

Notice: Use this form to request a **written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This form should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 2 of 7

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name Thomas	First Amber	MI	Organization/ Business Name Village of Grafton
Mailing Address 675 North Green Bay Road			City Grafton
			State WI
			ZIP Code 53024
Phone # (include area code) (262) 375-5325	Fax # (include area code)	Email AThomas@Village.Grafton.wi.us	

The requester listed above: (select all that apply)

- Is currently the owner
 Is considering selling the Property
 Is renting or leasing the Property
 Is considering acquiring the Property
 Is a lender with a mortgagee interest in the Property
 Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request)

Select if same as requester

Contact Last Name Stollenwerk	First Marita	MI D	Organization/ Business Name TRC
Mailing Address 150 N. Patrick Blvd., Suite 180			City Brookfield
			State WI
			ZIP Code 53045-5854
Phone # (include area code) (262) 901-2158	Fax # (include area code) (262) 879-1220	Email mstollenwerk@trccompanies.com	

Environmental Consultant (if applicable)

Contact Last Name Stollenwerk	First Marita	MI D	Organization/ Business Name TRC
Mailing Address 150 N. Patrick Blvd, Suite 180			City Brookfield
			State WI
			ZIP Code 53045-5854
Phone # (include area code) (262) 901-2158	Fax # (include area code) (262) 879-1220	Email mstollenwerk@trccompanies.com	

Section 2. Property Information

Property Name Lime Kiln Park – Grafton Vil.	FID No. (if known) 246036780
BRRTS No. (if known) 02-46-000743	Parcel Identification Number 100400076000
Street Address Green Bay Rd & Falls Rd.	City Grafton
	State WI
	ZIP Code 53024
County Ozaukee	Municipality where the Property is located <input type="radio"/> City <input type="radio"/> Town <input checked="" type="radio"/> Village of Grafton
	Property is composed of: <input checked="" type="radio"/> Single tax parcel <input type="radio"/> Multiple tax parcels
	Property Size Acres 28

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 3 of 7

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

No Yes

Date requested by: _____

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

No. **Include the fee that is required for your request in Section 3, 4 or 5.**

Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:

Section 3. Technical Assistance or Post-Closure Modifications;

Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [Numbers in brackets are for WI DNR Use]

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of \$350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of \$1050, and:**
 - Include a fee of \$300 for sites with residual soil contamination; and
 - Include a fee of \$350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 4 of 7

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

"Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the real Property, and/or the personal Property and fixtures;
- (2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;
- (3) the date the environmental assessment was conducted by the lender;
- (4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.
- (5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.
- (6) a copy of the Property deed with the correct legal description; and,
- (7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).
- (8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292.21(1)(c)2., h.-i., Wis. Stats.:
 - h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.
 - i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

"Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the Property;
- (2) the date of Property acquisition by the representative;
- (3) the means by which the Property was acquired;
- (4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;
- (5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and
- (6) a copy of the Property deed with the correct legal description.

Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

- hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];
- Perceived environmental contamination - [649];
- hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or
- solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of \$700, a summary of the environmental liability clarification being requested, and the following:**

- (1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).
- (2) current and proposed ownership status of the Property;
- (3) date and means by which the Property was acquired by the LGU, where applicable;
- (4) a map and the ¼, ¼ section location of the Property;
- (5) summary of current uses of the Property;
- (6) intended or potential use(s) of the Property;
- (7) descriptions of other investigations that have taken place on the Property; and
- (8) (for solid waste clarifications) a summary of the license history of the facility.

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 5 of 7

Section 4. Request for Liability Clarification (cont.)

Lease liability clarification - s. 292.55, Wis. Stats. [646]

❖ **Include a fee of \$700 for a single Property, or \$1400 for multiple Properties and the information listed below:**

- (1) a copy of the proposed lease;
- (2) the name of the current owner of the Property and the person who will lease the Property;
- (3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;
- (4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;
- (5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and
- (6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

❖ **Include a fee of \$700 and an adequate summary of relevant environmental work to date.**

No Action Required (NAR) - NR 716.05, [682]

❖ **Include a fee of \$700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

❖ **Include a fee of \$700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/Igu.html#tabx4.

Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

❖ **Include a fee of \$700, and the information listed below:**

- (1) Phase I and II Environmental Site Assessment Reports,
- (2) a copy of the Property deed with the correct legal description.

Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

❖ **Include a fee of \$700, and the information listed below:**

- (1) Phase I and II Environmental Site Assessment Reports,
- (2) a copy of the Property deed with the correct legal description.

Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

❖ **Include a fee of \$1400, and the information listed below:**

- (1) a draft schedule for remediation; and,
- (2) the name, mailing address, phone and email for each party to the agreement.

Technical Assistance, Environmental Liability
Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 6 of 7

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

Phase I Environmental Site Assessment Report - Date: _____

Phase II Environmental Site Assessment Report - Date: _____

Legal Description of Property (required for all liability requests and specialized agreements)

Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

Groundwater Soil Sediment Other medium - Describe: _____

Date of Collection: _____

A copy of the closure letter and submittal materials

Draft tax cancellation agreement

Draft agreement for assignment of tax foreclosure judgment

Other report(s) or information - Describe: _____

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

Yes - Date (if known): _____

No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at:
dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

I am the person submitting this request (requester)

I prepared this request for: Amber Thomas

Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.



Signature

06/30/2020

Date Signed

Senior Project Manager

Title

(262) 328-4528

Telephone Number (include area code)

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 7 of 7

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a [DNR regional brownfields specialist](#) with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

DNR NORTHERN REGION

Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION

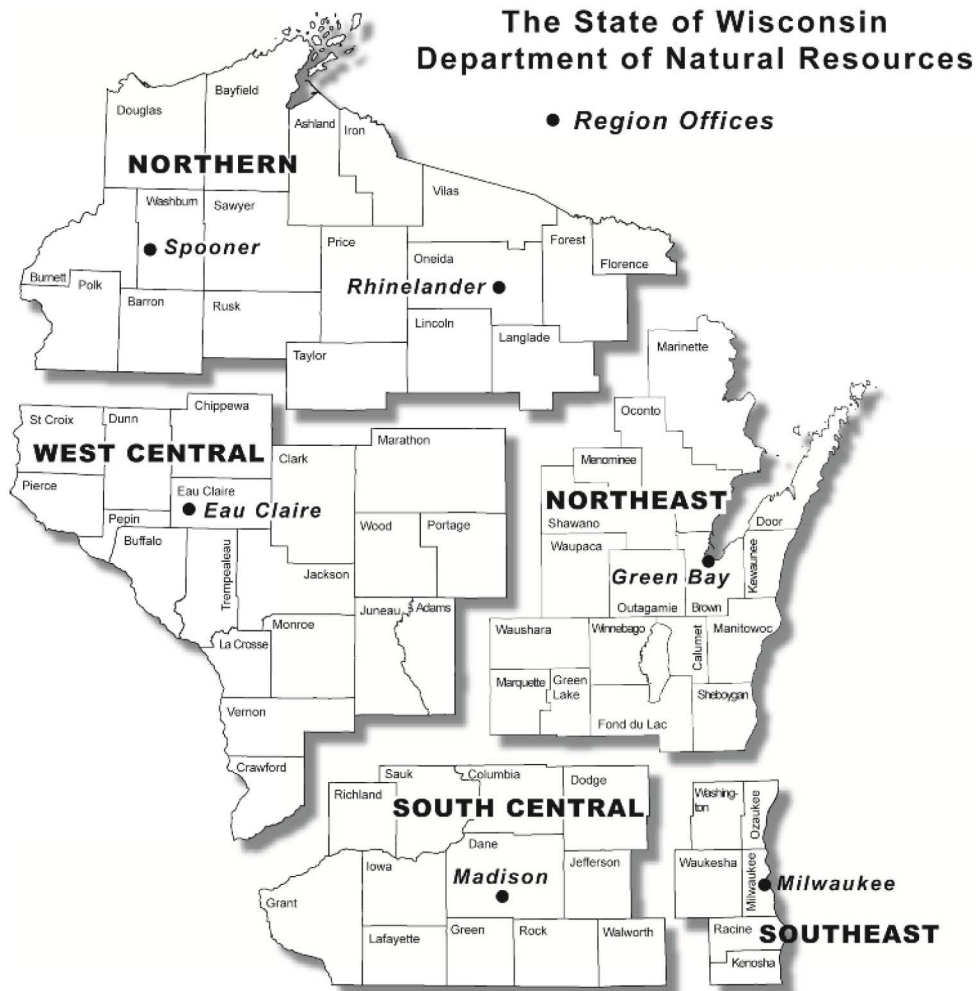
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION

Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer		Comments	
Fee Enclosed? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		



150 N Patrick Blvd., Suite 180
Brookfield, WI 53045

T 262.879.1212
TRCcompanies.com

June 30, 2020

Mr. John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, WI 53073

Subject: Site Investigation Workplan
Lime Kiln Landfill and West Plume Area
Village of Grafton, Wisconsin
BRRTS Activity # 02-46-000743 and 02-46-549906
TRC No. 383236.0000

Dear Mr. Feeney:

On May 27, 2020, TRC Environmental Corporation (TRC) and the Village of Grafton (Village) participated in a conference call with the Wisconsin Department of Natural Resources (WDNR) regarding the Lime Kiln Park Landfill (BRRTS activities #02-46-000743 and #02-46-549906) located in the Village of Grafton, Wisconsin.

TRC, on behalf of the Village of Grafton, has developed this work plan to complete a shallow groundwater assessment for the Manchester Drive and Green Bay Road residential areas near the Lime Kiln Landfill Site in response to vapor intrusion concerns expressed by the WDNR.

Background

The Lime Kiln Landfill/West Plume area is located near Lime Kiln Park, within the limits of the Village of Grafton, Ozaukee County. The Milwaukee River borders the south and east edges of the park, while residential areas border the northeast, west, and southwest sides of the Park, as well as the east side of the Milwaukee River. Industries and businesses are located west, north, and northwest along Wisconsin Avenue.

The Village has completed almost 25 years of investigation and monitoring for the plumes associated with the two BRRTS sites (activities #02-46-000743 and #02-46-549906). Two groundwater plumes emanate from two distinct sources and mix beneath the Manchester Drive area. The Village is currently the Responsible Party for addressing both sites.

In a May 1, 2019 letter to the Village of Grafton, the WDNR requested a vapor intrusion screening of the Manchester Drive subdivision and homes along Green Bay Road due to the trichloroethylene (TCE) NR 140 Enforcement Standard exceedance at well MW-8A. On July 2, 2019, AECOM provided a limited vapor intrusion assessment to the WDNR, in which it recommended that three properties be sampled for vapor intrusion: 1767, 1749, and 1741 Manchester Drive. The WDNR has since requested a similar assessment along Green Bay Road. Due to the current COVID-19 pandemic social distancing restrictions, rather than enter residential homes to collect sub-slab vapor samples, TRC proposes to install temporary groundwater monitoring wells at the water table near these properties to evaluate the potential vapor intrusion risk.

The WDNR's original request for a vapor investigation was based on incorrect information that indicated MW-8A was a water table well. Measuring the VOC concentrations in groundwater at the

Mr. John Feeney
Wisconsin Department of Natural Resources
June 30, 2020
Page 2

water table will provide data to determine if subsequent vapor intrusion investigation work is needed or if the vapor intrusion pathway can be ruled out without further sampling.

Purpose and Scope

TRC, on behalf of the Village of Grafton, has developed this work plan to assist the Village of Grafton with completing a shallow groundwater assessment for the Manchester Drive and Green Bay Road residential areas near the Lime Kiln Landfill Site in response to vapor intrusion concerns expressed by the WDNR. The results of this investigation will dictate whether additional investigation or remediation is required to address the environmental impacts.

Site Information

Site Address

Lime Kiln Park – Grafton Vil, BRRTS #02-46-000743
Green Bay Rd & Falls Rd.
Grafton, Ozaukee County, WI 53024
SW ¼ of NE ¼ of Section 25, T10N, R21E
Lat. 43.3051265, Long. -87.9543264
Parcel ID #100400076000

Grafton Lime Kiln Park, BRRTS #02-46-549906
Green Bay Rd & Falls Rd.
Grafton, Ozaukee County, WI 53024
NE ¼ of NW ¼ of Section 25, T10N, R21E
Lat. 43.305937, Long. -87.9550536
Parcel ID #100400076000

Responsible Party

Village of Grafton
Amber Thomas, PE
Director of Public Works/Village Engineer
675 North Green Bay Road
Grafton, WI 53024
AThomas@Village.Grafton.wi.us
(262) 375-5325

Environmental Consultant

TRC Environmental Corporation
Marita Stollenwerk, Senior Project Manager
150 N Patrick Boulevard, Suite 180
Brookfield, WI 53045
MStollenwerk@trccompanies.com
(262) 328-4528

Geology & Hydrogeology

The following conceptual hydrogeologic model was previously provided in AECOM's *2014 Progress Report* for the Lime Kiln Landfill:

The area's conceptual groundwater flow model consists of thin unconsolidated glacial deposits and fill which overlie an unconfined dolomite bedrock aquifer. The dolomite aquifer contains lithologic changes, and individual hydrostratigraphic units were classified as aquifers or aquitards. The vertical extent of the conceptual model is bounded by a lower permeability aquitard.

The Silurian-age dolomite aquifer is comprised of undifferentiated Racine Formation and the Romeo beds of the Racine Formation. The aquifer extends approximately 200 feet below the top of bedrock, coincident with the contact of the underlying Waukesha Formation. The Waukesha Formation is designated as an aquitard because it is fine-grained and unweathered.

Northwest of the Park, the water table is approximately 15 to 20 feet below the ground surface. At the landfill, the water table is approximately 20 feet below ground surface, saturating the lower portion of the waste in the landfill.

The Milwaukee River forms the eastern boundary of the Park. The reach of the river immediately adjacent to and south of the park is higher than the water table. Water, therefore, flows from the river bottom to the aquifer.

Local flow in the vicinity of the site is less pronounced than the regional flow. Groundwater in the uppermost aquifer (Racine Formation including the Romeo beds) is considered part of the regional flow system with a recharge area encompassing the site, as well as topographically high areas west of the site. Longer flow paths and discharge to Lake Michigan located about 2.5 miles to the east of the site also characterize the regional flow system.

Once water reaches the water table, flow is controlled by the hydraulic head in the units as shown by water levels in wells surrounding the site. The downward gradients at the site are consistent with the site's position within a recharge area as evidenced by vertical gradients observed in the investigation report.

Groundwater flow is controlled primarily by the bedrock structure and the regional discharge to Lake Michigan. In highly transmissive zones (higher hydraulic conductivity), advective contaminant transport within the aquifer yields a narrow, horizontal plume, as seen downgradient of the Lime Kiln site.

The regional groundwater flow pattern may also be influenced by public and private water supply wells in the area. The Village of Grafton has seven water supply wells that pump groundwater. Two wells with limited usage are located upgradient of Lime Kiln Park. Private residence wells outside the Village limits also withdraw groundwater and may affect groundwater flow.

Proposed Scope of Work

The investigation work completed to date has been focused on deep portions of the groundwater plumes associated with these two BRRTS activities. Further investigation is needed to define the degree of VOC contamination at the water table to evaluate potential vapor impacts overlying the plumes.

Sample Locations

The proposed work includes four temporary wells. Proposed locations are shown on Figure 1. The proposed sampling locations are near residential properties along both Manchester Drive and Green Bay Road within the public right-of-way. As such, slight changes to the proposed sampling locations may be required in the field due to potential conflicts with subsurface utilities within the rights-of-way.

Groundwater Sampling

Install four driven well point samplers to approximately 50 to 60 feet below ground surface (bgs) (or approximately 5 feet below the water table) with a Geoprobe using the Screen Point 16 (SP-16) groundwater sampling tool. Depth to water table is estimated at approximately 55 feet bgs. This methodology uses direct push technology to push an in-situ sampler to the desired depth and obtain a groundwater sample.

TRC requests WDNR approval for shallow groundwater sampling in accordance with Wis. Admin. Code NR 141.29. Additional information on the well construction details and the rationale for using the SP-16 temporary wells to achieve investigation goals is provided below:

Temporary Well Construction

- The geoprobe will drive 1.6-inch outer diameter protected screen sheath 50 to 60 feet bgs (or approximately 5 feet below the water table).
- Upon reaching the desired depth, the screen sheath will be released, and the outer casing retracted, deploying a 36-inch long stainless-steel screen with a 0.004 inch (0.10 mm) standard slot size.
- A groundwater sample will be collected using a check valve assembly using polyethylene tubing oscillated up and down to obtain water for sampling.
- The plug at the lower end of the screen will be removed and the borehole will be sealed with grout as the sampler is extracted.
- The sampler will be decontaminated and reused at the next location.

An exemption is requested from NR 141 well construction, diameter, and development requirements in order to obtain data from the shallow water zone quickly.

Temporary Well Rationale

- The traffic and roadway maintenance operations along the Manchester Drive and Green Bay Road rights-of-way increase risk of damage to permanent wells. Abandoning sampling points during the same mobilization minimizes impact on roadway operations and risk of damage to wells.
- SP-16 temporary wells produce quality data to evaluate contaminant conditions in shallow groundwater quickly and within a reasonable cost. Due to the subsurface lithology in the Village comprised of glacial till, use of the small diameter SP-16 tool is recommended in this lithology rather than installation of 1-inch diameter temporary wells, as the small diameter rod is more likely to probe deeper than pushing a larger diameter rod with filter pack. SP-16 is likely the fastest and most cost-effective technology to answer the immediate question of shallow groundwater impacts without the risk of entering residential properties during the global pandemic. The cost of installation of permanent NR 141 compliant shallow wells using hollow stem augers would be 5 to 6 times more expensive per location than use of the SP-16 groundwater sampling tool.
- Significant fluctuations in groundwater concentrations are not anticipated given the time elapsed since the chemical releases; therefore, one round of data can be used to make assessment of water table impacts in this area.

Temporary Well Sampling

- Depth to water will be measured prior to collection of groundwater samples from each well.
- The well will also be purged using low-flow purging methods. Water extraction using a Wattera pump is needed due to the small diameter of the SP-16 groundwater sampling tool.
- Dissolved oxygen (DO), pH, temperature, and specific conductance will be monitored during purging to look for steady-state conditions. Collection of groundwater samples via low-flow methods will take place once pH and specific conductance readings have stabilized. pH will be considered stable when three consecutive readings vary by no more than 0.1 standard units.
- Once stabilization has been established, appropriate sample containers can be filled directly from the low-flow discharge.
- If the well recharge is limited, monitoring of stabilization parameters will be stopped and a water sample will be collected.

Sample Identification

Each sample collected from the site will be assigned a unique alpha-numeric sample descriptor. The sample ID will be recorded in the field notes. Samples will be designated as “SP” for screen point samples.

Sample Shipment and Laboratory Analysis

Groundwater samples for laboratory analysis will be placed in appropriate sample containers provided by the laboratory and labeled with sample identification information. Sample containers will be placed on ice immediately after collection for transport to a Wisconsin Certified Laboratory for analysis. The samples will be laboratory analyzed for VOCs using EPA Method 8260 on a standard turn-around time (10 business days).

Temporary Well Locations

The final sampling locations will be logged using differential global positioning system (GPS) techniques. A Trimble Geoexplorer handheld GPS unit, with H-Star technology enabled (or equivalent), will be used to collect these locations. Where field conditions permit, carrier-phase signal data will be used for GPS data collection. When collecting GPS location data, field staff will continuously log a sample position until the predicted post-processed accuracy is better than 1 foot, or until 30 position readings have been collected. All data collected with the Trimble GPS unit will be post-processed through the software program Trimble Pathfinder Office using nearby reference station Global Navigation Satellite System (GNSS) reference data, as available. GPS and survey data will be projected into the State Plane coordinate system (NAD83, US Feet).

Temporary Well Abandonment

Following groundwater sample collection, temporary wells will be abandoned by removing the SP-16 groundwater sampling tool and plugging the un-collapsed portion of the borehole using bentonite chips, bentonite granules, or a high-solids bentonite grout to within 6 inches of the ground surface. The remaining borehole will be topped with soil and compacted, or if located in a paved area, the surface will be patched with concrete or asphalt as appropriate.

Decontamination of Equipment

Single-use sampling equipment and materials will be used wherever possible. Single-use equipment may include, but is not limited to, nitrile gloves, plastic core barrel liners, plastic bags, and LDPE and silicone tubing. Non-single-use sampling equipment, such as direct-push cutting shoes and core barrels, will be decontaminated between uses by washing with a non-phosphate detergent solution and rinsing with potable water.

Investigation-Derived Waste

Investigation-derived waste streams generated during this investigation will include, well purge water, decontamination fluids, and general refuse (e.g., used personal protective equipment, single-use sampling equipment, and trash). Excess soil cuttings will not be generated by the proposed sampling methods. Well purge water and decontamination fluids will be disposed for treatment at the permitted Village of Grafton wastewater treatment plant. General refuse will be collected in trash bags and placed in a waste dumpster.

Schedule

We anticipate that the site investigation activities will begin within approximately four to six weeks following WDNR’s approval of this Site Investigation Workplan. The specific schedule for the field work is subject to change and will depend upon coordination with Village regarding operations within the rights-of-way.

Reporting

TRC will tabulate and evaluate the results of these site investigation activities to determine if additional investigation or remedial action are needed to comply with closure criteria of Wis. Admin. Code ch. 726. TRC will provide the WDNR with a letter report documenting the findings of this investigation and recommendation for next steps (which could be a remedial action plan).

NR 712 Certification

I, Bryan Bergmann, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



Signature

June 30, 2020

Date

Enclosed is a check for \$700 for the site investigation workplan review fee and request for approval to use temporary wells.

Please contact me at (262) 328-4528 with any questions. I look forward to your review and response to this request.

Sincerely,

TRC



Marita Stollenwerk
Senior Project Manager



Bryan Bergmann, PG
Quality Reviewer

Attachments: Figure 1 – Proposed Sampling Locations

cc: Amber Thomas – Village of Grafton (pdf via email)

Figure

Figure 1 - Proposed Sampling Locations

