

September 30, 2019

Proposal QTB108727

Cathy Fox
Coldwell Banker River Valley, Realtors
1808 E. Main Street
Onalaska, WI 54650

Re: Proposal to Conduct a Phase I Environmental Site Assessment
Mississippi Welders Supply Co. Building
621 3rd Street
La Crosse, Wisconsin 54601

Dear Ms. Fox:

Braun Intertec Corporation is pleased to present this proposal to conduct a Phase I environmental site assessment (ESA) of the referenced site. The objective of a Phase I ESA is to evaluate the site for indications of recognized environmental conditions and to assist in satisfying All Appropriate Inquiries (AAI) criteria and requirements. The Phase I ESA will be conducted in general conformance with the scope and limitations of ASTM International Practice E 1527-13 (ASTM Practice E 1527-13) and 40 CFR Part 312.

Scope of Services

Site History Review

The Phase I ESA will summarize reasonably ascertainable information pertaining to former and current land-use activities at the site. Our summary will include a review of aerial photographs, fire insurance atlases, city directories, property tax files, building records, topographic maps, and/or other historical documents to satisfy the historical-use requirements of the ASTM Practice E 1527-13 and 40 CFR Part 312.

Regulatory Information Review

We will request that a national regulatory information vendor, such as Environmental Data Resources, Inc., conduct a limited file evaluation of the site. If readily available and practically reviewable, the file evaluation will include, at a minimum, a review of the following databases within the corresponding approximate minimum search distance indicated in the ASTM Practice E 1527-13 and 40 CFR Part 312:

- Federal National Priorities List (NPL)
- Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- Federal Institutional and Engineering Controls
- Federal Resource Conservation and Recovery Act (RCRA) Transport, Storage and Disposal (TSD) facilities
- Federal RCRA TSD facilities that have received RCRA corrective action activities
- Federal RCRA generators
- Federal Emergency Response Notification (ERNS) sites

AA/EOE

- State NPL and CERCLIS equivalents
- State landfill and/or solid waste disposal sites
- State Voluntary cleanup programs
- State leaking underground and aboveground storage tank (LUST/LAST) sites
- State registered underground and aboveground storage tank (UST/AST) sites
- State Brownfield programs
- State Institutional and Engineering Controls
- State spills list

We will review and summarize this information, and comment on known and potential environmental hazards that may impact the site. The scope of work does not include a detailed review of file information of identified facilities listed on the regulatory databases. However, if in our opinion a file review is warranted to evaluate the existence of a recognized environmental condition, historical recognized environmental condition, controlled recognized environmental condition, or a *de minimis* condition, we will contact you to discuss expanding the assessment to include a file review and the associated costs.

Site Reconnaissance and Interviews

The Phase I ESA will include a reconnaissance of the site. During the reconnaissance we will note, if observed, the type of vegetation, exposed soils, open excavations or depressions, and site topography. Visible indications of underground and aboveground storage tanks, dumping, spills of petroleum and chemicals, and other obvious potential sources of contamination will be noted. In addition, we will conduct interviews with site representatives and governmental officials regarding past and current land-use activities.

Results and Reporting

A draft Phase I ESA report will be sent to you for review and comment. The Phase I ESA report will remain in draft status until we are notified by you to proceed with issuance of the final Phase I ESA report.

If we encounter indications of existing or potential sources of contamination during our assessment, we will notify you to discuss how the assessment may proceed. You may wish to discontinue the Phase I ESA or you may consider expanding the assessment to further evaluate the contamination sources that are identified. If contamination at the site is confirmed, the property owner may be required to notify proper governmental authorities.

User-Provided Information

As part of Phase I ESA, the "User" should provide available information to Braun Intertec as the Environmental Professional to help identify the possibility of recognized environmental conditions in connection with the Site. A "User" is the party seeking to use ASTM Practice E 1527-13 to complete an environmental site assessment and may include, without limitation, a potential purchaser, tenant or owner of the property, a lender, or a property manager.

The attached User questionnaire should be completed in its entirety by the User(s) and returned with the signed authorization. If multiple Users are requesting reliance on the Phase I ESA, please provide us with a questionnaire completed by each of the appropriate entities.

Assessment Limitations

Upon completion of the Phase I ESA, Braun Intertec does not guarantee qualification for Landowner Liability Protections (LLP). Our proposed scope of work is consistent with "good commercial and customary practices" (as defined by ASTM Practice E 1527-13) conducted in an effort to evaluate recognized environmental conditions at a site in this area.

The assessment will not include vapor encroachment screening as defined in ASTM Practice E2600-15, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*. ASTM Practice E2600-15 is not a requirement or component of AAI, and its results are not determinative of whether hazardous substances from a release are or may be present at the property for the sake of AAI or ASTM E1527-13. However, vapors present or likely present from hazardous substances or petroleum products will be considered no differently than hazardous substances or petroleum products present or likely present as a result of a release to the environment. Therefore, while a vapor encroachment screening per the ASTM Practice E2600-15 standard will not be conducted as part of this proposal, the potential for impacts to the property from vapor migration that is a result of a release of hazardous substances and/or petroleum products to the environment will be considered when assessing for the presence of a recognized environmental condition as defined by ASTM E1527-13.

Cost

The lump-sum cost for the tasks described in this proposal is as follows.

Service Description	Lump Sum Cost
Phase I Environmental Site Assessment	\$2,400

Schedule

We anticipate the draft Phase I ESA report will be completed within two to three weeks from the date of your written authorization. The Phase I ESA report will remain in draft status until we are notified by you to proceed with issuance of the final Phase I ESA report.

General Remarks

Braun Intertec appreciates the opportunity to present this proposal to you. It is being sent in an electronic version *only*. A hard copy of the proposal will be supplied upon request. ***Please return a signed copy of the proposal, the completed User Questionnaire, and the completed Client Information Request Form, in their entirety.***

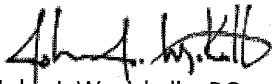
The proposed fee is based on the scope of services described and the assumption that our services will be authorized within 30 days and that others will not delay us beyond our proposed schedule.

We include the Braun Intertec General Conditions, which provide additional terms and are a part of our agreement.

We appreciate the opportunity to provide professional services for you on this project. If you have questions regarding the contents of this proposal, please call John Wyciskalla at 608.781.7277.

Sincerely,

BRAUN INTERTEC CORPORATION



John J. Wyciskalla, PG
Associate Principal – Senior Scientist



Mark L. Gretebeck
Principal

Attachments:

General Conditions – Phase I Assessments (1/1/18)
ASTM Practice E 1527-13 User Questionnaire
Client Information Request Form

The proposal is accepted, and you are authorized to proceed.

Authorizer's Firm

Authorizer's Signature

Authorizer's Name (please print or type)

Authorizer's Title

Date

General Conditions

Phase I Environmental Site Assessments and Related Services

Section 1: Agreement

1.1 Our agreement with you consists of these General Conditions and the accompanying written proposal or authorization ("Agreement"). This Agreement is the entire agreement between you and us. It supersedes prior agreements. It may be modified only in a writing signed by us, making specific reference to the provision modified.

1.2 The words "you," "we," "us," and "our" include officers, employees, and subcontractors.

1.3 In the event you use a purchase order or other documentation to authorize our scope of work ("Services"), any conflicting or additional terms are not part of this Agreement. Directing us to start work prior to execution of this Agreement constitutes your acceptance. If, however, mutually acceptable terms cannot be established, we have the right to terminate this Agreement without liability to you or others, and you will compensate us for fees earned and expenses incurred up to the time of termination.

Section 2: Our Responsibilities

2.1 We will provide Services specifically described in this Agreement. You agree that we are not responsible for services that are not expressly included in this Agreement. Unless otherwise agreed in writing, our findings will be written and you may not rely on oral statements.

2.2 In performing our professional services, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality. If you direct us to deviate from our recommended procedures, you agree to hold us harmless from claims, damages, and expenses arising out of your direction. If during the one year period following completion of Services it is determined that the above standards have not been met and you have promptly notified us in writing of such failure, we will perform, at our cost, such corrective services as may be necessary, within the original scope in this Agreement, to remedy such deficiency. Remedies set forth in this section constitute your sole and exclusive recourse with respect to the performance or quality of Services.

2.3 We will reference our field observations and sampling to available reference points, but we will not survey, set, or check the accuracy of those points unless we accept that duty in writing. Locations of field observations or sampling described in our report or shown on our sketches are based on information provided by others or estimates made by our personnel. You agree that such dimensions, depths, or elevations are approximations unless specifically stated otherwise in the report. You accept the inherent risk that samples or observations may not be representative of things not sampled or seen and further that site conditions may vary over distance or change over time.

2.4 You will provide, at no cost to us, appropriate site safety measures as to work areas to be observed or inspected by us. Our employees are authorized by you to refuse to work under conditions that may be unsafe.

2.5 Unless a fixed fee is indicated, our price is an estimate of our project costs and expenses based on information available to us and our experience and knowledge. They may not reflect current market conditions. Such estimates are an exercise of our professional judgment and are not guaranteed or warranted. You should allow a contingency in addition to estimated costs.

Section 3: Your Responsibilities

3.1 You will provide access to the site. You agree to provide us with all plans, changes in plans, and new information as to site conditions until we have completed Services.

3.2 You agree to provide us with information in your possession or control relating to contamination at the work site.

3.3 Neither this Agreement nor the providing of Services will operate to make us an owner, operator, generator, transporter, treater, storer, or a disposal facility within the meaning of the Resource Conservation Recovery Act, as amended, or within the meaning of any other law governing the handling, treatment, storage, or disposal of hazardous substances. *You agree to hold us harmless, defend, and indemnify us from any damages, claims, damages, penalties or losses resulting from the storage, removal, hauling or disposal of such substances.*

3.4 You agree to make all disclosures required by law. In the event you do not own the project site, you acknowledge that it is your duty to inform the owner of the discovery or release of contaminants at the site. *You agree to hold us harmless, defend, and indemnify us from claims, damages, penalties, or losses and expenses, including attorney fees, related to failures to make disclosures, disclosures made by us that are required by law, and from claims related to the informing or failure to inform the site owner of the discovery of contaminants.*

Section 4: Reports and Records

4.1 Unless you request otherwise, we will provide our report in an electronic format.

4.2 Our reports, notes, calculations, and other documents and our computer software and data are instruments of our service to you, and they remain our property. We hereby grant you a license to use the reports and related information we provide only for the related project and for the purposes disclosed to us. You may not transfer our reports to others or use them for a purpose for which they were not prepared without our written approval. *You agree to indemnify, defend, and hold us harmless from claims, damages, losses, and expenses, including attorney fees, arising out of such a transfer or use.*

4.3 If you do not pay for Services in full as agreed, we may retain work not yet delivered to you and you agree to return to us all of our work that is in your possession or under your control.

4.4 Electronic data, reports, photographs, samples, and other materials provided by you or others may be discarded or returned to you, at our discretion, unless within 15 days of the report date you give us written direction to store or transfer the materials at your expense.

Section 5: Compensation

5.1 You will pay for Services as stated in this Agreement. If such payment references our Schedule of Charges, the invoicing will be based upon the most current schedule. An estimated amount is not a firm figure. You agree to pay all sales taxes and other taxes based on your payment of our compensation. Our performance is subject to credit approval and payment of any specified retainer.

5.2 You will notify us of billing disputes within 15 days. You will pay undisputed portions of invoices upon receipt. You agree to pay interest on unpaid balances beginning 30 days after invoice dates at the rate of 1.5% per month, or at the maximum rate allowed by law.

5.3 If you direct us to invoice a third party, we may do so, but you agree to be responsible for our compensation unless the third party is creditworthy (in our sole opinion) and provides written acceptance of all terms of this Agreement.

5.4 Your obligation to pay for Services under this Agreement is not contingent on your ability to obtain financing, governmental or regulatory agency approval, permits, final adjudication of any lawsuit, your successful completion of any project, receipt of payment from a third party, or any other event. No retainage will be withheld.

5.5 If you do not pay us in accordance with this Agreement, you agree to reimburse all costs and expenses for collection of the moneys invoiced, including but not limited to attorney fees and staff time.

5.6 You agree to compensate us in accordance with our Schedule of Charges if we are asked or required to respond to legal process arising out of a proceeding related to the project and as to which we are not a party.

5.7 If we are delayed by factors beyond our control, or if project conditions or the scope or amount of work changes, or if changed labor conditions result in increased costs, decreased efficiency, or delays, or if the standards or methods change, we will give you timely notice, the schedule will be extended for each day of delay, and we will be compensated for costs and expenses incurred in accordance with our Schedule of Charges.

5.8 If you fail to pay us in accordance with this Agreement, we may consider the default a total breach of this Agreement and, at our option, terminate our duties without liability to you or to others, and you will compensate us for fees earned and expenses incurred up to the time of termination.

5.9 In consideration of our providing insurance to cover claims made by you, you hereby waive any right to offset fees otherwise due us.

Section 6: Disputes, Damage, and Risk Allocation

6.1 Each of us will exercise good faith efforts to resolve disputes without litigation. Such efforts will include, but not be limited to, a meeting(s) attended by each party's representative(s) empowered to resolve the dispute. Before either of us commences an action against the other, disputes (except collections) will be submitted to mediation.

6.2 *Notwithstanding anything to the contrary in this Agreement, neither party hereto shall be responsible or held liable to the other for punitive, indirect, incidental, or consequential damages, or liability for loss of use, loss of business opportunity, loss of profit or revenue, loss of product or output, or business interruption.*

6.3 You and we agree that any action in relation to an alleged breach of our standard of care or this Agreement shall be commenced within one year of the date of the breach or of the date of substantial completion of Services, whichever is earlier, without regard to the date the breach is discovered. Any action not brought within that one year time period shall be barred, without regard to any other limitations period set forth by law or statute. We will not be liable unless you have notified us within 30 days of the date of such breach and unless you have given us an opportunity to investigate and to recommend ways of mitigating damages. You agree not to make a claim against us unless you have provided us at least 30 days prior to the institution of any legal proceeding against us with a written certificate executed by an appropriately licensed professional specifying and certifying each and every act or omission that you contend constitutes a violation of the standard of care governing our professional services. Should you fail to meet the

conditions above, you agree to fully release us from any liability for such allegation.

6.4 *For you to obtain the benefit of a fee which includes a reasonable allowance for risks, you agree that our aggregate liability for all claims will not exceed the fee paid for Services or \$50,000, whichever is greater. If you are unwilling to accept this allocation of risk, we will increase our aggregate liability to \$100,000 provided that, within 10 days of the date of this Agreement, you provide payment in an amount that will increase our fees by 10%, but not less than \$500, to compensate us for the greater risk undertaken.* This increased fee is not the purchase of insurance.

6.5 *You agree to indemnify us from all liability to others in excess of the risk allocation stated herein and to insure this obligation. In addition, all indemnities and limitations of liability set forth in this Agreement apply however the same may arise, whether in contract, tort, statute, equity or other theory of law, including, but not limited to, the breach of any legal duty or the fault, negligence, or strict liability of either party.*

6.6 This Agreement shall be governed, construed, and enforced in accordance with the laws of the state in which our servicing office is located, without regard to its conflict of laws rules. The laws of the state of our servicing office will govern all disputes, and all claims shall be heard in the state or federal courts for that state. Each of us waives trial by jury.

6.7 No officer or employee acting within the scope of employment shall have individual liability for his or her acts or omissions, and you agree not to make a claim against individual officers or employees.

Section 7: General Indemnification

7.1 *We will indemnify and hold you harmless from and against demands, damages, and expenses of others to the comparative extent they are caused by our negligent acts or omissions or those negligent acts or omissions of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses of others to the comparative extent they are caused by your negligent acts or omissions or those negligent acts*

or omissions of persons for whom you are legally responsible.

7.2 To the extent it may be necessary to indemnify either of us under Section 7.1, you and we expressly waive, in favor of the other only, any immunity or exemption from liability that exists under any worker compensation law.

7.3 You agree to indemnify us against losses and costs arising out of claims of patent or copyright infringement as to any process or system that is specified or selected by you or by others on your behalf.

Section 8: Miscellaneous Provisions

8.1 We will provide a certificate of insurance to you upon request. Any claim as an Additional Insured shall be limited to losses caused by our negligence.

8.2 You and we, for ourselves and our insurers, waive all claims and rights of subrogation for losses arising out of causes of loss covered by our respective insurance policies.

8.3 Neither of us will assign or transfer any interest, any claim, any cause of action, or any right against the other. Neither of us will assign or otherwise transfer or encumber any proceeds or expected proceeds or compensation from the project or project claims to any third person, whether directly or as collateral or otherwise.

8.4 This Agreement may be terminated early only in writing. You will compensate us for fees earned for performance completed and expenses incurred up to the time of termination.

8.5 If any provision of this Agreement is held invalid or unenforceable, then such provision will be modified to reflect the parties' intention. All remaining provisions of this Agreement shall remain in full force and effect.

8.6 No waiver of any right or privilege of either party will occur upon such party's failure to insist on performance of any term, condition, or instruction, or failure to exercise any right or privilege or its waiver of any breach.

ASTM Practice E 1527-13 User Questionnaire

Site: Mississippi Welders Supply Co. Building
621 3rd Street
La Crosse, Wisconsin 54601

Name: Jason Gilman Date: 10-1-2019

Company: CITY OF LA CROSSE

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2002 (the "Brownfields Amendment"), the User must conduct the following inquiries. The User should provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete.

- (1) Environmental cleanup liens that are filed or recorded against the property.**
The types of title reports that may disclose environmental liens include Preliminary Title Reports, Title Commitments, Condition of Title, and Title Abstracts. Chain-of-title reports will not normally disclose environmental liens. Did a search of *recorded land title records* (or judicial records where appropriate) identify any environmental cleanup liens filed or recorded against the *property* under federal, tribal, state or local law?
- (2) Activity and use limitations (AULs) that are in place on the property or that have been filed or recorded against the property.**
The types of title reports that may disclose AULs include Preliminary Title Reports, Title Commitments, Condition of Title, and Title Abstracts. Chain-of-title reports will not normally disclose AULs. Did a search of *recorded land title records* (or judicial records where appropriate) identify any AULs, such as *engineering controls*, *land use restrictions*, or *institutional controls* that are in place at the *property* and/or have been filed or recorded against the *property* under federal, tribal, state or local law?
- (3) Specialized knowledge or experience of the person seeking to qualify for the LLP.**
Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?
- (4) Relationship of the purchase price to the fair market value of the property if it were not contaminated.**
Does the purchase price being paid for this *property* reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

- (5) **Commonly known or reasonably ascertainable information about the property.**
Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example,
- (a) Do you know the past uses of the *property*? If so, please explain.
 - (b) Do you know of specific chemicals that are present or once were present at the *property*? If so, please explain.
 - (c) Do you know of spills or other chemical releases that have taken place at the *property*? If so, please explain.
 - (d) Do you know of any environmental cleanups that have taken place at the *property*? If so, please explain.
- (6) **The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation.**
Based on your knowledge and experience related to the *property*, are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*? If so, please explain.

Client Information Request Form for Phase I Environmental Site Assessments

Project/Site Name: 621 3rd Street, La Crosse, WI

So that we may serve you better, please answer the following questions concerning the project Site. If a question does not apply to the Site, write "NA." If you do not know the answer, write "Unknown."
Please return the completed form along with one copy of the signed authorization letter.

Client Objectives

A. What is your interest in the Site? Check all that apply.

- Buying property
- Refinancing
- Selling property
- Development
- Redevelopment
- Other: _____

B. In addition to the User, are there any additional entities you would like included on the report for reliance purposes?

C. A final PDF of the report will be provided. If hard copies are needed, how many? 6

D. What is the desired completion date for this project?

Date: 10-25-2019

E. Do you wish to receive a verbal report before the written report is received?

Yes No

F. Is confidentiality requested?

Yes No

If so, to whom is it limited? CITY OFFICIALS

Site-Specific Information

A. Where is the Site located?
Address: 621 3rd Street
La Crosse WI 54601
Legal Description: See attached.

B. Who is the current property owner?
Name: Mississippi Welders Supply Co.
Phone: 608-782-6687

C. Who will provide access to the property and/or who is the Site contact?
Name: Cathy Fox, Coldwell Banker
Phone: 608-386-8115

D. Has any previous environmental work been performed on the Site? Check all that apply.

- No previous environmental work has been performed
- Unknown
- Geotechnical/Soil borings
- Phase I Environmental Site Assessment
- Phase II Environmental Site Assessment
- Soil Vapor/Sub-slab Soil Vapor Investigation
- Radon Investigation
- Asbestos/Lead-based Paint Inspections
- Hazardous Materials Testing
- Other: _____

If previous environmental work has been performed...

When was it performed? _____
By whom?
Name: _____
Phone: _____
What were the results?
Are copies of the report(s) available?
 Yes No Unknown

E. Is a current Site plan available? If yes, please provide.

- Yes No Unknown

F. How large is the property (total acreage)?

.47 acres

G. How is the property currently used? Check all that apply.

- Undeveloped Light industrial
- Agricultural Retail
- Residential Office Building
- Parking Lot Warehouse
- Commercial Other: _____

H. What is the proposed use of the property?

Unknown

I. Are there existing buildings on the property?

Yes No Unknown

If yes:

How many buildings? 1 w/addition

What year was each building originally built? 1920

What year(s) was/were any subsequent addition(s) completed for each building?

unknown

What is the total square footage of each building and/or additions? 4,250 +/-

Are you aware of any asbestos-containing building materials in any building? No.

Give a brief description and use of each building.

Masonry Gas Plant Bldg, Metal Addition

J. What was the property used for in the past?

Gas Plant, 1920s, Commercial/Leases

K. Are there currently or previously any aboveground or underground storage tanks located on the property?

Aboveground storage tanks: Yes No Unknown

Underground storage tanks: Yes No Unknown

If yes:

Where are they located?

What are the sizes and contents of the tanks (e.g., 500-gallon diesel)?

When were the tanks installed?

Are there any maintenance records available for the tanks?

Are the tanks currently being used?

Yes No Unknown

If no:

When were the tank(s) closed? _____

Was the MPCA notified? _____

L. Have hazardous chemicals or petroleum products ever been stored at the Site?

Hazardous chemicals: Yes No Unknown

Petroleum products: Yes No Unknown

If yes, which ones? _____

M. Has the property ever been used or is the property currently used for dumping or landfilling?

Unknown

Client Information Request Form
for Phase I Environmental Site Assessments

N. Utilities

Are there any wells or septic systems formerly or currently located at the Site?

Wells: Yes No Unknown

Septic systems: Yes No Unknown

Is the Site connected to city sewer and water?

Sewer: Yes No Unknown

Water: Yes No Unknown

What types of utilities service the Site? Check all that apply.

Unknown

Gas

Electric

Propane

Other: _____

O. Are there any environmental concerns regarding the property or adjoining properties?

Yes, Xcel Gas Plant Site to West of Property. - See
DNR letter, attached.

P. How are the adjacent properties used?

Public, Commercial.

Parcel Information:

Parcel:	17-20009-40
Internal ID:	27788
Municipality:	City of La Crosse
Record Status:	Current
On Current Tax Roll:	Yes
Total Acreage:	0.410
Township: ⓘ	16
Range: ⓘ	07
Section: ⓘ	31

Legal Description:

TOWN OF LA CROSSE PRT LOTS 7 8 9 & 10 & PRT VAC ALLEY BLK 14 BEG NE COR LOT 10 S0D2M23SE 89.57FT S7D 14M41SW 97.58FT S75D37M37SW 26.13FT N64D2M23SW 53.28FT N61D44M23SW 78.27FT TO C/L VAC ALLEY ALG SD C/L N28D31M 47SE 74.50FT TO SE LN GROVE ST ALG SD SE LN N60D34M20SE 136.41FT TO POB & PRT LOT 3 BLOCK 14 & VAC ALLEY BEG INTER C/L VAC ALLEY & SELY LN GROVE ST S28D29M15SW 66.98FT N62D52M10SW 42.46FT N60D34M20SE 79.96FT TO POB EX PRT LOTS 7 & 8 & PRT VAC ALLEY COM INTER C/L VAC ALLEY & SELY LN GROVE ST S28D29M15SW 66.98FT TO POB S28D29M15SW 8.37FT S61D42ME 77.39FT S64D0ME 53.28FT N75D 40ME 19.72FT N62D32M10SW 35.80FT N76D18M37SW 21FT N62D32M10SW 89FT TO POB

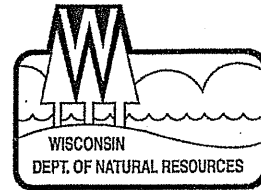
Property Addresses:

Street Address
621 3RD ST N

City(Postal)
LA CROSSE

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1300 W. Clairemont Ave.
Eau Claire WI 54701

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



January 11, 2016

Don Peterson
Mississippi Welders Supply Company
P.O. Box 1036
Winona, MN 55987

Subject: Notice of Completion of Environmental Work at Xcel Energy's La Crosse MGP Site
Located at 200 Second Street in La Crosse, WI
DNR BRRTS Activity # 02-32-000324

Dear Mr. Peterson:

The Department of Natural Resources (DNR) recently approved the completion of the environmental work done at the Xcel Energy La Crosse MGP Site. This letter describes how that approval affects your property (Tax Parcel 17-20009-40); you are not required to take any action.

State law directs parties responsible for environmental contamination to take actions to restore the environment and minimize harmful effects. The law allows some contamination to remain in soil and groundwater if it does not pose a threat to public health, safety, welfare or to the environment.

On August 24, 2015, you received information from Cedar Corporation, Xcel Energy's environmental consultant, about the contamination at Xcel Energy La Crosse MGP Site. Contaminants remain in groundwater beneath your property. Over time, this contamination will clean up on its own. You are not responsible for cleaning up the contamination that has migrated beneath your property (s. 292.13, Wis. Stats.).

Please note that your drinking water is not affected by the contamination. Your drinking water is provided by the municipal water supply system, which is routinely tested to ensure the water meets federal drinking water standards.


If you construct or reconstruct a well on your property in the future, prior approval is required by ch. NR 812, Wis. Adm. Code, to help ensure a safe well (using DNR form 3300-254: <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>). Local ordinances may also apply.

Additional information about this case is available at the DNR's Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web: <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>. Enter 0232000324 in the **activity number** field in the initial screen, then click on **search**. Scroll down and click on the **GIS Registry Packet** link for information about the completion of the environmental work.

If you cannot access the BRRTS website, or have additional concerns or questions regarding this case, you may contact Doug Joseph, the DNR Project Manager, at 715-839-1602 or doug.joseph@wisconsin.gov.

Please don't hesitate to contact me at 715-839-3710, or the DNR Project Manager if you have questions.

Sincerely,



David Rozeboom, Team Supervisor
WCR Region, Remediation & Redevelopment Program

- c. Roger Clarke, Xcel Energy, P.O. Box 8, Eau Claire, WI 54702-0008
Mitch Evenson, Cedar Corporation, 604 Wilson Ave., Menomonie, WI 54751

Mississippi Welders Supply Co Inc
PO Box 1036
Winonoa, MN, 55987

SUBJECT: Notification associated with Former Manufactured Gas Plant Remediation Project Closure

Dear Mississippi Welders Supply Co Inc:

Northern States Power Company, a Wisconsin Corporation (NSPW) and doing business as Xcel Energy is in the process of asking the Wisconsin Department of Natural Resources (WDNR) to close the remediated manufactured gas plant (MGP) site at 200 Second Street in La Crosse, Wisconsin. As part of the closure or completion process, NSPW is required by the WDNR to send the attached official, standardized notice to property owners that are adjacent to the MGP site. In addition, NSPW would like to take this opportunity to convey additional information regarding the MGP Site.

As part of its completed remediation efforts, NSPW and its contractors excavated and disposed of 70,000 tons of mixed MGP wastes from the former MGP site, including: 1) MGP impacted soils; 2) subsurface structures; and 3) impacted materials in and adjacent to the subsurface structures.

It is a common part of the closure process for properties with approved cleanups to have continuing obligations. As residual impacted groundwater has been identified beneath your property, it will be necessary for you to obtain WDNR approval prior to the construction of water supply wells on your property.

NSPW has sought WDNR concurrence to close (or complete) this remediation project. If you should have any concerns regarding this matter you may contact: 1) Roger Clarke at 414 Nicollet Mall (MP04), Minneapolis, MN 55401, (612) 330-5500; 2) NSPW's environmental consultant at Cedar Corporation - Mitch Evenson, 604 Wilson Avenue, Menomonie, WI 54751, (715) 235-9081; or 3) the Wisconsin Department of Natural Resources, Doug Joseph, 1300 W. Clairemont Avenue, Eau Claire, WI 54701 telephone (715) 839-1602.

Sincerely,

CEDAR CORPORATION

Section A: Deeded Property Notification: Residual Contamination and/or Continuing Obligations

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

PO Box 1036
Winona, MN, 55987

Dear Mississippi Welders Supply Co Inc:

I am providing this letter to inform you of the location and extent of contamination remaining on your property, and of certain long-term responsibilities (continuing obligations) for which you may become responsible.

I have investigated a release of:

Manufactured Gas Plant (MGP) impacted materials

on 200 Second Street, La Crosse, WI, 54601 that has shown that contamination has migrated onto your property.

I have responded to the release and will be requesting that the Department of Natural Resources (DNR) grant case closure.

Closure means that the DNR will not be requiring any further investigation or cleanup action to be taken. However, continuing obligations may be imposed as a condition of closure approval.

You have 30 days to comment on the attached legal description of your property and on the proposed closure request:

Please review the enclosed legal description of your property, and notify Evenson Mitch at 604 Wilson Ave, Menomonie, WI, 54751 within the next 30 days if the legal description is incorrect.

The DNR will not review my closure request for at least 30 days after the date of receipt of this letter. As an affected property owner, you have a right to contact the DNR to provide any technical information that you may have that indicates that closure should not be granted for this site. If you would like to submit any information that is relevant to this closure request, or if you want to waive the 30 day comment period, you should mail that information to the DNR contact: 1300 W. Clairemont Avenue, Eau Claire, WI, 54701, or at Doug.Joseph@wisconsin.gov.

Your Long-Term Responsibilities as a Property Owner and Occupant:

The responses included

the excavation/stabilization and treatment of manufactured gas plant (MGP) impacted materials mixed with demolition debris at the former MGP site in downtown La Crosse.

The continuing obligations I am proposing that affect your property are listed below, under the heading **Continuing Obligations**. Under s. 292.12 (5), Wis. Stats., current and future owners and occupants of this property are responsible for complying with continuing obligations imposed as part of an approved closure.

The fact sheet "Continuing Obligations for Environmental Protection" (DNR publication RR 819) has been included with this letter, to help explain the responsibilities you may have for maintenance of a certain continuing obligation, the limits of any liability for investigation and cleanup of contamination, and how these differ. If the fact sheet is lost, you may obtain copies at <http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf>.

Contract for responsibility for continuing obligation:

Before I request closure, I will need to inform the DNR as to whom will be responsible for the continuing obligation/s on your property.

No agreement or contract has been worked out between the RP and affected party.

Under s. 292.12, Wis. Stats., the responsibility for maintaining all necessary continuing obligations for your property will fall on you or any subsequent property owner, unless another person has a legally enforceable responsibility to comply with the requirements of the final closure letter. If you need more time to finalize an agreement on the responsibility for the continuing obligations on your Property, you may request additional time from the DNR contact identified in **Contact Information**.

(Note: Future property owners would need to negotiate a new agreement.)

Groundwater Contamination:

Groundwater contamination originated at the property located at 200 Second Street, La Crosse, WI, 54601 . Contaminated groundwater has migrated onto your property at: 621 3rd St N, La Crosse, WI, 54601.

The levels of benzene, naphthalene, and cyanide contamination in the groundwater on your property are above the state groundwater enforcement standards found in ch. NR 140, Wis. Adm. Code.

However, the environmental consultants who have investigated this contamination have informed me that this groundwater contaminant plume is stable or receding and will naturally degrade over time. I believe that allowing natural attenuation, or the breakdown of contaminants in groundwater due to naturally occurring processes, to complete the cleanup at this site will meet the case closure requirements of ch. NR 726, Wis. Adm. Code. As part of my request for case closure, I am requesting that the DNR accept natural attenuation as the final remedy for this site.

The following DNR fact sheet (RR 671, "What Landowners Should Know: Information About Using Natural Attenuation to Clean Up Contaminated Groundwater") has been included with this notification, to help explain the use of natural attenuation as a remedy. If the fact sheet is lost, you may obtain a copy at <http://dnr.wi.gov/files/PDF/pubs/rr/RR671.pdf>.

Continuing Obligations on Your Property: As part of the cleanup, I am proposing that the following continuing obligations be used at your property, to address future exposure to residual contamination. If my closure request is approved, you will be responsible for the following continuing obligations.

To construct a new well or to reconstruct an existing well, the property owner at the time of construction or reconstruction will need to obtain prior approval from the DNR. See the paragraph **GIS Registry and Well Construction Requirements**. Typically, this results in casing off a portion of the aquifer during drilling, when needed, to protect the water supply.

Maintenance and Audits of Continuing Obligations:

If compliance with a maintenance plan is required as part of a continuing obligation, an inspection log will need to be filled out periodically, and kept available for inspection by the DNR. Submittal of the inspection log may also be required. You will also need to notify any future owners or occupants of this property of the need to maintain the continuing obligation and to document that maintenance in the inspection log. Periodic audits of these continuing obligations may be conducted by the DNR, to ensure that potential exposure to residual contamination is being addressed. The DNR provides notification before conducting site visits as part of the audit.

GIS Registry and Well Construction Requirements:

If this site is closed, all properties within the site boundaries where contamination remains, or where a continuing obligation is applied, will be listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web, at <http://dnr.wi.gov/topic/Brownfields/clean.html>. Inclusion on this database provides public notice of remaining contamination and of any continuing obligations. Documents can be viewed on this database, and include final closure letters, site maps and any applicable maintenance plans. The location of the site may also be viewed on the Remediation and Redevelopment Sites Map (RR Sites Map), on the "GIS Registry" layer, at the same internet address listed above.

DNR approval prior to well construction or reconstruction is required for all sites included in the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. Special well construction standards may be necessary to protect the well from the remaining contamination. Well drillers need to first obtain approval from a regional water supply specialist in DNR's Drinking Water and Groundwater Program. The well construction application, form 3300-254, is on the internet at <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>.

Site Closure:

If the DNR grants closure, you will receive a letter which defines the specific continuing obligations on your property. The status of the site (open or closed) may also be checked by searching BRRTS on the Web. You may view or download a copy of the closure letter (sent to the responsible party) from BRRTS on the Web. You may also request a copy of the closure letter from the **responsible party** or by writing to the DNR contact, at Doug Joseph, Doug.Joseph@wisconsin.gov, (715) 839-1602 . The final closure letter will contain a description of the continuing obligation, any prohibitions on activities and will include any applicable maintenance plan.

**Notification of Continuing Obligations
and Residual Contamination**

Form 4400-286 (5/15)

C. I. Page

The affected property is:

- the source property (the source of the hazardous substance discharge), but the property is not owned by the person who conducted the cleanup (a deeded property)
- a deeded property affected by contamination from the source property
- a right-of-way (ROW)
- a Department of Transportation (DOT) ROW

Include this completed page as an attachment with all notifications provided under sections A and B.

Contact Information

Responsible Party: The person responsible for sending this form, and for conducting the environmental investigation and cleanup is:

Responsible Party Name Northern States Power Company (doing business as Xcel Energy) in Wisconsin (NSPW)

Contact Person Last Name Clarke	First Roger	MI	Phone Number (include area code) (612) 330-5500
Address 414 Nicollet Mall MP-4		City Minneapolis	State ZIP Code MN 55401
E-mail roger.a.clarke@xcelenergy.com			

Name of Party Receiving Notification:

Business Name, if applicable: Mississippi Welders Supply Co Inc

Title	Last Name Mississippi Welders Supply Co Inc	First	MI	Phone Number (include area code) (507) 454-5231
Address PO Box 1036		City Winona	State MN	ZIP Code 55987

Site Name and Source Property Information:

Site (Activity) Name Former La Crosse Manufactured Gas Plant

Address 200 Second Street		City La Crosse	State WI	ZIP Code 54601
DNR ID # (BRRTS#) 02-32-000324	(DATCP) ID #			

Contacts for Questions:

If you have any questions regarding the cleanup or about this notification, please contact the Responsible Party identified above, or contact:

Environmental Consultant: Cedar Corporation

Contact Person Last Name Mitch	First Evenson	MI E	Phone Number (include area code) (715) 235-9081
Address 604 Wilson Ave		City Menomonie	State ZIP Code WI 54751
E-mail mitch.evenson@cedarcorp.com			

Department Contact:

To review the Department's case file, or for questions on cleanups or closure requirements, contact:

Department of: Natural Resources (DNR)

Address 1300 W. Clairemont Avenue		City Eau Claire	State WI	ZIP Code 54701
Contact Person Last Name Joseph	First Doug	MI	Phone Number (include area code) (715) 839-1602	
E-mail (Firstname.Lastname@wisconsin.gov) Doug.Joseph@wisconsin.gov				

**Mississippi Welders Co Inc
Property Legal Description**

Address: 621 3rd St N, La Crosse, WI 54601
Parcel #: 17-20009-040

Legal Description:

Part of Lots 7 and 8 in Block 14 of Original Plat of the Town of La Crosse, now City of La Crosse, La Crosse County, Wisconsin, being part of Government Lot 3 of Section 31, Township 16 North, Range 7 West, City of La Crosse; also part of the vacated alley in said Block 14, described as follow: Commencing at the intersection of the centerline of said vacated alley in said Block 14 (vacated Aug. 10, 1978) and the Southeasterly line of Grove Street (formerly Second Street); thence South 28 degrees 29 minutes 15 seconds West 66.98 feet along said centerline to the point of beginning; thence continuing South 28 degrees 29 minutes 15 seconds West 8.37 feet along said centerline; thence South 61 degrees 42 minutes East, 77.39 feet; thence South 64 degrees 00 minutes East, 53.28 feet; thence North 75 degrees 40 minutes East 19.72 feet; thence North 62 degrees 32 minutes 10 seconds West, 35.80 feet; thence North 76 degrees 18 minutes 37 seconds West, 21.00 feet; thence North 62 degrees 32 minutes 10 seconds West, 89.00 feet, to said centerline of vacated alley and the point of beginning.

Source: Warranty Deed, Document No. 1147123



Continuing Obligations for Environmental Protection

Responsibilities of Wisconsin Property Owners

PUB-RR-819

November 2013

This fact sheet is intended to help property owners understand their legal requirements under s. 292.12, Wis. Stats., regarding continuing obligations that arise due to the environmental condition of their property.

The term “continuing obligations” refers to certain actions for which property owners are responsible following a completed environmental cleanup. They are sometimes called environmental land use controls or institutional controls. These legal obligations, such as a requirement to maintain pavement over contaminated soil, are most often found in a cleanup approval letter from the state.

Less commonly, a continuing obligation may apply where a cleanup is not yet completed but a cleanup plan has been approved, or at a property owned by a local government that is exempt from certain cleanup requirements.

What Are Continuing Obligations?

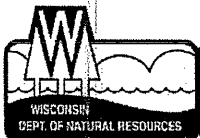
Continuing obligations are legal requirements designed to protect public health and the environment in regard to contamination that remains on a property.

Continuing obligations still apply after a property is sold. Each new owner is responsible for complying with the continuing obligations.

Background

Wisconsin, like most states, allows some contamination to remain after cleanup of soil or groundwater contamination (residual contamination). This minimizes the transportation of contamination and reduces cleanup costs while still ensuring that public health and the environment are protected.

The Department of Natural Resources (DNR), through its Remediation and Redevelopment (RR) Program, places sites or properties with residual contamination on a public database in order to provide notice to interested parties about the residual contamination and any associated continuing obligations. Please see the “Public Information” section on page 3 to learn more about the database. (Prior to June 3, 2006, the state used deed restrictions recorded at county courthouses to establish continuing obligations, and those deed restrictions have also been added into the database.)



Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, WI 53707
dnr.wi.gov, search “brownfield”



Types of Continuing Obligations

1. Manage Contaminated Soil that is Excavated

If the property owner intends to dig up an area with contaminated soil, the owner must ensure that proper soil sampling, followed by appropriate treatment or disposal, takes place. Managing contaminated soil must be done in compliance with state law and is usually done under the guidance of a private environmental professional.

2. Manage Construction of Water Supply Wells

If there is soil or groundwater contamination and the property owner plans to construct or reconstruct a water supply well, the owner must obtain prior DNR approval to ensure that well construction is designed to protect the water supply from contamination.

Other Types of Continuing Obligations

Some continuing obligations are designed specifically for conditions on individual properties. Examples include:

- keeping clean soil and vegetation over contaminated soil;
- keeping an asphalt “cover” over contaminated soil or groundwater;
- maintaining a vapor venting system; and
- notifying the state if a structural impediment (e.g. building) that restricted the cleanup is removed. The owner may then need to conduct additional state-approved environmental work.

It is common for properties with approved cleanups to have continuing obligations because the DNR generally does not require removal of all contamination.

Property owners with the types of continuing obligations described above will find these requirements described in the state’s cleanup approval letter or cleanup plan approval, and *must*:

- comply with these property-specific requirements; and
- obtain the state’s permission before changing portions of the property where these requirements apply.

The requirements apply whether or not the person owned the property at the time that the continuing obligations were placed on the property.

Changing a Continuing Obligation

A property owner has the option to modify a continuing obligation if environmental conditions change. For example, petroleum contamination can degrade over time and property owners may collect new samples showing that residual contamination is gone. They may then request that DNR modify or remove a continuing obligation. Fees are required for DNR’s review of this request and for processing the change to the database (\$1050 review fee, \$300/\$350 database fee). Fees are subject to change; current fees are found in Chapter NR 749, Wis. Adm. Code, on the web at www.legis.state.wi.us/rsb/code/nr/nr749.pdf.

Public Information

The DNR provides public information about continuing obligations on the Internet. This information helps property owners, purchasers, lessees and lenders understand legal requirements that apply to a property. DNR has a comprehensive database of contaminated and cleaned up sites, *BRRTS on the Web*. This database shows all contamination activities known to DNR. Site specific documents are found under the *Documents* section. The information includes maps, deeds, contaminant data and the state's closure letter. The closure letter states that no additional environmental cleanup is needed for past contamination and includes information on property-specific continuing obligations. If a cleanup has not been completed, the state's approval of the remedial action plan will contain the information about continuing obligations.

Properties with continuing obligations can generally be located in DNR's *GIS Registry*, part of the *RR Sites Map*. *RR Sites Map* provides a map view of contaminated and cleaned up sites, and links to *BRRTS on the Web*.

If a completed cleanup is shown in *BRRTS on the Web* but the site documents cannot be found in the *Documents* section, DNR's closure letter can still be obtained from a regional office. For assistance, please contact a DNR Environmental Program Associate (see the *RR Program's Staff Contact* web page at dnr.wi.gov/topic/Brownfields/Contact.html).

BRRTS on the Web and
RR Sites Map are part of
CLEAN
(the Contaminated Lands
Environmental Action Network) at
dnr.wi.gov/topic/Brownfields/clean.html

Off-Site Contamination: When Continuing Obligations Cross the Property Line

An off-site property owner is someone who owns property that has been affected by contamination that moved through soil, sediment or groundwater from another property. Wisconsin law, s. 292.13, Wis. Stats., provides an exemption from environmental cleanup requirements for owners of "off-site" properties. The DNR will generally not ask off-site property owners to investigate or clean up contamination that came from a different property, as long as the property owner allows access to his or her property so that others who are responsible for the contamination may complete the cleanup.

However, off-site property owners are legally obligated to comply with continuing obligations on their property, even though they did not cause the contamination. For example, if the state approved a cleanup where the person responsible for the contamination placed clean soil over contamination on an off-site property, the owner of the off-site property must either keep that soil in place or obtain state approval before disturbing it.

Property owners and others should check the *Public Information* section above if they need to:

- determine whether and where continuing obligations exist on a property;
- review the inspection, maintenance and reporting requirements, and
- contact the DNR regarding changing that portion of the property. The person to contact is the person that approved the closure or remedial action plan.

Option for an Off-Site Liability Exemption Letter

In general, owners of off-site properties have a legal exemption from environmental cleanup requirements. This exemption does not require a state approval letter. Nonetheless, they may request a property-specific liability exemption letter from DNR if they have enough information to show that the source of the contamination is not on their property. This letter may be helpful in real estate transactions. The fee for this letter is \$700 under Chapter NR 749, Wis. Adm. Code. For more information about this option, please see the RR Program's Liability web page at dnr.wi.gov/topic/Brownfields/Liability.html.

Legal Obligations of Off-Site Property Owners

- Allow access so the person cleaning up the contamination may work on the off-site property (unless the off-site owner completes the cleanup independently).
- Comply with any required continuing obligations on the off-site property.

Required Notifications to Off-Site Property Owners

1. The person responsible for cleaning up contamination must notify affected property owners of any proposed continuing obligations on their off-site property **before** asking the DNR to approve the cleanup. This is required by law and allows the off-site owners to provide the DNR with any technical information that may be relevant to the cleanup approval.

When circumstances are appropriate, an off-site neighbor and the person responsible for the cleanup may enter into a "legally enforceable agreement" (i.e. a contract). Under this type of private agreement, the person responsible for the contamination may also take responsibility for maintaining a continuing obligation on an off-site property. This agreement would not automatically transfer to future owners of the off-site property. The state is not a party to the agreement and can not enforce it.

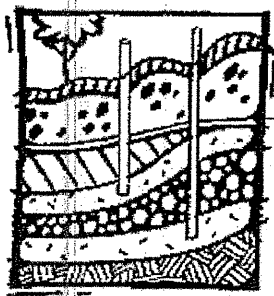
2. If a cleanup proposal that includes off-site continuing obligations is approved, DNR will send a letter to the off-site owners detailing the continuing obligations that are required for their property. Property owners should inform anyone interested in buying their property about maintaining these continuing obligations. For residential property, this would be part of the real estate disclosure obligation.

More Information

For more information, please visit the RR Program's Continuing Obligations web site at dnr.wi.gov/topic/Brownfields/Residual.html.

For more information about DNR's Remediation and Redevelopment Program, see our web site at dnr.wi.gov/org/aw/rr/. This document contains information about certain state statutes and administrative rules but does not include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240. This publication is available in alternative format upon request. Please call 608-267-3543 for more information.



Using Natural Attenuation to Clean Up Contaminated Groundwater: What Landowners Should Know

PUB-RR-671

August 2014

What Is Natural Attenuation?

Natural attenuation makes use of natural processes in soil and groundwater to contain the spread of contamination and to reduce the amount of contamination from chemical releases.

Natural attenuation is an *in-situ* treatment method. This means that contaminants are left in place while natural attenuation works on them. Natural attenuation is relied upon to clean up contamination that remains after the source of the contamination is removed. An example of a source of contamination would be a leaking underground petroleum tank.

How Does Natural Attenuation Work?

Natural attenuation processes work at many sites, but the rate and degree of effectiveness varies from property to property, depending upon the type of contaminants present and the physical, chemical and biological characteristics of the soil and groundwater.

Natural attenuation processes can be divided into two broad categories – destructive and non-destructive. Destructive processes destroy contaminants. The most common destructive process is **biodegradation**.

Non-destructive processes do not destroy the contaminant, but reduce contaminant concentrations in groundwater through **dilution, dispersion or adsorption**.

Biodegradation

Biodegradation is a process in which micro-organisms that naturally occur in soil and groundwater (e.g. yeast, fungi, or bacteria), break down, or degrade, hazardous substances to less toxic or non-toxic substances. Microorganisms, like humans, eat and digest organic compounds for nutrition and energy (organic compounds contain carbon and hydrogen atoms).

Some types of microorganisms can digest organic substances such as fuels or solvents that are hazardous to humans. Microorganisms break down the organic contaminants into harmless products – mainly carbon dioxide and water. Once the contaminants are degraded, the microorganism populations decline because they have used their food sources. These small populations of microorganisms pose no contaminant or health risk.

Many organic contaminants, like petroleum, can be biodegraded by microorganisms in the underground environment. For example, biodegradation processes can effectively cleanse soil and groundwater of hydrocarbon fuels such as gasoline and benzene, toluene, ethylbenzene, and xylene – known as the BTEX compounds, under certain conditions.

Biodegradation can also breakdown other contaminants in groundwater such as trichloroethylene (TCE), a chlorinated solvent used in metal cleaning. However, the processes involved are harder to predict and are less effective at contaminant removal compared to petroleum-contaminated sites



Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, WI 53707
dnr.wi.gov, search "brownfield"

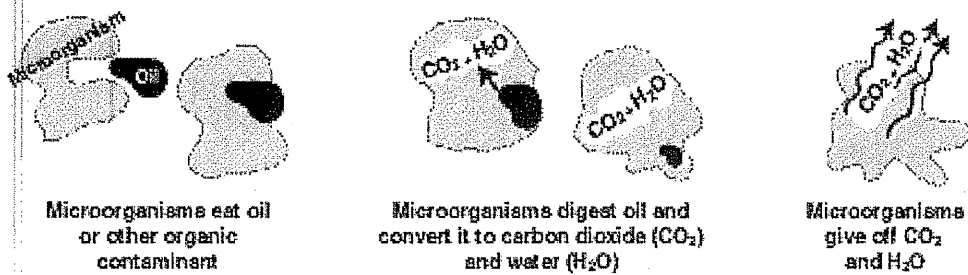


Figure 1. Schematic Diagram of Aerobic Biodegradation in Soil

Dilution and Dispersion

The effects of dilution and dispersion reduce contaminant concentrations but do not destroy contaminants. Clean water from the surface seeps underground to mix with and dilute contaminated groundwater.

Other processes that lead to reduced concentrations of contaminants include clean groundwater flowing into contaminated areas, and the dispersion of pollutants as they spread out and away from the main path of the contaminated plume.

Adsorption

Adsorption occurs when contaminants attach or “sorb” to underground particles. Most oily substances (like petroleum compounds) repel water and escape from the groundwater by attaching to organic matter and clay minerals in the subsurface.

This process holds back or retards contaminant movement and reduces the concentration of contaminants in the groundwater. However, like dilution and dispersion, adsorption does not destroy contaminants.

Why Consider Natural Attenuation To Clean Up Soil And Groundwater?

In certain situations, natural attenuation is an effective, inexpensive cleanup option and the most appropriate way to remediate some contamination problems. Natural attenuation focuses on confirming and monitoring natural remediation processes rather than relying on engineered or “active” technologies (such as pumping groundwater, treating it above ground, then disposing of the treated water).

Contaminants from petroleum are good candidates for natural attenuation because they are among the most easily destroyed by biodegradation. Natural attenuation is non-invasive, which allows treatment to go on below ground, while the surface can continue to be used.

Natural attenuation can also be less costly than active engineered treatment options, and requires no special equipment, energy source, or disposal of treated soil or groundwater.

Will Natural Attenuation Work At My Property?

Whether natural attenuation will work at a particular location is determined by investigating the soil and groundwater. These investigations determine the type of contaminants present, the levels of contamination, and the physical and chemical conditions that lead to biodegradation of the contaminants.

In order to rely on natural attenuation, responsible parties are required to confirm that natural attenuation processes are working by monitoring the soil and groundwater over a period of time to show that the contaminant concentrations are decreasing and that the contamination is no longer spreading.

Those conducting the cleanup need to know whether natural attenuation, or any proposed remedy, will reduce the contaminant concentrations in the soil and groundwater to legally acceptable limits within a reasonable period of time.

Natural attenuation may be an acceptable option for sites where active remediation has occurred and has reduced the concentration of contaminants (for instance, removing leaking underground tanks and contaminated soil).

However, natural attenuation is not an appropriate option at all sites. If the contamination has affected a drinking water well, or has entered a stream or lake, active cleanup options may be necessary to make sure people and the environment are protected from direct contact with the contamination.

The speed or rate of natural attenuation processes is typically slow. Monitoring is necessary to show that concentrations decrease at a sufficient rate to ensure that contaminants will not become a health threat in the future.

Closure Of Contaminated Sites Using Natural Attenuation As A Final Remedy

When contamination is discovered at a property (such as a gas station with leaking underground tanks), the person who is responsible for causing the contamination, and persons having possession or control of hazardous substances that have been discharged, have the responsibility to remove the source of contamination and investigate and clean up the contamination that has escaped into the soil and groundwater.

The contaminant release must be reported to the Wisconsin Department of Natural Resources (DNR) and the site investigation and cleanup are overseen by a state agency. Depending on the type of contaminant, the oversight agency could be the Department of Agriculture, Trade and Consumer Protection or Department of Natural Resources.

When the cleanup has complied with state standards, the person responsible for the contamination will ask the state agency for closure of the case. If natural attenuation is relied upon to finish cleaning up a contaminated property after closure, the responsible person will need to show that contaminant concentrations are not spreading, that contaminant concentrations are stable or decreasing, and that the concentrations will decrease in the future until state groundwater standards are met.

Because natural attenuation processes are slow, it may take many years before the properties with contamination are clean. State rules require that all owners of properties where groundwater contamination has spread must be informed of the contamination below their property.

In addition, the properties with groundwater contamination exceeding state groundwater enforcement standards must be listed on a database to notify future owners and developers of the presence of contamination. If future monitoring occurs and shows that natural attenuation processes have removed the contaminants to state-required cleanup levels, then the properties can be removed from the database.

The state agency will grant closure if the site investigation and monitoring shows that natural attenuation will clean up groundwater to state standards within a reasonable period of time. All state rules for cleanup must be met and the person who is responsible for the contamination must comply with all conditions of the state's closure approval.

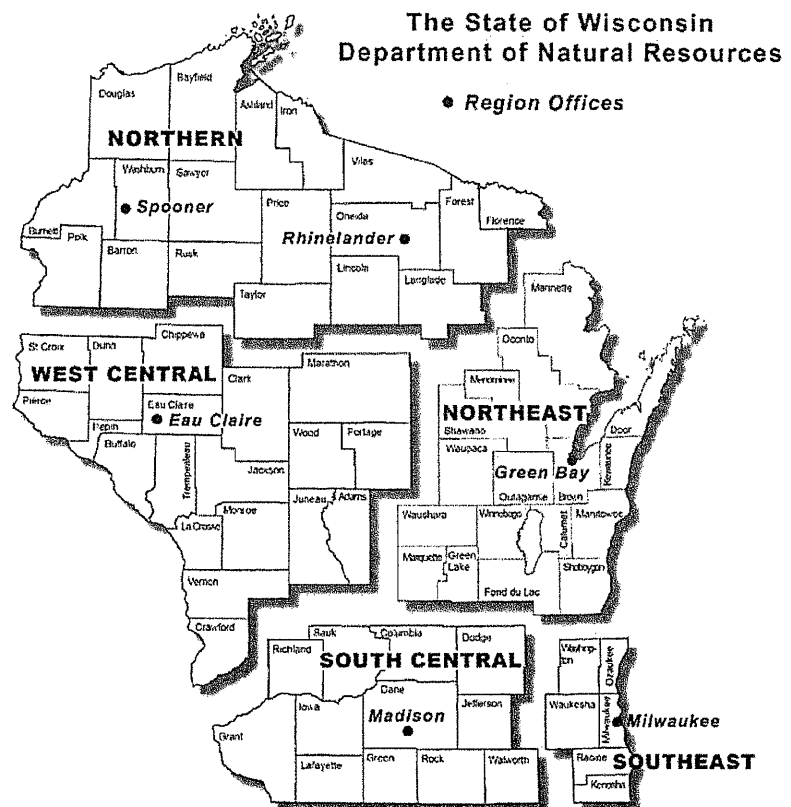
Publications

The following publications provide additional information on natural attenuation. Websites where these can be downloaded free of charge are also listed.

- *A Citizen's Guide to Bioremediation*, September 2012, EPA 542-F-12-003; www.epa.gov/tio/download/citizens/a_citizens_guide_to_bioremediation.pdf
- *Commonly Asked Questions Regarding the Use of Natural Attenuation for Petroleum-Contaminated Sites at Federal Facilities*, www.clu-in.org/download/techfocus/na/na-petrol.pdf
- *Monitored Natural Attenuation of Petroleum Hydrocarbons: U.S. EPA Remedial Technology Fact Sheet*, May 1999, EPA 600-F-98-021; www.clu-in.org/download/remed/pet-hyd.pdf
- *Monitored Natural Attenuation of Chlorinated Solvents*, May 1999, EPA 600-F-98-0022; www.clu-in.org/download/remed/chl-solv.pdf
- *Guidance on Natural Attenuation for Petroleum Releases, WI DNR, Bureau for Remediation and Redevelopment*, March 2003, PUB-RR-614; dnr.wi.gov/files/PDF/pubs/rr/RR614.pdf

Remediation & Redevelopment Program Contacts

If you have questions about natural attenuation contact a DNR Environmental Program Associate (EPA) in your local DNR regional office. The EPA can direct you to a project manager.



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

This document contains information about certain state statutes and administrative rules but does not necessarily include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions. The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240. This publication is available in alternative format upon request. Please call 608-267-3543 for more information.