown Silty Clay w/mortifed CL 12.5"-14" 60% 16 No Odor/Not Discolor at 9'  and recoverly do to equipment used CL 15"-14" 60% 16 No Odor/Not Discolor at 9'  13 Brown Silty Clay w/mortifed CL 12.5"-14" 60% 16 No Odor/Not Discolor 15'  14 And recoverly do to equipment used CL 15"-14" 60% 16 No Odor/Not Discolor 15'  15' E.O.B.			ENCE IN	DUSTRIES			<del></del>		
DATE/TIME STARTED: 3/29/2001  GW DEPTH WHILE DRILLING: 9' AFTER DRILLING: 17PE OF BACKFILL: MW-2  LOGGED BY: Josh Blair MONITORING EQUIP: Model \$309 PID  DEPTH SAMPLE DESCRIPTION CLASS SAMPLE SAMPLE PID SAMPLE SAMPLE RECOVERY READING TYPE NUMBER  1									
LOGGED BY: Josh Blair DETTH SAMPLE USCS SAMPLE RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION NO Odor/Not Discolor No Odor/Not Discolor at 5'  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION NO Odor/Not Discolor at 5'  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  TOTAL DESCRIPTION CLASS INTERVAL RECOVERY READING T		<del>*</del>						3/29/2	2001
DEFTH DESCRIPTION CLASS SAMPLE RECOVERY READING TYPE NUMBER REMARKS  1	GW DEPT	H WHILE DRILLING:	9'	AFTER DR	ILLING:		TYPE OF	BACKFILL	.: MW-2
TEET DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  1									B PID
an orecoverly do to equipment used  Brown Silty Clay  CL 5'-6.5' 50% 0 Chemical BH-2A No Odor/Not Discolor at 5'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'.9' 80% 27 Chemical BH-2B No Odor/Not Discolor at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'.9' 80% 27 Chemical BH-2B No Odor/Not Discolor at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  Brown Silty Clay w/mottled  CL 10'-11.5' 100% 19 No Odor/Not Discolored  Brown Silty Clay w/mottled  13 Brown Silty Clay w/mottled  14 ao recoverly do to equipment used  15 EO.B.									REMARKS
Brown Silty Clay  10 recoverly do to equipment used  11 Brown Silty Clay w/montled  12 CL 7.5'-9' 80% 27 Chemical at 9' No Odor/Not Discolor at 9' No Odor No Odor/Not Discolor at 9' No Odor No Odor No Odor No Odor No Odor No Odor No Odor		<i>D250101</i> 1.011	02100	MARCH COLOR	RECOVER	IC. IDE IO	1110	HOMBER	
Brown Silty Clay  CL 5'-6.5' 50% 0 Chemical BH-2A No Odor/Not Discolor at 5'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'-9' 80% 27 Chemical at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 7.5'-9' 80% 27 Chemical at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  Brown Silty Clay w/mottled  CL 12.5'-14' 60% 16  No Odor/Not Discolored  13 Brown Silty Clay w/pebbles, Tighter  CL 12.5'-14' 60% 16  No Odor/Not Discolored  15 In or recoverly do to equipment used  16 In or recoverly do to equipment used	2	no recoverly do to equipment used		•	,				
Moisture Increases Down  CL 5'-6.5' 50% 0 Chemical at 5'  no recoverly do to equipment used  Brown Silty Clay w/mortled  CL 7.5'-9' 80% 27 Chemical at 9'  no recoverly do to equipment used  Brown Silty Clay w/mortled  CL 10'-11.5' 100% 19  Slight Odor/Slightly Discolored  10 ao recoverly do to equipment used  11 Brown Silty Clay w/mortled  CL 12.5'-14' 60% 16  No Odor/Not Discolored  No Odor/Not Discolored  13 Brown Silty Clay  w/pebbles, Tighter  CL 12.5'-14' 60% 16  No Odor/Not Discolored  15 I5' E.O.B.		Brown Silty Clay		2.5'-4'	60%	0			No Odor/Not Discolored
CL 5'-6.5' 50% 0 Chemical at 5'  no recoverly do to equipment used  Brown Silty Clay w/mortled  CL 7.5'-9' 80% 27 Chemical at 9'  no recoverly do to equipment used  Brown Silty Clay w/mortled  CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  Brown Silty Clay w/mortled  CL 10'-11.5' 100% 19 No Odor/Not Discolored  Brown Silty Clay w/mortled  CL 12.5'-14' 60% 16 No Odor/Not Discolored  13 Brown Silty Clay  w/pebbles, Tighter  CL 12.5'-14' 60% 16  No Odor/Not Discolored  15 I5' E.O.B.	5_								
8 Brown Silty Clay w/mortled CL 7.5'-9' 80% 27 Chemical at 9' BH-2B No Odor/Not Discolor at 9'  10 Brown Silty Clay w/mortled CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  11 Brown Silty Clay w/pebbles, Tighter CL 12.5'-14' 60% 16 No Odor/Not Discolor 14  15 Is' E.O.B.		Moisture Increases Down	CL	5'-6.5'	50%	. 0		BH-2A	No Odor/Not Discolored
CL 7.5'-9' 80% 27 Chemical at 9' No Odor/Not Discolor at 9'  no recoverly do to equipment used  Brown Silty Clay w/mottled  CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  no recoverly do to equipment used  Brown Silty Clay w/pebbles, Tighter  CL 12.5'-14' 60% 16 No Odor/Not Discolor or recoverly do to equipment used  13 Brown Silty Clay w/pebbles, Tighter  CL 12.5'-14' 60% 16 No Odor/Not Discolor or recoverly do to equipment used  15 Is' E.O.B.	7_	no recoverly do to equipment used				·			
Brown Silty Clay w/mottled CL 10'-11.5' 100% 19 Slight Odor/Slightly Discolored  12 no recoverly do to equipment used  13 Brown Silty Clay w/pebbles, Tighter CL 12.5'-14' 60% 16 No Odor/Not Discolor 14 no recoverly do to equipment used  15 15' E.O.B.		Brown Silty Clay w/mottled	CL	7.5'-9'	80%	27		вн-28	No Odor/Not Discolored
12 no recoverly do to equipment used  13 Brown Silty Clay w/pebbles, Tighter  14 no recoverly do to equipment used  15 15' E.O.B.	-	no recoverly do to equipment used							
13 Brown Silty Clay w/pebbles, Tighter  CL 12.5'-14' 60% 16  No Odor/Not Discolor  14 no recoverly do to equipment used  15 15' E.O.B.	_	Brown Silty Clay w/mottled	CL	10'-11.5'	100%	19			Slight Odor/Slightly Discolored
w/pebbles, Tighter  CL 12.5'-14' 60% 16  No Odor/Not Discolor  no recoverly do to equipment used  15	12	no recoverly do to equipment used							
no recoverly do to equipment used  15		· · · · · · · · · · · · · · · · · · ·	CL	12.5'-14'	60%	16			No Odor/Not Discolored
16		no recoverly do to equipment used	_ 1			77.40			
ROJECT NAME: Towanda Logged By: Josh Blair		:5' E.O.B.					:		
ROJECT NO.: 1800118					Logged By:	Josh Blair			

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		_							
		נטא	ITED SCIENC	E INDUSTRIES					
				BOREHOLE NO: BH-:					
BORING LOC	<del></del>			TOTAL DEI		15'			
DRILLING CO	OMPANY: UNITED SCI AMPLING/METHOD: 4.2:			DRILLER:					
DATE/TIME		Honow	V Stem Auge	DATE/TIME		·	3/29/2	001	
	VHILE DRILLING:	8.5-9'	AFTER DR			TYPE OF	BACKFILL		
LOGGED BY:				MONITORI			Model 580		
CEPTH (FEET)	SAMPLE DESCRIPTION	USCS CLASS	SAMPLE INTERVAL	% SAMPLE RECOVERY	PID	SAMPLE TYPE	SAMPLE	REMARKS	
1	<u>DESCRITION</u>	CLASS	HVIERVAL	RECOVERI	KEADING	TIFE	NUMBER	· · · · · · · · · · · · · · · · · · ·	
2no r	ecoverly do to equipment used								
3Blac	k Silty Clay	CL	2.5'-4'	40%	2			No Odor/Not Discolored	
· ———	ecoverly do to equipment used								
	vn Silty Clay w/mottled  / Moisture Increases  /n	CL	5'-6.5'	100%	146	Chemical at 5'	BH-3A	Odor/Slightly Discolored	
7no re	ecoverly do to equipment used								
8 Oliv . Wet	e Gray Silty Clay w/pebbles	CL	7.5'-9'	50%	224	Chemical	вн-зв	Slight Odor/Slightly Discolored	
10 no re	coverly do to equipment used								
Brov 11Tigh	vn Silty Clay M. Jbbles ter	CL	10'-11.5'	80%	15			No Odor/Slightly Discolored	
12 no re	coverly do to equipment used							·	
13 Brow	n Silty Clay	CL	12.5'-14'		10			No Odor/Not Discolored	
no re	coverly do to equipment used								
1615' E	.O.B.								
PROJECT NAME PROJECT NO.:		****		Logged By:	Josh Blair				

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-4 BORING LOCATION: · See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING COMPANY: DRILLING SAMPLING/METHOD: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DATE/TIME STARTED: 5/17/2001 0845 DATE/TIME ENDED: 5/17/2001 0905 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA MW-5 LOGGED BY: Scott Hertel MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER Topsoil Brown Silty Clay Medium CL 0'-5' 100% 0 ppm No Odor/Stain Stiff, Moist Green Soft Silty Clay, Moist CL 5'-10' 100% 75 ppm Chemical BH-4A Obvious Odor/Stain at 6' Groundwater at 7' Saturated Below 7' 10-15" 80% BH-4B 48 ppm Chemical Slight Odor **Obvious Stain** at 12° 15' E.O.B. 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

## UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG

BORING LOCATION:   Sec Site Map	· ·							BOREHOLE NO: BH-5			
DRILLING COMPANY: UNITED SCIENCE INDUSTRIES  DRILLING SAMPLING/METHOD: 3.25° ID Hollow Stem Augers, 5° Split Barrel Sampler  DATE/TIME STARTED: 5/17/2001 0920 DATE/TIME ENDED: 5/17/2001 0935  GW DEPTH WHILE DRILLING: 7° AFTER DRILLING: NA TYPE OF BACKFILL: MW-6  LOGGED BY: Scort Hertel MONITORING EQUIP: PID Model \$80B PID  DEPTH SAMPLE USCS SAMPLE NOTORING EQUIP: PID Model \$80B PID  DEPTH SAMPLE USCS SAMPLE RECOVERY READING TYPE NUMBER REMARKS  (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  1 Topsoil 2 Brown Silty Clay Medium CL 0°-5° 100% 0 ppm Chemical BH-5A No Odor/Stain at 6'-  Stiff, Moist 4 S'-10' 100% 25 ppm Chemical BH-5B Odor/Stain at 6'-  Green Soft Silty Clay, Moist CL 10-15' 100% 12 ppm No Odor/Stain After 11'  1 Brown Soft Silty Clay CL 10-15' 100% 12 ppm No Odor/Stain After 11'	BORNO	LOCATION: See Site Man	<del></del>		TOTAL DE	The same of the sa					
DRILLING SAMPLING/METHOD: 3.25° ID Hollow Stem Augers, 5° Split Barrel Sampler  DATE/TIME STARTED: 5/17/2001 0920 DATE/TIME ENDED: 5/17/2001 0935  GW DEPTH WHILE DRILLING: 7' AFTER DRILLING: NA TYPE OF BACKFILL: MW-6  LOGGED BY: Scott Hertel MONITORING EQUIP: PID Model \$30B PID  DEPTH SAMPLE USCS SAMPLE PID SAMPLE SAMPLE RECOVERY READING TYPE NUMBER  O TOPSOIL  2 Brown Silty Clay Medium CL 0'-5' 100% 0 ppm Chemical at 3'  6 Green Soft Silty Clay, Moist CL  8 From Soft Silty Clay, Moist CL  10 Brown Soft Silty Clay CLASS CL			CIENCE	MISTRIES							
DATE/TIME STARTED:   S/17/2001   0920   DATE/TIME ENDED:   S/17/2001   0935				<del></del>							
GW DEPTH WHILE DRILLING:  LOGGED BY: Scott Hertel  DEPTH SAMPLE (FEET)  DESCRIPTION  CLASS  SAMPLE (FEET)  Topsoil  Brown Silty Clay Medium  Stiff, Moist  CL  S-10'  Brown Soft Silty Clay  CL  Brown Soft Silty Clay  CL  S-10'  100%  DEPTH SAMPLE SAMPLE SAMPLE PID SAMPLE SAMPLE SAMPLE NUMBER  CL  O'-5'  100%  Depth Chemical At 3'  Chemical BH-5A No Odor/Stain At 6'  Green Soft Silty Clay  No Odor/Stain at 6' Groundwater at 7'  No Odor/Stain After 11'  No Odor/Stain After 11'								2001	0036		
LOGGED BY: Scott Hertel  DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS  (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER  Topsoil  Brown Silty Clay Medium  CL 0'-5' 100% 0 ppm Chemical at 3'  Stiff, Moist  CL 5'-10' 100% 25 ppm Chemical at 6' Groundwater at 7'  Brown Soft Silty Clay  CL 10-15' 100% 12 ppm No Odor/Stain  After 11'  16 15' E.O.B.					<del></del>						
DEPTH SAMPLE (FEET)				ind telebro							
Tepsoil   Description   Class   Interval   Recovery   Reading   Type   Number			USCS	SAMPLE							
Topsoil Brown Silty Clay Medium Stiff, Moist  Green Soft Silty Clay, Moist  CL  5'-10' 100%  Chemical at 3' BH-5A No Odor/Stain After 11'  Topsoil  Brown Silty Clay Medium Stiff, Moist  CL  5'-10' 100%  Chemical at 6' BH-5B Odor/Stain at 6'+ Groundwater at 7'  No Odor/Stain After 11'	(FEET)	DESCRIPTION		INTERVAL		READING		1			
2 Brown Silty Clay Medium CL 0'-5' 100% 0 ppm Chemical BH-5A No Odor/Stain Stiff, Moist CL  6 Green Soft Silty Clay, Moist CL  8 Silty Clay, Moist CL  10 Brown Soft Silty Clay CL  10 In In In In In In In In In In In In In	0_										
Stiff, Moist  6 Green Soft Silty Clay, Moist  CL  8	_										
4	2_	Brown Silty Clay Medium	CL	0'-5'	100%	0 ppm	Chemicai	BH-5A	No Odor/Stain		
6 Green Soft Silty Clay, Moist CL  8	l _	Stiff, Moist					at 3'		•		
8   5'-10'   100%   25 ppm   Chemical at 6'   BH-5B   Odor/Stain at 6'+ Groundwater at 7'   10     12   Brown Soft Silty Clay   CL   10-15'   100%   12 ppm   No Odor/Stain After 11'   16   15' E.O.B.	4_	ļ							•		
8   5'-10'   100%   25 ppm   Chemical at 6'   BH-5B   Odor/Stain at 6'+ Groundwater at 7'   10     12   Brown Soft Silty Clay   CL   10-15'   100%   12 ppm   No Odor/Stain After 11'   16   15' E.O.B.	_						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
10   at 6'   Groundwater at 7'  12   Brown Soft Silty Clay   CL   10-15'   100%   12 ppm   No Odor/Stain   After 11'  16   15' E.O.B.	6_	Green Soft Silty Clay, Moist	CL				i				
10   at 6'   Groundwater at 7'  12   Brown Soft Silty Clay   CL   10-15'   100%   12 ppm   No Odor/Stain   After 11'  16   15' E.O.B.	<u> </u>										
12 Brown Soft Silty Clay CL  14 16 15' E.O.B.  18 18 18 18 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10	8			5'-10'	100%	25 ppm	Chemical	BH-5B	Odor/Stain at 6'+		
12 Brown Soft Silty Clay  14 16 15' E.O.B.  18 18 18 10-15' 100% 12 ppm No Odor/Stain After 11'			İ				at 6'		Groundwater at 7'		
14	10										
14											
14 After 11	12	Brown Soft Silty Clay	CL								
16 15' E.O.B.	!			10-15'	100%	12 ppm		}	No Odor/Stain		
	14								After 11'		
				]							
	16	15' E.O.B.									
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PROJECT NAME: Towanda LOGGED BY Scott Hertel	PROJECT N	NAME: Towanda			LOGGED BY	Scott He	rtel				
PROJECT NO.: 1800118	PROJECT N	NO.: 1800118									

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: **BH-6** BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING SAMPLING/METHOD: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DATE/TIME STARTED: 5/17/2001 0950 DATE/TIME ENDED: 5/17/2001 1005 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-7 LOGGED BY: Scott Hertel MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY **READING** TYPE NUMBER Topsoil Brown Soft Silty Clay, Moist 0'-5' 100% 35 ppm BH-6A Chemical Obvious Odor/Stain at 3' 5'-10' 100% 22 ppm BH-6B Chemical No Odor/Stain Groundwater at 7' at 6' 10 Brown Soft Silry Clay w/rocks 10-15' 100% 18 ppm No Odor/Stain 14 15' E.O.B. 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES:

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO: BH-7** BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING SAMPLING/METHOD: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler 1015 DATE/TIME ENDED: DATE/TIME STARTED: 5/17/2001 5/17/2001 1035 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-8 LOGGED BY: Scott Hertel MONITORING EQUIP: PID Model 580B PID USCS SAMPLE SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS RECOVERY INTERVAL READING TYPE NUMBER Topsoil Brown Soft Silty Clay, Moist 0'-5' 100% 14 ppm Chemical BH-7A No Odor/Stain at 3' Green Soft Silty Clay, Moist CL 5'-10' 100% 350 ppm BH-7B Obvious Odor/Stain Chemical at 6' Groundwater at 7' 10 Brown Soft Silty Clay w/rocks CL 12 10-15 100% 0 ppm No Odor/Stain 14 15' E.O.B. 18 20 22 24 26 28 PROJECT NAME: Towanda: LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG. BOREHOLE NO: BH-8 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Steve Pavelitch DRILLING SAMPLING/METHOD: 3.25" ID Hollow Stem Augers, 5' Split Barrel Sampler DATE/TIME STARTED: 5/17/2001 1045 DATE/TIME ENDED: 5/17/2001 1105 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA MW-9 LOGGED BY: Scott Hertel MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER Topsoil Brown Soft Silty Clay, Moist CL 0'-5' 100% 350 ppm BH-8A Obvious Odor/Stain Chemical After 3' at 4' Green Soft Silty Clay, Moist CL 5'-10' 100% 850 ppm BH-8B Chemical Obvious Odor/Stain Groundwater at 7' at 6' Brown Soft Silty Clay CL 10-15 100% No Odor/Stain 0 ppm After 12' 15' E.O.B. 26 28 PROJECT NAME: Towanda LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

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						BOREHOL	E NO: BH-9
BORING LOCATION: See Site Map			TOTAL DE				
			DRILLER:		:	·	
JULING SAMPLING/METHOD:		. auger w/ 3" x	5' continuous				
	3/2002	I comen on	DATE/TIME			2002	<del></del>
GW DEPTH WHILE DRILLING: LOGGED BY: Jarrod Yearwood	8'	AFTER DR		NA NA		BACKFILL:	
DEPTH SAMPLE	USCS	SAMPLE	MONITORI % SAMPLE	PID	SAMPLE	Model 580B	
(FEET) DESCRIPTION	CLASS	INTERVAL			TYPE	NUMBER	REMARKS
0 Concrete							<del></del>
Olive Brown Silty Clay  4	CL	0'-5'	75%	6 ppm			No Stain/No Odor
68Gray Soft Silty Clay	CL	5'-10'	100%	50 ppm	Chern @	ВН-9	Slight Stain/No Odor
12 14 14		10-15'	100%	8 ppm			No Stain/No Odor
16 EOB 15'							
28		Ġ					,
477 77 78 78							
ROJECT NAME: Towanda:			LOGGED BY	arrod Yea	rwood		
PROJECT NO.: 1800118 *					<u> </u>		
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#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BH-10 BORING LOCATION: S:e Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME STARTED: 9/18/2002 DATE/TIME ENDED: 9/18/2002 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA cuttings LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION **CLASS** INTERVAL RECOVERY READING **TYPE** NUMBER Concrete Olive Brown Silty Clay Softer CL with Depth 0'-5' 50% 2 ppm No Stain/No Odor Chem @ 5'-10' 50% ·17 ppm 7' BH-10 No Stain/Slight Odor **EOB 10'** 16 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BYlarrod Yearwood PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BH-11 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: \_\_UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING SAMPLING/METHOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME STARTED: 9/13/2002 DATE/TIME ENDED: 9/18/2002 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: cuttings LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION CLASS (FEET) INTERVAL RECOVERY READING TYPE NUMBER Concrete Olive Gray Brown Silty Clay CL 0'-5' 60% 173 ppm Obvious Stain & Odor Chem @ 5'-10' 100% ! 10 ppm 7' BH-11 Obvicus Stain & Odor Gray Silty Clay CL EOB 10' 16 20 26 28 PROJECT NAME: LOGGED BY Iarrod Yearwood Towanda #. 🐶 PROJECT NO.: 1800118 --- 3 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BH-12 BORING LOCATION: See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME STARTED: 9/18/2002 DATE/TIME ENDED: 9/18/2002 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA cuttings LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION RECOVERY READING (FEET) CLASS INTERVAL TYPE NUMBER Grass Black Silty Clay CL 0'-5' 2 100% 6 ppm No Stain/No Odor CL Brown Silty Clay Chem @ 5'-10' 100% 7' BH-12 8 ppm No Stain/No Odor CL Brown Soft Silty Clay 10 EOB 10' 12 16 20 22 26 28 PROJECT NAME: LOGGED BY Tarrod Yearwood Towanda 😘 🔀 PROJECT NO.: 1800118 : UNITED SCIENCE INDUSTRIES

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1	a	UN	TED SCIENC	E INDUSTRIES	J			
			<u>/</u>			BOREHO	LE NO: MW-4	
<del></del>	LOCATION: See Site Map			TOTAL DE		15'		
<u> </u>	G COMPANY: UNITED SCI			DRILLER:		; 		
	G SAMPLING/METHOD: 4.25 ME STARTED: 3/29/2001	. Hollon	/ Stem Auge				2000	
	ME STARTED: 3/29/2001 TH WHILE DI 5:	8'	AFTER DR	DATE/TIME	ENDED:	TVDE OF	3/29/2 BACKFILL	
	BY: Josh Blair	<u> </u>	MILKON	MONITORE	NG FOLID		Model 580	
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	. PID	SAMPLE	SAMPLE	REMARKS
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY	READING	TYPE	NUMBER	
2	no recoverly do to equipment used							
3	Brown Silty Clay	CL	2.5'-4'	60%	5	No Samples		No Odor/Not Discolored
5	no recoverly do to equipment used							
6 _	Brown Silty Sandy Clay w/mottled Gray w/p:hbles	CL	5'-6.5'	100%	0	No Samples		Slight Odor/Slightly Discolored
7	no recoverly do to equipment used							·
8 — 9 —	Brown Silty Clay w/pebbles Wet	CL	7.5'-9'	100%	0	No Samples		No Odor/Not Discolored
10	no recoverly do to equipment used	_						
11	Brown Silty Clay w/pebbles	CL	10'-11.5'	80%	0	No Samples		No Odor/Not Discolored
12	no recoverly do to equipment used							
13	Brown Silty Clay w/pobbles	CL	12.5'-14'	60%	0	No Samples		No Odor/Not Discolored
15	no recoverly do to equipment used							
16	15' E.O.B.							
*	AME: Towanda O.: 1800118		·	Logged By:	Josh Blair			

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-II BORING LOCATION: See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKec DRILLING COMPANY: DRILLING SAMPLING/METHOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME STARTED: 9/18/2002 DATE/TIME ENDED: 9/18/2002 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA MW-11 LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER Topsoil NO NO Olive Brown Silty Clay Softer CL SAMPLES **SAMPLES** with Depth 0'-5' 50% TAKEN 2 ppm TAKEN No Stain/Slight Odor 5'-10' 50% 3 ppm No Stain/No Odor Gray Silty Soft Clay CL 10 12 10-15' 100% 10 ppm No Stain/No Odor EOB 15' 18 20 26 28 PROJECT NAME: Towanda . . . LOGGED BYlarrod Yearwood PROJECT NO.: 1810031

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-12 TOTAL DEPTH: BORING LOCATION: See Site Map DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING SAMPLING/MITTIOD: 3.25" I.D. auger w/ 3" x 5' continuous sampler DATE/TIME ENDED: DATE/TIME STARTED: 9/13/2002 9/13/2002 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-12 LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID USCS DEPTH SAMPLE SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS INTERVAL (FEET) DESCRIPTION CLASS RECOVERY READING TYPE NUMBER Top Soil NO NO Black Silty Clay CL SAMPLES SAMPLES 0'-5' 75% TAKEN TAKEN 0 ppm No Stain/No Odor 2 CL Brown Silty Sticky Clay Brown Silty Soft Clay CL 5'-10' 100% No Stain/No Oder 1 ppm CL Gray Soft Silty Cl. 10 12 10-14' 100% No Stain/No Odor 3 ppm **EOB 14**' 16 18 20 22 26 28 PROJECT NAME: LOGGED BY Iarrod Yearwood Towanda \*. PROJECT NO.: 1800118

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-13 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Jason McKee DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube DATE/TIME STARTED: 4/11/2003 DATE/TIME ENDED: 4/11/2003 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA MW-13 LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID USCS DEPTH SAMPLE SAMPLE % SAMPLE SAMPLE PID SAMPLE REMARKS (FEET) DESCRIPTION **CLASS** INTERVAL RECOVERY READING TYPE NUMBER Brown silty clay - moist CL NO NO **SAMPLES SAMPLES** 0'-5' 100% 0 ppm TAKEN TAKEN No Stain/No Odor at 4 - 4.5' Olive green silty clay - moist CL 5'-10' 100% 83 ppm Discolored/Odor GW @ 8' at 7 - 7.5' 10-14 100% 20 ppm Discolored/Odor at 13 - 13.5° **EOB 14**' 16 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-14 BORING LOCATION: See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube DATE/TIME STARTED: 4/11/2003 DATE/TIME ENDED: 4/11/2003 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: NA MW-14 LOGGED BY: Ron Minks MONTTORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION (FEET) CLASS INTERVAL RECOVERY READING **TYPE** NUMBER Gravel NO NO Brown silty clay - moist CL SAMPLES SAMPLES 0'-5' 100% 0 ppm TAKEN TAKEN No Stain/No Odor at 4 - 4.5' Olive green silty clay - moist CL 5'-10' 100% 9 ppm Discolored/Odor GW @ 8' at 7 - 7.5' 10 10-14' 100% 53 ppm Discolored/Odor at 13 - 13.5' EOB 14' 16 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-15 BORING LOCATION: TOTAL DEPTH: See Site Map DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube DATE/TIME STARTED: 4/28/2003 1330 DATE/TIME ENDED: 4/28/2003 1415 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: MW-15 LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID USCS SAMPLE DEPTH SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION CLASS (FEET) INTERVAL RECOVERY READING TYPE NUMBER Topsoil NO NO SAMPLES **SAMPLES** 0'-5' Rock till 80% 0 ppm TAKEN TAKEN No Stain/No Odor at 4' CL Brown soft silty clay Brown & gray soft silty clay CL GW @ 8' 5'-10" 90% 0 ррш Slight odor/stained Gray soft silty clay CL at 7' below GW 10 GW @ 8' Brown wet silty clay CL 10-15' 100% 39 ppm Slight odor/no stain 14 at 12 EOB 15' 18 20 22 24 26 28 PROJECT NAME: Townsda 1. LOGGED BYlarrod yearwood PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-16 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1420 DATE/TIME ENDED: DATE/TIME STARTED: 4/28/2003 4/28/2003 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-16 L 'GGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID SAMPLE JEPTH USCS SAMPLE % SAMPLE SAMPLE SAMPLE PID REMARKS DESCRIPTION **CLASS** (FEET) INTERVAL RECOVERY READING NUMBER TYPE Topsoil NO NO SAMPLES SAMPLES Dark brown silty clay CL 0'-5' 75% 0 ppm TAKEN TAKEN No Stain/No Odor at 4' Brown silty clay CL CL Brown & gray wet silty clay 5'-10' 100% No Stain/No Odor 0 ppm at 7' 10 GW @ 7' Brown silty stiff clay CL with pebbles 10-15 75% O ppm No Stain/No Odor 14 at 14' EOB 15' 16 18 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BY Tarrod Yearwood PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-17 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Jason McKee DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1510 DATE/TIME ENDED: DATE/TIME STARTED: 4/28/2003 4/28/2003 1540 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-17 LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION **CLASS** INTERVAL RECOVERY READING TYPE NUMBER Topsoil NO NO SAMPLES **SAMPLES** Dark brown stiff silty clay CL 0'-5' 70% 0 ppm TAKEN TAKEN No Stain/No Odor at 4' Brown & gray soft silty clay CL 5'-10" 100% 0 ppm No Stain/No Odor GW @8' at 7' 10 GW @ 8" Brown stiff silty clay CL with pebbles 10-15 100% 0 ppm No Stain/No Odor at 14' EOB 15' 20 22 24 26 28 PROJECT NAME: Towanda - :: LOGGED BYlarrod Yearwood PROJECT NO .: 1800118

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-18 . BORING LOCATION: See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Jason McKee DRILLING COMPANY: DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube 1540 DATE/TIME ENDED: DATE/TIME STARTED: 4/28/2003 4/28/2003 1610 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: MW-18 · LOGGED BY: Jarrod Yearwood MONITORING EOUIP: PID Model 580B PID USCS DEPTH SAMPLE SAMPLE % SAMPLE . PID SAMPLE SAMPLE REMARKS . (FEET) DESCRIPTION **CLASS** INTERVAL RECOVERY READING TYPE NUMBER Topsoil NO NO SAMPLES SAMPLES Dark brown stiff silty clay CL 0'-5' TAKEN 70% TAKEN 0 ppm No Stain/No Odor at 4' Brown silty soft clay CL Brown & gray soft silty clay CL 5'-10' 100% 140 ppm No Stain/No Odor GW @8' at 8' 10 GW @ 8' Brown stiff silty clay CL with pebbles 12 10-15' 100% 35 ppm No Stain/No Odor 14 at 14' EOB 15' 16 18 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BY Iarrod Yearwood PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-19 BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Greg Liggett DRILLING SAMPLING/METHOD: Geoprobe 6600 w/1.5" x 5' Sample Tube with 8" augers DATE/TIME STARTED: 4/22/2004 1430 DATE/TIME ENDED: 4/22/2004 GW DEPTH WHILE DRILLING: 12' AFTER DRILLING: NA TYPE OF BACKFILL: MW-19 LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING **TYPE** NUMBER Gravel NO NO Sand backfill SW **SAMPLES** SAMPLES 0'-5' 100% 0 ppm TAKEN TAKEN No odor no stain 5'-10' 100% 0 ppm No odor no stain 10 12 Brown silty sand sw 10-15' 100% 0 ppm No odor with pebbles at 14' no stain 15' End of boring 16 18 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: MW-20 BORING LOCATION: See Site Map TOTAL DEPTH: UNITED SCIENCE INDUSTRIES | DRILLER: Greg Liggett DRILLING COMPANY: DRILLING SAMPLING/ML: .IOD: Geoprobe 6600 w/1.5" x 5' Sample Tube with 8" augers DATE/TIME STARTED: 4/22/2004 1525 DATE/TIME ENDED: 4/22/2004 1600 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: MW-20 LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID USCS % SAMPLE DEPTH SAMPLE SAMPLE PID SAMPLE SAMPLE REMARKS READING (FE::1) DESCRIPTION **CLASS** INTERVAL RECOVERY NUMBER TYPE Gravel NO NO SW SAMPLES SAMPLES Sand backfill 0'-5' 100% TAKEN TAKEN 0 ppm No odor no stain 5'-10' 100% 0 ppm No odor no stain 10 12 Brown silty sand SW 10-15 100% 55 ppm Odor with pebbles at 14' no stain 15' End of boring 18 20 22 26 28 PROJECT NAME: Towanda :: LOGGED BY Ron Minks PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

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							BOREHOL	E NO: MW-21
BORING	LOCATION: See Site Map			TOTAL DE	Ή: 15'		<del>'</del>	
LLIN	G COMPANY: UNITED SO	CIENCE II	NDUSTRIES	DRILLER:	Greg Liggett			
JLLIN	G SAMPLING/METHOD:			t 5' Sample Tul				
DATE/III	ME STARTED: 4/22/2			DATE/TIME		4/22/	2004	1630
GW DEP	TH WHILE DRILLING:	12'	AFTER DR	ILLING:	NA	TYPE OF E	ACKFILL:	MW-21
LOGGED	BY: Ron Minks			MONITORI	NG EQUIP:		Model 580B	
DEPTH	SAMPLE	USCS	SAMPLE	% SAMPLE	PID	SAMPLE	SAMPLE	REMARKS
(FEET)	DESCRIPTION	CLASS	INTERVAL	RECOVERY	READING		NUMBER	
۰	Gravel					NO	МО	-
	Sand backfill	sw		<b>[</b>	!	SAMPLES	SAMPLES	
2			0'-5'	100%	0 ppm	TAKEN	TAKEN	No odcr
		Ì,			•			no stain
4								
				<u> </u>				
6								
8 7			5'-10'	100%	0 ррт			. No odor
`—					o pp.n			
10	·							no stain
'°					·····			
	j							
12								
<i>∹</i>	Brown silty sand	sw	10-15'	100%	0 ppm			No odor
." 14	with pebbles	1			at 14'	₩	+	no stain
16	15' End of boring					•	[	
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ROJECT N	O.: 1800118							
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#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: WC-1 BORING LOCATION: See Site Map TOTAL DEPTH: 15' DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Hertel DRILLING SAMPLING/METHOD: hand auger DATE/TIME STARTED: 1430 DATE/TIME ENDED: 2/18/2004 2/18/2004 1500 GW DEPTH WHILE DRILL::G: AFTER DRILLING: NA TYPE OF BACKFILL: soil cuttings LOGGED BY: Jarrod Yearwood MONITORING EQUIP: PID Model 580B PID SAMPLE DEPTH SAMPLE USCS % SAMPLE PID SAMPLE REMARKS SAMPLE DESCRIPTION (FEET) CLASS INTERVAL RECOVERY READING TYPE NUMBER 0 topsoil brown soft silty clay 0'-5' 100% 17 ppm No Stain/No Odor at 4' Brown silty soft clay CL 5'-10' 100% chem @ 84 ppm WC-1 No Stain/No Odor gray soft silty clay CL 10' 10 12 16 18 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BY Scott Hertel PROJECT NO.: 1800118 UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BF-I BORING LOCATION: See Site Map TOTAL DEPTH: 15' DRILLING COMPANY: UNFIED SCIENCE INDUSTRIES DRILLER: Hertel DRILLING SAMPLING/METIOD: hand auger DATE/TIME STARTED: DATE/TIME ENDED: 3/27/2006 3/27/2006 1500 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION **CLASS** INTERVAL RECOVERY READING TYPE NUMBER asphalt PID 0'-5' brown rocky 80% 13 ppm No Stain/No Odor @ sandy clay at 4' 4' to 3' discolored olive green 3-5 silty clay CL 5'-10' 100% 400 ppm BF-IA chem @ discolored olive brown/grunn at 8' 9 to 12" 10 silty, sandy, clay 12 10'-15' 90% brown silty clay 0 ppm at BF1-B chem @ no stain 14 12' 13' no odor brown/gray silty clay 12'-15' end of boring 16 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PPOJECT NO.: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG : BOREHOLE NO: BF-2 BORING LOCATION: TOTAL DEPTH: See Site Map 15' DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Hertel DRILLING SAMPLING/METHOD: hand auger DATE/TIME STARTED: 3/27/2006 DATE/TIME ENDED: 3/27/2006 1500 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID SAMPLE USCS DEPTH SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) DESCRIPTION CLASS INTERVAL RECOVERY READING TYPE NUMBER gravel PID brown soft 0'-5' 80% 0 ppm @ No Stain/No Odor silty clay at 4' 4' to 7' discolored CL olive brown/green 5'-10' 100% 400 ppm chem @ BF-2A discolored silty clay at 8' 9' 7'-12' 10 (moist) 12 brown soft silty clay 10'-15' 100% 5 ppm at chem @ BF2-B no stain 14 12' 13' no odor 12'-15' end of boring 16 18 20 22 24 26 28 232 " 11 E PROJECT NAME: Towanda \*: LOGGED BY Ron Minks PROJECT NO.: 1800118 - 1 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG **BOREHOLE NO:** BF-3 BORING LOCATION: S. SIC Man TOTAL DEPTH: 15' DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Henci DRILLING SAMPLING/METHOD: band auger DATE/TIME STARTED: 3/27/2006 DATE/TIME ENDED: 3/27/2006 1500 GW DEPTH WHILE DRILLING: AFTER DRILLING: TYPE OF BACKFILL: N.A soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DE:-TH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION RECOVERY (FET) CLASS INTERVAL READING TYPE NUMBER 0 gravel PID 0'-5' brown 80% 0 ppm @ No Stain/No Odor silty clay at 4' 4° to 6' discolored CL5'-10' olive brown/green chem @ 90% 120 ppm BF-3A discolored silty clay at 8' 9' 6'-13' 10 (moist) 12 10'-15' 100% 0 ppm at BF-3B chem @ no stain brown silty clay 14 12' 14' no odor 13-15' end of boring 16 . 18 20 22 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks 1800118 PROJECT NO .: TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BF-4 " ORING LOCATION: See Site Map TOTAL DEPTH: 15' DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Hertel DRILLING SAMPLING/METHOD: hand auger DATE/TIME STARTED: 3/27/2006 DATE/TIME ENDED: 3/27/2006 1500 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE .% SAMPLE PID SAMPLE REMARKS SAMPLE (FEET) <u> לין:ר:DESCR</u> CLASS INTERVAL RECOVERY READING TYPE NUMBER gravel PID black 0'-5' 90% No Stain/No Odor 0 ppm @ at 4' silty clay to 3' 4' olive brown/green discolored 3-14' silty clay shelby CL tube 7.5-9' Shelby Tube 5'-10' 100% 300 ppm chem @ BF-4A at 8' 9' 10 ST-1 12 10'-15' 100% 2 ppm at BF-4B chem @ nd stain brown silty clay 12' is. nd odor soft brown silty clay 14-15' end of boring 16 18 20 22 26 28 PROJECT NAME: Towanda / LOGGED BY Ron Minks PROJECT NO .: 1800118 TRANSCRIBED BY: Darin DeNeal

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BF-5 BORING LOCATION: See Site Map TOTAL DEPTH: 15' DRILLING COMPANY: UNITED SCIENCE INDUSTRIES DRILLER: Hencl DRILLING SAMPLING/METHOD: hand auger DATE/TIME STARTED: 3/27/2006 DATE/TIME ENDED: 3/27/2006 1500 GW DEPTH WHILE DRILLING: AFTER DRILLING: NA TYPE OF BACKFILL: soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE . USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS DESCRIPTION :rEET) **CLASS** INTERVAL RECOVERY READING TYPE NUMBERgravel PID black 0'-5' 80% 0 ppm @ No Stain/No Odor silty clay at 4' 4' to 7' brown silty clay CL 5'-10' 90% BF-5A 106 ppm chem @ discolored olive brown/green at 8' 9' 7-13 10 silty clay 12 . 10'-15' 100% 0 ppm at BF-5B chem @ discolored 14 12' 14 no odor 13-15' 14-15' end of boring 16 18 20 22 24 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO .: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES.

#### UNITED SCIENCE INDUSTRIES, INC. DRILLING BOREHOLE LOG BOREHOLE NO: BORING LOCATION: See Site Map TOTAL DEPTH: DRILLING COMPANY: UNITED SCIENCE INDUSTRIES | DRILLER: Henei DRILLING SAMPLING/METHOD: hand auger DATE/TIME STARTED: 3/27/2006 DATE/TIME ENDED: 3/27/2006 1500 GW DEPTH WHILE DELLERGE AFTER DRILLING: TYPE OF BACKFILL: NA soil cuttings LOGGED BY: Ron Minks MONITORING EQUIP: PID Model 580B PID DEPTH SAMPLE USCS SAMPLE % SAMPLE PID SAMPLE SAMPLE REMARKS (FEET) **DESCRIPTION** CLASS INTERVAL RECOVERY READING TYPE NUMBER grass PID brown 0'-5' 100% 0 ppm No Stain/No Odor @ silty clay at 4' . 4' CL 5'-10' 100% 0 ppm chem @ at 8' 8' end of boring 12 16 18 20 24 26 28 PROJECT NAME: Towanda LOGGED BY Ron Minks PROJECT NO .: 1800118 TRANSCRIBED BY: Darin DeNeal UNITED SCIENCE INDUSTRIES

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	- Illinois Environmental Protection Agency						COMPANY, INC.
الكلا		. •			•		NG BOREHOLE LOG
	• •			•		.;	Page 1 of 2
	NCIDENT #: 2000-1913		BOREHO				
SITE NA			BORING	LOCAT	ION: 22	2' S & 55' E fi	om SW Corner of Bldg
SITE AI	DDRESS: Old Highway 66		DIC TVDS				
DATE/I	Towanda, IL 61776  TIME STARTED: 9/11/23 9:45		RIG TYPE			Geoprobe	Push
	TIME FINISHED: 9/11/23 10:15		BACKFIL			JD:	rusii
DEPTH		USCS	Sample			SAMPLE	REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	•			Moisture. Penetrometer, etc.)
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	Black Silty Clay	CL					
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	Olive Gray Silty Clay					•	Slight Odor and Discoloration
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15	EOB 15'						
	Stratification lines are approximate, in-situ transition between	oil types w	nav he oraduel		<u></u>		
	No samples taken per plan	cypcs II	y ve graudar.		•	,	
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	Manway / Surface Elevation:	100.32'					
	Groundwater Depth While Drilling:	~9-10'.	Auger Dep	oth:	15'	Driller:	AEDC
$\nabla$	Groundwater Depth After Drilling:	•	Rotary De	pth:	,	Geologist:	MWD/JKK
							AT II DIVINI

	Illinois Environmental Protection Agency	<i>y</i> :		***		CW <sup>□</sup> M	COMPANY, INC.
	· •					DRILLI	NG BOREHOLE LOG
							Page 1 of 2
	NCIDENT #: 2000-1913		BOREHO				
SITE NA			BORING	LOCAT	ION: 33	3' S & 18' E fr	om SW Corner of Bldg
SITE AD	DDRESS: Old Highway 66						· · · · · · · · · · · · · · · · · · ·
O A TE CE	Towanda, IL 61776  IME STARTED: 9/11/23 10:15		RIG TYPE			Geoprobe	
	IME FINISHED: 9/11/23 10:15		DRILLING/ BACKFIL			<u>DD:                                   </u>	Push
DEPTH		USCS	Sample			SAMPLE	REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS					Moisture, Penetrometer, etc.)
0	Gravel	<u> </u>		```			
	Brown Silty Clay	CL					
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	Stratification lines are approximate, in-situ transition between	soil types m	ay be gradual.				•
OIES:	No samples taken per plan						· · · · ·
i	Manway / Surface Elevation:	100.78'					
<b>T</b>	Groundwater Depth While Drilling:		Auger Dep	th.	-15'	Ďriller:	AEDC
<del>\</del>							
<b>V</b>	Groundwater Depth After Drilling:		Rotary De	pth:	<u> </u>	Geologist:	MWD/JKK

	Illinois Environmental Protection Agency					CW <sup>□</sup> M	COMPANY, INC.
	•						NG BOREHOLE LOG
	•						Page 1 of 2
LUST IN	CIDENT #: 2000-1913		BOREHO	LE NUN	IBER:	MW-8 R	rage r or z
SITE NA	ME: Henson Oil Company						m SW Corner of Bldg
SITE AD	DRESS: Old Highway 66						
	Towanda, IL 61776		RIG TYPE			Geoprobe	
	IME STARTED: 9/11/23 10:45		DRILLING/			OD:	Push
DEPTH	IME FINISHED: 9/11/23 11:15 SOIL AND ROCK	USCS	BACKFIL Sample		Sample	CAMPIE	REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS			Type		Moisture, Penetrometer, etc.)
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	Stratification lines are approximate, in-situ transition between s No samples taken per plan	oil types m	ay be gradual.				
140163:1	110 Samples taken per platt						
P	Manway / Surface Elevation:	99.53'					
<b>V</b>	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15'	Driller:	AEDC
$\overline{}$	Groundwater Depth After Drilling:		Rotary De			Geologist:	MWD/JKK
						Ceologist.	MINDINK

	Illinois Environmental Protection Agency					CW <sup>□</sup> M	COMPANY, INC.
						NG BOREHOLE LOG	
	•						Page 1 of 2
	NCIDENT #: 2000-1913		BOREHO	LE NUN	IBER:	MW-10 R	
SITE NA			BORING I	LOCAT	ION: 5'	N & 89' E fro	m SW Corner of Bldg
SITE AD	DDRESS: Old Highway 66		DIC TYPE	<del></del>		<u> </u>	·
DATE/T	Towanda, IL 61776  IME STARTED: 9/11/23 11:15		RIG TYPE		E METU	Geoprobe	Push
	IME FINISHED: 9/11/23 11:45		BACKFIL			OD:	rusii
DEPTH	SOIL AND ROCK	USCS	Sample			SAMPLE	REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
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	Gray Silty Clay						
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··	Stratification lines are approximate, in-situ transition between s	oil turce	ou bo are desi				·
	Strattrication lines are approximate, in-situ transition between s No samples taken per plan	on types m	ay de gradual.				
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1	Manway / Surface Elevation:	101.39'				-	·
	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15' .	Driller:	AEDC
$\nabla$	Groundwater Depth After Drilling:		Rotary De	pth:		Geologist:	· MWD/JKK

	Illinois Environmental Protection Agency		,			CW <sup>□</sup> M	COMPANY, INC.
اً إلى					•	DRILLI	NG BOREHOLE LOG
			<del></del>				Page 1 of 2
_	CIDENT #: 2000-1913		BOREHO				011.0
ITE NA	ME: Henson Oil Company  DRESS: Old Highway 66		BORING I	OCAT	ION: 5'	S & 36' W fro	om SW Corner of Bldg
ILEAD	Towanda, IL 61776		RIG TYPE	•		Geoprobe	
ATE/TI	IME STARTED: 9/11/23 11:45		DRILLING				Push
	IME FINISHED: 9/11/23 12:15		BACKFIL				
рертн	SOIL AND ROCK	USCS	Sample			SAMPLE	REMARKS: (Odor, Color,
FEET)	. • DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
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	Brown Silty Clay	CL					
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	Olive Silty Clay	İ				· ·	Slight Discoloration
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5	EOB 15'						
<u> </u>	Stratification lines are approximate, in-situ transition between	soil tuess =	ay be amduct			<del></del> .	<u> </u>
	No samples taken per plan	son types π	ay oc gradual.				
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	Manway / Surface Elevation:	98.95'					
<u> </u>	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15'	Driller:	AEDC

	Illinois Environmental Protection Agency	<del> </del>				CW <sup>□</sup> M	COMPANY, INC.
	•			NG BOREHOLE LOG			
							Page 1 of 2
	CIDENT #: 2000-1913		BOREHO	LE NUN	IBER:	F-1R	<u> </u>
SITE NA		•	BORING I	LOCAT	ION: 2	7' S & 4' E fro	m SW Corner of Bldg
SITE AD	DRESS: Old Highway 66						
	Towanda, IL 61776		RIG TYPE			Geoprobe	
	IME STARTED: 9/11/23 12:15		DRILLING				Push
DATE/I	IME FINISHED: 9/11/23 12:30 SOIL AND ROCK	Licos	BACKFIL				Inna and
(FEET)	DESCRIPTION -	USCS CLASS	Sample Recovery				REMARKS: (Odor, Color,
	Gravel	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
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	Stratification lines are approximate, in-situ transition between	oil types m	ay be gradual.				
	Sampled at only 12' per plan	••					
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ľ	Manway / Surface Elevation:						
▼ (	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15'	Driller:	AEDC
$\nabla$	Groundwater Depth After Drilling:		Rotary De	pth:		Ģeologist:	MWD/JKK
			,			- cologist.	WATER STREET

	Illinois Environmental Protection Agency				-	CW <sup>□</sup> M	COMPANY, INC.			
				DRILLING BOREHOLE LOG						
	· · · · · · · · · · · · · · · · · · ·						Page 1 of 2			
	NCIDENT #: 2000-1913	•		BOREHOLE NUMBER: F-2R						
SITE NA			BORING	LOCAT	ION: 1	7' S & 0' E/W	from SW Corner of Bldg			
SHEAD	DDRESS: Old Highway 66 Towanda, IL 61776		RIG TYPE	•		C				
DATE/T	IME STARTED: 9/11/23 12:30		DRILLING		e Metu	Geoprobe	Push			
	IME FINISHED: 9/11/23 12:45		BACKFIL				rusii			
DEPTH		USCS	Sample				REMARKS: (Odor, Color,			
(FEET)	DESCRIPTION	CLASS	Recovery		Type		Moisture, Penetrometer, etc.)			
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	Stratification lines are approximate, in-situ transition between s	oil tynes m	av he gradual		!	-				
	Sampled at only 12' per plan	ypcs III	-, oo giduudi.							
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	Manway / Surface Elevation:	<del></del>			<del> </del>					
▼ (	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15'	Driller:	AEDC			
$\nabla$	Groundwater Depth After Drilling:		Rotary De <sub>l</sub>	pth:	•	Geologist:	MWD/JKK			

	Illinois Environmental Protection Agency		· · · ·				COMPANY, INC.
						DRILLI	NG BOREHOLE LOG
LUSTING	CIDENT #: 2000-1913		BOREHO	E MIIA	IDED.	F-3R	Page 1 of 2
SITE NA							rom SW Corner of Bldg
	DRESS: Old Highway 66		1	200/11	.0	, 5 ac 10 L II	ion 3 w Corner of Blug
	Towanda, IL 61776		RIG TYPE	:		Geoprobe	
	ME STARTED: 9/11/23 12:45		DRILLING				Push
	ME FINISHED: 9/11/23 13:00		BACKFIL				
DEPTH	SOIL AND ROCK	USCS	Sample				REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer. etc.)
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15 E	EOB 15'						
	tratification lines are approximate, in-situ transition between so	oil types m	ay be gradual.				
1OTES: S	Sampled at only 12' per plan						
	Noncon / Surface Flourit						
<b>IV</b>	Manway / Surface Elevation:			¥			
	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	15' l	Driller:	AEDC

	Illinois Environmental Protection Agency					CW <sup>□</sup> M	COMPANY, INC.
	•						NG BOREHOLE LOG
							Page 1 of 2
LUST I	NCIDENT #: 2000-1913		BOREHO	LE NUN	IBER:	SGV-1	1 3
SITE N.							om SW Corner of Bldg
SITE A	DDRESS: Old Highway 66						<u> </u>
	Towanda, IL 61776		RIG TYPE			Geoprobe	
	TIME STARTED: 9/11/23 12:45		DRILLING				SGV
	TIME FINISHED: 9/11/23 13:00	r	BACKFIL				
DEPTH		USCS	Sample				REMARKS: (Odor, Color,
(FEET)		CLASS	Recovery	(ppm)	Type	NUMBER	Moisture. Penetrometer, etc.)
°_	Gravel						
_	Brown Sand Backfill	ŀ	ŀ		<b>i</b> 1		
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4						SGV-I	
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14							
' <sup>-</sup>					j	j	
_			j				
15							
	Stratification lines are approximate, in-situ transition between so	oil types m	ay be gradual.		•		
NOTES:	No Sample taken only SGV						
	34 /0 6 TH :-						
	Manway / Surface Elevation:	T					·
<del></del>		~9-10'	Auger Dep	th:	15'	Driller:	AEDC
V	Groundwater Depth After Drilling:		Rotary De	oth:		Geologist:	MWD/JKK

	Illinois Environmental Protection Agency	,	<del></del>			CW <sup>□</sup> M	COMPANY, INC.
							NG BOREHOLE LOG
	•						Page 1 of 2
	NCIDENT #: 2000-1913		BOREHO				
ITE N	AME: Henson Oil Company DDRESS: Old Highway 66		BORING	LOCAT	ION: 3	7' S & 21' W	from SW Corner of Bldg
IIE A	Towanda. IL 61776		RIG TYPE	· <u>·</u>		Geoprobe	
ATE/I	TIME STARTED: 9/11/23 13:00		DRILLING		E METH		Push
	TIME FINISHED: 9/11/23 13:15		BACKFIL				t water
DEPTH		USCS	Sample		Sample		REMARKS: (Odor, Color,
FEET)	· · · · · · · · · · · · · · · · · · ·	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture. Penetrometer, etc.)
0	Gravel						
_	Black Silty Clay	•			ŀ		No Odor/ Discoloration
1		CL		0	ł		
	Brown Silty Clay	1				ĺ	ĺ
2		CL			l		
	1	l	80%	0	ŀ	SB-1A	BETX
3 -	1					25 III	
-	1						
, –	1						
*	4	ľ		0			
_	-	ļ					
5 _							
_	Brown Clayey Silt	ML					
6		!		0			
7							
			90%	0			
			90%	ا "			
°—	,			1			
_							Slight Odor
9				39		SB-1B	BETX
_	Gray Olive Clayey Silt	ML					
0							
	EOB 10'						
1			l				
_							
2							
				i	ĺ		
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5			ļ				
TES:	Stratification lines are approximate, in-situ transition between s Sampled within the 0-5' and 5-10 intervals per pla Sampled in the center due to 0 PID reading Sampled at the highest PID reading per 5' interval Manway / Surface Elevation:		ay be gradual.	•			
_	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC
7-7	Groundwater Depth After Drilling:					<del></del>	
	Groundwater Depth After Drining:		Rotary De	)(III:		Geologist:	MWD/JKK

A'A	Illinois Environmental Protection Agency	,	***************************************			CW <sup>□</sup> M	COMPANY, INC.		
		•		DRILLING BOREHOLE LOG					
1							Page 1 of 2		
LUST I	NCIDENT #: 2000-1913		BOREHOLE NUMBER: W-2R						
SITE N.							om SW Corner of Bldg		
SITE A	DDRESS: Old Highway 66					<u> </u>			
- · · · · ·	Towanda, IL 61776		RIG TYPE			Geoprobe			
	FIME STARTED: 9/11/23 13:15 FIME FINISHED: 9/11/23 13:30		DRILLING/				Push		
DEPTH		USCS	BACKFIL Sample		Sample		REMARKS: (Odor, Color,		
(FEET)			Recovery				Moisture, Penetrometer, etc.)		
0	Gravel			,,,,,,,,	<u> </u>				
-	Brown Sand Backfill					<u> </u>	No Odor/Discoloration		
1 1 -				0	ŀ		110 Oddir Discoloration		
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	4		90%	0	Ì	1			
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4	j			0			[		
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5			1						
-	1						}		
6 -	1	l		0		W-2R	Sampled at 6'		
		:		١ ،		W-2K			
l							BETX		
l <sup>7</sup> —									
ļ _			90%	0			1		
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-	EOB 10'								
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15			j	- 1	ļ		•		
	Stratification lines are approximate, in-situ transition between s	oil types m	av be gradual	<u>-</u>					
	Sampled within the 5-10' interval at 6' per plan	<del></del>	-, 5.uuuui,						
	Sampled in the center due to 0 PID reading								
	Manway / Surface Elevation:	1	<del></del>						
_	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC		
$\nabla$	Groundwater Depth After Drilling:		Rotary De <sub>l</sub>	oth:	•	Geologist:	MWD/JKK		

lllinois E	Environmental Protection Agency						COMPANY, INC.
47.						DRILLI	NG BOREHOLE LOG
V							Page 1 of 2
UST INCIDENT #			BOREHO				
	Henson Oil Company		BORING I	.OCAT	ION: 5'	S & I'W from	n SW Corner of Bldg
TE ADDRESS: C	Towanda, IL 61776		DIC TYPE		<del></del> -		
	TED: 9/11/23 13:30		RIG TYPE DRILLING/		FAIRTH	Geoprobe	Push
	HED: 9/11/23 13:45		BACKFIL				Pusn
ЕРТН	SOIL AND ROCK	USCS	Sample				REMARKS: (Odor, Color,
EET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type		Moisture, Penetrometer, etc.)
0 Gravel	•						
Brown Sar	nd Backfill						No Odor/Discoloration
1				0	·		
				•	ļ	•	
, ㅓ		1					İ
<sup>-</sup> <b></b>			9004	^	}		
, ┤		1	80%	0			
3						•	
4							
<sup>4</sup>	•			0			
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5 7.							
	•						
<sub>5</sub>				0		W-4R	Sampled at 61
~ <del>-</del>				١			Sampled at 6'
. ⊢	:	1					BETX
<b>′</b> →	•						
			80%	0			
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EOB 10'		<u> </u>					
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	ines are approximate, in-situ transition between s	soil types m	ay be gradual.				
LS: Sampled wi	ithin the 5-10' interval at 6' per plan						•
Manway / S	Surface Elevation:						
	ter Depth While Drilling:	~9-10'	Auger Dep	h: ·	10'	Driller:	AEDC
<del>-</del>					-		
✓ Groundwa	ter Depth After Drilling:		Rotary Dep	th:	5.0	Geologist:	MWD/JKK

	Illinois Environmental Protection Agency		,	<u></u>			COMPANY, INC.
<u> </u>						DRILLI	NG BOREHOLE LOG Page 1. of 2
LUST IN	CIDENT #: 2000-1913		BOREHO	E NUM	IBER:	SB-4	rage. I. O. 2
SITE NA							om SW Corner of Bldg
SITE AD	DRESS: Old Highway 66			•			
	Towanda, IL 61776		RIG TYPE	:		Geoprobe	
_	ME STARTED: 9/11/23 13:45		DRILLING				Push .
	ME FINISHED: 9/11/23 14:00	7	BACKFIL		_		
DEPTH	SOIL AND ROCK	USCS	Sample				REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
-	Gravel Cravel	ļ					
ال	Black Silty Clay	CL	1		[ [		No Odor/Discoloration
1				0			i
					l I		
2 ┦							l '
<b>-</b>		1					
			90%	0		SB-4A	BETX
3			]				
		1					·
4		j		0			
<del></del>	Gray Silty Clay	CL		Ĭ			·
	Olay Silly Clay						
5 📙		4			1		
I <sup>I</sup>	Brown Mottled Gray Silty Clay	CL					
6	•			0	:		٠ .
$\neg$							·
, $\dashv$							•
′—							
			100%	5.7	ľ	•	
8	•	1	ı				
$\neg$					l		Slight Odor
9 7				374		SB-4B	BETX
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OTES: S ? S	tratification lines are approximate, in-situ transition between stampled within the 0-5' and 5-10 intervals per pla Sampled in the center due to 0 PID reading sampled at the highest PID reading per 5' interval vianway / Surface Elevation:		ay be gradual.				
<del>-</del>	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10' 1	Driller:	AEDC
$\overline{\Box}$	Groundwater Depth After Drilling:		Rotary De				

	Illinois Environmental Protection Agency	•			<del></del>		COMPANY, INC.			
				DRILLING BOREHOLE LO						
1							Page 1 of 2			
سيحصسب	NCIDENT #: 2000-1913			BOREHOLE NUMBER: W-13R						
SITE NA			JBORING I	OCAT	ION: 71	' E & 52'N fro	om SW Corner of Bldg			
SIIE AD	DDRESS: Old Highway 66 Towanda, IL 61776		RIG TYPE	•		Geoprobe	· · · · · · · · · · · · · · · · · · ·			
DATE/T	IME STARTED: 9/11/23 14:00		DRILLING/				Push			
	TME FINISHED: 9/11/23 14:15		BACKFIL				·			
DEPTH		USCS	Sample		Sample		REMARKS: (Odor, Color,			
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)			
0	Gravel									
	Brown Sand Backfill						No Odor/Discoloration			
1 7				0						
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2	1		[							
-			900/	^						
` ⊢			80%	0						
3	,									
4		}		0						
5										
		1		_		W 12D	g			
6—				0	ľ	W-13R	Sampled at 6'			
							BETX			
7					' I					
			95%	0						
8 7										
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	EOB 10'									
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15										
	Stratification lines are approximate, in-situ transition between	soil types m	av he gradual	!						
	Sampled within the 5-10' interval at 6' per plan		_, 5							
							•			
1	Manway / Surface Elevation:						<u> </u>			
<b>V</b>	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC			
$\overline{}$	Groundwater Depth After Drilling:		Rotary De							

# Illinois Environmental Protection Agency    CW   M COMPAN	HOLE LOG
BOREHOLE NUMBER: W-14R  SITE NAME: Henson Oil Company  SITE ADDRESS: Old Highway 66  Towanda, IL 61776  DATE/TIME STARTED: 9/11/23 14:15  DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK USCS Sample PID Sample SAMPLE REMARKS: (FEET)  O Gravel  BOREHOLE NUMBER: W-14R  BORING LOCATION: 17' S & 54'E from SW Corner of SW Corne	
SITE NAME: Henson Oil Company  SITE ADDRESS: Old Highway 66  Towanda, IL 61776  DATE/TIME STARTED: 9/11/23 14:15  DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK USCS Sample PID Sample SAMPLE REMARKS: (FEET) DESCRIPTION CLASS Recovery (ppm) Type NUMBER Moisture. Pene	f Bldg
Towanda, IL 61776  DATE/TIME STARTED: 9/11/23 14:15  DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK USCS Sample PID Sample SAMPLE REMARKS: (FEET)  O Gravel  O Gravel	f Bldg
Towanda. IL 61776  DATE/TIME STARTED: 9/11/23 14:15  DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK (FEET) DESCRIPTION  O Gravel  RIG TYPE: Geoprobe  DRILLING/SAMPLE METHOD: Push  BACKFILL: Cuttings/Grout  USCS Sample PID Sample SAMPLE REMARKS: (Opm) Type NUMBER Moisture. Pene	
DATE/TIME STARTED: 9/11/23 14:15  DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK (FEET) DESCRIPTION  O Gravel  DRILLING/SAMPLE METHOD: Push  BACKFILL: Cuttings/Grout  USCS Sample PID Sample SAMPLE REMARKS: (Opm) Type NUMBER Moisture. Pene	
DATE/TIME FINISHED: 9/11/23 14:30  DEPTH SOIL AND ROCK USCS Sample PID Sample SAMPLE REMARKS: ( (FEET) DESCRIPTION CLASS Recovery (ppm) Type NUMBER Moisture. Pene  O Gravel	
(FEET) DESCRIPTION CLASS Recovery (ppm) Type NUMBER Moisture. Pene  O Gravel	
0 Gravel	
	trometer, etc.)
Black Silty Clay CI.   No Odor/Disc	
	coloration
1	
100% 0	
Brown Silty Clay CL	*
5	
Brown Clayey Silt ML	
BETX	
7	
100% 0	
Olive Gray Silty Clay CL	
9   85.5   85.5	
10	
EOB 10'	
11 7	
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Stratification lines are approximate, in-situ transition between soil types may be gradual.	
OTES: Sampled within the 5-10' interval at 6' per plan	
For the second s	
Manway / Surface Elevation:	
Groundwater Depth While Drilling: ~9-10' Auger Depth: 10' Driller:	AEDC
Groundwater Depth After Drilling: Rotary Depth: Geologist: M	WD/JKK

	Illinois Environmental Protection Agency			-		CW <sup>□</sup> M	COMPANY, INC.
	,⊒			DRILLING BÖREHOLE LOG			
1							Page 1 of 2
					IBER:		
SITE NA			BORING I	LOCAT	ION: 5'	N & 80'E from	n SW Corner of Bldg
SITE AL	DDRESS: Old Highway 66						<u> </u>
DATECT	Towanda, IL 61776  IME STARTED: 9/11/23 14:30		RIG TYPE			Geoprobe	
	IME STARTED: 9/11/23 14:30		DRILLING/ BACKFIL				Push
DEPTH		USCS	Sample				REMARKS: (Odor, Color,
(FEET)			Recovery				Moisture, Penetrometer, etc.)
0	Gravel	<u> </u>					
	Brown Sand Backfill				<del>                                     </del>		
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<sup>2</sup> —		i			l .		
_			100%	0			
3		ļ					
	Brown Silty Clay	CL					·
4				0			
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5 _							
	Brown Clayey Silt	ML					;
6				0		W-15R	Sampled at 6'
							BETX
7 7					1		
···			100%	85		·	
_ , ⊢			100%	63			
* <del> </del>							
	Olive Gray Silty Clay	CL					
9				648			
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10							
$\dashv$	EOB 10'			•			•
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	Stratification lines are approximate, in-situ transition between s Sampled within the 5-10' interval at 6' per plan	soil types m	ay be gradual.	•		•	•
i	Manway / Surface Elevation:						<u> </u>
	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC
$\nabla$	Groundwater Depth After Drilling:		Rotary De	pth:	۰۰.	Geologist:	MWD/JKK

	Illinois Environmental Protection Agency		•		-	CW <sup>□</sup> M	COMPANY, INC.
						DRILLI	NG BOREHOLE LOG
			1				Page 1 of 2
LUST IN	ICIDENT #: 2000-1913	•	BOREHO				CW Commence CD11
	ME: Henson Oil Company DRESS: Old Highway 66		BOKING	JUCAT	ION: 99	E& 76'N IT	om SW Corner of Bldg
SILLAD	Towanda, IL 61776		RIG TYPE	<u> </u>		Geoprobe	
DATE/T	IME STARTED: 9/11/23 14:45		DRILLING		E METHO		Push
DATE/T	IME FINISHED: 9/11/23 15:00		BACKFIL				
DEPTH		USCS	Sample				REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
°_	Grass					<u> </u>	
	Topsoil	j	1		l		No Odor/Discoloration
1	Brown Mottled Black Silty Clay	CL		0			
						ŀ	
2 -							
~			000				
		1	90%	0	ì	SB-5A	BETX
3					<b>[</b> .		
	Brown Clayey Silt	ML			<b>l</b> i		
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5 7					,		
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. 4			1		i		
6				0			
7 7						•	
			100%	8.5			
. ⊢			100%	6.5			
8							
	Olive Gray Silty Clay						Slight Odor
9		CL	]	13.2		SB-5B	BETX
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10							
_	EOB 10'						
	LOB IV						
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OTES: S	Stratification lines are approximate, in-situ transition between s Sampled within the 0-5' and 5-10 intervals per pla Sampled in the center due to 0 PID reading Sampled at the highest PID reading per 5' interval Manway / Surface Elevation:		ay be gradual.				
_	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC
$\nabla$	Groundwater Depth After Drilling:	ļ	Rotary De	pth:		Geologist:	MWD/JKK
<b>v</b> (	roundwater Depth Atter Drilling:		Kotary De	pth:		Geologist:	MWD/JKK

	Illinois Environmental Protection Agency	·. · ·				CW <sup>□</sup> M	COMPANY, INC.
			DRILLING BOREHOLE LOG				
	• •						Page 1 of 2
LUST IN	CIDENT #: 2000-1913		BOREHO	LE NUM	IBER:	W-11R	ruge 1 or 2
SITE NAME: Henson Oil Company							om SW Corner of Bldg
SITE AD	DDRESS: Old Highway 66						
	Towanda, IL 61776		RIG TYPE			Geoprobe	
	IME STARTED: 9/11/23 15:00		DRILLING				Push
DEPTH	IME FINISHED: 9/11/23 15:15 SOIL AND ROCK	Licos	BACKFIL				Ingui, nuo
(FEET)	DESCRIPTION	USCS CLASS	Sample				REMARKS: (Odor, Color, Moisture. Penetrometer, etc.)
	Gravel Gravel	CLASS	Recovery	(bbin)	Type	NUMBER	ivioisture. Penetrometer, etc.)
	· · · · · · · · · · · · · · · · · · ·	-					
	Clayey Topsoil	OL	ľ				No Odor/Discoloration
<sup>1</sup> _		1	· .	0			
	Brown Sand Backfill						
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			80%	0		1	
3		1					
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$\downarrow$ $\dashv$		1					
⁴				0			
4		ļ					
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	,						
6				0		W-IIR	Sampled at 6'
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	Stratification lines are approximate, in-situ transition between s	oil types m	av he gradual	I			
	Sampled within the 5-10' interval at 6' per plan	vy pos III	-, ve gravual.				
	, , , , , , , , , , , , , , , , , , ,						
N	Manway / Surface Elevation:						
	Groundwater Depth While Drilling:	~9-10'	Auger Dep	th:	10'	Driller:	AEDC
$\overline{\Box}$	Groundwater Depth After Drilling:	•	Rotary De	. Al		Geologist:	MWD/JKK

	Illinois Environmental Protection Agency		,	•		CW <sup>□</sup> M	COMPANY, INC.
ي ت						DRILLI	NG BOREHOLE LOG
							Page 1 of 2
LUST INCIDENT #: 2000-1913			BOREHO				
ITE NA	ME: Henson Oil Company DRESS: Old Highway 66		BORING I	LOCAT	ION: 11	5' E & 40' N	from SW Corner of Bldg
IIEAD	Towanda, IL 61776		RIG TYPE	•		Geoprobe	
ATE/TI	IME STARTED: 9/11/23 15:15		DRILLING		E METH		Push
	IME FINISHED: 9/11/23 15:30		BACKFIL				
EPTH	SOIL AND ROCK	USCS	Sample				REMARKS: (Odor, Color,
FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
0	Gravel	<u> </u>					
	Topsoil	1	Ì				
1 7				0			
	Brown Silty Clay	CL					
2	• •				İ		
~			95%	0			
<sub>3</sub> -		1	7570	"			1
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		1					
5							
7	Gray Olive Silty Clay	CL			]		Slight Odor and Discoloration
6				354		W-17R	Sampled at 6'
$\dashv$				334		W-I/IC	
							BETX
<sup>7</sup> →							LEL 8
			90%	1086			
8 ]							
。ヿ				842			LEL 6
<b>^</b>		1					
$^{\prime}$ $\dashv$							,
$^{\circ}$		-					
4	EOB 10'						
<sup>1</sup>							
	·						
2 7							
<sub>3</sub> 🕇							
$\mathbf{H}$							
. ᅴ					,		
4							
⁵⊥		1					
	Stratification lines are approximate, in-situ transition between	soil types m	ay be gradual				
TES: S	Sampled within the 5-10' interval at 6' per plan	•					
	•						
,	Manway / Surface Elevation:						to.
		.0.10	Augar Da	sth:	1:01	Driller:	AEDC
7	Groundwater Depth While Drilling:	~9-10'	Auger De				
<b>V</b> (	Groundwater Depth After Drilling:		Rotary De	pth:	• •	Geologist:	MWD/JKK

	Illinois Environmental Protection Agency	• •		-	<del></del>	CW <sup>□</sup> M	COMPANY, INC.
							NG BOREHOLE LOG
	हि <sub>स</sub> ्त्र्य च <mark>रो</mark> री						Page 1 of 2
LUST IN	NCIDENT #: 2000-1913		BOREHO	LE NUN	IBER:	SB-6	
ITE NA			BORING I	LOCAT	ION: 33'	E & 35' N fro	om SW Corner of Bldg
ITE AD	DDRESS: Old Highway 66		DIG TWDI				
ATE/T	Towanda, IL 61776  IME STARTED: 9/11/23 15:30		RIG TYPE		e Meru	Geoprobe	Push
	IME FINISHED: 9/11/23 15:45		BACKFIL				rusii
DEPTH		USCS	Sample				REMARKS: (Odor, Color,
FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
0	Gravel						
	Black Silty Clay	CL					No Odor/Discoloration
1		Ţ		0			
2							
			100%	2.5			
3 -			10070	2.5			
<i>-</i>							
, 4	Grov Mottled Proves Siles Class	┤ ॣ.		ا ۱		05.44	DETV
4	Gray Mottled Brown Silty Clay	CL		9.1		SB-6A	BETX
		1					
5 _							
6			İ	43.9			
							•
7							
′—			1000/			6D 6D	
_		I	100%	443		SB-6B	BETX
8—							
		_					Slight Odor
9	Olive Gray Silty Clay	CL		193			
10						:	
	EOB 10'	1					
11 7							
$\Box$							
12 十							•
<b>'</b> '—							
ᅴ							
<sup>13</sup> —							
14							
$\neg$							
15							
	Stratification lines are approximate, in-situ transition between Sampled within the 0-5' and 5-10 intervals per plants.		ay be gradual	, <u></u>			
	Sampled at the highest PID reading per 5' interval						-
	Manway / Surface Elevation:						**
_		~9-10'	Auger Dep	oth:	10'	Driller:	AEDC

A'A	Illinois Environmental Protection Agency				· ·	CW <sup>□</sup> M	COMPANY, INC.
	•					DRILLI	NG BOREHOLE LOG
٠.							Page 1 of 2
	CIDENT #: 2000-1913		BOREHO				
ITE NA		<del></del>	BORING I	LOCAT	ION: 10	5' E & 14' S	from SW Corner of Bldg
HIE AD	DRESS: Old Highway 66 Towanda. IL 61776		RIG TYPE			Geoprobe	
ATE/TI	ME STARTED: 9/11/23 15:45		DRILLING		E METHO	•	Push
	ME FINISHED: 9/11/23 16:00		BACKFIL				•
DEPTH	SOIL AND ROCK	USCS	Sample				REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
0	Gravel						
	Topsoil	]					
1	Brown Silty Clay	CL		0			No Odor/Discoloration
		1					
2 ]					ł		
			100%	0	1	SB-3A	ветх
3 7							
			·				
<sub>4</sub> -				0			
·			1				·
ᅟᅠᅟᅥ	r	<u> </u>					
' ᅴ	•	İ					
ᆜ		1					
6		ĺ		0			
7	,						
			100%	0			
8		ļ					
		i					Slight Odor
9 1	Gray Olive Silty Clay	CL		2.3		SB-3B	BETX
<b>~</b> —		U.D		2.5	•	3D-3D	BETA
,, <del> </del>							
10	EOD 101						
	EOB 10'						
11	•						
╛							
12							
13							,
$\neg$							
14							
$\Box$							
15							
والمستند	Stratification lines are approximate, in-situ transition between s	oil types -	ay be andus!				·
	Sampled within the 0-5' and 5-10 intervals per pla		iay oc gradual.				
	Sampled in the center due to 0 PID reading						
5	Sampled at the highest PID reading per 5' interval						2
	Manway / Surface Elevation:	<u>-</u>					
W	Groundwater Depth While Drilling:	~9-10'	Auger Dep	oth:	10'	Driller:	AEDC

	Illinois Environmental Protection Agency		<del></del>	V. (7.77)	· · · ·	CW <sup>□</sup> M	COMPANY, INC.
	ed)					DRILLI	NG BOREHOLE LOG
							Page 1 of 2
	NCIDENT #: 2000-1913		BOREHO				
SITE N.			BORING I	LOCAT	ION: 64	'E&20'S fi	om SW Comer of Bldg
SHEAL	DDRESS: Old Highway 66 Towanda. IL 61776		RIG TYPE	<u> </u>		Caarraha	
DATE/I	'IME STARTED: 9/11/23 16:00		DRILLING/		E METU	Geoprobe	Push
	TME FINISHED: 9/11/23 16:15		BACKFIL				1 431
DEPTH		USCS	Sample				REMARKS: (Odor, Color,
(FEET)	DESCRIPTION	CLASS	Recovery	(ppm)	Type	NUMBER	Moisture, Penetrometer, etc.)
0	Gravel	<u></u>					
_	Topsoil		1				No Odor/Discoloration
1	Black Silty Clay	CL		0	i .		
2 -							
_			95%	0		SB-2A	BETX
3 -	Brown Silty Clay	CL	1370			OD-ZA	BUIX
, -		l		^			
"—		1		0			
		]					
5 _		l					
	Brown Clayey Silt	ML					,
6				0			
7 -				•			
_	·		100%	0			·
8 -			10070	۰			
°							au
\ \ <del>-</del>	Gray Olive Silty Clay	<b></b>					Slight Odor
9	Gray Office Stity Clay	CL		19.5		SB-2B	BETX
_							-
10							
	EOB 10'			Ī			
11							·
				ı			
12					ŀ		*
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13							
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14			]				
	1			ľ			
15							
NOTES:	Stratification lines are approximate, in-situ transition between s Sampled within the 0-5' and 5-10 intervals per pla Sampled in the center due to 0 PID reading Sampled at the highest PID reading per 5' interval		ay be gradual.				
	Manway / Surface Elevation:	<u> </u>		<del></del>			
$\overline{}$	Groundwater Depth While Drilling:		Auger Dep			Driller:	AEDC
	Groundwater Depth After Drilling:	, I	Rotary De	pth:		Geologist:	MWD/JKK

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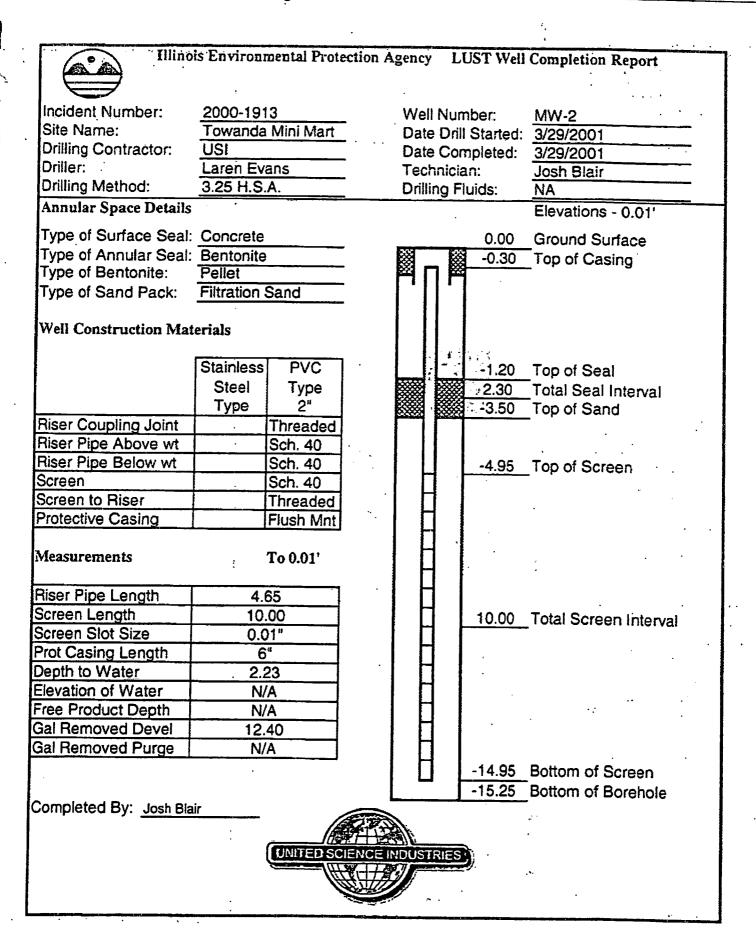
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Illino	is Environmental Prote	ection Agency	LUST Well	Completion Report		
				Toport		
Incident Number:	2000-1913	Well Nu	ımber:	MW-1		
Site Name:	Towanda Mini Mart	•		3/29/2001		
Drilling Contractor:	USI	_	impleted:	3/29/2001		
Driller:	Laren Evans	Technic	•	Josh Blair		
Drilling Method:	3.25 H.S.A.	Drilling I		NA .		
Annular Space Details				Elevations - 0.01'		
Type of Surface Seal:	Concrete		0.00	Ground Surface		
Type of Annular Seal:		38 8	₩ -0.30	•		
Type of Bentonite:	Pellet		× -0.30	Top of Casing		
Type of Sand Pack:	Filtration Sand		1			
Type of Garia Lack.	Tatration Sand					
Well Construction Mat	erials					
	Stainless PVC	1 11	1.00	Top of Coal		
l			-1.00	Top of Seal		
	1 75 1		2.50	Total Seal Interval		
Picer Coupling Joint	<del>                                     </del>		-3.50	Top of Sand		
Riser Coupling Joint	Threaded	1 11	1			
Riser Pipe Above wt	Sch. 40					
Riser Pipe Below wt	Sch. 40		-4.80	Top of Screen		
Screen	Sch. 40					
Screen to Riser	Threaded					
Protective Casing	Flush Mnt		1			
Measurements	To 0.01'					
Riser Pipe Length	4.50	I H				
Screen Length	10.00	I H	10.00	Total Screen Interval		
Screen Slot Size	0.01"	l H	10.00	Total Gorden Interval		
Prot Casing Length	6"	H	]			
Depth to Water	13.05	l H				
Elevation of Water	N/A	l H		·		
Free Product Depth	N/A	I H				
Gal Removed Devel	1.69	H		<u>.</u>		
Gal Removed Purge		H	]	-		
dai nemoved ruige	N/A	1 H				
				Bottom of Screen		
•	•		-15.10	Bottom of Borehole		
Completed By: Josh Bla	<u>ir</u>			_		
UNITED SCIENCE INDUSTRIES						



Illino	is Engineermental Pro-				¥1000 111 11	
1 Innio	is Environmental Prot	ection A	gency	L	UST Well	Completion Report
Incident Number:	2000-1913		Wal	1 NI	mber:	M/M/ O
Site Name:	Towanda Mini Mart	-				MW-3 3/29/2001
Drilling Contractor:	USI	_				
Driller:	Laren Evans	-		hnici	mpleted:	
Drilling Method:	3.25 H.S.A.	<b>-</b>		_	arı. Huids:	Josh Blair NA
Annular Space Details				9 .	Talao.	Elevations - 0.01'
1 -				1	٠,٠,٠,٠	
Type of Surface Seal:		_				Ground Surface
Type of Annular Seal:		_	▩.	_ 🧱	3 -0.30	_Top of Casing
Type of Bentonite:	Pellet	_		1 60	9	
Type of Sand Pack:	Filtration Sand	_				
Well Construction Mat						
Well Construction Mai	eriais		1		<b>l</b> .	
	Stainless PVC	3		1	4.00	
	1				-1.90	_Top of Seal
	Steel Type				2.50	_Total Seal Interval
Picor Coupling Iniah					-4.40	_Top of Sand
Riser Coupling Joint	Threaded	1			,	
Riser Pipe Above wt	Sch. 40					•
Riser Pipe Below wt	Sch. 40		Ė		-4:70	_Top of Screen
Screen Screen to Riser	Sch. 40			4		
	Threaded		L	1		
Protective Casing	Flush Mnt		-	-		·
Measurements	Ta 0 011		-	4		
Meason ements	To 0.01'					,
Riser Pipe Length	4.40		-	-		
Screen Length	10.00		-	1	40.00	T.4.16
Screen Slot Size	0.01"		-		10.00	_Total Screen Interval
Prot Casing Length	6"		-	1		
Depth to Water	8.10		-	1		
Elevation of Water	N/A	ł	F			
Free Product Depth	N/A	1	-			
Gal Removed Devel	6.40	- 1	⊢			
Gal Removed Purge	N/A	ľ	H			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14//		H		-14.70	Bottom of Screen
		1	L	!	-14.70	-
Completed By: Josh Bla	ir	L			-15.00	Bottom of Borehole
Completed by. Just bla	<u> </u>					
					<b>3</b> .	·
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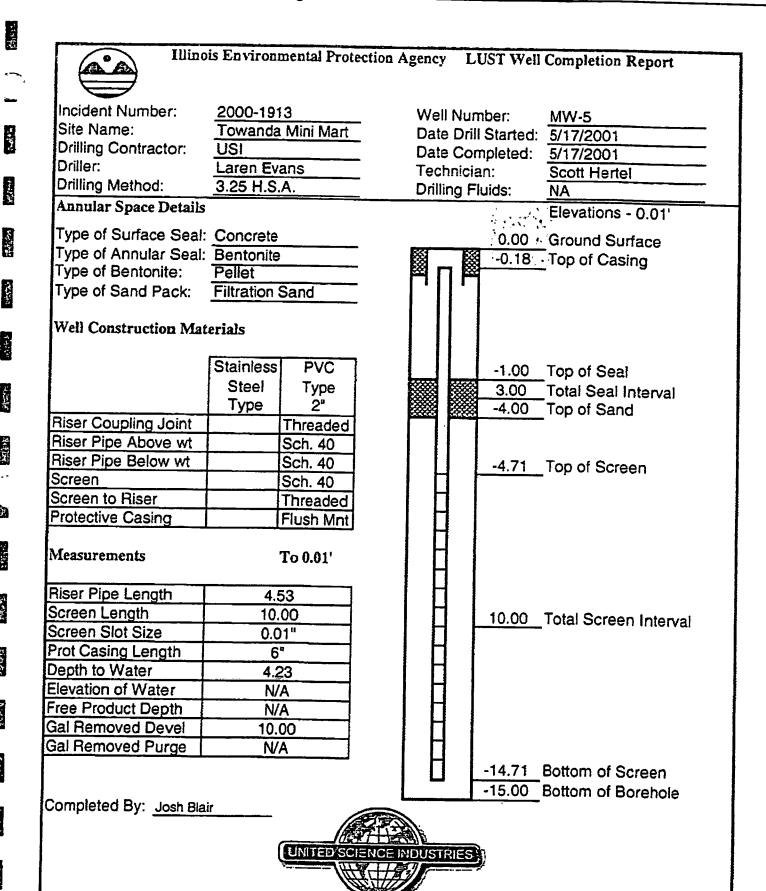
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Illino	is Environmental Prot	ection Agency II	ICT Well	Completion Person		
		cedon Agency De	JSI WEII	Completion Report		
Incident Number:	2000-1913	Well Num	ber:	MW-4		
Site Name:	Towanda Mini Mart	Date Drill		3/29/2001		
Drilling Contractor:	USI	Date Com		3/29/2001		
Driller:	Laren Evans	Technicia		Josh Blair		
Drilling Method:	3.25 H.S.A.	Drilling Flu		NA NA		
Annular Space Details			<u></u>	Elevations - 0.01'		
•	•			Lievations - 0.01		
Type of Surface Seal:			0.00	Ground Surface		
Type of Annular Seal:			-0.30	Top of Casing		
Type of Bentonite:	Pellet	. 門门門		<u> </u>		
Type of Sand Pack:	Filtration Sand	.				
Well Construction Mat	erials					
	Stainless PVC		-1.00	Top of Seal		
	Steel Type		2.40	Total Seal Interval		
	Type 2"		-3.40	Top of Sand		
Riser Coupling Joint	Threaded			•		
Riser Pipe Above wt	Sch. 40	.		>		
Riser Pipe Below wt	Sch. 40		-4.75	Top of Screen		
Screen	Sch. 40					
Screen to Riser	Threaded	1 11 1		•		
Protective Casing	Flush Mnt	1 H 1		i .		
Measurements	To 0.01'					
Diegr Ding Langth						
Riser Pipe Length	4.45					
Screen Length	10.00		10.00	Total Screen Interval		
Screen Slot Size	0.01"					
Prot Casing Length	6"					
Depth to Water	14.78					
Elevation of Water	N/A					
Free Product Depth	N/A					
Gal Removed Devel	11.60	1 11 1				
Gal Removed Purge	N/A					
			-14.75	Bottom of Screen		
				Bottom of Borehole		
Completed By: Josh Blai	ir			- cuom or boletiole		
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Wine	is Facinate Al Dec		
inino	us Environmental Prot	ection Agency LUS	T Well Completion Report
incident Number:	2000-1913	Weil Numb	or: NAVAL C
Site Name:	Towanda Mini Mart	•	er: <u>MW-6</u> started: 5/17/2001
Drilling Contractor:	USI	Date Comp	
Driller:	Laren Evans	Technician	
Drilling Method:	3.25 H.S.A.	Drilling Flui	
Annular Space Details			Elevations - 0.01'
Type of Surface Seal:	Conorata		
Type of Annular Seal:		223 200	0.00. Ground Surface
Type of Bentonite:	Pellet		-0.21 Top of Casing
•	Filtration Sand		
Type of Salid Fack.	i ilitation Sand		
Well Construction Mat	erials		
	.04 14425		
	Stainless PVC		-0.80 Top of Seal
	Steel Type		3.00 Total Seal Interval
•	Type 2"	<b>                                      </b>	-3.80 Top of Sand
Riser Coupling Joint	Threaded		Top of Sailu
Riser Pipe Above wt	Sch. 40		
Riser Pipe Below wt	Sch. 40		-4.70 Top of Screen
Screen	Sch. 40		rop or ocreen
Screen to Riser	Threaded	1 H I	•
Protective Casing	Flush Mnt	1 H I	
		1 H I	
Measurements	To 0.01'		
		H	
Riser Pipe Length	4.49		
Screen Length	10.00		10.00 Total Screen Interval
Screen Slot Size	0.01"		rotal colocii interval
Prot Casing Length	6"		
Depth to Water	3.00		
Elevation of Water	N/A		
Free Product Depth	N/A		
Gal Removed Devel	11.00		i
Gal Removed Purge	N/A		
			14.70 Bottom of Screen
			15.00 Bottom of Borehole
Completed By: Josh Bla	<u>ir                                     </u>		
	UNITED SO	ENCE INDUSTRIES	
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Illino	is Environmental Prot	notion Agency I IICT IV	-11 C - 1-4'- D
	is Euvironmentai Prot	ection Agency LUST W	ell Completion Report
Incident Number:	2000-1913	Well Number:	MW-7
Site Name:	Towanda Mini Mart	Date Drill Starte	
Drilling Contractor:	USI	Date Completed	
Driller:	Laren Evans	_ Date Completed Technician:	Scott Hertel
Drilling Method:	3.25 H.S.A.	Drilling Fluids:	NA
Annular Space Details			Elevations - 0.01'
Type of Surface Seal:	Concrete	0.00	
Type of Annular Seal:			
Type of Bentonite:	Pellet	-0.2	Top of Casing
Type of Sand Pack:	Filtration Sand	. [7][7]	
Type of Sand Pack.	Filliation Sand	.	
Well Construction Mat	erials		
	Stainless PVC	1	
		-0.1	
	Steel Type	3.00	
D: 0 !! ! !	Type 2"	-3.1	Top of Sand
Riser Coupling Joint	Threaded		
Riser Pipe Above wt	Sch. 40		•
Riser Pipe Below wt	Sch. 40	-4.68	Top of Screen
Screen	Sch. 40		
Screen to Riser	Threaded		
Protective Casing	Flush Mnt		
Measurements	To 0.01'		
Riser Pipe Length	4.43	H	
Screen Length	10.00	H 1 10 00	Total Screen Interval
Screen Slot Size	0.01"	H   -10.00	_ rotal ocicen interval
Prot Casing Length	6"	H	
Depth to Water	13.62	H	
Elevation of Water	N/A		
Free Product Depth	N/A	H	
Gal Removed Devel	1.00		
Gal Removed Purge	N/A	I H I	
<u></u>		-14.6	8 Bottom of Screen
		<u> </u>	Bottom of Borehole
Completed By: Josh Bla	nir		
Completed by. Court Die			
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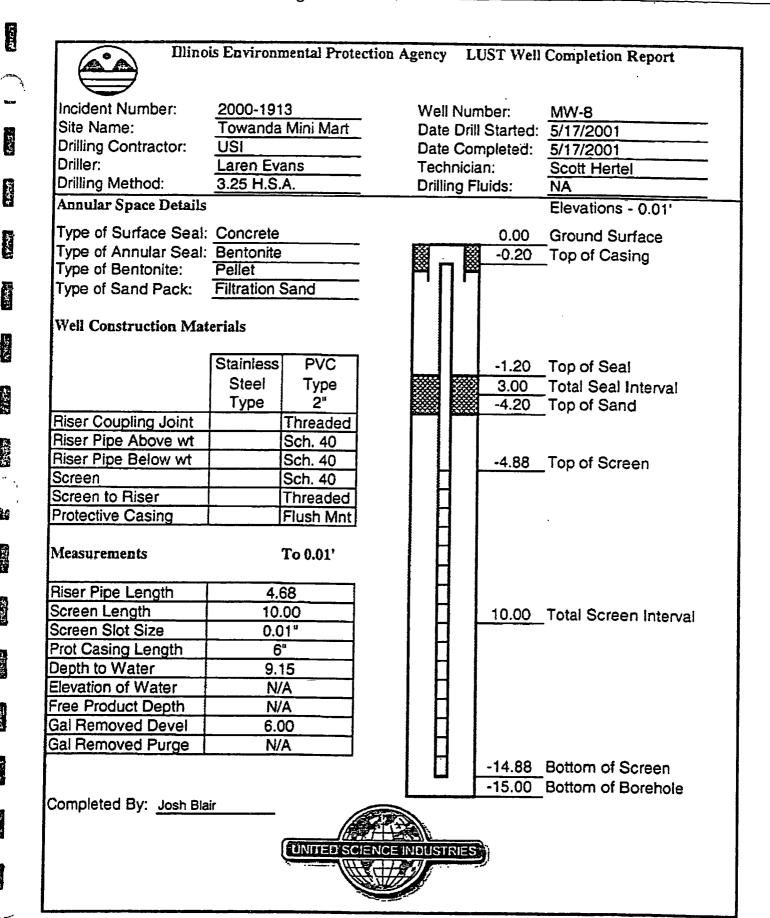
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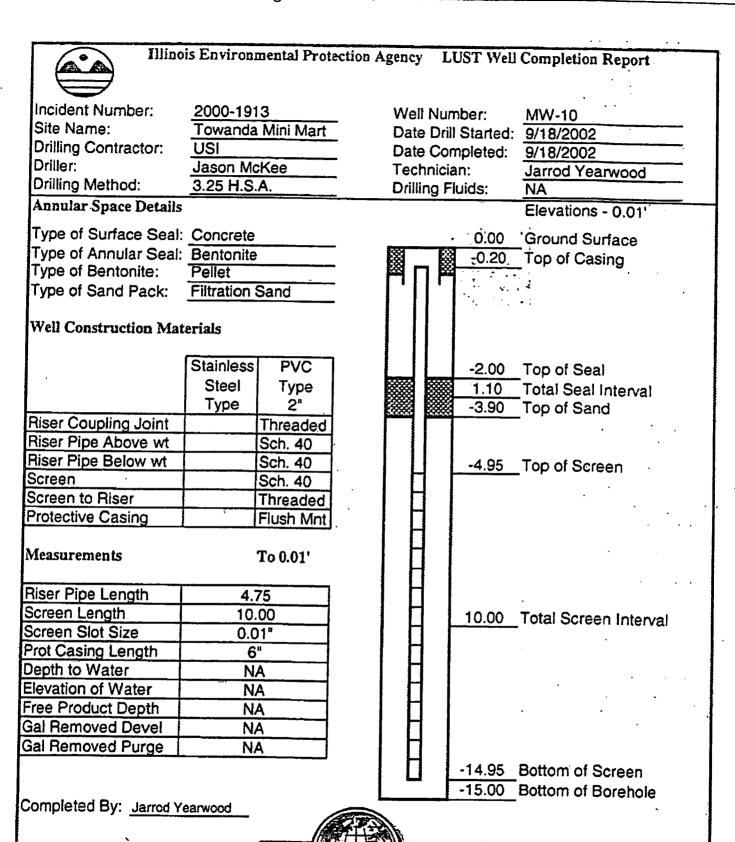
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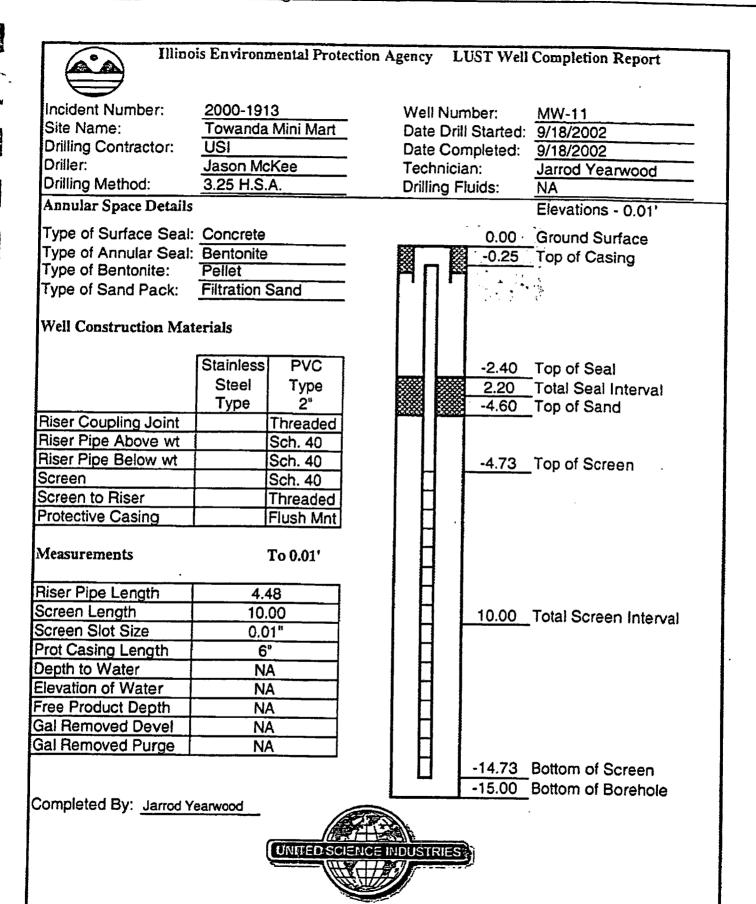
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a Mini Mart vans S.A.  e e e Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded Flush Mnt	Date Date Tec	e Drill e Cor hnicia	-0.50 -2.00	MW-9 5/17/2001 5/17/2001 Scott Hertel NA Elevations - 0.01' Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand  Top of Screen
vans S.A.  e e e Type 2" Threaded Sch. 40 Sch. 40 Threaded	Date Tec	e Cor hnicia	-0.50 -2.00	5/17/2001 Scott Hertel NA Elevations - 0.01' Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand
S.A.  PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded	Tec	hnicia	-0.50 -2.00	Scott Hertel NA Elevations - 0.01' Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand
PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded			-0.50 -2.00	NA Elevations - 0.01' Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand
PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded			-0.50 -1.50 -2.00	Elevations - 0.01' Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand
PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded			-0.50 1.50 -2.00	Ground Surface Top of Casing  Top of Seal Total Seal Interval Top of Sand
PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded			-0.50 1.50 -2.00	Top of Casing  Top of Seal  Total Seal Interval  Top of Sand
PVC Type 2" Threaded Sch. 40 Sch. 40 Threaded			-0.50 1.50 -2.00	_Top of Seal _Total Seal Interval _Top of Sand
Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			1.50 -2.00	Total Seal Interval Top of Sand
Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			1.50 -2.00	Total Seal Interval Top of Sand
Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			1.50 -2.00	Total Seal Interval Top of Sand
Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			1.50 -2.00	Total Seal Interval Top of Sand
Type 2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			1.50 -2.00	Total Seal Interval Top of Sand
2" Threaded Sch. 40 Sch. 40 Sch. 40 Threaded			-2.00	Top of Sand
Threaded Sch. 40 Sch. 40 Sch. 40 Threaded				<del>-</del>
Sch. 40 Sch. 40 Sch. 40 Threaded			-4.60	_Top of Screen
Sch. 40 Sch. 40 Threaded			-4.60	_Top of Screen
Sch. 40 Threaded		1 1	-4.00	_ top of Screen
Threaded				
	1 1	1 1		
IL 1031 MILL		1 1		
	- 1 F	-		
To 0.01'				
.40	1	1 1		·
0.00		1	10.00	Total Screen Interval
01"		1 t	10.00	_ rotal Ocicen interval
6"		1		
.00	1	1		
I/A		1		
VA	1 +	1 1		
	1	1 1		
/A		1		
		1	-14 60	Bottom of Screen
	"	'		Bottom of Borehole
	_		-15.00	Porrous of Potetiole
	00 /A /A 00 /A	00 /A /A 00 /A	00 /A /A 00 /A	00 /A /A 00 /A -14.60



UNITED SCIENCE INDUSTRIES



Well Number:

Date Drill Started: 9/18/2002

Date Completed: 9/18/2002



# Illinois Environmental Protection Agency LUST Well Completion Report

MW-12

Incident	Number:
miciaciii	MUHIUEL.

2000-1913

Site Name:

Towanda Mini Mart

Drilling Contractor:

USI

Driller:

Jason McKee

Drilling Method:

Technician: 3.25 H.S.A. Drilling Fluids:

NA Elevations - 0.01'

Jarrod Yearwood

## **Annular Space Details**

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Pellet

Type of Bentonite:

Type of Sand Pack:

Filtration Sand

## Well Construction Materials

İ	Stainless	PVC
	Steel	Туре
	Type	2"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

## Measurements

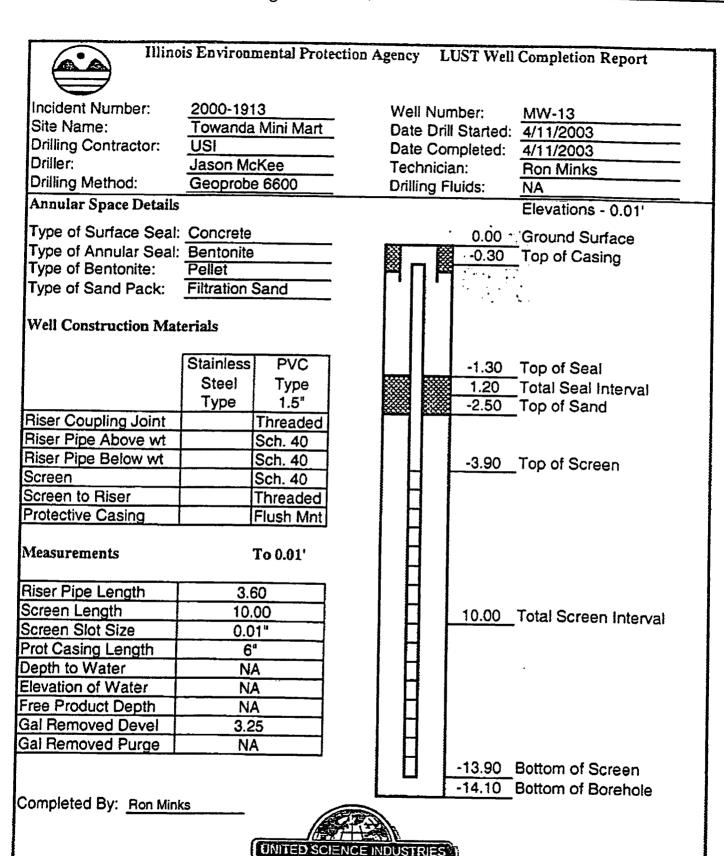
To 0.01'

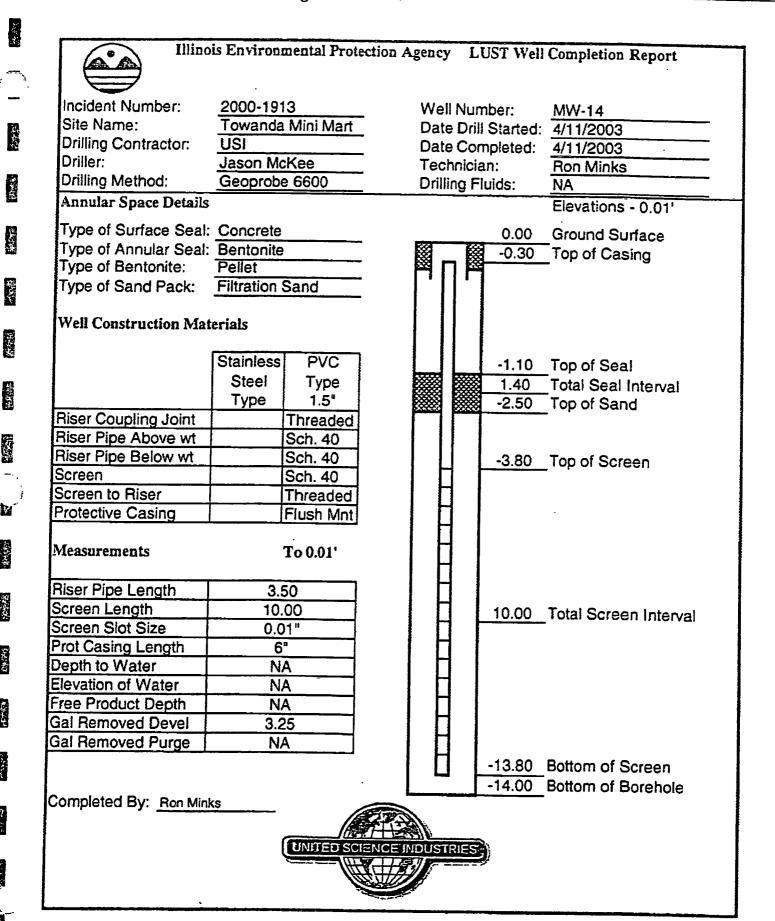
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Riser Pipe Length	4.18	
Screen Length	10.00	
Screen Slot Size	0.01"	
Prot Casing Length	6"	
Depth to Water	NA	
Elevation of Water	NA	
Free Product Depth	NA	
Gal Removed Devel	NA	
Gal Removed Purge	NA	

Completed By: Jarrod Yearwood

МП	0.00 Ground Surface -0.25 Top of Casing
	-1.20 Top of Seal
	2.20 Total Seal Interval
	-3.40 Top of Sand
	-4.43 Top of Screen
	10.00 Total Screen Interval
	-14.43 Bottom of Screen -15.00 Bottom of Borehole







## Illinois Environmental Protection Agency LUST Well Completion Report

Incident Number:

2000-1913

Site Name:

Towanda Mini Mart

**Drilling Contractor:** 

USI

Driller:

1

1

500

Jason McKee Geoprobe 6600

**Drilling Method:** 

Date Completed: 4/28/2003 Technician:

Drilling Fluids:

Well Number:

MW-15

Date Drill Started: 4/28/2003

Jarrod Yearwood

NA

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Type of Bentonite:

Pellet

Type of Sand Pack:

Filtration Sand

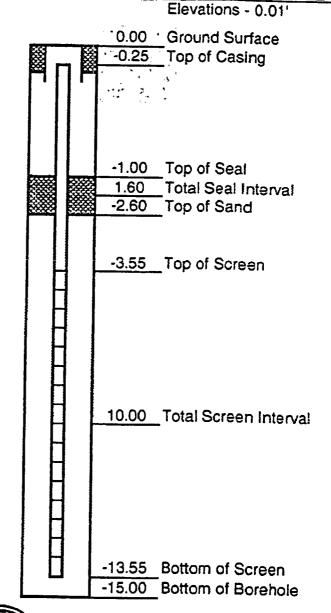
## Well Construction Materials

	Stainless	PVC
	Steel	Type
	Type	1.5"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

#### Measurements To 0.01'

Riser Pipe Length	3.30
Screen Length	10.00
Screen Slot Size	0.01"
Prot Casing Length	6"
Depth to Water	5.1'
Elevation of Water	NA
Free Product Depth	NA
Gal Removed Devel	2.25
Gal Removed Purge	NA

Completed By: <u>Jarrod Yearwood</u>





## Illinois Environmental Protection Agency LUST Well Completion Report

Incident Number:

2000-1913

Site Name:

Driller:

2. E

12

Towanda Mini Mart

Drilling Contractor:

USI

Drilling Method:

Jason McKee Geoprobe 6600

UNITED S

**Drilling Fluids:** 

Well Number:

MW-16

Date Drill Started: 4/28/2003

Date Completed: 4/28/2003 Technician:

Jarrod Yearwood

NA

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Seal: Bentonite

Pellet

Type of Bentonite: Type of Sand Pack:

Filtration Sand

#### Well Construction Materials

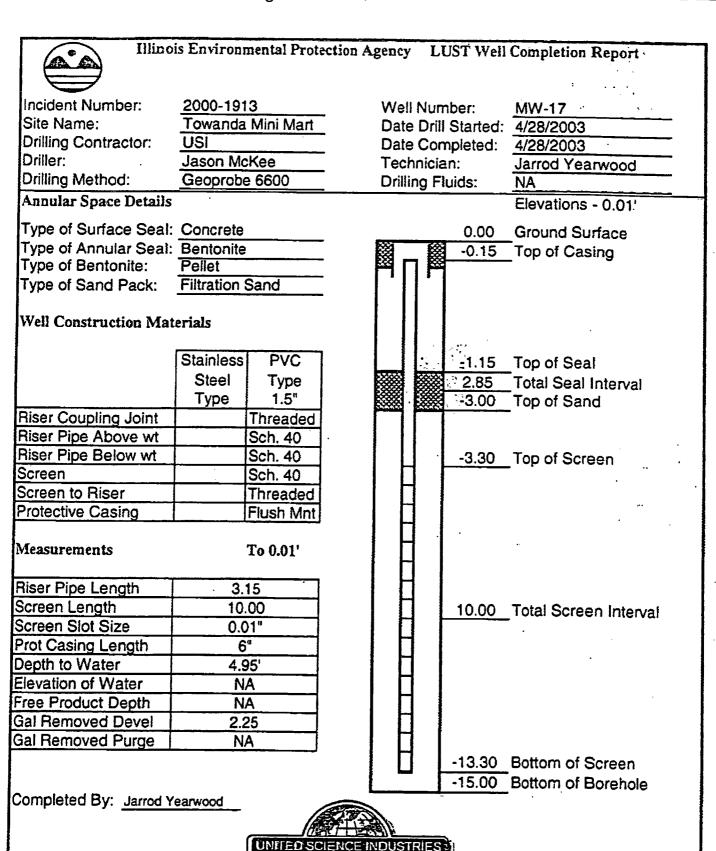
	Stainless	PVC
	Steel	Type
	Type	1.5"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

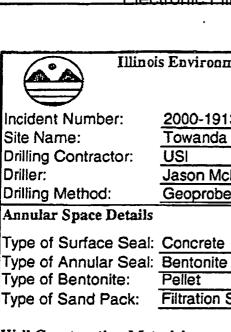
Measurements	To 0.01'
MEASUI EIMEMIS	1004

Riser Pipe Length	3.25
Screen Length	10.00
Screen Slot Size	0.01"
Prot Casing Length	6"
Depth to Water	3.98'
Elevation of Water	NA
Free Product Depth	NA
Gal Removed Devel	2.50
Gal Removed Purge	NA

Completed By: Jarrod Yearwood

:	. 7	Elevations - 0.01
ŗ.,	0.00	· Ground Surface
		Top of Casing
MUM		
-	1.00	Top of Seal
<b>*** ***</b> 2	2.00	Total Seal Interval
	3.00	Top of Sand
	2.40	Tax of Cases
H	5.40	_Top of Screen
1 H I		
1 11 1		
H		
1 H I .	200	Total Career' later at
	<u> </u>	Total Screen Interval
1 H 1		
1 H I		
1 H I.	3 40	Bottom of Screen
	5.00	_





# Illinois Environmental Protection Agency LUST Well Completion Report

2000-1913

Towanda Mini Mart

USI

Driller:

PAC F.

1

Jason McKee

Drilling Method: Geoprobe 6600 Well Number:

Date Drill Started: 4/28/2003

Date Completed: 4/28/2003

MW-18

Technician:

Jarrod Yearwood

Drilling Fluids:

NA Elevations - 0.01'

Annular Space Details

Type of Surface Seal: Concrete

Type of Bentonite:

Pellet

Type of Sand Pack:

Filtration Sand

#### Well Construction Materials

	Stainless	PVC
	Steel	Type
	Type	1.5"
Riser Coupling Joint		Threaded
Riser Pipe Above wt		Sch. 40
Riser Pipe Below wt		Sch. 40
Screen		Sch. 40
Screen to Riser		Threaded
Protective Casing		Flush Mnt

Measurements	To 0.01'
--------------	----------

Riser Pipe Length	3.25
Screen Length	10.00
Screen Slot Size	0.01"
Prot Casing Length	6°
Depth to Water	4.42'
Elevation of Water	NA
Free Product Depth	NA
Gal Removed Devel	2.50
Gal Removed Purge	NA

Completed By: Jarrod Yearwood

-0.60 Top of Seal 2.00 Total Seal Interval -2.60 Top of Sand -3.50 Top of Screen	 	0.00	_
2.00 Total Seal Interval -2.60 Top of Sand  -3.50 Top of Screen		-0.25	Top of Casing
2.00 Total Seal Interval -2.60 Top of Sand  -3.50 Top of Screen			
Top of Sand		0.60	Top of Seal
Top of Screen		2.00	Total Seal Interval
		-2.60	Top of Sand
10.00 Total Screen Interval	-	-3.50	_Top of Screen
-13.50 Bottom of Screen			
-15.00 Bottom of Borehole			_

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Illino	is Environmental Prote	ction Age	псу	L	UST Well	Completion Report
Incident Number: Site Name:	2000-1913 Towanda Mini Mart	•	. •		nber: Started:	MW-19 4/22/2004
Drilling Contractor:	USI		ate (	Cor	npleted:	4/22/2004
Driller:	Greg Liggett	•	echr			Ron Minks
Drilling Method:	Geoprobe 6600 w/augers		rillin	g F	uids:	NA
Annular Space Details						Elevations - 0.01'
Type of Surface Seal:	Concrete				0.00	Ground Surface
Type of Annular Seal:	Bentonite		1	£Ş.	-0.30	Top of Casing
Type of Bentonite:	Pellet	<b>2</b>	П		0.00	_ 10p 0i 0using
Type of Sand Pack:	Filtration Sand		'	•		
Well Construction Mat	terials					
	Stainless PVC	1	$\parallel \parallel$		4.50	<b>-</b>
	1 _ 1 1	355			-1.50	Top of Seal
	1 75.				2.10	Total Seal Interval
Picar Coupling laint	Type 2" Upack		<b>84 F</b>	***	-3.60	Top of Sand
Riser Coupling Joint Riser Pipe Above wt	Threaded		-11	ı		
Riser Pipe Below wt	Sch. 40		-11		5.00	<b>T</b>
Screen	Sch. 40		Н	ŀ	-5.60	Top of Screen
Screen to Riser	Sch. 40		Н			
Protective Casing	Threaded	ŀ	Н	I		
i Totective Casing	Flush Mnt	j	Н			
Measurements	To 0.01'		H			
Riser Pipe Length	5.30		H			
Screen Length	10.00		Н		10.00	Total Screen Interval
Screen Slot Size	0.01"		Н	Ī		Total Colocii Intelval
Prot Casing Length	· 6"		Н			
Depth to Water	NA	l	Н	- 1		
Elevation of Water	NA	1	Н	- 1		
ree Product Depth	NA	ļ	H			
Gal Removed Devel	NA		Н			
Gal Removed Purge	NA		Н			
			Н	1	-15.60	Bottom of Screen
				r		Bottom of Borehole
Completed By: Ron Min	ks					- Charlet Of Ellote
•	UNITEDISC	ENCE INDI	JSTR	ES.		

Illino	is Environmental Prote	ection Agency LUST Well	Completion Report
Incident Number: Site Name: Drilling Contractor:	2000-1913 Towanda Mini Mart USI	Well Number: Date Drill Started: Date Completed:	MW-20 4/22/2004 4/22/2004
Driller: Drilling Method:	Greg Liggett Geoprobe 6600 w/augers	Ron Minks NA	
Annular Space Details			Elevations - 0.01'
Type of Surface Seal: Type of Annular Seal: Type of Bentonite: Type of Sand Pack:			Ground Surface Top of Casing
Well Construction Mat	erials		
Riser Coupling Joint	Stainless PVC Steel Type Type 2" Upack Threaded	-2.30 2.30 -4.60	Top of Seal Total Seal Interval Top of Sand
Riser Pipe Above wt Riser Pipe Below wt Screen	Sch. 40 Sch. 40 Sch. 40	-5.40	Top of Screen
Screen to Riser Protective Casing	Threaded Flush Mnt		
Measurements	To 0.01'		
Riser Pipe Length	5.20	H	
Screen Length	10.00	10.00	Total Screen Interval
Screen Slot Size	0.01"		Total Co. Co. Tittorvar
Prot Casing Length	6°	1 П 1	!
Depth to Water	NA		
Elevation of Water	NA NA	] -[] [	
Free Product Depth	NA	ПП	
Gal Removed Devel	NA	1 11 1	
Gal Removed Purge	NA		
Completed By: Ron Mint	ve .		Bottom of Screen Bottom of Borehole
		ENGE INDUSTRIES	

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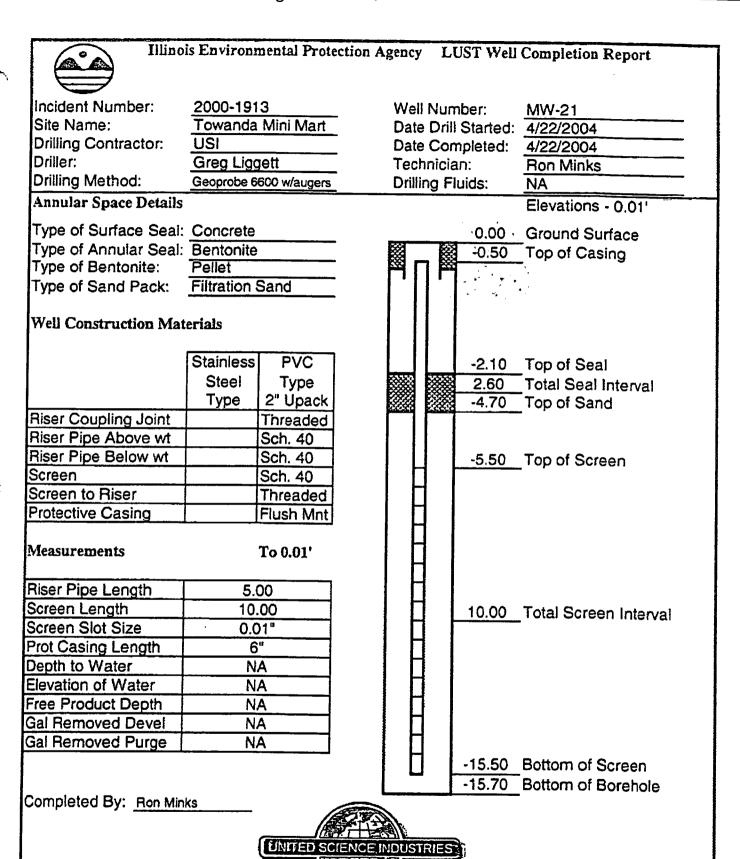
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#### Illinois Environmental Protection Agency **LUST Well Completion Report** Incident No. 2000-1913 Well No. MW-5R Henson Oil Site Name **Date Drilled** 9/11/2023 **Drilling Contractor AEDC Date Completed** 9/11/2023 Driller **AEDC** MWD/JKK Geologist Hollow Stem Auger **Drilling Method Drilling Fluids** N/A <u>Annular Space Details</u> Type of Surface Seal Concrete Type of Annular Sealant **Bentonite** High-Yield Type of Bentonite Top of Protective Type of Sand Pack Coarse 20-20 100.32 ft. Casing 100.07 ft. Top of riser pipe 100.32 ft. Ground surface Top of Annular Sealant 99.82 Casing Stickup Well Construction Materials N/A Stainless PVC Other Steel Specify Specify Type Type Type Riser Coupling Joint Riser Pipe Above Sched.-40 w.t. 99.82 ft. Top of Seal Riser Pipe Below w.t. Screen ft. Total Seal interval Sched.-40 3.00 Coupling Joint Sched.-40 Screen to Riser 96.82 ft. Top of Sand Protective Casing Steel ft. Top of Screen 95.82 Measurements Riser Pipe Length 4.25 ft. Screen Length 10.0 ft. Screen Slot Size 10-slot Protective Casing Length N/A Depth to Water ft. while drilling ~10 Total Screen Depth to Water 94.12 ft. static ft. Interval 10.0 Free Product Thickness N/A Gallons removed (develop) ~3 Gallons removed (purge) ~3 Other Bottom of Completed by: 85.82 ft. Screen **MWD** Bottom of 85.32 ft. Borehole

#### Illinois Environmental Protection Agency **LUST Well Completion Report** 2000-1913 Incident No. Well No. MW-6R Henson Oil Site Name **Date Drilled** 9/11/2023 **Drilling Contractor AEDC Date Completed** 9/11/2023 Driller **AEDC** MWD/JKK Geologist Hollow Stem Auger **Drilling Method Drilling Fluids** N/A Annular Space Details Type of Surface Seal Concrete Type of Annular Sealant **Bentonite** Type of Bentonite High-Yield Type of Sand Pack Coarse 20-20 1 Top of Protective 100.78 ft. Casing 100.53 : ft. Top of riser pipe 100.78 ft. Ground surface Top of Annular Sealant 100.28 ft. Casing Stickup Well Construction Materials N/A Stainless PVC Other Steel Specify Specify Type Type Type Riser Coupling Joint Riser Pipe Above Sched.-40 100.28 ft. Top of Seal Riser Pipe Below w.t. Screen ft. Total Seal interval Sched.-40 3.00 Coupling Joint Sched.-40 Screen to Riser 97.28 ft. Top of Sand Protective Casing Steel 96.28 ft. Top of Screen Measurements Riser Pipe Length 4.25 ft. Screen Length 10.0 ft. Screen Slot Size 10-slot Protective Casing Length N/A Depth to Water ft. while drilling ~10 Total Screen Depth to Water 94.03 ft. static ft. Interval 10.0 Free Product Thickness N/A Gallons removed (develop) ~3 Gallons removed (purge) ~3 Other Bottom of Completed by: MWD 86.28 ft. Screen Bottom of 85.78 ft. Borehole

linois Environmental	Protection	n Agency	I	LUST Well Completion Repo	ort			
ncident No.	2000	-1913		Well No.	MW-8R			
ite Name	Hens	on Oil		Date Drilled	9/11/2023			
rilling Contractor	AED	С		Date Completed	9/11/2023			
riller	AED			Geologist	MWD/JKK			
rilling Method	Hollo	ow Stem Auger		Drilling Fluids	N/A			
nnular Space Det	ails	<del></del>	<del></del>	**************************************				
Type of Surface Sec Type of Annular Sec Type of Bentonite Type of Sand Pack		Concrete Bentonite High-Yield Coarse 20-20	- - -	4	Top of Protective			
Vell Construction	Material	s			99.53 ft. Casing 99.28 ft. Top of riser pipe 99.53 ft. Ground surface Top of Annular 99.03 ft. Sealant N/A Casing Stickup			
	Stainless	PVC	Other					
	Steel	Specify	Specify					
	Type	Туре	Type					
				_{				
Riser Coupling Joint	ļ			<b></b>	•			
Riser Pipe Above		Sched40		XXX XXX				
W.t.	<del> </del>		<u> </u>	→ 💹 💹	99.03 ft. Top of Seal			
Riser Pipe Below w.t.	1	C-1-1 40	<del> </del>	┥	2.00 A T-4-10 I			
Coupling Joint	<del> </del>	Sched40	<u> </u>	┨	3.00 ft. Total Seal interva			
Screen to Riser		Sched40		<b>₩</b> ₩	OCO2 A Ton official			
Protective Casing	1	<del></del>	Steel	<b> </b>	96.03 ft. Top of Sand			
Trocedive Casing			Sieei	<del>-</del> ┛  ┆╽┆┆	05.02 & Top of Server			
easurements					95.03 ft. Top of Screen			
Riser Pipe Length		4.25 ft.						
Screen Length		10.0 ft.		H				
Screen Slot Size		10-slot						
Protective Casing Length Depth to Water		N/A	.,,.	1	<b></b>			
	<del></del>	~10 ft. while di	rilling	IAI	Total Screen			
Depth to Water Free Product Thickness		94.56 ft. static			10.0 ft. Interval			
Gallons removed (develop	<del>,                                    </del>	N/A						
Gallons removed (purge)	<u>'                                   </u>	~3 ~3	<del></del>	H	,			
Other		~ <u>J</u>	——	1 H 1				
Completed by:	MWD				Bottom of  85.03 ft. Screen  Bottom of			

inois Environmenta	Protection	n Agency	LU	ST Well Completion Re	eport
cident No.	2000	-1913		Well No.	MW-10R
te Name	Hens	on Oil	<del></del>	Date Drilled	9/11/2023
illing Contractor	AED	C		Date Completed	
iller	AED	C		Geologist	MWD/JKK
illing Method	Hollo	ow Stem Auger	<del></del>	Drilling Fluids	N/A
nnular Space De	<u>tails</u>				
Type of Surface Se	al	Concrete			
Type of Annular S		Bentonite	_	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Type of Bentonite		High-Yield	_		
Type of Sand Pack	_	Coarse 20-20	_		Top of Protective
ell Construction	<u>Material</u>	<u>is</u>			101.39 ft. Casing 101.14 ft. Top of riser pipe 101.39 ft. Ground surface Top of Annular 100.89 ft. Sealant N/A Casing Stickup
	Stainless	PVC	Other		
	Steel	Specify	1		
			Specify		
	Туре	Туре	Туре		
Riser Coupling Joint	+	<del></del>	<del>  </del>	] [ ] [	•
Riser Pipe Above	<del></del>	<del>-  </del>	<del>                                     </del>		•
w.t.		Sched40		<b>                                     </b>	100.89 ft. Top of Seal
Riser Pipe Below w.t.	+		<del>  -  </del>	· 💹 💹	100.89 II. 100 01 3car
Screen	<del></del>	Sched40		<b>XX XX</b>	3.00 ft. Total Seal interva
Coupling Joint				<b>※ ※</b>	
Screen to Riser		Sched40	1 1	<b>₩ ₩</b>	97.89 ft. Top of Sand
Protective Casing			Steel	SXXX XXX	
			<del></del>		96.89 ft. Top of Screen
<u>easurements</u>				1 .H 1	
easurements Riser Pipe Length		4.25 ft.		<sub> </sub>   -  <sub></sub>	
Riser Pipe Length Screen Length		4.25 ft. 10.0 ft.			
Riser Pipe Length Screen Length Screen Slot Size					
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length		10.0 ft.			
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water		10.0 ft. 10-slot	rilling		Total Screen
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water Depth to Water		10.0 ft. 10-slot N/A	rilling		Total Screen
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water Depth to Water Free Product Thickness		10.0 ft. 10-slot N/A ~10 ft. while d	rilling		
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water Depth to Water Free Product Thickness Gallons removed (develop	)	10.0 ft. 10-slot N/A ~10 ft. while d 94.93 ft. static N/A ~3	rilling		
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water Depth to Water Free Product Thickness	)	10.0 ft. 10-slot N/A ~10 ft. while d 94.93 ft. static N/A	rilling		
Riser Pipe Length Screen Length Screen Slot Size Protective Casing Length Depth to Water Depth to Water Free Product Thickness Gallons removed (develop	)	10.0 ft. 10-slot N/A ~10 ft. while d 94.93 ft. static N/A ~3	rilling		

#### Illinois Environmental Protection Agency **LUST Well Completion Report** 2000-1913 Incident No. Well No. MW-14R Henson Oil Site Name **Date Drilled** 9/11/2023 Drilling Contractor **AEDC Date Completed** 9/11/2023 Driller **AEDC** Geologist MWD/JKK Hollow Stem Auger **Drilling Method Drilling Fluids** N/A Annular Space Details Type of Surface Seal Concrete Type of Annular Sealant **Bentonite** Type of Bentonite High-Yield Type of Sand Pack Coarse 20-20 Top of Protective 98.95 Casing ft. ft. Top of riser pipe 98.70 ft. Ground surface 98.95 Top of Annular Sealant 98.45 Well Construction Materials N/A Casing Stickup Stainless PVC Other Steel Specify Specify Type Type Type Riser Coupling Joint Riser Pipe Above Sched.-40 w.t. 98.45 ft. Top of Seal Riser Pipe Below w.t. Screen Sched.-40 ft. Total Seal interval 3.00 Coupling Joint Sched.-40 Screen to Riser 95.45 ft. Top of Sand Protective Casing Steel 94.45 ft. Top of Screen **Measurements** Riser Pipe Length 4.25 ft. Screen Length 10.0 ft. Screen Slot Size 10-slot Protective Casing Length N/A Depth to Water ft. while drilling ~10 Total Screen Depth to Water 93.29 ft. static 10.0 ft. Interval Free Product Thickness N/A Gallons removed (develop) ~3 Gallons removed (purge) ~3 Other Bottom of Completed by: **MWD** 84.45 ft. Screen Bottom of ft. Borehole 83.95

# APPENDIX E ANALYTICAL RESULTS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

Henson G., rowanda Early Action Data Soil Sampling - USI

<del></del>	Location	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	<u> </u>				
	Date	12/29/2000	12/28/2000	12/28/2000	12/28/2000	12/28/2000				F-1	F-2	F-3	PI-1	PI-2
	Depth	6'	6'	6'	6'	6'	12/25/2000	12/29/2000	12/29/2000	12/29/2000	12/29/2000	12/28/2000	12/28/2000	12/29/2000
Parameter	Tier I CUO					<del></del>			<u> </u>	12'	12'	12'	3'	3'
Benzene	0.03	ND	ND	ND	ND	ND	0.003	110						
Ethylbenzene	13.0	ND	ND	ND	ND	ND		ND	0.006	0.13	0.003	ND	ND	0.009
Toluene	12.0	ND	0.016	ND	ND		0.006	ND	ND ND	1.55	ND .	ND	0.007	0.012
Total Xylenes	5.6	ND	0.010	ND		ND	0.062	ND ND	0.003	0.033	0.027	ND	0.118	0.112
Numbers not bold indicat BOLD & SHADING E ND Not Detected (mg/l	e actual quantit	ies, but are be	low the TACC	Tier I Most	ND Stringent Soil Objective.	ND Clean-up Ob	0.111 ective.	ND	0.022	0.135	0.008	ND	0.048	0.217

Henson Oil - Towanda Site Assessment Data Soil Sampling -USI

	Location	BH-1A	BH-1B	BH-2A	BH-2B	BH-3A	BH-3B	BH-4A	BH-4B	BH-5A	Ditten	511.00		r
	Date	3/29/2001	3/29/2001	3/29/2001	3/29/2001	3/29/2004	3/29/2004	E/47/2004	E(47/2004	DH-3A	BH-5B	BH-6A	BH-6B	BH-7A
	Depth	5'	9'	5'	9'	512312001	9'	5/1//2001	5/1//2001	5/1//2001	5/17/2001	5/17/2001	5/17/2001	5/17/200
Parameter	Tier I CUO			<del></del>			<del>                                     </del>	6.	12'	3'	6'	3'	6'	3'
Benzene	0.03	1.9.	0.524	ND	ND	0.43	0.192	ND	0.015	ND	ND	0.021	0.040	
Ethylbenzene	13.0	3.69	4.36	ND	ND	0.809	0.58	ND	0.046	ND	ND ND		0.613	ND
Toluene	12.0	0.362	0.226	ND	ND	0.02	0.018	ND	0.003	ND	ND	0.014	21.	0.019
Total Xylenes	5.6	13.	8.29	ND	ND	0.677	0.222	ND	0.003	ND	ND ND	0.002 0.012	1.84	ND
Numbers not bold indicate	actual quantit	ies, but are t	elow the TA	CO Tier I N	lost Stringer	t Soil Clean-	up Objective		0.047	I IND	NU	0.012	61.1	0.028
BOLD & SHADING : E	xceeds the TA	CO Tier I M	lost Stringen	t Soil Clean-	up Objective		<u> </u>							
ND Not Detected (mg/k	g)					1	ſ <u></u>							
							<del></del>			<u> </u>				
												L	لـــــــا	

Henson Oil - Towanda Site Assessment Data Soil Sampling -USI

	Location	BH-7B	BH-8A	BH-8B	BH-9	BH-10	BH-11	BH-12
	Date	5/17/2001	5/17/2001	5/17/2001	5/17/2001		9/18/2002	
	Depth	6'	4'	6'	7'	7'	7'	7'
Parameter	Tier I CUO							
Benzene	0.03	ND	ND	ND	0.0072	ND	ND	ND
Ethylbenzene	13.0	0.167	2.35	17.	0.0821	ND	1.52	0.0045
Toluene	12.0	0.013	0.009	0.029	ND	ND	ND	ND
Total Xylenes	5.6	0.136	7.26	51.8	0.038	ND	0.158	ND
Numbers not bold indicate BOLD & SHADING E ND Not Detected (mg/k	xceeds the TA						000	

#### Henson Oil-Towanda Site Assessment Data Groundwater Sampling -USI

4/9/2001 3.47	4/9/2001	4/9/2001	4/9/2001	MW-5 5/17/2001	MW-6 5/17/2001	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
				1011112001								
3.47	<del></del>		1		571112001	3/1//2001	5/1//2001	5/1//2001	9/24/2002	9/24/2002	9/24/2002	4/16/2003
	I ND	3.35	ND	0.24	0.234	2.43	0.46					
1.23	ND	0.134							··· 0.171	0.00236	ND	: 0.259
					1.7	1.89	4.24	0.061	0.0164	0.001	ND	0.954
	ND	0.071	<u>ND</u>	0.065	0.193	0.521	0.366	ND	0.109	0.0784		0.0393
		0.194	ND	0.665	2.85	5.8	4.76	0.215				
tities, but are	below the	TACO Ties	r I Most Sti	ingent Group	ndwater Cles	n-un Ohiecti	V0	0.210	0.130	ND	_ טא	2.45
lost Stringen	t Groundive	iter Clean-i	ın Obiectiv	е.	id violer Cite	ar-up Objecti	¥C.					
1	1 1	]			··							
	_		<del></del>									
_	0.379 3.94 ntities, but are	0.379 ND 3.94 ND ntities, but are below the	0.379 ND 0.071 3.94 ND 0.194 ntities, but are below the TACO Ties	0.379 ND 0.071 ND 3.94 ND 0.194 ND nitities, but are below the TACO Tier   Most Str	0.379 ND 0.071 ND 0.065 3.94 ND 0.194 ND 0.665	0.379 ND   0.071 ND   0.065   0.193   3.94 ND   0.194 ND   0.665   2.85   1.11ties, but are below the TACO Tier   Most Stringent Groundwater Clean	0.379 ND   0.071 ND   0.065   0.193   0.521   3.94 ND   0.194 ND   0.665   2.85   5.8   1tities, but are below the TACO Tier   Most Stringent Groundwater Clean-up Objects	0.379 ND   0.071 ND   0.065   0.193   0.521   0.366     3.94 ND   0.194 ND   0.665   2.85   5.8   4.76     1.11tities, but are below the TACO Tier   Most Stringent Groundwater Cleanaum Objective	0.379 ND   0.071 ND   0.065   0.193   0.521   0.366 ND     3.94 ND   0.194 ND   0.665   2.85   5.8   4.76   0.215	0.379 ND   0.071 ND   0.065   0.193   0.521   0.366 ND   0.109       3.94 ND   0.194 ND   0.665   2.85   5.8   4.76   0.215   0.136     1tities, but are below the TACO Tier   Most Stringent Groundwater Cleanup Objective	0.379 ND   0.071 ND   0.065   0.193   0.521   0.366 ND   0.109   0.0784   0.001   0.	0.379 ND   0.071 ND   0.065   0.193   0.521   0.366 ND   0.109   0.0784 ND     3.94 ND   0.194 ND   0.665   2.85   5.8   4.76   0.215   0.136 ND ND     tities, but are below the TACO Tier   Most Stringent Groundwater Clean-up Objective

#### Henson Oil-Towanda Site Assessment Data Groundwater Sampling -USI

Location	MW-14	MW-15	MW-16	MW-17	MW-18
Date	4/16/2003	4/16/2003	4/28/2003	4/28/2003	4/28/2003
Tier I CUO					1120/2000
0.005	0.29	ND	ND	ND	ND
0.7	0.331	0.168	ND		ND
1.0	0.0207	ND	ND		ND
10.0	0.0834	0.102			ND
xceeds the Mo					
	Date Tier I CUO 0.005 0.7 1.0 10.0 actual quantit	Date   4/16/2003   Tier I CUO   0.005   0.29   0.7   0.331   1.0   0.0207   10.0   0.0834   cactual quantit   xceeds the Mo	Date   4/16/2003   4/16/2003   Tier I CUO	Date   4/16/2003   4/16/2003   4/28/2003     Tier   CUO	Date   4/16/2003   4/16/2003   4/28/2003   4/28/2003   Tier I CUO

Henson Oil-Towanda Corrective Action Data Soil Sampling -USI

	Location	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	1 101 40	100.00	101.40		r				
	Date	4/6/2004	4/6/2004	4/6/2004			4/7/2004	417/2004	4/42/2004	4/4 4/2004	W-10	W-11	W-12	W-13	W-14	W-15	W-16	W-17	W-18
	Depth	6'	6'	6'	6'	6'	61	61	4/13/2004	4/14/2004	4/14/2004	4/13/2004	4/13/2004	4/14/2004	4/16/2004	4/16/2004	W-16 4/19/2004	4/19/2004	4/19/2004
Parameter	Tier I CUO			— <u> </u>	<b>-</b> •			<del></del> -	- b	9.	6.	6'	6'	6'	6'	6'	6'	6'	6'
Benzene	0.03		0.0459	0.0215	<b>0.751</b>	0.0051	0.0089	0.0000	0.0004							L	L		
Ethylbenzene	13.0	ND	0.0062					0.0036	0.0031	0.0073	0.0058	0.0283	0.0073	0.0052	號0.0797:	0.146	0.029	0.0791	0.0046
Toluene				0.0066	2.77	0.0046	0.0043	ND_	0.0538	0.0156	0.0095	8.06	0.428	3.04	· 0.472	3.99	. 12	4.03	0.0047
	12.0		0.00771		0.0113		0.00678	0.00867	0.00604	0.0167	0.0122	0.0556	0.0107	0.00773	0.0155	0.0577	0.0141	0.0467	0.00998
Total Xylenes	5.6	ND	0.0184	0.0113		ND	0.0115	ND	0.0312	0.0249	0.0198	. 30.5	0.283	6.98	0.106	4.29	ND	ND	
		Numbers n	ot bold ind	icate actual	quantities,	but are belo	ow the TAC	O Tier I N	Aost Stringen	t Soil Cleans	up Objective			1.0.00	0.100	4.20	140	<u> </u>	0.011
	1	BOLD & S	SHADING	Exceeds	the TACO	Tier I Mos	d Stringent	Soil Clean	up Objective		up Objective	L					<u> </u>	<u> </u>	
		ND Not	Detected (r	nu/ku)				O'M CICEM	ap conjective		i				<b> </b>	<del></del>			
	1	1.50	3,50 (					·			·								L
	<del></del>								L	I							I		

Henson Oil-Towanda Corrective Action Data Soil Sampling -USI

| Location   | F-1                         | F-2   | F-3  | F-4   | F-5   | F-6  
   
  | F.7   | E.R   | ΕO   
   
   | E 40   | E 44   | F = 45   |  |   
  |  |  |
|------------|-----------------------------|---|--|---|---
--
--
---|---|---
--
--|--|--
--|--|--|--
--|
| Date       | 4/6/2004                    | 4/6/2004  | 4/7/2004   | 4/7/2004  | 4/7/2004  | 4/7/2004   
   
  | 4/13/2004   | 4/13/2004   | 4/12/2004  
   
   | 4/4 4/2004   | F-11   | F-12   | F-13   | F-14  
  | F-15   |  |
| Depth      | 12'                         | 12'   | 12'  | 12'   | 12'   | 121  
   
  | 12'   | 471372004   | 4/13/2004  
   
   | 4/14/2004  | 4/19/2004  |  |  | 4/19/2004   
  | 4/19/2004  | _  |
| Tier I CUO |                             | <del></del>   | <del></del>  | <del></del>   | <del></del>   | <del>'^-</del> -   
   
  | 1-1-  | <del>- 12</del>   | 12   
   
   | 12   | 12'  | 12'  | 12'  | 1.2'  
  | 12'  |  |
| 0.03       | ≟ 0.713 ::                  | 50.141  | 1.38 2   | ND  | ND  | ND   
   
  | ND  | ND  | 0.0000   
   
   |  | <del> </del>   |  |  |   
  |  |  |
|            |                             |   |  |   |   | NID  
   
  |   |   | <del></del>  
   
   |  |  |  | ND   | ND  
  | ND ]   |  |
|            |                             |   |  |   |   | O COCC   
   
  |   |   |  
   
   |  |  |  | ND   | ND  
  | ND   |  |
|            |                             | 711111  |  |   |   |  
   
  |   |   |  
   
   | 0.00493  | 0.00379  | 0.00328  | 0.00337  | 0.00331   
  | 0.00414  |  |
| 3.0        | 0.147                       | 0.0241  | ND   | UD  | ND  |  
   
  |   |   |  
   
   | ND   | ND _   | ND .   | ND   | ND  
  | ND   |  |
|            |                             |   |  |   |   |  
   
  | Numbers no  | t bold indica   | ite actual qua   
   
   | ntities, but a   | re below the   | TACO Tier  | I Most String  | uent Soil ('le  
  | an-us Objecti  | 110  |
| ļ          |                             |   |  |   |   |  
   
  | BOLD & SI   | HADING  | Exceeds the  
   
   | TACO Tier  | 1 Most Strin   | uent Soil Cle  | an-un Ohiec  | live  
  | an up Objecti  | ·  |
| L          |                             |   |  |   |   |  
   
  | ND Not I  | Detected (mg/   | /kg)   
   
   |  |  | Parit 1.011 ¢10  | an-up Object   | 1116,   
  | •  |  |
| ll         |                             |   | !  |   |   |  
   
  |   |   |  
   
   | T  |  |  |  |   
  |  |  |
|            | Date<br>Depth<br>Tier I CUO | Date 4/6/2004 Depth 12 Tier I CUO 0.03 20.713 13.0 2.08 12.0 0.0427 | Date         4/6/2004         4/6/2004           Depth         12'         12'           Tier I CUO         0.03         ₹0.713 € ₹0.7141 €           13.0         2.08         0.901           12.0         0.0427         0.0266 | Date   4/6/2004   4/6/2004   4/7/2004     Depth   12'   12'   12'     Tier   CUO     0.03 | Date         4/6/2004         4/6/2004         4/6/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         12' | Date Depth         4/6/2004         4/6/2004         4/6/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         4/7/2004         1/2 <th< td=""><td>Date         4/6/2004         4/6/2004         4/7/2004         12'         12</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4</td><td>Date         4/6/2004         4/6/2004         4/7/2004         1/2*         12*         12*         12*         12*         12*         12*         12*<td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13/2004  
4/13/2004   4/13</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td><td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004  
4/7/2004   4/</td></td></th<> | Date         4/6/2004         4/6/2004         4/7/2004         12'         12 | Date   4/6/2004   4/6/2004   4/7/2004   4 | Date         4/6/2004         4/6/2004         4/7/2004         1/2*         12*         12*         12*         12*         12*         12*         12* <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13/2004 
 4/13/2004   4/13</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004   4/</td> <td>  Date   4/6/2004   4/6/2004   4/7/2004  
4/7/2004   4/</td> | Date   4/6/2004   4/6/2004   4/7/2004   4/ | Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13 | Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13 | Date   4/6/2004   4/6/2004   4/7/2004   4/ | Date   4/6/2004   4/6/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/7/2004   4/13/2004  
4/13/2004   4/13 | Date   4/6/2004   4/6/2004   4/7/2004   4/ | Date   4/6/2004   4/6/2004   4/7/2004   4/ |

#### Henson Oil-Towanda Corrective Action Data Groundwater Sampling - USI

	Location	MW-5	MW-6	MW-8	MW-10	MW-13	MW-14	MW-19	MW-20	MW-21	Г
	Date	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/24/2004	5/5/2004	5/5/2004	5/5/2004	<del></del>
Parameter	Tier I CUO				1		0/2 //2007	0/0/2004	0/0/2004	3/3/2004	
Benzene	0.005	∵ 0.167 .	0.156	0.261	0.176	0.144	0.314	ND	0.00642	ND	
Ethylbenzene	0.7	0.345	1.3	. 0.818	0.179	0.426	0.183	ND	0.0106	ND	
Toluene	1.0	0.0212	0.208	0.0384	0.0119	0.0142	0.0161	ND	ND	ND	
Total Xylenes	10.0	0.123	2.47	0.287	0.0509	0.59	0.0308	ND	0.0842	ND	ļ
Numbers not bold indicat	e actual quantit	ies, but are b	elow the TA	CO Tier I M	lost Stringen	Groundwat	er Clean-up (	Diective	0.00.12	113	
BOLD & SHADING I	Exceeds the Mo	st Stringent (	Gröundwater	Clean-up O	biective		1	•			
ND Not Detected (ml./		l , , , ,	·		i	· :					

#### Henson Oil Correction Action Soil Gas Vapor Results

	Indoor				Outdoor		
Und	der 5' Separa	ation Ove	r 5' Separa	ition			
Result mg/m3	App B Table H Resid.	App B Table H I/C	App. B Table I Resid.	App. B Table I I/C	App. B Table G Resid.	App. B Table G I/C	App. B Table G CW
	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
0.0591	0.37	2.8	41	300	420	800	1,100
0.1224	1.3	9.3	150	1,100	59,000	59,000	8,500
0.1085	6,200	40,000	140,000	140,000	140,000	140,000	50,000
0.0034	3,700	24,000	420,000	1,200,000	1,200,000	1,200,000	23,000
0.4056	140	840	17,000	49,000	49,000	49,000	2,900

Henson Oil- Towanda Corrective Action Soil Analytical Results

	Location	F-1R	F-2R	F-3R	SB-1A	SB-1B	W-2R	W-4R	SB-4A	SB-4B
	Date	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023
	Depth	1:2'	12'	12'	2.5'	9'	6'	6'	2.5'	9'
Parameter	Tier I CUO									••
Benzene	0.03	<0.0158	<0.0110	<0.0132	<0.0144	<0.0119	<0.0144	<0.0124	<0.0140	<0.0109
Ethylbenzene	13.0	·<0.0631	<0.0438	<0.0527	<0.0575	<0.0477	<0.0575	<0.0497	<0.0559	<0.0435
Toluene	12.0	<0.0631	<0.0438	<0.0527	<0.0575	<0.0477	<0.0575	<0.0497	<0.0559	<0.0435
Total Xylenes	5.6	<0.126	<0.0877	<0.105	<0.115	<0.0955	<0.115	<0.0994	<0.112	<0.0871

Numbers not bold indicate actual quantities, but are below the TACO Tier 1 Most Stringent Soil Clean-up Objective.

BOLD & SHADING Exceeds the TACO Tier 1 Most Stringent Soil Clean-up Objective.

values in mg/kg

Henson Oil- Towanda Corrective Action Soil Analytical Results

	Location	W-13R	W-14R	W-15R	SB-5A	SB-5B	W-11R	W-17R	SB-6A	SB-6B	SB-3A	SB-3B	SB-2A	SB-2B
	Date	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023
	Depth	6'	6'	6'	2.5'	9'	6'	6'	4'	7.5'	2.5'	9,	2.5	9'
Parameter	Tier I CUO													
Benzene	0.03	<0.0138	<0.0127	<0.0129	<0.0159	<0.0115	<0.0111	<0.0128	<0.0132	<0.0124	<0.0151	<0.0136	<0.0133	<0.0145
Ethylbenzene	13.0	<0.0550	<0.0507	<0.0516	<0.0635	<0.0459	<0.0443	'<0.0511	<0.0527	<0.0496	<0.0605	<0.0545	. <0.0532	<0.0582
Toluene	12.0	<0.0550	<0.0507	<0.0516	<0.0635	<0.0459	<b>:&lt;0.0443</b>	<0.0511	<0.0527	<0.0496	<0.0605	<0.0545	<0.0532	<0.0582
Total Xylenes	5.6	<0.110	<0.101	<0.103	<0.127	<0.0918	<0.0886	<0.102	<0.105	<0.0992	-<0.121	<0.109	<0.106	<0.116

Numbers not bold indicate actual quantities, I
BOLD & SHADING — Exceeds the TAC(

values in mg/kg

#### Henson Oil - Towanda Corrective Action Groundwater Analytical Results

	Location	MW-5	MW-6	MW-8	MW-10	MW-14
	Date	10/2/2023	10/2/2023	10/2/2023	10/2/2023	10/2/2023
	Depth					
Parameter	Tier I CUO					
Benzene	0.005	<0.00100	<0.00100	<0.00100	0.00462	<0.00100
Ethylbenzene	0.7	0.0197	0.0719	0.00217	0.0537	0.00170
Toluene	1.0	0.00110	0.00267	<0.00100	<0.00100	<0.00100
Total Xylenes	10.0	<0.00200	0.0109	<0.00200	0.00458	<0.00200

Numbers not bold indicate actual quantities, but are below the TACO Tier 1 Most Stringent Soil Clean-up Objective.

BOLD & SHADING \*\* Exceeds the TACO Tier 1 Most Stringent Soil Clean-up Objective.

ND -- Not Detected

## SUBURBAN LABORATORIES, Inc.



1950 S. Batavia Ave., Suite 150 Geneva, Illinois 60134 Tel. (708) 544-3260 • Toll Free (800) 783-LABS Fax (708) 544-8587 www.suburbaniabs.com

Workorder: 2309B64

September 21, 2023

Carol Rowe CWM Company, Inc 701 West South Grand Springfield, IL 62704

TEL: (217) 522-8001 FAX: (217) 522-8009 RE: Hendson Oil Co

Dear Carol Rowe:

Suburban Laboratories, Inc. received 22 sample(s) on 9/15/2023 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation including, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Dan Galeher

Project Manager

708-544-3260 ext 216

dan@SuburbanLabs.com

A.QC Sell





#### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, II 60134 (708) 544-3260

Case Narrative

Date: September 21, 2023

Client: CWM Company, Inc

Temperature of samples upon receipt at SLI: C

Project: Hendson Oil Co

WorkOrder: 2309B64

PO #:

QC Level:

Chain of Custody #:

#### General Comments:

- -- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.
- All radiological results are reported to the 95% confidence level.

#### Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. TNTC: Too Numerous To Count
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS: (Surrogate Standard): Quality control compound added to the sample by the lab.
- -LA: Lab Accident No valid data to report.
- -VO: Insufficient Volume provided
- -BR: Received broken
- -IP: Invalid Sampling

#### Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

#### Workorder Specific Comments:

8260:

Sample 2309B64-001A: S=The MS percent recovery for Ethylbenzene was outside laboratory control limits

(76% - 124%): 128.92%

Created: 9/21/2023 6:07:56 PM

Client: CWM Company, Inc.

Date: September 21, 2023

Project: Hendson Oil Co

PO #:

WorkOrder: 2309B64

OC Level:

Temperature of samples upon receipt at SLI: C

Chain of Custody #:

8260:

Sample 2309B64-001A: R=The MS & MSD Precision for the following analytes were greater than laboratory

control limits (30% RPD):

Benzene; 41.25% Ethylbenzene; 40.37% m,p-Xylene; 41.47% o-Xylene; 41.71% Toluene; 42.29%

Created: 9/21/2023 6:07:56 PM



#### Suburban Laboratories, Inc.

1950 S. Batavia Ave , Suite 150, Geneva, II, 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: F-1R

Lab ID: 2309B64-001

Matrix: SOIL

Date Received: 09/15/2023 10:45 AM

Collection Date: 09/11

Collection Date: 09/11/2023 12:30 PM

DAU 1D. 2309B04-001	Date Rec	eivea: 09/13/202	3 10:43 AM	Collectio	n Date: 0	9/11/2023 12:30 PM	
Parameter	Result	Report Limit	. Qual.	Units	Dilution	Date Analyzed	D . 1
					ractor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Metho	d: EPA-8260B-R	lev 2, Dec-96	.:	Analyst: RWM	
Benzene	ND	0.0158	R	malka da.	. 45 77	20/45/0000 + 20 514	· : ·
Eihylbenzene · · · · ·	ND	0.0631	SR ·	mg/Kg-dry	45.77		R167425
m,p-Xylene	ND	0.126	R.	mg/Kg-dry	45.77	09/15/2023 1:39 PM	R167425
o-Xylene	ND	0.0631	R	mg/Kg-dry	45.77	09/15/2023 1:39 PM	R167425
Total Xylenes	. ŅD	0.126	K	mg/Kg-dry	45.77	09/15/2023 1:39 P.M	R167425
Toluene	ND		-	mg/Kg-dry	45.77	09/15/2023 1:39 PM	R167425
Internal Quality Control Compounds		0.0631	R	mg/Kg-dry	45.77	09/15/2023 1:39 PM	R167425
SS: 4-Bromofluorobenzene	 1.00	70.400		11 gaz - 17			
SS: Dibromofluoromethane		79-122		. %Rec	45.77	09/15/2023 1:39 PM	R167425
·	82.1	63-129		%Rec	45.77	09/15/2023 1:39 PM	R167425
SS: Toluene-d8	95.7	79-119		%Rec	45.77	09/15/2023 1:39 PM	R167425
PERCENT MOISTURE		· Metho	d: ASTM-D2216-	Rev 2005		Analysi: KC	
Percent Moisture	27	1.0	С	·wt%	1	09/19/2023 9:54 AM	R167467
Client Sample ID: F-2R							K 10/40/
Lab ID: 2309B64-002	Date Rece	ived: 09/15/2023	10:45 AM		latrix: SO	0/11/2023 12:45 PM	
				Conceilo			
Parameter ·	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Metho	d: EPA-8260B-R	ev 2, Dec-96		Analyst: RWM	
Benzene	ND .	0.0110		mall/a da	20.00	00/45/0000	_
Ethylbenzene	_			mg/Kg-dry	38.03	09/15/2023 2:17 PM	R167425
		U U 43 D	*				
m n-xviene	ND ND	0.0438	*	mg/Kg-dry	38.03	09/15/2023 2:17 PM	R167425
m.p-Xylene	ND	0.0877	•	mg/Kg-dry	38.03	09/15/2023 2:17 PM	R167425 R167425
o-Xylene	ND ND	0.0877 0.0438		mg/Kg-dry mg/Kg-dry	38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425
o-Xylene Total Xylenes	ND ND ND	0.0877 0.0438 0.0877		mg/Kg-dry mg/Kg-dry mg/Kg-dry	38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425
o-Xylene Total Xylenes Toluene	ND ND	0.0877 0.0438		mg/Kg-dry mg/Kg-dry	38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	ND ND ND	0.0877 0.0438 0.0877 0.0438	•	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	38.03 38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND ND	0.0877 0.0438 0.0877 0.0438		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec	38.03 38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	ND ND ND ND 101 81.4	0.0877 0.0438 0.0877 0.0438 79-122 63-129		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec %Rec	38.03 38.03 38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND ND	0.0877 0.0438 0.0877 0.0438		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec	38.03 38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	ND ND ND ND 101 81.4	0.0877 0.0438 0.0877 0.0438 79-122 63-129 79-119	l: ASTM-D2216-	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec %Rec %Rec	38.03 38.03 38.03 38.03 38.03	09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM 09/15/2023 2:17 PM	R167425 R167425 R167425 R167425 R167425



#### Suburban Laboratories, Inc.

1950 S. Batavía Ave., Sinte 150, Geneva, II, 60134 (708) 544-3269

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: F-3R

Lab ID: 2309B64-003

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

Collection Date: 09/11/2023 1:00 PM

Parameter	Result	Report Limit	. Qual.	Units	Dilution Factor		Batch ID
VOLATILE ORGANIC COMPOUNDS	•	Method	: EPA-8260B-R	ev 2, Dec-96	> >1444444444 M.	Analyst: RWM	
Benzene	ND	0.0132		mg/Kg-dry	46.08	09/15/2023 2:43 PM	D167405
Ethylbenzene	ND	0.0527		mg/Kg-dry	46.08	09/15/2023 2:43 PM	R167425
m,p-Xylene	ND	0.105		mg/Kg-dry	46.08	09/15/2023 2:43 PM	R167425
o-Xylene	ND	0.0527		mg/Kg-dry	46.08	09/15/2023 2:43 PM	R167425 R167425
Total Xylenes	ND	0.105		mg/Kg-dry	46.08	09/15/2023 2:43 PM	R167425
Toluene	ND	0.0527		mg/Kg-dry	46.08	09/15/2023 2:43 PM	R167425
Internal Quality Control Compounds					.5.00		K16/425
SS: 4-Bromofluorobenzene	102	79-122		%Rec	46.08	09/15/2023 2:43 PM	R167425
SS: Dibromofluoromethane	81.9	63-129		%Rec	46.08	09/15/2023 2:43 PM	R167425
SS: Toluene-d8	96.3	79-119		%Rec	46.08	09/15/2023 2:43 PM	R167425
PERCENT MOISTURE		Method	: ASTM-D2216-	Rev 2005		Analyst: KC	. •
_				•	• •	* * * * * *	• • • • • • • • • • • • • • • • • • • •
Percent Moisture	13	1.0	С	wt%	1	09/19/2023 9:54 AM	R167467
Client Sample ID: SB-1A	·				Aatrix: SO	711	
Lab ID: 2309B64-004	Date Rece	eived: 09/15/2023	10:45 AM			)/[1/2023 ]:10 PM	
•		Report		•	D214:2		

	•				0,	7 1 17 20 25 1 10 [ 10]	
Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method	: EPA-8260B-Re	v 2, Dec-96		Analyst: RWM	
Benzene	ND	0.0144		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
Ethylbenzene	ND	0.0575		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
m,p-Xylene	ND	0.115		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
o-Xylene	ND	0.0575		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
Total Xylenes	ND	0.115		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
Toluene	ND	0.0575		mg/Kg-dry	46.42	09/15/2023 3:08 PM	R167425
Internal Quality Control Compounds				3 3		00.10.2020 0.00 7 W	17107423
SS: 4-Bromoflucrobenzene	101	79-122		%Rec	46.42	09/15/2023 3:08 PM	R167425
SS: Dibromofluoromethane	81.5	63-129		%Rec	46.42	09/15/2023 3:08 PM	R167425
SS: Toluene-d8	96.3	79-119		%Rec	46.42	09/15/2023 3:08 PM	R167425
PERCENT MOISTURE		Method:	ASTM-D2216-R	ev 2005		Analyst: KC	-
Percent Moisture	19	1.0	С	wt%	1	09/19/2023 9:54 AM	R167467



#### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150. Geneva, II, 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company. Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: SB-1B

Lab ID: 2309B64-005

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

END 1D: 2309B04-003						9/11/2023 1;15 PM	
	_	Report			Dilution		
Parameter	Result	Limit	Qual.	Units	Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-8260B-R	ev 2, Dec-96		Analyst: RWM	
		•					
Benzene ·	ND	" 0.0119 ·		mg/Kg-dry	. 39.77	09/15/2023 3:41 PM	R167425
Ethylbenzene	ND ·	0.0477		. mg/Kg-dry	39.77	09/15/2023 3:41 PM	R167425
m.p-Xylene -	ND	0.0955		mg/Kg-dry	39.77	09/15/2023 3:41 PM	R167425
o-Xylene	ND	0.0477		mg/Kg-dry	39.77	09/15/2023 3:41 PM	R167425
Total Xylenes	ND	0.0955		mg/Kg-dry	39.77	09/15/2023 3:41 PM	R167425
Toluene	ND	0.0477		mg/Kg-dry	39.77	09/15/2023 3:41 PM	R167425
Internal Quality Control Compounds				3.3.7		50. 10. 2020 5.41 F W	K10/425
SS: 4-Bromofluorobenzene	103	79-122		%Rec	39.77	09/15/2023 3:41 PM	R167425
SS: Dibromofluoromethane	80.5	63-129		%Rec	39.77	09/15/2023 3:41 PM	
SS: Toluene-d8 .	97.0	79-119		%Rec	39.77	09/15/2023 3:41 PM	R167425
DEBOGNET HOLOTHON					03.77	09/13/2023 3.41 PM	R167425
PERCENT MOISTURE	•	Method: A	ASTM-D2216-	Rev 2005		Analyst: KC	
•						•	•
		4 ^	_	wt%	1	09/19/2023 9:54 AM	R167467
Percent Moisture	17	1.0	C	Wt 70		03/13/2023 3.34 AIVI	17107407
Client Sample ID: W-2R	17	1.0	· · ·				1/10/40/
	,		• .	ī	Matrix: SO	DIL	1 107407
Client Sample ID: W-2R	,	eived: 09/15/2023 1	• .	ī	Matrix: SO		
Client Sample ID: W-2R Lab ID: 2309B64-006	Date Reco	eived: 09/15/2023 1 Report	• .	ī	Matrix: SO	DIL	
Client Sample ID: W-2R	,	eived: 09/15/2023 1	• .	Collectio	Matrix: Son Date: 09	DIL	Batch ID
Client Sample ID: W-2R Lab ID: 2309B64-006	Date Reco	eived: 09/15/2023 1 Report Limit	0:45 AM Qual.	Collectio  Units	Matrix: Son Date: 09	OIL 0/11/2023 1:30 PM Date Analyzed	
Client Sample ID: W-2R Lab ID: 2309B64-006 Parameter	Date Reco	eived: 09/15/2023 1 Report Limit	0:45 AM	Collectio Units	Matrix: Son Date: 09	OIL 0/11/2023 1:30 PM	
Client Sample ID: W-2R Lab ID: 2309B64-006 Parameter	Date Reco	Report Limit  Method: E	0:45 AM Qual.	Collectio Units	Matrix: SO n Date: 09 Dilution Factor	OIL  O/11/2023 1:30 PM  Date Analyzed  Analyst: RWM	Batch 1D
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene	Date Reco	Report Limit  Method: E	0:45 AM Qual.	Collectio Units  2 Dec-96 mg/Kg-dry	Matrix: SO n Date: 09 Dilution Factor	DIL 0/11/2023 1:30 PM Date Analyzed Analyst: RWM 09/15/2023 4:06 PM	Batch 1D
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene	Date Reco	Report Limit  Method: E  0.0144 0.0575	0:45 AM Qual.	Collectio  Units  2 Dec-96  mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor 54.42 54.42	DIL 0/11/2023 1:30 PM Date Analyzed Analyst: RWM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	Batch ID R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene	Date Reco	Report Limit  0.0144 0.0575 0.115	0:45 AM Qual.	Collectio  Units  2 2 Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42	DIL D/11/2023 1:30 PM  Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	Batch ID R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575	0:45 AM Qual.	Collection Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	Batch ID  R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575 0.115	0:45 AM Qual.	Collectio  Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Toluene	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575	0:45 AM Qual.	Collection Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	Batch ID  R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	ND  Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575	0:45 AM Qual.	Collectio  Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425	
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575	0:45 AM Qual.	Collectio  Units  v 2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575 79-122 63-129	0:45 AM Qual.	Collectio  Units  2 2 Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575	0:45 AM Qual.	Collectio  Units  v 2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575 79-122 63-129 79-119	0:45 AM Qual.	Collectio  Units  v 2, Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425 R167425
Client Sample ID: W-2R Lab ID: 2309B64-006  Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m,p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane SS: Toluene-d8	Date Reco	Report Limit  0.0144 0.0575 0.115 0.0575 0.115 0.0575 79-122 63-129 79-119	0:45 AM Qual. EPA-8260B-Re	Collectio  Units  v 2, Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Matrix: Son Date: 09 Dilution Factor  54.42 54.42 54.42 54.42 54.42 54.42 54.42 54.42	DIL D/11/2023 1:30 PM Date Analyzed  Analyst: RWM  09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM 09/15/2023 4:06 PM	R167425 R167425 R167425 R167425 R167425 R167425 R167425



Parameter

#### Suburban Laboratories, Inc.

1959 S. Batavia Ave., State 150, Geneva, IL 60134 (708) 544-3260

Result

# Laboratory Results

Analyst: RWM

Batch ID

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: W-4R

VOLATILE ORGANIC COMPOUNDS

Lab ID: 2309B64-007

Date Received: 09/15/2023 10:45 AM

Report

Limit

Qual.

Method: EPA-8260B-Rev 2. Dec-96

Units

Matrix: SOIL

Dilution

Collection Date: 09/11/2023 1:45 PM

Factor Date Analyzed

	•	•					
Benzene	ND	0.0124		mg/Kg-dry	47.09-	09/15/2023 4:32 PM	R167425
Ethylbenzene	ND	0.0497		mg/Kg-dry	47.09	09/15/2023 4:32 PM	R167425
m,p-Xylene	ND	0.0994		mg/Kg-dry	47.09	09/15/2023 4:32 PM	R167425
o-Xylene	ND	0.0497		mg/Kg-dry	47.09	09/15/2023 4:32 PM	R167425
Total Xylenes	, ND	0.0994		mg/Kg-dry	47.09	09/15/2023 4:32 PM	R167425
Toluene	ND	0.0497		mg/Kg-dry	47.09	09/15/2023 4:32 PM	R167425
Internal Quality Control Compounds				<b>0</b> , 5		10.10.10.10.1	107.425
SS: 4-Bromofluorobenzene	. 101	79-122		%Rec	47.09	09/15/2023 4:32 PM	R167425
SS: Dibromofluoromethane	. 80.3	63-129		%Rec	47.09	09/15/2023 4:32 PM	R167425
SS: Toluene-d8	.96.2	79-119		%Rec	47.09	09/15/2023 4:32 PM	R167425
PERCENT MOISTURE		Method: A	STM-D2216-	Rev 2005		Analyst: KC	•
Percent Moisture	. 5.3	1.0 ·	С	wt%	1	09/19/2023 9:54 AM	
Client Sample ID: SB-4A						وي والمراجع في المراجع في المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع ا	R167467
Lab ID: 2309B64-008	Date Rec	Matrix Pate Received: 09/15/2023 10:45 AM Collection Date				OIL 0/11/2023 1:55 PM	
Parameter	Result	Report Limit	Qual.	 Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS	,	Method. El	PA-8260B-Re	ev 2, Dec-96		Analyst: RV/M	
Benzene							D. 4 0 D. 4 0 D.
Ethylbenzene	ND	0.0140		ma/Ka-dry	43 68	00/15/2022 A-E7 DM	
	ND ND	0.0140 0.0559		mg/Kg-dry ma/Ka-dry	43.68 43.68	09/15/2023 4:57 PM	R167425
m,p-Xylene				mg/Kg-dry	43.68	09/15/2023 4:57 PM	R167425
m.p-Xylene o-Xylene	ND	0.0559		mg/Kg-dry mg/Kg-dry	43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM.	R167425 R167425
	ND ND	0.0559 0.112		mg/Kg-dry mg/Kg-dry mg/Kg-dry	43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425
o-Xylene	ND ND ND	0.0559 0.112 0.0559		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	43.68 43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425 R167425
o-Xylene Total Xylenes	ND ND ND ND	0.0559 0.112 0.0559 0.112		mg/Kg-dry mg/Kg-dry mg/Kg-dry	43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425
o-Xylene Total Xylenes Toluene	ND ND ND ND	0.0559 0.112 0.0559 0.112		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	43.68 43.68 43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	ND ND ND ND	0.0559 0.112 0.0559 0.112 0.0559		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec	43.68 43.68 43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND ND ND	0.0559 0.112 0.0559 0.112 0.0559		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	43.68 43.68 43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425 R167425 R167425 R167425
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	ND ND ND ND ND	0.0559 0.112 0.0559 0.112 0.0559 79-122 63-129 79-119	STM-D2216-F	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec %Rec %Rec	43.68 43.68 43.68 43.68 43.68 43.68	09/15/2023 4:57 PM 09/15/2023 4:57 PM. 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM 09/15/2023 4:57 PM	R167425 R167425 R167425 R167425 R167425



#### Suburban Laboratories, Inc.

1950 S. Bataviji Ave., Suite 150, Geneva, 0, 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample 1D: SB-4B

Lab ID: 2309B64-009

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

Lab 1D: 2309B04-009	Date Rec	eived: 09/15/2023	0:45 AM	Collection	on Date: 09	D/11/2023 2:00 PM	
Parameter	Result	Report Limit	Qual.	Units	Dilution - Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: E	PA-6260B-R	ev 2, Dec-96		Analyst: RWM	
	. •	٠.	•				
Benzene	ND	0.0109		··mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
Elhylbenzene	ND	0.0435	· .	. mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
m,p-Xylene	ND	0.0871		mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
o-Xylene	· ND	0.0435		mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
Total Xylenes	. ND	0.0871		mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
Toluene	ND	0.0435		mg/Kg-dry	37.81	09/15/2023 5:22 PM	R167425
Internal Quality Control Compounds		•				* * * * * * * * * * * * * * * * * * * *	11107423
SS: 4-Bromofluorobenzene	113	79-122		%Rec	37.81	09/15/2023 5:22 PM	R167425
SS: Dibromofluoromethane	78.8	63-129		. %Rec	37.81	09/15/2023 5:22 PM	
SS: Toluene-d8	94.3	79-119		%Rec	37.81	09/15/2023 5:22 PM	R167425 R167425
PERCENT MOISTURE		Method: A	STM-D2216-	Rev 2005	**	Analyst: KC	
•						. Allalyst: KC	•
Percent Moisture	13	1.0	С	wť%	1	09/19/2023 9:54 AM	. D167460
Client Sample ID: W-13R			<del></del>		N	· · · · · · · · · · · · · · · · · · ·	· R167468
Lab ID: 2309B64-010	Date Rece	ived: 09/15/2023 10	N/A 71-0		Matrix: SC		
			V. 12 / LIVI	Collectio	n Date: 09	/11/2023 2:15 PM	
		Report		•	Dilution		
Parameter	Result	Limit	Qual.	Units		Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: E	DA.9260D D	ev 2, Dec-96			
		Wethou.	- A-0200B-N	ev 2, Dec-96		Analyst: RWM	
Benzene	ND	0.0138	•	mg/Kg-dry	49.42	09/15/2023 5:48 PM	R167425
Ethylbenzenė	ND	0.0550		mg/Kg-dry	49.42	09/15/2023 5:48 PM	R167425
m.p-Xylene	ND	0.110		mg/Kg-dry	49.42	09/15/2023 5:48 PM	R167425
o-Xylene	ND	0.0550		mg/Kg-dry	49.42	09/15/2023 5:48 PM	R167425
Total Xylenes	ND	0.110		mg/Kg-dry	49.42	09/15/2023 5:48 PM	R167425
Toluene .	ND	0.0550		mg/Kg-dry	49.42.	09/15/2023 5:48 PM	
Internal Quality Control Compounds					10.72	001 1012023 3.40 PW	R167425
SS: 4-Bromofluorobenzene	101	79-122		%Rec	49.42	00/15/2022 5:40 044	D407.405
SS: Dibromofluoromethane	79.3	63-129		%Rec	49.42	09/15/2023 5:48 PM	R167425
SS: Toluene-d8	97.1	79-119		%Rec	49.42 49.42	09/15/2023 5:48 PM 09/15/2023 5:48 PM	R167425
PERCENT MOISTURE			STM-D2216-I		70.72	Analyst: KC	R167425
Percent Moisture	10	1.0	С	wt%	1	-	<b>D</b>
		<del></del>		441.70		09/19/2023 9:54 AM	R167468



Parameter

## Suburban Laboratories, Inc.

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Result

# Laboratory Results

Analyst: RWM

Batch ID

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Factor Date Analyzed

Workorder: 2309B64.

Client Sample 1D: W-14R

VOLATILE ORGANIC COMPOUNDS

Lab ID: 2309B64-011

Date Received: 09/15/2023 10:45 AM Collection D

Qual.

Method: EPA-8260B-Rev 2, Dec-96

Report

Limit .

Matrix: SOIL

Dilution

023 10:45 AM Collection Date: 09/11/2023 2:30 PM

Units

Benzene	ND	0.0127		mg/Kg-dry	40.93.⋅	09/15/2023 7:04 PM	R167425		
Ethylbenzene	, ND	0.0507	•	mg/Kg-dry	40.93	09/15/2023 7:04 PM	R167425		
m.p-Xylene	,ND	0.101		mg/Kg-dry	40.93	09/15/2023 7:04 PM	R167425		
o-Xylene	ND	0.0507		mg/Kg-dry	40.93	09/15/2023 7:04 PM	R167425		
Total Xylenes	ND	0.101		mg/Kg-dry	40.93	09/15/2023 7:04 PM	R167425		
Toluene	ND	0.0507		mg/Kg-dry	40.93	09/15/2023 7:04 PM	R167425		
Internal Quality Control Compounds				5 - 5 7		55. 15.2025 7.547 W	K 107425		
. SS: 4-Bromofluorobenzene	. 101	79-122		%Rec	40.93	09/15/2023 7:04 PM	R167425		
SS: Dibromofluoromethane	78.9	63-129		%Rec	40.93	09/15/2023 7:04 PM	R167425		
SS: Toluene-d8	96.3	79-119		%Rec	40.93	09/15/2023 7:04 PM	R167425		
PERCENT MOISTURE		· Method: /	ASTM-D2216-	-Rev 2005		· Analyst: KC			
	•	• •							
Percent Moisture	19	1.0	С	wt%	1	09/19/2023 9:54 AM	R167468		
Client Sample ID: W-15R	,			1	vlatrix: SC	ix: SOIL			
Lab ID: 2309B64-012	Date Rec	eived: 09/15/2023 1	0:45 AM		n Date: 09				
•		Report		•	Dilution				
Parameter	Result	Limit	Qual.	Units		Date Analyzed	Batch ID		
VOLATILE ORGANIC COMPOUNDS		Mathad	PA-8260B-R	2 Di-00	<del></del>				
TOLINIZE SIGNATUS SOUN SUITES		Wedlob. E	:FA-02008-R	ev 2, Dec-96		* Analyst: RWM			
Berzene	, ND	0.0129		mg/Kg-dry	42.16	09/15/2023 7:30 PM	R167425		
Ethylbenzene	ND	. 0.0516		mg/Kg-dry	42.16	09/15/2023 7:30 PM	R167425		
m,p-Xylene	ND	0.103		mg/Kg-dry	42.16	09/15/2023 7.30 PM	R167425		
c-Xylene :	, 'ND	0.0516		mg/Kg-dry	42.16	09/15/2023 7:30 PM	R167425		
Total Xylenes	, ND	0.103		mg/Kg-dry	42.16	09/15/2023 7:30 PM	R167425		
Toluene	ND	0.0516		mg/Kg-dry	42.16	09/15/2023 7:30 PM	R167425		
Internal Quality Control Compounds							11107423		
SS: 4-Bromofluorobenzene	. 100	79-122		%Rec	42.16	09/15/2023 7:30 PM	R167425		
SS: Dibromofluoromethane	78.9	63-129		%Rec	42.16	09/15/2023 7:30 PM	R167425		
SS: Toluene-d8	. 95.2	79-119		%Rec	42.16	09/15/2023 7:30 PM	R167425		
	. 59.2					03/13/2023 7.30 FM			
PERCENT MOISTURE	. 59.2		 STM-D2216-I			Analyst: KC	11107420		



#### Suburban Laboratories, Inc.

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# Laboratory Results

Client ID: CWM Company, Inc.

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: SB-5A

Lab ID: 2309B64-013

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

Collection Date: 09/11/2023 2:55 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS	•	Method	: EPA-8260B-R	ev 2, Dec-96		Analyst: RWM	
Benzene	· ND	0.0159	•	mg/Kg-dry	49.82	09/15/2023 7:55 PM	D407405
Ethylbenzene	ND	0.0635		mg/Kg-dry	49.82	09/15/2023 7:55 PM	R167425
m,p-Xylene	ND	0.127		mg/Kg-dry	49.82	09/15/2023 7:55 PM	R167425
o-Xylene .	ND	0.0635		mg/Kg-dry	49.82	09/15/2023 7:55 PM	R167425
Total Xylenes	NĎ	. 0.127		mg/Kg-dry	49.82	09/15/2023 7:55 PM	R167425
Toluene	ND	. 0.0635	•	mg/Kg-dry	49.82	09/15/2023 7:55 PM	R167425
Internal Quality Control Compounds	• •				45.02	09/13/2023 7.55 PW	R167425
SS: 4-Bromofluorobenzene	101	79-122		%Rec	49.82	09/15/2023 7:55 PM	D407:07
SS: Dibromofluoromethane	79.1	63-129		%Rec	49.82	09/15/2023 7:55 PM	R167425
SS: Toluene-d8	95.4	79-119		%Rec	49.82	09/15/2023 7:55 PM	R167425
PERCENT MOISTURE		Method	ASTM-D2216-			Analyst: KC	R167425
Percent Moisture	22_	1.0	<b>c</b>	wt%:	1	09/19/2023 9:54 AM	R167468
Client Sample ID: SB-5B					latrix: SC		**************************************
				:1	naurix: 50	JH.	
Lab ID: 2309B64-014	· Date Rece	eived: 09/15/2023	10:45 AM			/11/2023 3:00 PM	
Lab ID: 2309B64-014	Date Rece	Report	10:45 AM		n Date: 09	•	
Lab ID: 2309B64-014	Date Rece Result		10:45 AM Qual.		n Date: 09 Dilution	•	Batch ID
,		Report Limit		Collection Units	n Date: 09 Dilution	711/2023 3:00 PM	Batch ID
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene		Report Limit	Qual.	Collection Units	Date: 09 Dilution Factor	Date Analyzed  Analyst: RWM	
Parameter  VOLATILE ORGANIC COMPOUNDS	Result	Report Limit	Qual.	Units ev 2. Dec-96 mg/Kg-dry	n Date: 09 Dilution	Date Analyzed  Analyst: RWM  09/15/2023 8:21 PM	R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene	Result	Report Limit  Method:	Qual.	Units ev 2. Dec-96 mg/Kg-dry mg/Kg-dry	Dilution Factor 39.41 39.41	Date Analyzed  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene	Result ND ND	Report Limit Method: 0.0115 0.0459	Qual.	Units ev 2, Dec-96 mg/Kg-dry mg/Kg-dry mg/Kg-dry	Dilution Factor	Date Analyzed.  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene	Result  ND ND ND ND	Report Limit Method: 0.0115 0.0459 0.0918	Qual.	Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41	Date Analyzed.  Analysi: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene	Result  ND ND ND ND ND ND	Report Limit Method: 0.0115 0.0459 0.0918 0.0459	Qual.	Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41 39.41	Date Analyzed.  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes	Result  ND ND ND ND ND ND ND ND	Report Limit Method: 0.0115 0.0459 0.0918 0.0459 0.0918	Qual.	Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41	Date Analyzed.  Analysi: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes Toluene	Result  ND ND ND ND ND ND ND ND	Report Limit Method: 0.0115 0.0459 0.0918 0.0459 0.0918	Qual.	Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41 39.41 39.41	Date Analyzed  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425 R167425 R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p.Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	Result  ND	Report Limit Method: 0.0115 0.0459 0.0918 0.0459 0.0918 0.0459	Qual.	Units  Pv 2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41 39.41 39.41 39.41	Date Analyzed  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425 R167425 R167425
Parameter  /OLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p.Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	Result  ND ND ND ND ND ND ND ND ND ND ND ND ND	Report Limit Method: 0.0115 0.0459 0.0918 0.0459 0.0918 0.0459	Qual.	Units  Pv 2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	39.41 39.41 39.41 39.41 39.41 39.41	Date Analyzed.  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p.Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	Result  ND ND ND ND ND ND ND ND 101 79.0	Report Limit 0.0115 0.0459 0.0918 0.0459 0.0918 0.0459 79-122 63-129 79-119	Qual.	Units  Units  2. Dec-96  mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry Mg/Kg-dry Mg/Kg-dry Mg/Kg-dry	39.41 39.41 39.41 39.41 39.41 39.41 39.41 39.41	Date Analyzed  Analyst: RWM  09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM 09/15/2023 8:21 PM	R167425 R167425 R167425 R167425 R167425 R167425



#### Suburban Laboratories, Inc.

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# Laboratory Results

Client ID: CWM Company, Inc.

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: W-11R

Client Sample ID: W-11R  Lab ID: 2309B64-015	Date Rec	reived: 09/15/2023 1	0:45 AM		Matrix: SOIL on Date: 09/11/2023 3:15 PM			
Parameter	Result	Report Limit	. Qual.	Units	Dilution Factor	Date Analyzed	Batch ID	
VOLATILE ORGANIC COMPOUNDS	· · ·	. Method: E	PA-8260B-R	ev 2, Dec-96		Analyst: RWM		
Benzene ·	ND	0.0111		· , mg/Kg-dry	· · · 40.08	09/15/2023 8:46 PM		
Eihylbenzene	. ND	0.0443		mg/Kg-dry	40.08		R167425	
m.p-Xylene	, ND	0.0886		mg/Kg-dry	40.08	09/15/2023 8:46 PM	R167425	
o-Xylene	ND	0.0443		mg/Kg-dry	40.08	09/15/2023 8:46 PM	R167425	
Total Xylenes	ND	0.0886		mg/Kg-dry	40.08	09/15/2023 8:46 PM	R167425	
Toluene	ŅD	0.0443		mg/Kg-dry	40.08	09/15/2023 8:46 PM	R167425	
Internal Quality Control Compounds	•	0.01-10		mg/kg-ciy	40.08	09/15/2023 8:46 PM	R167425	
SS: 4-Bromofluorobenzene	 101	79-122		%Rec	40.08	00/45/0000 0 40 70 4		
SS: Dibromofluoromethane	78.8	63-129		%Rec	40.08	09/15/2023 8:46 PM	R167425	
SS: Toluene-d8	96.3	79-119		%Rec		09/15/2023 8:46 PM	R167425	
` ,		75-115		76KeC	40.08	09/15/2023 8:46 PM	R167425	
PERCENT MOISTURE		Method: A	STM-D2216-	Rev 2005	•	Analyst: KC		
Percent Moisture	9.6	1.0	. с	wt%	1	09/19/2023 9:54 AM	R167468	
Client Sample ID: W-17R			<del></del>	•			K107400	
Lab ID: 2309B64-016	Date Reco	eived: 09/15/2023 10	):45 AM		Matrix: SC n Date: 09	OIL 9/11/2023 3:30 PM		
•	•	Report		·.	Dilution	7 11/2025 5.50 FIVE		
Parameter	Result	Limit	Qual.	Units		Date Analyzed	Batch ID	
VOLATILE ORGANIC COMPOUNDS		Method: El	PA-8260B-Re	v 2, Dec-96	•	Analyst: RWM	All and the second	
Benzene .	ND	0.0128		mg/Kg-dry	41.84	00/15/2002 044 514		
Ethylbenzene	ND	0.0511		mg/Kg-dry	41.84	09/15/2023 9:11 PM	R167425	
m.p-Xylene	ND	0.102		mg/Kg-dry	41.84	09/15/2023 9:11 PM	R167425	
o-Xylene	ND	0.0511				09/15/2023 9;11 PM	R167425	
Total Xylenes	ND	0.102		mg/Kg-dry	41.84	09/15/2023 9:11 PM	R167425	
Toluene	ND	0.102		mg/Kg-dry	41.84	09/15/2023 9:11 PM	R167425	
Internal Quality Control Compounds	,,,,	0.0311		mg/Kg-dry	41.84	09/15/2023 9:11 PM	R167425	
SS: 4-Bromoflucrobenzene	107	79-122		₽/ Dog	44.04	00/45/0000		
SS: Dibromofluoromethane	77.1	63-129		%Rec	41.84	09/15/2023 9:11 PM	R167425	
SS: Toluene-d8	92.9	79-119		%Rec	41.84	09/15/2023 9:11 PM	R167425	
• •	J2.J	12-113		%Rec	41.84	09/15/2023 9:11 PM	R167425	
PERCENT MOISTURE		Method: AS	STM-D2216-F	Rev 2005		Analyst: KC		

wt%

09/19/2023 9:54 AM

Percent Moisture

R167468



#### Suburban Laboratories, Inc.

1950 S. Baravin Ave., Suite 150. Geneva. II, 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: SB-6A

Lab ID: 2309B64-017

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

Collection Date: 09/11/2023 3:40 PM

						•	•
Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch II
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-8260B-R	ev 2, Dec-96		Analyst: RWM	
		: •					٠.
Benzene ·	ND	0.0132	• •	mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
Ethylbenzene	. ND	0.0527		mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
m.p-Xylene	ND ·	0.105		mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
o-Xylene	ND	0.0527		mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
Total Xylenes	ND	0.105		mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
Toluene	ND	0.0527		mg/Kg-dry	42.84	09/15/2023 9:36 PM	R167425
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	103	79-122		%Rec	42.84	09/15/2023 9:36 PM	R167425
SS: Dibromofluoromethane	77.7	63-129		%Rec	42.84	09/15/2023 9:36 PM	R167425
SS: Toluene-d8	96.7	79-119		%Rec	42.84	09/15/2023 9:36 PM	R167425
PERCENT MOISTURE		Method: /	ASTM-D2216-	Rev 2005	.`	Analyst: KC	
Percent Moisture	19	1.0	С	wt%	1	09/19/2023 9:54 AM	· R167468
Client Sample ID: SB-6B			· · · · · · · · · · · · · · · · · · ·	3	4-1-1-66		11107700
Lab ID: 2309B64-018	Data Dan	Matrix: SOIL					
130 10: / 109504-018		nix:ad+ NQ/15/2022 T	D-45 AAA				
Lab 1D: 2309B04-018	Date Rece	eived: 09/15/2023 [	0:45 AM	Collection	n Date: 09	7/11/2023 3:45 PM	
LAD 1D: 2309B04-018	Date Rece		0:45 AM	Collection		•	
Parameter	Result	Report Limit		-	Dilution	•	Batch 1D
		Report Limit		Units	Dilution	Date Analyzed	Batch ID
Parameter		Report Limit	Qual.	Units	Dilution Factor	grad.	Batch ID
Parameter		Report Limit	Qual.	Units v	Dilution Factor	Date Analyzed  Analyst: RWM	
Parameter  VOLATILE ORGANIC COMPOUNDS	Result	Report Limit	Qual.	Units ev 2, Dec-96	Dilution Factor 40.82	Date Analyzed Analyst: RWM 09/15/2023 10:02 PM	R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene	Result ND	Report Limit  Method: 9	Qual.	Units ev 2. Dec-96 mg/Kg-dry mg/Kg-dry	Dilution Factor 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene	Result ND ND	Report Limit Method: 5 0.0124 0.0496	Qual.	w 2, Dec-96 mg/Kg-dry mg/Kg-dry mg/Kg-dry	Dilution Factor 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene	Result ND ND ND	Report Limit  Method: 8  0.0124  0.0496  0.0992	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Dilution Factor 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p.Xylene o-Xylene	Result  ND ND ND ND ND	Report Limit  0.0124 0.0496 0.0992 0.0496	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	40.82 40.82 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes	Result  ND ND ND ND ND ND	Report Limit  Method: 8  0.0124 0.0496 0.0992 0.0496 0.0992	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	Dilution Factor 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes Toluene	Result  ND ND ND ND ND ND	Report Limit  Method: 8  0.0124 0.0496 0.0992 0.0496 0.0992	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	40.82 40.82 40.82 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	Result  ND ND ND ND ND ND ND ND	Report Limit  Method: 9  0.0124 0.0496 0.0992 0.0496 0.0992 0.0496	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	40.82 40.82 40.82 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	Result  ND	Report Limit  Method: 9  0.0124 0.0496 0.0992 0.0496 0.0992 0.0496 79-122	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	40.82 40.82 40.82 40.82 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425 R167425 R167425 R167425 R167425
Parameter  VOLATILE ORGANIC COMPOUNDS  Benzene Ethylbenzene m.p-Xylene o-Xylene Total Xylenes Total Aylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	Result  ND ND ND ND ND ND ND ND ND 106 75.7	Report Limit  0.0124 0.0496 0.0992 0.0496 0.0992 0.0496 79-122 63-129 79-119	Qual.	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	40.82 40.82 40.82 40.82 40.82 40.82 40.82	Date Analyzed  Analyst: RWM  09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM 09/15/2023 10:02 PM	R167425 R167425 R167425 R167425 R167425 R167425



#### Suburban Laboratories, Inc.

1956 S. Batavia Ave., Suite 150, Geneva, IL 60134, (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: SB-3A

Lab ID: 2309B64-019

Date Received: 09/15/2023 10:45 AM

Matrix: SOIL

Lab ID: 2309B64-019	Date Rec	eived: 09/15/2023	10:45 AM	Collectio	n Date: 09	9/11/2023 3:55 PM				
		Report		•	Dilution	•				
Parameter	Result	Limit	Qual.	Units	Factor	Date Analyzed	Batch ID			
VOLATILE ORGANIC COMPOUNDS		Method	EPA-8260B-R	ev 2, Dec-96		Analyst: RVVM				
Benzene	· ND	0.0151		mg/Kg-dry	45.83	09/18/2023 1:47 PM	D167474			
Ethylbenzene .	ND	0.0605		mg/Kg-dry	45.83	09/18/2023 1:47 PM	R167474			
m,p-Xylene	ND	0.121		mg/Kg-dry	45.83	09/18/2023 1:47 PM	R167474			
o-Xylene	ND	0.0605		mg/Kg-dry	45.83	09/18/2023 1:47 PM	R167474			
Total Xylenes	ND	0.121		mg/Kg-dry	45.83	09/18/2023 1:47 PM	R167474			
Toluene.	ND	0.0605		mg/Kg-dry	45.83	09/18/2023 1:47 PM	R167474			
Internal Quality Control Compounds	•	3.3333		mg/itg dry	45.05	09/10/2023 1.47 P[VI	R167474			
SS: 4-Bromofluorobenzene	102	79-122		%Rec	45.83	09/18/2023 1:47 PM	D467474			
SS: Dibromofluoromethane	80.0	63-129		%Rec	45.83	09/18/2023 1:47 PM	R167474			
SS: Toluene-d8	94.9	79-119		%Rec	45.83	09/18/2023 1:47 PM	R167474			
	•				43.03	03/10/2023 1.47 PW	R167474			
PERCENT MOISTURE		· Method:	ASTM-D2216-	Rev 2005	•	Analyst: KC				
				• •	•,	,				
Percent Moisture .	24	1.0	С	wt%	1	09/19/2023 9:54 AM	R167468			
Client Sample ID: SB-3B	•				latrix: SO	)II. · ·				
Lab ID: 2309B64-020	Date Rece	1 00/15/0000 10 15				0/11/2023 4:00 PM				
	•	Report	•	•	Dilution		•			
Parameter	Result	Limit	Qual.	Units		Date Analyzed	Batch ID			
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-8260B-R	ev 2, Dec-96	4	Analyst: RWM				
Benzene	ND	0.0136		malka da						
Ethylbenzene	ND	0.0545		mg/Kg-dry mg/Kg-dry	44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474			
m,p-Xylene	.,,	0.0070			44.52	U9/18/2023 2:12 PM				
	ND	0.100					R167474			
•	ND ND	0.109		mg/Kg-dry	44.52	09/18/2023 2:12 PM	R167474			
o-Xylene	ND	0.0545		mg/Kg-dry mg/Kg-dry	44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474			
o-Xylene	ND ND	0.0545 0.109		mg/Kg-dry mg/Kg-dry mg/Kg-dry	44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474			
o-Xylene Total Xylenes Toluene	ND	0.0545		mg/Kg-dry mg/Kg-dry	44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474			
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds	ND ND ND	0.0545 0.109 0.0545	,	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	44.52 44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474 R167474			
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND	0.0545 0.109 0.0545 79-122		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	44.52 44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474 R167474			
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	ND ND ND 101 80.6	0.0545 0.109 0.0545 79-122 63-129		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec %Rec	44.52 44.52 44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474 R167474			
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene	ND ND ND	0.0545 0.109 0.0545 79-122		mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry	44.52 44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474 R167474			
o-Xylene Total Xylenes Toluene Internal Quality Control Compounds SS: 4-Bromofluorobenzene SS: Dibromofluoromethane	ND ND ND 101 80.6	0.0545 0.109 0.0545 79-122 63-129 79-119	ASTM-D2216-i	mg/Kg-dry mg/Kg-dry mg/Kg-dry mg/Kg-dry %Rec %Rec %Rec	44.52 44.52 44.52 44.52 44.52	09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM 09/18/2023 2:12 PM	R167474 R167474 R167474 R167474 R167474			



Parameter

#### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Smie 150. Geneva, II, 60134 (708) 544-3260

Result

# Laboratory Results

Batch ID

Client 1D: CWM Company, Inc

Project Name: Hendson Oil Co

Report Date: September 21, 2023

Workorder: 2309B64

Client Sample ID: SB-2A

Lab ID: 2309B64-021

Date Received: 09/15/2023 10:45 AM

Report

Limit

Qual.

Units

Matrix: SOIL

Dilution

Collection Date: 09/11/2023 4:10 PM

Factor Date Analyzed

VOLATILE ORGANIC COMPOUNDS		Method	: EPA-8260B-F	Rev 2. Dec-96		Analyst: RWM	•
Benzene	ND	0.0133		mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
Ethylbenzene	ND	0.0532		mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
m.p-Xylene	. ND	0.106	• •	mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
o-Xylene	. ND	0.0532		mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
Total Xylenes	ND	0.106		mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
Toluene	ND	0.0532		mg/Kg-dry	42.41	09/18/2023 2:38 PM	R167474
Internal Quality Control Compounds				0 0 ,			
SS: 4-Bromofluorobenzene	101	79-122		%Rec	42,41	09/18/2023 2:38 PM	R167474
SS: Dibromofluoromethane	81.0	63-129		%Rec	42.41	09/18/2023 2:38 PM	R167474
SS: Toluene-d8	95.8	79-119		%Rec	42.41	09/18/2023 2:38 PM	R167474
PERCENT MOISTURE		Method:	ASTM-D2216	-Rev 2005	•	Analyst: KC	
Percent Moisture	: 20	1.0	С	wt%	1	09/19/2023 9:54 AM	R167468
Client Sample ID: SB-2B				. 1	Matrix: SC		
Lab ID: 2309B64-022	Date Rec	eived: 09/15/2023	10:45 AM			0/11/2023 4:15 PM	
• •		Report			Dilution	-	
Parameter	Result	Limit	Qual.	Units	Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-8260B-R	ev 2, Dec-96		Analyst: RWM	
Benzene	ND	0.0145		mg/Kg-dry	50	09/18/2023 3:03 PM	D407474
Ethylbenzene	ND	0.0582		mg/Kg-dry	50	09/18/2023 3:03 PM	R167474
m.p-Xylene	ND	0.116		mg/Kg-dry	50	09/18/2023 3:03 PM	R167474
o-Xylene	ND	0.0582		mg/Kg-dry	50	09/18/2023 3:03 PM	R167474
Total Xylenes	ND	0.116		mg/Kg-dry	50	09/18/2023 3:03 PM	R167474
Toluene	ND	0.0582		mg/Kg-dry	50	09/18/2023 3:03 PM	R167474
Internal Quality Control Compounds				g.r.g cry	50	· · · · · · · · · · · · · · · · · · ·	R167474
SS: 4-Bromofluorobenzene	111	79-122		%Rec	50	09/18/2023 3:03 PM	D167474
SS: Dibromofluoromethane	80.4	63-129		%Rec	50	09/18/2023 3:03 PM	R167474
SS: Toluene-d8	95.6	79-119	•	%Rec	50	09/18/2023 3:03 PM	R167474 R167474
PERCENT MOISTURE		Method:	ASTM-D2216-	Rev 2005		Analyst: KC	



#### Suburban Laboratories, Inc.

1950 S. Barayia Ave., Suite 150, Geneva, (L 60134-7708) 544-3260

# PREP DATES REPORT

Client:

CWM Company, Inc.

Project: Hendson Oil Co

Report Date: September 21, 2023

Lab Order: 2309B64

Sample ID	Collection Date	Batch ID	Prep Test Name · · ·	TCLP Date Prep Date
2309B64-001A	9/11/2023 12:30:00 PM	92374	CLOSED SYSTEM P&T VOC Prep	9/18/2023
2309B64-002A	9/11/2023 12:45:00 PM	92374	CLOSED SYSTEM P&T VOC Prep	9/18/2023
2309B64-003A	9/11/2023 1:00:00 PM	92374	CLOSED SYSTEM P&T VOC	
2309B64-004A	9/11/2023 1:10:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-005A	9/11/2023 1:15:00 PM	923,74	CLOSED SYSTEM P&T VOC Prep	9/18/2023
2309B64-006A	9/11/2023 1:30:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-C07A	9/11/2023 1:45:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-008A	9/11/2023 1:55:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-009A	9/11/2023 2:00:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-010A	9/11/2023 2:15:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-011A	9/11/2023 2:30:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-C12A	9/11/2023 2:45:00 PM	92374	CLOSED SYSTEM P&T VOC	. 9/18/2023
2309B64-013A	9/11/2023 2:55:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-014A	9/11/2023 3:00:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-015A	9/11/2023 3:15:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-016A	9/11/2023 3:30:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-017A	9/11/2023 3:40:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-018A	9/11/2023 3:45:00 PM	92374	CLOSED SYSTEM P&T VOC Prep	9/18/2023
2309B64-019A . ;	9/11/2023 3:55:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-020A	9/11/2023 4:00:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-021A	9/11/2023 4:10:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023
2309B64-022A	9/11/2023 4:15:00 PM	92374	CLOSED SYSTEM P&T VOC	9/18/2023 ·



#### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

# Qualifier Definitions

WO#: 2309B64 Date: 9/21/2023

#### Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
В	Analyte detected in the associated Method Blank
С	Value is below Minimum Concentration Limit
c	Analyte not in TNI/NELAC scope of accreditation
Ē	Estimated, detected above quantitation range
G	Refer to case narrative page for specific comments
Н	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limit (QL)
N	Tentatively identified compounds
ND	Not Detected at the Reporting Limit
P	Present
Q	Accreditation is not available from Wisconsin
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
T	Analyte detected in sample trip blank
<b>V</b> .	EPA requires field analysis/filtration. Lab analysis would be considered past hold time.
$WI \to_{\mathrm{ca}}$	This sample was ran at the Wisconsin Laboratory, WI DNR Certified #246179890

Electroni
nic F
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k's Office
erk's Office 07/24/20

SUBURBAN LABORAT		•	CHAIN	OF CUSTODY	RECORD	
1950 S. Batavia Ave. Ste. 150 Geneva, IL	60134	Tel. 708.544.3		labs.com www.s	suburbaniabs.com	
CW3M Company Inc.			TIME REQUESTED	ANALYSIS & METHO : Enter an "X" in box b	DD REQUESTED P	Page / of 2 %
Company Address		Normal	Rush			0#
City State Zip		Must be pre-approved a	nd surcharges apply. Checking			leport
Office 1 Mobile		this box indicates you  Date and Time	ir approval of surcharges.		נד	ype X Normal Special
(717) 522 - 8001 / 8009	,	Report Needed:				Additional charges apply for OC reports and raw data. Specify in comments section
Project 10/Location		Specify Regulatory Program	n: None/Info Only		SI	hipping Method ·
Headen O'l Co		X LUST SF	RP SDWA			LAB USE ONLY
Corri L Rose		503 Sludge N	PDES MWRDGC			Vark Order # 7300 27 U
Sample Collector(s)  Mulp / JKK		Disposal CO	OTHER-	74     1		emperature of
SAMPLE IDENTIFICATION			Specify Below		7 8	eceived Samples 5.5 C
(Use 1 line per container type) DATE	DLLECTION MATE	GRAB/ CONTA				ours of collection? No Yes
	23 12:30 Soil	0/ 40	8 TYPE PRESERVATIVE	×		Lab Comment LAB #
2 F-2R	12:45.	Grab 3/2 70m	1402 MA			
3 F-3R	13:00	<del>-                                     </del>		<del>╏</del> ┩╌╂╌╂╌╂╌		
4 30-14	13:10			<del>                                     </del>	<del>                                     </del>	
5 58-18	13:15			<del>                                     </del>	┼┼┼╂	
		<del></del>	<del></del>		<del> - - - - </del>	
6 W-2R 7 W-4R	13:36	<del></del>			<del>- - - - -</del>	
8 5B - 4A	13:45	<del>-}-}-</del>		+	<del>                                     </del>	
9 58-48	13:55	<del>-                                    </del>		<del>-                                     </del>	+	
10 W-13R	14:15	<del>-   -   -     -   -   -   -   -   -   -</del>			┼┼┼┼	
11 W-14R	14:30	<del>-   -   -   -   -   -   -   -   -   -  </del>			<del>┤┤┤┤</del>	· · · · · · · · · · · · · · · · · · ·
12 W-15R	14:45	1122		<del>                                     </del>		
MATRIX: Drinking Water (DW). Soil (S). COMMENTS & SPECI		14110				
Waste Water (WW), Surface Water(SW), Ground Water (GW), Solid Waste (WA),						
Sludge (U), Wipe (P) CONTAINER: 20z,						Į.
4oz, 8oz, 40ml Vial, 500ml, Liter (L.), Tube,					•••	
Glass (G), Plastic (P) PRESERVATIVE: H <sub>2</sub> SO <sub>4</sub> , HCI, HNO <sub>2</sub> , Methanol (MeOH)						
NaOH, Sodium Bisulfate (NaB), NaThio						
8 Am Mar 9/15/73	nquished By	9115175	3. Relinquished By	. Date	4. Relinquished By	Date
With Usa Dice 805 De	en Al	lce Time [1:15	Received By	Time:	Received By	Time
HIS FORM MUST BE FILLED OUT COMPLETELY BY THE	SAMPLE COLLECTOR C		GINAL FORM MUST ACCO	PMPANY SAMPLES AT	ALL TIMES.	(_) ICE   Rev 2/17

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<u>7</u>
2024

SUBURBAN LABORATORII	ES, Inc.			CHAIN (	OF	CUSTO	DY REC	ORI		
1950 S. Batavia Ave. Ste. 150 Geneva, IL 60134	·	Tel. 70	8.544.3260	togin@suburban	labs.o	com w	ww.suburbank	abs.com	1	
CW3M Company Inc.	· .	,	OUND TIME REC			ANALYSIS & M Enter an "X" in	ETHOD REQUES box below for rec		Page 2 of	2
Company Address 701 South Grand Ave. L	√.	Normal	اا	RUSH*					PO#	- Ĉ
springfield to 62704		* Must be pre-app this box indic	roved and surcharg ates your approval	es apply. Checking					Report Norm	nal Special
Office Mobile Fax (217) 522 - 8001 / 8009		Date and Time Report Needed:			1 1				* Additional charges as	pply for QC reports and
Email Address  Chim @ Clim Company, Com  Project ID / Location		Specify Regulatory	Program:	None/Info Only					raw data. Specify in Shipping Method	n comments section
Project ID / Location Hendson Oil Co.		LUST	SRP	SDWA	$\lfloor L \rfloor$				· LABLIS	E ONLY
Project Manager (Report to)  Laral L. Rowe		503 Sludge	NPDES	MWRDGC	弘		1 1.1		Work Order # 27	- 0 P( )
Sample Collector(s)  MwD / TKK		Disposal	CCDD	OTHER-	8			0	Temperature of	27/064
SAMPLE IDENTIFICATION	<u></u>		<del></del>	Specify Below				'	Received Samples Received within 24	3 8' °C
(Use 1 line per container type)  COLLECTION  DATE	TIME MATRIX	l <del>)</del>	SIZE & TYPE	PRESERVATIVE					hours of collection?	No Yes
1 53-5A 9/11/23 1	14:55 50:1	Grah 8/2	40mv/402	MOH NA	X	111	<del>                                     </del>	1 +	Lab Commen	t LAB#
	5:00	1	1	, , , , ,	 	111	111			<del></del>
	5:15				<i> </i>		+++	+	<del>                                     </del>	
	5:30						111		<del> </del>	
5 <b>5B</b> -6A is	5:40						111		1	
	5:45	1/ 11					1	f		<del></del>
	5:55				1		<del>                                      </del>	1  -	<b> </b>	
	6:00				1				1	
9 53-2A 16	6:10				1		1 1 1			
10 58-20 2 16	:15	4 1		4	T					
11										
12	• .									
MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water(SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipc (P) CONTAINER; 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE; H <sub>2</sub> SO <sub>4</sub> , HCI, HNO <sub>3</sub> , Methanol (MeOH)	STRUCTIONS:			· · · · · · · · · · · · · · · · · · ·						
NaOH, Sodium Bisulfate (NaB), NaThlo Relinquished By  Date  2. Relinquished B		Oate	3. Relinquish	ed By		Date	4. Relinquis	hed By	Da	ale
<u> </u>	h lis	9,1151				Toro	Grant at A			
Rice 8.00 April		Ice Time	i		<u></u> (		Received B	-	lce lce	ine
HIS FORM MUST BE FILLED OUT COMPLETELY BY THE SAMPL	E COLLECTOR OR	SUBMITTER A	ND ORIGINAL FO	ORM MUST ACCO	MPA	NY SAMPLES	AT ALL TIME	S.	•	Rev 2/17



# Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed \$50,000.00 for the violation and an additional civil penalty of not to exceed \$10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

# Leaking Underground Storage Tank Program Laboratory Certification for Chemical Analysis

	L	aboratory Certification for Ch	nemical Analysis	
A.	Site Identification			
	IEMA Incident # (6- or 8-digit	r): 20001913	IEPA LPC# (10-digit): 11310550	007
	Site Name: Henson Oil Co.		· · · · · · · · · · · · · · · · · · ·	
	Site Address (Not a P.O. Box	k): Old Hwy. 66	,	
	City: Towanda	County: McLean county	ZIP Code: 61776	
	Leaking UST Technical File	•	,	
В.	Sample Collector	·		
	I certify that:			
	1. Appropriate sampling equ	uipment/methods were utilized to obt	ain representative samples.	_Vrk
	2. Chain-of-custody proced	ures were followed in the field.		(Initial) リドド (Initial)
	3. Sample integrity was mai	ntained by proper preservation.		(Initial)
	4. All samples were properly	y labeled.	·	(Initial)
C.	Laboratory Representat	tive		(IIIIIIai)
	I certify that:			$\sim$ 0
	1. Proper chain-of-custody p	procedures were followed as docume	nted on the chain-of-custody forms	(Indiana
	2. Sample integrity was main	ntained by proper preservation.		(Initial)
	3. All samples were properly	labeled.		Unities
	4. Quality assurance/quality	control procedures were established	and carried out.	(Initial)
	5. Sample holding times wer	re not exceeded.		0/~

- 6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses.
- 7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003).



#### D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative
Name John Kyston	Name DAN GALFHUR
Title Project Marager	Title SENIOR PM
Company CWM Company, Inc.	Company Suburban Laboratories, Inc.
Address 701 South Grand Ave. West	Address 1950 S. Batavia Ave Ste 150
City Springfield	City Geneva
State IL	State IL
Zip Code 62704	Zip Code 60134
Phone 217-522-8001	Phone 708-544-3260
Signature John Kwitzn	Signature
Date9//1/23	Date 9-22-23



http://www.teklabinc.com/

September 20, 2023

Carol Rowe CW3M Co. Inc.

701 W. South Grand Ave.

Springfield, IL 62704

TEL: (217) 522-8001

FAX: (217) 522-8009:

RE: Hendson Oil

Dear Carol Rowe:

TEKLAB, INC received 1 sample on 9/12/2023 2:10:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling Project Manager

(618)344-1004 ex 41

mdarling@teklabinc.com

Marin L. Darling II



Illinois

100226

Kansas

E-10374

Louisiana

.05002 Louisiana -05003

Oklahoma ...

**WorkOrder: 23090751** 



Client Project: Hendson Oil

## **Report Contents**

http://www.teklabinc.com/

Work Order: 23090751

Report Date: 20-Sep-23

This reporting package includes the following:

Client: CW3M Co. Inc.

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	8
Receiving Check List	10
Chain of Custody	Appended



#### **Definitions**

http://www.teklabinc.com/

Work Order: 23090751

Report Date: 20-Sep-23

Client: CW3M Co. Inc.

Client Project: Hendson Oil

#### Abbr Definition

- \* Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
  - DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
  - DNI Did not ignite . . .
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- NC Data is not acceptable for compliance purposes
- ND Not Detected at the Reporting Limit

#### **NELAP NELAP Accredited**

- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- -SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count ( > 200 CFU )



#### **Definitions**

http://www.teklabinc.com/

Work Order: 23090751

Report Date: 20-Sep-23

Client: CW3M Co. Inc.

Client Project: Hendson Oil

#### Qualifiers

- B Analyte detected in associated Method Blank
- E Value above quantitation range
- I Associated internal standard was outside method criteria
- M Manual Integration used to determine area response
- R RPD outside accepted recovery limits
- T TIC(Tentatively identified compound)

- # Unknown hydrocarbon
- C RL shown is a Client Requested Quantitation Limit
- H Holding times exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside recovery limits
- X Value exceeds Maximum Contaminant Level



#### Case Narrative

#### http://www.teklabinc.com/

· Client: CW3M Co. Inc.

Work Order: 23090751

Client Project: Hendson Oil

Report Date: 20-Sep-23

Cooler Receipt Temp: N/A °C

TO15 analysis was performed at the North Bluff Road facility in Collinsville Illinois, Agency Interest No. 166578.

1 ----

			Locations			
	Collinsville		Springfield		Kansas City	
Address  Phone Fax Email	5445 Horseshoe Lake Road Collinsville, IL 62234-7425 (618) 344-1004 (618) 344-1005 jhriley@teklabinc.com	Address Phone Fax Email	3920 Pintail Dr Springfield, IL 62711-9415 (217) 698-1004 (217) 698-1005 KKlostermann@teklabinc.com	Address Phone Fax Email	8421 Nieman Road Lenexa, KS 66214 (913) 541-1998 (913) 541-1998 jhriley@teklabinc.com	n
Address	Collinsville Air 5445 Horseshoe Lake Road	- Address	Chicago	_		
Phone Fax	Collinsville, IL 62234-7425 (618) 344-1004 (618) 344-1005	Phone Fax	Downers Grove. IL 60515 (630) 324-6855		•	
Email	EHurley@teklabinc.com	Email	arenner@teklabinc.com			•:



## Accreditations

http://www.teklabinc.com/

Work Order: 23090751

Report Date: 20-Sep-23

Client: CW3M Co. Inc.

Client Project: Hendson Oil

State	Dept .	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA 1 7	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584	·	5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville



# Laboratory Results

http://www.teklabinc.com/

Client: CW3M Co. Inc.
Client Project: Hendson Oil

Work Order: 23090751 Report Date: 20-Sep-23

Lab ID: 23090751-001

Client Sample ID: SGV-1

Matrix: AIR CANISTER Collection Date: 09/11/2023 10:15

	Analyses	Certification	RL Qual	Result	Units	DF	Date Analyzed	Batch
TO-15, VOL	ATILE ORGANIC	COMPOUNDS, BY GO	C/MS					
Benzene	7	NELAP	3.75	18.5	ppbv	7.5	09/18/2023 14:14	212153
	8.11184		0.012	0.0591	mg/m3			
Ethylbenzene	e	NELAP	3.75	28.2	ppbv	7.5	09/18/2023 14:14	212153
MW 10	06.165		0.0163	0.1224	mg/m3			
Isopropanol		NELAP	22.5	ND	ppbv	7.5	09/18/2023 14:14	212153
MW 60	0.09502		0.0553	ND	mg/m3			
m,p-Xylene		NELAP	7.50	71.3	ppbv	7.5	09/18/2023 14:14	212153
MW 10	06.17		0.0326	0.3096	mg/m3			2.2.00
Methyl tert-bu	utyl ether	NELAP	0.75	0.93	ppbv	7.5	09/18/2023 14:14	212153
MW 88	3.14818		0.0027	0.0034	mg/m3			212700
o-Xylene		NELAP	3.75	22.2	ppbv	7.5	09/18/2023 14:14	212153
MW 10	06.165		0.0163	0.0964	mg/m3			
Toluene		NELAP	3.75	28.8	ppbv	7.5	09/18/2023 14:14	212153
MW 92	2.13842		0.0141	0.1085	mg/m3			, 00
Xylenes, Tota	al	NELAP	11.2	93.4	ppbv	7.5	09/18/2023 14:14	212153
MW 10	06.165		0.0486	0.4056	mg/m3			
Surr: 4-Bro	mofluorobenzene	•	46.9-145	90.3	%REC	7.5	09/18/2023 14:14	212153
MW 17	4.9983632		46.9-145	90.3	%REC			,
levated report	ting limit due to high	levels of target and non-ta	arget analytes.					



Client: CW3M Co. Inc.

# Quality Control Results

http://www.teklabinc.com/

Work Order: 23090751

Client Project: Hendson Oil								0	23030	
	٠.						•	Report Dat	e: 20-Sep	ı <b>-</b> 23
TO-15, VOLATILE ORGANIC	COMPO	JNDS, I	BY GC/MS		,			<del></del>		
Batch 212038 SampType:	MBLK		Units ppby						<del></del>	<del></del>
SamplD: MBLK-U230914-1								. •		Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Benzene	*	0.50		ND						09/14/2023
Ethylbenzene	*	0.50		ND	i			٠.	٠.	09/14/2023
Isopropanol	•	3.00		ND			•	•		09/14/2023
m,p-Xylene	*	1.00		. ND		•				09/14/2023
Methyl tert-butyl ether	•	0.50		ND	:		•	••	٠	09/14/2023
o-Xylene	*	0.50		ND		÷	:			09/14/2023
Toluene	•	0.50		ND						09/14/2023
Xylenes, Total	•	1,50		ND				•		09/14/2023
Surr: 4-Bromofluorobenzene	•		•	8.37	10.00		83.7	46.9	145	09/14/2023
										03/14/2023
Batch 212038 SampType:	LCSD		Units ppbv			· ·	• • • • • • • • • • • • • • • • • • • •	RPD Lir	nit: 30	<del></del>
SamplD: LCSD-U230914-1					٠.				• • • •	Date: 1
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Va	MRPD	Date Analyzed
Benzene	•	0.50		10.2	10.00	0	101.7	10.26	0.83	09/14/2023
Ethylbenzene	•	0.50		11.3	10.00	0	113.1	11.44	1.12	09/14/2023
Isopropanol	•	3.00		8.26	10.00	Ö	82.6	8.246	0.20	09/14/2023
m,p-Xylene	•	1.00		21.7	20.00	0	108.4	21.97	1.39	09/14/2023
Methyl tert-butyl ether	•	0.50		10.4	10.00	0	103.8	10.45	0.63:-	09/14/2023
o-Xylene	*	0.50		10.5	10.00	0	105.2	10.65	1.27	09/14/2023 09/14/2023
Toluene	*	0.50		10.8	10.00	0	107.6	.10:82	0.58	09/14/2023
Xylenes, Total	•	1.50		32.2	30.00	0	107.3	32.63	1.35	
Surr: 4-Bromofluorobenzene	•			9.19	10.00		91.9	52.00	1.55	09/14/2023
· · · · · · · · · · · · · · · · · · ·	• •									09/14/2023
Batch 212038 SampType:	LCS		Units ppbv		<del></del>	<del>- ·</del>	-	<del></del>		
SamplD: LCS-U230914-1						•				
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	•	0.50		10.3	10.00	0	102.6	73.8	122	09/14/2023
Ethylbenzene	•	0.50		11.4	10.00	0	114.4		. 133	09/14/2023
Isopropanol	•	3.00		8.25	10.00	0	82.5	52.3	129	
m,p-Xylene	•	1.00		22.0	20.00	0	109.9	74.8	129	09/14/2023
Methyl tert-butyl ether	•	0.50		10.4	10.00	0	104.5	70.3	129	09/14/2023
o-Xylene	•	0.50		10.7	10.00	0	104.5	70.3 74.2		09/14/2023
Toluene .		0.50		10.8		0	108.2		130	09/14/2023
Xylenes, Total	•	1.50		32.6	30.00	0	108.8	76.5	127	09/14/2023
Surr: 4-Bromofluorobenzene	•	·		9.12	10.00	•		75.1	129	09/14/2023
	,			V. 12	10.00		91.2	84 <sub>.</sub> 2	115	09/14/2023



# **Quality Control Results**

http://www.teklabinc.com/

Client: CW3M Co. Inc.

Work Order: 23090751

Client Project: Hendson Oil

Report Date: 20-Sep-23

Cheme Project. Fleriosoff Oil								Report Dat	c. 20 Sep	-23.
TO-15, VOLATILE ORGANIC		NDS, I	BY GC/MS							:
Batch 212153 SampType: SampID: MBLK-U230918-1	MBLK:	•. •	Unitsppbv	•						Data
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzenė .	•	0.50		ND						09/18/202:
Ethylbenzene	•	0.50		ND						09/18/202:
Isopropanol '	•	3.00		ND		•	•	•	٠	09/18/202
m.p-Xylene	•	1.00		ND	·	•		•		09/18/202
Methyl tert-butyl ether	•	0.50		ND	·:·	•	•	٠.	:·	09/18/202
o-Xylene "	•	0.50		ND						09/18/202
Toluene	•	0.50		ND						09/18/2023
Xylenes, Total	•	1.50		ND .			•		•	09/18/2023
Surr: 4-Bromofluorobenzene	•			8.33	10.00		83.3	46.9	145	09/18/2023
Batch 212153 SampType:	LCSD .		Units ppbv	<del></del>		··· · ·	···	RPD Lin	nit: 30	<del></del>
SamplD: LCSD-U230918-1				•	• ;		• .			Date
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Va	# %RPD	Analyzed
Benzene	,	0.50		10.1	10.00	0	100.6	10.20	1.34	09/18/2023
Ethylbenzene	•	0.50		11.1	10.00	0	111.3	11.24	0.94	09/18/2023
Isopropanol	•	3.00		8.18	10.00	Ò	81.8	8.153	0.30	09/18/2023
m,p-Xylene	•	1.00		21.2	20.00	0	105.8	21.56	1.86	09/18/2023
Methyl tert-butyl ether	*	0.50		10.3	10.00	0	103.1	10.30	0.07	09/18/2023
o-Xylene	•	0.50		10.2	10.00	0	102.0	10.36	1.52	09/18/2023
Toluene	•	0.50		10:6	10.00	0	105.9	10.71	1.11	09/18/2023
Xylenes, Total	*	1.50		31.4	30.00	0	104.5	31.92	1.76	09/18/2023
Surr: 4-Bromofluorobenzene	*			9.03	10.00		90.3		,	09/18/2023
	•	•	•							
Batch 212153 SampType: SampID: LCS-U230918-1	LCS		Units ppbv						1886.7	0-4-
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Benzene	*	0.50		10.2	10.00	0 .	102.0	73.8	1,22	09/18/2023
Elhylbenzene	•	0.50		11.2	10.00	0	112.4	76.2	133	09/18/2023
Isopropanol	•	3.00		8.15	10.00	0	81.5	52.3	129	09/18/2023
m,p-Xylene	•	1.00		21.6	20.00	С	107.8	74.8	129	09/18/2023
Methyl tert-butyl ether	•	0.50		10.3	10.00	0	103.0	70.3	126	09/18/2023
o-Xylene	•	0.50		10.4	10.00	C	103.6	74.2	130	09/18/2023
Toluene	•	0.50		10.7	10.00	0	107.1	76.5	127	
Videoro Total	•	1.50		31.9	30.00	0	106.4	75.1	129	09/18/2023 09/18/2023
Kylenes, Total										



#### Receiving Check List

Environmental Laboratory			http:/	//www.teklabinc.com/
Client: CW3M Co. Inc.			. Work O	rder: 23090751
Client Project: Hendson Oil	•	· :		Date: 20-Sep-23
Carrier: Paul Reeves	Rec	ceived By: MBP	•	•
Completed by: On: 12-Sep-23 Amber Dilallo	n. <del></del>	eviewed by: On: : -Sep-23 .	Elizabeth A. Hurley	leg.
Pages to follow: Chain of custody 1	Extra pages includ	ed 2		
Shipping container/cocler in good condition?	Yes 🗹	No 🗆	Not Present	Toma 80 A44
Type of thermal preservation? Chain of custody present?.	None 🗹 Yes 🗹	Ice 🔲 No 🔲	Blue Ice	Temp °C N/A Dry Ice
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗆		
Chain of custody agrees with sample labels?	Yes 🗹	No 🗌		
Samples in proper container/bottle?	Yes 🗹	No 🔲	•	
Sample containers intact?	Yes 🗹	No 🗀		
Sufficient sample volume for indicated test?	Yes 🗹	No 🗆		
All samples received within holding time?	Yes 🗹	No 🗆		•
Reported field parameters measured:	Field 🔲	Lab 🗌	NA 🗹	
Container/Temp Blank temperature in compliance?	Yes 🗹	No 🗌	177.	
When thermal preservation is required, samples are compliant 0.1°C - 6.0°C, or when samples are received on ice the same of	with a temperatur	e between	•	
Water – at least one vial per sample has zero headspace?	Yes 📙	No 🔲	No VOA vials <b>√</b> I	
Water - TOX containers have zero headspace?	Yes 🗌	No 🗀	No TOX containers	
Water - pH acceptable upon receipt?	Yes 🗆	No 🗆	NA 🗹	
NPDES/CWA TCN interferences checked/treated in the field?	Yes 🗌	No 🔲	NA ☑ NA ☑	
Any No responses mu	ist be detailed be	low or on the	coc.	
Clients sample id, canister id and clients final vacuum gauge reading sampled canisters is between -5 and -12 "Hg kkizer - 9/13/2023 12 SGV-1 872 -6/-6	js followed by rea 2:04:15 PM	dings taken up	on arrival at the laboratory.	ldeal vacuum on

Samples were transferred to Collinsville Air Lab on 9/13/23 at 0947. - ehopkins - 9/18/2023 2:30:21 PM

#### TEKLAB, INC.

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

	i		1
pg	1	of	/

Lab Work Order# 239(215)

## AIR SAMPLING FIELD FORM AND CHAIN OF CUSTODY

Client Name:		onlony	Inc.			Result	s Reques	ted (ch	eck one)	Sample Type (check one)						
Address:		Grand A	Ive. W.				ndard (7-		day) Ambient Air			. 7   , 0	- 1	•	acNian	
Phone:	(217) 522-80	201				1 Day (200% surcharge)			Ambient AirSoil Gas/V			•	()I			
Email:	inmo Cwp	1 Company	1. Com			2-3 Day (100% surcharge)			1	•					. A	
Project ID:	Itendon Oi	1				4	2-3 Day (100% surcharge)Indoor Sub-Slab 4-5 Day (50% surcharge) Stack						Other	(specify	Y)	
Project Manager	Laral L. F	love			Lab Us				N, Samples	A <del></del>	BlueNo loc	\$. LL				<del></del> -
Sampler:	· · · · · · · · · · · · · · · · · · ·			<del></del>	Comme			- TE	iv, samples	on:lce/E	siue/_No ice	, <i>1</i> 714	Temp. <sup>4</sup>	'C		٠. :
PO Number:						sins.		9	y Öllyy.			, '			•	,
Lab Use Only					- ,			Ou	rier	2			· · ·			
				Sample	Start Pa	rameters			rameters	Meddested A	Analysis (list meta	ls/other	below ii	n comm	ents)	
		Canister	Controller				Cample			ists	\$ 15 B			ТЅР		j
					T	v accióu(i)	. 22	· ·	Vacuum	15 L	S C S S S S S S S S S S S S S S S S S S	<u>~</u>	_	7 /0	S	_
aboratory ID	Sample Identification	Number	Number	Date	Time	(in. Hg)	Date	Time	(in. Hg)	TO-15 Lis (circle) Standard Extended	76-45 selece BTEX MB1E Naphhälene Sapropano 7PH-3RO	70-13	TO-4	PM10/	Metals	Other
45040 15J	56V-1	872	253	9/11/21			9/11/21		6	1- SWID	H 0/2 41-	-		п.	_2_	10
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pecial QC Requiren	nown to be involved in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in litigation in li	Yes	No	на раскас	je wili be	e generate	ed and a s	urcharg	je will appi	y.	Yes		^	No T		
hipping Company Relinquished By	and Tracking Number:	<del></del>	· · · · · · · · · · · · · · · · · · ·	···		· · · · · · · · · · · · · · · · · · ·										
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	all all	mxc			<u>, // , // , / , / , / , / , / , / , / ,</u>		108 <u>:</u>	ull.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 Vos	3/	4	<u> </u>	<u> 23</u>	08	25
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The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

White & Yellow Copy - Labora ary Pink Copy - Sampier



# Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed \$50,000.00 for the violation and an additional civil penalty of not to exceed \$10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

# Leaking Underground Storage Tank Program Laboratory Certification for Chemical Analysis

Α.	Site identification		
	IEMA Incident # (6- or 8-digit): 20001913 Site Name: Henson Oil Co.	IEPA LPC# (10-digit): 11310550	07 · ·
	Site Address (Not a P.O. Box): Old Hwy. 66		
	City: Towanda County: [	McLean county ZIP Code: 61776	
	Leaking UST Technical File	The second secon	
В.	Sample Collector	• ,	
	I certify that:		
	1. Appropriate sampling equipment/methods we	ere utilized to obtain representative samples.	JXK_
	2. Chain-of-custody procedures were followed in	n the field.	(Initial)
	3. Sample integrity was maintained by proper pro	reservation.	(Initial) (Initial)
	4. All samples were properly labeled.		TKK (Initial)
C.	Laboratory Representative		(iniuai)
••	I certify that: 2309075/		
	Proper chain-of-custody procedures were follo	owed as documented on the chain-of-custody forms	MLPTT (Initial)
	2. Sample integrity was maintained by proper pre	eservation.	(Initial)
	3. All samples were properly labeled.		(Initial)
	4. Quality assurance/quality control procedures w	were established and carried out.	MLOTT (Initial)
	5. Sample holding times were not exceeded.		MLOTT (Initial)

23041075

23090751

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses.

(Initial)

 An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003).

m LOT

#### D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative
Name Johl Kullon	Name Marvin L. Darling It
Title Project Mgc	Title Project Manager
Company CWM Company, Inc.	Company Suburban Laboratories Inc. Taleful Inc.
Address 701 South Grand Ave. West	Address 1950 S. Batavia Ave Ste 150 SHET Hossinge
City Springfield	City Geneva Colling wille Late Pol.
State IL	∯ State IL
Zip Code <u>62704</u>	Zip Code 60134 12234
Phone 217-522-8001	Phone 708-544-3260 (6/8) 341-1044
Signature Asia Kriton	Signature Marin L. Danling II
Date 9/11/23	Date 9/20/23

# **APPENDIX F**

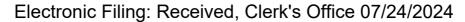
# CORRECTIVE ACTION BUDGET AND CERTIFICATIONS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

# Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST activities for Leaking UST incident 2000-1913 this budget are for necessary activities and are reasonable also certify that the costs included in this budget are not for of 415 ILCS 5/57, no costs are included in this budget that a costs exceed Subpart H: Maximum Payment Amounts, App Appendix E Personnel Titles and Rates of 35 III. Adm. Code payment from the Fund pursuant to 35 III. Adm. Code 732.6 amendment. Such ineligible costs include but are not limite	I furt and accurate to the base action in eare not described in the endix D Sample Hand 732 or 734. I furthe of or 734.630 are not accurately the control of the endix D Sample Hand 732 or 734.630 are not accurately the endix D Sample Hand 734.630 are not accurately the endix D Sample Point Poi	her certify that the costs set forth in pest of my knowledge and belief. I excess of the minimum requirements he corrective action plan, and no adding and Analysis amounts, and excertify that costs inclinible for
Costs associated with ineligible tanks.	•	· · · · ·
Costs associated with site restoration (e.g., pump	islands, canopies).	
Costs associated with utility replacement (e.g., sev	vers, electrical, telep	hone, etc.).
Costs incurred prior to IEMA notification.  Costs associated with planned tank pulls.		
Legal fees or costs.		
Costs incurred prior to July 28, 1989.		·
Costs associated with installation of new USTs or t	the repair of existing	USTs.
11 (m) 21		•
Owner/Operator: Hensey Oil Co.	<u> </u>	
Authorized Representative: Jerry Henson	<b></b>	
Authorized Representative. Jerry Herison	i itie:	Representative
Signature: A. Hung	Date:	11/13/23
J		
Subscribed and sworn to before me the day of	November &	રેઠે વેરૂ
( ) ( )		OFFICIAL SEAL
	Seal:	CAROL L. ROWE
(Notary Public)		NOTARY PUBLIC. STATE OF ILLINOIS
In addition 10 to the control of the control of		MY COMMISSION EXPIRES 03-18-2025
In addition, I certify under penalty of law that all activities that conducted under my supervision or were conducted under the	t are the subject of the	nis plan, budget, or report were
or Licensed Professional Geologist and reviewed by me: tha	t this plan, budget, o	r report and all attachments were
prepared under my supervision; that, to the best of my know	ledge and belief, the	work described in the plan, budget
or report has been completed in accordance with the Environ	nmental Protection A	ct [415    CS 5] 35     Adm. Codo
732 or 734, and generally accepted standards and practices accurate and complete. I am aware there are significant per	of my profession; ar	nd that the information presented is
to the Illinois EPA, including but not limited to fines, imprison	ment, or both as pro	vided in Sections 44 and 57.17 of the
Environmental Protection Act [415 ILCS 5/44 and 57.17].	·	Si.
L.P.E./L.P.G.: Vince E. Smith	_ L.P.E./L.P.G. Sea _	67118
L.P.E./L.P.G. Signature:	Date:	11/8/23
Subscribed and sworn to before me the day of ).	) overder 202	3 \ \ " / /
	OFFICIAL SEAL	
	AROLL ROW	F S
(Notary Public) { NOTAR	Y PUBLIC, STATE OF II	LINOIS
The Illinois EPA is authorized to require this information and	MISSION EXPIRES 03-	18-2025 }
The initions Era is authorized to require this information and	₴₺₲₧₺₺₴₴₼₭₴₽₻	eleaure.of this information is

required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.





# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## General Information for the Budget and Billing Forms

LPC#	0190805029	County:	, McLean
City:	Towanda		Henson Oil Co
Site Ad	ddress: Old Highway 66		
Date th	nis form was prepared: Nov 15, 2023	<del></del>	
List all	IEMA Incident numbers associated with	this package:	
2000-	1913		
List all	other incidents associated with this site	that are not associated	with this package:
This fo	orm is being submitted as a (check one, i	f applicable):	
O!	Billing Package		
	Budget Amendment (Budget amendments r	must include only the costs	over the provious budget
<b>⊘</b> 1	oudget Amendment (budget amendments i	nust include only the costs	over the previous budget.)
O	Budget Proposal		
F	Please provide the name(s) and date(s) of r	eport(s) documenting the	costs requested:
	Name(s): CAP Amendment	,	• •
	Date(s): Nov 15, 2023		
This na	ackage is being submitted for the site ac	tivities indicated below:	
-	II. Adm. Code 734:	divides indicated below.	
<u></u> □ 8	Early Action		
<u></u> □ F	Free Product Removal after Early Action		,
	Site Investigation Stag	e 1:	Stage 3:
<b>V</b>	Corrective Action		
35	III. Adm. Code 732:		·
<b>□</b> E	Early Action		
□F	ree Product Removal after Early Action		
	Site Classification		
	ow Priority Corrective Action		
	ligh Priority Corrective Action		
3 <b>5</b> i	il. Adm. Code 731:		
	Site Investigation		
	Corrective Action		

# General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund for this package.

Pay to the order of:	Henson Oil Comp	any	•			
Send in care of:	CWM Company, I	nc				
Address:	701 South Grand	Avenue West				
City:	Springfield			State:	IL	Zip: 62704
Jerry A Henson  Printed name of	Owner   the owner or opera		•	or both.)	0-26- Date W-9 must	be submitted.
Email:  Number of petroleur parent or joint stock joint stock company	company of the ov	vner or operator; erator:	or operated by and any comp	oany ow	ner or operaned by any	ator; any subsidiary, parent, subsidiary or

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	1		Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Gasoline	8,000	Yes 🕢	No 🔾	2000-1913	Tank Leak
Gasoline	8,000	Yes 🕢	No 🔿	2000-1913	Tank Leak
Gasoline	8,000	Yes 🕢	No 🔿	2000-1913	Tank Leak
		Yes 🔾	No 🔿		

# **Budget Summary**

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
					Proposed
Drilling and Monitoring Well Costs Form	\$	\$	\$	\$	\$
Analytical Costs Form	\$275.35E	\$ 1.78 TE	\$144 N. A.	\$ 1000	\$ 178
Remediation and Disposal Costs Form	\$	\$	\$	\$	\$
UST Removal and Abandonment Costs Form	\$ 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	\$ 2.4 (%)	\$ 100	\$	\$ 1112
Paving, Demolition, and Well Abandonment Costs Form	\$	, \$	\$	\$	\$ 3,549.60
Consulting Personnel Costs Form			\$ 3 P 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	•	\$ 24,196.55
Consultant's Materials Costs Form	\$	\$	\$	\$	\$ 85.00
Handling Charges Form	Handling charge the Illinois EPA: accordance with	s will be determing The amount of all the Handling Ch	ned at the time a owable handling arges Form.	oilling package is charges will be d	submitted to ( ) etermined in ( )
Total	\$	\$ .	\$	\$	\$ 27,831.15

## Paving, Demolition, and Well Abandonment Costs Form

#### A. Concrete and Asphalt Placement/Replacement

Number of Square Feet	Asphalt or Concrete	Thickness (inches)	Cost (\$) per Square Foot	Replacement or Placement for an Engineered Barrier	Total Cost
		.00			<del></del>
					•
;					•
			• •		

Total Concrete and Asphalt	
Placement/Replacement Costs:	

#### **B. Building Destruction or Dismantling and Canopy Removal**

Item to Be Destroyed, Dismantled, or Removed	Unit Cost (\$) Total Cost			
		·		
		· · · · · · · · · · · · · · · · · · ·		
,				
		<del></del>		

Total Building Destruction or Dismantling and Canopy Removal Costs:	
_	

# Paving, Demolition, and Well Abandonment Costs Form

#### C. Well Abandonment

Monitoring Well ID #	Type of Well (HSA / PUSH / Recovery)	Depth of Well (feet)	Cost (\$) per Foot	Total Cost
MW-4	HSA	15.00	14.79	\$221.85
MW-5	HSA	15.00	14.79	\$221.85
MW-6	HSA	15.00	14.79	\$221.85
MW-8	HSA	15.00	14.79	\$221.85
MW-10	HSA	15.00	14.79	\$221.85
MW-12	HSA	15.00	14.79	\$221.85
MW-13	HSA	15.00	14.79	\$221.85
MW-14	HSA	15.00	14.79	- \$221.85
MW-20	HSA	15.00	14.79	\$221.85
MW-19	HSA	15.00	14.79	\$221.85
MW-21	HSA	15.00	14.79	\$221.85
MW-5R	HSA	15.00	14.79	\$221.85
MW-6R	HSA	15.00	14.79	\$221.85
MW-8R	HSA	15.00	14.79	\$221.85
MW-10R	HSA	15.00	14.79	\$221.85
MW-14R	HSA	15.00	14.79	\$221.85
	· · · · · · · · · · · · · · · · · · ·			
	-			

	Total Monitoring Well Abandonment Costs:	\$3,549.60	
i	_	f I	

To	otal Paving, Demolition, and Well Abandonment Costs:	\$3,549.60
		1 ' '

# Consulting Personnel Costs Form

Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task			
The state of the s	With the second second second second	<u> </u>			
		Senior Project Manager	30.00	147.95	\$4,438.50
CCAP	Corrective Actio	n Plan Design and Preparation			
2 8% Dates remain the contract of the contract	We The Resemble and them.			······································	
		Senior Prof. Engineer	2.00	192.33	\$384.66
CCAP	Corrective Action	n Plan Review and Certification			
at their and county of their distribution and other sections	er. I make are there are the	•		T	
		Senior Admin. Assistant	2.00	. 66.58	\$133.16
CCAP	Corrective Action	n Plan Compilation, Assembly and E	Distribution		
The same of the sa	Double to me super to the addition		·	1	
		Senior Draftperson/CAD	7.00	88.76	\$621.32
CCAP	Drafting for Corre	ective Action Plan		•	
The state of the state of the second state of	disk di atania i kanbuman da utah			· · · · · ·	
		Engineer III	40.00	147.95	\$5,918.00
CACR	Report Preparation	on/Development/inputs			
	Michigan and Charles				
		Senior Draftperson/CAD	10.00	88.76	\$887.60
CACR	Drafting/Updating	& Completion of Maps			
PROMINE OF STATE OF STATE STATE OF THE PROMINE THE PRO	TABLE TRANSPORT NAVIGORIAN				
		Senior Prof. Engineer	• 2.00	192.33	\$384.66
CACR	Report Review/C	ertification			
Principle Spirits of the principle of th	tall on the same grows and				
		Senior Admin. Assistant	2.00	66.58	\$133.16
CACR	Report Compilation	on/Assembly/Distribution			
And the state of t	The street reports - Springers to be to the				
None English Reference				·	
······································		***		<del></del>	

Reserved Asset By A

Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost	
Remediation Category		Task				
and the second and the first and the second operations.		•		T		
		Senior Project Manager	8.00	147.95	\$1,183.60	
CCAP-Budget	Corrective Action	n Budget Design, Calculations	and Inputs			
		Senior Prof. Engineer	2.00	192.33	\$384.66	
CCAP-Budget	Corrective Action	n Budget Review and Certifical	tion			
TO THE RESERVE OF THE PARTY OF		Senior Project Manager		-		
ELUC		<u> </u>	12.00	147.95	\$1,775.40	
	Village of Towan	ida Groundwater Ordinance Re	eview/Preparation/De	esign/Village Mee	ting	
		Senior Prof. Engineer	4.00	192.33	\$769.32	
ELUC	Correspondence	with Village Officials/Village C	ouncil			
		Senior Draftperson/CAD	6.00	88.76	\$532.56	
ELUC	Drafting maps for	r groundwater ordinance				
		Senior Project Manager	4.00	147.95	\$591.80	
ELUC	Groundwater Ord	linance Notifications				
		Senior Admin. Assistant	1.00	66.58	\$66.58	
ELUC	Groundwater Ord	linance Notifications				
		Senior Admin. Assistant				
CACR	Stratil colle	fillage Correspondence/Fee	2.00	66.58	\$133.16	
	TW-T\ Necoluling/V	mage Correspondence/ree		<del></del>		
CALLETTE.						

Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task	(		١,
Compared the Committee Removed in	Atomic Centrelies	<u> </u>	<del></del>	<u> </u>	
A STATE OF THE STA		Engineer III	4.00	147.95	\$591.80
TACO 2 or 3	TACO Tier 2 CU	O Development		·	
		Senior Project Manager	T		
TACO 2 or 3			5.00	147.95	\$739.75
1400 2 01 3	Contaminant Tra	insport Modeling / Assessment of	Contamination Lo	evels/Plume	
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Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost	
Remediation Category		Task				
	•					
		Senior Prof. Engineer	4.00	192.33	\$769.32	
CA-Pay	Corrective Action	n Reimbursements Certification (2	2 Claims)			
The state of the s	*3 135- es es escen	<del> </del>		· — —		
		Senior Acct. Technician	32.00	81.36	\$2,603.52	
CA-Pay	Corrective Action	n Reimbursements Preparation, C	Calculations and In	puts (2 Claims)		
		Senior Admin. Assistant	T			
		- Adding Adding Assistant	4.00	66.58	\$266.32	
CA-Pay	Corrective Action	Reimbursements Compilation, A	Assembly and Dist	ribution (2 Claims	s)	
THE CALLEY WAS A TOTAL	ng an pagem	One in the same of	<u> </u>			
as the finished an india, the continues and the		Senior Project Manager	4.00	147.95	\$591.80	
CCA-Field	Office Preparation, Scheduling, Arrangements for Well Abandonment Actitivies					
Charles and the second of the second of	tar etroper	<u> </u>	•	· .		
		Senior Project Manager	2.00	147.95	\$295.90	
CCA-Field	CA Documentation	on/Compliance for Well Abandonr				
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Refer to the applicable Maximum P	avment Amoun	ts document.				

**Total of Consulting Personnel Costs** 

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\$24,196.55

# **Consultant's Materials Costs Form**

Materials, Equipment	, or Field Purchase	Time or Amount Used	Rate (\$)	Unit	Total Cost
Remediation Category		3.			
				. [	<u>"</u>
Postage	11111111111111111111111111111111111111	2.00	12.00	/each	\$24.00
CCAP	Distribution of Corrective A	Action Forms / Plan	·		
CACR	Distribution of GAGD's	2.00	12.00	/each	\$24.00
CACR	Distribution of CACR/forms	<del></del>			
				•	
ostage ELUC		2.00	8.00	/each	\$16.00
ELUC .	Groundwater Ordinance dis	Stribution to Village	Office/IEPA		
				· I	,
det om i have minte e stra					
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a transmitta		,			
ostage CA-Pay	Distribution of Correction A	2.00	10.50	/each	\$21.00
СА-Рау	Distribution of Corrective A	Cuon Kelmburseme	ent Packages / D	rafts / Forms	
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Total of Consultant Materials Costs

# **APPENDIX G**

# TACO VARIABLES AND EQUATIONS & HYDRAULIC CONDUCTIVITY CALCULATIONS

CORRECTIVE ACTION PLAN & BUDGET AMENDMENT HENSON OIL CO. TOWANDA, ILLINOIS

#### R-26 Input/Summary Sheet

IEMA incident #	6 or 8 digit)	2000-1913		····		
IEPA LPC # (10 c	ligit)	1131055007				
Site Name:		Henson Oil Company		· · · · · · · · · · · · · · · · · · ·		
Site Address:		Old Hwy 66				
City:		Towanda				
County:		McLean		<del></del>		
Zip Code:		61776	**		· · · · · · · · · · · · · · · · · · ·	
SSL Equations U	sed:	S5,6,7,8,9,10,17,18,19,20,2°	22 24			
RBCA Equations		R-1, R-2, R3	· 144-147			
Contact Information 1	or Individual who Performed Calculat					
Land Use:		Residential & Construct	ion Worker			
Objective from S	17 used in R26:	No				
Groundwater:		Class 1		<del></del>		
Standard or Mass	s Limit Equations:	Standard Equations		If Mass Limit, then Specifiv Acres:		
	ume for Mass Limit Eq.:	0.00	<del></del>		< use this # above	
Date Data is Ente		October 13, 2023		· · · · · · · · · · · · · · · · · · ·	- dae una # above	
Entry	Description		<del></del>	<del></del>		
	Holcomb Bulk Density (pcf)	or	Shelby Tub	be Location:	<del></del> -	
1.65	Dry Soil Bulk Density (g/cm	or kg/L): 1.5, or Gravel =2.0.	Sand = 1.8. Silt	= 1.6, Clay = 1.7, or site specific		
				, o.ey, or and appendix		
2.65	ps - Soil Particle Density		Reference	]		
0.377	Total Soil Porosity		0.377	0.377		
0.328	Water Filled Porosity		0.328	0.328		
0.049	Air Filled Porosity		0.049	0.049		
0.346	8 <sub>T</sub> - Total Soil Porosity (RBC)	A)	0.43 or, Grave! -	0.25; Sand = 0.32; Silt = 0.40; Clay = 0.36		
0.252	w - Average Soil Moisture Co	ntent	0.1, or: Subsurface Soil (top 1m) = 0.1; Subsurface Soil (below 1 m) = 0.2; or Site Specific			
Silt Clay	USDA Soil Classification (Pic		U. P. Or. Gubsuriaci	e don (top fin) = 0.1, Subsurface Soli (below f m) =	Entry	
				Organic Matter (%):	Lindy	
0.03600	Fractional Organic Carbon (	fac) in a/a		Organic Matter (mg/kg):		
		, 5.5		Total Organic Carbon (g/g):	0.036	
3.57E-04	Average Hydraulic Conductivity (	cm/sec) Well Name		Total Organic Carbon (g/g).]	0.036	
3.57E-04	Falling Hydraulic Conductivity (cr					
0.01.001	Rising Hydraulic Conductivity (cn			Unidentalia Canadia de Calandado .	_	
0.05613	Hydraulic Gradient (0.02 for site		Meters	Hydraulic Gradient Calculation		
0.00010	Trydradiic Gradient (0.02 to site	s with no groundwater)	meters	MW-14	93.29	
10	4 4 75 77 11 11 10			MW-5	94.12	
	d <sub>a</sub> - Aquifer Thickness (ft)		3.048 m	MW-10	94.93	
10	d, - Depth of Source (ft) (Vertical Thic	kness of Contamination)	3.048 m	Distance:	161	
	X - Distance along the centerline of the setback zone or surface water from the groundwater flow (ft) (RBCA)	ne groundwater plume emanating to ne source in the direction of	0 cm		<del></del>	
127	L - Source Length Parallel to	Groundwater Flow (ft)	38,7096 m			
90	Sw: Source Width -horizontal	plane (ft) (RBCA)	2743.2 cm			
C <sub>to</sub> - Concentra	tion of Contaminant in groundw	ater at distance Y from the se-	urce (mc/l \	Curfoon Water		
- J <sub>[X]</sub>	Benzene		urce (mg/L)	Surface Water		
<del></del>		MTBE				
	Toluene Ethylbenzene					
	Total Xylenes					
<del></del>						
	Chemicals of Concern	1				
Benzane B	Naphthalene					
Toluene		Chrysene				
Ethylbenzene		Benzo(k)fluoranthene				
Total Xylenes	التال السال السالا	Indeno(1,2,3-cd)pyrene				
MTBE						

Mass Limit Equations

SSL Equations Needed

Inhalation Equations

□ Groundwater Ingestion Equations

Version: 3/26/2018

₽ Csat Equations

Fugitive Dust Equations

#### Text discussion for "i", L, da, ds, Swn Sd

Hydraulic Gradient

The Hydraulic Gradient (i) was determined from an onsite survey of each of the groundwater monitoring wells. The riser elevations were determined and the depth to groundwater was noted in each well. This data was used to generate a potentiometric flow map with contour lines which show potentiometric head. A corresponding flow line, perpendicular to the contour lines, was determined between two known points of groundwater elevation. The hydraulic gradient was determined by the difference in elevation divided by the length of flow between the points.

Source Length

The Source Length Parallel to Groundwater Flow (L) was determined from the site map and analytical results. A value of 45.1104 m was used to encompass the length of contamination parallel to groundwater flow. This value is the distance between soil borings BH-1 and BH-2.

Aquifer Thickness

The Aquifer Thickness (d<sub>a</sub>) is a site specific value determined by the length of the monitoring well screen. The Aquifer Thickness value used in the modeling equations was 3.048 meters.

Depth of Source

The **Depth of Source** (d<sub>s</sub>) was determined from the analytical results and soil boring logs. A value of 3.048 m was used to encompass the vertical thickness of contamination based upon a clean soil sample at BH-1A, "hot" samples at BH-2B and BH-2C, and a clean soil sample at BH-2D. Thus the vertical thickness of soil contamination has been determined to be 3.048 m.

Source Width

The source width perpendicular to groundwater flow direction in the Horizontal Plane  $(S_w)$  was determined from the site map and analytical results. A value of 3566.16 cm was used to encompass the width of contamination in the horizontal plane. This value is the distance between clean wells MW-4 and and MW-6.

Source Depth

The source width perpendicular to groundwater flow direction in the Vertical Plane  $(S_d)$  was determined from the soil boring logs and analytical results. A value of 304.8 cm was used to encompass the width of contamination in the vertical plane based on the depths of contamination present and the PID readings from the bore logs.

Distance (X)

			BEN	ZENE	· · · · · · · · · · · · · · · · · · ·	<del></del>		
Soil Exceedances					Groundwater Exceedances			
	Soil	Х	Gw <sub>obj</sub> (mg/L)	C(x)		Groundwater	X	C(x)
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location	Concentration (mg/L)	(ft)	(mg/L)
EA-F1	0.13	11	0.003	0.0032	MW-1	3.470	380	0.0434
			<u> </u>		MW-3	3.350	378	0.0427
					MW-7	2.430	354	0.0387
-	•							
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			Tolu	iene			7	
Soil Exceedances				Groundwater Exceedances				
1	Soil	×	Gw <sub>obj</sub> (mg/L)	C(x)		Groundwater	х	C(x)
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location	Concentration (mg/L)	(ft)	(mg/L)
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			Ethylb	enzene		<u> </u>		
	Soil Excee	dances	Laryib	enzene	Τ	Groundwater Exceed	fances	
	Soil X Gw <sub>obj</sub> (mg/L) C(x)					Groundwater	х	C(x)
Location	Concentration (mg/kg)	(ft)	R26 Csource	(mg/L)	Location		(ft)	(mg/L)
					MW-1	1.230	13	0.9752
					MW-7	1.890	23	1.2620
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#### Summary of Tier 2 Calculations Henson Oil Company 2000-1913 10/13/23

Table 3

Tier	4	$\sim$	.:.	-41		
Her	7		310	CT	VAC	

Residential	·	Benzene		Toluene		Ethylbenzen	е	Total Xylene	s	Naphthalen	•	MTBE	
residential	Ingestion	12	mg/kg	16,000	mg/kg	7,800	mg/kg	16,000	mg/kg	1,600	mg/kg	780	Imadia.
	Inhalation	0.8	mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	170			mg/kg
Migratio	on Class 1	0.03	mg/kg	12	mg/kg	13	mg/kg	150		170	mg/kg	8,800	mg/kg
Migratio	on Class 2	0.17	mg/kg	29	mg/kg	19	mg/kg	150	mg/kg	12	mg/kg	0.32	mg/kg
ndustrial/Commercial	Ingestion	100	mg/kg	410.000					mg/kg	18	mg/kg	0.32	mg/kg
	Inhalation	1.60			mg/kg	200,000	mg/kg	410,000	mg/kg	41,000	mg/kg	20,000	mg/kg
Construction Worker			mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	270	mg/kg	8,800	mg/kg
Source And Met	Ingestion	2,300	mg/kg	410,000	mg/kg	20,000	mg/kg	41,000	mg/kg	4,100	mg/kg	2,000	mg/kg
	Inhalation	2.20	mg/kg	42	mg/kg	58	mg/kg	5.6	mg/kg	1,80	mg/kg	140	
Soil Saturation		580	mg/kg	290	mg/kg	150	mg/kg	110	mg/kg	564.18	mg/kg	8,400	mg/kg mg/kg

Tier 2 SSL Objectives

Residential Ingestion	Benzene	Equation		Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthalene	Equation	MTBE	
		S-2	6,257:141	] S-1	7,821	S-1	15,643	S-1	1 564	S-1	782.1	S-1
Inhalation		S-6	€ 628,180.04 <b>1</b>	S-4	164.61	S-6	e120,986.40	S-4	1,521,65			
Migration Mass-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28		S-4	ø.220,518.93 <del>√</del>	S-4
Migration Class 1	0.201	S-17	117.90	S-17					7.02	S-28	3.51	S-28
					164.20	S-17	<b>4 2</b> ,906.97	S-17	50.96	S-17	0.86	S-17
		S-2	1,635,200	S-1	204,400	S-1	408,800	S-1	40.880	S-1	20,440	~ S-1
inhalation		S-6	<b>√1,000,115:72</b> ■	S-4	314:491	S-6	#/33;412.13 mm	S-4	2,422.60		\$ 351,084:77s	
Migration Mass-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28	7.02	S-28		S-4
/Migration Class 1	0.201	S-17	117.90	S-17	164.20	S-17	2,906,97	S-17			3.51 4	S-28
Construction Worker Ingestion	2,258,21	S-3	163,236						50.96	S-17	0.86	S-17
					العظ 10,202.26 الم	S-1	81,618	S-1	122,427	S-1	61.214	S-1
Inhalation			<b>€</b> £6,470,00	S-5	442.28	S-7	864.61	S-5	15.67	S-5	1.892.71	S-5
Soil Saturation	3,610.11	S-29	3,124.26	S-29	1,993.83	S-29	1,598.83	S-29	564.18	S-29	31,288,68	S-29

all values are in mg/kg

.

Site Specific Value cannot exceed Soil Saturation Limit, otherwise Tier 2 Inhalation or Tier 2 Migration objectives are the Soil Saturation objective Calculated value is less than Tier 1 Objective

Groundwater Contaminate Concentration Exceedances at Surface Water or Set Back Zone (mg/l )

					ices at Sulface 449							
	Benzene	Equation	Toluene	Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthalene	Equation	MTBE	
Result	#DIV/0!	R-26	#DIV/0!	R-26	#DIV/0!	R-26	#DIV/0!	R-26		Equalion		T 5.00
Surface Water Objective	0.86					11-20		N-20	ļ		#DIV/0!	R-26
Surface Water Objective	0.86		0.6		0.014		0.36	1			-	

Version: 3262018

# Henson Oil Company Tier 1 -- SOIL CLEAN-UP OBJECTIVES

(mg/kg) Res. Res. Res. Res. I/C I/C I/C I/C I/C I/C Csat Parameter Ingestion GW C II Inhai. GW C I I/C Ina I/C Inh. CW Ing. CW Inh. GW C I GW C II Benzene 0.8 0.03 0.17 1.6 2.2 0.03 0.17 Ethylbenzene MTBE 0.32 0.32 0.32 0.32 Toluene Total Xylenes 5.6 Acenaphthene Acenaphthylene<sup>^</sup> Anthracene Benzo(a)anthracene 0.9 Benzo(a)pyrene 0.09 8.0 Benzo(b)fluoranthene 0.9 Benzo(g,h,i)perylene^ Benzo(k)fluoranthene . 250 Chrysene Dibenz(a,h)anthracene 0.09 7.6 8.0 2. 7.6 Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene 0.9 Naphthalene 1.8 Phenanthrene<sup>^</sup> Pyrene 

<sup>^</sup>Temporary Objectives from additional tables -- 10/1/04 Updated 12/20/04

Parameter         CUO         GW         GW         (U)           Benzene         0.005         0.005         0.025         <0.002           Ethylbenzene         0.7         0.77         1         <0.002           MTBE         0.07         0.07         0.07         <0.002           Toluene         1.0         1.0         0.007         <0.002           Total Xylenes         10.0         10.0         0.001         <0.002           Acenaphthene         0.42         2.1         <0.016           Acenaphthylene^         0.21         0.21         1.05         <0.006           Anthracene         2.1         0.001         0.0006         <0.0006           Benzo(a)anthracene         0.00013         0.00013         0.00065         <0.0006           Benzo(a)pyrene         0.0002         0.0002         0.0002         <0.000           Benzo(b)fluoranthene         0.00018         0.00018         0.0009         <0.0007           Benzo(k)fluoranthene         0.0017         0.00017         0.00085         <0.0007           Chrysene         0.0015         0.00015         0.00015         <0.0001           Chrysene         0.00015         0.00015 <th>GROUND</th> <th>WATER CLEAN-U</th> <th>JP OBJECTIVE:</th> <th>S</th> <th></th>	GROUND	WATER CLEAN-U	JP OBJECTIVE:	S	
Parameter         CUO         GW         GW         (U)           Benzene         0.005         0.005         0.025         <0.002           Ethylbenzene         0.7         0.7         1         <0.002           MTBE         0.07         0.07         0.07         <0.007           Toluene         1.0         1.0         0.0         <0.007           Total Xylenes         10.0         10.0         0.00         <0.006           Acenaphthene         0.42         0.42         2.1         <0.016           Acenaphthylene^         0.21         0.21         1.05         <0.016           Anthracene         2.1         0.0013         0.00065         <0.0006           Benzo(a)anthracene         0.00013         0.00013         0.00065         <0.0007           Benzo(b)fluoranthene         0.0002         0.0002         <0.0006         <0.0006           Benzo(b)fluoranthene         0.0018         0.00018         0.0009         <0.0007           Benzo(k)fluoranthene         0.0015         0.00017         0.00085         <0.0007           Chrysene         0.0015         0.00015         0.00075         <0.000           Chysene         0.0015	*****	(mg/L)			
Benzene         0.005         0.005         0.005 <th></th> <th></th> <th></th> <th></th> <th>ADLs</th>					ADLs
Ethylbenzene         0.7         0.7         1         <0.002           MTBE         0.07         0.07         0.007         <0.005					
MTBE         0.07         0.07         0.07         <0.005           Toluene         1.0         1.0         1.0         10.0         10.0         10.0         <0.005				0.025	<0.002
Toluene         1.0         1.0         2.5         <0.002           Total Xylenes         10.0         10.0         10.0         10.0         <0.005		0.7	学是20.7点。总统	1	<0.002
Total Xylenes         10.0         10.0         10.0         10.0         2.1         <0.005           Acenaphthene         0.42         0.21         1.05         <0.010		0.07			<0.005
Acenaphthene         0.42         0.42 \ 0.21 \ 0.21 \ 0.018         2.1         <0.018           Acenaphthylene^         0.21         0.21 \ 0.21 \ 0.21 \ 0.006         1.05         <0.006					<0.002
Acenaphthylene^         0.21         0.21         1.05         <0.010           Anthracene         2.1         2.1         10.5         <0.006			字层: 10.0 C在A	3 1∰10.0 <del>1</del> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<0.005
Anthracene         2.1         2.1         10.5         <0.006           Benzo(a)anthracene         0.00013         0.00013         0.00065         <0.0001		0.42	0.42 T	2.1	<0.018
Benzo(a)anthracene         0.00013         0.00013         0.00065         <0.0001           Benzo(a)pyrene         0.0002         0.0002         0.0002         <0.000	Acenaphthylene^	0.21	原理 0.21150	1.05	<0.010
Benzo(a)pyrene         0.0002         0.0002         0.0002         <0.0001           Benzo(b)fluoranthene         0.00018         0.00018         0.0009         <0.0001	Anthracene	2.1	734 2.1% (g)	10.5	<0.0066
Benzo(b)fluoranthene         0.00018         0.00018         0.0009         <0.0001           Benzo(g,h,i)perylene^         0.21         1.05         <0.0007	Benzo(a)anthracene	0.00013	<i>₹</i> 0.00013	0.00065	<0.00013
Benzo(g,h,i)perylene^         0.21         0.21 1.05         <0.0007	Benzo(a)pyrene	0.0002	0.0002	0.002	<0.0002
Benzo(k)fluoranthene         0.00017         0.00017         0.00085         <0.0001           Chrysene         0.0015         0.0015         0.0075         <0.001	Benzo(b)fluoranthene	0.00018	<b>ぜ0.00018</b>	0.0009	<0.00018
Chrysene         0.0015         0.0015         0.0075         <0.001           Dibenz(a,h)anthracene         0.0003         0.0003         0.0015         <0.000	Benzo(g,h,i)perylene^	0.21	<b>4.0.21</b> € 5 €	1.05	<0.00076
Dibenz(a,h)anthracene         0.0003         0.0003         0.0015         <0.000           Fluoranthene         0.28         1.4         <0.002		0.00017	的是10.00017A型	0.00085	<0.00017
Fluoranthene       0.28       0.28       1.4       <0.002         Fluorene       0.28       0.28       1.4       <0.002         Indeno(1,2,3-cd)pyrene       0.00043       0.00043       0.00215       <0.0004         Naphthalene       0.14       0.14       0.22       <0.010         Phenanthrene^       0.21       0.21       1.05       <0.006		0.0015	当学0.0015字式	0.0075.	< 0.0015
Fluorene         0.28         1.4         <0.002           Indeno(1,2,3-cd)pyrene         0.00043         0.00043         0.00215         <0.0004	Dibenz(a,h)anthracene	0.0003	: ፡፡ 0.0003 ኦርያ	0.0015	<0.0003
Indeno(1,2,3-cd)pyrene         0.00043         0.00043         0.00215         <0.0004           Naphthalene         0.14         0.14         0.22         <0.010	Fluoranthene	0.28	10.28	1.4	<0.0021
Naphthalene         0.14         0.14         0.22         <0.010           Phenanthrene*         0.21         0.21         1.05         <0.006	Fluorene	0.28	≦ (0.28)	1.4	<0.0021
Phenanthrene^ 0.21 0.21 1.05 <0.006	ndeno(1,2,3-cd)pyrene	0.00043	ು 0.00043 🕮	0.00215	<0.00043
11 CILL 2 R. W. 1100		0.14	(0.14) · · · ·	0.22	<0.010
Pyrene <b>0.21 0.21</b> 1.05 <0.002	Phenanthrene^	0.21	0.21	1.05	<0.0064
	Pyrene	0.21	0.21	1.05	<0.0027
Temporary Objectives from additional tables 10/1/04					

#### Summary of Tier 2 Calculations Henson Oil Company 2000-1913 10/13/23

Table 3

Tier 1	Obj	ectives
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Decide atlat		Benzene		Toluene		Ethylbenzen	e	Total Xylene	s	Naphthalen	Ð	MTBE	
Residential	Ingestion	12	mg/kg	16,000	mg/kg	7,800	mg/kg	16,000	mg/kg	1,600	mg/kg	780	malka
	Inhalation	0.8	mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	170		8,800	mg/kg
Migr	ation Class 1	0.03	mg/kg	12	mg/kg	13	mg/kg	150	mg/kg	170	mg/kg		mg/kg
Migr	ation Class 2	0.17	mg/kg	29	mg/kg	19	mg/kg	150	mg/kg	18	mg/kg	0.32	mg/kg
ndustrial/Commercial	Ingestion	100	mg/kg	410,000	mg/kg	200,000	mg/kg	410,000	mg/kg	41,000	mg/kg	0.32 20.000	mg/kg
	Inhalation	1.60	mg/kg	650	mg/kg	400	mg/kg	320	mg/kg	270	mg/kg mg/kg	8,800	mg/kg
Construction Worker	Ingestion	2,300	mg/kg	410,000	mg/kg	20,000	mg/kg	41,000	mg/kg	4,100		2,000	mg/kg
	Inhalation	2.20	mg/kg	42	mg/kg	58	mg/kg	5.6	mg/kg	1.80	mg/kg mg/kg	140	mg/kg
Migratic Industrial/Commercial Construction Worker		580	mg/kg	290	mg/kg	150	mg/kg	110	mg/kg	564.18	mg/kg	8,400	mg/kg mg/kg

Tier 2 SSL Objectives

					I E JOL OL	Jecuves							
		Benzene	Equation		Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthaleле	Equation	MTBE	
Residential	Ingestion	11.64	S-2	6,257.14	S-1	7,821	S-1	15.643	S-1	1,564	S-1	782.1	S-1
	Inhalation	22.93	S-6	628,180,04 1	S-4	164.61	S-6	20.986.40	S-4	1,521,65	S-4		
Migration Mass	s-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28	7.02		220,518.93	S-4
Mig	gration Class 1	0.201	S-17	117.90	S-17	164.20	S-17	2.906.97	S-17	50.96	S-28	3.51	S-28
Industrial-Commercia	al Ingestion	104.06	S-2	1.635.200	S-1	204,400	S-1	408.800	S-1	40.880	S-17	0.86	S-17
	Inhalation	43.80	S-6	1,000,115,72	S-4	314,49	S-6	33,412,13	S-4	2,422.60	S-1	20,440	S-1
Migration Mass	s-Limit Class 1	0.25	S-28	50.11	S-28	35.08	S-28	501.07	S-28	7.02	S-4	351,084.77	S-4
Mig	gration Class 1	0.201	S-17	117.90	S-17	164.20	S-17	2,906.97	S-17	50.96	S-28	3.51	S-28
Construction Worker	Ingestion	2.258.21	S-3	163,236	S-1	10,202,26	S-1	81,618	S-17		S-17	0.86	S-17
	Inhalation		S-7	6,470.00	S-5	442.28	S-7	864.61	S-5	122,427 15.67	S-1	61,214	S-1
Soil Saturation		3,610,11	S-29	3.124.26	S-29	1,993.83	S-29	1,598.83			S-5	1,892.71	S-5
			<u> </u>	0,124.20	0-23	1,993.03	3-25		S-29	564.18	S-29	31.288.68	S-29

all values are in mg/kg

Site Specific Value cannot exceed Soil Saturation Limit, otherwise Tier 2 Inhalation or Tier 2 Migration objectives are the Soil Saturation objective Calculated value is less than Tier 1 Objective

Groundwater Contaminate Concentration Exceedances at Surface Water or Set Back Zone (mg/l)

	Benzene	Equation	Toluene	Equation	Ethylbenzene	Equation	Total Xylenes	Equation	Naphthalene	Equation	MTBE	
Result		R-26	#DIV/01	R-26	#DIV/0!	R-26	#DIV/0!	R-26			#DIV/0I	R-26
Surface Water Objective	0.86		0.6		0,014		0.36					

Lers in 3262018

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lace in	Lucien (Egypten S 17)		1 fool = 30 48 cm	R-15 a,=010-X	R-17 g. eg. 43		B.18 p. s.c. (70)	"Term 1" = [X/(2 - a, 9	
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2000-1913	
lenson Oil Company	

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Sample		W .	Z AM															L				Service		*			L								L										L	

### Illinois Enviromental Protection Agency Leaking Underground Storage Tank Program SSL Input Parameters for Use with Tier 2 Calculations

Site Identification				
IEMA Incident # (6- or 8-digit):	2000	-1913	IEPA LPC # (10-digit):	1131055007
Site Name: Henson Oil Comp	any			
Site Address (not a P.O. Box):	Old Hwy 66			
City: Towanda	County:	McLean	Zip Code	e: <u>61776</u>
Leaking UST Technical File				
Tier 2 Calculation Information	1			
Equation(s) Used (ex: S12,S17,	S28): <u>S5,6,7</u> ,	<u>,8,9,10,17,18,19,</u>	20,21,22,24	
Contact Information for Individu	al Who Perform	ed Calculations:		
0				
Land Use: Residential		Soil Type:	Silt Clay	
Groundwater: X Class I		Class II		
Mass Limit: Yes	No I	f Yes, then Spec	ify Acreage:	
- Mass Limit Acreage other than	defaults must a	ilways be rounde	d un	

- Mass Limit Acreage other than defaults must always	s be rounded up.
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<sup>-</sup> Failure to use site-specific parameters where allowed could affect payment from the UST Fund

B.

AT (ingestion)	=	Residential = 6	уг
		Con. Worker = 0.115	yr
AT (inhalation)	=	Residential = 30	уг
		Con. Worker = 0.115	yr
AT <sub>c</sub>	=	70	yr
BW	=	Res. (NonCarcinogen) = 15	kg
		Res. (Carcinogen) = 70	kg
		Con. Worker = 70	kg
C <sub>sat</sub> =	-	Benzene = 3610.112	mg/kg
		Toluene = 3124.262	mg/kg
		Ethylbenzene = 1993.829	mg/kg
1		Total Xylenes = 1598.831	mg/kg
1		MTBE = 31288.682	mg/kg
		Naphthalene = 564.18	mg/kg
			mg/kg
!			mg/kg
			mg/kg
			mg/kg

-				
ďa		=	3.048	m
ds		=	3.048	m
DA	=	Benzene	= 2.40104065763145E-06	cm²/s
		Folue	ene = 8.93613811684789E-07	cm²/s
		Ethylbenze	ene = 4,53467102908054E-07	cm²/s
		l Xyle	enes = 3,2025960669178E-07	cm²/s
		МТ	BE = 2.61053129659003E-06	cm²/s
		Naphthate	ene = 5.48265279537481E-08	cm²/s
				cm²/s
				cm²/s
				cm²/s
				cm²/s

Maps depicting source width, plume dimensions, distance, etc. must also be submitted.
 Inputs must be submitted in the designated unit.

Cw   =   Benzene = 0.1   mg/L     Toluene = 20   mg/L     Toluene = 164.197   mg/L     MTBE = 0.858   mg/L     MTBE = 0.858   mg/L     m	Incident # 2000-19	13		
Ethylbenzene = 164.197   mg/L   mg/	C <sub>w</sub>	=	Benzene = 0.	1 mg/L
Ethylbenzene = 164.197   mg/L   mg/			Toluene = 2	mg/L
MTBE = 0.858   mg/L			Ethylbenzene = 164.19	7 mg/L
MTBE = 0.858   mg/L			•	•
Naphthalene = 50.958   mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L			· ·	-
mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L				_
Mag/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L m	ļ			•
Mag/L   Mag/L   Mag/L   Mag/L   Mag/L	į.			-
Description of carcinogens   Con. Worker = 1   Yr				•
Description of carcinogens				-
ED (inhalation of carcinogens)	4	_	5.476	
carcinogens)         Con. Worker = 1         yr           ED (ingestion of noncarcinogens)         Residential = 6         yr           ED (inhalation of noncarcinogens)         Residential = 30         yr           ED (ingestion of groundwater)         Residential = 30         yr           ED (ingestion of groundwater)         Residential = 350         d/yr           EF         Residential = 350         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 1         yr           EF         Residential = 350         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           Con. Worker = 30         d/yr           F(x)         = 0.036         g/g           GW <sub>obj</sub> = Benzene = 0.005         mg/L           Total Xylenes = 10         mg/L           mg/L         mg/L           mg/L         mg/L           mg/L         mitte				
ED (ingestion of noncarcinogens)		_		•
Noncarcinogens   Con. Worker = 1		_		
ED (inhalation of noncarcinogens)		_		-
Description of the property		_	· · · · · · · · · · · · · · · · · · ·	
ED (ingestion of groundwater)	,	=		•
Groundwater   Con. Worker = 1   yr				
EDM-L   = 70    yr		=		yr
EF = Residential = 350				
Con. Worker = 30   d/yr				
F(x)	EF	=		-
foc				
GW <sub>obj</sub> = Benzene = 0.005 mg/L				
Toluene = 1 mg/L Ethylbenzene = 0.7 mg/L Total Xylenes = 10 mg/L MTBE = 0.07 mg/L Naphthalene = 0.14 mg/L mg/L mg/L mg/L mg/L mg/L  H' = Benzene = 0.23 unitless Toluene = 0.271 unitless Ethylbenzene = 0.324 unitless Total Xylenes = 0.271 unitless MTBE = 0.0241 unitless Naphthalene = 0.0198 unitless			0.036	g/g
Ethylbenzene = 0.7 mg/L Total Xylenes = 10 mg/L MTBE = 0.07 mg/L MTBE = 0.07 mg/L MTBE = 0.14 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	GW <sub>obj</sub>	=	Benzene = 0.005	mg/L
Total Xylenes = 10 mg/L  MTBE = 0.07 mg/L  MTBE = 0.07 mg/L  Maphthalene = 0.14 mg/L  mitless  unitless	1		Toluene = 1	
MTBE = 0.07 mg/L Naphthalene = 0.14 mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L			•	-
Naphthalene = 0.14   mg/L			•	•
mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L				
March   Marc			Naphthalene = 0.14	·
Mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L m				I
H'				
H' = Benzene = 0.23 unitless				· ·
Toluene = 0.271 unitless  Ethylbenzene = 0.324 unitless  Total Xylenes = 0.271 unitless  MTBE = 0.0241 unitless  MTBE = 0.0241 unitless  unitless	<del>                                     </del>	_	Benzene - 0 22	
Ethylbenzene = 0.324 unitless Total Xylenes = 0.271 unitless MTBE = 0.0241 unitless MTBE = 0.0241 unitless Naphthalene = 0.0198 unitless	<b>!</b> ''	_		
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Naphthalene = 0.0198			•	
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	i	=	0.05613	
$1_{M-L}$ = 0.18 m/yr $IF_{soil-adj}$ = 114 (mg-yr)/(kg-d) $IR_{soil}$ = Residential = 200 mg/d	ĺ	Ξ	0.3	
$IF_{soil-adj}$ = 114 (mg-yr)/(kg-d) $IR_{soil}$ = Residential = 200 mg/d	1 <sub>M-L</sub>	=	0.18	
IR <sub>soil</sub> = Residential = 200 mg/d		=	114	(mg-yr)/(kg-d)
		=	Residential = 200	
	3011			- 1

D <sub>i</sub>	=	Benzene = 0.088	cm²/s
		Toluene = 0.087	cm²/s
ľ		Ethylbenzene = 0.075	cm²/s
		Total Xylenes = 0.0735	cm²/s
		MTBE = 0.102	cm²/s
		Naphthalene = 0.0000075	cm²/s
			cm²/s
			cm²/s
			cm²/s
			cm²/s
D <sub>w</sub>	=	Benzene = 0.0000102	cm²/s
		Toluene = 0.0000086	cm²/s
		Ethylbenzene = 0.0000078	2
		Total Xylenes = 0.00000923	cm²/s
		MTBE = 0.000011	cm²/s
		Naphthalene = 0.0000075	cm²/s
			cm²/s
			cm²/s
			cm²/s
			cm²/s
DF	=	3.980238991	unitless
ED (ingestion of	=		yr
carcinogens		Con. Worker = 1	yr
K <sub>oc</sub>	=	Benzene = 50	cm³/g or L/kg
		Toluene = 158	cm³/g or L/kg
		Ethylbenzene = 320	
		Total Xylenes = 398	cm³/g or L/kg
		MTBE = 11.5	cm³/g or L/kg
		Naphthalene = 500	cm³/g or L/kg
			cm <sup>3</sup> /g or L/kg
			cm³/g or L/kg cm³/g or L/kg
			cm <sup>3</sup> /g or L/kg
Ks	_	8	m/yr
1		38.7096	m
PEF	_	00.1000	m³/kg
PEF'	_		m <sup>3</sup> /kg
Q/C (VF equations)	=	Residential = 68.81	(g/m²-s)/(kg/m³)
		Con. Worker = 85.81	(g/m <sup>2</sup> -s)/(kg/m <sup>3</sup> )
Q/C (PEF equations)	=		(g/m²-s)/(kg/m³)
RfC (mg/m³)		Chronic Sub	chronic
Benzene	=		0.08
Toluene	=	5	5
Ethylbenzene	=	1	9
Total Xylenes	=	0.1	0.4
MTBE	=		2.5
Naphthalene	=	0.003	.003
	=		NA
	=		NA
	=		NA
	=		NA

#### Incident # 2000-1913

Incident # 20	JU-191	3		
IR <sub>w</sub>		=	Residential = 2	L∕d
K		=	112.58352	m/yr
K₀(non-ioniz	ing	=	Benzene = 1.8	cm²/g or L/kg
organcis)			Toluene = 5.688	cm²/g or L/kg
			Ethylbenzene = 11.52	cm²/g ar L/kg
		٦	Total Xylenes = 14.328	cm²/g or L/kg
l			MTBE = 0.414	cm²/g or L/kg
ł			Naphthalene = 18	cm²/g or L/kg
				cm²/g ar L/kg
				cm²/g or L/kg
				cm²/g or L/kg
V (lanking are		_	<del></del>	cm²/g or L/kg
K <sub>d</sub> (ionizing orga		<u>-</u>		cm²/g or L/kg cm²/g or L/kg
K <sub>d</sub> (inorgan	ics)			
VF'	=		Benzene = 5642.093	m³/kg
		Tolu	ene = 9248.367	m³/kg
		Ethylb	enzene = 12982.763	m³/kg
	7		Xylenes = 15448.593	m³/kg
		MT	BE = 5410.975	m³/kg
	Napht	hale	ene = 37337.45	m³/kg
				m³/kg
				m³/kg
				m³/kg
				m³/kg
VM <sub>M-L</sub>	=		#VALUE!	m³/kg
			#VALUE!	m³/kg
			#VALUE!	m³/kg
			#VALUE!	m³/kg
			#VALUE!	m³/kg
			#VALUE!	m³/kg
				m³/kg
				m³/kg
				m³/kg
				m³/kg

RfD <sub>o</sub> mg/(kg-d)		Chronic Su	bchronic
Benzene	=	0.004	0.012
Toluene	=	0.08	0.8
Ethylbenzene	=	0.1	0.05
Total Xylenes	=	0.2	0.4
MTBE	=	0.01	0.3
Naphthalene	=	0.02	0.6
	=		0.2
	=		NA
	=		NA
S	<u> </u>	Benzene = 180	NA
3	_	Toluene = 53	
		Ethylbenzene = 17	
·		Total Xylenes = 11	•
		•	•
		MTBE = 5100	
		Naphthalene = 3	- 1
			mg/L
		,	mg/L
			mg/L
			mg/L
SF <sub>o</sub>	=	Benzene = 0.05	5 (mg/kg-d) <sup>-1</sup>
		Toluene = N	A (mg/kg-d) <sup>-1</sup>
		Ethylbenzene = 0.01	1 (mg/kg-d) <sup>-1</sup>
		Total Xylenes = N/	4 (mg/kg-d) <sup>-1</sup>
		MTBE = NA	(mg/kg-d) <sup>-1</sup>
•		Naphthalene = Na	4 (mg/kg-d) <sup>-1</sup>
			(mg/kg-d) <sup>-1</sup>
			(mg/kg-d) <sup>-1</sup>
			(mg/kg-d) <sup>-1</sup>
			(mg/kg-d) <sup>-1</sup>
T	=	Residential = 9.5E08	s
		Con. Worker = 3.6 x 10 <sup>6</sup>	s
T <sub>M-L</sub>	=	30	yr
THQ	=	1	unitless

VF' <sub>M-L</sub>	=	#VALUE!	m³/kg
		#VALUE!	m³/kg
		#VALUE!	m³/kg
ļ '	,	#VALUE!	m³/kg
		#VALUE!	m³/kg
		#VALUE!	m³/kg
			m³/kg
			m³/kg
			m³/kg
			m³/kg
η	=	0.377	L <sub>pore</sub> /L <sub>soil</sub>
θa		0.049	L <sub>air</sub> /L <sub>soil</sub>

<u> </u>	TR		=	1.00E-06	unitless
	Um		=	4.69	m/s
	URF		=	Benzene = 7.8 x 10 <sup>-6</sup>	(μg/m³) <sup>-1</sup>
	Ut		=	11.32	m/s .
	V		=	0.5	unitless
v	F	=		Benzene = 73496.132	m³/kg
				Toluene = 120472.884	m³/kg
ŀ				Ethylbenzene = 169118.59	m³/kg
				Total Xylenes = 201239.468	m³/kg
		•		MTBE = 70485.501	m³/kg
				Naphthalene = 486372.344	m³/kg
					m³/kg
					m³/kg
					m³/kg
					m³/kg

#### Incident # 2000-1913

θ,,	=	0.328	L <sub>water</sub> /L <sub>soil</sub>
ρ <sub>b</sub>	. =	1.65	kg/l or g/cm <sup>3</sup>
ρ <sub>s</sub>	-	2.65	g/cm <sup>3</sup>
. ρ <sub>w</sub>	-	1	g/cm <sup>3</sup>
1/(2b+3)	=	0.042	unitless

#### Illinois Enviromental Protection Agency Leaking Underground Storage Tank Program RBCA input Parameters for Use with Tier 2 Calculations

IEIVIA Incident	# (6- or 8-digit):	2000-	-1913	IEPA LPC # (10-digit):	1131055007
Site Name: H	enson Oil Compa	ny			
Site Address (r	ot a P.O. Box):	Old Hwy 66			
City: Toward	a	County:	McLean	Zip Co	de: <u>61776</u>
Leaking UST To	echnical File				
Tier 2 Calculat	ion Information				
Equation(s) Use	ed (ex: R12,R14,R	26): <u>R16, R1</u>	7, R18,R19, R21, R	22, R23, R24,R26	
Contact Informa	ation for Individual	Who Performed	Calculations:		
0					
Land Use: R	esidential		Soil Ty	pe: Silt Clay	
Groundwater:	X Class I		Class II	_	
Mass Limit:	Yes X	No	If Yes, then Specif	fy Acreage:	
	S17 used in R26?	Yes	X No		
Objective from S		<del></del>			
Objective from \$	If Yes, then S	pecify C <sub>source</sub> fro	m S1/	See Attached mg/L.	

ΑT <sub>c</sub>	=	70	yr
AT,	=	Residential = 30	yr
		Con. Warker = 0.115	уr
BW	=	70	yr
Csource	=	See Attached	mg/L
Cno	=	See Attached	mg/L
ď	=	100	cm

erf	=	See Attached	unitless
f <sub>oc</sub>	=	0.036	9/9
GW <sub>comp</sub>	=	See Attached	mg/L
GW <sub>source</sub>	=	See Attached	mg/L
H'	=	See Attached	cm3 <sub>ester</sub> /cm <sup>3</sup> er
i	=	0.05613	cm/cm
1	=	30_	cm/yr
IR <sub>air</sub>	=	20	m³/d
IR <sub>soil</sub>	_	Residential = 100	mg/d
IT\soil	_	Con. Worker = 480	mg/d
IR,,	=	Residential = 2	Ľ⁄d
К	=	30,845	cm/d
		11258.352	cm/yr
Koc	=	See Attached	cm³/g or L/kg
K <sub>5</sub> (non-ionizing organics)	=	See Attached	cm <sup>3</sup> <sub>wate</sub> /g <sub>sol</sub>
K <sub>8</sub> (ionizing organics)	=	Not Applicable	cm <sup>3</sup> <sub>water</sub> /g <sub>soil</sub>
k <sub>s</sub> (inorganics)	=	Not Applicable	cm³ <sub>water</sub> /g <sub>soll</sub>
L,	=	100	cm
LF <sub>sw</sub>	=	See Attached	(mg/L)/(mg/kg)
M	=	0.5	mg/cm <sup>2</sup>
Pe	=	6.9 · 10 <sup>-14</sup>	g/cm²-s
RAF <sub>d</sub>	=	0.5	unitless
α <sub>x</sub>	=	See Attached	cm
a,	=	See Attached	cm
α <sub>z</sub>	=	See Attached	cm
λ	=	See Attached	ď1
π	=	3.1416	

9.46 · 10<sup>8</sup>

D <sup>as</sup>	=	See Attached	cm²/s
D <sub>wates</sub>		See Attached	cm²/s
D <sub>s</sub> <sup>eff</sup>		See Attached	cm²/s
ED		Residential = 30	yr
		Con. Worker = 1	yr
EF	=	Residential = 350	d/yr
		Con. Worker = 30	d/yr

RAF <sub>d</sub> (PNAs)	=	0.05	unitless
RAF <sub>d</sub> (inorganics)	=	0	unitless
RAF.	=	1	unitless
RBSL <sub>air</sub> (carcinoginic)	=	See Attached	µg/m³
RBSL <sub>sir</sub> (noncarcinoginic)	=	See Attached	µg/m³
RfD <sub>i</sub>	=	See Attached	mg/kg-d
SA	=	3,160	cm <sup>2</sup> /d
Sd	=	200.0	cm
S <sub>w</sub>	-	2,743.2	cm
SF;	=	See Attached	(mg/kg-d) <sup>-1</sup>
SF.	=	See Attached	(mg/kg-d) <sup>-1</sup>
THQ	=	1	unitless
TR	=	1.00E-06	unitless
U	=	5.0052	cm/d
U <sub>sir</sub>	=	225	cm/s
Ugw	=	11258.408	cm/y
VF,	=	3.97133E-12	kg/m³
VF <sub>somb</sub>	=	See Attached	(mg/m³_y/mg/kg <sub>est</sub> or kg/m
VF <sub>ss</sub>	=	See Attached	kg/m3
W	=		cm
w	=	0.252	Gwater/Gspit
δ <sub>oir</sub>	=	200	cm
δ <sub>gw</sub>	=	200	cm
θ <sub>as</sub>	=	-0.0699	cm <sup>3</sup> <sub>nir</sub> /cm <sup>3</sup> <sub>soil</sub>
θ <sub>ws</sub>	=	0.4158	cm³ <sub>wate</sub> /cm³ <sub>ect</sub>
θ <sub>f</sub>	=	0.3459	cm³/cm³ <sub>soil</sub>
ρь	=	1.65	g/cm <sup>3</sup>
Pw	=	1	g/cm <sup>3</sup>

H	λ	Koc
0.23	0.0009	50
0.271	0.011	158
0.324	0.003	320
0.271	0.0019	398
0.0241	0	11.5
0.0198	0.0027	500
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	0.23 0.271 0.324 0.271 0.0241	0.23 0.0009 0.271 0.011 0.324 0.003 0.271 0.0019 0.0241 0

		Benzene R26	Modeled G	roundwater f	rom Vertical N	<b>Nodeled Soils</b>	3	
Location	C <sub>source</sub> from S17 (mg/L)	C(x) (mg/L)	X (cm)	a <sub>x</sub> (cm)	a <sub>y</sub> (cm)	a <sub>z</sub> (cm)	erf: S,, / (4 · √(a, · X])	erf: S,,/(2 v[(a,·X))
EA-F1	0.003	0.003	30.48	3.048	1.016	0.1524	1	1
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	Benzene R26 Modeled Groundwater													
Location	C(x) (mg/L)	X (cm)	( a <sub>x</sub> (cm)	a, (cm)	a <sub>z</sub> (cm)	erf: S.,/(4· √(a,·X))	erf: S <sub>w</sub> / (2 · √[a <sub>z</sub> · X])							
MW-1	3,470	11582.4	1158.24	386.08	57.912	0.35350928								
MW-3	3.350	11521.44	1152.144	384.048	57.6072		0.20757112 0.20864406							
MW-7	2.430	10789.92	1078.992	359.664	53.9496									
14144-1	2.430	10705.52	1070.332	335.004	33.5486	0.37751279	0.22242902							
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	E	thylbenzene	R26 Modelec	Groundwate	r from Vertic	al Modeled S	oils	
Location .	C <sub>source</sub> from S17 (mg/L)	C(x) (mg/L)	X (cm)	a <sub>v</sub> (crn)	a <sub>y</sub> (cm)	az (cm)	erf: S <sub>w</sub> /(4 · √(α <sub>v</sub> · X))	erf: S <sub>w</sub> /(2 · √[a₂ · X])
EA-F1	0.0066	0.0065	30.48	3.048	1.016	0.1524	1	1
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			Ethylbenzend	R26 Modele	d Groundwate	er	
Location	C(x) (mg/L)	X (cm)	a <sub>x</sub> (cm)	a <sub>y</sub> (cm)	az (cm)	√[a,·X])	√[a₂ ×])
MW-1	1.230	396.24	39.624	13.208	1.9812	1	1
MW-7	1.890	701.04	70.104	23.368	3.5052	1	0.99998625
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# Tier 2 Residential Calculations for Benzene Henson Oil Company 2000-1913

SSL & RBCA IRIS/HEAST SSL MARBCA 138

Date Compiled:

10/13/23

	b's Bulk Density> 0	Converted	Value to be used in	calculation	n sheet> 🗻	يو في	-		SDA Soil Classific			inana, i .am	عن بد سخه	
		FOC % (0.58 conversion	1)> : : : . 0.000				0			rsion) 0.000	foc conv	ersion to g/g:		1
1.650 2.65	ρ <sub>b</sub> - Dry Soil Bulk Density	·					Silt = 1.6;	Clay = 1.7; c	or Site Specific					
	ps - Soil Particle Density				r; Site Specific		•							
0.049	Θ <sub>a</sub> - Air Filled Soil Porosity	0.049	Value from S-21	Top 1	meter = 0.28;	below 1 me	ter = 0.13; (	Gravel = 0.0	5; Sand = 0.14; S	it =0.24; Clay = 0.19;	or Calculated Value	S21)		
0.328	Ow - Water Filled Soil Porosity	0.328	Value from S-20	Top 1	meter = 0.15;	below 1 me	ter = 0.30; (	Gravel = 0.2	0: Sand = 0.18: S	It =0 16. Clav = 0 17.	or Calculated Value	S20)		
0.377	η - SSL: Total Soil Porosity	0.377	Value from S-24	n 43 ∩	r Graval - A 20	5; Sand = 0.	.32; Silt = 0.	40; Clay = (	0.36; or Calculated	Value (S24 or R23)		020/		
0.0561	i - Hydraulic Gradient 😂 🍪 🚓 🗯	esisten in includific temps (Caper)	of the second second	Site S	pecific						<del></del>	<del></del> -		
0.036 20.000	foc - Total Organic Carbon (g/g)			Surfac	e Soil = 0.006	Subsurfac	e Soil = 0.0	02; or Site S	pecific					
5.477	DF - Dilution Factor d - Mixing Zone (m)	3.980		If calc	lated value fo	r DF is less	than 20, the	en 20 defau	It is used, else cal	culated value is used				
3.048		5.477	Value from S-25		alculated value									
	da - Depth of source (m)		· feet = 10 .	Depth	of Source (Ve	rtical thickno	ess of conta	mination)						
	K - Hydraulic Conductivity (m/yr)		3.57E-04	Site S	pecific	3	0.84	u cm/d	11258,35 = c	m/yr Use cm/d for R1	5. R19. & R28. cm/	vr for R24	21 (4855) 131 4417	Car . 404 . 42 3
38.710	L - Source Length Parallel to Groundwa	iter Flow (m)	feet = 127	Site S	ecific (m)							J. 101 112-75		
3.048	d <sub>a</sub> - Aquifer Thickness (m)		, feet = 10	Site S	pecific (m)									
0.3	I - Infiltration Rate (m/yr)			0.3 for	Illinois									
8	K Saturated Hydraulic Conductivity			See Ta	ble K for Inpu	t Values						<del></del>		<del></del>
0.005	GW <sub>obj</sub> - Groundwater Remediation Obje	ctive Class 1			0.025		Proundwater	Remediation	on Objective Class				<u> </u>	
0.042	1/(2b+3) - Exponent for S20	***************************************	:	See Ta	hia K for long	4 Mature						· · · ·	<u> </u>	
70	BW - Body Weight	files seemantalesse	WELTER THROUGH STREET	Reside	ntial = 70 (car	ciudaeuic).	15 (non-car	cinonenic):	Industrial/Commo	rial = 70: Canala alia	. Wester = 70, DDO		:	
114.	IF of an -Age Adjusted Soil Ingestion Far	ctor for Carcinogens		114			10 (11011 001	untogerno),		Cial - 70, Construction	I WOIKER = 70; RBC/	1=/0		<del></del>
200	IR <sub>sol</sub> -Soil Ingestion Rate				miol = 200, to	duntal (On a		0.0		<u> </u>			<u> </u>	• •
0.05514		the entrant of the contract of	ner i lari i l	Reside	muai - 200; in	dustnavcon	nmerciai = 5	U; Construc	tion Worker = 480	) *****				• •
2	SF <sub>o</sub> -Oral Slope Factor	PROPERTY OF THE PROPERTY OF	* * * * * * * * * * * * * * * * * * *	₹ ¡Benze	ne = 0.055	LICK	Sec. 12.	11111	COLUMN TO SERVICE		のないはは他の人は	4	rie e	A 183
	IR, -Daily Water Ingestion Rate : 34	A			ntial = 2; Indu	strial/Comm	ercial = 1							
		<del></del>			ne = 1750									
	TR - Target Cancer Risk	CO SELECTION OF THE	A 74	1 Reside	<u>ntial = 10°6; In</u>	dustrial/Con	nmercial = 1	0 <sup>-6</sup> ; Constr.	ction Worker = 10	at point of human e	xposure		· · · ·	
70	AT <sub>c</sub> -Average Time for Carcinogens ~:	Bellin The state of	45	<b>470</b>										
	URF - Inhalation Unit Risk Factor			Benza	e = 7.8 x 10	5 To 16	400		1200		A CHARLES		15-15-15-15-15-15-15-15-15-15-15-15-15-1	Anna Carlo
350	EF - Exposure Frequency = 42 accord	ennethering #61	St 352.50	→ Reside	ntial = 350; In:	dustrial/Con	nmercial = 2	50: Constru	ction Worker = 30	······································		1		2-27
30	ED - Exposure Duration for Inhalation for	Carcinogens		Reside	ntial = 30; Indi	ustrial/Comr	mercial = 25	: Constructi	on Worker = 1					<del></del> -
68.81	Q/C - Inverse of the mean concentration	n at the center of a squar	re source	Reside	nt al = 68.81; l	Industrial/Co	ommercial =	85.81; Con	struction Worker :	85.81; or Table H				
	T - Exposure Interval			Reside	ntial = 9.5 x10	<sup>8</sup> ; Industrial	/Commercia	1 = 7.9 x 10	Construction We	orker = 3.6 x 10 <sup>6</sup>				<del> </del>
30	T <sub>M-L</sub> - Exposure Interval for Mall Limit Vo	platilization Factor Equati	ion S26	30		:		-						<del></del>
70 -	ED <sub>ML</sub> - Exposure Duration for Migration to G	roundwater Mass-Limit Equ	uation S28	70						<del></del>	<del></del>	<del></del>		<del></del>
0.18	IM-L - Infiltration Rate for Migration to Gr	oundwater Mass-Limit Ed	quation S28	0,18								···		
0.088	D, & D <sup>M</sup> - Diffusivity in Air 出海	A THERMAN THE S.	" Jacon" Las Halle" T		ne = 0 088								·	
0.230	H' - Henry's Law Constant ===	APPROPRIATE AND AND THE PROPRIET.	TARREST BANKS AND A SEC	Ponto	10 - 0.000									
.02E-05	D. & D. Diffusivity in Water	the control was been as and	والمناف المناف المناف المناف المناف	r i Donizei	10 - U.ZZU							<del></del>		
50.00	K <sub>sc</sub> - Organic Carbon Partition Coefficien	of	4 TATE A TE 15 TAT											
	I. C. Samo Carport Langual Coefficie	<u> </u>		Denzei	ne = 58.9									
sidential	Ingestion Tier II Benzene Objective		<del> </del>											
	TR · AT <sub>e</sub>	. 205											•	
-2 =			1.0E-06	•	70	•	365				_ 2.6E-02	_	44.046	
	Sf <sub>o</sub> · 10 <sup>6</sup> · Ei	F · IF <sub>solvedj</sub>	0.055		1.00E-06	•	350		114		2.19E-03	_ =	11.643	mg/k
											2,136-03			
					<del></del>									
onstructio	n Worker Ingestion Tier II Benzene Ob	lective	<del></del>					·		<del></del>				• •
	n Worker Ingestion Tier II Benzene Ob TR x BW x A		1 DE DE		70							<del> </del>		• •
onstructio	n Worker Ingestion Tier II Benzene Ob TR x BW x / Sf <sub>o</sub> x 10 <sup>-6</sup> x E	AT <sub>c</sub> x 365	= 1.0E-06 0.055		70 1.00E-06		70 30		365 480	• • • •	≃ 1.8E+00	· ·	2258.21	mg/k

## Tier 2 Residential Calculations for Benzene Henson Oil Company

Pacidontia	l labalation	n Tier II Benzene Objective				H	2000-1	Company 913									
	ii iiirialatioi	TR x ATc x 365													-		
S-6 =			= -	1.0E-06		70		365					=	0.02555	- =	22.928	mg/kg
		URF x 1000 x EF x ED x 1/VF		7.80E-06	•	1000	•	350		30	. (1/	73,496.13	)	1.11E-03			
Constructi	lon Worker	Inhalation Tier II Benzene Objective		<del></del>													
S-7 =		TR x ATc x 365	= _	1.0E-06		70		365					_	0.02555	_		
		URF x 1000 x EF x ED x 1/VF		7.80E-06	•	1000	•	30	•	1	(1/	564,21	<del></del>	4.15E-04		61.605	mg/kg
RESIDENT	IAL OR CO	DMMERCIAL															
S-8 =	VF =	Q (3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 <sup>-4</sup>	=	68.81	٧.	3,14	x	2.40E-08	×	9.50E+08	) <sup>1/2</sup> x	0.0001	_	0.5823			
		C (2 x p <sub>b</sub> x D <sub>A</sub> )			"(	2	×	1.65	×	2.40E-06	)			0.0000	- =	73496.133	
Constructi	on Worker		_														
S-8 =	VF =	Q (3.14 x D <sub>A</sub> x T) <sup>1/2</sup> x 10 <sup>-4</sup>	= .	85.81	×	3,14	×	2.40E-06	х	3.60E+06	) <sup>1/2</sup> x	0.0001		0.0447	- =	5642.0935	
	<u>:</u>	C (2 x ρ <sub>b</sub> x D <sub>A</sub> )				2	. ×	1.65	. <b>x</b>	2.40E-06	)			0.0000	· -	3042.0933	**
Equation f	or Derivation	on of Volatilization Factor - Construction Worker															
S-9 =	VF' =	VF	· = .	5642.0935													
•		10		10				•							=	564.2094	
Equation fo	or Derivatio	on of Apparent Diffusivity				_											
S-10 =	D <sub>A</sub> =	$(\theta_a^{3.33} \times D_i \times H') + (\theta_w^{3.33} \times D_w)$			1												
<b>U</b> -10-	D <sub>A</sub>	η²	•	(ρ <sub>b</sub> x K <sub>d</sub>	) + 0 <sub>w</sub> +	(θ <sub>a</sub> x H')	_							•		-	
•	•																
٠. ٠			= 7	4.35E-05	x	0.088	х	0.230	<u>) + (</u>	0.0244	х	1.02E-05	ᆜ .		•		
								0.1421			٠		-	•			
			7	1.65	×	1.8	)+	0,33	+ (	0.049	×	0.230			=	2.40E-06	
									<u> </u>					<del> </del>	<del></del>		
S-17 =	onent of the	e Migration to Groundwater Cleanup Objective (Class $K_d$ + $\frac{(\theta_w + \theta_a \times h)}{\rho b}$	s 1) H')	=		0.1	x	1.8	+ (_	0.328	+	0.049 1.65	x	0.230	<u>.</u> ] =	0.201	mg/kg
Target Soil	Leachate (	Concentration (Class 1)															
S-18 =		DF x GW <sub>obj</sub>	=	20.00	x	0.005									=	0.1	
							•	,								=	
				<del></del>			<del></del>								-	•	

#### Tier 2 Residential Calculations for Benzene Henson Oil Company 2000-1913

Soil-Water		coefficient								-							•	
S-19 =	K <sub>d</sub> =		K <sub>oc</sub> x f <sub>oc</sub>	=	50.00	X	0.036									=	1.8	
Water-Fille	-																	
S-20 =	Θ"=	η x <del></del>	( 1/(20+3)	=	0.38	×[-	0.300 8.000									=	0.3284	
Air-Filled P	orosity																	
S-21 =	Θ <sub>a</sub> =	η - 6	<b>),</b>	=	0.38	-	0,33									=	0.0490	
Dilution Fac	ctor																	
S-22 =	DF =	1 +	Kxixd IxL	<b></b> = ·	112.58 0.300	x	0.0561 38.710	x	5.477	- +	1					=	3.9802	
GW Ingestic	on																	
S-23 =			TR x BW x At <sub>c</sub> x 365 SF <sub>o</sub> x IR <sub>w</sub> x EF x ED	_ = .	1.0E-06 0.055	×	70 2,000	×	70 350	x	365 30	-	•	= -	1.8E+00 1155	=	0.0015	mg/L
Total Soil P	orosity					•												
S-24 =		1 P	<u>.                                      </u>	=	1		1.65 2.65	_								=	0.3774	
Estimation	of Mixing	Zone Depth										•						
S-25 =	d =	(0.0112 x L <sup>2</sup> ) <sup>0</sup>	<sup>15</sup> + d <sub>a</sub>	ixd <sub>a</sub> )														
1				= (	0.0112	×	38.710	<sup>2</sup> ) <sup>0,5</sup> +										
							3.048	×	1 - ехр	{-	-38.710 112.584	×	0.3 0.0561	) *	3.048	<u>-</u> _] =	5.477	m
Soil Saturat	tion Limit																	
S-29 =	C <sub>sat</sub> =	S P <sub>b</sub> x	[(K <sub>d</sub> x pb) + Gw + (H' x 8a)]	= •	1800 1.65	-x [ (	1.8	x	1.65	) +	0.328	+ (	0,230	×	0.049	)] =	3,610.11	mg/kg
Soli Gas Ou	tdoor inha																	
S-30 =	ROs g =	•	ROsoil X H X pb X 1000 H' X Oa + Ow + Kd X pb	_ = .	22.928 0.230	x	0.230 0.049	*	1.650 0.328	*	1,800	Х	1,650			=	2,629.37	mg/m³

# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913

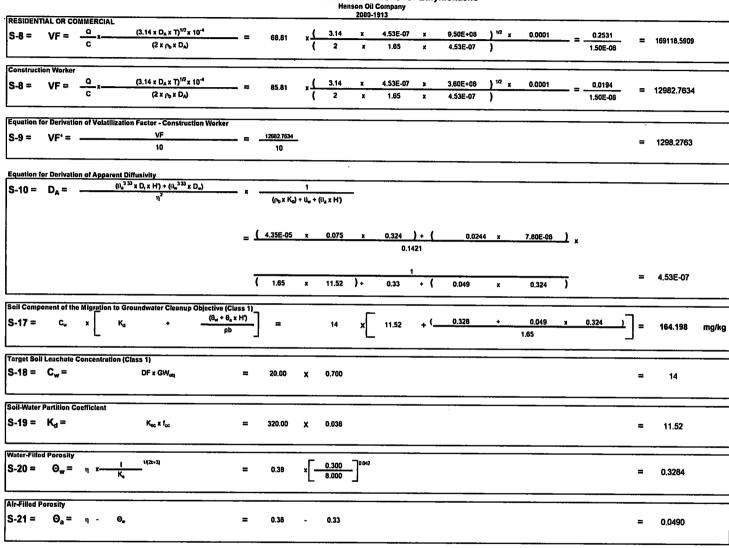
10/13/23

											12500 12	0.47?18	
Input Values Holcomb's Bulk Density → 0		falue to be used in	enlevintion e	hoot			IODA C-II Ol		16'' 0'				
	~:- FOC % (0.58 conversion)	-> 0 000	a Organic M	atter (mother)	<del></del>	1 m . 5	USDA Soll Class	silication:	Sitt City				
1.650 pp - Dry Soil Bulk Density	100 10 (0.00 00.00 00.00)		1 6 on Con	iol a 2 O Con	4 = 4 0: 0:0	10.0	CC mg/kg (U as E	OWER STORY	1-4-0.000-	TOC CONVE	sion to g/g:	0.000	1 7. July
2.65 ps - Soil Particle Density		etras en la companya	73 65 cm 634	rei = 2.0; San	u = 1.6; Siit	= 1.0; C(a)	y = 1.7; or Site \$	Specific					
0.049 Ga - Air Filled Soil Porosity								_					
		Value from S-21	Top 1 mete	r = 0.28; belo	w 1 meter =	0.13; Grav	/el = 0.05; Sand	3 = 0.14; 5	Silt =0.24; Clay =	0.19; or Calculate	d Value (S2	11)	
0.328 Ow - Water Filled Soil Porosity		Value from S-20	Top 1 mete	r = 0.15; belo	w 1 meter =	0.30; Grav	/el = 0.20; Sand	i = 0.18; S	Silt =0.18; Clay =	0.17; or Calculate	d Value (S2	(0)	
0.377 n - SSL: Total Soil Porosity		Value from S-24	0.43 or; Gra	avel - 0,25; Sa	and = 0,32; 5	Silt = 0.40;	Clay = 0.36; or	Calculate	d Value (S24)				
	دره چه ده وسيس. دره چه دري و دو وسيس.		- Site Specifi	C					,,,,,,				
0.036 foc - Total Organic Carbon (g/g)			Surface So	il = 0.006; Sul	bsurface So	il = 0.002;	or Site Specific						
20.000 DF - Dilution Factor	3,980	Value from S-22	If calculated	d value for DF	is tess than	20, then :	20 default is use	ed. else c	alculated value is	used			
5.477 d - Mixing Zone (m)		Value from S-25	2; or calcula	ated value									
3.048 d, - Depth of source (m)		feet = 10	. Depth of Sc	ource (Vertica	l thickness o	of contami	nation)						
112.58 K - Hydraulic Conductivity (m/yr)	cm/sec = . :		Site Specifi			≥ cm/d		4	Il lea and to the	E 040 8 008			
38.710 L - Source Length Parallel to Gro		feet = 127	Site Specifi		.002.701	× Cityu	1.135704	4 F CHDYL	Use cm/d for R1	3, K19, & K20.	myr for K24		
3.048 d Aquifer Thickness (m)													
	<del></del>	feet = 10 .	Site Specifi										
		•	0.3 for Illino			_							
8 . K Saturated Hydraulic Conduct	ivity		See Table I	K for Input Va	lues								
0.700 - GW <sub>ob</sub> - Groundwater Remediation	n Objective Class 1		2 1 1	. GW	- Groundwa	ter Remer	fiation Objective	Close 2				<del></del>	
0.042 1/(2b+3) - Exponent for S20			See Table I	K for Input Ve	lues								
15 BW - Body Weight	TENER OF THE	ka a ka a hakka a	Residential	= 70 (carcino	nonic): 15 /	on-carde	occupiety Industri	lal/Carr	ordal = 70: C	metica Med	70. 000*	**	
114 . IF <sub>soil-eq</sub> -Age Adjusted Soil Ingesti	on Factor for Carcinogene		114	- 10 Contino	gane), 13 (	wireaigh	ogenic), industr	idi/Comm	eidai = 70; Cons	nnchou Worker =	70; KBCA	- /0	
	an a solution caremogalis												
200 - IR <sub>sol</sub> -Soil Ingestion Rate	•		Residential	= 200; Indust	rial/Comme	rcial = 50;	Construction W	forker = 4	80				
. 2 IR, -Daily Water Ingestion Rate	Live with Walnut its new alternation	A SHOW THE WAY	I Residential	= 2; Industria	l/Commerci	al = 1							_
170 S - Solubility in Water			Ethylhenzer	ne = 169									
1.0E-06 TR - Terget Cencer Risk & 🖘 🖘	olds barrowskians - folkstingen	Bankley of St.	Posidontial	= 10 By tendent	dell'Commo	-i-t - 40 <sup>4</sup>		At- I	406 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				
350 · EF - Exposure Frequency	and the best constitution and the	winds to the second	Pasidential	= 250: Indust	riol/Comme	raiol - 250	Construction V	vorker =	10 - at point of nu	man exposure			
30 - ED - Exposure Duration for Inhais	tion for Non-Carringgage	file spaces are to a re-	Posidential	= 30t Industri	Hancolline	1-1 - 25. 0	Construction v	vorker	30				
68.81 Q/C - Inverse of the mean concer	stration at the center of a course	0.001100	Pooleontal	~ 60 04: lad.	ai/Commerc	181 = 25; C	Onstruction vvo	rker = 1					
9.50E+08 T - Exposure Interval	manon at the contain of a square	e source	Residential	= 00.01; Indu	SINAUCOMIT	ercial - 5:	5.81; Construction	on worke	r = 85.81; or Tabl	<u>e H</u>			
				= 9.5 x 10°; In	dustrial/Cor	nmercial =	7.9 x 10°; Cons	struction \	Norker = 3.6 x 10	·			
30 . T <sub>M.L</sub> - Exposure Interval for Mall L			30										
70 ED <sub>M4</sub> - Exposure Duration for Migratio	n to Groundwater Mass-Limit Equa	tion S28	70										
0.18 Int - Infiltration Rate for Migration	to Groundwater Mass-Limit Eq	uation S28	0.18										
0.075 » D, - Diffusivity in Air			Ethylbenzer	0075									
0.324 · H' - Henry's Law Constant	<del></del>												
0.329 · In - Henry's Law Constant			Ethylbenzer	ne = 0.323									
7.80E-06 D <sub>w</sub> - Diffusivity in Water				ne = 7.8 x 10 <sup>c</sup>								<u>·</u>	
6 AT - Average Time for Non-Carcin	logens in ingestion Equation		Residential	= 6; Industria	VCommerci:	al = 25; Co	nstruction Work	ker = 0.11	5				
6 AT - Average Time for Non-Carcin 30 AT - Average Time for Non-Carcin	nogens in ingestion Equation nogens in inhalation Equation		Residential	= 6; Industria	VCommerci:	al = 25; Co ial = 25; C	nstruction Work	ker = 0.11 rker = 0.1	5				•
6 AT - Average Time for Non-Carcin 30 AT - Average Time for Non-Carcin 1 THQ - Target Hazard Quotient	logens in Inhalation Equation		Residential Residential	= 6; Industria = 30; Industri	VCommercia al/Commerci	ial = 25; C	onstruction Wo	rker = 0.1	15				
6 AT - Average Time for Non-Carcin 30 AT - Average Time for Non-Carcin	logens in Inhalation Equation		Residential Residential	= 6; Industria = 30; Industri	VCommercia al/Commerci	ial = 25; C	onstruction Wo	rker = 0.1	15				
6 AT - Average Time for Non-Carcin 30 AT - Average Time for Non-Carcin 1 THQ - Target Hazard Quotient	logens in Inhalation Equation		Residential Residential 1 Chronic = 1	= 6; Industria = 30; Industri Subchronic	//Commercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15		alay ang kata (1914)		
. 6 AT - Average Time for Non-Carcir 30 AT - Average Time for Non-Carcir 1 THO - Target Hazard Quotient ACT 1 22 RIC - Inhalation Reference Conce	nogens in Inhatation Equation		Residential Residential 1 Chronic = 1 Chronic = 0	= 6; Industria = 30; Industri Subchronic .1; Subchroni	//Commercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15		**************************************		erioteros.
6 AT - Average Time for Non-Carcir 30 AY - Average Time for Non-Carcir 1 THO - Target Hazard Quotient ACT 1224 RIC - Inhalation Reference Conce	nogens in Inhatation Equation		Residential Residential 1 Chronic = 1	= 6; Industria = 30; Industri Subchronic .1; Subchroni	//Commercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15				AND ENTEREDS
6 AT - Average Time for Non-Carcir 30 - AT - Average Time for Non-Carcir 1 - THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - Tenget Hazard Quotient 1-THO - TENGET HAZARD PRINTED HAZARD PR	nogens in Inhatation Equation entration		Residential Residential 1 Chronic = 1 Chronic = 0	= 6; Industria = 30; Industri Subchronic .1; Subchroni	//Commercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15		in and the second		
6 AT - Average Time for Non-Carcir 30 AT - Average Time for Non-Carcir 1 THO - Target Hazard Quotient 1-THO - Target Hazard Quotient 1-THO - Target Hazard Quotient 2-THO - Target Hazard Quotient 2-THO - Oral Reference Dose 320.00 K <sub>oc</sub> - Organic Cerbon Partition Co Residential Ingestion Remediation Objective	nogens in Inhatation Equation Intration efficient is for Non-Carcinogenic Cont	aminants	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer	= 6; Industria = 30; Industri Subchronic 1; Subchroni ne = 363	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15				ALCENDA CARROLLAN
6 AT - Average Time for Non-Cercir     30 AT - Average Time for Non-Cercir     1 TriO - Terget Hezard Quotient     1 TriO - Terget Hezard Quotient     1 2 TriO - Terget Hezard Quotient     1 2 TriO - Consider the TriO - Concercia 20.00     1 2 RiD - Oral Reference Concercia 20.00     1 2 RiD - Oral Reference Dose     320.00     1 2 RiD - Oral Reference Concercia 20.00     1 Residential Ingestion Remediation Objective     1 TriO x TriO x	nogens in Inhabilion Equation intration efficient is for Non-Carcinogenic Cont BW x AT x 365	_ 1	Residential Residential 1 Chronic = 1 Chronic = 0 Ethylbenzer x 1	= 6; Industria = 30; Industri Subchronic :1; Subchronic ne = 363	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15	32850	**************************************		eterner 19
AT - Average Time for Non-Cercir     30 - AT - Average Time for Non-Cercir     1 - ThO - Target Hezard Quotient     1 - ThO - Target Hezard Quotient     1 - St. RiC - Inhalation Reference Conce     20.1 Fee RiD <sub>o</sub> - Oral Reference Dose     320.00 K <sub>cc</sub> - Organic Cerbon Partition Co     Residential Ingestion Remediation Objective     S.4 = ThO x	nogens in Inhatation Equation Intration efficient is for Non-Carcinogenic Cont	aminents 1 0.000001	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer	= 6; Industria = 30; Industri Subchronic :1; Subchronic ne = 363	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15			7821	mg/kg
AT - Average Time for Non-Cercir     30 - AT - Average Time for Non-Cercir     1 - ThO - Target Hezard Quotient     1 - ThO - Target Hezard Quotient     1 - St. RiC - Inhalation Reference Conce     20.1 Fee RiD <sub>o</sub> - Oral Reference Dose     320.00 K <sub>cc</sub> - Organic Cerbon Partition Co     Residential Ingestion Remediation Objective     S.4 = ThO x	nogens in Inhabilion Equation intration efficient is for Non-Carcinogenic Cont BW x AT x 365	_ 1	Residential Residential 1 Chronic = 1 Chronic = 0 Ethylbenzer x 1	= 6; Industria = 30; Industri Subchronic :1; Subchronic ne = 363	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15 25.42>5,5	32850	- =		eterner 19
6 AT - Average Time for Non-Carcir 30 AT - Average Time for Non-Carcir 1 THO - Target Hezard Quotient NCT   5.2 Fr   RIC - Inhalation Reference Conce 47 0.1 Per   RIC - Oral Reference Dose 320.00   Koc - Organic Carbon Partialon Co  Residential Ingestion Remediation Objective S-1 = THO X   10 ° x (1/RIC)	iogens in Inhalation Equation intration  efficient is for Non-Carcinogenic Cont BWx AT x 365  b) x EF x ED x IR <sub>826</sub>	= 1 0.000001	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0	= 6; Industria = 30; Industri Subchronic :1; Subchronic ne = 363	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15 25.42>5,5	32850	- =		eterner 19
6 AT - Average Time for Non-Carcir 30 AT - Average Time for Non-Carcir 1 THO - Target Hazard Quotient 1 THO - Target Hazard Quotient 1 AT - Average Time for Non-Carcir 1 AT - The Target Hazard Quotient 1 AT - The Time Time Time Time Time Time Time Tim	nogens in Inhabition Equation intration  efficient  os for Non-Carcinogenic Cont BW x AT x 365  v) x EF x ED x IR <sub>ed</sub> Objectives for Non-Carcinog	= 1 0.000001	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic = 363 -5 x -1 x	VCommercial/Commercial	ial = 25; C	385	rker = 0.1	15 25.42>5,5	= 32850			eterner 19
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Terget Hezard Quotient 1 THO - Terget Hezard Quotient 1 THO - Terget Hezard Quotient 1 2-2° RiC - Inhulation Reference Conce 22 0.15 Per RiDo - Oral Reference Dose 320.00 Koc - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective THQ x  110 x (1/RiD  Construction Worker Ingestion Remediation THQ x	nogens in Inhelation Equation Introllon  efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365	= 1 0.000001	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic -1 = 363 -5 x -1 x	VCommercial/Commercial	ial = 25; C	onstruction Wo	rker = 0.1	15 25.42>5,5	32850	- =	7821	mg/kg
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Terget Hezard Quotient 1 THO - Terget Hezard Quotient 1 THO - Terget Hezard Quotient 1 2-2° RiC - Inhulation Reference Conce 22 0.15 Per RiDo - Oral Reference Dose 320.00 Koc - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective THQ x  110 x (1/RiD  Construction Worker Ingestion Remediation THQ x	nogens in Inhabition Equation intration  efficient  os for Non-Carcinogenic Cont BW x AT x 365  v) x EF x ED x IR <sub>ed</sub> Objectives for Non-Carcinog	= 1 0.000001	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic = 363 -5 x -1 x	VCommercial/Commercial	ial = 25; C	385	rker = 0.1	15 25.42>5,5	= 32850 4.2 2938.25			eterner 19
AT - Average Time for Non-Cercir     30    AT - Average Time for Non-Cercir     1    THO - Target Hezard Quotient     NorT   25° RIC - Inhulation Reference Conce       RID - Oral Reference Dose       320.00      Koc - Organic Cerbon Partition Co       Residential Ingestion Remediation Objective       THO x	nogens in Inhelation Equation Introllon  efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365	enic Contaminant	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic -1; Subchronic -1 = 363 -1	### Commercial/Commerc	al = 25; C	365 6	rker = 0.1	200	= 32850	- =	7821	mg/kg
6 AT - Average Time for Non-Cercir 30 - AT - Average Time for Non-Cercir 1 THO - Terget Hezard Quotient NorT 1 2.2° RIC - Inhalation Reference Conce 42 0.1 5.2° RIC - Inhalation Reference Conce 320.00 K <sub>oc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THO x    Construction Worker Ingestion Remediation S-1 = THO x    10° x (1/RID	nogens in Inhabition Equation Intration  efficient  se for Non-Carcinogenic Cont BW x AT x 365  3 x EF x ED x IR <sub>son</sub> Objectives for Non-Carcinog BW x AT x 365  3 x EF x ED x IR <sub>son</sub>	enic Contaminant	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic -1; Subchronic -1 = 363 -1	### Commercial/Commerc	al = 25; C	365 6	rker = 0.1	200	= 32850 4.2 2938.25		7821	mg/kg
6 AT - Average Time for Non-Carcir 30 AT - Average Time for Non-Carcir 1 THO - Target Hazard Quotient North State Ric - Inhabition Reference Conce 42 0.1 Se RiC - Inhabition Reference Conce 42 0.1 Se RiC - Organic Carbon Partition Co Residential Ingestion Remediation Objective S-1 = THO x 10 s x (I/RID Construction Worker Ingestion Remediation S-1 = THO x 10 s x (I/RID Residential Inhabition Tier II Ethylbenzene C	ingens in Inhabition Equation intration  efficient is for Non-Carcinogenic Cont BWX AT x 365	enic Contaminant	Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic -1; Subchronic -1 = 363 -1	### Commercial/Commerc	al = 25; C	365 6	rker = 0.1	200	= 32850 4.2 2938.25		7821	mg/kg
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Tegrey Hazard Quotient Act 13.2% Rife - Inhalation Reference Conce 42.0.1 \$40 Rife - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THO x 10.6 x (WRID  Construction Worker Ingestion Remediation THO x 10.6 x (WRID  Residential Inhalation Tier II Ethylbenzene C  Residential Inhalation Tier II Ethylbenzene C  S-4 = THO	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IReas	enic Contaminant	Residential Residential Residential Chronic = 1 Chronic = 0 Ethylbenzer  x 1 x 1/ 0   x 1/ 0	= 6; Industrial = 30; Industrial Subchronic -1; Subchronic -1; Subchronic -1 = 363 -1	### Commercial/Commerc	al = 25; C	365 6	rker = 0.1	200	= 32850 4.2 = 2938.25 0.288	- =	7821 10202	mg/kg
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Tegrey Hazard Quotient Act 13.2% Rife - Inhalation Reference Conce 42.0.1 \$40 Rife - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THO x 10.6 x (WRID  Construction Worker Ingestion Remediation THO x 10.6 x (WRID  Residential Inhalation Tier II Ethylbenzene C  Residential Inhalation Tier II Ethylbenzene C  S-4 = THO	ingens in Inhabition Equation intration  efficient is for Non-Carcinogenic Cont BWX AT x 365	enic Contaminant	Residential Residential I Chronic = 1 Chronic = 0 Ethylbenzer  x 11 0  x 17 0  x 3	= 6; Industrie = 30; Industrie = 30; Industrie = 30; Industrie = 363	#Commercial/Commercial	al = 25; C	385 6 385 1	rker = 0.1	200	= 32850 4.2 = 2938.25 0.288	- =	7821	mg/kg
. 6 AT - Average Time for Non-Cercir . 30 . AY - Average Time for Non-Cercir . 30 . AY - Average Time for Non-Cercir . 1 . THO - Target Hezard Quotient . 1 . THO - Target Hezard Quotient . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IReas	= 1 0.000001 enic Contaminant = 1 0.000001	Residential Residential I Chronic = 1 Chronic = 0 Ethylbenzer  x 11 0  x 17 0  x 3	= 6; Industria = 30; Industria - 30; Industria - 30; Subchronic - 1; Subchronic - 2 363 - 363 - 5 x - 1 x - 0 x - 00 x	#Commercial/Commercial	al = 25; C	365 6 365 1	Refer = 0.1	200 480	= 32850 4.2 = 2938.25 0.288 = 10950 0.062086	- = - =	7821 10202 176366.631	mg/kg
. 6 AT - Average Time for Non-Cercir . 30 . AY - Average Time for Non-Cercir . 30 . AY - Average Time for Non-Cercir . 1 . THO - Target Hezard Quotient . 1 . THO - Target Hezard Quotient . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IReas	= 1 0.000001 enic Contaminant = 1 0.000001	Residential Residential I Chronic = 1 Chronic = 0 Ethylbenzer  x 11 0  x 17 0  x 3	= 6; Industrie = 30; Industrie = 30; Industrie = 30; Industrie = 363	#Commercial/Commercial	al = 25; C	365 6 365 1	Refer = 0.1	200	= 32850 4.2 = 2938.25 0.288 = 10950 0.062086	- = - =	7821 10202 176366.631	mg/kg
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Target Hezard Quotient NCT 1 2 2 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Reference Conce 42 0.1 5 RIC - Inhalation Concern Partition Concern Partition Concern Partition Concern Partition Concern Partition Construction Worker Ingestion Remediation 10 X (1/RIC)  Residential Inhalation Tier II Ethylbenzene Concern Partition Concern Partition Concern Partition Concern Partition Construction Worker Ingestion Remediation 110 X (1/RIC)  Residential Inhalation Tier II Ethylbenzene Concern Partition Concer	nogens in Inhabition Equation Intration  efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IR <sub>600</sub> Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IR <sub>600</sub> Objective 1x AT x 365 x (1/RIC x 1/VF)	= 1 0.000001 enic Contaminant = 1 0.000001	Residential Residential I Chronic = 1 Chronic = 0 Ethylbenzer  x 11 0  x 17 0  x 3	= 6; Industrie = 30; Industrie = 30; Industrie = 30; Industrie = 363	#Commercial/Commercial	al = 25; C	365 6 365 1	Rece = 0.1	200 200 480	= 32850 4.2 = 2938.25 0.288 = 10950 0.062086 cannot excess	= = 6 = 6 d Soil Sail	7821 10202 176366.531 turation Lim	mg/kg
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 30 Tri-Average Time for Non-Cercir 1 Tri-Q - Target Hezard Quotient 1 Tri-Q - Target Hezard Quotient 1 Acc 1 1 2 Price Ric - Inhalation Reference Conce 20.1 1 2 Ric - Crisch Reference Conce 20.1 1 2 Ric - Crisch Reference Conce 20.0 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = Tri-Q x 1  Construction Worker Ingestion Remediation ThQ x 1  Construction Worker Ingestion Remediation ThQ x 1  Residential Inhalation Tier II Ethylbenzene C S-4 = Tri-Q EF x ED  Residential Inhalation Objective (Carcinoger	nogens in Inhabition Equation Intration  efficient  se for Non-Carcinogenic Cont BW x AT x 365  a) x EF x ED x IR <sub>see</sub> Objectives for Non-Carcinog BW x AT x 365  b) x EF x ED x IR <sub>see</sub> Delective 1x AT x 365  x (1/RIC x 1/VF)	= \frac{1}{0.000001} entc Contaminant = \frac{1}{0.000001} = \frac{1}{350}	Residential Residential Residential (Chronic = 1) (Chronic = 1) (Chronic = 2) (Chronic = 3) (Chronic	= 8; Industrie = 30; Industrie = 30; Industrie = 383   1; Subchronie = 383   5	#Commercial/Commercial	al = 25; C	365 6 365 1	Rece = 0.1	200 480	= 32850 4.2 = 2938.25 0.288 = 10950 0.06208c cannot exceed	= = 6 = 6 d Soil Sail	7821 10202 176366.531 turation Lim	mg/kg
6 AT - Average Time for Non-Cercir 30 AY - Average Time for Non-Cercir 10 TriQ - Terget Hezard Quotient ACT 1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THQ x   10° x (I/RIC)  Construction Worker Ingestion Remediation S-1 = THQ x   10° x (I/RIC)  Residential Inhalation Tier II Ethylbenzene C S-4 = THQ EF x ED	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IR <sub>sol</sub> Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IR <sub>sol</sub> Dijectivo x AT x 365 x (1/RIC x 1/VF)	= \frac{1}{0.000001} enic Contaminant = \frac{1}{0.000001} = \frac{1}{350} = \frac{0.000001}{0.000001}	Residential Residential Residential (Chronic = 1) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 1) (Chronic	= 6; Industria = 30; Industria = 30; Industria - 30; Industria - 30; Subchronic - 1; Subchronic - 363  5	### ##################################	Hall = 25; C	385 6 365 1	x x 2 Inhala	200  480  tion Objective	= 32850 4.2 = 2938.25 = 10950 0.06208 Cannot excedive does not excedive does not excedive = 0.02555	eed Tier 1 (	7821 10202 176366.531 turation Lim	mg/kg mg/kg lt
6 AT - Average Time for Non-Cercir 30 AY - Average Time for Non-Cercir 10 TriQ - Terget Hezard Quotient ACT 1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THQ x   10° x (I/RIC)  Construction Worker Ingestion Remediation S-1 = THQ x   10° x (I/RIC)  Residential Inhalation Tier II Ethylbenzene C S-4 = THQ EF x ED	nogens in Inhabition Equation Intration  efficient  se for Non-Carcinogenic Cont BW x AT x 365  a) x EF x ED x IR <sub>see</sub> Objectives for Non-Carcinog BW x AT x 365  b) x EF x ED x IR <sub>see</sub> Delective 1x AT x 365  x (1/RIC x 1/VF)	= \frac{1}{0.000001} entc Contaminant = \frac{1}{0.000001} = \frac{1}{350}	Residential Residential Residential (Chronic = 1) (Chronic = 1) (Chronic = 2) (Chronic = 3) (Chronic	= 6; Industria = 30; Industria = 30; Industria - 30; Industria - 30; Subchronic - 1; Subchronic - 363  5	#Commercial/Commercial	al = 25; C	365 6 365 1	Rece = 0.1	200 200 480	= 32850 4.2 = 2938.25 0.288 = 10950 0.06208c cannot exceed	eed Tier 1 (	7821 10202 176366.631 turation Lim	mg/kg
6 AT - Average Time for Non-Cercir 30 AY - Average Time for Non-Cercir 10 TriQ - Terget Hezard Quotient ACT 1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THQ x   10° x (I/RIC)  Construction Worker Ingestion Remediation S-1 = THQ x   10° x (I/RIC)  Residential Inhalation Tier II Ethylbenzene C S-4 = THQ EF x ED	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IR <sub>sol</sub> Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IR <sub>sol</sub> Dijectivo x AT x 365 x (1/RIC x 1/VF)	= \frac{1}{0.000001} enic Contaminant = \frac{1}{0.000001} = \frac{1}{350} = \frac{0.000001}{0.000001}	Residential Residential Residential (Chronic = 1) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 1) (Chronic	= 6; Industria = 30; Industria = 30; Industria - 30; Industria - 30; Subchronic - 1; Subchronic - 363  5	### ##################################	Hall = 25; C	385 6 365 1	x x 2 Inhala	200  480  tion Objective	= 32850 4.2 = 2938.25 = 10950 0.06208 Cannot excedive does not excedive does not excedive = 0.02555	eed Tier 1 (	7821 10202 176366.631 turation Lim	mg/kg mg/kg lt
6 AT - Average Time for Non-Cercir 30 AY - Average Time for Non-Cercir 10 TriQ - Terget Hezard Quotient ACT 1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Inhulation Reference Conce 472 0.1 5.2% RIC - Oral Reference Dose 320.00 K <sub>cc</sub> - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THQ x   10.8 x (I/RIC)  Construction Worker Ingestion Remediation THQ x   10.8 x (I/RIC)  Residential Inhalation Tier II Ethylbenzene C S-4 = THQ EF x ED  Residential Inhalation Objective (Carcinoger S-6 = URF x 1000	nogens in Inhelation Equation entration efficient es for Non-Carcinogenic Cont BW x AT x 365 b) x EF x ED x IReas  Objectives for Non-Carcinog BW x AT x 365 b) x EF x ED x IReas  Dijective x AT x 365 x (1/RIC x 1/VF)	= \frac{1}{0.000001} enic Contaminant = \frac{1}{0.000001} = \frac{1}{350} = \frac{0.000001}{0.000001}	Residential Residential Residential (Chronic = 1) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 1) (Chronic	= 6; Industria = 30; Industria = 30; Industria - 30; Industria - 30; Subchronic - 1; Subchronic - 363  5	### ##################################	Hall = 25; C	385 6 365 1	x x 2 Inhala	200  480  tion Objective	= 32850 4.2 = 2938.25 = 10950 0.06208 Cannot excedive does not excedive does not excedive = 0.02555	eed Tier 1 (	7821 10202 176366.631 turation Lim	mg/kg mg/kg lt
6 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 30 AT - Average Time for Non-Cercir 1 THO - Terget Hezard Quotient Act 13-2% Ric - Inhalation Reference Conce 42 0.1 \$40 Ric - Organic Cerbon Partition Co  Residential Ingestion Remediation Objective S-1 = THO x   10° x (1/Ric)  Residential Inhalation Tier ii Ethylbenzene Conce S-4 = THO x   10° x (1/Ric)  Residential Inhalation Tier ii Ethylbenzene Conce S-4 = THO X   Residential Inhalation Objective (Carcinoger S-6 = TR x CONSTRUCTION OF TR X CONSTRUCTION O	nogens in Inhabition Equation Intration  efficient  se for Non-Carcinogenic Cont BW x AT x 365  b) x EF x ED x IR  Objectives for Non-Carcinog BW x AT x 365  b) x EF x ED x IR  objective 1 x AT x 365  x (1/RIC x 1/VF)  1 AT c x 365  x EF x ED x (1/VF)  arcinogen)	=\frac{1}{0.000001} enic Contaminant =\frac{1}{0.000001} =\frac{1}{350} =\frac{0.000001}{2.5E-08}	Residential Residential Residential (Chronic = 1) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 1) (Chronic	= 6; Industrial = 30; I	### October 1   ####   ####   #####   ####   ####   ####   ####   ####   #####   ####   ####   ######	Hall = 25; C	385 6 365 1	x x 2 Inhala	200  480  tion Objective	= 32850 4.2 = 2938.25 = 10950 0.06208 Cannot excedive does not excedive does not excedive = 0.02555	eed Tier 1 (	7821 10202 176366.631 turation Lim	mg/kg mg/kg lt
6 AT - Average Time for Non-Cercin 30 AY - Average Time for Non-Cercin 30 AY - Average Time for Non-Cercin 1 ThO - Terget Hezard Quotient Acri 1 5.2% (RIC - Inhulation Reference Concercin 1 5.2% (RIC - Inhulation Reference Concercin 1 5.2% (RIC) - Oral Reference Concercin 1 Section 1 S	efficient efficient es for Non-Carcinogenic Cont BW x AT x 365  a) x EF x ED x IR <sub>see</sub> Objectives for Non-Carcinog BW x AT x 365  b) x EF x ED x IR <sub>see</sub> Objective x AT x 365 x (1/RIC x 1/VF)  1) t ATc x 365 x EF x ED x (1/VF)  arcinogen) ATc x 365	=\frac{1}{0.000001} enic Contaminant =\frac{1}{0.000001} =\frac{1}{350} =\frac{0.000001}{2.5E.08} =\frac{0.000001}{0.000001}	Residential Residential Residential Residential IChronic = 1 IChronic = 0 Ethylbenzer  x 1 x 1/ 0  s x 7 x 1/ 0  x 3 x 3 x 3 x 7 x 10	= 8; Industria = 30; Industria	## Commercial ##	Hall = 25; C	365 6 365 1 169118.5909 Tier :	x x 2 Inhala	200  480  tion Objective shalation Object	= 32850 4.2 = 2938.25 = 10950 0.06208 Cannot excedive does not excedive does not excedive = 0.02555	eed Tier 1 (	7821 10202 176366.631 turation Lim Objective 164.609	mg/kg mg/kg lt mg/kg
6 AT - Average Time for Non-Cercit 30 AY - Average Time for Non-Cercit 30 AY - Average Time for Non-Cercit 1 THO - Terget Hezard Quotient ACT 1 5.2% (RIC - Inhalation Reference Conce 473.0.1 \$100 RID - Oral Reference Conce 473.0.1 \$100 RID - Oral Reference Conce 473.0.1 \$100 RID - Oral Reference Conce 473.0.1 \$100 RID - Oral Reference Conce 473.0.1 \$100 Residential Ingestion Remediation Objective  THO x 10 x (1/RID  Residential Inhalation Tier ii Ethylbenzene C S-4 = THO EF x ED  Residential Inhalation Objective (Carcinoger S-6 = TR x URF x 1000  Construction Worker Inhalation Objective (C S-7 = TR x	nogens in Inhabition Equation Intration  efficient  se for Non-Carcinogenic Cont BW x AT x 365  b) x EF x ED x IR  Objectives for Non-Carcinog BW x AT x 365  b) x EF x ED x IR  objective 1 x AT x 365  x (1/RIC x 1/VF)  1 AT c x 365  x EF x ED x (1/VF)  arcinogen)	=\frac{1}{0.000001} enic Contaminant =\frac{1}{0.000001} =\frac{1}{350} =\frac{0.000001}{2.5E-08}	Residential Residential Residential (Chronic = 1) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 0) (Chronic = 1) (Chronic	= 8; Industria = 30; Industria	### October 1   ####   ####   #####   ####   ####   ####   ####   ####   #####   ####   ####   ######	Hall = 25; C	385 6 365 1	x x 2 Inhala	200  480  tion Objective	= 32850 4.2 = 2938.25 0.288 = 10950 0.06208c cannot exceet ve does not exceet ve does not exceet	eed Tier 1 (	7821 10202 176366.631 turation Lim	mg/kg mg/kg lt

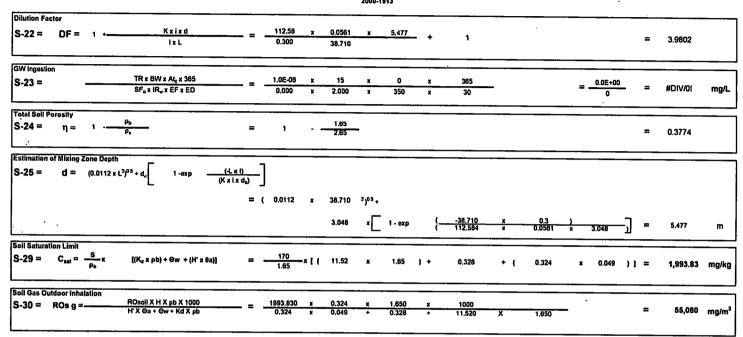
# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913

Construction Worker Inhalation Objective												
S-5 = THQ x AT x 365	_ = .	1	×	0.115	x	365			_ 41.975	٠_		
EF x ED x (1/RIC x 1/VF')		30	×	1	x 1/	9	x 1/	1298,276342	0.0025675	=	16348.545	mg/kg
······································								Tier 2 Inhalation Objective	e cannot exceed S	oil Sa	turation Limit	ı

#### Tier 2 Residential Calculations for Ethylbenzene



# Tier 2 Residential Calculations for Ethylbenzene Henson Oil Company 2000-1913



#### Henson Oil Company 2000-1913

# Appendix C - Table K Parameter Estimates for Calculating Water - Filled Soil Porosity (Ow)

Soil Texture	Saturated Hydraulic Conductivity (Ks) (m/yr)	1/ (2b+3)
Sand	1830	0.09
Loamy Sand	540	0.085
Sandy Loam	230	0.08
Silt Loam	120	0.074
Loam	60	0.073
Sandy Clay Loam	40	0.058
Silt Clay Loam	13	0.054
Clay Loam	20	0.05
Sandy Clay	10	0.042
Silt Clay		0.042
Clay	5	0.039

Version: 3/26/2018

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity

	Bouwer & Rice Method for Calculating Hydraulic Conductivity						
Proje	Project Name: Towanda Mini Mart					ject No.:	<del>-</del>
Clie	nt Name:	Henson Oil	Company			ification:	MW-4
	er Name:	IB	11				
	Run Date:	,-			10.00		
		ina Diamatan	0.167	6	Ē		
1		ipe Diameter:		- 1	٠ -		
1		ke Diameter:		feet	1.00		
		ntake Length:		feet	Ę		
Sati	urated Co	lumn Length:	10	feet	F		
1	Water	Table Depth:	2.64	feet	0.10		
1	Aquif	er Thickness:	10	feet	Ē		
	-	Starting No.:		Min 1 to	ļ		
		Ending No.:		Max 81	0.01		
[		Output Units:		1 to 9	0.0	E E E 2500 E	- 4:00 = = :6:00 = = :6:00
1	эреспу с	•		- 1	<u> </u>		
1		K(h):		cm./sec.	0.00		
		n Coefficient:	0.9808				
Meas.	Time	Field Meas.	Drawdown/up		Line F		Regression On
# 7\1	minutes	feet 1.07	feet 1.57	r	LN(		LN(Yt)
2)	0.08	1.13	1.51			0.449	-0.079 -0.088
3)	0.10	1.26	1.38		<del></del>	0.322	-0.086
4)	0.11	1.37	1.27			0.238	-0.105
5)	0.12	1.12	1.52			0.421	-0.114
6)	0.13	1.45	1.19			0.173	-0.123
7)	0.15	1.70	0.94			-0.061	-0.132
8)	0.16	1.40	1.24			0.216	-0.140
9)	0.17	1.53	1.11			0.105	-0.149
10)	0.18 0.19	1.53 1.56	1.11			0.107	-0.158
11)	0.19	1.56	1.08			0.077 0.082	-0.167
13)	0.21	1.63	1.01		<del></del>	0.032	-0.176 -0.185
14)	0.22	1.64	1.00		<del></del>	0.003	-0.193
15)	0.24	1.63	1.01			0.006	-0.203
16)	0.25	1.67	0.97			-0.033	-0.212
17)	0.26	1.73	0.91			0.093	-0.223
18)	0.27	1.77	0.87			0.139	-0.234
19)	0.29	1.68	0.96			0.044	-0.246
20)	0.31 0.32	1.67 1.82	0.97 0.82			0.029	-0.258
22)	0.32	1.85	0.82			0.202 -0.237	-0.271 -0.285
23)	0.36	1.87	0.77			0.267	-0.300
24)	0.38	1.90	0.74			0.300	-0.315
25)	0.40	1.92	0.72			0.334	-0.332
26)	0.42	1.95	0.69			-0.370	-0.350
27)	0.44	1.97	0.67			0.403	-0.368
28)	0.47	2.00	0.64			0.442	-0.388
29)	0.50	2.01	0.63			0.465	-0.408
30)	0.52	2.05	0.59			0.533	-0.431
31)	0.55	2.08	0.56			0.573	-0.454
32) 33)	0.58 0.62	2.10	0.54			0.616	-0.479
34)	0.62	2.13	0.52 0.49			0.664 0.707	-0.505
35)	0.69	2.17	0.49			0.707 0.755	-0.533 -0.562
22/	0.07		0.4/		·	V./ JJ	-0.302

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity

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	Bouwer & Rice Method for Calculating Hydraulic Conductivity							
Proj	ect Name:	: Towanda Mini Mart			Project No.: 1800118			
Cli	ent Name:	Henson Oil	Company		Identification: MW-4			
	ser Name:	JB						
	Run Date:	<del>2</del>	<del></del>		10.00 -=======			
		ipe Diameter	0.165	7 61				
		_		feet	<u> </u>			
1		ake Diameter		feet	1.00			
1		ntake Length:		eet				
Sa		lumn Length:		) feet				
1	Water	Table Depth	2.64	feet	0.10			
j		fer Thickness:		feet				
	_	Starting No.:		Min 1 to				
1		t Ending No.:		Max 81	0.01			
ł				- 1	0.00	4:00		
1	эреспу с	Output Units:		1 to 9				
İ		K(h):		cm./sec.	0.00			
		n Coefficient:	0.9808					
Meas.	Time		Drawdown/up	)	Line Fit To	Regression On		
#	minutes	feet	feet		LN(Yt)	LN(Yt)		
36) 37)	0.73 0.77	2.19	0.45		-0.801	-0.593		
38)	0.77_	2.21 2.23	0.43 0.41		-0.851	-0.626		
39)	0.86	2.26	0.39		-0.899 -0.955	-0.661		
40)	0.91	2.27	0.37		-1.005	-0.698 -0.738		
41)	0.97	2.30	0.35		-1.064	-0.779		
42)	1.02	2.31	0.33		-1.115	-0.823		
43)	1.08	2.33	0.31		-1.171	-0.870		
44)	1.14	2.35	0.29		-1.228	-0.920		
45)	1.21	2.36	0.28		-1.284	-0.972		
46) 47)	1.28 1.35	2.38 2.40	0.26 0.24		-1.343	-1.027		
48)	1.43	2.41	0.23		-1.411 -1.465	-1.086		
49)	1.52	2.43	0.22		-1.537	-1.149 -1.215		
50)	1.61	2.44	0.20		-1.599	-1.285		
51)	1.70	2.45	0.19		-1.666	-1.359		
52)	1.80	2.46	0.18		-1.737	-1.437		
53)	1.90	2.48	0.16		-1.808	-1.520		
54)	2.02	249	0.15		-1.890	-1.608		
55) 56)	2.13	2.50 2.51	0.14 0.13		-1.959	-1.701		
57)	2.39	2.52	0.13		-2.048 -2.129	-1.800		
58)	2.53	2.53	0.11	<del></del>	-2.129	-1.905 -2.016		
59)	2.68	2.54	0.10	<del></del>  -	-2.293	-2.133		
60)	2.84	2.55	0.10		-2.354	-2.258		
61)	3.01	2.55	0.09		-2.453	-2.389		
62)	3.17	2.56	0.08		-2.551	-2.521		
63)	3.34	2.57	0.07		-2.659	-2.652		
64) 65)	3.51 3.67	2.58	0.06		-2.765	-2.784		
66)	3.84	2.58 2.59	0.06		-2.830	-2.915		
67)	4.01	2.59	0.05		-2.919 -3.037	-3.047		
68)	4.17	2.60	0.04	<del></del>	-3.170	-3.178 -3.310		
69)	4.34	2.60	0.04		-3.270	-3.442		
70)	4.51	2.61	0.03		-3.381	-3.573		
						0.070		

#### Bouwer & Rice Method for Calculating Hydraulic Conductivity Project Name: Towanda Mini Mart Project No.: 1800118 Client Name: Henson Oil Company Identification: MW-4 User Name: JB 10.00 Run Date: Riser Pipe Diameter: 0.167 feet Intake Diameter: 0.67 feet 1.00 Intake Length: 10 feet Saturated Column Length: 10 feet Water Table Depth: 2.64 feet 0.10 Aquifer Thickness: 10 feet Line Fit Starting No.: Min 1 to 0.01 Line Fit Ending No.: **7**5 Max 81 Specify Output Units: 1 to 9 3.57E-04 cm./sec. K(h): 0.00 Correlation Coefficient: 0.9808 Meas. Time Field Meas. Drawdown/up Line Fit To Regression On minutes feet feet LN(Yt) LN(Yt) 71) 4.67 2.61 0.03 -3.474 -3.705 72) 4.84 2.61 0.03 -3.650 -3.836 73) 5.01 2.62 0.02 -3.689 -3.968 74) 5.17 2.62 0.02 -3.817 -4.099 75) 5.34 2.62 0.02 -3.963 -4.231 76) 5.51 2.63 0.02 -4.200 -4.363 77) 5.67 2.63 0.01 -4.343 -4.494 78) 5.84 2.63 0.01 -4.605 -4.626 79) 6.01 2.63 0.01 -4.962 **-4.757** 80) 6.17 2.64 0.00 -5.521 -4.889 81) 6.34 2.64 0.00 -6.908 -5.020

# W 0 8 2024

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#### LEAKING UST TECHNICAL REVIEW NOTES

Reviewed by: Scott Rothering

Date Reviewed: 3/4/24

Re: 1131055007 -- McLean County Towarda / Henson Oil Company

Old Highway 66

Leaking UST Incident 20001913 Leaking UST Technical File

#### Document(s) Reviewed:

Corrective Action Plan and Budget Dated November 16, 2023, and received November 20, 2023.

#### **General Site Information:**

Site subject to: 734

IEMA date(s): 10/6/00	Payment from the Fund? (Y/N/unknown): yes
UST system removed? (Y/N): yes	OSFM Fac. ID #: 4-012241
Encountered groundwater? (Y/N/unknown): yes	SWAP mapping and evaluation completion date: 8/24/22
Free product? (Y/N/unknown): no	Site placement correct in SWAP? (Y/N): yes
Current/past land use: commercial	Inspection Required? (Date/Plan):
Size & product of USTs: 3 8,000 gallon gasoli	ne .
Is site located in EJ area? yes	Is investigation of indoor inhalation exposure route required? yes
Has enough sampling been completed to perform a Right-to-Know Evaluation? no	PLA Checklist Complete? yes

#### **BOL File Information**:(optional) (Arranged chronologically):

The tanks were removed, and a release reported on 10/6/00. The site was classified as high priority. Originally, the consultant at the site was United Science Industries. There was a lot of investigation at the site. Nothing was done from 2007 until March 4, 2022. On this date, the current consult went to the site after being contacted by the owner to remediate the site. The purpose of this visit was to locate any wells still present on site and whether they would be able to be used for resampling. 16 of the monitoring wells were found.

The site was determined to be a High Priority Site due to proximity of contamination by the property line and the contamination of groundwater. Contaminated soil was removed from the site, and the excavation confirmation samples indicated soil contamination was no longer determined to be present on site. However, groundwater contamination was still present on site. The extent of contamination present in groundwater was determined to remain on site. Several

Page 2

samplings were performed, and the groundwater remained present on site. The consultant then proposed the use of Permeox (bioremediation) and this was approved, along with a sampling plan to determine if the bioremediation was working. This was never really determined and in 2007 the consultant at the time quite preparing and submitting reports.

At the end of this time period – soil contamination was reported to be removed on site and was no longer a risk for the site. That is not accurate per my research. However, groundwater was still present on site and was being treated by the use of Permeox.

Soil contamination on site was found in several borings, although mainly in borings peripheral to the location of the former UST. The following exceedances were noted (ppm):

#### Early Action (2000 - 2001):

#### Soil

Benzene	Result	Depth
F-1 BH-1	0.13 1.9	12 feet bgs, exceeds migration to groundwater. 5 feet bgs, exceeds outdoor inhalation residential, soil m/g
BH-1	0.52	9 feet bgs, soil m/g
BH-3	0.43	5 feet bgs, soil m/g
BH-3	0.192	9 feet bgs, soil m/g
BH-6	0.61	6 feet bgs, soil m/g
Ethylbenzene		
BH-6	21.0	6 feet bgs, exceeds soil m/g
BH-8	17.0	6 feet bgs, exceeds soil m/g.
Total Xylenes		
BH-1	13.0	5 feet bgs
BH-1	8.29	9 feet bgs
BH-6	61.1	6 feet bgs
BH-8	7.26	4 feet bgs
BH-8	51.8	6 feet bgs
		•

#### Groundwater

#### Benzene

MW-1 3.47 All exceed

#### Page 3

MW-3	3.35
NW-5	0.24
MW-6	0.234
MW-7	2.43
MW-8	0.46
MW-10	0.171
MW-13	0.259
MW-14	0.29

#### Ethylbenzene

MW-1	1.23 All exceed
MW-5	0.88
MW-6	1.1
MW-7	1.89
MW-8	4.24

It should be noted that these samples were taken prior to use of bioremediation Permeox) at the site.

Further sampling was done at the site in 2004. It is assumed this was after bioremediation treatment

Exceedances are note below in parts per million.

#### Soil

#### Benzene

W-2 .	0.05	6 feet bgs, Migration to groundwater
W-4	0.75	6 feet bgs
W-14	0.08	6 feet bgs
W-15	0.15	6 feet bgs
W-17	0.08	6 feet bgs
F-1	0.71	12 feet bgs
F-2	0.14	12 feet bgs
F-3	1.38	12 feet bgs

#### **GROUNDWATER**

#### Benzene

MW-5	0.17
------	------

MW-6	0.16
MW-8	0.26
MW-10	0.18
MW-13	0.14
MW-14	0.31

#### Ethylbenzene

MW-6	1.3
MW-8	0.82

#### Results of the sampling of 2023

All soil samples were no detect.

#### Groundwater:

All below Tier 1, most no detect.

SOIL GAS SAMPLE RESULT (mg/m<sup>3)</sup>

0.0591
0.1224
0.1085
0.0034
0.4056

The results of that CAP are included in this CAP, which then proposes obtaining a site specific groundwater ordinance to close the site.

Discussion of the Proposed Work:

The proposed work in this CAP proposes the use of a groundwater ordinance for both soil(migration to groundwater) and groundwater remediation. Additionally, they proposed and performed modeling in the CAP for determining the potential extent of groundwater flow, and proposed Tier 2 numbers for inhalation, based upon the 2001 and 2004 sample results.

The R26 modeling and the Tier 2 RO determinations were checked, and they are ok.

Information regarding modeling equations:

Hydraulic Conductivity – 3.57 E<sup>-4</sup> cm/sec

Determined by a slug test in 2001, via analyzing graph data.

Soil Bulk Density – 1.65 g/cm<sup>3</sup> Soil Particle Density – 2.65 g/cm<sup>3</sup> Moisture Content – 25.2% Foc – 0.0360 g/g

Parameters were previously approved in 2005. They were also used in the CAP approved in 2022, which we approved.

Spreadsheets are included in my PM file. All check out ok.

**Exposure Route Evaluation** 

#### Outdoor Inhalation:

Historically there has been one soil sample which exceeds Tier 1 residential remediation objectives — BH-1 — taken in 2000 at 5 feet of depth. The consultant developed a Tier 2 remediation objective for this pathway of 22.93 ppm residential and 61.60 ppm construction worker. These calculations were checked, and the exposure route has been excluded by use of Tier 2 numbers.

#### Indoor Inhalation:

The site did not pass the VI checklist. As such, a vapor sample was collected on site. The sample was collected from the most contaminated area of the site. The soil gas sample was below Tier 1 remediation objectives, as such, the exposure pathway is excluded, per the consultant.

#### Soil Ingestion:

Below Tier 1 remediation objectives.

Soil Migration to Groundwater

These locations are all from previous sampling done prior to and in 2007. The new sampling approved in the CAP of 2022 did not have any exceedances of Tier 1 remediation objectives. Therefore, the consultant claims that the extent of contamination has been defined, and I agree.

Soil contamination (0.13ppm) exceeds Tier 1 ROs for Soil component of groundwater. This is exceeded at a Floor sample – approximately 10 feet bgs south and west of the excavation pit. This was collected during EA but resampled in 2022 and non-detect at that time. However, they are proposing using a groundwater ordinance based on the old results and based on groundwater contamination.

Groundwater contamination was present in 2007. The proposed wells in the last CAP were performed and the results were below Tier 1 remediation objectives. However, the consultant is proposing the use of a groundwater ordinance. The ordinance is with the City of Towanda and a draft of the ordinance is included in the CAP. It is debatable whether the ordinance is required to close the site. I am going to check with management to verify, but I assume that since there has been both soil and groundwater contamination on the site, the ordinance is required for closure.

Notification of the properties which may be affected by groundwater contamination is proposed in this plan. The groundwater flow direction, as proven my measurement in the monitoring wells is in the south and eastern direction. The consultant has performed and provided the information for performing R26 modeling to determine the length of the potential groundwater plume, which is east to southeast (debatable but ok). All property owners in this direction are proposed to be notified of the use of a groundwater ordinance and the potential affect on their property. I have run the R26 equation and have obtained similar results as what they propose. Additionally, input parameters were checked, and they have been approved. The completed R26 internal modeling can be located on my N drive file under the LPC for this site.

During review of the previous CAP, it was determined that soil vapor inhalation would have to be investigated. The consultant sampled the site near the location of the heaviest contamination. This sample indicated there was no exceedances of Tier 1 remediation for soil vapor. For this reason, the vapor inhalation exposure route has been excluded with an instutional control based upon Table H.

It is not necessary to do an enhanced PLA requirement investigation since the site is relying upon a groundwater ordinance and notifications to close.

It is anticipated that a CACR will be received for this site once the groundwater ordinance has been approved by both the City of Towanda and the Illinois EPA.

#### Budget:

The costs include the proposed costs for:

- 1) Writing this CAP Line items 1-4
- 2) Writing the upcoming CACR Line Items 5 8
- 3) Preparing this budget Line items 9-10
- 4) Preparing a groundwater ordinance Line items 11-15
- 5) Recording CACR Line Item 16
- 6) Performing TACO Equations Line Items 17 and 18

There are some questions:

Line item 1: 30 hours seems high for this CAP since there really isn't a lot of new information in the plan. I can only find one little paragraph which appears to be different from the one which was previously submitted. I sent the consultant an email, requesting why the 30 hours were required. The agreed to a cut to 24 hours, so I cut it to that amount.

Line item 2: ok

Line item 3: ok

Line item 4: I will have them verify the extra amount of work required, and the amount of time included on the drafting of the new map. I cut it to 5 hours, with the consultant's agreement.

Line item 5: They are proposing 40 hours to write a CACR, but I don't really have anything to verify this with. I will check on it. Determined to be ok after their response.

Line item 6 – again, drafting for the future CACR. Not sure about these costs and what can Line item. OK after their response.

7: ok

Line Item 8: ok

Line item 9 – current budget – ok

Line item 10 – current budget – ok

Line item 11 – cut the four hours which the consultant stated was for GW review.

Line item 12 - I cut to Sr. PM rates, and left the hours.

Line item 13 – determined to be ok.

Line item 13 – ok

Line item 14 - ok

Line item 16 – ok

Line item 17 and 18- these costs are base are old results which were approved in the last CAP. The new groundwater results were all below Tier 1 Ros and the modeling which was previously performed and approved in a budget is the modeling which is currently being used.

Line item 19, 20, 21 – find out why they would want two claims. It ok, one for plan and one for right after CAP is approved and one is right after closure.

Line item 22 and 23 – cut because well abandonment costs are included in the well abandonment charges.

#### Final budget cuts are shown on the attached budget.

All materials costs are ok.

## **Budget Summary**

Choose the applicable regulation: 6 734 ( 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
		•	•		Proposed
Drilling and Monitoring Well Costs Form	\$	\$	\$	\$	\$
Analytical Costs Form	•	<b>.</b>		\$ 40.5	S # 1/2/2
Remediation and Disposal Costs Form	\$	\$	\$	\$	\$
UST Removal and Abandonment Costs Form		<b>\$</b>		\$	\$
Paving, Demolition, and Well Abandonment Costs Form	\$	\$	\$	\$	\$ 3,549.60
Consulting Personnel Costs Form	<b>s</b>	\$			\$ 24,196.55
Consultant's Materials Costs Form	\$	\$	\$	\$	\$ 85.00
Handling Charges Form	the Illinois EPA.	s will be determin The amount of all the Handling Ch	ned at the time a OWable handling arges Form.	billing package is charges will be d	submitted to etermined in
Total	\$	\$	\$	\$	\$ 27,831.15

# Paving, Demolition, and Well Abandonment Costs Form

#### A. Concrete and Asphalt Placement/Replacement

Number of Square Feet	Asphalt or Concrete			Total Cost	
-		.00			•
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					No. 12 Page 1
				推進以外別等以後	

	·
Total Concrete and Asphalt	
Placement/Replacement Costs:	

#### **B.** Building Destruction or Dismantling and Canopy Removal

Item to Be Destroyed, Dismantled, or Removed	Unit Cost (\$)	Total Cost (\$)	
	2000 - 10		

Total Building Destruction or Dismantling and	
Canopy Removal Costs:	

# Paving, Demolition, and Well Abandonment Costs Form

#### C. Well Abandonment

Monitoring Well ID #	Type of Well (HSA / PUSH / Recovery)	Depth of Well (feet)	Cost (\$) per Foot	Total Cost
MW-4	HSA	15.00	14.79	\$221.85
MW-5	HSA	15.00	14.79	\$221.85
MW-6	HSA	15.00	14.79	\$221.85
MW-8	HSA	15.00	14.79	\$221,85
MW-10	HSA	15.00	14.79	\$221.85
MW-12	HSA	15.00	14.79	\$221.85
MW-13	HSA	15.00	14.79	\$221.85
MW-14	HSA	15.00	14.79	\$221.85
MW-20	HSA	15.00	14.79	\$221.85·
MW-19	HSA	15.00	14.79	\$221,85
MW-21	HSA	15.00	14.79	\$221.85
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MW-5R	HSA	15.00	14.79	\$221.85
MW-6R	HSA	15.00	14.79	\$221.85
MW-8R	HSA	15.00	14.79	\$221,85
MW-10R	HSA -	15.00	14.79	\$221.85
MW-14R	HSA	15.00	14.79	\$221.85
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Total Monitoring Well Abandonment Costs:	\$3,549.60

Total Paving	, Demolition, and Well Abandonment Costs:	\$3,549.60

# **Consulting Personnel Costs Form**

Employee Name		Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task			
		Senior Project Manager	30.00	147.95	\$4,438.50
CCAP	Corrective Action	n Plan Design and Preparation	- G 724	x 147.4	(= 3,550
		Senior Prof. Engineer	2.00	192.33	\$384.66
CCAP	Corrective Action	n Plan Review and Certification			
		Senior Admin. Assistant	2.00	66.58	\$133.16
CCAP	Corrective Action	n Plan Compilation, Assembly and	l Distribution		
		Senior Draftperson/CAD	7.00	88.76	\$621.32
CCAP	Drafting for Corre	ective Action Plan			
		Engineer III	40.00	147.95	\$5,918.00
CACR	Report Preparation	on/Development/inputs			
		Senior Draftperson/CAD	10.00	88.76	\$887.60
CACR	Drafting/Updating	& Completion of Maps			
		Senior Prof. Engineer	2.00	192.33	ا <b>ر</b> \$384.66
CACR	Report Review/Co	ertification			
The state of the s		Senior Admin. Assistant	2.00	66.58	\$133.16
CACR	Report Compliation	on/Assembly/Distribution			
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Employee Nam	<b>e</b>	Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task	<		
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		Senior Project Manager	8.00	147.95	\$1,183.60
CCAP-Budget	Corrective Action	n Budget Design, Calculations an	id Inputs		
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		Senior Prof. Engineer	2.00	192.33	\$384.66
CCAP-Budget	Corrective Action	n Budget Review and Certification	n		
		Senior Project Manager	12.00	447.05	×
ELUC		de Creum durates Codinana - Durit	12.00	147.95	\$1,775.40
		da Groundwater Ordinance Revi	ew/Preparation/D	esign/village Mee	ting
		Senior Prof. Engineer	4.00	192.33	\$769.32
ELUC		with Village Officials/Village Cou	nell		
	olikin sosiyy iz		T	<u> </u>	
		Senior Draftperson/CAD	6.00	88.76	\$532.56
ELUC	Drafting maps for	r groundwater ordinance	·····		·
		Senior Project Manager			<u> </u>
			4.00	147.95	\$591.80
ELUC	Groundwater Ord	linance Notifications			
		Senior Admin. Assistant	1,00	66.58	**************************************
ELUC		linance Notifications	1,00	00.55	\$66.58
		Senior Admin. Assistant	2.00	66.58	\$133.16
CACR	NFR Recording/V	fillage Correspondence/Fee			
	office interest of the con-		T		
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Employee Name		Personnel Title	Haura	Dodge (A)	<i></i>
Remediation Category			Hours	Rate* (\$)	Total Cost
Tremediation Category	<u> </u>	Task	<u> </u>		٠,
	(5.15.150e)	Engineer III	[	<u> </u>	
		mignicet tit	4.00	147.95	\$591.80
TACO 2 or 3	TACO Tier 2 CU	IO Development			
520 20744 Supplemental State (					
多数的复数数		Senior Project Manager	5.00	147.95	\$739.75
TACO 2 or 3	Contaminant Tra	insport Modeling / Assessment of C	Contamination Le	vels/Plume	
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Employee Name	)	Personnel Title	Hours	Rate* (\$)	Total Cost
Remediation Category		Task			•
\$ \$ **					
		Senior Prof. Engineer	4.00	192.33	\$769.32
CA-Pay	Corrective Actio	n Reimbursements Certification (2	Claims)		
		Senior Acct. Technician	32.00	81.36	\$2,603.52
CA-Pay	Corrective Action	n Relmbursements Preparation, C	alculations and I	nputs (2 Cialms)	
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		Senlor Admin. Assistant	4.00	66.58	\$266,32
CA-Pay	Corrective Action	n Reimbursements Compliation, A	ssembly and Dis	tribution (2 Claim	s)
Marie Care and Edition of the Control	i kuraliya dan Maliy		<u> </u>	<del> </del>	
		Senior Project Manager	4.00	147.95	\$591.80
CCA-Field	Office Preparation	on, Scheduling, Arrangements for t	Vell Abandonme	nt Actitivies	
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		Senior Project Manager	2.00	147.95	\$295.90
CCA-Field	CA Documentation	on/Compliance for Well Abandonn	nent .		·
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**Total of Consulting Personnel Costs** 

\$24,196.55

# Consultant's Materials Costs Form

Materials, Equipment	, or Field Purchase	Time or Amount Used	Rate (\$)	Unit	Total Cost
Remediation Category		Description/J	lustification		
Postage		2.00	12.00	/each	\$24.00
CCAP	Distribution of Corrective A	Action Forms / Plan			
Postage		2.00	12.00	/each	\$ <del>\</del> \$24.00
CACR	Distribution of CACR/forms	3			
Postage		2.00	8.00	/each	\$16.00
ELUC	Groundwater Ordinance di	stribution to Village	Office/IEPA		
		<u> </u>			
Postage √ CA-Pay	Distribution of Correction A	2.00	10.50	/each	\$21.00
ON-1 ay	Distribution of Corrective A	Cuon Reimbursemer	It Packages / Dr	atts / Forms	·
				<del></del>	·

**Total of Consultant Materials Costs** 

\$85.00

From: <u>Mickey Davis</u>
To: <u>Rothering, Scott</u>

Subject: [External] Re: Henson Oil Company - Incident # 20001913

**Date:** Friday, March 8, 2024 11:31:41 AM

Scott,

Below are my responses to your budget questions:

30 hours for Senior PM to write this CAP – I can only find a very few changes t the Cap from the last one. As such, I don't see how 30 hours can be approved. Without a reduction of hours the entire line item will be deducted.

The CAP may appear to have few changes from paragraph to paragraph compared to the previous CAP but the majority of the hours that go into developing and writing a new CAP are not used for actually writing the report. The majority of the time spent is in the process of accurately incorporating the new analytical data and information acquired since the last CAP. This process involves but not limited to analyzing the new analytical data accurately to come to a correct determination of what the next step should be. This determination includes the cross-referencing of sample depths and sample results with the previous CAP to develop an accurate representation of the current situation at the site. It also includes corresponding with the client to determine which course of action best suits their needs as well as corresponding with the needed officials to determine the viability of a potential action. The process also involves ongoing feedback from senior personnel, consistent assessment, and finally writing the comprehensive new CAP. This is a complex and involved process which strives for correct representation and accuracy as well as client review and additional discussion. If the hours are to be reduced, we request a reduction to 24.00 hrs.

#### Please explain the 7 hours for drafting in this CAP.

For this CAP additional maps were drafted to accurately include the most recent sampling locations and analytical data. Additional maps were drafted to accurately represent groundwater analytical data. Additional maps were drafted to accurately represent the new soil plume map, the groundwater modeling, and the proposed groundwater ordinance area. If the hours are to be reduced, we request a reduction to 5.00 hrs.

Please explain why you anticipate it taking 40 hours to write the CACR for this site, and 10 hours to update maps.

Specific details with number of maps and writing of the plan are required for approval.

All CACRs, especially for older sites can take 40-50 hours. We can only budget what it would typically take; if it takes less time, less time would be billed. We never just bill for the full amount budgeted; only for the hours actually incurred. The process includes combining years of previous plans which have not been reviewed or assessed recently along with correctly including the documents needed for the closure report. We will need to accurately examine, assess, and incorporate the needed analytical data, soil boring logs, well completion reports, TACO documentation, drafted maps, report tables, and previous information to satisfy the Illinois EPA requirements. We also may need to correspond and acquired documents from the

client, property owners, and from city officials. This documentation also needs to be correctly incorporated into the closure report. The process also involves ongoing feedback from senior personnel, consistent assessment, and writing the comprehensive CACR. This is a complex and involved process which strives for correct representation and accuracy. In all likelihood, completion of the CACR will take more than 40.00 hours from start to finish.

We anticipate 10.00 hrs for drafting and updating maps because we are compiling current and old reports into the CACR. Besides our current maps needing to accurately reflect the most recent data locations and depths, we have to be sure that the drafted maps of previous reports are still legible and reflect the information from their reports. Between contamination value and location maps, previous consultant maps, and maps that accurately reflect the completed actions taken, about 10 plus maps will be updated.

Please break out the number of hours needed for each task for Senior Project Manager (12 hours total) for Village of Towanda Groundwater Ordinance Review, Preparation, Design, and Village Meeting)

Village of Towanda Groundwater Ordinance Review (Draft review by IEPA, Senior Project Manager review, Draft review by the Village of Towanda): 4.00 hrs

Preparation (Parcel boundary and address gathering, Communication with Village of Towanda, Notifications Letters, Creating an accurate ordinance narrative). 2.00 hrs

Design (accurately drafting, incorporating Parcel information): 2.00 hrs

Village Meeting: 4.00 hr

Since money was approved in the last budget for TACO calculations and the results (it appears) from the latest sampling are all below Tier 1 remediation objectives, why is there additional modeling proposed?

After a review of the previous budget, the analytical data, and the TACO document; the TACO document was changed to reflect the recent data and the modeling altered.

• What is the timing of two claims and why are two claims needed?

One claim is for after the CAP plan is approved and the other claim is for after the closure.

If you have any other questions or comments, feel free to contact
---

-Mickey

From: Rothering, Scott <Scott.Rothering@Illinois.gov>

**Sent:** Wednesday, March 6, 2024 11:59 AM **To:** Mickey Davis <mickey@cwmcompany.com>

**Subject:** RE: Henson Oil Company - Incident # 20001913

There are costs for two claims requested in the budget. Why are two claims needed specifically for this site?

Scott R. Rothering Illinois Environmental Protection Agency scott.rothering@illinois.gov 217-785-1858

From: Mickey Davis <mickey@cwmcompany.com>

Sent: Wednesday, March 6, 2024 11:49 AM

**To:** Rothering, Scott <Scott.Rothering@Illinois.gov>

Subject: [External] Re: Henson Oil Company - Incident # 20001913

Scott,

The most recent analytical groundwater laboratory results missing from the report was an error on our part and are attached to this email.

The groundwater ordinance was proposed due to the groundwater contamination modeling shown in Drawing 0013. The groundwater exceedances results are from MW-1, MW-7, and MW-3 (installed, sampled and excavated by USI, Inc.) and their location can be seen on Drawing 0005. The modeling was based off the exceedances of those three wells.

We will answer the budget questions by Tuesday March 12, 2024.

Could you please explain in more detail your question about claims? What is the timing of two claims and why are two claims needed?

Mickey

Project Manager CW3M Company, Inc.

**From:** john cwmcompany.com < john@cwmcompany.com>

**Sent:** Wednesday, March 6, 2024 10:01 AM **To:** Mickey Davis < <u>mickey@cwmcompany.com</u>>

**Subject:** FW: Henson Oil Company - Incident # 20001913

I think you were working on Henson oil, right?

From: Rothering, Scott < Scott.Rothering@Illinois.gov>

Sent: Wednesday, March 6, 2024 9:40 AM

**To:** Carol Rowe < <u>carol rowe@sbcglobal.net</u>>; john cwmcompany.com

<john@cwmcompany.com>

**Subject:** Henson Oil Company - Incident # 20001913

As your office is aware, I am currently reviewing this site.

I have some questions/comments about the site which will need to be addressed.

The first thing is I am not sure why you are proposing a groundwater ordinance for the site. It is true historically that there is both soil and groundwater contamination on site. However, the current sample results from the sampling performed last year do not indicate a need for the use of a groundwater ordinance, or any institutional controls, as I see it.

Which brings up another point, The groundwater sampling results from the lab, along with the chain of custody and laboratory certifications must be provided, I cannot find them in this report.

There are some questions with the budget will have to be verified:

- 1. 30 hours for Senior PM to write this CAP I can only find a very few changes t the Cap from the last one. As such, I don't see how 30 hours can be approved. Without a reduction of hours the entire line tem will be deducted.
- 2. Please explain the 7 hours for drafting in this CAP.
- 3. Please explain why you anticipate it taking 40 hours to write the CACR for this site, and 10 hours to update maps. Specific details with number of maps and writing of the plan are required for approval.
- 4. Please break out the number of hours needed for each task for Senior Project Manager (12 hours total) for Village of Towanda Groundwater Ordinance Review, Preparation, Design, and Village Meeting)
- 5. Since money was approved in the last budget for TACO calculations and the results (it appears) from the latest sampling are all below Tier 1 remediation objectives, why is there additional modeling proposed?
- 6. What is the timing of two claims and why are two claims needed?

I may have more questions about the site before issuing a letter.

Please note, the response is due from IEPA on March 19, 2024. I have every intention of meeting this deadline. However, I will need an answer to the above questions prior to issuing a response. Please respond as quickly as possible. I realize the plan and budget have been in the house since November 20, 2023, and some of the questions may take some research. I need a response by Tuesday March 12, 2024. There is always the possibility of more time being allowed if needed. However, if no response is received the action on the plan and budget will be taken which may included denial of plan/budget and /or cutting entire line items.

Scott & Rothering Illinois Environmental Protection Agency scott.rothering@illinois.gov 217-785-1858

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## SUBURBAN LABORATORIES, Inc.



1950 S. Batavia Ave., Suite 150 Geneva, Illinois 60134 Tel. (708) 544-3260 • Toll Free (800) 783-LABS Fax (708) 544-8587 www.suburbanlabs.com

Workorder: 2310542

October 11, 2023

Carol Rowe CWM Company, Inc 701 West South Grand Springfield, IL 62704

TEL: (217) 522-8001 FAX: (217) 522-8009 RE: Henson Oil

Dear Carol Rowe:

Suburban Laboratories, Inc. received 5 sample(s) on 10/6/2023 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation including, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Dan Galeher Project Manager

708-544-3260 ext 216 dan@SuburbanLabs.com

Dac Sell





#### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Case Narrative

Client: CWM Company, Inc.

Project: Henson Oil WorkOrder: 2310542

Date: October 11, 2023

PO #: OC Level:

Chain of Custody #: Temperature of samples upon receipt at SLI: C

#### General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.
- All radiological results are reported to the 95% confidence level,

#### Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS: (Surrogate Standard): Quality control compound added to the sample by the lab.
- -LA: Lab Accident No valid data to report.
- -VO: Insufficient Volume provided
- -BR: Received broken
- -IP: Invalid Sampling

#### Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

#### Workorder Specific Comments:

Created: 10/11/2023 4:28:24 PM



### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Henson Oil

Report Date: October 11, 2023

Workorder: 2310542

Client Sample ID: MW-5

**Lab ID:** 2310542-001

Date Received: 10/06/2023 10:32 AM

Matrix: GROUNDWATER

Collection Date: 10/02/2023 1:10 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method	EPA-SW8260B-	-Rev 2, Dec-9	6	Analyst: RWM	
Benzene	ND	0.00100		mg/L	1	10/06/2023 8:02 PM	R168321
Ethylbenzene	0.0197	0.00100		mg/L	1	10/06/2023 8:02 PM	R168321
m,p-Xylene	ND	0.00200		mg/L	1	10/06/2023 8:02 PM	R168321
c-Xylene	ND	0.00100		mg/L	1	10/06/2023 8:02 PM	R168321
Total Xylenes	ND	0.00200		mg/L	1	10/06/2023 8:02 PM	R168321
Toluene	0.00110	0.00100		mg/L	1	10/06/2023 8:02 PM	R168321
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	103	76-119		%Rec	1	10/06/2023 8:02 PM	R168321
SS: Dibromofluoromethane	83.4	66-137		%Rec	1	10/06/2023 8:02 PM	R168321
SS: Toluene-d8	103	80-120		%Rec	1	10/06/2023 8:02 PM	R168321

Client Sample ID: MW-6

Lab ID: 2310542-002

Date Received: 10/06/2023 10:32 AM

Matrix: GROUNDWATER

Collection Date: 10/02/2023 1:20 PM

Parameter	Result	Report Limit	Qual. Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method	: EPA-SW8260B-Rev 2, Dec-96		Analyst: RWM	·
Benzene	<b>N</b> D .	0.00100	mg/L	1	10/06/2023 8:28 PM	R168321
Ethylbenzene	0.0719	0.00100	mg/L	1	10/06/2023 8:28 PM	R168321
m,p-Xylene	0.00922	0.00200	mg/L	1	10/06/2023 8:28 PM	R168321
o-Xylene	0.00172	0.00100	mg/L	1	10/06/2023 8;28 PM	R168321
Total Xylenes	0.0109	0.00200	mg/L	1	10/06/2023 8:28 PM	R168321
Toluene	0.00267	0.00100	mg/L	1	10/06/2023 8:28 PM	R168321
Internal Quality Control Compounds						
SS: 4-Bromofluorobenzene	102	76-119	%Rec	1	10/06/2023 8:28 PM	R168321
SS: Dibromofluoromethane	88.4	66-137	%Rec	1	10/06/2023 8:28 PM	R168321
SS: Toluene-d8	103	80-120	%Rec	1	10/06/2023 8:28 PM	R168321



### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

# Laboratory Results

Client ID: CWM Company, Inc

Project Name: Henson Oil

Report Date: October 11, 2023

Workorder: 2310542

Client Sample ID: MW-8

Lab ID: 2310542-003

Date Received: 10/06/2023 10:32 AM

Matrix: GROUNDWATER

Collection Date: 10/02/2023 1:30 PM

		Report			Dilution	l	
Parameter	Result	Limit	Qual.	Units	Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-SW8260B-	Rev 2, Dec-96	3	Analyst: RWM	
Benzene	ND	0.00100		mg/L	1	10/06/2023 8:54 PM	R168321
Ethylbenzene	0.00217	0.00100		mg/L	1	10/06/2023 8:54 PM	R168321
m,p-Xylene	ND	0.00200		mg/L	1	10/06/2023 8:54 PM	R168321
o-Xylene	ND	0.00100		mg/L	1	10/06/2023 8:54 PM	R168321
Total Xylenes	ND	0.00200		mg/L	1	10/06/2023 8:54 PM	R168321
Toluene	ND	0.00100		mg/l.	1	10/06/2023 8:54 PM	R168321
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	103	76-119		%Rec	1	10/06/2023 8:54 PM	R168321
SS: Dibromofluoromethane	87.4	66-137		%Rec	1	10/06/2023 8:54 PM	R168321
SS: Toluene-d8	100	80-120		%Rec	1	10/06/2023 8:54 PM	R168321

Client Sample ID: MW-10

Lab ID: 2310542-004

Date Received: 10/06/2023 10:32 AM

Matrix: GROUNDWATER

Collection Date: 10/02/2023 1:40 PM

		Report			Dilution		
Parameter	Result	Limit	Qual.	Units	Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method	: EPA-SW8260B-	Rev 2, Dec-96	3	Analyst: RWM	,
Benzene	0.00462	0.00100		mg/L	1	10/06/2023 9:20 PM	R168321
Ethylbenzene	0.0537	0.00100		mg/L	1	10/06/2023 9:20 PM	R168321
m,p-Xylene	0.00358	0.00200		mg/L	1	10/06/2023 9:20 PM	R168321
o-Xylene	0.00100	0.00100		mg/L	1	10/06/2023 9:20 PM	R168321
Total Xylenes	0.00458	0.00200		mg/L	1	10/06/2023 9:20 PM	R168321
Toluene	<b>N</b> D	0.00100		mg/L	1	10/06/2023 9:20 PM	R168321
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	103	76-119		%Rec	1	10/06/2023 9:20 PM	R168321
SS: Dibromofluoromethane	89.0	66-137		%Rec	1	10/06/2023 9:20 PM	R168321
SS: Toluene-d8	102	80-120	=	%Rec	1	10/06/2023 9:20 PM	R168321

Page 4 of 7

Created: 10/11/2023 4:28:26 PM



### Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

-Laboratory-Results-

Client ID: CWM Company, Inc

Project Name: Henson Oil

Report Date: October 11, 2023

Workorder: 2310542

Client Sample ID: MW-14

Lab ID: 2310542-005

Date Received: 10/06/2023 10:32 AM

Matrix: GROUNDWATER

Collection Date: 10/02/2023 1:50 PM

Parameter	Result	Report Limit	Qual. Units	Dilution Factor		Batch ID
VOLATILE ORGANIC COMPOUNDS		Method:	EPA-SW8260B-Rev 2, Dec-96		Analyst: RWM	
Benzene	ND	0.00100	mg/L	1	10/06/2023 9:45 PM	R168321
Ethylbenzene	0.00170	0.00100	mg/L	1	10/06/2023 9:45 PM	R168321
m,p-Xylene	ND	0.00200	mg/L	1	10/06/2023 9:45 PM	R168321
o-Xylene	ND	0.00100	mg/L	1	10/06/2023 9:45 PM	R168321
Total Xylenes	ND	0.00200	mg/L	1	10/06/2023 9:45 PM	R168321
Toluene	ND	0.00100	mg/L	1	10/06/2023 9:45 PM	R168321
Internal Quality Control Compounds						
SS: 4-Bromoffuorobenzene	102	76-119	%Rec	1	10/06/2023 9:45 PM	R168321
SS: Dibromofluoromethane	88.2	66-137	%Rec	1	10/06/2023 9:45 PM	R168321
SS: Toluene-d8	102	80-120	%Rec	1	10/06/2023 9:45 PM	R168321



## Suburban Laboratories, Inc.

## **Qualifier Definitions**

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

WO#: 2310542 Date: 10/11/2023

## Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
В	Analyte detected in the associated Method Blank
C	Value is below Minimum Concentration Limit
c	Analyte not in TNI/NELAC scope of accreditation
E	Estimated, detected above quantitation range
G	Refer to case narrative page for specific comments
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limit (QL)
N	Tentatively identified compounds
ND	Not Detected at the Reporting Limit
P	Present
Q	Accreditation is not available from Wisconsin
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
T	Analyte detected in sample trip blank
V	EPA requires field analysis/filtration. Lab analysis would be considered past hold time.
WI	This sample was ran at the Wisconsin Laboratory, WI DNR Certified #246179890

SUBURBAN LA	BORATO	RIES, II	nc.				CHAIN (	OF (	CUSTODY REC	ORD	)		1
1950 S. Batavia Ave. Ste. 150	Geneva, IL 60	134		Te	. 70	8.544.3260	login@suburban						_
Company Name LWM Company Inc.						ROUND TIME RE	EQUESTED		NALYSIS & METHOD REQUE Enter an "X" in box below for re		Page / of /	<u>,</u>	
Company Address 701 West South Grand,	Avr			No	mal		RUSH*				PO#	e 7 of	1
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Office Mobile	Fa	ıx		Date and	Time		TO SOFCHAIGES.	1			* Additional charges apply for		d
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SAMPLE IDENTIFICATION	1100	ECTION		GRAB/		CONTAINERS		BETX			Received within 24 hours of collection?	Vo Yes	
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Waste Water (WW), Surface Water(\$W), Ground Water (GW), Solid Waste (WA), Skrdge (U), Wipe (P) CONTAINER: 2oz,						•							/2024
4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube. Glass (G), Plastic (P) PRESERVATIVE:													
H_SO_ HCI, HNO, Methanol (MeOH)													
NaOH, Sodium Bisuifate (NaB), NaThio Relinquished By	2. Religio	uished By		Date		3. Relingu	ished By		Date 4. Reling	uished By	Date		-
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THIS FORM MUST BE FILLED OUT COMPLET	ELY BY THE S	AMPLE COLL	ECTOR OR	SUBMITT	ER/	AND ORIGINAL	FORM MUST ACC	OMPA	NY SAMPLES AT ALL TIM	ES.		Rev 2/1	7



# Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed \$50,000.00 for the violation and an additional civil penalty of not to exceed \$10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

#### Leaking Underground Storage Tank Program Laboratory Certification for Chemical Analysis

	IEMA Incident # (6- or 8-digit)	: 20001913	IEPA LPC# (10-digit): 11310550	07
	Site Name: Henson Oil Co.			
	Site Address (Not a P.O. Box	): Old Hwy. 66		
	City: Towanda	County: McLean county	ZIP Code: 61776	
	Leaking UST Technical File			
3.	Sample Collector			
	I certify that:			
	<ol> <li>Appropriate sampling equ</li> </ol>	ipment/methods were utilized to obtai	n representative samples.	MUD
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			(Initial)
	<ol><li>Chain-of-custody procedu</li></ol>	res were followed in the field.		(Initial)
	Sample integrity was mair	ntained by proper preservation.		MWI)
	o. Gample integrity was mail	italiled by proper preservation.		(Initial)
	4. All samples were properly	labeled.		MWD
·.	Laboratory Representat	ive		(Initial)
	I certify that:			0.
	1. Proper chain-of-custody p	rocedures were followed as documen	ted on the chain-of-custody forms	(Initial)
	2. Sample integrity was main	ntained by proper preservation.		(Initial)
	3. All samples were properly	labeled.		(Initial)
	4. Quality assurance/quality	control procedures were established a	and carried out.	(Initial)
	5. Sample holding times wer	e not exceeded.		(Initial)

IL 532 2283 LPC 509 Rev. March 2006

- 6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses.
- 7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003).

(Initial)

### D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector	Laboratory Representative	
Name Mickey Davis	Name Dar GALFHER	
Title Project Manger	Title GENIOR P.M	
Company CWM Company, Inc.	Company Suburban Laboratories, Inc.	
Address 701 South Grand Ave. West	Address 1950 S. Batavia Ave Ste 150	
City Springfield	City Geneva	
State IL	State IL	
Zip Code 62704	Zip Code 60134	
Phone 217-522-8001	Phone 708-544-3260	
Signature 200	Signature / //	
Date /0/2/23	Date 10-20-23	

From: <u>Mickey Davis</u>
To: <u>Rothering, Scott</u>

Subject: [External] Re: Budget for Incident # 20001913

Date: Tuesday, March 26, 2024 11:35:39 AM

Scott,

I would like clarification on the statement you made: "I cannot include the 40 hours for CACR prep in this budget However, when you submit the CACR, you can submit an amended budget to include those costs. I also cannot approve the groundwater ordinance preparation costs in this budget either, they will have to be included in the next one. Additional budget preparation costs will also be eligible."

It was my understanding from our conversation that the corrective action activities at Henson Oil site were concluded. The most recent CAP proposed a groundwater ordinance, CACR plan costs along with other needed items. The groundwater ordinance and CACR design/preparation costs were not approved in a letter dated 3/19/24. To move to the CACR report, we need to complete the ordinance. Before we can do the work to obtain the ordinance and write the CACR, a budget needs to be approved for both.

I am unsure how you would like CWM to proceed since we do not have an approved budget for obtaining the ordinance or for writing the CACR.

Mickey

**From:** Rothering, Scott <Scott.Rothering@Illinois.gov>

**Sent:** Friday, March 15, 2024 5:36 PM

**To:** Mickey Davis <mickey@cwmcompany.com> **Subject:** RE: Budget for Incident # 20001913

I had to take time off this afternoon. As a said, I will write the letter Monday morning. I cannot include the 40 hours for CACR prep in this budget However, when you submit the CACR, you can submit an amended budget to include those costs. I also cannot approve the groundwater ordinance preparation costs in this budget either, they will have to be included in the next one. Additional budget preparation costs will also be eligible. Thank you.

Scott R. Rothering Illinois Environmental Protection Agency scott.rothering@illinois.gov 217-785-1858

From: Mickey Davis <mickey@cwmcompany.com>

Sent: Friday, March 15, 2024 12:13 PM

**To:** Rothering, Scott <Scott.Rothering@Illinois.gov>

Subject: [External] Re: Budget for Incident # 20001913

Scott,

Thank you for the update. I would just like to confirm that you will be granting the 40.00 hours for the CACR preparation and a reduction is not required.

Mickey

**From:** Rothering, Scott < Scott.Rothering@Illinois.gov>

Sent: Friday, March 15, 2024 11:37 AM

**To:** Mickey Davis <<u>mickey@cwmcompany.com</u>> **Subject:** RE: Budget for Incident # 20001913

I am going to finalize this letter on Monday. Information which you have provided is sufficient for what I need to complete the letter. Thank you. If you have any specific questions prior to issuance of the letter, let me know. Thank you.

Scott R. Rothering
Illinois Environmental Protection Agency
scott.rothering@illinois.gov
217-785-1858

**From:** Mickey Davis < mickey@cwmcompany.com>

Sent: Friday, March 15, 2024 10:40 AM

**To:** Rothering, Scott < Scott.Rothering@Illinois.gov > **Subject:** [External] Re: Budget for Incident # 20001913

Scott,

1. I didnt notice that you didn't include a copy of the notification letter (draft) for notifying off site property owners about the use of the the groundwater ordinance.

Attached is a generic notification letter as requested.

2. 40 hours of preparation for the CACR for this CAP is too high, there will have to be a reduction in the number of hours, or the entire line item will be cut.

As requested, a statement regarding the 40.00 hrs.

All CACRs, especially for older sites can take 40-50 hours. We can only budget what it would typically take; if it takes less time, less time would be billed. We never just bill for the full amount budgeted; only for the hours actually incurred. The process includes combining years of previous plans which have not been reviewed or assessed recently along with correctly including the documents needed for the closure report. We will need

to accurately examine, assess, and incorporate the needed analytical data, soil boring logs, well completion reports, TACO documentation, drafted maps, report tables, and previous information to satisfy the Illinois EPA requirements. We also may need to correspond and acquired documents from the client, property owners, and from city officials. This documentation also needs to be correctly incorporated into the closure report. The process also involves ongoing feedback from senior personnel, consistent assessment, and writing the comprehensive CACR. This is a complex and involved process which strives for correct representation and accuracy. In all likelihood, completion of the CACR will take more than 40.00 hours from start to finish.

If you need additional information or a request for a reduction, please feel free to contact me.

Mickey

**From:** Rothering, Scott < Scott.Rothering@Illinois.gov>

**Sent:** Friday, March 15, 2024 9:27 AM

**To:** Mickey Davis <<u>mickey@cwmcompany.com</u>>; Carol Rowe <<u>carol\_rowe@sbcglobal.net</u>>

**Subject:** Budget for Incident # 20001913

Thank you for taking the time to answer my questions about the above site. I have submitted the letter and Budget for management review and have a couple of more things I need clarification prior to issuing the letter:

- 1. I didn't notice that you didn't include a copy of the notification letter (draft) for notifying off site property owners about the use of the the groundwater ordinance.
- 2. Apparently, a draft groundwater ordinance is not sufficient. I need some sort of communication with a representative of the Village of Towanda indicating they are willing to accept the use of the ordinance. I assume you have had communication with them.
- 3. 40 hours of preparation for the CACR for this CAP is too high, there will have to be a reduction in the number of hours, or the entire line item will be cut.

I will follow this email with a phone call later this morning if you want to discuss, I want to get the letter done as soon as possible (it is due Tuesday). I would like to have it done this morning. Thank you.

Scott R. Rothering Illinois Environmental Protection Agency scott.rothering@illinois.gov 217-785-1858

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all

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# **Environmental Consulting Services**

Phone: (217) 522-8001 Fax: (217) 522-8009

Date	Certified Mail #
Addı	ress
Re:	Notice for Groundwater Ordinance Reliance
To W	hom It May Concern:
respo	is performing an environmental response action at the property located at Street, City, County, Illinois. The response action is being performed use of a release of petroleum from underground storage tanks at the site. The onse action consists of defining the contamination plume, and Ill. Adm. Code 742 has utilized to gain closure of the incident.
groun will n the p wells	rotect human health, Illinois regulations require that either clean up adwater contamination or demonstrate that the groundwater in the area of the release not be used as potable water. (Groundwater is the water beneath the ground stored in ores of soil and rock; some communities and homeowners pump this water out of to supply potable water. Potable means fit for human consumption including ing, bathing, preparing food, washing dishes, and so forth.)
prohi instit object contr Envir adop contr	,Street, City,County, Illinois has adopted an ance that strictly prohibits the human and domestic consumption of the groundwater ath your property. Under Illinois regulations, a local ordinance that effectively bits the installation and use of potable water supply wells may be used as an utional control to allow contamination above the groundwater ingestion remediation etives to remain in the groundwater (35 Ill. Adm. Code 742.1015). (An institutional ol is a legal mechanism for imposing a restriction on land use.) The Illinois ronmental Protection Agency (Illinois EPA) has determined that the ordinance ted by the meets the regulatory requirements for use as an institutional ol has requested and has been granted approval from the Illinois EPA to the groundwater ordinance as an institutional control.
affec water on th dome	property, located at; Parcel I.D. #, is included in the area ted by the ordinance. This means that you cannot install or use a private, potable well on your property. Based on the remediation objectives established in reliance is ordinance, groundwater beneath your property may not be suitable for human or estic consumption. Illinois regulations require that you be notified of these facts. Ordinance is identified as Ordinance No If you wish to obtain a copy of the ance, please contact the by mail at Street,,  County, Illinois, or by telephone at (217) 483-2451. To learn more about please contact us either by mail at 701 South Grand Avenue West.

Springfield, Illinois 62/04, or by telephone at (21/) 522-8001, or the Illinois EPA,
Bureau of Land Project Manager, by mail at 1021 North Grand Avenue East,
P.O. Box 19276, Springfield, Illinois 62794-9276, or by telephone at (217) 785-5715.
You may also obtain a copy of the complete Illinois EPA file on . To do
so, you will need to submit a written request with your signature to the Freedom of
Information Act (FOIA) Officer, Illinois EPA, Bureau of Land, 1021 North Grand
Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276. When requesting a copy
of the file, please reference the file heading shown below:
LPC: – County
LPC: County , Illinois / , Illinois
, Illinois
Incident Number
FOIA requests may also be requested through the Illinois EPA's web page at
www.epa.state.il.us/foia.
Sincerely,



1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 · (217) 782-3397

JB Pritzker, Governor

John J. Kim, Director

(217) 524-3300

**CERTIFIED MAIL** 

MAR 1 9 2024

9589 0710 5270 1328 8602 50

Jerry Henson Henson Oil Company PO Box 712 Bloomington, IL 61702

Re:

1131055007 -- McLean County

Towanda / Henson Oil Company

Old Highway 66

Leaking UST Incident 20001913 Leaking UST Technical File

Dear Mr. Henson:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Plan (plan) submitted for the above-referenced incident. This plan, dated November 16, 2023, was received by the Illinois EPA on November 20, 2023. Citations in this letter are from the Environmental Protection Act (415 ILCS 5) (Act) and Title 35 of the Illinois Administrative Code (35 Ill. Adm. Code).

The Illinois EPA requires modification of the plan; therefore, the plan is conditionally approved with the Illinois EPA's modifications. The following modifications are necessary, in addition to those provisions already outlined in the plan, to demonstrate compliance with Title XVI of the Act (Sections 57.7(b)(2) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(a)):

Pursuant to Section 57.7(b)(2) of the Act, 35 Ill. Adm. Code 734.345(a)(3)(B), and 35 Ill. Adm. Code 742.1000(a)(9), an institutional control consisting of a building with a full concrete slab-on-grade or a full concrete basement floor and walls must be placed on the property when indoor inhalation exposure route remediation objectives are based on the use of Title 35 742 Appendix A Table H.

In addition, the budget is modified pursuant to Sections 57.7(b)(3) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(b). Based on the modifications listed in Section 2 of Attachment A, the amounts listed in Section 1 of Attachment A have been approved. Please note that the costs must be incurred in accordance with the approved plan. Be aware that the amount of payment from the Fund may be limited by Sections 57.7(c), 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655.

Further, pursuant to 35 Ill. Adm. Code 734.145, it is required that the Illinois EPA be notified of field activities prior to the date the field activities take place. This notice must

Page 2

include a description of the field activities to be conducted; the name of the person conducting the activities; and the date, time, and place the activities will be conducted and shall be made to EPA. Field Notifications @illinois.gov. This notification of field activities must be provided at least two weeks prior to the scheduled field activities.

Pursuant to Sections 57.7(b)(4) and 35 Ill. Adm. Code 734.305 and 734.335(c), the Illinois EPA requires that a Corrective Action Completion Report that achieves compliance with applicable remediation objectives be submitted on or before September 19, 2024, to:

Illinois Environmental Protection Agency Bureau of Land - #24 Leaking Underground Storage Tank Section 1021 North Grand Avenue East Post Office Box 19276 Springfield, IL 62794-9276

Please submit all correspondence in duplicate and include the Re: block shown at the beginning of this letter.

An underground storage tank system owner or operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need further assistance, please contact the undersigned at (217) 785-1858 or at Scott.Rothering@illinois.gov.

Sincerely,

Scott Rothering Project Manager

Special Projects and Financial Unit

Leaking Underground Storage Tank Section

Bureau of Land

Attachments: Attachment A

ho t

Appeal Rights

c: Carol Rowe, CWM Company (electronic copy)

BOL File

#### Attachment A

Re: 1131055007 -- McLean County Towanda / Henson Oil Company Old Highway 66 Leaking UST Incident 20001913 Leaking UST Technical File

#### **SECTION 1**

Based on the modifications in Section 2 of this Attachment A, the following amounts have been approved:

\$0.00	Drilling and Monitoring Well Costs
\$0.00	Analytical Costs
\$0.00	Remediation and Disposal Costs
\$0.00	UST Removal and Abandonment Costs
\$3,549.60	Paving, Demolition, and Well Abandonment Costs
\$11,144.55	Consulting Personnel Costs
\$85.00	Consultant's Materials Costs

Handling charges will be determined at the time an application for payment is reviewed by the Illinois EPA. The amount of allowable handling charges will be determined in accordance with Section 57.1(a) of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.635.

#### **SECTION 2**

1. \$887.70 for costs for Senior Project Manager (Corrective Action Plan Design and Preparation), which lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities in excess of those necessary to meet the minimum requirements of Title XVI of the Act. Therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they may be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

Additionally, the costs are not reasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd).

The Illinois EPA contacted the environmental consultant requesting clarification of the costs requested for Corrective Action Plan Design and Preparation, originally requested as 30 hours for Senior Project Manager. The environmental consultant agreed to a reduction of 6 hours (\$147.95 per hour) for the above task.

Therefore, \$877.70 has been deducted from the Consulting Personnel Costs line item.

2. \$7,347.42 for costs for writing the Corrective Action Completion Report, which lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities in excess of those necessary to meet the minimum requirements of Title XVI of the Act. Therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they may be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

Additionally, the costs that are not reasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd).

This includes the following deductions:

\$5,918.00 Engineer III (40 hours at \$147.95 per hour) for Report Preparation/Development/Inputs.

\$887.60 Senior Draftsperson/CAD (10 hours at \$88.76 per hour) for Drafting/Updating & Completion of Maps.

\$384.66 Senior Professional Engineer (2 hours at \$192.33 per hour) for Report Review/Certification.

\$133.16 Senior Administrative Assistant (2 hours at \$66.58 per hour) for Report Compilation/Assembly/Distribution.

\$24.00 Distribution of CACR/Forms.

These costs may be added, with documentation, to a future budget.

3. \$3,751.66 for costs for obtaining the Village of Towanda Groundwater Ordinance, which lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities in excess of those necessary to meet the minimum requirements of Title XVI of the Act. Therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they may be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

Additionally, the costs that are not reasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd).

This includes the following deductions:

\$1,775.40 Senior Project Manager (12 hours at \$147.95 per hour) for Village of Towanda Groundwater Ordinance Review/Preparation/Design/Village Meeting.

\$769.32 Senior Professional Engineer (4 hours at \$192.33 per hour) for Correspondence with Village Officials/Village Council.

\$532.56 Senior Draftsperson/CAD (6 hours at \$88.76 per hour) for Drafting maps for groundwater ordinance.

\$591.80 Senior Project Manager (4 hours at \$147.95 per hour) for Groundwater Ordinance Notifications.

\$66.58 Senior Administrative Assistant (1 hour at \$66.58 per hour) for Groundwater Ordinance Notifications.

\$16.00 Postage for Groundwater Distribution to Village Office/IEPA.

These costs may be added, with documentation, to a future budget.

4. \$177.52 for costs for Senior Draftsperson/CAD (Drafting for Corrective Action Plan), which lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities in excess of those necessary to meet the minimum requirements of Title XVI of the Act. Therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they may be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

Additionally, the costs are not reasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd).

The Illinois EPA contacted the environmental consultant requesting clarification of the costs requested for Drafting for Corrective Action Plan, originally requested as 7 hours for Senior Draftsperson/CAD. The environmental consultant agreed to a reduction of 2 hours (\$88.76 per hour) for the above task.

Therefore, \$177.52 has been deducted from the Consulting Personnel Costs line item.

5. The costs associated with Office Preparation, Scheduling, Arrangements for Well Abandonment Activities are not approved as part of this budget. These charges are included in the Well Abandonment Costs rate, for which a maximum rate of \$14.79 per foot applies. The costs exceed the maximum payment amounts set forth in Subpart H,

Appendix D, and/or Appendix E of 35 Ill. Adm. Code 734. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(zz). In addition, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they are not reasonable.

Based upon the above deduction, a total of \$591.80 was deducted from the Consulting Personnel Costs Form.

6. The costs associated with CA Documentation/Compliance for Well Abandonment are not approved as part of this budget. These charges are included in the Well Abandonment rate, for which a maximum rate of \$14.79 per foot applies. The costs exceed the maximum payment amounts set forth in Subpart H, Appendix D, and/or Appendix E of 35 Ill. Adm. Code 734. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(zz). In addition, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they are not reasonable.

Based upon the above deduction, a total of \$295.90 was deducted from the Consulting Personnel Costs Form.