

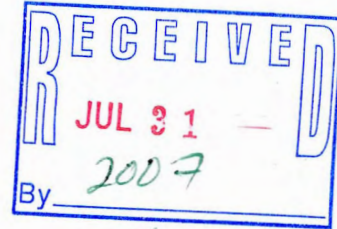
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July 31, 2007

Mr. John Feeney  
Wisconsin Department of Natural Resources  
1155 Pilgrim Road  
Plymouth WI 53073-429



Subject: **Village of Grafton West Plume**  
**Earth Tech Project No. 100907.01**

PO  
675

via email

Dear John:

A TCE plume (the "West Plume") was identified in groundwater in the Village of Grafton through groundwater sampling that occurred between 1996 and 1998. The plume was further defined in a 1999 Site Investigation Report submitted to the Wisconsin Department of Natural Resources (WDNR). The Village of Grafton assumed responsibility for plume investigation in a 1998 agreement between the Village and potentially responsible parties.

On May 23, 2007, representatives from the WDNR and the Village of Grafton (including their consultants Earth Tech, Inc. and Buck Sweeney, Esq.) met to discuss the groundwater plume and determine a course of action for the plume investigation. The meeting minutes compiled by Pat Chung of the WDNR and an Earth Tech response to those minutes are included in Attachment A.

An agreement was reached at the meeting that Earth Tech would prepare a summary of the West Plume investigation history, and recommend further action for the West Plume investigation under Wisconsin Administrative Code NR 716.07, Site Investigation Scoping. This document includes the required summary and Earth Tech recommendations.

**SITE SETTING**

The West Plume and Lime Kiln Landfill site area is within the Village of Grafton, Ozaukee County. Specifically, it is in the SE 1/4 of the NW 1/4 of Section 25, Township 10 North, Range 21 East of the Cedarburg 7.5-minute quadrangle. The West Plume is bounded by First Avenue to the West, Lakefield Road to the South, Oak Street and Lime Kiln Park to the north, and the Lime Kiln Plume on the east. Lime Kiln Park is located off of Green Bay Road, just south of the intersection of Falls Road and Green Bay Road (Figure 1). The landfill is inside the park.

The Milwaukee River borders the south and east edges of the park, while residential areas border the northeast, west, and southwest sides of the plume area. Industries and businesses, including Milwaukee Sign/ORE, are located west, north, and northwest of the plume area.

## **SITE AREA HISTORY**

Preliminary investigations in the early 1980s by WDNR (IT, 1989) detected volatile organic compounds (VOCs) in municipal well Nos. 1, 2, 4, 5, and 6. As a result, the WDNR conducted a groundwater quality survey of public, private, and monitoring wells in the Village and Town of Grafton. Groundwater was tested for 45 VOC compounds. Eight compounds were detected throughout the area, including compounds that are detected in groundwater near Lime Kiln Park.

The Wisconsin Department of Health (WDH) and the WDNR initiated the sampling of approximately 95 residential wells in the site area during July 1996, because of VOCs detected by a private well owner in July 1996. Agency sampling continued through 1997. The United States Environmental Protection Agency (EPA) was notified about well contamination by residents who asked EPA to provide interim funding for alternative drinking water and guidance. The EPA also performed groundwater sampling during this period.

The WDNR and EPA sampled private wells in the area, mainly along Green Bay Road and within the Manchester Drive area, south (downgradient) of the site area. Based on groundwater sampling results the EPA issued a consent order that was signed and dated by Village representatives on July 7, 1997. The EPA delineated an advisory zone in which private wells were to be abandoned and homes were to receive Village water. Construction of the water mains commenced in 1997 and private residences were connected to the Village water system by 1998. The WDNR targeted the Lime Kiln Landfill as the source of contamination, and required the Village of Grafton, the landfill owner, to investigate the landfill under NR 700.

Groundwater contamination was detected upgradient and sidegradient of Lime Kiln Park, to the west and northwest along Green Bay Road and Wisconsin Avenue. Several compounds detected in groundwater are not detected in samples collected within the Lime Kiln Landfill or associated groundwater plume. In particular, Freon 113 has been detected upgradient of the Lime Kiln Park, and TCE has been detected at several wells along Green Bay Road. The upgradient groundwater contamination originates between Wisconsin Avenue and First Avenue, near the area formerly occupied by Milwaukee Sign.

Wells in the Green Bay Road area showed detects of Freon 113, which is not detected in the Lime Kiln Landfill. Based on the Freon compound, two plumes were delineated as shown on Figure 1. The Village and the Lime Kiln PRP Group addressed the Lime Kiln Landfill, and the PRP's eventually paid the Village to be removed from liability for the landfill. The Village did not address the West Plume (Green Bay Road) because it is a result of a source other than Lime Kiln Landfill.

On May 23, 2007, representatives from the WDNR, the Village of Grafton and Earth Tech met to determine a course of action for the West Plume. After agreement was reached at the meeting, Earth Tech was tasked with proposing a scope of work to investigate the West Plume under NR 716.

## SITE AREA CONCEPTUAL MODEL

The conceptual groundwater flow model for the site area consists of thin unconsolidated glacial deposits and urban land/fill which overlie a nearly flat lying unconfined dolomite bedrock aquifer, the Racine Formation. The dolomite aquifer contains lithologic changes and individual hydrostratigraphic units classified as aquifers or aquitards. The vertical extent of the conceptual model is bounded by a lower permeability aquitard, the Waukesha Dolomite.

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 based on the visual observations of the rock core and low flow rates noted by borehole flowmeter testing. *flow rates were?*

The water table in the local groundwater flow system is found near or below the surface of the bedrock. The water table is approximately 15 to 20 feet below the ground surface.

The Milwaukee River lies south and east of the site area. The 500- to 700-foot reach of the River immediately downstream of the dam adjacent to Lime Kiln Park is higher than the water table. Water therefore flows from the river bottom to the aquifer. Groundwater may discharge to the River downstream of this reach.

Local groundwater flow components control groundwater flow in the site area, and are affected by larger, regional flow systems. Groundwater in the uppermost aquifer (Racine Formation including the Romeo beds) is considered part of the regional flow systems with a recharge area encompassing the site as well as topographically high areas west of the site area. 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 are consistent with the site area's position within a recharge area as evidenced by vertical gradients observed at the several monitoring well locations.

Groundwater flow is controlled primarily by the bedrock structure and the regional discharge to Lake Michigan. In highly transmissive zones (higher hydraulic conductivity) such as the Racine Dolomite, groundwater flows predominantly by advection. Open borehole wells and vertical fractures interconnect the Racine Formation throughout its thickness.

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 near the site area. Private residence wells outside the Village limits also withdraw groundwater and may affect groundwater flow.



Four monitoring zones were determined through the field investigation; the water table zone; the "B" Zone, a more porous limestone zone in the Racine formation; the Romeo Beds of the Racine Formation ("C" Zone), and the Waukesha Dolomite directly below the Romeo Beds (the "D" Zone.) The majority of wells were screened in the "B" Zone, where the highest levels of contamination were sampled. The B zone is the monitoring zone for the adjacent Lime Kiln Landfill monitoring program.

## PREVIOUS SITE INVESTIGATION

Earth Tech was contracted by the Village of Grafton to conduct the NR 700 investigation of the Lime Kiln Park area in 1997. Implementation of the WDNR approved Work Plan began in February of 1998. An investigation report was submitted in January, 1999. Through the course of the investigation, the following items were completed:

- A literature search of the landfill and the Village of Grafton areas.
- Waste characterization that evaluated the size and type of source material at the Lime Kiln Landfill.
- A geologic, hydrogeologic, and surface water investigation of the surrounding area.
- Characterization of potential migration pathways.
- Preliminary Remedial Action Identification for the Lime Kiln Landfill.

Nine groundwater wells, 2 waste wells, 33 Geoprobe borings, and a geophysical investigation were implemented to evaluate the geology and hydrogeology, and investigate the sources, nature and extent of groundwater impacts in the site area. Multiple private wells were also used to characterize the subsurface and investigate the nature and extent of groundwater contamination. Figure 1 serves as an existing conditions map which shows the location of monitoring wells, sampled private wells, and the nature and extent of both plumes in the site area.

The conclusions of the Site Investigation were as follows:

- The Lime Kiln Landfill is a source of groundwater contamination.
- Groundwater is the only media through which contamination is expected to migrate from the landfill to receptors. Groundwater carries contamination from the landfill into the upper 100 to 200 feet of the Racine Dolomite.
- Receptors affected by groundwater contamination are private wells in Manchester Drive area. Potential receptors, currently not impacted, are wells along Lakefield Road, and the Milwaukee River and associated wetlands south of Manchester Subdivision. *Green Bay Rd*
- Low levels of contaminants were measured in Lime Kiln Landfill gas, which is not expected to be a significant pathway for contaminant migration because of the low methane levels encountered and the limited area in which landfill gas was detected.

- Two groundwater contaminant plumes were delineated during this investigation. Groundwater contamination from the landfill is limited to the area shown on Figure 1. Groundwater contamination from other sources contributes to the West Plume. The plumes are distinguished by compounds unique to each plume. NR 140 standards are exceeded for limited compounds in each plume.
- Transport of groundwater contamination occurs in both the pores of the rock matrix and fractures in the rock. The rock matrix is sufficiently permeable such that fractures are not the sole permeability controlling contaminant migration. However, the regional fracture set aids in keeping the plume narrow when groundwater flow is parallel to a fracture set.
- Treatment is occurring through natural attenuation of parent VOC products as evidenced by the presence of breakdown byproducts, and the levels of natural attenuation indicators in groundwater such dissolved oxygen, ethanes, and dissolved metals.
- The groundwater plume from the landfill is likely to be stable or receding, based on the length of time since the disposal of waste, the volume of the landfill, and natural attenuation processes.

## **EXISTING CONDITIONS**

Seven of the nine previously mentioned monitoring well locations, including a three level multi-port well, are installed in such a way as to monitor the West Plume. Three private wells in the West Plume (PW760GB, PW1788MR/P9B, PW1749MD/P8B) were tested using a packer apparatus to sample discrete areas. Based upon groundwater samples from private and monitoring wells, the nature and extent definition of the West Plume was nearly complete at the time of the 1998 field investigation. Sample locations and generalized concentrations of TCE are shown on Figure 1.

Two data gaps exist in the definition of nature and extent for the West Plume. The southern plume boundary is not clearly defined, as there is no existing discrete well located along Green Bay Road. Private wells may be used for general plume location, but do not define the level of contamination in the area due to long, non-discrete screened intervals. Also, the West Plume source area has not been characterized to determine if soil contamination remains at the site from which impacts originated.

## **RECOMMENDATIONS**

In order to complete the field investigation and determine the nature and extent for the West Plume, the following items are recommended:

- Source Characterization - A Geoprobe investigation is recommended at the Milwaukee Sign/ORE property. Approximately 12 borings will be advanced at the ORE property to bedrock, using direct push technology. A field geologist will oversee the drilling operation. The geologist will log the boreholes, identify obvious contamination, monitor soil with a photoionization detector, and collect two soil samples from every borehole for

laboratory analysis. Samples will be selected based upon field observation and PID readings collected in the field. The soil samples will be analyzed for VOCs from the special list contained in Attachment B. The list was used during the Lime Kiln Investigation, and it encompasses the compounds of concern that have been detected in the site area during previous investigations.

- Groundwater well installation - One groundwater well will be installed along Green Bay Road, near the edge of the West Plume as defined in 1998. The proposed location for the well is on the Grafton Dells property, shown in Figure 1. Access has not yet been contractually agreed upon. However, Grafton Dells has been contacted and is willing to work with the Village to find a suitable well location on their property.

The borehole will be installed using sonic drilling techniques. Sonic drilling provides a straight, clean borehole with an intact, six-inch diameter sample. The rig is capable of drilling in rock and soil. Drilling can be performed efficiently with minimal cuttings and high quality samples. The borehole will be drilled to approximately 150 feet, and logged by an Earth Tech geologist. Downhole geophysical measurements will be collected to aide in selecting the monitoring zone. Groundwater in the borehole will be sampled using a packer apparatus to collect discrete samples from two specific intervals.

K The groundwater well will be set in the "B" monitoring zone, at the depth of the highest concentration and consistent with other site wells. That depth is at approximately 130 feet, and will be determined more closely by field geology, natural gamma readings, and groundwater packer sampling. The well will be constructed of 2-inch diameter PVC according to NR 140 requirements. The well will be named P-10B using the naming convention consistent with Lime Kiln Landfill wells.

- A groundwater sampling event will be completed on ten wells to monitor the West Plume and determine the hydrogeologic setting. The proposed sample event includes the following wells, as shown on Figure 1:

- ✓ P-1B – Middle of the plume
- ✓ P-1C – Middle of the plume
- ✓ P-1D – Middle of the plume
- ✓ P-5B – Middle of the plume
- ✓ P-6B – Upgradient
- ✓ P-7B – Downgradient edge of plume
- ✓ P-9B – Sidegradient
- ✓ P-10B (Proposed) – Sidegradient
- ✗ 2 private wells on Green Bay Road – Sidegradient

The wells will be sampled for VOCs from the special list that is used for the plume area. Field indicators including DO, ORP, temperature, conductivity and turbidity will also be collected. The samples will be used to evaluate the nature and extent of groundwater contamination in the West Plume area and to begin to assess if natural attenuation is a viable remedial option for the site.



- After the field investigation is completed, an NR 700 investigation report will be completed for the West Plume. The report will detail the site background, investigation procedures, site characterization including geology and hydrogeology, the nature and extent of contamination, a preliminary remedial alternatives identification, and site recommendations.

After the field investigation and NR 700 report are complete, Earth Tech will determine a technically and economically feasible remedial alternative for the West Plume in accordance with NR 700.

### INVESTIGATION SCHEDULE

The Village of Grafton needs approval of this scope prior to August 26 in order to place the item on the September Village Board meeting agenda. If approval is received by that time, the Village will begin preparation for the field investigation upon their Board's approval. The investigation will begin with preparation of a brief work plan and a health and safety plan. Both will be submitted to the WDNR for approval. The field investigation can be completed in the fall of 2007 if WDNR approval is granted in a timely manner. The field investigation results would be analyzed in the fall/winter of 2007, with an investigation report submitted to the WDNR in the spring of 2008. The remedial option evaluation would begin immediately following submittal of the investigation report.

As the recommendations in this letter match the recommendations we agreed to at the May 23rd meeting, I anticipate that approval of this approach will be received by August 26. Please contact me at 920-451-2589 or [bj.leroy@earthtech.com](mailto:bj.leroy@earthtech.com) if you have any questions about the approach we have outlined.

Thank you,

Sincerely,

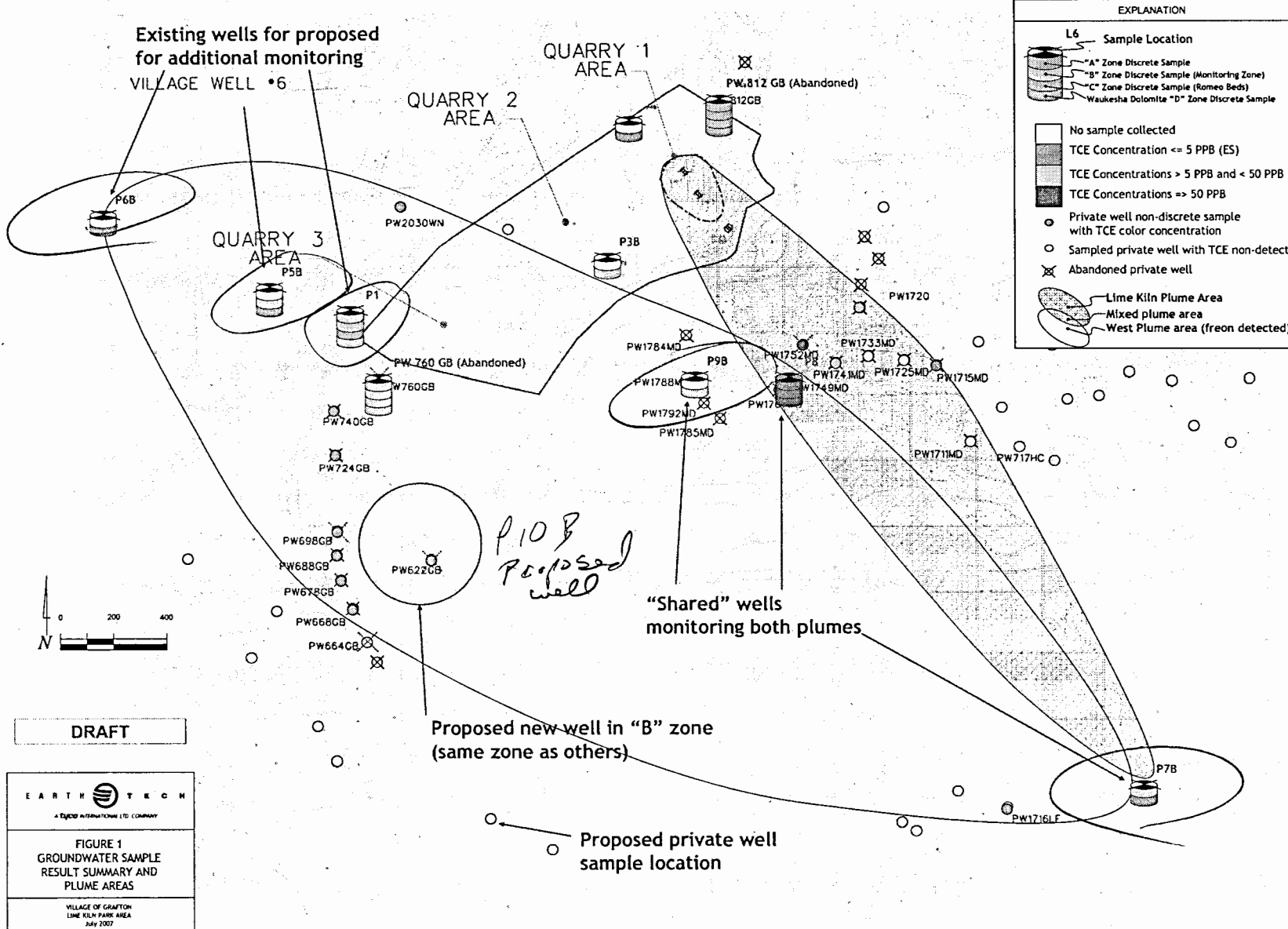
Earth Tech, Inc.

**BJ.LeRoy**  
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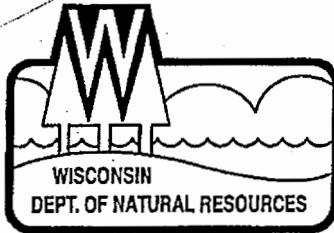
B.J. Le Roy  
Project Manager

c: Pat Chung, WDNR  
David Murphy, Village of Grafton  
Darrell Hofland, Village of Grafton

Enclosure: As Noted







## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Scott Hassett, Secretary  
Gloria L. McCutcheon, Regional Director

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May 29, 2007

*Responded - June 29.*

Darrell Hofland, Administrator  
The Village of Grafton  
1708 12th Avenue  
Grafton, Wisconsin 53024

FID 246036780

Dear Mr. Hofland:

Thank you for meeting with representatives of the Department of Natural Resources on May 23, 2007, to discuss the notice of violation issued to the Village on April 23<sup>rd</sup>. If you are not in agreement with this summary, please send your comments to my attention at your earliest convenience.

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In attendance: Darrell Hofland and David Murphy (Village of Grafton), Buck Sweeney (Axley Brynelson, LLP, representing the Village), B.J. LeRoy (Earth Tech, consultant for the Village), John Feeney, Walt Ebersohl, Judy Ohm and Pat Chung (DNR)

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### Conference Agreement

- Earth Tech will submit a 2006 remedial action status report for the Lime Kiln Park Landfill to John Feeney by June 30, 2007. The submittal will include 2006 sampling data for the east plume and recommendations for additional sampling and/or remedial actions, including a recommendation for additional deeper piezometers to determine the vertical extent of contamination in groundwater at the P8 and P2 locations. B.J. LeRoy will also include a copy of the map used at the meeting.
- Earth Tech will prepare a sampling plan for investigation of the west plume, to include conducting geo-probes of the Ozaukee Real Estate ("ORE") site, and installation of a new monitoring well/s. Following approval of the plan by the Village of Grafton, Earth Tech will submit the plan to the DNR, no later than July 31<sup>st</sup>, 2007. The submittal will include a summary of the Village's historical investigation of the site, including information obtained in interviews conducted by Winter Hess.
- Buck Sweeney will contact the owners of the ORE property to secure access for sampling. If there are problems securing access, Judy Ohm will assist in obtaining access, and will, if necessary, prepare a letter to the company explaining the potential consequence of prohibiting access under state law.
- John Feeney will review DNR files for the names of ORE contacts for the site, and will provide the name(s) to Buck Sweeney.
- Buck Sweeney will provide Judy Ohm with copies of documents from the Village's negotiation and cost recovery process under s. 292.35. Stats, including PRP agreements, if the documents are not found in the files for the DNR's Bureau of Remediation and Redevelopment, Fiscal and Information Technology Section.
- Walt Ebersohl will discuss Grafton's plans for redevelopment of the ORE property with Brownfield staff and will notify Buck Sweeney if staff is aware of any additional funding sources for the project.
- B.J. LeRoy will provide John Feeney with documentation of whether Earth Tech submitted a review fee with the 2005 report.

## Discussion

Pat Chung thanked representatives of the Village and their agents for attending the meeting. She said that the Department was concerned about conditions at Lime Kiln, because it appeared that no actions had been taken to address conditions in the east plume for the past two years, and that no action had been taken to investigate and remediate the west plume. She said that the Department had authority to refer violations of §. 292.11, Wis. Stats., to the Department of Justice.

Buck Sweeney said that the April 23<sup>rd</sup> Notice of Violation had falsely stated that the Village did not respond to the Department's requests to investigate the West Plume. He said that Earth Tech had responded to requests for further investigation via e-mail and letter, indicating that the Village did not believe it was responsible for investigating contamination located on the Ozaukee Real Estate ("ORE") Association site.

Sweeney said that there was TCE in the west plume, but there was no evidence that TCE was used at the ORE site. He said that the owners of Milwaukee Sign (who leased the site from ORE) were convinced that the property was not the source of the plume containing TCE.

Sweeney said that the Village was interested in redeveloping the property as a Brownfield, and had asked Earth Tech to develop a plan that would meet the DNR's expectations and allow the Village to proceed with redevelopment.

B.J. LeRoy and Sweeney said that the Village had provided municipal water to home owners whose drinking water wells were contaminated by the west plume. LeRoy said that the potable wells had been helpful in determining the southern edge of the plume. He said that the wells were abandoned, and that Earth Tech was proposing to install a new monitoring well/s to further define the southern boundary of the west plume.

John Feeney said that Earth Tech should collect soil borings directly from the ORE property. Sweeney said that the Village was proposing to raze the building on the property, and redevelop the property using SAG grants and other money available for Brownfield's development. Sweeney said they were going to talk with the Department of Commerce to find out if they qualified for additional money; Walt Ebersohl said he would let Sweeney know if DNR Brownfield's staff were aware of other funding sources. Feeney said that if the building's concrete slab was destroyed, additional contamination might be released. Sweeney said it might be feasible to retain the cap. He said that Earth Tech could conduct geo-probes on the ORE property, but that they would need to work with ORE to secure access. Feeney said he would review DNR files for the names of any ORE contacts for the site. He said that if he found any, he would provide the name(s) to Sweeney. Judy Ohm said that if ORE denied access, she would assist Sweeney in securing access. Sweeney said that the Village would need a chance to review and approve a sampling plan for the ORE site before it could be sent to the DNR. David Murphy said that the Village could complete the review in time to allow submittal by the end of July. LeRoy said he would submit a new sampling plan for the west plume to the DNR, along with a brief summary of the historical investigation of the site, by July 31<sup>st</sup>.

Ohm said that the Department would like to review the documents from the negotiation and recovery process, under s. 292.35, Stats., including the agreements that the Village signed with all of the PRPs that entered into the municipal negotiation/cost recovery process. She said that she would check with Marie Stewart of the Bureau for Remediation and Redevelopment Fiscal and Information Technology Section to see if the Department had any of the documents. Sweeney said he would provide the documents to Ohm if she was unable to locate them.

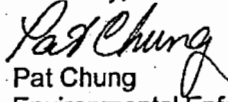
Feeney said he had not received any data for samples collected in 2005 or 2006. LeRoy said that he had not done any sampling in 2005, because he had made an argument for natural attenuation in the report he submitted to the DNR in 2005. LeRoy said that he stopped sampling, waiting to hear from the Department, but since he did not hear back, he resumed sampling in 2006. He is currently only sampling for VOCs. The Department requested additional monitoring wells to define the vertical extent of

contamination in the east plume, due to increasing concentrations of trichloroethylene at PW8B. LeRoy said that Sigma can't find suitable locations for additional wells. He said that increasing concentrations of vinyl chloride demonstrate that natural attenuation is working and that trichloroethylene at PW8B is breaking down. LeRoy said that the 2006 report and data for the east plume is currently under review by the Village, and will be submitted to Feeney by June 30, 2007. LeRoy will also include recommendations for additional sampling of the east plume with the submittal.

Ebersohl said that it would be very unusual for the Department to not respond to a request for review, if it was submitted along with a review fee. *(Under NR 749.04 (1), Wis. Adm. Code, when a person requests the department to review a document listed in Table 1, the person requesting this assistance shall pay to the department the applicable fees....Appropriate fees shall accompany all requests for specific department assistance. Department assistance will not be provided unless the applicable fee accompanies the request for assistance....)* LeRoy said he would check his records and see whether the company had submitted a review fee with the report, and would submit the information to Feeney. He will also send Feeney a copy of the map he brought to the meeting.

---

Sincerely,



Pat Chung  
Environmental Enforcement  
Southeast Region

cc: John Feeney – SER  
Judy Ohm – LS/5  
Walt Ebersohl - SER  
Earth Tech  
Buck Sweeney



June 28, 2007

Ms. Pat Chung  
Wisconsin Department of Natural Resources  
Southeast Region Headquarters  
2300 North Dr. Martin Luther King Jr. Drive  
Milwaukee, WI 53212-3128

Subject: **ORE West Plume Correspondence  
Village of Grafton  
Lime Kiln Landfill  
Earth Tech Project No. 30250**

Dear Ms. Chung:

Earth Tech, on behalf of the Village of Grafton, is submitting this letter in response to your May 29, 2007, correspondence to the Village, regarding the ORE West Plume and the Lime Kiln Landfill projects in the Village. This letter clarifies several statements in the May 29 letter.

The WDNR references the FID number used for the Lime Kiln Landfill for both the ORE West Plume and Lime Kiln sites. While we understand the two sites share some data, we consider the two sites separate. We request the use of separate FID numbers for each site because they are two separate projects. We also request that FID 246036780 stay with the Lime Kiln site because that site has received grants under that FID and it has much more work under that FID than the ORE West Plume project.

We did not expect to discuss the Lime Kiln Landfill regarding the notice of violation for the ORE West Plume. We have responded to every WDNR request for the Lime Kiln project and have actively worked toward closure. As mentioned at the meeting, it was good to talk about the Lime Kiln project, and certainly the projects are related to the degree that the plumes are in the same area of the Village and may share a few monitoring wells. However, the Lime Kiln project status should not be in question and discussion of its status at the notice of violation meeting might have been misplaced.

Specific comments are as follows:

Conference Agreement Bullet 1: Earth Tech will make recommendations for future sampling of the existing wells monitoring the Lime Kiln plume. Earth Tech did not agree to recommend additional piezometers. At the May 23, 2007 meeting, John Feeney wondered aloud if additional piezometers would be beneficial. When John has asked this question before, Earth Tech has always responded the same way. We realize that monitoring for downgradient protection is warranted until levels are stable or decreasing. In the 1999 RI, we made the argument, and the WDNR agreed that the plume's nature and extent were adequately defined. The monitoring wells used in the RI are still sampled quarterly in the current monitoring plan. Earth Tech had also sampled at depth during the RI in several private wells that were later abandoned. There is

a significant confining layer below the site in the Waukesha Dolomite that has extremely low porosity and hydraulic conductivity. We also have no reasonable place to put additional piezometers in alternate locations because the river and associated wetlands are inaccessible. The current system adequately monitors the plume as it attenuates.

Conference Agreement Bullet 2: Earth Tech is preparing a sampling plan for submittal to the WDNR for the ORE West Plume investigation. At the meeting, we discussed and agreed upon one additional well to compliment the 10 wells that are already in place to monitor the plume. This well will be placed to monitor the south edge of the plume along Green Bay Road. We are not considering adding more than one well at this time, per our discussion and agreement on May 23.

Discussion Paragraph 5: Private wells were helpful in 1999 for determining the southern extent of the ORE West Plume. Not all private wells are abandoned along Green Bay Road, and these wells will be used again to evaluate the plume extent. One new discrete monitoring well will be proposed at a location along Green Bay Road that is dependent upon property access.

Discussion Paragraph 8: We have shown that natural attenuation is occurring through several processes. After 2004, we submitted our updated monitoring plan to the WDNR recommending that sampling be reduced to VOCs only, because natural attenuation was clearly documented as occurring. We did not submit the review fee at that time because it was our understanding that it was not necessary. We did make John aware of the plan to sample only VOCs. Earth Tech will continue to monitor the VOC trends within the plume, and to ensure downgradient users that their drinking water was suitable for use. Our intent was not to request closure, it was simply to reduce the monitoring plan after 5 years, as we had previously outlined in 1999. The site does require continued monitoring because one well shows an increasing trend of TCE breakdown products.

Discussion Paragraph 8: The WDNR did not request additional wells. John Feeney has forwarded only one correspondence to the Village since 2005 that is specific to the Lime Kiln Plume. His August 10, 2005, letter was received and we responded to that letter via phone call and e-mail, and submittal of the 2004 Annual Report. There was no specific request for additional piezometers in that letter. I spoke with John after receiving the letter. According to my phone log, he mentioned that he was working on a more specific letter regarding the Lime Kiln Plume. I explained that deep piezometers were not feasible or necessary for several reasons, which are detailed in the annual report and the RI. We agreed to wait until John's letter to have a further discussion. To my knowledge, the Village had not received a letter specifically requiring additional piezometers. We have heard nothing further from the WDNR regarding the Lime Kiln Plume until the ORE West Plume notice of violation meeting.

Discussion Paragraph 8: Please note that Sigma is not involved in this project.

Discussion Paragraph 8: The Village has a draft of the 2006 Lime Kiln Annual Report. Earth Tech will submit the Annual Report before June 30, 2007.

If you have any questions or comments, please let me know. It was good to speak with you and we look forward to working with the WDNR to close the ORE West Plume in a timely manner.

Sincerely,

Earth Tech, Inc.

B.J. Le Roy  
Project Manager

c: John Feeney, WDNR  
Judy Ohm, WDNR  
Walt Ebersohl, WDNR  
Darrell Hofland, Village of Grafton  
David Murphy, Village of Grafton  
Buck Sweeney, Axley Brynelson, LLP  
Joan Underwood, Earth Tech



<b>Attachment B Special Volatile Organic Compound List Village of Grafton West Plume/Lime Kiln Landfill Plume Area</b>
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene, Total
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
2,2-Dichloropropane
2-Butanone
2-Chloroethylvinylether
2-Chlorotoluene
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon Disulfide
Carbon Tetrachloride
Chlorobenzene

<b>Attachment B Special Volatile Organic Compound List Village of Grafton West Plume/Lime Kiln Landfill Plume Area</b>
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromomethane
Dichlorodifluoromethane
Diisopropyl Ether
Ethylbenzene
Fluorotrichloromethane
Hexachlorobutadiene
Isopropylbenzene
Methylene Chloride
Methyl-tert-butyl-ether
Naphthalene
n-Butylbenzene
n-Propylbenzene
p-Isopropyltoluene
s-Butylbenzene
Styrene
t-Butylbenzene
Tetrachloroethene
Tetrahydrofuran
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl Chloride
Xylene, m + p
Xylene, o
Xylene, Total

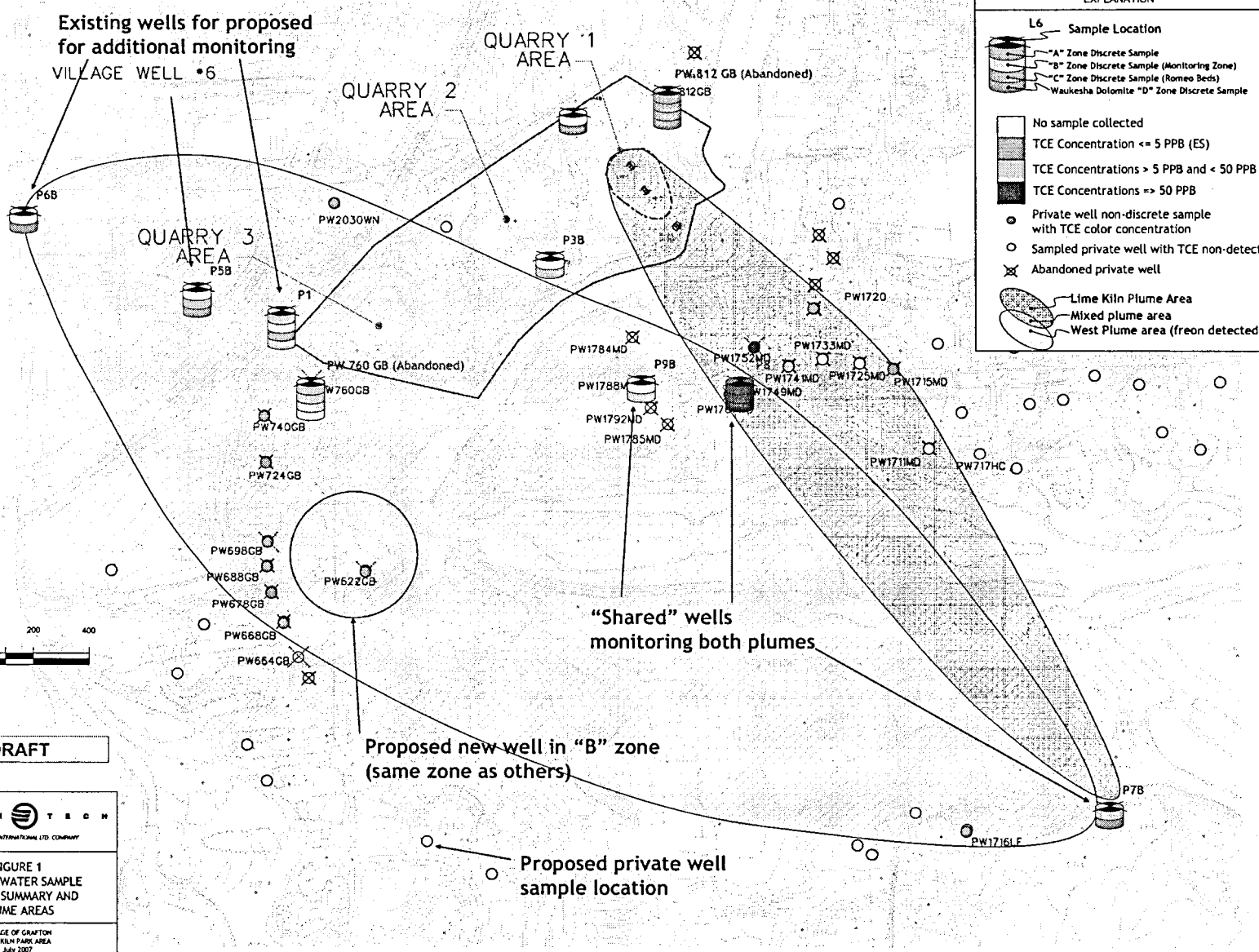
Notes:

Analysis Method 8260

Freon 113 synonym is 1,1,2-Trichlorotrifluoroethane

List prepared and agreed upon during 1999 Site Investigation Report (Earth Tech, 1999)

Current VOC list for Lime Kiln Park Groundwater Monitoring Plan



**EXPLANATION**

L6 Sample Location

- A" Zone Discrete Sample
- B" Zone Discrete Sample (Monitoring Zone)
- C" Zone Discrete Sample (Romeo Beds)
- Waukesha Dolomite "D" Zone Discrete Sample

- No sample collected
- TCE Concentration <= 5 PPB (ES)
- TCE Concentrations > 5 PPB and < 50 PPB
- TCE Concentrations => 50 PPB
- Private well non-discrete sample with TCE color concentration
- Sampled private well with TCE non-detect
- Abandoned private well
- Lime Kiln Plume Area
- Mixed plume area
- West Plume area (freon detected)

**DRAFT**

**EARTH TECH**  
A GYCSB INTERNATIONAL LTD COMPANY

**FIGURE 1**  
GROUNDWATER SAMPLE  
RESULT SUMMARY AND  
PLUME AREAS

VILLAGE OF GRAFTON  
LIME KILN PARK AREA  
July 2007



- After the field investigation is completed, an NR 700 investigation report will be completed for the West Plume. The report will detail the site background, investigation procedures, site characterization including geology and hydrogeology, the nature and extent of contamination, a preliminary remedial alternatives identification, and site recommendations.

After the field investigation and NR 700 report are complete, Earth Tech will determine a technically and economically feasible remedial alternative for the West Plume in accordance with NR 700.

### INVESTIGATION SCHEDULE

The Village of Grafton needs approval of this scope prior to August 26 in order to place the item on the September Village Board meeting agenda. If approval is received by that time, the Village will begin preparation for the field investigation upon their Board's approval. The investigation will begin with preparation of a brief work plan and a health and safety plan. Both will be submitted to the WDNR for approval. The field investigation can be completed in the fall of 2007 if WDNR approval is granted in a timely manner. The field investigation results would be analyzed in the fall/winter of 2007, with an investigation report submitted to the WDNR in the spring of 2008. The remedial option evaluation would begin immediately following submittal of the investigation report.

As the recommendations in this letter match the recommendations we agreed to at the May 23rd meeting, I anticipate that approval of this approach will be received by August 26. Please contact me at 920-451-2589 or [bj.leroy@earthtech.com](mailto:bj.leroy@earthtech.com) if you have any questions about the approach we have outlined.

Thank you,

Sincerely,

Earth Tech, Inc.

**BJ.Leroy**  
Digitally signed by BJ.Leroy  
DN: cn=BJ.Leroy  
Reason: I am the author of the document  
Date: 2007.07.31 11:25:00 -0500

B.J. Le Roy  
Project Manager

c: Pat Chung, WDNR  
David Murphy, Village of Grafton  
Darrell Hofland, Village of Grafton

Enclosure: As Noted



## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Scott Hassett, Secretary  
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters  
2300 N. Dr. Martin Luther King, Jr. Drive  
Milwaukee, Wisconsin 53212-3128  
FAX 414-263-8606  
Telephone 414-263-8500  
TTY Access via relay - 711

May 29, 2007

*Responded - June 29.*

Darrell Hofland, Administrator  
The Village of Grafton  
1708 12th Avenue  
Grafton, Wisconsin 53024

FID 246036780

Dear Mr. Hofland:

Thank you for meeting with representatives of the Department of Natural Resources on May 23, 2007, to discuss the notice of violation issued to the Village on April 23<sup>rd</sup>. If you are not in agreement with this summary, please send your comments to my attention at your earliest convenience.

In attendance: Darrell Hofland and David Murphy (Village of Grafton), Buck Sweeney (Axley Brynelson, LLP, representing the Village), B.J. LeRoy (Earth Tech, consultant for the Village), John Feeney, Walt Ebersohl, Judy Ohm and Pat Chung (DNR)

### Conference Agreement

- Earth Tech will submit a 2006 remedial action status report for the Lime Kiln Park Landfill to John Feeney by June 30, 2007. The submittal will include 2006 sampling data for the east plume and recommendations for additional sampling and/or remedial actions, including a recommendation for additional deeper piezometers to determine the vertical extent of contamination in groundwater at the P8 and P2 locations. B.J. LeRoy will also include a copy of the map used at the meeting.
- Earth Tech will prepare a sampling plan for investigation of the west plume, to include conducting geo-probes of the Ozaukee Real Estate ("ORE") site, and installation of a new monitoring well/s. Following approval of the plan by the Village of Grafton, Earth Tech will submit the plan to the DNR, no later than July 31<sup>st</sup>, 2007. The submittal will include a summary of the Village's historical investigation of the site, including information obtained in interviews conducted by Winter Hess.
- Buck Sweeney will contact the owners of the ORE property to secure access for sampling. If there are problems securing access, Judy Ohm will assist in obtaining access, and will, if necessary, prepare a letter to the company explaining the potential consequence of prohibiting access under state law.
- John Feeney will review DNR files for the names of ORE contacts for the site, and will provide the name(s) to Buck Sweeney.
- Buck Sweeney will provide Judy Ohm with copies of documents from the Village's negotiation and cost recovery process under s. 292.35. Stats, including PRP agreements, if the documents are not found in the files for the DNR's Bureau of Remediation and Redevelopment, Fiscal and Information Technology Section.
- Walt Ebersohl will discuss Grafton's plans for redevelopment of the ORE property with Brownfield staff and will notify Buck Sweeney if staff is aware of any additional funding sources for the project.
- B.J. LeRoy will provide John Feeney with documentation of whether Earth Tech submitted a review fee with the 2005 report.

## Discussion

Pat Chung thanked representatives of the Village and their agents for attending the meeting. She said that the Department was concerned about conditions at Lime Kiln, because it appeared that no actions had been taken to address conditions in the east plume for the past two years, and that no action had been taken to investigate and remediate the west plume. She said that the Department had authority to refer violations of S. 292.11, Wis. Stats., to the Department of Justice.

Buck Sweeney said that the April 23<sup>rd</sup> Notice of Violation had falsely stated that the Village did not respond to the Department's requests to investigate the West Plume. He said that Earth Tech had responded to requests for further investigation via e-mail and letter, indicating that the Village did not believe it was responsible for investigating contamination located on the Ozaukee Real Estate ("ORE") Association site.

Sweeney said that there was TCE in the west plume, but there was no evidence that TCE was used at the ORE site. He said that the owners of Milwaukee Sign (who leased the site from ORE) were convinced that the property was not the source of the plume containing TCE.

Sweeney said that the Village was interested in redeveloping the property as a Brownfield, and had asked Earth Tech to develop a plan that would meet the DNR's expectations and allow the Village to proceed with redevelopment.

B.J. LeRoy and Sweeney said that the Village had provided municipal water to home owners whose drinking water wells were contaminated by the west plume. LeRoy said that the potable wells had been helpful in determining the southern edge of the plume. He said that the wells were abandoned, and that Earth Tech was proposing to install a new monitoring well/s to further define the southern boundary of the west plume.

John Feeney said that Earth Tech should collect soil borings directly from the ORE property. Sweeney said that the Village was proposing to raze the building on the property, and redevelop the property using SAG grants and other money available for Brownfield's development. Sweeney said they were going to talk with the Department of Commerce to find out if they qualified for additional money; Walt Ebersohl said he would let Sweeney know if DNR Brownfield's staff were aware of other funding sources. Feeney said that if the building's concrete slab was destroyed, additional contamination might be released. Sweeney said it might be feasible to retain the cap. He said that Earth Tech could conduct geo-probes on the ORE property, but that they would need to work with ORE to secure access. Feeney said he would review DNR files for the names of any ORE contacts for the site. He said that if he found any, he would provide the name(s) to Sweeney. Judy Ohm said that if ORE denied access, she would assist Sweeney in securing access. Sweeney said that the Village would need a chance to review and approve a sampling plan for the ORE site before it could be sent to the DNR. David Murphy said that the Village could complete the review in time to allow submittal by the end of July. LeRoy said he would submit a new sampling plan for the west plume to the DNR, along with a brief summary of the historical investigation of the site, by July 31<sup>st</sup>.

Ohm said that the Department would like to review the documents from the negotiation and recovery process, under s. 292.35, Stats., including the agreements that the Village signed with all of the PRPs that entered into the municipal negotiation/cost recovery process. She said that she would check with Marie Stewart of the Bureau for Remediation and Redevelopment Fiscal and Information Technology Section to see if the Department had any of the documents. Sweeney said he would provide the documents to Ohm if she was unable to locate them.

Feeney said he had not received any data for samples collected in 2005 or 2006. LeRoy said that he had not done any sampling in 2005, because he had made an argument for natural attenuation in the report he submitted to the DNR in 2005. LeRoy said that he stopped sampling, waiting to hear from the Department, but since he did not hear back, he resumed sampling in 2006. He is currently only sampling for VOCs. The Department requested additional monitoring wells to define the vertical extent of

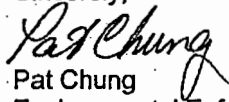


contamination in the east plume, due to increasing concentrations of trichloroethylene at PW8B. LeRoy said that Sigma can't find suitable locations for additional wells. He said that increasing concentrations of vinyl chloride demonstrate that natural attenuation is working and that trichloroethylene at PW8B is breaking down. LeRoy said that the 2006 report and data for the east plume is currently under review by the Village, and will be submitted to Feeney by June 30, 2007. LeRoy will also include recommendations for additional sampling of the east plume with the submittal.

Ebersohl said that it would be very unusual for the Department to not respond to a request for review, if it was submitted along with a review fee. *(Under NR 749.04 (1), Wis. Adm. Code, when a person requests the department to review a document listed in Table 1, the person requesting this assistance shall pay to the department the applicable fees....Appropriate fees shall accompany all requests for specific department assistance. Department assistance will not be provided unless the applicable fee accompanies the request for assistance....)* LeRoy said he would check his records and see whether the company had submitted a review fee with the report, and would submit the information to Feeney. He will also send Feeney a copy of the map he brought to the meeting.

---

Sincerely,



Pat Chung  
Environmental Enforcement  
Southeast Region

cc: John Feeney - SER  
Judy Ohm - LS/5  
Walt Ebersohl - SER  
Earth Tech  
Buck Sweeney

June 28, 2007

Ms. Pat Chung  
Wisconsin Department of Natural Resources  
Southeast Region Headquarters  
2300 North Dr. Martin Luther King Jr. Drive  
Milwaukee, WI 53212-3128

Subject: **ORE West Plume Correspondence  
Village of Grafton  
Lime Kiln Landfill  
Earth Tech Project No. 30250**

Dear Ms. Chung:

Earth Tech, on behalf of the Village of Grafton, is submitting this letter in response to your May 29, 2007, correspondence to the Village, regarding the ORE West Plume and the Lime Kiln Landfill projects in the Village. This letter clarifies several statements in the May 29 letter.

The WDNR references the FID number used for the Lime Kiln Landfill for both the ORE West Plume and Lime Kiln sites. While we understand the two sites share some data, we consider the two sites separate. We request the use of separate FID numbers for each site because they are two separate projects. We also request that FID 246036780 stay with the Lime Kiln site because that site has received grants under that FID and it has much more work under that FID than the ORE West Plume project.

We did not expect to discuss the Lime Kiln Landfill regarding the notice of violation for the ORE West Plume. We have responded to every WDNR request for the Lime Kiln project and have actively worked toward closure. As mentioned at the meeting, it was good to talk about the Lime Kiln project, and certainly the projects are related to the degree that the plumes are in the same area of the Village and may share a few monitoring wells. However, the Lime Kiln project status should not be in question and discussion of its status at the notice of violation meeting might have been misplaced.

Specific comments are as follows:

Conference Agreement Bullet 1: Earth Tech will make recommendations for future sampling of the existing wells monitoring the Lime Kiln plume. Earth Tech did not agree to recommend additional piezometers. At the May 23, 2007 meeting, John Feeney wondered aloud if additional piezometers would be beneficial. When John has asked this question before, Earth Tech has always responded the same way. We realize that monitoring for downgradient protection is warranted until levels are stable or decreasing. In the 1999 RI, we made the argument, and the WDNR agreed that the plume's nature and extent were adequately defined. The monitoring wells used in the RI are still sampled quarterly in the current monitoring plan. Earth Tech had also sampled at depth during the RI in several private wells that were later abandoned. There is

a significant confining layer below the site in the Waukesha Dolomite that has extremely low porosity and hydraulic conductivity. We also have no reasonable place to put additional piezometers in alternate locations because the river and associated wetlands are inaccessible. The current system adequately monitors the plume as it attenuates.

Conference Agreement Bullet 2: Earth Tech is preparing a sampling plan for submittal to the WDNR for the ORE West Plume investigation. At the meeting, we discussed and agreed upon one additional well to compliment the 10 wells that are already in place to monitor the plume. This well will be placed to monitor the south edge of the plume along Green Bay Road. We are not considering adding more than one well at this time, per our discussion and agreement on May 23.

Discussion Paragraph 5: Private wells were helpful in 1999 for determining the southern extent of the ORE West Plume. Not all private wells are abandoned along Green Bay Road, and these wells will be used again to evaluate the plume extent. One new discrete monitoring well will be proposed at a location along Green Bay Road that is dependent upon property access.

Discussion Paragraph 8: We have shown that natural attenuation is occurring through several processes. After 2004, we submitted our updated monitoring plan to the WDNR recommending that sampling be reduced to VOCs only, because natural attenuation was clearly documented as occurring. We did not submit the review fee at that time because it was our understanding that it was not necessary. We did make John aware of the plan to sample only VOCs. Earth Tech will continue to monitor the VOC trends within the plume, and to ensure downgradient users that their drinking water was suitable for use. Our intent was not to request closure, it was simply to reduce the monitoring plan after 5 years, as we had previously outlined in 1999. The site does require continued monitoring because one well shows an increasing trend of TCE breakdown products.

Discussion Paragraph 8: The WDNR did not request additional wells. John Feeney has forwarded only one correspondence to the Village since 2005 that is specific to the Lime Kiln Plume. His August 10, 2005, letter was received and we responded to that letter via phone call and e-mail, and submittal of the 2004 Annual Report. There was no specific request for additional piezometers in that letter. I spoke with John after receiving the letter. According to my phone log, he mentioned that he was working on a more specific letter regarding the Lime Kiln Plume. I explained that deep piezometers were not feasible or necessary for several reasons, which are detailed in the annual report and the RI. We agreed to wait until John's letter to have a further discussion. To my knowledge, the Village had not received a letter specifically requiring additional piezometers. We have heard nothing further from the WDNR regarding the Lime Kiln Plume until the ORE West Plume notice of violation meeting.

Discussion Paragraph 8: Please note that Sigma is not involved in this project.

Discussion Paragraph 8: The Village has a draft of the 2006 Lime Kiln Annual Report. Earth Tech will submit the Annual Report before June 30, 2007.

If you have any questions or comments, please let me know. It was good to speak with you and we look forward to working with the WDNR to close the ORE West Plume in a timely manner.

Sincerely,

Earth Tech, Inc.

B.J. Le Roy  
Project Manager

c: John Feeney, WDNR  
Judy Ohm, WDNR  
Walt Ebersohl, WDNR  
Darrell Hofland, Village of Grafton  
David Murphy, Village of Grafton  
Buck Sweeney, Axley Brynelson, LLP  
Joan Underwood, Earth Tech

<b>Attachment B Special Volatile Organic Compound List Village of Grafton West Plume/Lime Kiln Landfill Plume Area</b>
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene, Total
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
2,2-Dichloropropane
2-Butanone
2-Chloroethylvinylether
2-Chlorotoluene
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon Disulfide
Carbon Tetrachloride
Chlorobenzene



**Attachment B  
Special Volatile Organic Compound List  
Village of Grafton  
West Plume/Lime Kiln Landfill Plume Area**

Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromomethane
Dichlorodifluoromethane
Diisopropyl Ether
Ethylbenzene
Fluorotrichloromethane
Hexachlorobutadiene
Isopropylbenzene
Methylene Chloride
Methyl-tert-butyl-ether
Naphthalene
n-Butylbenzene
n-Propylbenzene
p-Isopropyltoluene
s-Butylbenzene
Styrene
t-Butylbenzene
Tetrachloroethene
Tetrahydrofuran
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl Chloride
Xylene, m + p
Xylene, o
Xylene, Total

**Notes:**

Analysis Method 8260

Freon 113 synonym is 1,1,2-Trichlorotrifluoroethane

List prepared and agreed upon during 1999 Site Investigation Report (Earth Tech, 1999)

Current VOC list for Lime Kiln Park Groundwater Monitoring Plan