



Tier 1 Report
Leaking Underground Storage Tank Site Assessment
 for the Iowa Department of Natural Resources

SITE IDENTIFICATION

LUST No. UST Registration No.

Site Name:
 Site Address:
 City:

RESPONSIBLE PARTY IDENTIFICATION

Name:
 Street:
 City: State: Zip Code:

Submittal Date: Recommend: Tier 2 Corrective Action No Action Required

STATEMENT OF CERTIFICATION

I, _____, Groundwater Professional Certification No. _____, am familiar with all applicable requirements of Iowa Code § 455B.474 and all rules and procedures adopted thereunder including, but not limited to, Chapter 567-135 and the Department of Natural Resources' Tier 1 guidance. Based on my knowledge of those documents and information I have prepared and reviewed regarding this site, UST Registration No. _____, LUST No. _____, I certify that this document is complete and accurate as provided in 567 IAC 135.9(11)"c" and meets the applicable requirements of the Tier 1 site assessment.

Print Name, Address and Phone Number of Certified Groundwater Professional

 Signature: _____
 Date: _____

I certify that I have reviewed this document, appendices and attachments for submittal to the Iowa Department of Natural Resources. To the best of my knowledge, the site history and scaled site plan are accurate.

 Print Name of Responsible Party Signature- Responsible Party

Official IDNR Use Only

Date Received: Comment Letter Date:
 Reviewer: Approved: Yes No

***** IMPORTANT: READ ALL INSTRUCTIONS BEFORE COMPLETING *****
 USE THE TIER 1 GUIDANCE DOCUMENT TO ASSIST IN COMPLETING THE TIER 1 REPORT FORM
 CONFINE YOUR ANSWERS TO THE SPACE PROVIDED UNLESS OTHERWISE NOTED

TIER 1 SITE DATA SUMMARY

LUST# _____

Free Product Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, continue with Tier 1	If yes, go to Tier 2
Bedrock Encountered?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, continue with Tier 1	If yes, go to Tier 2

Analytical Data							
Groundwater Maximums				Soil Maximums			
	Date	B/ MW #	Concentration (µg/L)		Date	B/ MW #	Concentration (mg/kg)
B				B			
T				T			
E				E			
X				TPH			
TEH _d				TEH _d			
TEH _{wo}							
Soil Gas Maximums (optional)				Groundwater encountered? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date	Benzene (µg/m ³)	Toluene (µg/ m ³)	Is TEH for diesel required? <input type="checkbox"/> Yes <input type="checkbox"/> No				
			Is TEH for waste oil required? <input type="checkbox"/> Yes <input type="checkbox"/> No				
			TPH / TEH Conversion used? <input type="checkbox"/> Yes <input type="checkbox"/> No				
			All maximums < Tier 1 Levels? <input type="checkbox"/> Yes <input type="checkbox"/> No				

Receptors		
Drinking water wells present within 1000 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Non-drinking water wells present within 1000 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Protected groundwater source?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Maximum hydraulic conductivity (m/d)	MW#	K =
Minimum total dissolved solids (mg/L)	MW#	TDS =
Explosive vapor levels (>10% LEL) identified within 500 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, has the DNR Emergency Response Section been notified?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, what is the report number?	Spill #	
Plastic water lines present within 200 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
If yes, what is the shallowest depth to groundwater?	feet	< 20 feet? <input type="checkbox"/> Yes <input type="checkbox"/> No
Surface water present within 200 feet?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, is the water body a designated use segment?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Designation:
Is there a petroleum sheen on the surface water or residue on the bank from the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

TIER 1 PATHWAY EVALUATION SUMMARY

Pathway		Result			Corrective Action Selected	Date Completed:	Go to Tier 2
		Chemical Group:	1	2			
Groundwater Ingestion	actual	Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Established institutional controls <input type="checkbox"/> Plugged drinking water wells <input type="checkbox"/> Plugged non-drinking water wells <input type="checkbox"/> Notified DNR Water Supply Section <input type="checkbox"/> Notified designated county authority		<input type="checkbox"/>
	potential	Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
Soil Leaching to Groundwater		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Established institutional controls <input type="checkbox"/> Plugged drinking water wells <input type="checkbox"/> Plugged non-drinking water wells <input type="checkbox"/> Notified DNR Water Supply Section <input type="checkbox"/> Notified designated county authority <input type="checkbox"/> Conducted soil excavation		<input type="checkbox"/>
Groundwater Vapor to Enclosed Space		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Established institutional controls		<input type="checkbox"/>
Soil Vapor to Enclosed Space		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Established institutional controls <input type="checkbox"/> Conducted soil excavation		<input type="checkbox"/>
Groundwater to Plastic Water Line		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Relocated plastic water lines <input type="checkbox"/> Replaced plastic water lines <input type="checkbox"/> Notified utility company		<input type="checkbox"/>
Soil to Plastic Water Line		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> Relocated plastic water lines <input type="checkbox"/> Replaced plastic water lines <input type="checkbox"/> Notified utility company <input type="checkbox"/> Conducted soil excavation		<input type="checkbox"/>
Surface Water		Passed Failed NA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<i>Not applicable</i>		<input type="checkbox"/>

Corrective Action Summary:

TIER 1 REPORT CHECKLIST

Check the box for those items included in the Tier 1 report for this site.

Summary Sheets (either completed hard copy version or software generated version):

- Cover Sheet
- Site Data Summary (pg 2)
- Pathway Evaluation Summary (pg 3)

Report Body:

- Tier 1 Report Checklist (pg 4)
- Site History (pg 5-6)
- Sampling Results (pg 7-10)
- Receptor Survey- Well Survey (pg 11)
- Enclosed Space Survey (pg 12)
- Surface Water Survey (pg 12)

Maps

- Topographic Map
- Site Plan Map
- Site Vicinity Map
- Field Screening Map
- Soil Contamination Map
- Groundwater Contamination Map
- Groundwater Flow Direction Map
- Well Survey Map- *optional*
- Enclosed Space and Conduit Map
- Surface Water Map

Appendices

- Legal Description of Site- *optional*
- Tank and Line Tightness Test Results- *optional*
- Laboratory Data Sheets/Chromatograms
- Soil Boring Logs/Monitoring Well Construction Diagrams
- Hydraulic Conductivity Measurements/Hydraulic Conductivity Well Diagrams
- Well Logs (drinking and non-drinking water wells)- *optional*
- Completed Tier 1 Worksheet- *submission required if the Tier 1 software was not used.*

Corrective Action Documentation- optional

- Declaration of Restrictive Covenants/Institutional Controls
- Abandoned Water Well Plugging Record(s)
- Water Supply (DNR)/Designated County Agent Notification
- Report of Plastic Water Line Removal and/or Relocation
- Utility Company Notification (DNR Form 542-1531)
- Report of Excavation Activities and, if applicable, completed Land Application Notification Form

SITE HISTORY

Site Activity and Owner Chronology
Date the petroleum release was discovered (mm/dd/yy):
Date the petroleum release was reported to IDNR (mm/dd/yy):
Describe the circumstances of the discovery of the release and the initial actions taken to abate the release.

Site Owner Chronology: Provide a chronological summary of past and present site and tank owners and operational history in the table below. Begin with the present and work backwards. Include all periods of time petroleum products have been stored, used or sold at the site. This page may be copied for additional site history.

Has this page been copied? Yes No

Date:	to Present	to	to
Land Owner Name and Address:			
Tank Owner Name and Address:			
Operator Name and Address:			
Contract Agreements:			
Site Activities:			

SITE HISTORY (cont'd)

Current Site Conditions

Description of Existing UST System (This page may be photocopied if more than six tanks exist at this site)

Check here if no USTs currently exist at the site

Tank Number	1	2	3	4	5	6
Capacity						
Product Stored						
Construction Material						
Operational Status Check one box only for each tank						
Contains product	<input type="checkbox"/>					
Contains no product and is out of use	<input type="checkbox"/>					
Tank and Line Tightness Tests						
Tank Leak Rate (g/h)						
Line Leak Rate (g/h)						

Tank and Line Tightness Test. Explain the cause of testing anomalies and discuss any corrective actions or repairs made to the system. Identify the leak detection method. Confirm that the method and results have been reviewed and note whether releases are indicated.

Financial Responsibility. Indicate the financial assurance mechanism for the site and the status of coverage for corrective action:

Site Geology. Provide a general description.

Surrounding Land Use. Provide a general description of the current surrounding land use. Identify relevant land use restrictions and known future land use (e.g., surrounding properties are zoned for residential use).

SAMPLING RESULTS (cont'd):

Soil Analytical Data

Complete the table below with soil analytical data for each boring or monitoring well. List each sampling event chronologically with the oldest data first. If borings were sampled on a particular day at different elevations, list the results for the samples closest to the ground surface first. Record all elevations as feet Above Sea Level (ASL).

Boring / Well Number						
Date Sampled						
Elevations - Ground Surface						
- Soil Sample						
- Static Groundwater						
Benzene (mg/kg)						
Toluene (mg/kg)						
Ethylbenzene (mg/kg)						
Xylene (mg/kg)						
Total Extractable Hydrocarbons (mg/kg)						
Total Petroleum Hydrocarbons (mg/kg)						

Groundwater Analytical Data

Complete the table below with groundwater analytical data for each monitoring well. List the sampling events starting with the first well identification scheme. If the well was sampled more than once, list each sampling event chronologically with the oldest data first. Record all elevations as feet Above Sea Level (ASL). Check the box beneath the groundwater elevations which were used to develop the groundwater contour map.

Boring / Well Number						
Date Sampled						
Elevations - Ground Surface						
- Top of Screen						
- Static Groundwater						
Data used for contour map	<input type="checkbox"/>					
Hydraulic Conductivity (m/d)						
Total Dissolved Solids (mg/l)						
Benzene (µg/L)						
Toluene (µg/L)						
Ethylbenzene (µg/L)						
Xylene (µg/L)						
Total Extractable Hydrocarbons (µg/L)						

Free Product. Indicate whether free product historically has been observed at the site and in which wells. If the site has a history of free product, indicate the date the last "Free Product Recovery Report" was submitted. Discuss the status and effectiveness of the free product recovery system.

SAMPLING RESULTS (cont'd):

Soil Gas Analytical Data (Optional)

Complete the table below with soil gas analytical data for each vapor sampling point. List each sampling event chronologically with the oldest data first. Record all elevations as feet Above Sea Level (ASL). This page may be duplicated for additional sampling points. Has this page been copied? Yes No

Vapor Sample Identification					
Date Sampled					
Elevations - Ground Surface					
- Soil Vapor Sample					
- Static Groundwater					
Benzene ($\mu\text{g}/\text{m}^3$)					
Toluene ($\mu\text{g}/\text{m}^3$)					

Soil Gas Sampling. If soil gas measurements were taken, describe the soil gas sampling methods and explain why the methods provide a representative sample.

Groundwater Elevations. Identify the methodology and device used to determine static groundwater levels. Describe the benchmark used to survey for groundwater surface elevations, including its location and elevation. Explain any anomalous measurements or fluctuations in water levels with special emphasis on those which may alter general groundwater gradient or flow direction.

SAMPLING RESULTS (cont'd):

Hydraulic Conductivity					
Complete the table below with the well geometry variables used to calculate hydraulic conductivity for each well which was slug tested. Indicate the units (meters, feet, seconds, etc.) for each variable and the date the tests were conducted.					
Monitoring Well Number					
Date of Slug Test (mm/dd/yy)					
Static Water Level					
Volume of Slug (L)					
H (m)					
L _e (m)					
L _w (m)					
r _c (m)					
r _w (m)					
r _e (m)					
gravel pack porosity (% as a decimal)	0.15	0.15	0.15	0.15	0.15
Hydraulic Conductivity (m/d)					

Hydraulic Conductivity. Explain why the location/number of data points where hydraulic conductivity was determined adequately provides a representative indication of conductivity at the site. If a program other than AQTESOLV or BRSLUG was used to calculate hydraulic conductivity, identify the program name, version, vendor name, address, and phone number. Provide a justification if adjustments were made to best fit line for the plots of time versus drawdown data.

RECEPTOR SURVEY:

Groundwater Well Survey						
Well Number as identified on Groundwater Well Survey Map						
Well Status						
Active	<input type="checkbox"/>					
Inactive	<input type="checkbox"/>					
Abandoned	<input type="checkbox"/>					
Plugged	<input type="checkbox"/>					
According to Chapter 39	<input type="checkbox"/>					
Not according to Chapter 39	<input type="checkbox"/>					
Well Use						
Municipal Well	<input type="checkbox"/>					
Private Drinking Well	<input type="checkbox"/>					
Production Well	<input type="checkbox"/>					
SIC Code						
Other:	<input type="checkbox"/>					
Other:	<input type="checkbox"/>					
Static Water Level Elevation						
Well Depth Elevation						
Well Diameter						
Casing Material						
Screened Interval						
Well Log Provided? Yes	<input type="checkbox"/>					
No	<input type="checkbox"/>					
<p>Well owners and locations. Provide the name and address of each well owner. Indicate which public entities were contacted to determine well locations and details. Describe the plugging method for those wells not sealed according to 567--Chapter 39 IAC.</p>						

RECEPTOR SURVEY (cont'd):

Enclosed Space / Conduit Survey							
Conduit Number (on map)	Description (main or service?)	Construction Material	Conduit Backfill Material	Slope of Conduit	Burial Depth	Relationship to Groundwater Level	% LEL
Example 1	Sanitary Sewer Main - access way on Grand Ave & 1st	concrete	sand	west	5 feet below surface	2 feet above groundwater	7
Example 2	Basement of Smith residence	cement	NA (Not applicable)	NA	base 8 feet below surface	1 foot below groundwater	33
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

Surface Water Survey			
Surface Water Name	Classification - designated or general use	Description	Visual Observations
Example 1 - Red River	designated use segment	river	no sheens or residue observed
Example 2 - no name	general use	drainage ditch to the east	Residues noted on bank. Appeared to be non-petroleum. Lab data confirmed no hydrocarbons.