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WISCONSIN
DEPT. OF NATURAL RESOURCES

George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southeast District - Annex Building
Post Office Box 12436
4041 N. Richards St.
Milwaukee, Wisconsin 53212
TELEPHONE: 414-961-2727
TELEFAX #: 414-961-2770

June 15, 1993

In Response Refer To: FID#268148210
County of Waukesha
HW LIC/dmmscvr.693

Walter E. Frohboese
Vice President and General Manager
Milwaukee Solvents and Chemicals Corporation
P.O. Box 444
Butler, WI 53007

SUBJECT: Milwaukee Solvents and Chemicals Corporation (Milwaukee Solvents), Menomonee Falls, Wisconsin - WID#023350192
Determination to Approve a Major Modification Request

Dear Mr. Frohboese:

The Department has completed its review of Milwaukee Solvents' July 31, 1992 modification request along with their January 8, 1992 revised modification request for completeness and technical adequacy. The Department has also reviewed Milwaukee Solvents' comments to the March 30, 1993 preliminary determination to approve a major modification which were presented in their April 20, 1993 letter to the Department, Milwaukee Solvents' April 29, 1993 letter to the Department addressing conditions #23 through 27 of the preliminary determination, and the petition for judicial review which was filed in Waukesha County Circuit Court on April 29, 1993. The reports were prepared by Milwaukee Solvents and their consultant, Triad Engineering. The petition for judicial review was prepared by Milwaukee Solvents' attorney Richard Lewandowski of Dewitt, Porter, Huggett, Schumacher and Morgan, S.C. This letter along with the attached determination is an approval with conditions by the Department of Milwaukee Solvents' major modification request.

These documents were submitted as part of a request for a major modification to Milwaukee Solvents Feasibility Report and Plan of Operation and their respective approvals. The major modification was needed in order to allow Milwaukee Solvents to relocate tank #75 and the container storage area to an existing building on the west side of the North Lot. These units were originally proposed to be located in a new building on the east side of the North Lot. With this change in location, subsequent changes needed to be made in the feasibility report and plan of operation.

Modification Determination Cover Letter - Milwaukee Solvents - June 15, 1993

At this time, the Department also reviewed Milwaukee Solvents combining of the approved separate feasibility report and plan of operation into a merged document.

In order that the public might have a chance to comment on this proposal and allow for the request of a public informational hearing pursuant to s. NR 680.07(5), Wisconsin Administrative Code, a public notice of the Department's preliminary determination on the major modification was published in the Milwaukee Sentinel on March 30, 1993 and a radio announcement was broadcast on the same day during morning and evening drive times on radio station WEMP and during morning drive time on radio station WHAD. The only comments received on the preliminary determination were from Milwaukee Solvents.

The attached major modification conditional determination includes conditions. The Department believes that these conditions are necessary for Milwaukee Solvents to comply with chs. NR 600 through 685, Wisconsin Administrative Code.

As part of this submittal, Milwaukee Solvents had requested use of an alternative requirement as allowed by s. NR 680.04, Wisconsin Administrative Code, in place of complying with the location requirements for storage of ignitable wastes in containers, s. NR 640.14, Wisconsin Administrative Code. The Department grants Milwaukee Solvents use of an alternative requirement in this case conditional on their maintaining compliance with conditions #2, 3, 4, and 7 of the final determination and the requirements laid out by the Menomonee Falls Fire Department in their July 28, 1992 letter. The Department believes that the proposed alternative requirement does not pose an increased threat to human health or the environment as long as the above conditions are complied with. With approval of this alternative requirement, condition #8 of this preliminary determination replaces condition #41 of the July 25, 1992 plan of operation approval.

Milwaukee Solvents' April 20, 1993 letter to the Department and their April 29, 1993 petition for judicial review objected to conditions #5, #12, #14, #19, and #22 of the preliminary determination. This cover letter and the attached final determination address these disputed conditions. The Department has made the following changes to the preliminary determination in preparing the final determination:

Preliminary Determination Condition #5: Hazardous waste received from off-site shall be processed or moved into the container storage area within 24 hours of arriving on-site. Is replaced by Final Determination Condition #5: In the event that hazardous waste from off-site cannot be accepted within twenty-four hours of arriving on-site, Milwaukee Solvents shall promptly notify the Department by phone and notify the Department in writing within five days with an explicit account of the situation.

Preliminary Determination Condition #12: Milwaukee Solvents shall indicate on the hazardous waste manifest prepared for sending waste off-site all waste codes applicable to the hazardous waste prior to the commingling, recontainerization or bulking of hazardous waste on-site. And Preliminary Determination Condition #14: When hazardous wastes are combined, commingled or blended, Milwaukee Solvents shall demonstrate that no hazardous waste characteristic has been removed. Are Replaced by Final Determination Condition #12: In addition to listing the primary waste code, Milwaukee Solvents shall indicate on the hazardous waste manifest, prepared for sending waste off-site, all waste codes applicable to the hazardous waste prior to the commingling, recontainerization or bulking of hazardous waste on-site and all the primary and secondary waste codes applicable to the waste stream as it is sent off-site.

In response to Milwaukee Solvents' comment regarding Preliminary Determination Condition # 19, an additional statement has ben added to what was Preliminary Determination Condition #18 and is now Final Determination Condition #17 which allows for the construction documentation report to be submitted in phases.

Milwaukee Solvents and the Department have had discussions recently regarding how the construction required for the container storage area, tank #75, and the waste handling area would affect the continuing operation of their facility. Milwaukee Solvents will need to keep the Department closely informed of the progress of the construction at the site. It is my understanding that a partial closure documentation report would be submitted for all aspects of construction except the relocation and retesting of tank #75. This is done to allow time for the Department to review the closure documentation report and inspect the construction, while minimizing the down time on tank #75 needed during this construction and transition period. The Department will inspect the construction and do what they can to expeditiously review the document. The movement of tank #75 will be the last part of the construction to take place. The Department is aware of the importance to Milwaukee Solvents of the continuing operation of tank #75 to the operation of their recycling operation and will do what is possible to inspect and review the relocation and testing of tank #75 in an expeditious manner.

Preliminary Determination Condition #22: Closure activities must begin in the existing container storage area within 30 days of the containers being relocated into the new container storage area. Is replaced by Final Determination Condition #21: If possible, closure activities shall begin in the existing container storage area within 30 days of the date containers are being relocated into the new container storage area. If this is not possible due to weather constraints, Milwaukee Solvents shall begin when weather conditions allow for weather affected closure activities to be performed. Milwaukee Solvents shall submit to the Department documentation justifying reason(s) for the closure delay and a revised closure schedule.

Modification Determination Cover Letter - Milwaukee Solvents - June 15, 1993

Preliminary Determination Conditions #23, #25, and #26 have been satisfied by the response in your April 29, 1993 letter and have been removed as conditions of the determination.

In response to Preliminary Determination Condition #24 Milwaukee Solvents in the April 29, 1993 letter to the Department submitted a revised "Plan Of Operation Checklist". This checklist still does not accurately reflect the placement of these sections in the feasibility report and plan of operation. Milwaukee Solvents shall submit a revised "Plan of Operation Checklist" which accurately reflects placement of sections within the feasibility report and plan of operation. This shall be submitted to the Department within 15 days of the date of this approval.

In your April 29, 1993 letter, your response to Preliminary Determination Condition #27 mentions that before steam cleaning would take place, the equipment would be washed and rinsed with solvents. Final Determination Condition #25 now requests Milwaukee Solvents to revise section 3, page 3P in the feasibility report and plan of operation to include the washing and rinsing with solvents. Final Determination Condition #24 requests Milwaukee Solvents to: adjust the closure cost to reflect the cost of raw materials and disposal of rinsing and washing with solvents; and, submit a revised closure cost estimate. In addition, the cost for disposal of residue of the 15 fifty-five gallon drums at 0.49 $/gallon should be $404.25 instead of $44.25. This should be revised in the new closure cost estimate. Milwaukee Solvents shall submit this material within 15 days of the date of this approval.

The language in the Preliminary Determination Finding of Fact #6 and Conclusion of Law #5 have been changed for clarity.

In response to this letter, the Department requests that Milwaukee Solvents submit to the Department a submittal which explains their activities as a marketer of hazardous waste fuel and how they comply with the requirements of s. NR 625.07, Wisconsin Administrative Code. Even if Milwaukee Solvents has notified EPA of these activities, they must notify the Department of their hazardous waste activities as required by, s. NR 625.07(6)b, Wisconsin Administrative Code. Milwaukee Solvents activities in mixing of wastes for eventual disposition as a hazardous waste fuel are covered under this section. This shall be submitted within 45 days of the date of this letter.

Attached is a hazardous waste operating license application. Milwaukee Solvents shall submit a hazardous waste storage operating license application, at the latest, thirty days after completion of construction at the site.

Should you have any questions regarding this determination, please contact Patrick Brady at (414) 961-2717.

Your continued cooperation is appreciated.

Modification Determination Cover Letter - Milwaukee Solvents - June 15, 1993

Sincerely,

Walter A. Ebersohl

Walter A. Ebersohl
Hazardous Waste Management Section Supervisor
Southeast District

enclosure: Determination to Approve a Major Modification Request

cc: W. Ebersohl/P. Brady - SED
E. Lynch - SW/3 - HWMS
Bureau - SW/3 - HWMS (E. Syftestad)
C. Slaustas - EPA - Region 5, HRP-8J
L. Kosik - EPA - Region 5, HRM-7J
J. Fulcher, Chief, Village of Menomonee Falls Fire Department
W. Freisleben, Hazardous Waste Siting Board, Village of Menomonee Falls

BEFORE THE STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

DETERMINATION TO CONDITIONALLY APPROVE
A MAJOR MODIFICATION TO A
FEASIBILITY REPORT AND PLAN OF OPERATION

MILWAUKEE SOLVENTS AND CHEMICALS CORPORATION
EPA ID#: WID023350192
FID#: 268175490

GENERAL FACILITY INFORMATION

Name and Location of Facility:

Milwaukee Solvents and Chemicals Corporation (Milwaukee Solvents)
N59 W14706 Bobolink Avenue
Menomonee Falls, WI 53051
Section 26, Township 8 North, Range 20 East
Waukesha County
Phone # (414) 252-3550

Facility Owner/Operator:

Milwaukee Solvents and Chemicals Corporation

Authorized Contact:

Robert Heitzer, Manager Technical Services

Report Prepared by:

Farhad Mohsenian, P.E., Wisconsin P.E. #E-26234, and
Richard J. Fulk, P.E., Wisconsin P.E. #19457, Executive Vice President,
Triad Engineering Incorporated
325 East Chicago Street
Milwaukee, WI 53202
Phone # (414) 291-8841

Kevin M. Begin, Manager of Environmental Services, Milwaukee Solvents

Facility Description:

Milwaukee Solvents is a distributor of solvents and other chemicals to industry. Solvents and chemicals are stored on-site prior to distribution. Milwaukee Solvents also operates a solvent reclamation

facility. Spent solvents from customers are received on-site in both drums and bulk trailers. The spent solvents are stored until they can be recycled on-site or shipped off-site for proper treatment and/or disposal.

Those wastes that are recyclable are pumped into aboveground waste feed tanks and reclaimed by distillation in thin film evaporators. The reclamation process is considered legitimate reclamation, under s. NR 628.06, Wisconsin Administrative Code. Still bottoms, hazardous waste generated in the solvent reclamation process, and other non-recyclable wastes received are sent off-site for incineration, used as a secondary fuel, or disposed of at a licensed hazardous waste facility. The recovered solvent is sold as a product.

Ten specified aboveground hazardous waste storage tanks are part of Milwaukee Solvents hazardous waste storage operating license and are located in the North Lot tank farm. As part of their interim license, hazardous waste is also stored in aboveground tank #75 and is also stored in a maximum of 600 drums, as allowed by a variance to their interim license, in the container storage area. For their operating license for hazardous waste container storage, Milwaukee Solvents is requesting a storage capacity of 1,000 fifty-five gallon drums. Milwaukee Solvents is pursuing a final operating license for the hazardous waste container storage area and tank #75.

Milwaukee Solvents is able to receive from off-site the wastes listed in their September 24, 1990 Part A application.

Milwaukee Solvents has submitted a request for a major modification to their feasibility report and plan of operation. A modification is needed because of Milwaukee Solvents intention to change the on-site location of their aboveground hazardous waste storage tank #75 and hazardous waste container storage area from what had been initially proposed. Milwaukee Solvents had initially planned to build a new building on the eastern edge of their North Lot. Their intent now is to relocate tank #75 and the container storage area in an existing building on the west side of their North Lot. This relocation required changes in the feasibility report and plan of operation and their respective approvals. The processing area for containers will also be moved to the same building.

FINDINGS OF FACT

The Department finds that:

1. Milwaukee Solvents filed a notice of hazardous waste activity on July 14, 1980 with the Department. An EPA RCRA Part A hazardous waste permit application was filed on February 9, 1982 with EPA. Subsequent notifications were filed with the Department on January 3, 1983,

February 15, 1984 and September 24, 1990.

2. An interim license was issued to Milwaukee Solvents on January 12, 1983 allowing the facility to store waste in tanks and containers on site. On January 31, 1984 a variance to the interim license to allow Milwaukee Solvents to increase their hazardous waste storage capacity from 100 drums to 600 drums was issued. This variance has been renewed on December 30, 1985, May 24, 1988, January 30, 1990, and January 10, 1991.

3. On March 31, 1986, the Department finalized a environmental assessment which recommended that an environmental impact statement need not be prepared.

4. A feasibility report determination was issued by the Department on May 22, 1986.

5. On July 25, 1990, the Department issued a plan of operation approval to Milwaukee Solvents.

6. On September 28, 1990, the Department issued a hazardous waste facility operating license to Milwaukee Solvents for ten specified tanks with a total maximum storage capacity of 37,146 gallons. Milwaukee Solvents is licensed to store hazardous waste in an additional tank, (Tank #75) and in containers under their interim license. Milwaukee Solvents is pursuing an operating license for storing hazardous waste in the additional tank and in containers.

7. On July 31, 1992, Milwaukee Solvents submitted a request for a modification to their plan of operation.

8. On September 30, 1992, the Department sent Milwaukee Solvents a notice of incompleteness letter regarding the modification request.

10. On January 8, 1993, Milwaukee Solvents submitted a response to the notice of incompleteness.

11. Milwaukee Solvents has submitted the required $2,000.00 plan review fee for a major plan modification for container and tank storage.

12. On January 26, 1993, the Department, issued a minor modification determination on Milwaukee Solvents feasibility report for a revised waste analysis plan.

13. On March 30, 1993, the Department issued a preliminary determination to approve a major modification to a feasibility report and plan of operation. Notice of the preliminary determination was published in the Milwaukee Sentinel and broadcast on local radio stations WEMP/WMYX and WHAD on the same day.

14. On April 20, 1993, Milwaukee Solvents sent a letter to the Department

documenting discussions with the Department regarding requested changes to the preliminary determination.

15. On April 29, 1993, Milwaukee Solvents sent a letter to the Department responding to Conditions #23 through #27 of the preliminary determination.

16. On April 29, 1993, Milwaukee Solvents petitioned the Circuit Court of Waukesha County for judicial review of the March 30, 1993 preliminary determination.

17. This conditional plan approval is necessary to protect human health and the environment and comply with ch. NR 140, Wisconsin Administrative Code.

CONCLUSIONS OF LAW

1. The Department has the authority, pursuant to ss. 144.44, and 144.60 through 144.74, Wisconsin Statutes, the May 22, 1986 conditional feasibility determination and the July 25, 1990 plan of operation determination for Milwaukee Solvents, to issue a conditional major modification determination, if the conditions are necessary to comply with chs. NR 600 through 685, Wisconsin Administrative Code.

2. The Department has promulgated chs. NR 600 through 685, Wisconsin Administrative Code, establishing minimum requirements for hazardous waste management under the authority of ss. 144.60 and 144.62, Wisconsin Statutes.

3. The Department has authority, under s. 144.44, Wisconsin Statutes, to approve a major modification to a facility with an operating license in accordance with ss. NR 680.07(2) and 680.07(5), Wisconsin Administrative Code.

4. The Department has authority to approve a feasibility report and plan of operation with conditions, if the conditions are necessary to comply with chs. NR 600 through 685, Wisconsin Administrative Code, pursuant to s. 144.44, Wisconsin Statutes.

5. Milwaukee Solvents has been granted an operating license for hazardous waste storage in ten specific tanks and an interim license for storage of hazardous waste in an additional tank and containers under ch. NR 680, Wisconsin Administrative Code, and operates a solvent reclamation facility under ch. NR 625, Wisconsin Administrative Code. The Department has the authority to approve modifications to the feasibility report and plan of operation for the Milwaukee Solvents facility pursuant to s. NR 680.07(2), Wisconsin Administrative Code.

6. The Department has complied with the procedural requirements of s. NR

680.07(5), Wisconsin Administrative Code.

7. The conditions of this modification are necessary to ensure compliance with chs. NR 600 through 685, Wisconsin, Administrative Code.

DETERMINATION

Based on the Finding of Facts and Conclusions of Law, the Department issues this determination for a major modification to the Milwaukee Solvents conditional feasibility report and plan of operation approval subject to compliance with chs. NR 600 through 685 and NR 140, Wisconsin Administrative Code, and the following conditions:

The Department retains the right to modify this determination and to require additional information at any time. Nothing in this conditional determination shall relieve Milwaukee Solvents of the legal obligation to comply with applicable federal, state and local approvals.

CONDITIONS OF APPROVAL:

1. Milwaukee Solvents shall comply with all conditions of the license, the provisions of ch. 144, Wisconsin Statutes, all applicable requirements of chs. 680 through 685, Wisconsin Administrative Code, all plan approvals and determinations, and modifications thereof, and any special order and modifications thereof issued by the Department, except as otherwise authorized by the Department under ss. 600.09 or 680.50, Wisconsin Administrative Code.

2. All hazardous waste storage in containers shall be confined to the designated storage area as shown on Figure #4 of the modified feasibility report and plan of operation. (This condition replaces condition #32 of the July 25, 1990 plan of operation approval.)

3. Milwaukee Solvents shall store containers in a safe manner in the configuration that they are presented in Figure 4 of the modified feasibility report and plan of operation. (This condition replaces condition #45 of the July 25, 1990 plan of operation approval.)

4. Milwaukee Solvents shall comply with the maximum storage capacity requirements for containers.

5. In the event that hazardous waste from off-site cannot be accepted within twenty-four hours of arriving on-site, Milwaukee Solvents shall promptly notify the Department by phone and notify the Department in writing within five days with an explicit account of the situation.

6. Before Milwaukee Solvents pumps drummed wastes from the old container storage area into the new processing area, they shall notify the Department.

7. Milwaukee Solvents shall not store, accumulate, or transfer hazardous waste containers west and north of the container storage building.

8. In place of complying with the location requirements for storage of ignitable wastes in containers, s. NR 640.14, Wisconsin Administrative Code, Milwaukee Solvents shall comply with an alternative requirement as allowed by s. NR 680.04, Wisconsin Administrative Code. The alternative requirement mandates that, Milwaukee Solvents comply with conditions #2, 3, 4, and 7 of this approval and the requirements laid out by the Menomonee Falls Fire Department in their July 28, 1992 letter. (This condition replaces condition #41 of the July 25, 1992 plan of operation approval.)

9. Milwaukee Solvents shall comply with the inspection requirements for the tanks and tank systems of ss. NR 645.08(1)(c)2.c., NR 645.09(8)(b), and NR 645.11, Wisconsin Administrative Code.

10. Milwaukee Solvents shall perform a leak integrity test on tank #75 after the tank is moved to and before it is operated in its new location.

11. Milwaukee Solvents shall comply with the response to leaks and spills requirements of s. NR 645.12, Wisconsin Administrative Code.

12. In addition to listing the primary waste code, Milwaukee Solvents shall indicate on the hazardous waste manifest, prepared for sending waste off-site, all waste codes applicable to the hazardous waste prior to the commingling, recontainerization or bulking of hazardous waste on-site and all the primary and secondary waste codes applicable to the waste stream as it is sent off-site.

13. Milwaukee Solvents shall continue to keep an operating log on the operation of tank #75 that shows what wastes have entered into the unit, what has been done to the waste and the eventual disposition of the waste.

14. For any additional activity that the facility adds to their hazardous waste handling operation, Milwaukee Solvents shall inform the Department before such an operation begins which will allow the Department to review the activity to determine whether the activity would be regulated.

15. Milwaukee Solvents shall begin construction on the warehouse within 60 days of receiving a favorable final determination on the modification.

16. Milwaukee Solvents shall construct the facility in accordance with the approved modified feasibility report and plan of operation, the July 25, 1990 plan of operation approval and this determination.

17. Milwaukee Solvents shall submit to the Department a construction observation report within 30 days of completion of construction, and

shall have an independent registered professional engineer document facility construction and certify whether the facility has been constructed in substantial conformance with the modified Feasibility Report and Plan of Operation, and in accordance with s. NR 680.08, Wisconsin Administrative Code. Milwaukee Solvents can submit this report in phases.

18. Milwaukee Solvents may not operate the newly constructed tank and container storage units until the Department has approved the construction documentation report.

19. Milwaukee Solvents shall send a copy of the modified feasibility report and plan of operation to each affected municipality's local library and the U.S. EPA within 15 days of the receipt of the final determination issuance. The EPA copy should be mailed to Mr. Charles Slaustas, U.S. EPA Region 5, HRP-8J, 77 West Jackson Street, Chicago, IL 60604. Milwaukee Solvents shall submit verification to the Department that copies were sent within 15 days of sending the above copies.

20. Milwaukee Solvents shall submit a signed license application for hazardous waste storage in tank #75 and in containers, in accordance with s. NR 680.31, Wisconsin Administrative Code.

21. If possible, closure activities shall begin in the existing container storage area within 30 days of the date containers are being relocated into the new container storage area. If this is not possible due to weather constraints, Milwasukee Solvents shall begin when weather conditions allow for weather affected closure activities to be performed. Milwaukee Solvents shall submit to the Department documentation justifying reason(s) for the closure delay and a revised closure schedule.

22. Milwaukee Solvents shall supply a more detailed explanation of the actions that would take place if a spill or container leak is noted in the container storage area. This information shall be submitted in accordance with s. NR 680.05(1)(c), Wis. Adm. Code, within 30 days of the date of this determination. Revisions shall be noted as such on every edited page with the revision date.

23. Milwaukee Solvents shall revise the plan of operation checklist to accurately reflect the proper section and page numbers. This information shall be submitted within 15 days of the date of this determination.

24. To accurately reflect the cost of raw materials and the cost of disposal of rinsing and washing with solvents, Milwaukee Solvents shall submit a revised closure cost estimate (section 3 page 4P). In addition, the cost for disposal of residue of the 15 fifty-five gallon drums at 0.49 $/gallon should be corrected to $404.25 instead of $44.25. Milwaukee Solvents shall submit this material to the Department within 15 days of

the date of this approval.

25. Milwaukee Solvents shall submit a revised closure plan narrative (section 3 page 3P of the feasibility report and plan of operation) that includes the language regarding the washing and cleaning with solvents from the April 29, 1993 letter to the Department. Milwaukee Solvents shall submit this revision to the Department within 15 days of the date of this determination.

26. Milwaukee Solvents shall submit a hazardous waste storage operating license application, at the latest, thirty days after completion of construction at the site.

NOTIFICATION OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Statutes, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to s. 227.48(2), Statutes.

Dated: June 15, 1993

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Walter A. Ebersohl

Walter A. Ebersohl
Hazardous Waste Management Section Supervisor
Southeast District

Patrick Brady

Patrick Brady
Waste Management Engineer

PDF 515

Rec'd 7-25-90

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 12436
Milwaukee, Wisconsin 53212
Fax: (414) 562-1258

July 25, 1990

File Ref: 4430

Mr. Robert Heitzer
Technical Director
Milwaukee Solvents and Chemicals Corporation
P. O. Box 444
Butler, WI 53007

Dear Mr. Heitzer:

RE: Plan of Operation Approval and Closure Plan Approval
Milwaukee Solvents and Chemicals Corporation
EPA I.D.: WID023350192

The plans and specifications relating to the Milwaukee Solvents and Chemicals Corporation hazardous waste storage facility located at N59 W14765 Bobolink Avenue, Menomonee Falls, Wisconsin, EPA I.D. #WID023350192, have been reviewed by the Department. Based on the review of the submitted materials, the Department has determined that your facility as proposed will provide for satisfactory hazardous waste storage provided the conditions in the attached plan of operation approval are followed.

Pursuant to section NR 181.56(2) Wisconsin Administrative Code, the Department provided Milwaukee Solvents and Chemicals Corporation and the public with an opportunity to review the plan of operation, plan of operation approval preliminary determination, and other related documents prior to this final determination. This was done by publishing a public notice in the Milwaukee Sentinel and broadcasting a radio announcement on WUWM(FM) and WHAD(FM) on April 12, 1990. A copy of the preliminary plan of operation approval was provided to Milwaukee Solvents and Chemicals Corporation for review on April 12, 1990. Comments were received from Milwaukee Solvents and Chemicals Corporation on May 29, 1990. A separate letter dated July 25, 1990, addressing Milwaukee Solvents and Chemical Corporation's comments is being sent with this letter and approval. After review of comments, the Department issued this final determination on the plan of operation.

The Department reserves the right to require changes in the plan of operation should conditions arise making such changes necessary. Please review the attached conditional plan of operation approval closely. Your license, when issued, will be subject to compliance with the plan of operation approval final determination and the requirements of chapter NR 181, Wisconsin Administrative Code.

Please be reminded that approval and licensing by the Department does not relieve you of legal obligations to meet all other state and local permit, zoning, and regulatory requirements.

Milwaukee Solvents and Chemicals Corporation is required to submit a proposal for construction of a groundwater collection trench system and a proposal for a soils and groundwater investigation, which will both be implemented in conjunction with construction of the proposed North Lot container storage area. Milwaukee Solvents and Chemicals Corporation is also being required to submit a proposal to extend the North Lot tank farm groundwater collection trench system, a proposal for a groundwater monitoring system to adequately monitor groundwater quality along the eastern property boundary of the North Lot (due to the likely abandonment of existing monitoring wells in this area), and prepare two detailed cross-section diagrams from soil boring information collected at the North Lot. These cross-sections will be constructed through borings parallel and perpendicular to groundwater flow and are needed to aid in the overall interpretation of the geology and hydrogeology at the Milwaukee Solvents and Chemicals Corporation facility.

Demolition of areas of the existing storage facility is required before construction of the new storage areas takes place. These areas of the existing facility must be closed according to the closure plan before demolition can occur.

The conditional plan of operation approval and closure plan approval addresses the closure of the existing storage facilities. The closure plan approval, as modified with the conditions, satisfies the closure plan requirements of the Department. Because the construction is in phases and the Milwaukee Solvents and Chemicals Corporation will continue operating during construction, closure will occur in phases. Eventually all areas of the existing facility which are not incorporated into the new facility must be closed.

In accordance with section NR 181.42(8)(d) Wisconsin Administrative Code, the Department provided the public with the opportunity to review the closure plan, submit written comments on the plan, and request modification to the closure plan. This was done by publishing a public notice in the Milwaukee Sentinel on April 13, 1990.

Prior to initiating phases of construction, please contact the Southeast District office. After completion of each phase of your facility construction, a construction documentation report must be submitted. At that time, please contact the Southeast District office and arrange for a field inspection of the facility. District personnel will determine if that portion of the facility construction has been completed according to the engineering plans submitted and the attached report. The facility will be allowed to store waste in that specific area once the Department has granted approval of the construction observation report.

Because the Department believes it is necessary to expedite licensing for the tank storage area, separate license applications are being requested for the tank and container storage areas. The tank storage is presently on schedule for construction and licensing by September of 1990. A license application for tank storage shall be submitted by August 1, 1990. A renewal license application for tank storage shall be submitted by June 1, 1991. The

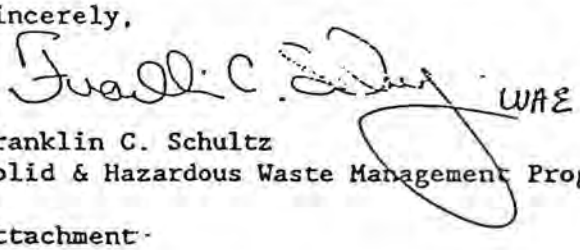
container storage area may not be ready for construction and licensing until the following construction season. The license application for the container storage area shall be submitted by June 1, 1991, or when the construction documentation for phase C is submitted, if construction documentation is submitted after June 1, 1991.

Milwaukee Solvents and Chemicals Corporation shall comply with all applicable requirements of ch. NR 445, Wisconsin Administrative Code, entitled, "Control of Hazardous Air Pollutants".

Tank #70 will also be required to have automatic overfill protection equipment within 30 days of this approval. Documentation verifying installation will be needed by September 15, 1990.

Please review these documents carefully. Particular attention should be given to the conditions of approval. Address any comments to Patrick Brady at (414) 562-9650, or Eric Syftestad at (608) 267-7561.

Sincerely,



Franklin C. Schultz
Solid & Hazardous Waste Management Program Supervisor

Attachment

c: Bureau Plan Review Coordinator (E. Lynch, E. Syftestad, C. English)-HWMS-SW/3
Program Services Section - SW/3
Peter Flaherty - Legal Services - LC/5
EPA, Region V - (Chuck Slaustas/Al Debus)
SED Casefile (F. Schultz, W. Ebersohl, P. Brady)

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Rcd 7-25-90

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 12436
Milwaukee, Wisconsin 53212
Fax: (414) 263-8483

July 25, 1990

File Ref: 4430

Mr. Robert Heitzer
Manager of Technical Services
Milwaukee Solvents and Chemicals Corporation
P. O. Box 444
Butler, WI 53007

Dear Mr. Heitzer:

The Department has received your comments on the preliminary plan of operation approval for Milwaukee Solvents' hazardous waste storage facility. Attached are the Department's responses to each of the changes you recommended. Some of Milwaukee Solvents' minor grammatical edits have been adopted without specific reference below. The page numbers referenced to are those in your May 25, 1990 submittal.

1. On page 2, F002 and F005 wastes were added to the list, but the language remains the same. Addition of any other wastes would require a modification. Milwaukee Solvents is limited to accepting only the latest hazardous waste types listed here.

2. On page 3, approval limitation no. 1 stays as originally written. For Milwaukee Solvents to receive any hazardous waste that is not on the Part A application, a plan modification will be needed.

3. On page 4, paragraph 1, the Department has incorporated your deletion of, "fifty-five gallon". Your addition of, "usually" was not incorporated because the statement should already cover every scenario.

4. On page 4, paragraph 3, Milwaukee Solvents will be required to have overfill protection for tank #70. Even though visual verification is conducted during filling, the Department still feels in order to prevent spills overfill protection is needed.

5. On page 5, paragraph 1, the additions proposed by Milwaukee Solvents were not incorporated except for, "which are moved during construction". The additional statement, "All storage tanks which remain in place during construction will be tank tested within a month of completion of construction", was added. The tanks that have not been moved also need to be tested since they were last tested five years ago.

6. On page 5, paragraph 3, the first sentence was changed to, "Construction of the tank farm began in June 1990, and will be completed by July 23, 1990". The Department did not incorporate the additional statement by Milwaukee Solvents concerning flexibility of dates. It is important that Milwaukee Solvents meet the date requirements.

7. The addition and deletion suggested by Milwaukee Solvents on page 5, paragraph 4, have been incorporated.

8. The addition suggested by Milwaukee Solvents on page 7, no. 2 of the findings of fact, was not incorporated because it does not agree with the variance wording.

9. The addition on page 13, no. 5 of the conclusions of law, was incorporated.

10. The addition and deletion on page 14, condition no. 2 were incorporated.

11. The addition and deletion on page 15, paragraph 1, were not incorporated. Changes which constitute a modification or expansion are defined in s. NR 181.55(6) Wisconsin Administrative Code.

12. The addition on page 15, condition no. 5.b., was incorporated. A Wisconsin registered professional engineer should certify the construction observation report.

13. On page 16, condition no. 7.b., the addition has been incorporated along with, "and hazardous waste management".

14. On page 18, condition no. 11.c., the suggested addition has not been incorporated. A written request would most likely be made but is not required.

15. On page 18, condition no. 14.b., the suggested additions and deletion have been incorporated.

16. On page 20, condition no. 21, the word, "approved", has been added instead of your suggestion of, "complete". The Department has incorporated Milwaukee Solvents' insertion of, "its receipt of", in reference to deadline dates based on issuance of a document.

17. On page 21, condition no. 22, Milwaukee Solvents' suggested additions and deletion have been incorporated.

18. On page 21, condition no. 23, Milwaukee Solvents' suggested deletion has not been incorporated. An independent registered professional engineer is required. The requirement for an independent registered professional engineer remains.

19. On condition no. 23.b., the language regarding tank no. 75 was incorporated.

20. On page 21, condition no. 23, the part addressing phase A of construction was rewritten as it was on page 5, paragraph 3. For the part addressing phase C of construction, Milwaukee Solvents' additions and deletions have been incorporated.

21. On page 22, condition no. 24, Milwaukee Solvents' suggested change of, "the proposed", to, "newly constructed", has been incorporated. The addition of the sentence at the end of the condition is not included, however, the Department will try to expedite reviews.

22. On page 22, condition no. 25, the license application for the tank storage area will still need to be submitted by August 1, 1990. The additions and deletions regarding the container storage license application have been incorporated.

23. On page 22, condition no. 26, Milwaukee Solvents' addition of, "except as provided in this approval", has not been incorporated. The allowable waste types listed on the Part A application are the same as listed here. The design capacity is for 1,000 fifty-five gallon drums. If other drum sizes are used, the drums need to fit the same configuration as presented in the plan of operation. With other size drums you won't necessarily get the same capacity because of the way different size drums will fit in the same area. If a fifty-five gallon drum is stored to less than capacity, the drum would be counted as a full drum because of the space it would take.

24. On page 23, condition no. 26, the approval limitation stays as previously written. This was previously explained in no. 2 of this letter.

25. On page 23, condition no. 26, the qualifier "Consistent with and to the extent required by EPA regulations", proposed by Milwaukee Solvents has not been incorporated.

26. On page 24, condition no. 29, the addition recommended by Milwaukee Solvents has been incorporated. The section recommended by Milwaukee Solvents to be deleted, remains as originally written.

27. On page 25, condition no. 33, bulk tanks would not be considered containers as defined in s. NR 181.04, Wisconsin Administrative Code, and are covered in the tank conditions section.

28. In conditions 35, 39, 40 and 46, the additions and deletion suggested by Milwaukee Solvents have been incorporated.

29. On page 27, condition 55, the Department would regard tanks that were unintentionally filled over their capacity to also be a violation of this condition.

30. In conditions 56, 57, 58 and 60, the Department agreed to the change from, "date" to, "receipt".

31. In conditions 57 and 58, the addition of, "or provide a detailed justification for eliminating analyses for some or all of these metals", has not been incorporated. The detailed justification may or may not be accepted by the Department as an alternative.

32. In condition 63, on page 31, the Department has incorporated Milwaukee Solvents' addition.

33. In condition 64, on page 31, the Department continues to require, "an independent Wisconsin registered professional engineer".

34. Conditions 65 and 67, page 32, have now been deleted because the closure of the concrete pad has been completed and the closure documentation report has been submitted. This is now part of the findings of fact.

35. In condition 68, on page 32, the suggestions on closure of the containment area have been incorporated but not the same wording.

36. In condition 69, on page 32, the Department has not incorporated your suggested addition, but will make every effort to expedite your review.

Your comments have been appreciated.

Condition 19 has been added requiring compliance with ch. NR 445 Wisconsin Administrative Code.

If you have any questions call Patrick Brady at (414) 263-8660 or Eric Syftestad at (608) 267-7561.

Sincerely,

Franklin C. Schultz
Solid and Hazardous Waste Program
Supervisor, Southeast District

Attachment

c: R. Lewandowski
P. Flaherty - LC/5
Bureau of Solid Waste Management - SW/3 - HWMS
(E. Lynch, C. English, E. Syftestad)
PSS - SW/3
EPA Region V - (C Slaustas, A Debus)
SED Casefile (F. Schultz, W. Ebersohl, P. Brady)

Rec'd 7-25-90

MILWAUKEE SOLVENTS AND CHEMICALS CORPORATION
PLAN OF OPERATION APPROVAL
AND CLOSURE PLAN APPROVAL

GENERAL FACILITY INFORMATION

Name of Facility and Location:

Milwaukee Solvents and Chemicals Corporation
N59 W14765 Bobolink Avenue
Menomonee Falls, Wisconsin 53051
Section 26, Township 8 North, Range 20 East
Waukesha County

EPA I.D.:

WID 023350192

Facility Owner:

Edward Mills, President

Authorized Contact:

Robert Heitzer, Manager Technical Services

Report Prepared by:

Frank Grisa, P.E., Birch-Grisa - Phillips, Inc., Brookfield, WI, WI P.E.# 5717
Ken Stock, P.E., Oliver Construction, Oconomowoc, WI, WI P.E.# E-10557
Richard Keates, P.E., CMC Corporation, Mequon, WI, WI P.E.# E-15706
Richard Fulk, P.E., Triad Engineering Inc., Milwaukee, WI, WI P.E. #19457
Robert Heitzer, Manager, Technical Services, Milwaukee Solvents and Chemicals Corporation
Kevin Bagin, Supervisor, Solvent Reclamation, Milwaukee Solvents and Chemicals Corporation
Joseph Mills, Manager, Solvent Reclamation, Milwaukee Solvents and Chemicals Corporation

Total Storage Area:

14,655 square feet (9,360 square feet in drum storage, 5,295 square feet in above ground tank farm)

The location of the storage areas (both tank and container storage areas) are shown on Figure 1P of the plan of operation. Plan of operation refers to the document submitted on November 9, 1989 with additions dated January 26, 1990, and February 26, 1990.

Total Storage Capacity:

Maximum Capacity: 93,860 gallons
Total Drum Storage Capacity: 55,000 gallons; 1,000 - 55 gallon drums
Total Tank Storage Capacity: 38,860 gallons, bulk in twelve designated above ground tanks (see Table 1).

TABLE 1

Tank Number	Safe Limit Usable Capacity (gallon)(1)	Minimum Shell Thickness (inches)(2)	Material of Construction(2)	NFPA 30 Required Tank Spacing (feet)(2)
70	515	0.0185	carbon steel	3.5
71	5,817	0.072	carbon steel	5
72	5,817	0.072	carbon steel	5
73	5,817	0.072	carbon steel	5
74	2,373	0.058	carbon steel	5
75	1,199	0.020	stainless steel	3.5
76	1,872	0.041	carbon steel	3.5
77	1,872	0.041	carbon steel	3.5
78	1,872	0.041	carbon steel	3.5
79	4,953	0.071	carbon steel	4.5
80	4,953	0.071	carbon steel	4.5
81	1,800	0.037	carbon steel	4.5
TOTAL	38,860			

1. Quantities are from plan of operation (History s., page 4).

2. Figures are from CHC Corporation's "LUWA Solvent Recovery System Tank Inspection Project", dated July 3, 1985.

The location and tank number of these tanks are shown on Figure 4P of the plan of operation.

Waste Types and Characteristics:

This facility handles spent halogenated and non-halogenated solvent wastes. The specific waste codes with descriptions are D001, ignitable wastes; F001, spent halogenated solvents used in degreasing (T); F002, spent halogenated solvents (T); F003 spent non-halogenated solvent mixtures (I,T); F005, spent non-halogenated solvents (I,T); U002, acetone (I); U112 aniline (I,T); U140 isobutyl alcohol (I,T); U154 methanol (I); U159 methyl ethyl ketone (I,T); U161 methyl isobutyl ketone (I,T); U210 tetrachloroethane (T); U220 toluene (T); U226 1,1,1 trichloroethane (T); U228 trichloroethene (T); U239 xylene (I); and K086 ink formulation solvent washers and sludges (T).

These waste codes are all listed on Milwaukee Solvents and Chemicals Corporation's Part A application dated February 15, 1984.

Approval Limitations:

1. This approval does not extend to the storage of unknown or miscellaneous hazardous wastes. This approval is specifically for storage of wastes identified in your most recent Part A (February 15, 1984) application and to wastes specifically identified in your plan of operation and listed above. Wastes with similar characteristics or of a similar nature (i.e. listed for similar reason or similar toxicological properties) can be stored at the facility by receiving written approval from the Department following a minor plan modification request. Depending upon the waste stream this request may be either a major or

minor plan modification. This approval does not cover the storage of waste oil unless it exhibits the characteristic of ignitability or is mixed with a listed waste denoted on Milwaukee Solvents and Chemicals Corporation's Part A application. In those cases, the waste oil is considered hazardous waste and must be properly identified and included in the appropriate hazardous waste inventory.

2. Milwaukee Solvents and Chemicals Corporation may store hazardous waste only in accordance with the requirements of ch. NR 181, Wisconsin Administrative Code, the feasibility report and plan of operation, and the conditions of their approvals. In cases where there is not agreement between the feasibility report and plan of operation and the conditions of their approvals, the conditions of the approvals shall take precedence.

FACILITY OPERATION AND CONSTRUCTION

Typical Operations: Milwaukee Solvents and Chemicals Corporation is a distributor of solvents and other chemicals to industry. Milwaukee Solvents and Chemicals Corporation stores solvents and chemicals prior to distribution.

Milwaukee Solvents and Chemicals Corporation also operates a solvent reclamation facility. Milwaukee Solvents and Chemicals Corporation receives spent solvents from customers in both drums and bulk tanker trailers, and stores them until they can be recycled on-site or shipped off-site for proper treatment and/or disposal. Those wastes that are recyclable are pumped into above ground waste feed tanks and reclaimed by distillation in thin film evaporators. The reclamation process is considered legitimate reclamation, under s. NR 181.19(3), Wisconsin Administrative Code. Still bottoms, hazardous waste generated in the solvent reclamation process, and other non-recyclable wastes received are sent off-site for incineration or use as a secondary fuel, or disposed of at licensed facilities. The still bottoms are made up of residue remaining in the bottom of the distillation apparatus when all of the solvent that can be distilled at acceptable purity has been removed.

Hazardous waste drums will be stored on pallets to a maximum of three drums high. The drum storage area will provide adequate aisle space between the palleted drums. The drum storage area will be roofed and sided. The floor of the drum storage area is to be sealed and diked and have a containment capacity of 10,997 gallons which is greater than 10% of the total drum capacity (107,800 gallons, 1,000 fifty-five gallon drums of hazardous waste and 960 fifty-five gallon drums of reclaimed solvent). Because the drum storage area is roofed and sided, the containment calculations do not include precipitation.

Hazardous waste storage tanks will be located in a tank farm which stores hazardous waste as well as reclaimed solvent. The hazardous waste tanks are described in Table 1 of this document. All of the tanks are above ground, covered, and on steel supports. All of the tanks except tank #70 have electronic sensors for overfill protection. Milwaukee Solvents and Chemicals Corporation is required to obtain automatic overfill protection equipment for tank #70 by condition #51 of this approval.

The tank farm will consist of a sealed concrete pad free of cracks or gaps with a twenty inch impervious concrete dike wall for providing adequate secondary containment capacity. The containment capacity is approximately 51,000 gallons. Because the area is uncovered, the containment capacity figure includes the effect of a 24 hour 25 year storm.

Facility Construction: The existing above ground storage tanks will be used in the proposed tank storage area. All storage tanks which are moved during construction will be tank tested before they are put back into use in the new containment area. All storage tanks which remain in place during construction will be tank tested within a month of completion of construction. On October 19, 1989 an interim license modification conditional approval was issued authorizing Milwaukee Solvents and Chemicals Corporation to begin construction of the proposed secondary containment system for their north lot tank farm. Conditions centered around concerns about remediation of the groundwater and soil beneath the proposed containment structure.

During construction of the tank farm containment structure, the inventory of hazardous waste and product materials will be minimized. Tanks taken out of service during the construction period will be emptied and placed outside the construction area. Some tanks will remain in service during construction of the new tank farm. These tanks will be located at the south end of the existing tank farm which will not be part of the proposed tank farm.

Construction began in June 1990, and will be completed by July 23, 1990. Construction documentation to be submitted to the Department is due before August 1, 1990.

Prior to construction of the proposed drum storage area, an investigation must be conducted to assess contamination in that area. The investigation will take place during the installation of the withdrawal trenches and will be coordinated with the construction of the proposed drum storage structure.

The proposed drum storage facility is to be built on an area which includes the south end of the existing tank farm, part of the existing drum storage area, and the reclaimed solvent storage area. Areas of construction are shown on Figures A., B., and C. of the plan of operation.

The drum storage area will be constructed in two phases. During the first phase (Part B), the east end of the new drum storage area will be constructed. A temporary drum storage area will hold a maximum of 240 fifty-five gallon drums and provide adequate secondary containment. The temporary drum storage area will be isolated from the construction area by concrete highway median barriers. During the second phase (Part C), the western part of the new drum storage area will be constructed. The temporary drum storage area used during this construction phase will be the newly constructed section of the new drum storage area. Before Milwaukee Solvents and Chemicals Corporation can use the new drum storage area a construction documentation approval must be obtained. The temporary drum storage capacity will be 288 fifty-five gallon drums of wastes and 300 fifty-five gallon drums of reclaimed solvent. The temporary drum storage containment capacity is approximately 8,000 gallons which is greater than 10% of the temporary drum storage capacity.

Construction of the proposed container storage area is scheduled to begin by May 1, 1991 and be completed by July 1, 1991. Construction documentation is due by August 1, 1991.

Closure: The proposed closure date for the proposed facility is the year 2035. The plan of operation includes a detailed closure plan and closure cost estimates.

The closure plan covers the drum storage area, the tank storage area, the processing stills, and any tools and equipment. The plan includes removal of the maximum allowable quantity of hazardous waste that can be maintained in storage units, and decontamination of all surfaces and equipment that may have been in contact with the hazardous waste.

Closure of Existing Hazardous Waste Storage Units: Areas of the existing units must be closed before construction occurs. Eventually all areas of interim storage not incorporated into the final license must be closed properly with Department approval.

The concrete pad in the existing tank farm must be clean closed in accordance with the closure plan and the conditions of the plan of operation approval and the closure plan approval. Closure will be completed before construction of the proposed tank farm commences.

The existing drum storage area will be closed in two phases. The area of the existing drum storage area affected by the construction of the new drum storage area must be closed in accordance with the closure plan and conditions in the plan of operation approval before construction of the new drum storage area begins. Eventually, the remaining area of the existing drum storage area will need to be closed. The remaining areas must also be closed in accordance with the closure plan approval and conditions of the plan of operation approval.

Financial Responsibility: The total closure cost of the facility is estimated by Milwaukee Solvents and Chemicals Corporation to be $60,238.20. The facility shall maintain a letter of credit to cover the total closure cost cited above or any updated estimate.

The facility shall also maintain a pollution liability insurance policy for sudden environmental releases of $1,000,000 per occurrence and $2,000,000 annual aggregate.

FINDINGS OF FACT

The Department finds that:

1. Milwaukee Solvents and Chemicals Corporation filed a notice of hazardous waste activity on July 14, 1980 with the Department. An EPA RCRA Part A hazardous waste permit application was filed on February 9, 1982 with EPA. Subsequent notification were filed with the Department on January 3, 1983, and February 15, 1984.

2. An interim license was issued to Milwaukee Solvents and Chemicals Corporation on January 12, 1983 for a hazardous waste storage and

treatment facility with a capacity of 100 fifty-five gallon drums and 28,000 gallons in bulk storage. The treatment operation is currently regulated under the legitimate recovery and reclamation recycling exemption, s. NR 181.19(3), Wisconsin Administrative Code. On January 31, 1984, a variance to the interim license was issued to allow Milwaukee Solvents and Chemicals Corporation to store 600 fifty-five gallon drums of hazardous waste. This variance was renewed on December 30, 1985, May 24, 1988, and January 30, 1990. The current variance expires December 31, 1990. The interim license and variance application included closure plans for the existing storage areas.

3. Information submitted in connection with this plan of operation approval and closure plan approval:

   a. The plan of operation for Milwaukee Solvents and Chemicals Corporation was submitted along with a five hundred dollar review fee on January 12, 1988.

   b. A response to a July 6, 1988 notice of incompleteness which was received on August 4, 1988.

   c. A response to a September 21, 1988 notice of incompleteness which was received on October 18, 1988.

   d. A response to a November 1, 1988 notice of incompleteness which was received on November 28, 1988.

   e. A response to a July 18, 1989 notice of incompleteness and a revised plan of operation which were received November 10, 1989.

   f. A response to a December 29, 1989 notice of incompleteness was received on January 29, 1990. Further information in response to the notice of incompleteness was received on February 28, 1990.

   g. A complete copy of CMC Corporation's July 3, 1985 "(LUWA) Luwa Solvent Recovery System Tank Inspection Project" for Milwaukee Solvents and Chemicals Corporation which was received on March 19, 1990.

   h. The revised plan of operation which was received on November 10, 1989 contained the existing facility closure plan.

4. On April 12, 1990 the plan of operation was determined to be complete and a public notice of completeness determination and preliminary determination on the plan of operation was published in the Milwaukee Sentinel. A public notice also appeared in the Milwaukee Sentinel on April 13, 1990 to inform the public of its opportunity to review and comment on the existing facility closure plan.

5. Additional items considered in connection with plan of operation approval and closure plan approval:

a. The feasibility report which was determined to be complete on January 23, 1986 and a public notice to this effect which was published in the Milwaukee Sentinel on February 14, 1986.

b. A final environmental assessment which recommended that an environmental impact statement need not be prepared for the facility and which was finalized on March 31, 1986.

c. The feasibility determination issued by the Department on May 22, 1986.

d. Documents and information reviewed in connection with the closure plan approval.

1. Interim license which was issued on January 12, 1983.

2. Revised closure plan which was filed on November 10, 1989.

3. Public notice of intent to close which was issued on April 13, 1990.

4. Milwaukee Solvents and Chemicals Corporation's comments on the public notice and the preliminary plan of operation approval and closure approval which was received on May 29, 1990.

6. On August 1, 1986, the Department issued a conditional Scope of Work plan approval for the "Proposed Environmental Assessment Plan for the Milwaukee Solvents and Chemicals Corporation", prepared by Hydro-Search, Inc. on behalf of Milwaukee Solvents and Chemicals Corporation. This scope of work was submitted to the Department to satisfy condition #9. of the hazardous waste storage variance renewal issued by the Department to Milwaukee Solvents and Chemicals Corporation on December 30, 1985. The plan described the proposed investigation for evaluating soil and groundwater impacts from hazardous waste spills at the Milwaukee Solvents and Chemicals Corporation facility.

7. On May 22, 1986, the Department issued a favorable feasibility determination for the storage of hazardous waste at the Milwaukee Solvents and Chemicals Corporation facility. Condition #4. of this determination reiterated the intent of condition #9. of the December 30, 1985 variance renewal, which required Milwaukee Solvents and Chemicals Corporation to conduct a groundwater monitoring program to assess the impact of previous spills at the facility on subsurface soils and groundwater. Condition #4. also stated that based on this assessment, the "Department will determine what remedial actions will be required of Milwaukee Solvents and Chemicals Corp...".

8. On December 23, 1986, the Department received the "Environmental Assessment at the Milwaukee Solvents and Chemicals Corp. Hazardous Waste Storage Facility Menomonee Falls, Wisconsin" (dated December 17, 1986), prepared for Milwaukee Solvents and Chemicals Corporation by Hydro-Search, Inc. The Department commented on this report in a letter dated March 18, 1987. The findings of the assessment showed volatile organic compound contamination of the soils and groundwater at Milwaukee

Solvents and Chemicals Corporation. The Department determined that additional, extensive investigations were necessary to characterize the nature and extent of soil and groundwater contamination resulting from operations at the Milwaukee Solvents and Chemicals Corporation facility.

9. On July 16, 1987, Hatcher, Inc., on behalf of Milwaukee Solvents and Chemicals Corporation, submitted a proposal for additional investigations at the facility entitled "Plan of Study Phase I Remedial Investigation Milwaukee Solvents and Chemicals Corp".

10. On September 28, 1987, the Department received the report entitled "Final Phase I Report Remedial Investigation Menomonee Falls, Wisconsin" (dated September 25, 1987) and a proposed "Off-Site VOC Extent Study" (dated September 25, 1987), which Hatcher, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation. This report and proposed study recommended additional investigations and proposed remedial actions to be conducted at the facility. On November 5, 1987 the Department responded to the report and proposed study. On November 11, 1987 Milwaukee Solvents and Chemicals Corporation commented on the Department's response.

11. On October 22, 1987, the Department received "Specifications Groundwater Remediation Phase II Menomonee Falls, Wisconsin" (dated October 14, 1987) and a "Soils Handling Plan" (dated October 14, 1987), submitted by Hatcher, Inc. on behalf of Milwaukee Solvents and Chemicals Corporation.

12. On December 5, 1987, the Department authorized the construction of the collection trenches in the north and south lots proposed in "Specifications Groundwater Remediation Phase II Menomonee Falls, Wisconsin", provided that the resulting soil was placed on an adequate plastic liner, covered and managed in a way to prevent run-on/run-off. Construction of the trenches has been completed as designed. Milwaukee Solvents and Chemicals Corporation made a determination that the excavated soils on and groundwater beneath the south lot of its property were not hazardous waste. Milwaukee Solvents and Chemicals Corporation notified the Department of this determination in writing on June 8, 1988.

13. On March 30, 1988, the Department received the report entitled "Plan of Study - Remedial Investigations" (dated March 25, 1988), which Hatcher, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation. On June 17, 1988, the Department received the report entitled "Off-Site Study Milwaukee Solvents & Chemicals Corp." (dated June 10, 1988), which Hatcher, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation. On August 15, 1988 the Department received the report entitled "Addendum To Off-Site Study Milwaukee Solvents & Chemicals" (dated August 12, 1988), which Hatcher, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation.

14. The Department issued a conditional plan approval modification to Milwaukee Solvents and Chemicals Corporation on July 29, 1988. This modification of the August 5, 1986 plan approval was necessary to formally respond to the investigations that had been conducted, and to approve further proposed investigations and the interim groundwater

remedial actions and associated soils handling plans for the Milwaukee Solvents and Chemicals Corporation facility. Based on discussions between the Department and Milwaukee Solvents and Chemicals Corporation during August of 1988, the Department agreed to amend the conditional plan approval modification and upon such amendment, Milwaukee Solvents and Chemicals Corporation agreed to waive its judicial review rights for this document. The Department amended the July 29, 1988 approval modification on September 2, 1988.

15. On September 2, 1988, the Department received "Phase II, Plan of Study, Remedial Investigations, Revised" (dated September 1, 1988), submitted by Hatcher, Inc. on behalf of Milwaukee Solvents and Chemicals Corporation. This plan of study was conditionally approved by the Department on October 17, 1988.

16. On December 19, 1988, the Department received the report entitled "Phase II Remedial Investigations, Milwaukee Solvents & Chemicals Corporation Menomonee Falls, Wisconsin", (dated December 15, 1988), which Hatcher - Sayre, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation. This report was conditionally approved by the Department on May 1, 1989.

17. On December 30, 1988, the Department received the report entitled "Phase III - 1989 Program, Plan of Study, Milwaukee Solvents & Chemicals Corp., Menomonee Falls, Wisconsin", (dated December 29, 1988), which Hatcher - Sayre, Inc. submitted on behalf of Milwaukee Solvents and Chemicals Corporation. This report was conditionally approved by the Department on May 1, 1989.

18. On September 15, 1989 the Department received "Milwaukee Solvents and Chemicals Corporation Phase III Remedial Investigations - Menomonee Falls, Wisconsin" (dated September 14, 1989) and "Compilation of Field and Laboratory Environmental Quality Data, 1986-1989" (dated September 14, 1989), submitted by Hatcher-Sayre, Inc. on behalf of Milwaukee Solvents and Chemicals Corporation. This report was conditionally approved by the Department on April 20, 1990.

19. In the report entitled "Compilation of Field and Laboratory Environmental Quality Data, 1986-1989" (dated September 14, 1989), prepared by Hatcher-Sayre, Inc., Tables 6, 7, 8 and 9 present groundwater quality data compiled from environmental investigations performed on or adjacent to the Milwaukee Solvents and Chemicals Corporation site from 1986 to 1989, by Hydro-Search, Inc. of Milwaukee, Wisconsin, and Hatcher-Sayre, Inc. of Richmond, Virginia. These tables reveal exceedances of ch. NR 140, Wisconsin Administrative Code groundwater quality preventive action limits and enforcement standards at the Milwaukee Solvents and Chemicals Corporation facility. The ch. NR 140, Wisconsin Administrative Code groundwater quality standards have been established to protect public health and welfare.

20. On June 4, 1990 the Department received a closure activity documentation report from Milwaukee Solvents and Chemicals Corporation with regard to the north lot tank farm concrete cleaning and rinsate testing. Laboratory certificates of analysis were submitted on June 18, 1990.

21. On May 29, 1990 the Department received Milwaukee Solvents and Chemicals Corporation's comments on the public notice and the preliminary plan of operation approval and closure approval.

CONCLUSIONS OF LAW

1. The Department has promulgated ch. NR 181, Wisconsin Administrative Code, establishing minimum requirements for hazardous waste management under the authority of ss. 144.60 and 144.62, Wisconsin Statutes.

2. The Department has the authority to approve a plan of operation with conditions, if the conditions are necessary to comply with ch. NR 181, Wisconsin Administrative Code, pursuant to s. 144.44(3), Wisconsin Statutes.

3. The conditions of approval set forth below are necessary to ensure compliance with ss. NR 181.42, 181.43, and 181.55, Wisconsin Administrative Code.

4. Materials have been discharged at the Milwaukee Solvents and Chemicals Corporation facility that are hazardous wastes as defined in s. 144.61(5), Wisconsin Statutes, and s. NR 181.12, Wisconsin Administrative Code, and are hazardous substances as defined in s. 144.01(4m), Wisconsin Statutes and s. NR 158.03(4), Wisconsin Administrative Code.

5. Milwaukee Solvents and Chemicals Corporation had possession and control of the hazardous substances and therefore has the responsibility under s. 144.76(3), Wisconsin Statutes, to restore the environment to the extent practicable and minimize the harmful effects of discharges of the hazardous substances to the environment.

6. The Department has the authority to impose groundwater monitoring requirements at the Milwaukee Solvents and Chemicals Corporation facility pursuant to ss. NR 181.08 and 181.43(6)(c), Wisconsin Administrative Code.

7. The Department has authority under ss. NR 140.24 and NR 140.26, Wisconsin Administrative Code to specify the terms and conditions under which the Department may seek remedial action when a preventive action limit or enforcement standard is attained or exceeded.

8. The Department has promulgated s. NR 181.42(8) and 181.43(10), Wisconsin Administrative Code establishing minimum requirements for closure of hazardous waste storage facilities under the authority of s. 144.62(8)(e), Wisconsin Statutes.

9. Based on the foregoing findings, the Department has the authority, pursuant to ss. 144.44, and 144.60-74 to 144.74, Wisconsin Statutes, to issue the following conditional plan of operation approval and conditional closure plan approval.

APPROVAL

The Department hereby conditionally approves the Milwaukee Solvents and Chemicals Corporation's hazardous waste storage facility Plan of Operation and closure plan for the existing storage area, provided that all conditions set forth in the approval are complied with. The Department retains jurisdiction either to require the submittal of additional information and to modify these approvals at any time, if, in the Department's opinion, further modifications are necessary.

CONDITIONS OF APPROVAL

GENERAL CONDITIONS

1. Milwaukee Solvents and Chemicals Corporation shall comply with all conditions of the license, the provisions of ch. 144, Wisconsin Statutes, all applicable requirements of ch. NR 181, Wisconsin Administrative Code, any plan approval and modifications thereof and any special order and modifications thereof issued by the Department, except as otherwise authorized by the Department under s. NR 181.55(9) or (10), Wisconsin Administrative Code.

2. If Milwaukee Solvents and Chemicals Corporation wishes to continue an activity regulated by a license after the expiration date of the license, Milwaukee Solvents and Chemicals Corporation shall apply for a new license. S. 227.51(2), Wisconsin Statutes, provides:

> "When a licensee has made timely and sufficient application for the renewal of a license or a new license with reference to any activity of a continuing nature, the existing license does not expire until the application is denied or the terms of the new license are limited, until the last day for seeking review of the agency decision or a later date fixed by order of the reviewing court."

3. It shall not be a defense for Milwaukee Solvents and Chemicals Corporation in an enforcement action that it would have been necessary to halt or reduce the licensed activity in order to maintain compliance with the conditions of the license.

4. All renewal applications, and all reports or other information submitted to the Department by Milwaukee Solvents and Chemicals Corporation shall be signed and certified as specified in s. NR 181.55(3), Wisconsin Administrative Code.

5. Milwaukee Solvents and Chemicals Corporation may not treat, store, or dispose of hazardous waste in a modified or expanded portion of the facility, until Milwaukee Solvents and Chemicals Corporation has received written approval from the Department. Changes in the types of hazardous wastes handled, or in the processes or equipment used to treat, store, or dispose of hazardous wastes are some examples which may

constitute a facility modification or expansion. Milwaukee Solvents and Chemicals Corporation may not treat, store, or dispose of hazardous waste in any newly constructed, modified, or expanded portion of a facility, if the Department has determined that the construction requires a plan submittal and subsequent approval, until:

a. The requirements of s. NR 181.55(2), Wisconsin Administrative Code, are met;

b. Milwaukee Solvents and Chemicals Corporation has submitted to the Department, by certified mail, overnight delivery service or hand delivery, a construction observation report signed by the licensee and sealed by a registered professional engineer, documenting that the construction is in compliance with the license and any Department plan approval; and

c. The Department has inspected the newly constructed, modified, or expanded portion of the facility and finds it in compliance with the license and any Department plan approval; or the Department has notified Milwaukee Solvents and Chemicals Corporation in writing that the inspection requirement under s. NR 181.55(8)(e)3.a., Wisconsin Administrative Code, is waived.

6. Milwaukee Solvents and Chemicals Corporation shall at all times maintain in good working order and operate efficiently all facilities and systems of treatment or control and related appurtenances which are installed or used to achieve compliance with the terms and conditions of the license. Proper operation and maintenance includes, but is not limited to, effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

7. Milwaukee Solvents and Chemicals Corporation shall, upon the request of any officer or employee of the Department, allow departmental personnel, at reasonable times and with notice no later than upon arrival, to:

a. Enter licensee's premises where a regulated facility or activity is located or conducted or where hazardous waste records are kept;

b. Have access to, and copy at reasonable times, records or labels pertaining to hazardous wastes or hazardous waste management that are being kept;

c. Inspect at reasonable times any facility's equipment, including monitoring equipment, or operations regulated under the license; and

d. Sample or monitor any substance or parameters at any location where a regulated facility or activity is located or conducted, in compliance with the requirements of s. 144.69, Wisconsin Statutes.

8. Milwaukee Solvents and Chemicals Corporation shall report to the Department any noncompliance which may endanger human health or the

environment. The information which is required to be included in a written report under this paragraph shall be provided orally to the appropriate district office of the Department within 24 hours from the time Milwaukee Solvents and Chemicals Corporation becomes aware of the circumstances. A written report shall be submitted within 5 days of the time Milwaukee Solvents and Chemicals Corporation becomes aware of the circumstances. The Department may allow up to 15 days to submit a written report if an extension is requested by the licensee. The written report shall contain:

a. Name, address, and telephone number of the owner or operator.

b. Name, address, and telephone number of the facility.

c. A description of the noncompliance and the period of noncompliance, including exact date and time, and if the noncompliance has not been corrected, the anticipated time the noncompliance is expected to continue.

d. Name and quantity of material involved.

e. The extent of injuries, if any.

f. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable, including information concerning the release of any substance which may cause contamination of a drinking water supply.

g. Estimated quantity and disposition of recovered material that resulted from the incident.

h. The known or suspected causes of the noncompliance and statement describing the measures taken to investigate the noncompliance to determine its cause.

i. Steps taken, or planned, to reduce or eliminate and prevent reoccurrence of the noncompliance.

9. Milwaukee Solvents and Chemicals Corporation shall notify the Division of Emergency Government and comply with the requirements of s. NR 181.42(4)(c) and ch. NR 158, Wisconsin Administrative Code, and s. 144.76, Wisconsin Statutes, if a discharge of hazardous waste or hazardous substance, or a fire or explosion occurs at the licensed facility.

10. In the event of noncompliance with the license, Milwaukee Solvents and Chemicals Corporation shall take all necessary steps to minimize discharges to the environment, and shall take all necessary steps to minimize any adverse impacts on human health or the environment.

11. Milwaukee Solvents and Chemicals Corporation shall comply with the following analytical requirements:

a. Analytical results shall be reported at the intervals and format specified in the feasibility report and plan of operation and ch. NR 181, Wisconsin Administrative Code.

b. All samples taken for analyses shall be representative of the waste stream they are taken from.

c. Milwaukee Solvents and Chemicals Corporation shall retain records of all analytical information, including all calibration and maintenance records of laboratory instrumentation and copies of all evaluation documentation required by this license, for a period of at least three years from the date of the generation. This period may be extended by request of the Department at any time.

d. Milwaukee Solvents and Chemicals Corporation shall report, at the time that the analytical results are submitted, all instances of noncompliance not reported under s. NR 181.55(8)(h), Wisconsin Administrative Code. Such reports shall contain the information required in s. NR 181.55(8)(h)1. through 9., Wisconsin Administrative Code.

12. Milwaukee Solvents and Chemicals Corporation shall furnish information needed to determine whether cause exists to modify, revoke, or to determine compliance with, the license. The licensee shall also furnish to the Department, upon request, copies of records required by the license.

13. The license, if issued, does not convey any property rights of any sort, or any exclusive privilege.

14. The following reports required in subchapter V of ch. NR 181, Wisconsin Administrative Code, shall be submitted to the Department:

a. Manifest discrepancy report. If any discrepancy in a manifest is discovered, the licensee shall attempt to reconcile the discrepancy. If not resolved within 15 days, the licensee shall submit a report, including a copy of the manifest, to the Department as required by s. NR 181.42(6)(a)6., Wisconsin Administrative Code.

b. Unmanifested waste report. An unmanifested waste report shall be submitted to the Department within 15 days of receipt of unmanifested hazardous waste when required by s. NR 181.42(6)(c)2., Wisconsin Administrative Code.

c. Annual report. An annual report shall be submitted covering facility activities during the previous reporting year, as specified in s. NR 181.42(6)(c)1., Wisconsin Administrative Code.

d. Additional reports. Additional reports as specified in s. NR 181.42(6)(c)3., Wisconsin Administrative Code, shall be submitted if necessary.

15. Milwaukee Solvents and Chemicals Corporation shall submit required documentation and take any action which is necessary to ensure protection of human health and the environment. The Department may require such documentation or action after inspecting the facility or reviewing any submittals, reports, or plans.

16. Milwaukee Solvents and Chemicals Corporation's license, if issued, may be modified or revoked for the reasons outlined in ss. NR 181.55(6) or (7), Wisconsin Administrative Code. The submittal of a request by Milwaukee Solvents and Chemicals Corporation for license modification or termination, or a notification of planned changes or anticipated noncompliance, does not stay the effectiveness of any license condition.

17. When Milwaukee Solvents and Chemicals Corporation becomes aware that there was a failure to submit relevant facts in any reports, plans, or other information submitted, or that incorrect information was submitted, Milwaukee Solvents and Chemicals Corporation shall promptly submit such facts or information to the Department.

18. Milwaukee Solvents and Chemicals Corporation shall comply with the following:

    a. Environmental and health standards in s. NR 181.41, Wisconsin Administrative Code,

    b. Identification number requirements in s. NR 181.42(1)(b), Wisconsin Administrative Code;

    c. Notice requirements in s. NR 181.42(1)(c), Wisconsin Administrative Code;

    d. General waste analysis requirements found in s. NR 181.42(1)(d), Wisconsin Administrative Code;

    e. Waste analysis requirements in s. NR 181.42(1)(e), Wisconsin Administrative Code;

    f. Generation and removal requirements in s. NR 181.42(1)(i), Wisconsin Administrative Code;

    g. Closure of noncomplying portions requirements in s. NR 181.42(1)(j), Wisconsin Administrative Code;

    h. General requirements for ignitable, reactive, or incompatible wastes in s. NR 181.42(1)(m), Wisconsin Administrative Code;

    i. General site selection requirements in s. NR 181.42(2), Wisconsin Administrative Code;

    j. Security requirements in s. NR 181.42(3), Wisconsin Administrative Code;

    k. Contingency plan and emergency procedures requirements in s. NR 181.42(4), Wisconsin Administrative Code;

l. Personnel training requirements in s. NR 181.42(5), Wisconsin Administrative Code;

m. Manifest, recordkeeping, and reporting requirements in s. NR 181.42(6), Wisconsin Administrative Code;

n. General inspection requirements in s. NR 181.42(7), Wisconsin Administrative Code;

o. Closure requirements in ss. NR 181.42(8) and 181.43(10), Wisconsin Administrative Code;

p. General storage standards in ss. NR 181.43(6),(7) and (8), Wisconsin Administrative Code.

19. Milwaukee Solvents and Chemicals Corporation shall, at all times, comply with all applicable requirements of ch. NR 445, Wisconsin Administrative Code, entitled, "Control of Hazardous Air Pollutants".

20. Closure and closure cost estimate: Milwaukee Solvents and Chemicals Corporation shall close in accordance with the requirements of ss. NR 181.42(8), and 181.43(10), Wisconsin Administrative Code, and the approved closure plan included in the feasibility report and plan of operation. When requested by the Department, Milwaukee Solvents and Chemicals Corporation shall submit an updated closure plan and closure cost estimates. Cost estimates shall be based upon the cost of a third party implementing closure.

21. Financial Responsibility: Milwaukee Solvents and Chemicals Corporation shall demonstrate continuous compliance with the financial responsibility requirements of s. NR 181.42(10) and (11), Wisconsin Administrative Code.

SPECIFIC CONDITIONS

22. Milwaukee Solvents and Chemicals Corporation shall send a copy of the approved plan of operation to each affected municipality's local library and U.S. EPA within 15 days of its receipt of this approval issuance. The EPA copy shall be mailed to Mr. Charles Slaustas, Chief, MN/WI Permitting s., 5HR-13, U.S. EPA Region V, 230 South Dearborn, Chicago, Illinois 60604. Milwaukee Solvents and Chemicals Corporation shall submit verification to the Department that copies were sent within 15 days.

23. Milwaukee Solvents and Chemicals Corporation shall construct the proposed facility in accordance with the approved feasibility report, the plan of operation and this approval.

24. Milwaukee Solvents and Chemicals Corporation shall submit to the Department a construction observation report by the date specified or within 30 days of completion of each phase of construction, and shall have an independent registered professional engineer document facility construction and certify whether the facility has been constructed in substantial conformance with the plan of operation, in accordance with

s. NR 181.43(5), Wisconsin Administrative Code. The phases of construction are:

a. Phase A - construction of the tank farm containment area and setting tanks in place,

b. Phase B - construction of the east side (first phase) of the drum storage building, and placement of tank #75 in its final location, and

c. Phase C - construction of the west side (second phase) of the drum storage building.

Phase A of the construction began in June 1990 and will be completed by July 23, 1990. A construction documentation report is due by August 1, 1990.

Phase B of the construction shall be started by May 1, 1991 and completed by July 1, 1991. Construction documentation is due by August 1, 1991. (Note: Submittal of this construction documentation will be necessary before this date to utilize the area during the construction of Phase C.)

Phase C of the construction shall be started by June 1, 1991 or within 30 days after the Department's approval of the construction documentation for Phase B, whichever is later. It is anticipated that construction will require 30 to 60 days to complete. Construction documentation is due within thirty days after completion of construction.

25. Milwaukee Solvents and Chemicals Corporation may not operate newly constructed tank and container storage units until the Department has approved the construction documentation required by 24. above, and all conditions of approval have been met.

26. Milwaukee Solvents and Chemicals Corporation shall submit a signed, final operating license application for hazardous waste storage, in accordance with s. NR 181.55(2), Wisconsin Administrative Code. The following items shall accompany the application submittal:

a. liability financial responsibility documentation,

b. closure cost financial responsibility documentation, and

c. the appropriate fee for the hazardous waste storage facility operating license. Refer to s. NR 181.55(5), Table XII, Fee Schedule, Wisconsin Administrative Code.

The license application for the tank storage area shall be submitted by August 1, 1990.

The license application for the container storage area shall be submitted by June 1, 1991, or when the construction documentation for phase C is submitted, if construction documentation is submitted after

June 1, 1991. The tank storage system renewal license application is due on June 1, 1991.

27. Limitation on waste: Milwaukee Solvents and Chemicals Corporation shall store only those waste types and codes listed on the Part A application submitted to the Department, February 15, 1984. The design maximum capacity for purposes of licensing and closure is 93,860 gallons (1,000 fifty-five gallon drums, and 38,860 gallons bulk in the twelve above ground tanks listed in the plan of operation) for the hazardous waste storage facility. This approval does not extend to the storage of unknown or miscellaneous hazardous wastes. This approval is specifically for storage of wastes identified in your most recent Part A Application of February 15, 1984 and to wastes specifically identified in the plan of operation and listed above. Wastes with similar characteristics or of a similar nature (i.e. listed for similar reason or similar toxicological properties) can be stored at the facility by receiving written approval from the Department following a minor plan modification request. Depending upon the waste stream this request may be either a major or minor plan modification. This approval does not cover the storage of waste oil unless it exhibits the characteristic of ignitability or is mixed with a listed waste denoted on Milwaukee Solvents and Chemicals Corporation's Part A application of February 15, 1984. In those cases, the waste oil is considered hazardous waste and must be properly identified and included in the appropriate hazardous waste inventory.

28. Waste analysis: Milwaukee Solvents and Chemicals Corporation shall monitor and analyze the hazardous waste transported to the storage facility in accordance with the methods and procedures described in the plan of operation report.

In addition, Milwaukee Solvents and Chemicals Corporation shall comply with the requirements established by U.S. EPA concerning the restrictions placed upon hazardous waste land disposal. These rules, which have been codified in 40 CFR Part 268, include the requirements for facilities handling these waste types to submit a notice to the treatment facility with each shipment of waste, that includes EPA Hazardous Waste Number, the corresponding treatment standard, the manifest number associated with the shipment of waste and any available waste analysis data.

29. Waste minimization: Milwaukee Solvents and Chemicals Corporation shall certify annually (on January 1 of each year) that it has a program in place to reduce the volume and toxicity of hazardous waste it generates to the degree determined by Milwaukee Solvents and Chemicals Corporation to be economically practicable, and that the proposed method of treatment, storage or disposal is that practicable method currently available to Milwaukee Solvents and Chemicals Corporation which minimizes the present and future threat to human health and the environment.

30. Spills reporting: Milwaukee Solvents and Chemicals Corporation shall, pursuant to and consistent with s. 144.76, Wisconsin Statutes, immediately report all spills and discharges of hazardous waste outside

of designed hazardous waste storage secondary containment structures and all spills of 10 gallons or greater of hazardous waste inside of the hazardous waste secondary containment structures at its facility and shall implement any necessary action in accordance with the requirements of ch. NR 158 and s. NR 181.42(4)(c), Wisconsin Administrative Code. Releases of hazardous waste or other hazardous substances in volumes of less than 10 gallons within the secondary containment structure of a designated hazardous waste storage area shall be recorded and reported to the Department on a quarterly basis. This report shall include the type and quantity of waste spilled, the location of the release, the source of the release, what actions were taken to clean-up the release and what actions will be taken to prevent a like release from recurring. If no spills or discharges occur, then Milwaukee Solvents and Chemicals Corporation shall send a letter to the Department stating there has been none.

31. The proof of financial responsibility for closure shall be adjusted to adequately cover the estimated closure cost of $60,238.20 for the proposed storage facility. The adjusted proof of financial responsibility shall be submitted with the operating license application.

SPECIFIC CONDITIONS - CONTAINERS

Basic facility requirements: Milwaukee Solvents and Chemicals Corporation shall follow the storage requirements of s. NR 181.43, Wisconsin Administrative Code, including but not limited to the following:

32. All hazardous waste storage in containers shall be confined to the designated storage area shown on Figure 2P of the plan of operation.

33. Adequate aisle space in the container storage areas shall be maintained to allow unobstructed movement of personnel, fire protection equipment and decontamination equipment in the event of an emergency.

34. Hazardous waste shall be stored only in containers (i.e., drums) in accordance with the feasibility report and plan of operation.

35. All containers used for storing hazardous waste shall be inspected weekly for evidence of leakage, corrosion, or deterioration of the containers or the secondary containment structures. Sufficient aisle space must be maintained to view all containers and their labels.

36. Any spilled, leaked, or discharged hazardous waste or other hazardous substances shall be expeditiously removed from the collection area so as to prevent overflow of the secondary containment system or prolonged exposure of the containment system or the exteriors of containers to the hazardous waste. These releases must be reported pursuant to specific condition #29 of this approval.

37. The identity and location of all stored hazardous waste shall be known throughout the entire storage period.

38. Waste shall be stored in containers in such a manner that no discharge of hazardous waste occurs.

39. Incompatible wastes or materials shall not be placed in the same container, including unwashed containers, unless they comply with s. NR 181.42(1)(m)2., Wisconsin Administrative Code.

40. Containers holding hazardous waste shall always be closed during storage, except when sampling, inspecting, adding or removing wastes. Containers holding hazardous waste shall not be opened, handled, or stored in a manner which causes the container to rupture or leak.

41. Containers holding ignitable waste shall be stored at a minimum of 50 feet from the facility's property line.

42. Storage containers holding a hazardous waste which is incompatible with any waste or other materials stored nearby in other containers or open tanks shall be separated from other wastes or materials or protected from them by means of a dike, berm, wall or other device.

43. If a container is not in good condition, the hazardous waste in the container shall be recontainerized into a storage container in good condition.

44. The containers shall be made or lined with materials which will not react with, or are otherwise incompatible with, the hazardous waste to be stored so that the ability of the container to contain the waste is not impaired.

45. Containers shall be stored in the configuration presented on Figure 2P in the plan of operation.

46. The minimum drum storage area secondary containment capacity of 10,780 gallons (10% of 107,800 gallons, the total drum storage capacity which includes 1,000 fifty-five gallon drums of hazardous waste and 960 fifty-five gallon drums of reclaimed solvents) shall be maintained as required by s. NR 181.43(6)(d), Wisconsin Administrative Code. Other materials whose volume will adversely impact the minimum drum storage area secondary containment capacity, may not be stored in the drum storage building.

47. Containers used to store hazardous waste shall be structurally sound, and if applicable, U. S. Department of Transportation approved.

SPECIFIC CONDITIONS - ABOVE GROUND TANKS

Basic facility requirements: Milwaukee Solvents and Chemicals Corporation shall follow the storage requirements of s. NR 181.43, Wisconsin Administrative Code, including but not limited to the following:

48. Milwaukee Solvents and Chemicals Corporation may not place hazardous wastes in the tank system if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail.

49. Milwaukee Solvents and Chemicals Corporation shall inspect the following components of the tank system once each operating day:

    a. Overfilling control equipment, (e.g., such as waste feed cutoff systems and bypass systems) to ensure it is in good working order.

    b. Data gathered from monitoring equipment (e.g., pressure or temperature gauges) to ensure that the tank system is being operated according to its design.

    c. The area immediately surrounding the tank, to detect erosion or signs of releases of hazardous waste (e.g., wet spots).

50. Milwaukee Solvents and Chemicals Corporation shall inspect the leak detection system in accordance with the plan of operation. (Note: The schedule and procedure shall be adequate to detect cracks, leaks, corrosion or erosion which may lead to cracks or leaks or wall thinning to less than the thickness required under s. NR 181.43(7)(a), Wisconsin Administrative Code.) Tanks found to have a sidewall or bottomwall thickness less than the minimum shell thickness shall be immediately taken out of service. Minimum shell thicknesses are listed in Table 1.

51. Within 30 days of the date of this approval Tank #70 shall be fitted with automatic overfill protection equipment. Documentation verifying installation shall be submitted to the Department by September 15, 1990.

52. All storage tanks which are moved during construction shall be tank tested before they are put back into use in the new containment area. All storage tanks which remain in place during construction shall be tank tested within a month of completion of construction.

53. Milwaukee Solvents and Chemicals Corporation shall comply with the procedures in the plan of operation for emptying tanks to allow entry and inspection of the interior to detect corrosion or erosion of the tank sides and bottom.

54. Milwaukee Solvents and Chemicals Corporation shall comply with the buffer zone requirements of the Department of Industry, Labor and Human Relations for tanks, when storing ignitable or reactive wastes in covered tanks.

55. Milwaukee Solvents and Chemicals Corporation may not place incompatible wastes, or incompatible wastes and materials in the same tank system unless s. NR 181.42(1)(m)2., Wisconsin Administrative Code is complied with.

56. Milwaukee Solvents and Chemicals Corporation may not place ignitable or reactive waste in the tank system unless the procedures specified in s. NR 181.43(7)(j), Wisconsin Administrative Code are followed.

57. Milwaukee Solvents and Chemicals Corporation may not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless the

requirements of s. NR 181.43(6)(f), Wisconsin Administrative Code are met.

58. Tanks may not be filled over their individual safe limit usable capacity as defined in the plan of operation and listed on Table 1.

SPECIFIC CONDITIONS - REMEDIAL INVESTIGATIONS AND IMPLEMENTATION

Milwaukee Solvents and Chemicals Corporation shall comply with the following conditions:

59. Within 20 days of the receipt of this approval, Milwaukee Solvents and Chemicals Corporation shall submit a proposal to construct a groundwater collection trench system in conjunction with construction of the north lot container storage area and a proposal to extend the north lot tank farm groundwater collection trench system as discussed in the March 30, 1990 meeting with the Department, Milwaukee Solvents and Chemicals Corporation and Hatcher-Sayre, Inc. Milwaukee Solvents and Chemicals Corporation shall address handling, sampling and analysis (field screening and/or laboratory testing), and disposal of all soils excavated as part of construction of the north lot groundwater collection trench systems, in this proposal. Milwaukee Solvents and Chemicals Corporation shall also specify the construction documentation program for the trench systems and address how the groundwater collected in the north lot container storage area collection trench system will be handled.

60. Within 20 days of the receipt of this approval, Milwaukee Solvents and Chemicals Corporation shall submit a proposal to collect and analyze soil samples from the unsaturated zone in the area defined as the proposed north lot container storage area. The proposal shall include analyses using SW 846 method 8240 for hazardous substance list (HSL) list of volatile organic compounds, and the 7000 series methods for the eight metals specified for the EP toxicity test. This proposal shall specify the soil sampling locations, soil sampling details, method of soil classification and documentation program. In specifying the soil sampling details, Milwaukee Solvents and Chemicals Corporation shall determine and justify the depth at which the soil samples will be collected for each of the two types of chemical analyses required to be performed.

61. Within 20 days of the receipt of this approval, Milwaukee Solvents and Chemicals Corporation shall submit a proposal to collect and analyze groundwater samples from beneath the proposed north lot container storage area. Groundwater samples shall be collected from the silty clay/gravel clay fill unit (i.e., at the water table) and from the clayey sand and gravel unit. This proposal shall include analyses using SW 846 method 8240 for HSL list of volatile organic compounds, and the 7000 series methods for the eight metals specified for the EP toxicity test. The groundwater samples may be collected by way of either permanent or temporary monitoring well screens. These proposals shall specify the

sampling locations, well construction, soil sampling details, method of soil classification, well development procedures and documentation programs.

62. In the construction documentation report for the north lot tank farm, required in Condition #63., below, Milwaukee Solvents and Chemicals Corporation shall present at least two cross-sections constructed on 24 inch x 36 inch plan sheets. At a minimum, one cross-section shall consist of MW-145, MW-132, MW-117, MW-304, MW-108, MW-110, MW-105, MW-104, MW-112 and MW-301. At a minimum, the other cross-section shall consist of MW-106, MW-116, MW-115, MW-107, MW-108, MW-117, MW-304, MW-103, MW-120, MW-119, MW-303, and MW-302. Where more than one interpretation can be reasonably made, conservative assumptions shall be used when evaluating heterogeneities within the unconsolidated deposits. The following information shall be presented on the geologic cross-sections:

(a) Inferred or questionable lithostratigraphic boundaries shall be shown with a dashed line or question mark.

(b) For clarity, a number or symbol shall be used to label major soil units instead of extensive shading. A key shall be provided which contains a description of each major soil unit including geologic description and origin, USCS classification and color.

(c) Boring logs showing the USCS classification of each major soil unit, the results of any grain size analyses, Atterberg limits, and lab and field hydraulic conductivity tests. The data shall be correlated to the sample location.

(d) Well construction details (for existing wells and abandoned MW-304), shown to scale, including the well screen and filter pack length, the location of the upper and lower seals and stabilized water level elevations, preferably measured on the same day. Where 2 or more water table observation wells are presented on a cross-section, a line representing the water table shall be drawn. The date the measurements were taken shall be specified in the key.

63. Within 20 days of the receipt of this approval, Milwaukee Solvents and Chemicals Corporation shall identify all wells that will be affected (abandoned or preserved) by all construction activities at the north lot tank farm and container storage area. Milwaukee Solvents and Chemicals Corporation shall submit a proposal for a groundwater monitoring system to assure that adequate monitoring of groundwater quality in the silty clay/gravel clay fill unit (i.e., at the water table) and the clayey sand and gravel unit can continue to be performed along the north lot eastern property boundary. Any newly proposed monitoring wells shall be designed, installed, developed and documented in accordance with ch. NR 141., which was promulgated on February 1, 1990. The following forms are required to be used at any monitoring well regulated by the

Department, which is installed, developed or abandoned after February 1, 1990:

a. Monitoring Well Construction form 4400-113A,

b. Monitoring Well Development form 4400-113B,

c. Well/Drillhole/Borehole Abandonment form 3300-5b,

d. Soil Boring Log form 4400-122.

The well information Form (WIF) shall be up-dated when new wells are installed, and the WIF resubmitted to the Department.

64. The information specified in conditions #59., #60., #61. and #63. above, shall be incorporated into the appropriate construction documentation report for either the north lot tank farm or the north lot container storage area. The information specified in condition #62. above, shall be incorporated into the construction report for the north lot tank farm. Milwaukee Solvents and Chemicals Corporation shall also include recommendations in the construction documentation report for the north lot container storage area for further investigations and remedial actions, if deemed necessary.

SPECIFIC CONDITIONS - CLOSURE OF EXISTING STORAGE AREAS

Milwaukee Solvents and Chemicals Corporation shall close the existing container and tank storage areas in accordance with the closure plan submitted on November 10, 1989 with the plan of operation, and as modified by the conditions listed below:

65. All material collected during decontamination for closure shall be handled appropriately by determining if the wastes are hazardous and properly treating and/or disposing of the waste.

66. Any equipment used during closure shall be properly decontaminated or disposed of as a hazardous waste if it is determined to be hazardous.

67. A closure documentation report certified by an independent professional engineer (P.E.) shall be submitted within 30 days after each phase of closure. These certification reports shall include:

a. a detailed discussion of all closure activities, waste types and quantities handled;

b. waste types and quantities generated during closure (including manifests);

c. sampling program details (i.e., sample location, methods used, and number of samples taken) and analytical results; and

d. independent Wisconsin P. E. certification that the closure plan was followed during closure and a detailed discussion of methods used in closing of any areas that were not.

68. If the tanks will be out of service for more than 90 days, the tanks shall be steam cleaned prior to their reuse.

69. The containment structure for the drum storage area shall be cleaned in accordance with the closure plan. Cleaning of the structure shall be repeated as necessary and include: scraping, steam cleaning, and rinsing with water, a hydrochloric acid solution, a potassium hydroxide solution, and a detergent. Analyses performed on the initial and final samples of the steam rinsate should include a test for total metals on all metals on the EP Toxicity list and a test for chlorinated solvents using reference methods HW601.

70. Approval of the closure documentation report for the southern section of the existing drum storage area shall be obtained before demolition of that section of the existing drum storage area occurs.

This report represents the conditional approval of the plan of operation for Milwaukee Solvents and Chemicals Corporation and closure plan for Milwaukee Solvents and Chemicals Corporation existing hazardous waste tank and container storage units. Construction and operation must strictly follow the conditions set forth herein.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin Statutes and Administrative Rules establish time periods within which request review Department decisions must be filed. For judicial review of a decision pursuant to ss. 227.52 and 227.53 Statutes, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate Circuit Court and serve the petition on the Department of Natural Resources as the respondent. This notice is provided pursuant to s. 227.48(2), Statutes.

Sincerely,

Franklin Schultz
Solid and Hazardous Waste Program Supervisor
Southeast District

APPENDIX P

CORRECTIVE ACTION PROGRAM

PDF 548

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Corrective Action Plan

Brenntag Great Lakes Facility
Menomonee Falls, Wisconsin

April 2013

ARCADIS

Corrective Action Plan

Brenntag Great Lakes Facility
Menomonee Falls, Wisconsin

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Project Geologist

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Our Ref.:
WI001307.0001

Date:
April 23, 2013

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Introduction

On December 9, 2003, the Wisconsin Department of Natural Resources (WDNR) re-issued operating licenses for storing hazardous waste in containers and tanks, and for treating hazardous waste in containers and tanks to Brenntag Great Lakes, LLC for its facility located at N59 W14765 Bobolink Avenue in Menomonee Falls, Wisconsin. The effective period of this license was 10 years, and expires on December 9, 2013. In a letter from the WDNR dated May 31, 2012, Brenntag Great Lakes received written notice that a revised feasibility and plan of operation report must be submitted as part of the license renewal.

The facility's feasibility and plan of operation report was modified by the WDNR in a letter dated August 2, 1994 to incorporate corrective actions at the facility. A corrective action plan, dated February 2000, was submitted as part of the feasibility and plan of operation report prepared for the previous license period. Corrective actions have been ongoing at the facility during the current license period.

This report presents an updated corrective action plan, to be included as part of the updated feasibility and plan of operation report. In accordance with the May 31, 2012 WDNR letter, the corrective action plan includes a history of spills that have occurred over the last 10 years, a history of corrective actions implemented at the facility, and a description of the overall plan for corrective action at the site.

Project Background

Site Location, Contacts, and Description

The facility is located at N59 W14765 Bobolink Avenue in the village of Menomonee Falls, Wisconsin. The facility consists of a north and south parcel (North Lot and South Lot), separated by Bobolink Avenue. The site is located in Section 26, Township 8 North, Range 20 East in Waukesha County. The location of the site is illustrated on a topographic quadrangle presented as Figure 1.

The North Lot is approximately 2.1 acres in size. The North Lot houses a licensed hazardous waste storage facility, waste solvent reclamation operations, and a bulk storage tank farm for waste and reclaimed solvents. The South Lot is approximately 4.79 acres in size, and is occupied by offices, solvent blending operations, shipping, and a bulk storage tank farm for blended solvent products. Drumming operations and a railroad spur are also located on the South Lot. The facility is located within an industrial park, and the adjacent properties are occupied by commercial and light

manufacturing facilities. Figure 2 illustrates the facility layout and the adjacent properties to the north, east, and south.

The site is serviced by municipal water supply and sewerage systems. Three water supply wells are located on the site, and several nonpotable water supply wells are located on adjacent properties. Water supply well locations are illustrated on Figure 2. The facility and surrounding properties had been previously serviced by these private water supply wells. The area has been converted to the municipal water supply system. The private wells remain in place, and are sampled to evaluate groundwater quality.

Overview of Solid Waste Management Units

The following 12 solid waste management units (SWMUs) have been identified at the facility:

- SWMU A: Location of former solvent reclamation and feed tanks.
- SWMU B: Former drum, tanker, and truck storage area.
- SWMU C: Former tanker truck washing area.
- SWMU D: Former tanker truck washing area.
- SWMU E: Former railroad tanker loading/unloading area.
- SWMU F: Former south lot tank farm and pump station.
- SWMU G: Former container storage area.
- SWMU H: Existing tanker/truck loading and unloading area.
- SWMU I: Existing solvent reclamation area.
- SWMU J: Former drain pipe and drainage ditch on the North Lot.
- SWMU K: North Lot tank farm.

- SWMU L: Drainage ditch located north and east of the South Lot.

Seven of the SWMUs (SWMUs A, B, C, D, E, F, and G) consist of areas where historical facility operations were conducted. The remaining areas (SWMUs H, I, J, K, and L) are occupied by current operations or adjacent drainage features. The locations of the 12 SWMUs are illustrated on Figure 3.

Figure 4 illustrates the locations of all of the soil borings and monitoring wells that have been advanced on the property over the past 20 years. Investigation activities have been conducted at all of the SWMUs. The most recent phases of investigation were completed in 2005 in the South Lot (SWMUs A, B, C, D, E) and at SWMU L. Supplemental investigation was completed at SWMU F in 2007 through 2009 to develop the remedy for this area.

As part of the investigations, approximately 228 soil borings (excluding borings advanced to install monitoring wells), five test pits, and 62 groundwater monitoring wells have been installed at the facility and at offsite locations. Since 1993, groundwater samples have been collected on a quarterly basis from the monitoring well network in accordance with a WDNR-approved groundwater monitoring program. Additionally, groundwater samples have been collected from the property periodically since 1987. Groundwater samples are also collected from the network of nine former water supply wells located on the property and surrounding properties. The historical activities at the SWMUs are well-understood and documented, and consisted of aboveground operations. These operations were common industrial practices such as filling and cleaning tanker trucks, operating solvent reclamation units, and utilizing aboveground storage tanks.

Overview of Historical Site Activities and Discharges

This corrective action plan has been developed to address the historical conditions associated with the identified SWMUs. Table 1 presents a summary of documents that provide information regarding investigation and remediation activities completed as part of corrective action. The following sections present an overview of current and historical site operations, identified constituents, and history of hazardous substance discharges.

Current Operations: The North Lot of the facility is currently used for the storage, blending and reclamation of waste solvents. Historically, solvent recovery operations were conducted on the South Lot of the facility. In 1981, solvent recovery operations were transferred to the North Lot. Storage and processing of hazardous waste only

occurs on the North Lot. The South Lot is currently used to formulate, package, store and prepare chemical products for shipment.

An office/warehouse building is located in the western portion of the North Lot. Solvent recovery equipment, including two LUWA thin-film evaporators, is located in the northern portion of the North Lot. A tank farm is located in the northeast corner of the North Lot. A canopy for the storage of drums and equipment is located south of the tank farm. The majority of the site is paved with concrete or asphalt, and is used for parking and loading/unloading of semi-trailers and tankers. Employee parking is located south of the office/warehouse building. A limited area of grass is located between the tank farm and canopy and between the south side of the North Lot and Bobolink Road. The North Lot is surrounded by chain link fencing for security.

Waste solvents are brought to the North Lot by tanker and in containers. Containers are stored in the warehouse. The contents of the containers are pumped from the warehouse to waste feed tanks in the tank farm via aboveground piping. Tankers of waste solvent are transferred directly to waste feed tanks in the tank farm from an unloading area west of the tank farm. Wastes are segregated into aboveground storage tank (ASTs) based on waste profile data and processing requirements. Material from waste feed tanks is processed through the distillation columns, and the recovered solvent is either transferred to 55-gallon drums or to product tanks in the tank farm. Residuals are collected and shipped offsite for fuel blending.

An office/warehouse building is located in the south-central portion of the South Lot. A bulk tank storage facility is located in the western portion of the South Lot. A railroad spur runs along the southern portion of the South Lot, terminating at the southeastern corner of the facility. A canopy runs along the southern portion of the facility, extending from the railroad spur to the bulk tank storage facility. Abovegrade piping connects the railroad spur to the warehouse and bulk tank storage facility. The remainder of the facility is paved with concrete and asphalt, and is used to stage semi-trailers. The South Lot is surrounded by chain link fencing for security.

Chemical products serving as the raw materials for the facility's production operations are brought to the South Lot via rail car and semi tankers. Chemical products are transferred from rail cars staged on the railroad spur to the bulk tank storage facility and warehouse via abovegrade piping. Tanker trucks are staged at a covered loading/unloading area located north of the bulk tank storage facility. Blending, formulation and packaging activities are completed in the warehouse area.

Historical Operations: SWMU A comprises the area formerly occupied by the facility's solvent reclamation unit and feed tanks. A LUWA Model No. L-300 thin film evaporator was installed in this area in 1974. The evaporator was used to reclaim solvents. Feedstock was pumped to the evaporator from two ASTs located to the north. The tanks had capacities of 1,300 and 2,600 gallons. Reclaimed solvent was transferred to containers or tankers. Still bottoms were containerized and disposed of off-site. The evaporator and ASTs were located on a concrete pad. The system was relocated to the North Lot in 1981. This area was subsequently used for parking and storage until 2000. An addition to the building was constructed over a portion of this area in 2000.

SWMU B comprises an area formerly used for the storage of drums, trailers, and tankers. Unused and reclaimed solvent and chemical products were stored in this area. The storage area was paved with concrete. The exact dates when this area was used for storage is unknown. This area is currently unoccupied.

SWMU C comprises an area that had been previously utilized to wash over-the-road tankers. A solvent/water solution was used to clean the tankers. The tankers were staged on a concrete pad, and washed by facility personnel using pressure washers. The cleaning solution was drained from the tankers and was collected in an oil/water separator. The aqueous fraction of the waste stream was discharged to the drainage ditch along the south property boundary. This practice was discontinued in September 1984, and the cleaning operations were moved to an area to the east, which comprises SWMU D. The area comprising SWMU C is currently unoccupied.

SWMU D comprises the area that was used to wash tankers after operations at SWMU C were discontinued. The washing process in this area utilized a solution of Gamma-Jet solvent and water. The washing was completed on a concrete pad that sloped to a belowground sump. Rinsate was recycled in the system until it became fully spent. The spent solution was then collected and transported to the recovery unit on the North Lot. Cleaning operations in this area were conducted from 1984 to the late 1980s. This area is currently unoccupied.

SWMU E comprises an area around a loading rack associated with a railroad spur that enters the property from a rail line along the south property boundary. Rail tank cars would be staged on the spur. Bulk product was transferred between the rail cars on the spur and the former South Lot tank farm. A concrete pad was located along the spur. This area was removed from service in 2002, when a new spur and tank farm was constructed to the west. The area comprising SWMU E is currently unoccupied.

SWMU F consisted of three operational areas: the former tank farm, a tanker loading area (located to the north of the tank farm), and a drumming facility (located west of the tank farm. The tank farm was constructed in the 1960s, and operated until July 2001. Following decommissioning and removal of the tanks and equipment in the area, several phases of investigation were completed. As discussed in a later section, 2,800 tons of impacted soil was excavated from SWMU F in 2009 for off-site disposal. The area was redeveloped in 2010, and is currently occupied by a reconstructed railroad spur, a storage canopy, and parking.

SWMU G consists of two former outdoor drum storage areas located on the North Lot. One storage area was located south of the reclamation area, and the second storage area was located east of the former tanker/truck area. Both areas were paved with concrete, but were not constructed with secondary containment. After the tank farm was reconstructed in 1990, outdoor drum storage was limited to the area east of the unloading area, and then ceased. This area, which currently consists of a covered storage area, is designated as SWMU G. The other container storage area was not designated in historical figures as a SWMU; however, investigation activities have included this area based on its historical use.

SWMU H is an area west of SMWU G that was used to stage tankers and trucks for loading and unloading. This area was formerly paved with gravel, and is currently paved with concrete and asphalt. This area is currently used to park semi-trailers and tankers. Loading and unloading activities are generally conducted further north, closer to the tank farm and reclamation area.

SWMU I consists of the solvent reclamation area located along the north property boundary, west of the tank farm. The reclamation area consisted of three LUWA thin film evaporators. Portions of the area were paved, with some areas unpaved. This area was reconstructed in 1990 during upgrades to the tank farm. The entire reclamation area is currently paved with concrete and surrounded by asphalt berms.

SWMU J consists of a former drain pipe that extended from a sump located adjacent to the reclamation area. The drain pipe extended southward to a grassy area south of the tanker/truck area and the drainage ditch along the north side of Bobolink Avenue. South of the tanker/truck area, the drain pipe consisted of a 2-inch diameter slotted plastic pipe in a trench. The purpose of the sump and drain pipe was to convey accumulated stormwater away from the reclamation area. The sump and pipe were removed from service in April 1985. The area associated with the section of pipe and trench formerly located south of the tanker/truck loading/unloading area is designated

as SWMU J. The northern portion of the pipe and the associated sump are located in other SWMUs.

SWMU K is the original tank farm, which consisted of a diked area approximately 60 feet by 120 feet in size. Approximately one-third of the area had a concrete base, while the remainder consisted of a gravel base. The tank farm has eleven ASTs for storage of hazardous waste (39,000 gallons of capacity) and six tanks for storage of product (72,500 gallons of capacity). Hazardous waste was transferred from tankers and containers to the hazardous waste feed tanks. The hazardous waste was then processed through the reclamation equipment, and reclaimed solvent was transferred to either 55-gallon drums or the product tanks. The tank area was reconstructed in 1990 in a reduced area within the north end of the footprint of the former tank area. The tanks were removed, a concrete base and concrete secondary containment was constructed, and fifteen tanks were installed. The footprint of the former tank area encompasses the current tank area.

SWMU L consists of the network of drainage ditches along the perimeter of the facility. Facility operations were not conducted within the ditches. However, storm water and discharges entered the ditches from the facility's operations. According to facility personnel, the locations of the drainage ditches have not been altered.

Types of Constituents: The facility has historically managed a range of chemical products. Table 2 presents a summary of products that were stored at the former tank farm on the South Lot. Because North Lot operations historically focused on solvent reclamation, wastes accepted by the facility largely exhibit a limited number of waste codes. At the time of a 1986 Resource Conservation and Recovery Act (RCRA) Preliminary Assessment and during investigations completed in the mid-1990s, 97 percent (by weight) of the hazardous waste brought to the North Lot for reclamation had the following waste codes: D001, F001, F002, F003 and F005. A subsequent 1987 RCRA Facility Assessment (RFA) indicated that the types of wastes accepted for reclamation included nonhalogenated and halogenated organic solvents. Typical wastes included acetone, ethanol, methanol, xylenes, methyl ethyl ketone, toluene, trichloroethene (TCE) and 1,1,1-trichloroethane. The facility produces various blends of petroleum distillates, and several customers ship spent product to the facility for reclamation.

Historical analytical data from previous soil and groundwater investigations were also reviewed to identify constituents. Additional information regarding the historical investigations is presented in a later section. Tables 3 through 6 presents a summary of the analytical results for soil, and Tables 7 and 8 presents a summary of analytical

results for groundwater. While there were a number of constituents detected, a limited number of constituents were detected at high concentrations: acetone, toluene, methyl ethyl ketone, and methyl isobutyl ketone. Nonchlorinated hydrocarbons were detected at higher concentrations than chlorinated hydrocarbons. Semivolatile organics and metals were generally detected at low concentrations.

History of Discharges: ARCADIS has previously reviewed the WDNR project file to identify releases that have occurred at the facility. Sources of information included the RFA prepared by the WDNR, a "Facility Investigation" report dated January 1995, and quarterly reports filed by the facility. The WDNR's online Bureau of Remediation Redevelopment Tracking System (BRRTS) database was also consulted. A summary printout from the BRRTS database that lists releases that have occurred during the current license period are included in Appendix A.

Hydrogeologic Conditions

Boring logs from the investigations were used to develop geologic cross sections for the facility. The locations of the cross sections are depicted on Figure 5; the cross sections are presented as Figures 6 and 7. The site geologic data indicates the presence of three geologic units. The uppermost stratum consists of gravel and clay, extending to a depth of 20 to 30 feet. Within the uppermost strata, discontinuous sand lenses (3 inches thick or less in thickness) were encountered at several borings. The middle stratum consists of sand and gravel, and the lowermost stratum consists of dolomite bedrock. Earlier investigations indicated that the dolomite is present beneath the site at depths ranging from between 30 and 50 feet below ground surface (ft bgs).

Geologic conditions affect the transport of constituents. The presence of the overlying gravel clay unit would tend to impede transport due to low hydraulic conductivity and high organic carbon content. The presence of sand lenses within the clay unit and the underlying sand serve as potential pathways of migration, due to their relatively higher hydraulic conductivity. Fractures within the underlying dolomite could also serve as potential migration pathways; however, migration within the dolomite could be limited by the degree of interconnectedness of the fractures.

Sixty-two monitoring wells/piezometers have been installed at the facility and the surrounding properties. The well locations are depicted on Figure 2. Groundwater conditions are also evaluated at nine water supply wells located on site and on the surrounding properties. Groundwater has been identified in each of the three geologic strata; monitoring wells are generally screened within the gravel/clay unit, and piezometers are located within the sand/gravel and dolomite units.

Static groundwater level measurements are collected from the monitoring well network on a quarterly basis. The typical depth to water in the water table monitoring wells is approximately 4 to 9 ft bgs. The water-table surface is located within the gravel/clay layer. Water level data collected during quarterly sampling events is used to generate groundwater contour maps. Groundwater contour maps for each of the units in May 2009 are presented on Figures 8, 9 and 10. The water table contour map for the gravel/clay unit (Figure 8) indicates that groundwater flow is to the east. The generalized flow direction is consistent with the overall site topography. The potentiometric surface contour map for the sand/gravel stratum (Figure 9) indicates the direction of groundwater flow is to the east; however, localized variations in flow are present, and vary from quarter to quarter. The variations in groundwater flow patterns are influenced by several factors, including the thickness and continuity of the sand layer (which varies across the site) and variations in the elevation of the interface between the unconsolidated sand and the underlying dolomite. The potentiometric surface contour map for the dolomite stratum (Figure 10) indicates the overall horizontal flow direction within this unit is generally to the east.

As part of the groundwater monitoring program, the horizontal and vertical gradients/velocities are evaluated each year. In 2008, the dolomite stratum exhibited the fastest groundwater velocities (approximately 10^{-3} centimeters per second [cm/s]). The gravel/clay and sand and gravel strata exhibited comparable groundwater velocities in 2008 (10^{-5} cm/s).

In addition to calculating the horizontal groundwater gradients and groundwater velocities within each stratum, vertical groundwater gradients and velocities were calculated between the strata. The vertical groundwater velocity is greatest between the sand and gravel stratum and the dolomite stratum. The vertical component of groundwater flow is generally upward from the dolomite stratum to the sand and gravel stratum. Comparatively, the vertical groundwater velocity between the gravel/clay stratum and the sand and gravel stratum is an order of magnitude less, and the flow direction is generally from the gravel/clay strata to the sand and gravel strata.

Conceptually, groundwater enters the sand and gravel unit from the overlying gravel/clay unit and underlying dolomite unit, and flows to the east. A comparison of horizontal and vertical gradients indicates that groundwater flow at the property represents a horizontally-dominated system.

Summary of Previous Investigations

Several phases of investigation have been completed at the facility. In addition, groundwater samples have been collected from the monitoring wells located in this area on a regular basis since 1993.

The following sections present an overview of the investigations completed during the current license period (i.e., since the 2000 Corrective Action Plan). No investigation activities were completed in the North Lot during the current license period. Because investigation activities will be completed in the North Lot during the next license period, soil (Table 3) and groundwater (Table 8) data from previous investigations are included in this report.

2000 Investigation

A soil investigation was completed at SWMU A in 2000. Twenty-six Geoprobe borings (GP-1 through GP-26) were advanced in a grid pattern in the area immediately west of the building on the South Lot. The investigation area included the former evaporator and AST locations. The boring locations are depicted on Figure 4.

Thirty-six soil samples were collected for analysis. The analytical results are summarized in Table 4. Concentrations of volatile organic compounds (VOCs) were highest in the immediate vicinity of the former evaporator and ASTs, and decreased to the north and west. The primary constituents of interest include trichloroethene, ethylbenzene, toluene, and xylene. Five samples contained diesel range organics (DRO) at concentrations above the residual contaminant level (RCL); the highest concentrations were detected in the vicinity of the former evaporator and ASTs. With the exception of arsenic, none of the samples contained metals at concentrations above the RCLs. Arsenic was detected in two samples (GP-15 and GP-26) at concentrations above the RCLs. The detected concentrations were 9.9 and 11 milligrams per kilogram (mg/kg). The similarity in detected concentrations suggests the arsenic level observed is indicative of background conditions.

2002 Investigation

ARCADIS conducted a soil investigation at SWMU F in 2002. Fifty-four soil borings were advanced in SWMU F for the collection of soil samples. Soil boring locations are illustrated on Figure 4. Sixty-five soil samples were collected for laboratory analyses including VOCs, DRO, alcohol, and metals. The primary constituents of interest were VOCs and DRO. Xylenes, ethylbenzene, and toluene were detected at the highest

concentrations and represent the majority of the constituent mass in the soil. DRO was also detected in samples at concentrations exceeding the NR 720 RCL; a result consistent with the higher concentrations of aromatic hydrocarbons detected in the VOC analysis. Low concentrations of alcohols and metals were detected. Soil VOC and DRO analytical results are summarized in Table 5.

Sixty-two of the 65 soil samples contained one or more VOCs at a concentration above the groundwater migration RCL. Fewer exceedances of the vapor inhalation and ingestion RCLs were identified. Samples from 23 of the borings contained one or more VOC at a concentration exceeding the vapor inhalation RCL. In general, the vapor inhalation RCL exceedances were located within the perimeter of the former tank farm and the former loading rack. The most prevalent compound detected above the vapor inhalation RCL was ethylbenzene. Six other constituents (benzene; 1,1-dichloroethene; methylene chloride; tetrachloroethene [PCE]; toluene; TCE) were also detected above the vapor inhalation RCL, but were less widely distributed. Samples from only two of the borings (GP-124 and GP-143) contained constituents at concentrations above the ingestion RCL. These borings were located in the northwest portion of the former tank farm. The lateral extent of soils containing constituents greater than the ingestion and vapor inhalation RCLs was defined during the 2002 investigation.

Thirty-nine soil samples were analyzed for DRO. The analytical results were compared to the WDNR generic RCL of 250 mg/kg. Thirty of the 39 samples contained DRO at concentrations greater than the RCL. Two areas exhibiting DRO concentrations above 5,000 mg/kg were identified. These areas consist of the former loading rack area (GP-113) and an area located in the north-central portion of the tank farm (GP-152).

During preliminary discussions with the WDNR regarding the use of excavation as the remedy for SWMU F, WDNR indicated that soil exhibiting concentrations indicative of hazardous waste were limited to the following locations: GP-110, GP-124, GP-135, GP-142, GP-143, and GP-152. The results from the 2002 investigation were used to determine the locations of additional soil borings to be completed as part of the supplemental investigation for waste characterization and confirming the extent of soil to be managed as hazardous waste.

2005 Investigation

ARCADIS conducted investigation activities at SWMUs A, B, C, D, E and L in 2005. The work included: thirty-eight injection wells (IW-1 through IW-38) installed throughout SWMUs A, B, C, D and E for collection of soil and groundwater samples and to

implement remediation; five geoprobe borings (AB-1 through AB-5) near the southeast corner of the main building, northeast of SWMU D; two geoprobe borings (GP-27 and GP-30) to the east and north of SWMU D; and ten hand auger borings (AHA-1 through AHA-10) and three geoprobe borings (GP-28, GP-29 and GP-31) within SWMU L. The work was completed in several phases throughout 2005. Boring locations are depicted on Figure 4.

During the initial phase of investigation, soil samples from IW-1 through IW-22 were collected for field screening only (i.e., no analytical samples), to evaluate soil conditions and determine additional sampling locations. Soil samples were collected from the subsequent phases of investigation for analytical testing. A round of groundwater samples was collected from seventeen injection wells (IW-4, IW-5, IW-7, IW-9, IW-11, IW-18, IW-22, IW-24, IW-25, IW-27, IW-29, IW-32, and IW-34 through IW-38) to evaluate baseline groundwater conditions prior to implementing remediation.

Soil samples were analyzed for VOCs and metals. Soil VOC analytical results from the 2005 investigation are presented in Table 6. In general, low to nondetectable concentrations of metals were detected in the soil samples. The primary constituents detected were VOCs, with the following VOCs being detected at the highest concentrations: PCE, TCE, cis-1,2-dichloroethene, vinyl chloride, 2-chlorotoluene, xylene and ethylbenzene. The nonchlorinated VOCs were detected at a greater frequency and concentration than the chlorinated VOCs. The highest concentrations were detected at the southeast (SWMU D) and southwest (SWMU B) corners of the building. Low to nondetectable constituents were present in the soil samples collected from SWMU L.

Groundwater analytical results from the 2005 investigation are presented in Table 8. The groundwater analytical results were reversed from the soil analytical results, as chlorinated VOCs were detected at higher concentrations than nonchlorinated VOCs. The majority of constituent mass in groundwater consisted of chlorinated VOCs. The highest concentrations were detected at the southeast (SWMU D) and southwest (SWMU B) corners of the building.

Based on the results of the investigation, groundwater remediation consisting of enhanced reductive dechlorination was implemented at SWMUs A, B, C, D and E. Additional information on the remediation activities is provided in a later section of this report.

2007 Investigation

ARCADIS conducted a supplemental investigation including 22 soil borings (GP-200 through GP-221) advanced in SWMU F in November 2007. Fifteen borings (GP-200 through GP-214) were advanced to delineate the extent of soil that would require management as a hazardous waste. Four borings (GP-215 through GP-218) were advanced within the soils requiring management as a hazardous waste to collect waste profiling samples. The remaining three borings (GP-219, GP-220, and GP-221) were advanced in the southern portion of SWMU F to further evaluate the depth of bedrock in this area. Soil samples were collected for analysis of VOCs using United States Environmental Protection Agency (U.S. EPA) Method 8260 and analysis of VOCs using the Toxicity Characteristic Leaching Procedure (TCLP). The soil analytical results are summarized in Table 5.

The TCLP VOC analytical results indicated that the soils proposed for management as a solid waste did not contain VOCs at concentrations exceeding the TCLP limits. These results, in conjunction with the characterization work presented in the September 2007 work plan, supports the characterization of the majority of soil as a solid waste.

The November 2007 investigation was successful at delineating the extent of soil requiring management as hazardous waste at two areas (GP-143, GP-135). However, the extent was not defined at the remaining three areas (GP-110, GP-124, and GP-152) targeted for excavation.

2008 Investigation

ARCADIS advanced seven soil borings (GP-222 through GP-228) on October 7, 2008 to further delineate the extent of soils to be managed as a hazardous waste. The borings were offset approximately 5 feet from the borings advanced during the November 2007 investigation that exceeded the ingestion and vapor inhalation SSLs. Soil Borings GP-223, GP-224, and GP-225 were advanced near GP-110; Soil Borings GP-222 and GP-228 were advanced near GP-124; and Soil Borings GP-226 and GP-227 were advanced near GP-152.

The soil analytical results are summarized in Table 5. The analytical results from the supplemental borings advanced around GP-124 and GP-152 did not contain constituents at concentrations that exceed the health-based limits that would require management as hazardous waste. These results indicate that adequate investigation

had been completed to delineate the extent of soil that would require management as a listed hazardous waste.

The analytical results from the supplemental investigation indicated that samples from two (GP-223 and GP-224) of the three supplemental borings advanced around GP-110 contained constituents at concentrations that exceed the health-based limits that would require management as hazardous waste. TCE and PCE were detected at concentrations exceeding health-based limits for inhalation. Based on these results, the extent of soil requiring management as a listed hazardous waste was not defined in that area.

2009 Investigation

ARCADIS advanced three soil borings (GP-229 through GP-231) on March 6, 2009 to further delineate the extent of soils to be managed as a hazardous waste within the limits of the former loading/unloading area. The borings were offset approximately 5 feet from the borings advanced during the October 2008 investigation that exceeded the ingestion and vapor inhalation SSLs. Soil Boring GP-229 was advanced near GP-224 and Soil Borings GP-230 and GP-231 were advanced near GP-223.

The soil analytical results are summarized in Table 5. The analytical results from the supplemental borings GP-230 through GP-231 did not contain constituents at concentrations that exceed the health-based limits that would require management as hazardous waste. These results indicated that adequate investigation had been completed to delineate the extent of soil that would require management as a listed hazardous waste. Excavation activities at SWMU F are described in a later section of this report.

Groundwater Monitoring Program

Thirty-four groundwater monitoring wells are currently present at the facility and surrounding properties. Figure 2 illustrates the well locations.

Quarterly groundwater monitoring is conducted at the facility to evaluate changes in groundwater quality and the progress of remediation. Between May 1993 and November 2003, groundwater samples were collected on a quarterly basis in accordance with a monitoring schedule approved by the WDNR in a letter dated March 26, 1993. In 2004 and 2005, modifications to the sampling program were made in consultation with the WDNR on a quarter-by-quarter basis. In a letter dated March 2, 2006, the WDNR approved a revised groundwater monitoring plan for the facility. The

changes in the groundwater monitoring program were made concurrent with the start of groundwater remediation in SWMUs A, B, C, D, and E.

Table 9 presents the details of the current monitoring program. In summary, seven wells are sampled on a quarterly basis. Ten of the wells are located in an enhanced reductive dechlorination (ERD) treatment area in SWMUs A, B, C, D and E; three wells are located near SWMU F; and one is located offsite on the Volkmann property. Selected former water supply wells in the area are sampled during the May and November sampling events. Thirty-two wells are sampled during the May sampling event of each year. The May sampling event provides data on site-wide conditions. In addition, water levels are measured at all of the wells each quarter to provide data on seasonal variations in groundwater flow.

Groundwater monitoring data collected from 2009 are presented in Table 7. Figures 11 through 13 depict total VOC concentrations over time (including the current license period) in the gravel/clay, sand and gravel, and dolomite strata, respectively. Total VOC concentrations in the North Lot have been decreasing over time, and are much lower than the concentrations detected in the South Lot. The highest total VOC concentration in groundwater has been consistently at MW-153, which is south of the area of highest historic soil VOC concentrations. This area was excavated in 2009.

Overview of Previous Remedial Measures

The following sections present a brief overview of previous and ongoing remedial measures conducted at the facility during the current license period.

Soil Remediation

In 2000, an addition was constructed on the west side of the building located on the South Lot. The addition partially extended over SWMUs A and C. As discussed earlier, a soil investigation was completed in this area. To facilitate construction of the building footings and to remove soils containing higher concentrations of constituents, approximately 1,134 tons of soil were excavated from the building footprint. Figure 14 illustrates the extent of the excavation. The excavated soil was transported off-site to the Environmental Quality facility in Wayne, Michigan for disposal. Footings were constructed within the perimeter excavation, which was then backfilled with clean, imported backfill material. The excavation conducted in the central portion of the addition's footprint was backfilled using concrete slurry.

As indicated earlier, soil excavation was completed at SWMU F in 2009. Approximately 2,796 tons of soils was excavated, including approximately 2,396 tons of soil managed as a nonhazardous special waste and approximately 400 tons of soil managed as a hazardous waste. The excavation area is depicted in Figure 17. ARCADIS used the weight of the excavated soil and the soil VOC data from the investigations to compute the mass of VOCs removed by the remedy. A total of 19 pounds of DRO, 19,662 pounds of non-chlorinated VOCs, and 726 pounds of chlorinated VOCs were removed. This equated to a mass reduction providing 93 percent reduction in DRO mass, 87 percent reduction in the non-chlorinated VOC mass, and 87 percent reduction in the chlorinated VOC mass

Active soil remediation has not been conducted in the North Lot due to the presence of active facility operations and infrastructure. During construction of the current tank farm in 1990, a vapor extraction system (VES) was installed beneath the footprint of SWMU K. The system consists of five horizontal wells, running east-west beneath the tank farm. The wells consist of 6-inch diameter perforated corrugated pipe, installed within a gravel bed. The wells are connected to a header pipe located along the east side of the tank farm. The VES has not yet been utilized. Following its construction, a 1992 report proposed a pilot test of the system, but was not implemented.

Groundwater Remediation

Interim groundwater remediation activities have consisted of the installation and operation of a groundwater recovery system. One groundwater recovery trench was installed on each of the two parcels in 1986. The groundwater recovery and treatment system was upgraded in 1990 and 1996, and currently includes two recovery trenches and seven extraction wells. The locations of the various remedial system components are illustrated on Figure 4.

A Remedial Action Options Report dated September 10, 2003 was submitted to the WDNR, and outlined proposed groundwater remediation activities at SWMUs A, B, C, D and E. Remediation consisted of ERD treatment of impacted groundwater. Enhanced biodegradation is an in-situ remediation technology that creates aquifer conditions that increase the rate of contaminant biodegradation by injecting a carbon amendment into the groundwater.

Soil and groundwater investigations (described earlier) were completed concurrent with implementing the remedy. ARCADIS installed a total of 41 injection wells (IW-1 through IW-41) between March 2005 and May 2006 for groundwater treatment. The injection well locations are depicted on Figure 2. Chlorinated VOCs, and to a lesser

degree, nonchlorinated VOCs were detected in the baseline groundwater samples collected in May 2006. The highest concentrations of groundwater VOCs were located to the east and southeast of the South Lot building and the western half of SWMUs A, B, and C. Based on this distribution, a subset of 28 injection wells were selected for applying the ERD carbon amendment. A subset of the remaining injection wells were converted to monitoring wells and are sampled quarterly to evaluate the progress of the remediation.

In accordance with the WDNR-approved work plan and permit application, the carbon amendment solution (potable water and molasses mixed at a 25:1 ratio) was delivered into the network of injection wells using a mobile injection system. Injections were conducted every 6 weeks from June 2006 through February 2007, and every 4 weeks from March 2007 through December 2007. The frequency of injections was increased based on groundwater analytical data collected from the quarterly sampling events. ARCADIS completed 16 injection events between June 6, 2006 and December 11, 2007, with a total of 24,600 gallons of solution pumped into the injection wells at approximately 1,000 to 2,000 gallons per event. Table 10 presents a summary of the injection activities.

Groundwater analytical results from the ERD treatment area (through 2009) are summarized in Table 8. Total VOC concentrations were used to evaluate the progress of remediation and the extent of groundwater impacts at SWMUs A, B, C, D and E. Figure 16 presents total VOCs in SWMUs A, B, C, D and E in May 2006, prior to the start of ERD treatment. Figure 17 presents the total VOC results for SMWUs A, B, C, D and E in May 2009, about 1-1/2 years after the last injection event. A comparison of Figures 16 and 17 indicate that the total VOC concentrations in the central portion of the plume greatly diminished, with reductions ranging up to 93 percent in outlying monitoring wells, and 40 to 60 percent reductions in the areas of highest VOC concentrations. Post-remediation groundwater monitoring is ongoing.

ARCADIS conducted a review of the groundwater extraction system in 2009. The review found that the groundwater extraction system had recovered approximately 2,200 pounds of dissolved phase constituents and 1,445 gallons of separate phase product. However, 97 percent of the dissolved mass and 100 percent of the separate phase product was recovered by the South Lot collection trench. Approximately 18 pounds of dissolved phase constituents have been recovered by the North Lot collection trench, and approximately 1.5 pounds of dissolved phase constituents have been recovered by EW-2. The review found that the groundwater extraction system had reached its limit of effectiveness, and that limited mass was being recovered by the northern component of the system. ARCADIS met with WDNR in November 2009

to discuss the results of the extraction system performance review, and recommended that operation of the system be terminated. The WDNR provided verbal approval to discontinue system operation.

Natural attenuation is also ongoing and is addressing groundwater constituents in this area. The groundwater extraction system review included an assessment of the aquifer's assimilative capacity. Based on concentrations of groundwater geochemical parameters, approximately 1,800 pounds of dissolved phase constituents per year can be removed through natural attenuation.

Overview of Investigation and Remediation Strategy for Corrective Action

As indicated in the previous sections of this report, investigation and remediation activities during the current license period have focused on the South Lot. This was noted by WDNR during the November 2009 meeting discussing the groundwater extraction system. During that meeting, the WDNR asked that investigation and remediation activities shift to the North Lot. As a result, it is anticipated that corrective action activities during the next license period will focus on the North Lot. In addition, the site-wide groundwater monitoring program will continue, and will be used to evaluate trends in groundwater quality on both the North Lot and South Lot.

SWMUs G, H, I, J and K are located in the North Lot. A work plan for investigation and interim action activities was submitted to WDNR in March 2011. The following sections present an overview of the anticipated investigation and remediation activities during the next license period.

Investigation Activities

As indicated above, a work plan for investigation activities in SWMUs G, H, I, J and K was submitted to WDNR in March 2011. In summary, 40 Geoprobe soil borings will be advanced in a grid pattern in and around the SWMUs to assess soil conditions. Temporary wells will be installed in 13 of the Geoprobe borings to evaluate groundwater quality. Because most of the existing groundwater monitoring wells on the North Lot are located around the perimeter of the property, five additional groundwater monitoring wells will be installed within the North Lot SWMUs to further evaluate groundwater quality and groundwater flow.

The locations of the Geoprobe borings, temporary wells and monitoring wells, described were selected based on the information identified during the investigation scoping. Geoprobe boring locations were selected to evaluate soil and groundwater

conditions. Geoprobe boring locations in primary source areas were first established, and include the current and former tank areas (SWMU K), the reclamation units (SWMU I), and the discharge pipe (SWMU J). Additional Geoprobe borings were located around these areas to evaluate soil and groundwater conditions surrounding the anticipated sources. Geoprobe borings were also located in areas where materials were stored (SWMUs G and H).

Figure 18 depicts the proposed soil boring, temporary well, and monitoring well locations. It should be noted that the boring locations depicted on Figure 16 are approximate. Deviations to the locations may occur based on receipt of additional information, screening results from nearby borings, and impediments such as underground utilities and above grade infrastructure.

The following is an overview of the proposed investigation:

- A total of 40 Geoprobe borings will be advanced during the investigation. Based on previous investigations conducted at the facility and the location of the groundwater table, each boring will be advanced to a depth of approximately 12 ft bls.

- Companion sampling will be completed by collecting two aliquots of soil from each sampling interval and placing each aliquot into a separate resealable plastic bag. One of the companion samples from each interval will be used for field screening for the presence of total ionizable VOC vapors with a calibrated flame ionization detector (FID). The screening samples will be warmed and the headspace FID reading of the soil taken by inserting the probe end of the FID into the plastic bag through the seal. The screened samples will be discarded; the unscreened companion samples will be used for preparing samples for analytical testing.

- Soil samples will be logged in the field to describe the condition and engineering properties of the soil.

- Soil samples will be collected for laboratory analysis from all 40 Geoprobe borings. The soil samples will be collected and submitted for laboratory analysis of VOCs, 1,4-dioxane, and tetrahydrofuran. A sample will also be collected for dry weight analysis. The samples will be analyzed using U.S. EPA Method 8260B.

- A subset of the 13 Geoprobe soil borings will be converted to temporary wells. Each well will consist of a 5-foot length of 1-inch diameter Schedule 40 polyvinyl chloride (PVC) well screen and a 1-inch diameter Schedule 40 PVC riser.

- Groundwater samples will be collected from the 13 temporary wells. Following purging, groundwater samples will be collected and submitted for laboratory analysis of VOCs, 1,4-dioxane, and tetrahydrofuran. The samples will be analyzed using U.S. EPA Method 8260B.

- A network of five monitoring wells will be installed. The well locations will be based on a review of the groundwater analytical results from the temporary wells, and ability for a hollow stem auger rig to access the locations.

- Initially, a single round of groundwater samples will be collected from the monitoring wells. The groundwater samples will be collected and submitted for laboratory analysis of VOCs, 1,4-dioxane, tetrahydrofuran, and 2-butoxyethanol. The samples will be analyzed using U.S. EPA Method 8260B.

- After the temporary and monitoring wells are installed, a licensed land surveyor will survey the locations of the wells.

- Following receipt of the soil and groundwater analytical results, ARCADIS will prepare a report. The report will present the investigation results and recommendations incorporating a subset of the new monitoring wells into the current site-wide groundwater monitoring program and for remediation based on the investigation results.

Remediation Activities

Active soil remediation has not been conducted in the North Lot due to the presence of active facility operations and infrastructure. During construction of the current tank farm in 1990, VES piping was installed beneath the footprint of SWMU K. The system consists of five horizontal wells, running east-west beneath the tank farm. The wells consist of 6-inch diameter perforated corrugated pipe, installed within a gravel bed. The wells are connected to a header pipe located along the east side of the tank farm.

To facilitate remediation in this area, the March 2011 investigation work plan included a scope of work to use the existing VES piping as part of an interim action to remediate shallow soil at SWMU K in conjunction with the soil and groundwater investigation.

A mobile trailer will be delivered to the site and connected to the existing piping system. The system will be activated following completion of the soil and groundwater investigation, so a baseline for soil and groundwater conditions is established. Based on ARCADIS' experience, a VES reaches a limit of effectiveness relatively quickly. Since the intention is to use VES as an interim measure, it is anticipated that the system would run until an asymptotic rate of VOC recovery is reached and additional remediation measures are conducted. For planning purposes, it is assumed the VES will operate for up to 2 years.

Groundwater Monitoring Program

Groundwater samples are collected from the existing monitoring well network on a quarterly basis in accordance with the schedule outlined in Table 9. The monitoring program was modified in 2006 to provide data from remediation activities at SWMUs A, B, C, D and E. Since new monitoring wells will be installed and remediation activities will shift to the North Lot, modifications to the monitoring program will be proposed after completion of the investigation at SWMUs G, H, I, J and K. The existing groundwater monitoring program will continue until the WDNR approves modifications to the monitoring program.

Financial Estimates

At this time, corrective action activities for the next 10-year license period will consist of the following:

- Implementation of investigation activities at SWMUs G, H, I, J and K in accordance with the March 2011 work plan.
- Implementation of VES in the North Lot as an interim measure, in accordance with the March 2011 work plan.
- Continuation of the quarterly groundwater monitoring program.

Projected costs for these activities are included in Appendix B.

Schedule

The work plan for investigation activities in the North Lot is currently being reviewed by WDNR. Comments were received in 2012 and a response is being prepared.

ARCADIS anticipates completion of the investigation by 2013. As stated above, the VES system would operate for approximately 2 years, from 2013 to 2015.

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Table 1. Summary of Historical Documents Reviewed for Investigation Scoping, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

March 28, 1985 – Site Investigation Report, prepared by RMT, Inc.

December 17, 1986 – Environmental Assessment Report, prepared by Hydro-Search, Inc.

March 5, 1987 – RCRA Facility Assessment, prepared by Wisconsin Department of Natural Resources

September 25, 1987 – Final Phase I Report, Remedial Investigation, prepared by Hatcher Incorporated

June 16, 1988 – Off-Site Study Report, prepared by Hatcher Incorporated

December 9, 1988 – Phase II Remedial Investigation Report, prepared by Hatcher-Sayre, Inc.

September 14, 1989 – Phase III Remedial Investigation Report, prepared by Hatcher-Sayre, Inc.

June 15, 1990 – Compilation of Field and Laboratory Environmental Quality Data, prepared by Hatcher-Sayre, Inc.

May 29, 1991 – Soil Evaluation along Anticipated Route of Sewer and Water Main Project, prepared by Hatcher-Sayre, Inc.

April 1994 – 1993 Annual Monitoring Report, prepared by Hatcher-Sayre, Inc.

January 15, 1995 – Facility Information Report, prepared by Hatcher-Sayre, Inc.

March 30, 1995 – Facility Investigation Report, prepared by Hatcher-Sayre, Inc.

June 28, 1996 – Water Supply Well Survey, prepared by Hatcher-Sayre, Inc.

October 1, 1998 – Soil Investigation Report, prepared by ARCADIS

June 16, 2003 – Annual Groundwater Monitoring Report – 2002, prepared by ARCADIS

September 10, 2003 – Remedial Action Options Report, prepared by ARCADIS

June 8, 2004 – Annual Groundwater Monitoring Report – 2003, prepared by ARCADIS

October 7, 2005 - Annual Groundwater Monitoring Report – 2004, prepared by ARCADIS

October 19, 2007 – Annual Groundwater Monitoring Report – 2006, prepared by ARCADIS

July 15, 2008 – Annual Groundwater Monitoring Report – 2007, prepared by ARCADIS

May 4, 2009 – Annual Groundwater Monitoring Report – 2008, prepared by ARCADIS

March 2011 – Work Plan for Investigation and Interim Action, SWMUs G, H, I, J and K – Prepared by ARCADIS

August 19, 2011 – Excavation Summary Report, SWMU F – Prepared by ARCADIS

1”-400’ Aerial Photographs for 1965, 1967, 1070, 1975, 1980, 1985, 1990, 1995, and 2000, prepared by Southeast Wisconsin Regional Planning Commission.

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Table 2. Summary of Chemical Products Stored in Former South Lot Tank Farm, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Product Name	MSDS Available	Chemical Composition
n-Butyl acetate	No	n-Butyl acetate
Ektasolve EP	Yes	Ethylene glycol monopropyl ether
Methyl isobutyl ketone	Yes	Methyl isobutyl ketone
Isobutyl acetate	Yes	Isobutyl acetate
1,1,1-trichloroethane	Yes	1,1,1-trichloroethane
Xylene	Yes	Xylene
Heptane	Yes	Heptane
Lac Sol 42KB	Yes	n-Heptane Isoparaffins Naphthenes Toluene
Butyl Cellosolve	Yes	Ethylene glycol monobutyl ether
Methylene chloride	Yes	Methylene chloride
Isopropyl acetate	Yes	Isopropyl acetate
Ethanol SDA-3A 200 Proof	Yes	Ethanol Methanol
Cellosolve Acetate 99	No	Ethylene glycol monoethyl ether acetate
MILSOLV 160	Yes	Petroleum distallates C10-C15
Toluene	Yes	Toluene
Hexane	Yes	Hexane
Acetone	Yes	Acetone
n-Butyl alcohol	Yes	n-Butyl alcohol
Mineral Spirits	Yes	Petroleum distallates
SVMP Naphtha	Yes	Petroleum distallates
Methanol	Yes	Methanol
Isopropanol	Yes	Isopropanol
Methyl ethyl ketone	Yes	Methyl ethyl ketone
High Flash Napththa	Yes	Petroleum distallates

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Table 2. Summary of Chemical Products Stored in Former South Lot Tank Farm, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Product Name	MSDS Available	Chemical Composition
Gettysolv R	Yes	Aliphatic petroleum distallates
Isobutyl Isobutyrate	Yes	Isobutyl Isobutyrate
Ethyl acetate	Yes	Ethyl acetate
MILSOLV 100	Yes	Aromatic petroleum distallates
MILSOLV 360	Yes	Aliphatic petroleum distallates
MILSOLV 150	Yes	Aromatic petroleum distillates
Mineral Seal Oil	Yes	Petroleum distallates
Ethylene glycol	Yes	Ethylene glycol
Monochlorotoluene	Yes	Chlorotoluene
n-Propyl acetate	Yes	n-Propyl acetate
n-Propyl alcohol	Yes	n-Propyl alcohol
Perchloroethylene	Yes	Tetrachloroethene
Antifreeze Permanent	Yes	Ethylene glycol Diethylene glycol
Glycol Ether DPM	Yes	Dipropylene glycol monomethyl ether
Methyl isoamyl ketone	Yes	Methyl isoamyl ketone
Wood Preservative Oil	Yes	Aromatic petroleum distallates Aliphatic petroleum distallates
Dioctyl phthalate	Yes	Di(2-ethylhexyl) phthalate
Glycol ether PM acetate	Yes	Propylene glycol monomethyl ether acetate
n-Butyl acetate urethane	Yes	Butyl acetate
LOLA	Yes	Aliphatic petroleum distillate
Mineral Seal Oil CV-600	No	Petroleum distillates
MILSOLV 47 Oil	Yes	Aromatic petroleum distillates Aliphatic petroleum distallates
Oderless Mineral Spirits	Yes	Aliphatic petroleum distallates
Triethylamine	Yes	Triethylamine
Trichloroethene	Yes	Trichloroethene

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Table 2. Summary of Chemical Products Stored in Former South Lot Tank Farm, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Product Name	MSDS Available	Chemical Composition
Glycol Ether EB Acetate	Yes	2-Butoxyethyl acetate
MILSOLV 5045 Deicer	Yes	Ethylene glycol
D-Limonene	Yes	D-Limonene
Ethanol SDA-3C	Yes	Ethanol Isopropanol
Ethanol CDA-20	Yes	Ethanol
Ethyl alcohol	Yes	Ethanol
Texanol Ester Alcohol	Yes	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate
MILSOLV Lacquer Thinner LT-R	Yes	Isopropyl acetate n-Heptane Isoparaffins Toluene Ethylbenzene Xylene Acetone Methyl ethyl ketone Isopropanol Methanol

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Table 3. Summary of Soil Analytical Data for North Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Boring Number	200	201	202	203	204	116				117			
Sample Depth (ft)	4-5	3-4	3-4	3-4	3-4	2-4	4-6	6-8	14-16	2-4	4-6	6-8	8-10
Date	9/9/86	9/9/86	9/9/86	9/9/86	9/9/86	7/27/87	7/27/87	7/27/87	7/27/87	7/28/87	7/28/87	7/28/87	7/28/87
Volatile Organic Compounds													
Benzene	9	180	540	6,500	150	<10,000	<500	<500	<500	<10,000	<500	<500	<500
Toluene	110	64	360	62,000	17,000	26,000	13,000	4,000	<500	10,000	3,000	3,000	1,000
Ethylbenzene	21	21	540	5,000	950	<10,000	900	<500	<500	<10,000	<500	<500	<500
Xylene	ND	ND	ND	ND	ND	11,000	4,000	1,000	<500	<10,000	2,000	600	<500
Trichloroethene	ND	ND	79	500	58	38,000	1,000	<1,000	<1,000	14,000	2,000	<1,000	<1,000
Methylene Chloride	160	180	230	740	410	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	ND	2,300	180	400	120	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ND	ND	43	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Dichloroethene	ND	ND	45	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	ND	ND	830	100	ND	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	ND	ND	45	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	ND	ND	ND	41	ND	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
4-methyl-2-pentanone	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	300	2,745	2,892	75,281	18,688	75,000	18,900	5,000	0	24,000	7,000	3,600	1,000

Concentrations expressed as micrograms per kilogram (µg/kg).

NA Not analyzed.

NC Not calculated; insufficient toxicological data.

ND Not detected, detection limit not reported.

SSL Soil Screening Levels, calculated using U.S. EPA website.

WDNR Wisconsin Department of Natural Resources.

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Table 3. Summary of Soil Analytical Data for North Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Boring Number	120		OSS-3	OSS-5		OSS-7	OSS-37	OSS-38	OSS-39	OSS-43
Sample Depth (ft)	2-4	10-12	4-4.5	2-2.5	4-4.5	2-2.5	4-4.5	4-4.5	2-2.5	2-2.5
Date	7/23/87	7/23/87	5/13/88	5/13/88	5/13/88	5/13/88	10/21/88	10/21/88	10/21/88	10/21/88
Volatile Organic Compounds										
Benzene	<500	<500	<150	<250	<120	<60	<27	<30	<32	<32
Toluene	<500	<500	4,000	9,500	5,600	220	59	12,000	<32	130
Ethylbenzene	<500	<500	520	3,300	1,500	70	<27	<30	<32	<32
Xylene	<500	1,000	3,800	17,000	7,400	140	94	<30	<32	<32
Trichloroethene	<1,000	<1,000	<150	<250	<120	<60	<27	<30	<32	<32
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
Chloroform	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
Dichloroethene	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
Tetrachloroethene	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
trans-1,2-Dichloroethene	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
cis-1,2-Dichloroethene	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
1,1-Dichloroethane	NA	NA	<150	<250	<120	<60	<27	<30	<32	<32
Acetone	NA	NA	<1,700	<3,100	7,600	<750	<680	<750	<800	<800
2-Butanone	NA	NA	<750	<1,300	<600	<300	<270	<300	<320	<320
4-methyl-2-pentanone	NA	NA	<750	<1,300	1,500	<300	<270	<300	<320	<320
Total VOCs	0	1,000	8,320	29,800	23,600	430	153	12,000	0	130

Concentrations expressed as micrograms per kilogram (µg/kg).

NA Not analyzed.

NC Not calculated; insufficient toxicological data.

ND Not detected, detection limit not reported.

SSL Soil Screening Levels, calculated using U.S. EPA website.

WDNR Wisconsin Department of Natural Resources.

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Table 3. Summary of Soil Analytical Data for North Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Boring Number	B-1	B-2	B-3	B-4		B-5	B-6	B-7	B-8	B-9	B-10
Sample Depth (ft)	1.5-3	6-7.5	6-7.5	3-4	6-7	6-7.5	6-7.5	6-7.5	4-5.5	3-4	6-7
Date	4/18/91	4/19/91	4/17/91	4/22/91	4/22/91	4/18/91	4/18/91	4/22/91	4/22/91	4/17/91	4/17/91
Volatile Organic Compounds											
Benzene	<5.6	<720	<710	<740	<1,400	<6.3	<6.800	<600	<720	<5.6	<5.8
Toluene	6.4	23,000	<710	19,000	13,000	15	3,700	7,100	5,200	17	84
Ethylbenzene	<5.6	2,300	<710	1,500	1,700	<6.3	<680	<660	<720	<5.6	<5.8
Xylene	<5.6	13,000	<710	11,000	7,300	13	1,200	1,800	3,400	<5.6	14
Trichloroethene	<5.6	<720	<710	<740	<1,400	100	<680	<660	<720	<5.6	<5.8
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<5.6	<720	<710	<740	<1,400	<6.3	<680	<660	<720	<5.6	6.5
Chloroform	<5.6	<720	<710	<740	<1,400	<6.3	<680	<660	<720	<5.6	<5.8
Dichloroethene	<5.6	<720	<710	<740	<1,400	<6.3	<680	<660	<720	<5.6	<5.8
Tetrachloroethene	<5.6	<720	<710	<740	<1,400	<6.3	<680	<660	<720	<5.6	<5.8
trans-1,2-Dichloroethene	<5.6	<720	<710	<740	<1,400	<6.3	<680	<660	<720	<5.6	<5.8
cis-1,2-Dichloroethene	<5.6	<720	<710	<740	<1,400	21	<680	<660	<720	<5.6	<5.8
1,1-Dichloroethane	<5.6	<720	<710	<740	<1,400	64	<680	<660	<720	<5.6	23
Acetone	<11	16,000	21,000	13,000	27,000	23	1,500	<1,400	5,400	<11	<12
2-Butanone	<11	8,400	10,000	7,600	25,000	<13	1,800	<1,400	5,500	<11	<12
4-methyl-2-pentanone	<11	1,800	6,600	4,300	8,900	<13	<1,400	<1,400	9,100	<11	<12
Total VOCs	6.4	64,500	37,600	56,400	82,900	236	8,200	8,900	28,600	17	127.5

Concentrations expressed as micrograms per kilogram (µg/kg).

NA Not analyzed.

NC Not calculated; insufficient toxicological data.

ND Not detected, detection limit not reported.

SSL Soil Screening Levels, calculated using U.S. EPA website.

WDNR Wisconsin Department of Natural Resources.

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Table 3. Summary of Soil Analytical Data for North Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Boring Number	B-11	B-13	B-14	B-15	GM-1			GM-2		GM-3	
Sample Depth (ft)	6-7.5	3-4.5	6-7.5	6-7.5	0-2	2-4	8-10	4-6	10-12	2-4	4-6
Date	4/17/91	4/18/91	4/18/91	4/18/91	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98
Volatile Organic Compounds											
Benzene	<5.4	<6.1	<5.8	<5.8	<50	<50	<50	<50	<50	<50	<50
Toluene	93	26	9	<5.8	<50	<50	<50	<50	<50	<50	<50
Ethylbenzene	6.9	<6.1	<5.8	<5.8	<50	<50	<50	<50	<50	<50	<50
Xylene	65	<6.1	<5.8	8.6	<100	<100	<100	<100	<100	<100	<100
Trichloroethene	<5.4	<6.1	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	<5.8	<5.8	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<5.4	<6.1	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
Chloroform	<5.4	<6.1	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
Dichloroethene	<5.4	<6.1	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<5.4	<6.1	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	<5.4	<6.1	<5.8	<5.8	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<5.4	<6.1	<5.8	<5.8	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<5.4	<6.1	35	<5.8	NA	NA	NA	NA	NA	NA	NA
Acetone	<11	<12	<12	<12	<2,500	<2,500	<2,500	<2,500	<2,500	<2,500	<2,500
2-Butanone	<11	<12	<12	<12	NA	NA	NA	NA	NA	NA	NA
4-methyl-2-pentanone	<11	<12	<12	<12	NA	NA	NA	NA	NA	NA	NA
Total VOCs	164.9	26	44	8.6	0	0	0	0	0	0	0

Concentrations expressed as micrograms per kilogram (µg/kg).

NA Not analyzed.

NC Not calculated; insufficient toxicological data.

ND Not detected, detection limit not reported.

SSL Soil Screening Levels, calculated using U.S. EPA website.

WDNR Wisconsin Department of Natural Resources.

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Table 3. Summary of Soil Analytical Data for North Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Boring Number	GM-3 (continued)	GM-4						
Sample Depth (ft)	4-6	4-6	6-8	WDNR	Ingestion	Inhalation of Dust	Inhalation of Vapors	Groundwater Migration
Date	7/13/98	7/13/98	7/13/98	RCL	SSL	SSL	SSL	SSL
Volatile Organic Compounds								
Benzene	<25	<50	<50	5.5	52,000	374,000,000	2,800	2.3
Toluene	<25	<50	<50	1,500	204,000,000	417,000,000,000	4,600,000	490
Ethylbenzene	<25	<50	<50	2,900	102,000,000	2,650,000,000	39,000	1,500
Xylene	45	<100	<100	4,100	2,040,000,000	NC	NC	11,000
Trichloroethene	<25	NA	NA	NE	260,000	1,720,000,000	15,000	3.7
Methylene Chloride	<25	<25	<25	NE	382,000	6,210,000,000	45,000	1.6
1,1,1-Trichloroethane	<25	NA	NA	NE	204,000,000	2,290,000,000,000	14,000,000	NE
Chloroform	<25	NA	NA		NC	NC	NC	NE
Dichloroethene	<25	NA	NA		NC	NC	NC	NC
Tetrachloroethene	<25	NA	NA	NE	55,000	5,030,000,000	35,000	4.1
trans-1,2-Dichloroethene	<25	<25	<25	NE	55,000	5,030,000,000	35,000	4.1
cis-1,2-Dichloroethene	<25	<25	<25	NE	10,200,000	NC	NC	27
1,1-Dichloroethane	<25	NA	NA	NE	102,000,000	521,000,000,000	3,600,000	330
Acetone	<120	<2,500	<2,500	NE	102,000,000	NC	NC	520
2-Butanone	<36	NA	NA	NE	613,000,000	1,040,000,000,000	28,000,000	240
4-methyl-2-pentanone	<25	NA	NA	NE	613,000,000	1,040,000,000,000	28,000,000	240
Total VOCs	45	0	0		NC	NC	NC	NC

Concentrations expressed as micrograms per kilogram (µg/kg).

NA Not analyzed.

NC Not calculated; insufficient toxicological data.

ND Not detected, detection limit not reported.

SSL Soil Screening Levels, calculated using U.S. EPA website.

WDNR Wisconsin Department of Natural Resources.

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name		Calculated	Calculated	Calculated	Calculated	GM-5	
Depth	WDNR	Ingestion	Inhalation of Dust	Inhalation of	Groundwater	2-4'	4-6'
Sample Date	RCL	SSL	SSL	Vapors SSL	Migration SSL	7/13/98	7/13/98
1,1,1-Trichloroethane	NE	204,000,000	2,290,000,000,000	14,000,000	280	NA	NA
1,1-Dichloroethane	NE	102,000,000	521,000,000,000	3,600,000	330	NA	NA
1,1-Dichloroethene	NE	4,770	58,400,000	230	5	NA	NA
1,2,4-Trimethylbenzene	NE	NC	NC	NC	NC	NA	NA
1,2-Dichlorobenzene	NE	92,000,000	209,000,000,000	8,300,000	910	NA	NA
1,2-Dichloroethane	4.9	31,400	112,000,000	1,300	1.6	NA	NA
1,2-Dichloroethene (total)	NE	NC	NC	NC	NC	NA	NA
1,3,5-Trimethylbenzene	NE	NC	NC	NC	NC	NA	NA
1,4-Dichlorobenzene	NE	119,000	830,000,000,000	29,000,000	230	NA	NA
1-Methylnaphthalene	NE	NC	NC	NC	NC	NA	NA
2,4-Dimethylphenol	NE	NC	NC	NC	NC	NA	NA
2-Butanone	NE	NC	NC	NC	NC	NA	NA
2-Butoxy ethanol	NE	511,000,000	13,600,000,000,000	NC	14,000	NA	NA
2-Chlorotoluene	NE	20,400,000	NC	NC	2,700	NA	NA
2-Methylnaphthalene	NE	NC	NC	NC	NC	NA	NA
4-Chlorotoluene	NE	NC	NC	NC	NC	NA	NA
4-Methyl-2-pentanone	NE	NC	NC	NC	NC	NA	NA
4-Methylphenol	NE	NC	NC	NC	NC	NA	NA
Acetone	NE	102,000,000	NC	NC	520	<2,500	<2,500
Benzene	5.5	52,000	372,000,000	2,800	2.8	<50	<50
Benzo(a)anthracene	NE	NC	NC	NC	NC	NA	NA
bis(2-Ethylhexyl)phthalate	NE	NC	NC	NC	NC	NA	NA
Bromomethane	NE	1,430,000	5,210,000,000	28,000	3.8	NA	NA
Chloroform	NE	NC	NC	NC	NC	NA	NA
Chrysene	NE	NC	NC	NC	NC	NA	NA
cis-1,2-Dichloroethene	NE	10,200,000	NC	NC	27	<25	<25
Dichloroethene	NE	NC	NC	NC	NC	NA	NA
Ethylbenzene	2900	102,000,000	2,650,000,000	39,000	1,500	<50	<50
Ethylene glycol	NE	2,040,000,000	NC	NC	1,900	NA	NA
Fluoranthene	NE	NC	NC	NC	NC	NA	NA
Hexane	NE	61,300,000	209,000,000,000	580,000	19,000	NA	NA
Isopropylbenzene	NE	NC	NC	NC	NC	NA	NA
Methanol	NE	511,000,000	NC	NC	2,700	NA	NA
Methylcyclohexane	NE	NC	NC	14,000,000	NC	NA	NA
Methylene chloride	NE	382,000	6,210,000,000	45,000	1.6	<25	<25

Footnotes on Page 3.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name		Calculated	Calculated	Calculated	Calculated	GM-5	
Depth	WDNR	Ingestion	Inhalation of Dust	Inhalation of	Groundwater	2-4'	4-6'
Sample Date	RCL	SSL	SSL	Vapors SSL	Migration SSL	7/13/98	7/13/98
Naphthalene	NE	20,400,000	3,130,000,000	470,000	340	NA	NA
n-Butanol	NE	120,000,000	NC	NC	2,000	NA	NA
n-Butylbenzene	NE	NC	NC	NC	NC	NA	NA
n-Propyl acetate	NE	NC	NC	NC	NC	NA	NA
n-Propylbenzene	NE	NC	NC	NC	NC	NA	NA
Phenanthrene	NE	NC	NC	NC	NC	NA	NA
p-Isopropyltoluene	NE	NC	NC	NC	NC	NA	NA
Pyrene	NE	NC	NC	NC	NC	NA	NA
sec-Butylbenzene	NE	NC	NC	NC	NC	NA	NA
Styrene	NE	204,000,000	1,040,000,000,000	3,800,000	190	NA	NA
tert-Butylbenzene	NE	NC	NC	NC	NC	NA	NA
Tetrachloroethene	NE	55,000	5,030,000,000	35,000	4.1	NA	NA
Toluene	1,500	204,000,000	417,000,000,000	4,600,000	490	<50	<50
trans-1,2-Dichloroethene	NE	20,400,000	NC	NC	98	<25	<25
Trichloroethene	NE	260,000	1,720,000,000	15,000	3.7	NA	NA
Trichlorofluoromethane	NE	307,000,000	730,000,000,000	2,900,000	29,000	NA	NA
Vinyl chloride	NE	NC	NC	NC	NC	NA	NA
Xylene, -o	NE	NC	NC	NC	NC	<50	<50
Xylenes, -m, -p	NE	NC	NC	NC	NC	<50	<50
Xylenes (total)	4,100	NC	NC	NC	NC	NA	NA
Arsenic	1,600	NC	NC	NC	NC	NA	NA
Barium	NE	71,500,000	NC	NC	NC	NA	NA
TCLP-Barium, ICP	NE	NC	NC	NC	NC	NA	NA
Cadmium	510,000	NC	NC	NC	NC	NA	NA
Chromium	200,000	NC	NC	NC	NC	NA	NA
Lead	500,000	NC	NC	NC	NC	NA	NA
Mercury, CVAA	NE	NC	NC	NC	NC	NA	NA
Silver	NE	5,110,000	NC	NC	NC	NA	NA
Diesel Range Organics	100,000	NC	NC	NC	NC	NA	NA

Footnotes on Page 3.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name		Calculated	Calculated	Calculated	Calculated	GM-5	
Depth	WDNR	Ingestion	Inhalation of Dust	Inhalation of	Groundwater	2-4'	4-6'
Sample Date	RCL	SSL	SSL	Vapors SSL	Migration SSL	7/13/98	7/13/98
Gasoline Range Organics	NE	NC	NC	NC	NC	NA	NA
TPH-Kerosene	NE	NC	NC	NC	NC	NA	NA
Solids, percent	NE	NC	NC	NC	NC	NA	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-6				GM-7			GM-8		
Depth	2-4'	2-4'	4-6'	6-8'	4-6'	4-6'	6-8'	2-4'	8-10'	8-10'
Sample Date	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/14/98	7/14/98	7/14/98
1,1,1-Trichloroethane	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,1-Dichloroethane	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,1-Dichloroethene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,2,4-Trimethylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,2-Dichlorobenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,2-Dichloroethane	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1,4-Dichlorobenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
1-Methylnaphthalene	NA	<59	NA	NA	NA	<59	NA	NA	NA	<58
2,4-Dimethylphenol	NA	<40	NA	NA	NA	<39	NA	NA	NA	<39
2-Butanone	NA	<36	NA	NA	NA	<36	NA	NA	NA	<36
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
2-Methylnaphthalene	NA	<71	NA	NA	NA	<71	NA	NA	NA	<70
4-Chlorotoluene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
4-Methyl-2-pentanone	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
4-Methylphenol	NA	<35	NA	NA	NA	<35	NA	NA	NA	<34
Acetone	<2,500	130	<2,500	<2,500	<2,500	120 Q	<2,500	<2,500	2,873	110 Q
Benzene	<50	<25	<50	<50	<50	<25	<50	<50	<50	<25
Benzo(a)anthracene	NA	<23	NA	NA	NA	<22	NA	NA	NA	<22
bis(2-Ethylhexyl)phthalate	NA	<47	NA	NA	NA	<47	NA	NA	NA	<47
Bromomethane	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Chloroform	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Chrysene	NA	<17	NA	NA	NA	<17	NA	NA	NA	<17
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	1,502.50	1,100
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	263	170	216.4	163.5	<50	<25	<50	<50	<50	<25
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	<34	NA	NA	NA	<34	NA	NA	NA	<34
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-6				GM-7			GM-8		
Depth	2-4'	2-4'	4-6'	6-8'	4-6'	4-6'	6-8'	2-4'	8-10'	8-10'
Sample Date	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/13/98	7/14/98	7/14/98	7/14/98
Naphthalene	NA	<79	NA	NA	NA	<79	NA	NA	NA	<78
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
n-Propyl acetate	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
n-Propylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Phenanthrene	NA	<27	NA	NA	NA	<27	NA	NA	NA	<27
p-Isopropyltoluene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Pyrene	NA	<26	NA	NA	NA	<26	NA	NA	NA	<26
sec-Butylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Styrene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
tert-Butylbenzene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Tetrachloroethene	NA	<25	NA	NA	NA	<25	NA	NA	NA	<25
Toluene	<50	<25	<50	<50	<50	<25	<50	<50	<50	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	NA	<25	NA	NA	NA	<25	NA	NA	NA	2,700
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	<25	NA	NA	NA	<25	NA	NA	NA	170
Xylene, -o	<50	31 Q	<50	<50	<50	<25	<50	<50	<50	<25
Xylenes, -m, -p	<50	<25	<50	<50	<50	<25	<50	<50	<50	<25
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	3,500	NA	NA	NA	4,300	NA	NA	NA	2,900
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	110 Q	NA	NA	NA	240	NA	NA	NA	130
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	7,200	NA	NA	NA	11,000	NA	NA	NA	5,400
Mercury, CVAA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	NA	14,000	NA	NA	NA	<4,700	NA	NA	NA	4,700

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-6				GM-7			GM-8		
Depth	**2-4'**	**2-4'**	**4-6'**	**6-8'**	**4-6'**	**4-6'**	**6-8'**	**2-4'**	**8-10'**	**8-10'**
Sample Date	**7/13/98**	**7/13/98**	**7/13/98**	**7/13/98**	**7/13/98**	**7/13/98**	**7/13/98**	**7/14/98**	**7/14/98**	**7/14/98**
Gasoline Range Organics	NA	<3,000	NA	NA	NA	<3,000	NA	NA	NA	3,100
TPH-Kerosene	NA	<10,000	NA	NA	NA	<4,700	NA	NA	NA	<11,000
Solids, percent	NA	84.3	NA	NA	NA	84.6	NA	NA	NA	85.5

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-9		GM-10			GM-11			GM-12		
Depth	0-2'	6-8'	4-6'	4-6'	8-10'	2-4'	2-4'	8-10'	0-2'	0-2'	6-8'
Sample Date	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98
1,1,1-Trichloroethane	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1,1-Dichloroethane	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1,1-Dichloroethene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1,2,4-Trimethylbenzene	NA	NA	NA	<25	NA	NA	49 Q	NA	NA	13,000 D	NA
1,2-Dichlorobenzene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1,2-Dichloroethane	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	<25	NA	NA	<25	NA	NA	4,900	NA
1,4-Dichlorobenzene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
1-Methylnaphthalene	NA	NA	NA	<61	NA	NA	100 Q	NA	NA	120 Q	NA
2,4-Dimethylphenol	NA	NA	NA	<40	NA	NA	<37	NA	NA	730	NA
2-Butanone	NA	NA	NA	<36	NA	NA	610	NA	NA	<36	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	<25	NA	NA	520	NA	NA	13,000 D	NA
2-Methylnaphthalene	NA	NA	NA	<73	NA	NA	89 Q	NA	NA	200 Q	NA
4-Chlorotoluene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
4-Methyl-2-pentanone	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
4-Methylphenol	NA	NA	NA	<36	NA	NA	84 Q	NA	NA	<34	NA
Acetone	<2,500	<2,500	<2,500	<90	<2,500	12,582	4,400 B	<2,500	<2,500	130 Q	<2,500
Benzene	<50	<50	<50	<25	<50	<50	<25	<250	<500	<25	241.3
Benzo(a)anthracene	NA	NA	NA	<23	NA	NA	<21	NA	NA	36 Q	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	<48	NA	NA	5500	NA	NA	990,000 D	NA
Bromomethane	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
Chloroform	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
Chrysene	NA	NA	NA	<18	NA	NA	<16	NA	NA	54	NA
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	136.7	<25	<25	<25
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<50	<50	50.4	49 Q	144.7	379.8	390	387	6,608.50	1,800	197.5
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	<35	NA	NA	<33	NA	NA	81 Q	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	<25	NA	NA	<25	NA	NA	110	NA
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<25	<25	<25	<25	<25	<25	<25	<125.0	<25	<25	<25

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-9		GM-10			GM-11			GM-12		
Depth	0-2'	6-8'	4-6'	4-6'	8-10'	2-4'	2-4'	8-10'	0-2'	0-2'	6-8'
Sample Date	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98	7/14/98
Naphthalene	NA	NA	NA	<81	NA	NA	56 Q	NA	NA	920	NA
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	<25	NA	NA	250	NA	NA	1200	NA
n-Propyl acetate	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
n-Propylbenzene	NA	NA	NA	<25	NA	NA	60 Q	NA	NA	310	NA
Phenanthrene	NA	NA	NA	<28	NA	NA	59 Q	NA	NA	54 Q	NA
p-Isopropyltoluene	NA	NA	NA	<25	NA	NA	31 Q	NA	NA	430	NA
Pyrene	NA	NA	NA	<27	NA	NA	<25	NA	NA	80	NA
sec-Butylbenzene	NA	NA	NA	<25	NA	NA	89	NA	NA	<25	NA
Styrene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
tert-Butylbenzene	NA	NA	NA	<25	NA	NA	86	NA	NA	<25	NA
Tetrachloroethene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
Toluene	<50	<50	<50	<25	<50	132	110	<250	3,754	830	<50
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<125.0	<25	<25	<25
Trichloroethene	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	<25	NA	NA	<25	NA	NA	<25	NA
Xylene, -o	<50	<50	<50	<25	<50	374.2	350	283	27,950	8,400	<50
Xylenes, -m, -p	<50	<50	<50	<25	<50	166.4	460	<250	59,335	19,000	175.9
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	3,700	NA	NA	2,700	NA	NA	1,600	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	220	NA	NA	200	NA	NA	240	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	8,100	NA	NA	7,100	NA	NA	9,200	NA
Mercury, CVAA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	NA	NA	NA	8,800	NA	NA	120,000	NA	NA	1,600,000	NA

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-9		GM-10			GM-11			GM-12		
Depth	**0-2'**	**6-8'**	**4-6'**	**4-6'**	**8-10'**	**2-4'**	**2-4'**	**8-10'**	**0-2'**	**0-2'**	**6-8'**
Sample Date	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**	**7/14/98**
Gasoline Range Organics	NA	NA	NA	<3,000	NA	NA	24,000	NA	NA	240,000	NA
TPH-Kerosene	NA	NA	NA	<4,400	NA	NA	25,000	NA	NA	750,000	NA
Solids, percent	NA	NA	NA	82.6	NA	NA	88.9	NA	NA	87.2	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-13		GP-1	GP-2		GP-3	GP-4	GP-5	GP-6	GP-7	GP-8
Depth	0-2'	6-8'	2-4'	2-4'	8-10'	2-4'	2-4'	8-10'	8-10'	8-10'	8-10'
Sample Date	7/14/98	7/14/98	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00
1,1,1-Trichloroethane	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,1-Dichloroethane	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,1-Dichloroethene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,2,4-Trimethylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,2-Dichlorobenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,2-Dichloroethane	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1,4-Dichlorobenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	<2,500	<2,500	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<50	<50	<30	<32	<28	<28	<30	<30	<31	<30	<29
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	<119	<130	<111	<114	<120	<120	<122	<121	<117
Chloroform	NA	NA	35 B	42 B	35 B	34 B	33 B	41 B	33 B	37 B	32 B
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	29.7	74.5	<30	<32	<28	<28	<30	892	120	<30	<29
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	189.5	<50	<30	<32	<28	<28	<30	<30	<31	<30	<29
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<25	<25	119 L	71 L	155 L	114 L	73 L	77 L	88 L	91 L	100 L

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-13		GP-1	GP-2		GP-3	GP-4	GP-5	GP-6	GP-7	GP-8
Depth	0-2'	6-8'	2-4'	2-4'	8-10'	2-4'	2-4'	8-10'	8-10'	8-10'	8-10'
Sample Date	7/14/98	7/14/98	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00
Naphthalene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
n-Propyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Styrene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Toluene	<50	<50	<30	<32	<28	<28	<30	<30	<31	<30	<29
trans-1,2-Dichloroethene	<25	<25	<30	<32	<28	<28	<30	41	<31	<30	<29
Trichloroethene	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Trichlorofluoromethane	NA	NA	<30	<32	<28	<28	<30	<30	<31	<30	<29
Vinyl chloride	NA	NA	<30	<32	<28	<28	<30	60	220	<30	<29
Xylene, -o	52	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, -m, -p	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	NA	<42	<45	<39	<40	<42	<42	<43	<42	<41
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, CVAA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GM-13		GP-1	GP-2		GP-3	GP-4	GP-5	GP-6	GP-7	GP-8
Depth	**0-2'**	**6-8'**	**2-4'**	**2-4'**	**8-10'**	**2-4'**	**2-4'**	**8-10'**	**8-10'**	**8-10'**	**8-10'**
Sample Date	**7/14/98**	**7/14/98**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**
Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solids, percent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-9		GP-10		GP-11		GP-12	GP-13	GP-14	
Depth	2-4'	8-10'	0-2'	8-10'	0-2'	6-8'	6-8'	8-10'	2-4'	8-10'
Sample Date	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/23/00	6/23/00
1,1,1-Trichloroethane	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
1,1-Dichloroethane	100	<30	<29	<25	NA	<33	<28	<56	<29	<30
1,1-Dichloroethene	<30	<30	<29	<25	NA	277	<28	<56	<29	<30
1,2,4-Trimethylbenzene	<30	<30	971	<25	NA	543	<28	<56	<29	<30
1,2-Dichlorobenzene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
1,2-Dichloroethane	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	<30	<30	705	<25	NA	157	<28	<56	<29	<30
1,4-Dichlorobenzene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	<119	<118	<116	<100	NA	<130	<113	<220	<117	<118
Chloroform	32 B	31 B	39 B	30 B	NA	39 B	29 B	71 B	40 B	43 B
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	<30	237	<29	<25	NA	134,000	68	8,940	<29	<30
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	69	<30	<29	<25	NA	35	<28	<56	<29	<30
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	<30	<30	<29	<25	NA	42	<28	<56	<29	<30
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	85 L	<59	68 L	66 L	NA	76 L	62 L	320 L	110 L	110 L

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-9		GP-10		GP-11		GP-12	GP-13	GP-14	
Depth	2-4'	8-10'	0-2'	8-10'	0-2'	6-8'	6-8'	8-10'	2-4'	8-10'
Sample Date	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/5/00	6/23/00	6/23/00
Naphthalene	<30	<30	68	<25	NA	<33	<28	<56	<29	<30
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
n-Propyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<30	<30	<29	<25	NA	80	<28	<56	<29	<30
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	<30	<30	231	<25	NA	<33	<28	<56	<29	<30
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<30	<30	173	<25	NA	<33	<28	<56	<29	<30
Styrene	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<30	<30	<29	<25	NA	82	64	<56	<29	<30
Toluene	239	<30	<29	<25	NA	87	<28	<56	<29	<30
trans-1,2-Dichloroethene	<30	<30	<29	<25	NA	1,570	<28	121	<29	<30
Trichloroethene	<30	<30	<29	<25	NA	65,100	37	3,420	<29	<30
Trichlorofluoromethane	<30	<30	<29	<25	NA	<33	<28	<56	<29	<30
Vinyl chloride	68	95	<29	<25	NA	712	<28	72	<29	<30
Xylene, -o	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, -m, -p	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	322	<41	68	<35	NA	193	<39	<78	<41	<41
Arsenic	NA	NA	<9,200 M	NA	<9,100 M	NA	NA	NA	<9,300 M	NA
Barium	NA	NA	55,000	NA	71,000	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	22,000	NA	2,500	NA	NA	NA	26,000	NA
Lead	NA	NA	<12,000 M	NA	<11,000 M	NA	NA	NA	27000	NA
Mercury, CVAA	NA	NA	<23	NA	<23	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	NA	NA	1,730,000	NA	537,000 H	NA	NA	NA	67,000	NA

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-9		GP-10		GP-11		GP-12	GP-13	GP-14	
Depth	**2-4'**	**8-10'**	**0-2'**	**8-10'**	**0-2'**	**6-8'**	**6-8'**	**8-10'**	**2-4'**	**8-10'**
Sample Date	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/5/00**	**6/23/00**	**6/23/00**
Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solids, percent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-15		GP-16		GP-17		GP-18		GP-19	
Depth	0-2'	8-10'	0-2'	8-10'	2-4'	8-10'	2-4'	8-10'	2-4'	8-10'
Sample Date	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	06/23/00	06/23/00
1,1,1-Trichloroethane	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1,1-Dichloroethane	NA	<30	NA	1,320	<30	34	NA	<30	NA	<30
1,1-Dichloroethene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1,2,4-Trimethylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1,2-Dichlorobenzene	NA	<30	NA	<1,200	37	<29	NA	<30	NA	<30
1,2-Dichloroethane	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1,4-Dichlorobenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	<30	NA	<1,200	3,260	<29	NA	240	NA	<30
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	<119	NA	<4,800	<121	<118	NA	<120	NA	<120
Chloroform	NA	38 B	NA	1,800 B	40 B	41 B	NA	44 B	NA	37 B
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	<30	NA	108,000	<30	931	NA	82	NA	<30
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	120 L	NA	12,000 L	87 L	110 L	NA	312 L	NA	132 L

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-15		GP-16		GP-17		GP-18		GP-19	
Depth	0-2'	8-10'	0-2'	8-10'	2-4'	8-10'	2-4'	8-10'	2-4'	8-10'
Sample Date	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	6/23/00	06/23/00	06/23/00
Naphthalene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
n-Propyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Styrene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	<30	NA	2,760	<30	<29	NA	<30	NA	<30
Toluene	NA	<30	NA	2,400	<30	<29	NA	<30	NA	<30
trans-1,2-Dichloroethene	NA	<30	NA	3,360	<30	66	NA	<30	NA	<30
Trichloroethene	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Trichlorofluoromethane	NA	<30	NA	<1,200	<30	<29	NA	<30	NA	<30
Vinyl chloride	NA	<30	NA	10,300	<30	530	NA	110	NA	<30
Xylene, -o	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, -m, -p	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	<42	NA	<1,680	110	<41	NA	<42	NA	<42
Arsenic	9,900	NA	<9,800 M	NA	<9,700 M	NA	<9,400 M	NA	<9,400 M	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	23,000	NA	22,000	NA	21,000	NA	22,000	NA	20,000	NA
Lead	<12,000 M	NA	<12,000 M	NA	<12,000 M	NA	<12,000 M	NA	<12,000 M	NA
Mercury, CVAA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	9,900	NA	528,000	NA	7,100	NA	17,000	NA	<5,900	NA

Footnotes on Page 18.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-15		GP-16		GP-17		GP-18		GP-19	
Depth	**0-2'**	**8-10'**	**0-2'**	**8-10'**	**2-4'**	**8-10'**	**2-4'**	**8-10'**	**2-4'**	**8-10'**
Sample Date	**6/23/00**	**6/23/00**	**6/23/00**	**6/23/00**	**6/23/00**	**6/23/00**	**6/23/00**	**6/23/00**	**06/23/00**	**06/23/00**
Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solids, percent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-20	GP-21		GP-22		GP-24	GP-25		GP-26	
Depth	6-8'	6-8'	8-10'	2-4'	8-10'	8-10'	0-2'	8-10'	0-2'	8-10'
Sample Date	06/23/00	06/23/00	06/23/00	06/23/00	06/23/00	06/24/00	06/24/00	06/24/00	06/24/00	06/24/00
1,1,1-Trichloroethane	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1,1-Dichloroethane	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1,1-Dichloroethene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1,2,4-Trimethylbenzene	<29	<29	<27	<31	<27	<30	4840	<30	10,100	33
1,2-Dichlorobenzene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1,2-Dichloroethane	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1,2-Dichloroethene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	<29	<29	<27	<31	<27	<30	3260	<30	3,220	<31
1,4-Dichlorobenzene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	<116	<116	<110	<124	<110	<119	<242	<121	<2,390	<124
Chloroform	38 B	42 B	40 B	47 B	38 B	39 B	96 B	43 B	931 B	46 B
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	186	<29	<27	<31	<27	<30	<60	<30	8,710	420
Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<29	<29	<27	<31	<27	<30	145	<30	14,300	<31
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	<29	<29	<27	<31	<27	<30	<60	<30	1,060	<31
Methanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	162 L	100 L	100 L	110 L	110 L	95 L	605 L	930 L	5,970 L	297 L

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-20	GP-21		GP-22		GP-24	GP-25		GP-26	
Depth	6-8'	6-8'	8-10'	2-4'	8-10'	8-10'	0-2'	8-10'	0-2'	8-10'
Sample Date	06/23/00	06/23/00	06/23/00	06/23/00	06/23/00	06/24/00	06/24/00	06/24/00	06/24/00	06/24/00
Naphthalene	<29	<29	<27	<31	<27	346	1,330	<30	5,610	<31
n-Butanol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
n-Propyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	<29	<29	<27	<31	<27	<30	157	<30	2,390	<31
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	<29	<29	<27	<31	<27	<30	80	<30	<597	<31
Styrene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Toluene	<29	<29	<27	<31	<27	<30	<60	<30	85,900	<31
trans-1,2-Dichloroethene	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Trichloroethene	29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Trichlorofluoromethane	<29	<29	<27	<31	<27	<30	<60	<30	<597	<31
Vinyl chloride	<29	<29	<27	<31	<27	<30	<60	<30	2,030	148
Xylene, -o	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, -m, -p	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	<41	<41	<38	<43	<38	<42	1,450	<42	66,800	<43
Arsenic	NA	NA	NA	<15,000 M	NA	NA	<9,700 M	NA	11,000	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP-Barium, ICP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	14,000	NA	NA	22,000	NA	25,000	NA
Lead	NA	NA	NA	<19,000 M	NA	NA	<12,000 M	NA	12,000	NA
Mercury, CVAA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	NA	NA	NA	11,000	NA	NA	2,540,000	NA	525,000	NA

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Table 4. Summary of Soil Analytical Data from Southwest Portion of South Lot, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Name	GP-20	GP-21		GP-22		GP-24	GP-25		GP-26	
Depth	6-8'	6-8'	8-10'	2-4'	8-10'	8-10'	0-2'	8-10'	0-2'	8-10'
Sample Date	06/23/00	06/23/00	06/23/00	06/23/00	06/23/00	06/24/00	06/24/00	06/24/00	06/24/00	06/24/00
Gasoline Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solids, percent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Results are in micrograms per kilogram (µg/kg).

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
B	Analyte detected in blank.
H	Late eluting hydrocarbons present.
J	Estimated result.
L	Common laboratory contaminant.
M	Matrix interference.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
SSL	Soil Screening Levels, calculated using USEPA website.
WDNR	Wisconsin Department of Natural Resources.

ARCADIS

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	Protocol II			Inhalation of	Inhalation of	Groundwater	GP-101	GP-102	
Depth (feet)	Acceptance	WDNR	Ingestion	Dust	Vapors	Migration	4-8'	0-4'	4-8'
Sample Date	Limits	RCL	SSL	SSL	SSL	SSL	05/13/02	05/13/02	05/13/02
DRO (mg/kg)									
Diesel Range Organics	NE	100	NE	NE	NE	NE	1,490	652	1,900
VOCs (µg/kg)									
1,1,1-Trichloroethane	NE	NE	204,000,000	2,290,000,000,000	14,000,000	280	3,300 J	<820	17,000
1,1-Dichloroethane	NE	NE	102,000,000	521,000,000,000	3,600,000	330	4,200 J	160 J	4,600 J
1,1-Dichloroethene	NE	NE	4,770	58,400,000	230	5	<21,000	<820	<16,000
1,2,4-Trimethylbenzene	NE	NE	NC	NC	NC	NC	90,000	7,200	74,000
1,2-Dichlorobenzene	NE	NE	92,000,000	209,000,000,000	8,300,000	910	<21,000	<820	<16,000
1,2-Dichloroethane	NE	4.9	31,400	112,000,000	1,300	1.6	<21,000	<820	<16,000
1,3,5-Trimethylbenzene	NE	NE	NC	NC	NC	NC	36,000	2,400	27,000
1,4-Dichlorobenzene	NE	NE	119,000	830,000,000,000	29,000,000	230	<21,000	<820	<16,000
2-Butanone	NE	NE	NC	NC	NC	NC	26,000 J	<3,300	<62,000
2-Butoxy ethanol	NE	NE	511,000,000	13,600,000,000,000	5,700,000,000	14,000	<6.3	<5.6	<6
2-Chlorotoluene	NE	NE	20,400,000	NC	NC	2,700	<21,000	<820	<16,000
4-Chlorotoluene	NE	NE	NC	NC	NC	NC	<21,000	<820	<16,000
4-Methyl-2-pentanone	NE	NE	NC	NC	NC	NC	<85,000	<3,300	<62,000
Acetone	NE	NE	102,000,000	NC	NC	520	<85,000	<3,300	<62,000
Benzene	NE	5.5	52,000	372,000,000	2,800	2.8	<21,000	<820	<16,000
Bromobenzene	NE	NE	NC	NC	NC	NC	<21,000	<820	<16,000
Butyl alcohol	NE	NE	120,000,000	NC	NC	2,000	<6.3	<5.6	<6
Chloroform	NE	NE	NC	NC	NC	NC	<21,000	<820	<16,000
cis-1,2-Dichloroethene	NE	NE	10,200,000	NC	NC	27	6,500 J	<410	32,000
Cyclohexane	NE	NE	NC	NC	NC	NC	<42,000	<1,600	6700 J
Ethylbenzene	NE	2900	102,000,000	2,650,000,000	39,000	1,500	**79,000**	3,400	**63,000**
Ethylene glycol	NE	NE	2,040,000,000	NC	NC	1,900	<32	<28	<30
Hexane	NE	NE	61,300,000	209,000,000,000	580,000	19,000	5,300 J	<820	11,000 J
Isopropylbenzene	NE	NE	NC	NC	NC	NC	8,100 J	360 J	5,400 J

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	Protocol II			Inhalation of	Inhalation of	Groundwater	GP-101	GP-102	
Depth (feet)	Acceptance	WDNR	Ingestion	Dust	Vapors	Migration	4-8'	0-4'	4-8'
Sample Date	Limits	RCL	SSL	SSL	SSL	SSL	05/13/02	05/13/02	05/13/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	NE	NE	NC	NC	14,000,000	NC	18,000 J	260 J	32,000
Methylene chloride	NE	NE	382,000	6,210,000,000	45,000	1.6	<21,000	<820	<16,000
Naphthalene	NE	NE	20,400,000	3,130,000,000	470,000	340	10,000 J	1,300	6,700 J
n-Butylbenzene	NE	NE	NC	NC	NC	NC	12,000 J	<820	<16,000
n-Propanol	NE	NE	NC	NC	NC	NC	70	4.5 J	77
n-Propylbenzene	NE	NE	NC	NC	NC	NC	14,000 J	990	12,000 J
p-Isopropyltoluene	NE	NE	NC	NC	NC	NC	<21,000	360 J	<16,000
sec-Butylbenzene	NE	NE	NC	NC	NC	NC	3,500 J	480 J	3,800 J
Styrene	NE	NE	204,000,000	1,040,000,000,000	3,800,000	190	<21,000	<820	<16,000
Tetrachloroethene	NE	NE	55,000	5,030,000,000	35,000	4.1	<21,000	370 J	<16,000
Tetrahydrofuran	NE	NE	NC	NC	NC	NC	<42,000	<1,600	<31000
Toluene	NE	1500	204,000,000	417,000,000,000	4,600,000	490	460,000	3,200	390,000
trans-1,2-Dichloroethene	NE	NE	20,400,000	NC	NC	98	<11,000	<410	<7800
Trichloroethene	NE	NE	260,000	1,720,000,000	15,000	3.7	<21,000	<820	<16,000
Trichlorofluoromethane	NE	NE	307,000,000	730,000,000,000	2,900,000	29,000	<21,000	<820	<16,000
Vinyl chloride	NE	NE	2040	NC	930	0.13	<21,000	<820	<16,000
Xylenes (total)	NE	4100	2,040,000,000	NC	NC	11,000	600,000	19,000	500,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-103	GP-104	GP-105	GP-106		GP-107	GP-108	GP-109	
Depth (feet)	0-4'	0-4'	4-8'	19-21'	4-8'	0-4'	0-4'	4-8'	8-12'
Sample Date	05/13/02	05/13/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
DRO (mg/kg)									
Diesel Range Organics	195 H	2,010	1,330	19	598	161	1,430 H	2,070	273
VOCs (µg/kg)									
1,1,1-Trichloroethane	<3,000	<5,600	53,000	<290	45,000	<320	<2,000	33,000	730 J
1,1-Dichloroethane	550 J	<5,600	<40,000	<290	<30,000	<320	810 J	<30,000	730 J
1,1-Dichloroethene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
1,2,4-Trimethylbenzene	21,000	26,000	170,000	<290	98,000	1,100	7,300	120,000	24,000
1,2-Dichlorobenzene	<3,000	<5,600	<40,000	<290	<30,000	93 J	<2,000	<30,000	<3,800
1,2-Dichloroethane	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
1,3,5-Trimethylbenzene	7,800	9,500	60,000	<290	39,000	450	2,600	39,000	7,500
1,4-Dichlorobenzene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
2-Butanone	<12000	<22,000	<160,000	<1,200	<120,000	<1,300	2,400 J	<120,000	<15,000
2-Butoxy ethanol	<5.9	<5.5	<6	<5.6	<5.9	<6.1	<5.9	18	<5.6
2-Chlorotoluene	<3,000	20,000	49,000	<290	80,000	<320	<2,000	41,000	<3,800
4-Chlorotoluene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
4-Methyl-2-pentanone	<12000	<22,000	12,000 J	<1,200	11,000 J	<1,300	5,300 J	8,800 J	4,300 J
Acetone	<12000	<22,000	<160,000	170 J B	<120,000	<1,300	12,000 B	<120,000	5,000 J B
Benzene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
Bromobenzene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
Butyl alcohol	<5.9	<5.5	<6	<5.6	21	<6.1	<5.9	35	<5.6
Chloroform	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
cis-1,2-Dichloroethene	1,200 J	<2,800	38,000	<150	36,000	<160	4,900	8,800 J	1,900
Cyclohexane	1,000 J	3,200 J	15,000 J	<580	5,900 J	58 J	<4,000	5,600 J	<7,600
Ethylbenzene	19,000	28,000	**230,000**	40 J	**120,000**	650	9,400	**170,000**	32,000
Ethylene glycol	<29	<27	<30	<28	<29	<31	<30	<29	<28
Hexane	3,400	7,600	26,000 J	<290	13,000 J	360	<2,000	10,000 J	<3,800
Isopropylbenzene	2,000 J	2,200 J	15,000 J	<290	7,800 J	370	380 J	7,500 J	1,200 J

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-103	GP-104	GP-105	GP-106		GP-107	GP-108	GP-109	
Depth (feet)	0-4'	0-4'	4-8'	19-21'	4-8'	0-4'	0-4'	4-8'	8-12'
Sample Date	05/13/02	05/13/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	5,900 J	12,000	55,000 J	<580	21,000 J	340 J	1,100 J	14,000 J	730 J
Methylene chloride	<3,000	<5,600	**72,000**	140 J	**68,000**	<320	7,400	**57,000**	15,000
Naphthalene	1,100 J	2,300 J	14,000 J	<290	8,300 J	2,200	940 J	11,000 J	3,400 J
n-Butylbenzene	<3,000	<5,600	<40,000	<290	13,000 J	980	820 J	<30,000	<3,800
n-Propanol	23	57	120	<5.6	130	<6.1	<5.9	49	47
n-Propylbenzene	2,800 J	4,200 J	33,000 J	<290	20,000 J	720	1,400 J	23,000 J	4,400
p-Isopropyltoluene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
sec-Butylbenzene	930 J	1,400 J	7,500 J	<290	3,500 J	640	200 J	4,300 J	620 J
Styrene	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
Tetrachloroethene	<3,000	2,400 J	**38,000 J**	<290	**36,000**	<320	<2,000	28,000 J	<3,800
Tetrahydrofuran	<6,000	<11,000	<80,000	<580	<60,000	<630	<4,000	<61,000	<7,600
Toluene	41,000	140,000	1,200,000	370	700,000	<320	46,000	840,000	140,000
trans-1,2-Dichloroethene	<1,500	<2,800	<20,000	<150	<15,000	<160	<1,000	<15,000	<1,900
Trichloroethene	<3,000	<5,600	**43,000**	<290	**36,000**	<320	<2,000	**33,000**	3,500 J
Trichlorofluoromethane	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
Vinyl chloride	<3,000	<5,600	<40,000	<290	<30,000	<320	<2,000	<30,000	<3,800
Xylenes (total)	160,000	240,000	1,600,000	230 J	740,000	540	54,000	890,000	180,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-110			GP-111	GP-112		GP-113		
Depth (feet)	0-4'	4-8'	8-12'	0-4'	12-14'	4-8'	0-4'	20-21.9'	4-8'
Sample Date	05/14/02	05/14/02	05/14/02	05/15/02	05/15/02	05/15/02	05/15/02	05/16/02	05/15/02
DRO (mg/kg)									
Diesel Range Organics	1,330	6,900	3,270	1,020 H	98 H	2,480	9,250	83 H	617
VOCs (µg/kg)									
1,1,1-Trichloroethane	34,000	54,000	25,000	24 J	<480	28,000 J	<120,000	<280	2,900 J
1,1-Dichloroethane	<8,900	<38,000	<12,000	<320	140 J	3,400 J	<120,000	45 J	2,400 J
1,1-Dichloroethene	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
1,2,4-Trimethylbenzene	55,000	93,000	67,000	660	440 J	160,000	290,000	<280	13,000
1,2-Dichlorobenzene	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
1,2-Dichloroethane	<8,900	<38,000	<12,000	14 J B	<480	<31,000	<120,000	<280	<3,100
1,3,5-Trimethylbenzene	29,000	41,000	27,000	210 J	150 J	55,000	110,000 J	<280	5,000
1,4-Dichlorobenzene	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
2-Butanone	<35,000	<150,000	17,000 J	<1,300	9,900	<120,000	<500,000	<1,100	1,800 J
2-Butoxy ethanol	12	350 E	330 E	<5.1	<5.7	<6.1	<12	<5.7	<5.9
2-Chlorotoluene	14,000	85,000	46,000	130 J	170 J	16,000 J	41,000 J	<280	1,100 J
4-Chlorotoluene	<8,900	<38,000	2,000 J	<320	<480	<31,000	<120,000	<280	<3,100
4-Methyl-2-pentanone	4,600 J	50,000 J	51,000	<1,300	34,000	5,300 J	<500,000	<1,100	1,900 J
Acetone	<35,000	<150,000	42,000 J B	190 J B	23,000 B	56,000 J B	130,000 J B	<1,100	5,800 J B
Benzene	<8,900	<38,000	<12,000	<320	34 J	<31,000	<120,000	2,700	<3,100
Bromobenzene	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
Butyl alcohol	7.9	87	82	<5.1	5.5 J	<6.1	<12	<5.7	<5.9
Chloroform	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
cis-1,2-Dichloroethene	<4,400	<19,000	<5,900	210	1,100	38,000	33,000 J	<140	8,100
Cyclohexane	3,300 J	11,000 J	7,900 J	33 J	<960	3,600 J	15,000 J	<560	1,700 J
Ethylbenzene	**60,000**	**120,000**	**67,000**	580	1,100	**190,000**	**280,000**	27 J	19,000
Ethylene glycol	<26	28	31	<25	<29	<31	<60	<29	<30
Hexane	8,100 J	31,000 J	12,000	250 J	<480	9,100 J	49,000 J	<280	7,700
Isopropylbenzene	4,900 J	7,900 J	6,100 J	24 J	31 J	13,000 J	26,000 J	<280	1,400 J

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-110			GP-111	GP-112		GP-113		
Depth (feet)	0-4'	4-8'	8-12'	0-4'	12-14'	4-8'	0-4'	20-21.9'	4-8'
Sample Date	05/14/02	05/14/02	05/14/02	05/15/02	05/15/02	05/15/02	05/15/02	05/16/02	05/15/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	10,000 J	26,000 J	21,000 J	61 J	<960	20,000 J	54,000 J	<560	5,600 J
Methylene chloride	11,000	**83,000**	14,000	<320	420 J	11,000 J	<120,000	<280	<3,100
Naphthalene	6,800 J	12,000 J	13,000	100 J	72 J	16,000 J	42,000 J	<280	2,600 J
n-Butylbenzene	9,300	11,000 J	11,000 J	78 J	44 J	26,000 J	51,000 J	<280	<3,100
n-Propanol	16	210	180	<5.1	<5.7	190	320	<5.7	<5.9
n-Propylbenzene	13,000	19,000 J	13,000	100 J	80 J	32,000	49,000 J	<280	25,00 J
p-Isopropyltoluene	<8,900	<38,000	5,600 J	<320	23 J	<31,000	<120,000	<280	<3,100
sec-Butylbenzene	2,500 J	4,000 J	3,400 J	16 J	<480	6,300 J	16,000 J	<280	670 J
Styrene	<8,900	<38,000	<12,000	<320	<480	<31,000	17,000 J	<280	<3,100
Tetrachloroethene	27,000	**37,000 J**	19,000	51 J	72 J	16,000 J	<120,000	<280	<3,100
Tetrahydrofuran	<18,000	<75,000	<24,000	<640	300 J	<62,000	<250,000	<560	<6,200
Toluene	310,000	830,000	270,000	8,300	13,000	750,000	3,100,000	280	81,000
trans-1,2-Dichloroethene	<4,400	<19,000	<5,900	<160	<240	<16,000	<62,000	<140	360 J
Trichloroethene	**19,000**	**55,000**	**16,000**	39 J	150 J	7,200 J	<120,000	<280	<3,100
Trichlorofluoromethane	<8,900	<38,000	<12,000	40 J	<480	<31,000	<120,000	<280	<3,100
Vinyl chloride	<8,900	<38,000	<12,000	<320	<480	<31,000	<120,000	<280	<3,100
Xylenes (total)	310,000	620,000	330,000	5,400	6,800	1,200,000	1,800,000	110 J	110,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-114	GP-115	GP-116	GP-117	GP-118		GP-119	GP-120
Depth (feet)	4-8'	4-8'	14-16'	4-8'	22-24'	4-8'	4-8'	8-10'
Sample Date	05/16/02	05/16/02	05/16/02	05/16/02	05/16/02	05/16/02	05/17/02	05/17/02
DRO (mg/kg)								
Diesel Range Organics	1,160	397	110 H	12	NA	NA	NA	NA
VOCs (µg/kg)								
1,1,1-Trichloroethane	36,000	<1,100	<290	<290	<290	3,500	<310	<290
1,1-Dichloroethane	6,000 J	<1,100	<290	<290	<290	1,200 J	<310	<290
1,1-Dichloroethene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
1,2,4-Trimethylbenzene	88,000	34,000	<290	<290	110 J	9,500	1,800	<290
1,2-Dichlorobenzene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
1,2-Dichloroethane	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
1,3,5-Trimethylbenzene	31,000	9,800	<290	<290	150 J	4,000	170 J	<290
1,4-Dichlorobenzene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
2-Butanone	<120,000	<4,600	<1,200	<1,200	<1,200	1,300 J	<1,200	<1,200
2-Butoxy ethanol	<5.9	<6.3	<5.7	<5.9	<5.7	<5.8	<5.9	<5.8
2-Chlorotoluene	<31,000	<1,100	<290	<290	<290	1,900	410	<290
4-Chlorotoluene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
4-Methyl-2-pentanone	8,400 J	<4,600	<1,200	<1,200	<1,200	1,100 J	<1,200	<1,200
Acetone	<120,000	<4,600	350 J	<1,200	510 J	2,900 J	530 J	<1,200
Benzene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
Bromobenzene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
Butyl alcohol	<5.9	<6.3	<5.7	<5.9	<5.7	<5.8	<5.9	<5.8
Chloroform	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
cis-1,2-Dichloroethene	36,000	<570	<150	<150	100 J	2,600	<160	<150
Cyclohexane	6,300 J	<2,300	<580	<590	<580	<3,100	<620	<580
Ethylbenzene	**140,000**	15,000	<290	<290	320	14,000	810	<290
Ethylene glycol	<30	<31	<28	<29	<29	<29	<30	<29
Hexane	17,000 J	470 J	<290	<290	<290	1,500	<310	<290
Isopropylbenzene	8,500 J	1,400	<290	<290	<290	900 J	230 J	<290

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-114	GP-115	GP-116	GP-117	GP-118		GP-119	GP-120
Depth (feet)	4-8'	4-8'	14-16'	4-8'	22-24'	4-8'	4-8'	8-10'
Sample Date	05/16/02	05/16/02	05/16/02	05/16/02	05/16/02	05/16/02	05/17/02	05/17/02
VOCs (µg/kg) (continued)								
Methylcyclohexane	17,000 J	2,100 J	<580	<590	<580	1,900 J	<620	<580
Methylene chloride	<31,000	480 J	99 J	<290	<290	540 J	<310	<290
Naphthalene	7,000 J	1,100	<290	<290	<290	3,000	260 J	<290
n-Butylbenzene	11,000 J	6,700	<290	<290	<290	1,300 J	<310	<290
n-Propanol	44	<6.3	<5.7	<5.9	<5.7	<5.8	<5.9	<5.8
n-Propylbenzene	19,000 J	6,000	<290	<290	<290	1,900	390	<290
p-Isopropyltoluene	4,400 J	1,100	<290	<290	<290	<1,500	58 J	<290
sec-Butylbenzene	3,700 J	1,700	<290	<290	<290	430 J	<310	<290
Styrene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
Tetrachloroethene	26,000 J	<1,100	<290	<290	<290	<1,500	<310	<290
Tetrahydrofuran	<62,000	<2,300	<580	<590	<580	<3,100	<620	<580
Toluene	530,000	240 J	91 J	19 J	1,200	43,000	<310	<290
trans-1,2-Dichloroethene	2,500 J	<570	<150	<150	<140	<770	<160	<150
Trichloroethene	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
Trichlorofluoromethane	<31,000	<1,100	<290	34 J	<290	<1,500	<310	85 J
Vinyl chloride	<31,000	<1,100	<290	<290	<290	<1,500	<310	<290
Xylenes (total)	730,000	63,000	<290	<290	1,500	66,000	3,000	<290

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-121		GP-123	GP-124	GP-125	GP-126	GP-127	GP-129	GP-130
Depth (feet)	0-4'	4-8'	0-4'	0-4'	0-4'	0-4'	0-4'	1-5'	0-4'
Sample Date	05/17/02	05/17/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	06/11/02
DRO (mg/kg)									
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	2,050
VOCs (µg/kg)									
1,1,1-Trichloroethane	<260	<290	<300	110,000	<3,200	11,000 J	<300	<28,000	11,000 J
1,1-Dichloroethane	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
1,1-Dichloroethene	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
1,2,4-Trimethylbenzene	4,700	4,500	69 J	330,000	52,000	390,000	240 J	590,000	110,000
1,2-Dichlorobenzene	<260	<290	85 J	<61,000	<3,200	<31,000	<300	<28,000	<20,000
1,2-Dichloroethane	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
1,3,5-Trimethylbenzene	1,500	1,300	100 J	100,000	20,000	200,000	91 J	200,000	38,000
1,4-Dichlorobenzene	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
2-Butanone	<1,000	<1,200	<1,200	<240,000	<13,000	<120,000	<1,200	<110,000	<80,000
2-Butoxy ethanol	<5	<5.8	<5.9	<6	<6.3	<6.2	<5.8	<5.5	<6
2-Chlorotoluene	<260	<290	110 J	<61,000	24,000	<31,000	<300	<28,000	490,000
4-Chlorotoluene	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	8,100 J
4-Methyl-2-pentanone	<1,000	<1,200	<1,200	<240,000	<13,000	<120,000	<1,200	<110,000	<80,000
Acetone	440 J	510 J	760 J B	120,000 J B	3,600 J B	16,000 J B	960 J B	38,000 J B	<80,000
Benzene	<260	<290	<300	**18,000 J**	<3,200	<31,000	<300	<28,000	<20,000
Bromobenzene	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
Butyl alcohol	<5	<5.8	<5.9	<6	<6.3	<6.2	<5.8	<5.5	<6
Chloroform	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
cis-1,2-Dichloroethene	<130	<150	<150	76,000	<1,600	<16,000	<150	<14,000	11,000
Cyclohexane	<520	<590	160 J	11,000 J	<6,300	4,800 J	<590	<57,000	29,000 J
Ethylbenzene	120 J	910	380	**330,000**	24,000	**150,000**	930	**130,000**	**180,000**
Ethylene glycol	<25	<29	<29	<30	<31	<31	<29	<28	<30
Hexane	<260	<290	420	22,000 J	<3,200	77,000	<300	<28,000	49,000
Isopropylbenzene	400	480	<300	31,000 J	6,400	36,000	67 J	29,000	11,000 J

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-121		GP-123	GP-124	GP-125	GP-126	GP-127	GP-129	GP-130
Depth (feet)	0-4'	4-8'	0-4'	0-4'	0-4'	0-4'	0-4'	1-5'	0-4'
Sample Date	05/17/02	05/17/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	05/22/02	06/11/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	<520	<590	130 J	110,000 J	1,100 J	74,000	110 J	37,000 J	110,000
Methylene chloride	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	5,000 J B
Naphthalene	130 J	<290	<300	<61,000	1,400 J	67,000	<300	470,000	11,000 J
n-Butylbenzene	540	63 J	<300	29,000 J	5,400	58,000	51 J	140,000	17,000 J
n-Propanol	<5	<5.8	<5.9	18	<6.3	17	<5.8	12	64
n-Propylbenzene	1,200	870	<300	62,000	10,000	81,000	89 J	90,000	21,000
p-Isopropyltoluene	110 J	53 J	<300	<61,000	<3,200	14,000 J	<300	24,000 J	4,000 J
sec-Butylbenzene	180 J	27 J	<300	12,000 J	2,000 J	18,000 J	<300	31,000	4,600 J
Styrene	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
Tetrachloroethene	<260	<290	<300	***110,000***	<3,200	<31,000	<300	<28,000	2,300 J
Tetrahydrofuran	<520	<590	<590	<120,000	<6,300	<62,000	<590	<57,000	<40,000
Toluene	96 J	<290	630	2,100,000	37,000	850,000	620	780,000	580,000
trans-1,2-Dichloroethene	<130	<150	<150	<30,000	<1,600	<16,000	<150	<14,000	<10,000
Trichloroethene	<260	<290	<300	**32,000 J**	<3,200	<31,000	<300	<28,000	<20,000
Trichlorofluoromethane	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
Vinyl chloride	<260	<290	<300	<61,000	<3,200	<31,000	<300	<28,000	<20,000
Xylenes (total)	420	7,600	590	3,000,000	270,000	1,500,000	2,500	1,200,000	1,200,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-131	GP-132	GP-133	GP-134	GP-135	GP-136	GP-137	GP-139	GP-140
Depth (feet)	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'
Sample Date	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/12/02	06/12/02
DRO (mg/kg)									
Diesel Range Organics	1,380	1,290	511	2,470	3,510	2,440	965	NA	NA
VOCs (µg/kg)									
1,1,1-Trichloroethane	<3,100	<6,200	860 J	<31,000	9,300 J	<1,600	20,000 J	<320	19,000 J
1,1-Dichloroethane	<3,100	<6,200	920 J	4,800 J	<160,000	<1,600	<32,000	<320	<81,000
1,1-Dichloroethene	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
1,2,4-Trimethylbenzene	67,000	190,000	20,000	87,000	360,000	49,000	80,000	17 J	190,000
1,2-Dichlorobenzene	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
1,2-Dichloroethane	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
1,3,5-Trimethylbenzene	24,000	65,000	7,900	39,000	170,000	20,000	32,000	<320	81,000
1,4-Dichlorobenzene	<3,100	<6,200	<2,600	2,400 J	<160,000	120 J	2,200 J	<320	<81,000
2-Butanone	1,400 J B	4,000 J B	<10,000	<130,000	<640,000	<6,500	<130,000	<1,300	<320,000
2-Butoxy ethanol	<6	<6.1	<6.1	<6.1	<6.2	<6.3	<6.4	<6.2	<6.4
2-Chlorotoluene	<3,100	<6,200	1,700 J	160,000	<160,000	<1,600	940,000	<320	<81,000
4-Chlorotoluene	<3,100	<6,200	<2,600	6,900 J	<160,000	<1,600	13,000 J	<320	<81,000
4-Methyl-2-pentanone	<12,000	7,900 J	<10,000	<130,000	<640,000	<6,500	<130,000	<1,300	<320,000
Acetone	<12,000	<25,000	1,800 J B	37,000 J B	<640,000	490 J B	<130,000	310 J B	<320,000
Benzene	230 J	1,100 J	370 J	<31,000	<160,000	160 J	<32,000	<320	<81,000
Bromobenzene	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Butyl alcohol	<6	<6.1	<6.1	<6.1	<6.2	<6.3	<6.4	<6.2	<6.4
Chloroform	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
cis-1,2-Dichloroethene	3,100	6,700	4,800	19,000	<80,000	<810	2,700 J	<160	<40,000
Cyclohexane	<6,200	<12,000	720 J	94,000	<320,000	340 J	<65,000	<640	9,500 J
Ethylbenzene	34,000	34,000	17,000	**180,000**	**100,000 J**	12,000	**43,000**	39 J	**180,000**
Ethylene glycol	<30	<31	<31	<30	<31	<31	<32	<31	<32
Hexane	2,200 J	2,000 J	1,500 J	58,000	130,000 J	3,200	4,000 J	<320	98,000
Isopropylbenzene	2,800 J	3,300 J	2,300 J	8,500 J	30,000 J	2,200	5,600 J	<320	25,000 J

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-131	GP-132	GP-133	GP-134	GP-135	GP-136	GP-137	GP-139	GP-140
Depth (feet)	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'	0-4'
Sample Date	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/11/02	06/12/02	06/12/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	12,000	4,200 J	9,800	460,000	27,000 J	2,400 J	17,000 J	<640	68,000 J
Methylene chloride	740 J B	1,400 J B	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Naphthalene	3,700	6,400	2,100 J	14,000 J	130,000 J	1,700	6,600 J	<320	19,000 J
n-Butylbenzene	<3,100	9,200	2,700	<31,000	57,000 J	4,600	8,900 J	<320	19,000 J
n-Propanol	<6	14	<6.1	51	260	<6.3	<6.4	<6.2	64
n-Propylbenzene	7,600	26,000	4,000	14,000 J	43,000 J	5,600	12,000 J	<320	28,000 J
p-Isopropyltoluene	<3,100	1,400 J	910 J	5,000 J	9,600 J	1,600	3,000 J	<320	7,100 J
sec-Butylbenzene	<3,100	2,100 J	1,100 J	4,700 J	13,000 J	1,800	3,800 J	<320	9,600 J
Styrene	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Tetrachloroethene	<3,100	<6,200	200 J	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Tetrahydrofuran	<6,200	<12,000	<5,200	<63,000	<320,000	<3,200	<65,000	<640	<160,000
Toluene	26,000	88,000	69,000	650,000	**5,200,000**	6,200	150,000	220 J	1,900,000
trans-1,2-Dichloroethene	<1,600	<3100	<1,300	<16,000	<80,000	<810	<16,000	<160	<40,000
Trichloroethene	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Trichlorofluoromethane	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Vinyl chloride	<3,100	<6,200	<2,600	<31,000	<160,000	<1,600	<32,000	<320	<81,000
Xylenes (total)	120,000	240,000	93,000	1,700,000	1,500,000	66,000	450,000	640	1,800,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-141	GP-142		GP-143		GP-144	GP-145	GP-146	GP-147
Depth (feet)	0-4'	0-4'	20-22'	0-4'	16-18'	0-4'	0-4'	0-4'	0-4'
Sample Date	06/12/02	06/12/02	06/12/02	06/12/02	06/12/02	06/12/02	06/13/02	06/13/02	06/13/02
DRO (mg/kg)									
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)									
1,1,1-Trichloroethane	<310	40,000	56 J	230,000	190 J	<30,000	40,000 J	<760	<3,700
1,1-Dichloroethane	<310	1,400 J	21 J	<50,000	30 J	3500 J	<160,000	<760	<3,700
1,1-Dichloroethene	<310	**580 J**	<290	***12,000 J***	<290	<30,000	<160,000	<760	<3,700
1,2,4-Trimethylbenzene	3,500	45,000	22 J	290,000	130 J	93,000	53,000 J	14,000	<3,700
1,2-Dichlorobenzene	<310	<3,900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
1,2-Dichloroethane	<310	<3,900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
1,3,5-Trimethylbenzene	1,100	15,000	<290	130,000	49 J	42,000	<160,000	1,600	<3,700
1,4-Dichlorobenzene	<310	360 J	<290	<50,000	19 J	2,100 J	<160,000	<760	<3,700
2-Butanone	<1300	1,600 J B	<1,100	<200,000	130 J B	<120,000	61,000 J	330 J	1,200 J
2-Butoxy ethanol	<6.1	<6.1	<5.7	<5.9	<5.8	<6	<6.1	<6	<5.8
2-Chlorotoluene	3,600	9,200	64 J	130,000	180 J	490,000	<160,000	<760	<3,700
4-Chlorotoluene	210 J	<3,900	<290	<50,000	<290	17,000 J	<160,000	<760	<3,700
4-Methyl-2-pentanone	<1300	<16,000	<1,100	<200,000	<1200	<120,000	<640,000	<3,100	<15,000
Acetone	430 J B	1,500 J B	300 J B	<200,000	500 J B	15,000 J B	<640,000	<3,100	<15,000
Benzene	<310	580 J	<290	<50,000	<290	<30,000	<160,000	140 J	<3,700
Bromobenzene	<310	<3,900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
Butyl alcohol	<6.1	<6.1	<5.7	<5.9	<5.8	<6	<6.1	<6	<5.8
Chloroform	<310	<3,900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
cis-1,2-Dichloroethene	<160	3,300	110 J	27,000	280	13,000 J	<80,000	<380	<1,800
Cyclohexane	14 J	14,000	<570	73,000 J	<590	110,000	<320,000	<1500	<7,400
Ethylbenzene	100 J	**52,000**	130 J	**240,000**	330	**220,000**	**140,000 J**	17,000	<3,700
Ethylene glycol	<30	<30	<28	<29	<29	<30	<30	<30	<29
Hexane	<310	3,500 J	<290	33,000 J	<290	82,000	100,000 J	1,700	<3,700
Isopropylbenzene	84 J	4,200	<290	19,000 J	11 J	12,000 J	<160,000	1,500	<3,700

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-141	GP-142		GP-143		GP-144	GP-145	GP-146	GP-147
Depth (feet)	0-4'	0-4'	20-22'	0-4'	16-18'	0-4'	0-4'	0-4'	0-4'
Sample Date	06/12/02	06/12/02	06/12/02	06/12/02	06/12/02	06/12/02	06/13/02	06/13/02	06/13/02
VOCs (µg/kg) (continued)									
Methylcyclohexane	90 J	29,000	29 J	420,000	42 J	500,000	<320,000	2,000	<7,400
Methylene chloride	<310	<3,900	<290	13,000 J B	<290	<30,000	36,000 J B	180 J B	1,000 J B
Naphthalene	30 J	3,500 J	<290	46,000 J	26 J	9,600 J	<160,000	910	<3,700
n-Butylbenzene	630	4,600	<290	<50,000	16 J	11,000 J	<160,000	1,100	<3,700
n-Propanol	<6.1	8.3	<5.7	74	<5.8	<6	540 E	<6	<5.8
n-Propylbenzene	430	8,200	35 J	39,000 J	30 J	16,000 J	<160,000	2,300	<3,700
p-Isopropyltoluene	190 J	1,400 J	<290	15,000 J	12 J	5,900 J	<160,000	520 J	<3,700
sec-Butylbenzene	310	2,000 J	<290	12,000 J	<290	7,600 J	<160,000	550 J	<3,700
Styrene	<310	<3.900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
Tetrachloroethene	<310	310 J	<290	***110,000***	46 J	<30,000	<160,000	<760	<3,700
Tetrahydrofuran	<630	<7,800	<570	<100,000	<590	<61000	<320,000	<1,500	<7,400
Toluene	270 J	130,000	970	1,300,000	2,500	640,000	4,200,000	1,800	320 J
trans-1,2-Dichloroethene	<160	280 J	<140	<25,000	<150	<15,000	<80,000	<380	<1,800
Trichloroethene	<310	<3,900	23 J	7,200 J	49 J	<30,000	13,000 J	<760	<3,700
Trichlorofluoromethane	<310	<3,900	32 J	<50,000	86 J	<30,000	<160,000	<760	<3,700
Vinyl chloride	<310	<3,900	<290	<50,000	<290	<30,000	<160,000	<760	<3,700
Xylenes (total)	950	440,000	730	2,100,000	2,100	3,100,000	2,100,000	30,000	1,000 J

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-148	GP-149	GP-150	GP-151	GP-152		GP-153	GP-154		GP-200
Depth (feet)	0-4'	0-4'	0-4'	0-4'	0-4'	8-12'	0-4'	0-4'	12-14'	4-6'
Sample Date	06/13/02	06/13/02	06/13/02	06/14/02	06/14/02	06/14/02	06/14/02	06/14/02	06/14/02	11/14/07
DRO (mg/kg)										
Diesel Range Organics	NA	NA	NA	3,120	16,000	45	2,240	2,710	30	NA
VOCs (µg/kg)										
1,1,1-Trichloroethane	<3,100	<3,800	<15,000	<8,600	43,000	690 J	<1,600	<31,000	<290	26,000
1,1-Dichloroethane	<3,100	840 J	<15,000	<8,600	<6,300	1,700	540 J	<31,000	<290	<6,200
1,1-Dichloroethene	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
1,2,4-Trimethylbenzene	7,500	85,000	400,000	31,000	510,000	2,500	39,000	98,000	<290	89,000
1,2-Dichlorobenzene	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
1,2-Dichloroethane	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
1,3,5-Trimethylbenzene	2,800 J	51,000	140,000	16,000	170,000	520 J	11,000	36,000	<290	33,000
1,4-Dichlorobenzene	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
2-Butanone	1,200 J	3,000 J	<60,000	8,000 J	22,000 J	7,000	1,100 J	12,000 J	140 J	NA
2-Butoxy ethanol	<6.2	<6	<5.8	<5	<6.1	<5.7	<6	<6	<5.6	NA
2-Chlorotoluene	<3,100	<3,800	<15,000	76,000	<6,300	820 J	<1,600	<31,000	<290	30,000
4-Chlorotoluene	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
4-Methyl-2-pentanone	<12,000	5,000 J	<60,000	3,600 J	<25,000	18,000	790 J	<120,000	<1,200	NA
Acetone	<12,000	<15,000	<60,000	12,000 J B	<25,000	14,000 B	<6,200	<120,000	300 J B	NA
Benzene	<3,100	<3,800	<15,000	<8,600	**7,100**	380 J	110 J	<31,000	<290	<6,200
Bromobenzene	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
Butyl alcohol	<6.2	<6	<5.8	<5	<6.1	<5.7	<6	<6	<5.6	NA
Chloroform	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
cis-1,2-Dichloroethene	430 J	850 J	2,900 J	3,200 J	230,000	15,000	970	4,200 J	78 J	24,000
Cyclohexane	<6,100	<7,700	<30,000	31,000	19,000	<1,900	<3,100	53,000 J	<580	NA
Ethylbenzene	7,600	12,000	22,000	**72,000**	**350,000**	4,100	3,600	**93,000**	76 J	**110,000**
Ethylene glycol	<31	<30	<29	<25	<30	<28	<30	<30	<28	NA
Hexane	<3,100	480 J	<15,000	11,000	25,000	<970	360 J	67,000	<290	NA
Isopropylbenzene	860 J	6,100	<15,000	1,800 J	34,000	<970	620 J	9,600 J	<290	8,600

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Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-148	GP-149	GP-150	GP-151	GP-152		GP-153	GP-154		GP-200
Depth (feet)	0-4'	0-4'	0-4'	0-4'	0-4'	8-12'	0-4'	0-4'	12-14'	4-6'
Sample Date	06/13/02	06/13/02	06/13/02	06/14/02	06/14/02	06/14/02	06/14/02	06/14/02	06/14/02	11/14/07
VOCs (µg/kg) (continued)										
Methylcyclohexane	2,100 J	5,200 J	7,400 J	180,000	110,000	<1,900	1,100 J	300,000	<580	NA
Methylene chloride	750 J B	1,200 J B	4,000 J B	2,500 J B	19,000 B	1,100 B	440 J B	9,100 J B	77 J B	16,000
Naphthalene	750 J	5,300	<15,000	5,300 J	350,000	<970	1,100 J	<31,000	<290	18,000
n-Butylbenzene	<3,100	11,000	11,000 J	<8,600	280,000	<970	1,900	11,000 J	<290	8,800
n-Propanol	<6.2	<6	<5.8	71	57	8	23	79	<5.6	NA
n-Propylbenzene	1,400 J	22,000	47,000	2,100 J	78,000	370 J	4,700	19,000 J	<290	23,000
p-Isopropyltoluene	530 J	3,000 J	<15,000	2,200 J	27,000	<970	470 J	6,600 J	<290	<6,200
sec-Butylbenzene	500 J	3,700 J	3,300 J	1,600 J	24,000	<970	450 J	7,600 J	<290	<6,200
Styrene	<3,100	<3,800	<15,000	<8,600	<6300	<970	<1,600	<31,000	<290	<6,200
Tetrachloroethene	<3,100	<3,800	<15,000	<8,600	**37,000**	<970	<1,600	<31,000	<290	28,000
Tetrahydrofuran	<6,100	<7,700	<30,000	<17,000	<13,000	<1,900	<3,100	<61,000	<580	NA
Toluene	11,000	36,000	29,000	170,000	2,500,000	24,000	29,000	640,000	970	800,000
trans-1,2-Dichloroethene	<1,500	<1,900	<7,500	<4,300	<3,100	490	<780	<15,000	<140	<6,200
Trichloroethene	<3,100	<3,800	<15,000	<8,600	<6,300	380 J	<1,600	<31,000	<290	11,000
Trichlorofluoromethane	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<6,200
Vinyl chloride	<3,100	<3,800	<15,000	<8,600	<6,300	<970	<1,600	<31,000	<290	<8,700
Xylenes (total)	29,000	91,000	140,000	580,000	2,600,000	26,000	26,000	700,000	500	590,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-201	GP-202	GP-203	GP-204	GP-205	GP-206	GP-207	GP-208	GP-209
Depth (feet)	4-6'	2-4'	4-6'	2-4'	2-4'	4-6'	4-6'	2-4'	2-4'
Sample Date	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07
DRO (mg/kg)									
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)									
1,1,1-Trichloroethane	92,000	190,000	57,000	810,000	290,000	110,000	76,000	130,000	95,000
1,1-Dichloroethane	<12,000	<15,000	4,800	<31,000	<15,000	8,000	5,200	<13,000	<13,000
1,1-Dichloroethene	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
1,2,4-Trimethylbenzene	170,000	270,000	45,000	490,000	300,000	88,000	77,000	220,000	220,000
1,2-Dichlorobenzene	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
1,2-Dichloroethane	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
1,3,5-Trimethylbenzene	68,000	86,000	15,000	150,000	94,000	26,000	21,000	69,000	59,000
1,4-Dichlorobenzene	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	210,000	44,000	39,000	250,000	140,000	30,000	10,000	<25,000	<26,000
4-Chlorotoluene	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<12,000	<15,000	<3,100	**48,000**	**32,000**	<6300	<3,200	**18,000**	<13,000
Bromobenzene	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
Butyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	<12,000	<15,000	<3,100	<31,000	<15,000	<6300	<3,200	<13,000	<13,000
cis-1,2-Dichloroethene	42,000	27,000	20,000	190,000	92,000	50,000	30,000	56,000	180,000
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	**280,000**	**420,000**	**68,000**	**560,000**	**280,000**	**120,000**	**64,000**	**230,000**	**240,000**
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	17,000	30,000	5,300	50,000	26,000	9,400	5,800	24,000	20,000

Footnotes on Page 18.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-201	GP-202	GP-203	GP-204	GP-205	GP-206	GP-207	GP-208	GP-209
Depth (feet)	**4-6'**	**2-4'**	**4-6'**	**2-4'**	**2-4'**	**4-6'**	**4-6'**	**2-4'**	**2-4'**
Sample Date	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**	**11/14/07**
VOCs (µg/kg) (continued)									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	38,000	**57,000**	<6,300	<62,000	<30,000	<13,000	<6,400	<25,000	<26,000
Naphthalene	40,000	51,000	12,000	<62,000	<30,000	15,000	8,700	<25,000	73,000
n-Butylbenzene	17,000	53,000	4,900	35,000	23,000	7,800	5,900	15,000	48,000
n-Propanol	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	40,000	71,000	12,000	110,000	58,000	22,000	17,000	48,000	42,000
p-Isopropyltoluene	<12,000	17,000	<3,100	<31,000	<15,000	<6,300	<3,200	<13,000	<13,000
sec-Butylbenzene	<12,000	22,000	<3,100	<31,000	<15,000	<6,300	3,700	<13,000	<13,000
Styrene	<12,000	<15,000	<3,100	<31,000	<15,000	<6,300	<3,200	<13,000	<13,000
Tetrachloroethene	***100,000***	***220,000***	<3,100	<31,000	15,000	<6,300	<3,200	**36,000**	***130,000***
Tetrahydrofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,400,000	2,200,000	420,000	3,600,000	1,700,000	760,000	410,000	1,300,000	1,500,000
trans-1,2-Dichloroethene	<12,000	<15,000	<3,100	<31,000	<15,000	<6,300	<3,200	<13,000	<13,000
Trichloroethene	13,000	**46,000**	<3,100	<31,000	<15,000	<6,300	<3,200	<13,000	<13,000
Trichlorofluoromethane	<12,000	<15,000	<3,100	<31,000	<15,000	<6,300	<3,200	<13,000	<13,000
Vinyl chloride	<17,000	<20,000	<4,400	<43,000	<21,000	<8,800	<4,500	<18,000	<18,000
Xylenes (total)	1,200,000	2,300,000	340,000	3,600,000	2,000,000	660,000	390,000	1,900,000	1,600,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-210	GP-211	GP-212	GP-213	GP-214	GP-222	GP-223	GP-224	GP-225
Depth (feet)	4-6'	0-2'	2-4'	6-8'	0-2'	2-4'	4-6'	4-6'	4-6'
Sample Date	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	10/07/08	10/07/08	10/07/08	10/07/08
DRO (mg/kg)									
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)									
1,1,1-Trichloroethane	78,000	170,000	160,000	96,000	44,000	43,000	63,000	44,000	6,500
1,1-Dichloroethane	4,600	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
1,1-Dichloroethene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
1,2,4-Trimethylbenzene	140,000	560,000	290,000	85,000	400,000	97,000	240,000	120,000	64,000
1,2-Dichlorobenzene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
1,2-Dichloroethane	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
1,3,5-Trimethylbenzene	31,000	160,000	97,000	29,000	99,000	45,000	79,000	46,000	20,000
1,4-Dichlorobenzene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	22,000	<64000	<64,000	240,000	<64,000	28,000	58,000	140,000	7,500
4-Chlorotoluene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
Bromobenzene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
Butyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1400
cis-1,2-Dichloroethene	34,000	110,000	50,000	29,000	<32,000	10,000	14,000	18,000	5,700
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	**51,000**	**460,000**	**150,000**	**93,000**	**110,000**	**50,000**	**330,000**	**160,000**	**86,000**
Ethylene glycol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	6,400	58,000	<32,000	<12,000	<32,000	12,000	20,000	9,800	4,300

Footnotes on Page 20.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-210	GP-211	GP-212	GP-213	GP-214	GP-222	GP-223	GP-224	GP-225
Depth (feet)	4-6'	0-2'	2-4'	6-8'	0-2'	2-4'	4-6'	4-6'	4-6'
Sample Date	11/14/07	11/14/07	11/14/07	11/14/07	11/14/07	10/07/08	10/07/08	10/07/08	10/07/08
VOCs (µg/kg) (continued)									
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<6,300	<64,000	<64,000	<25,000	<64,000	<13,000	26,000	24,000	10,000
Naphthalene	11,000	230,000	78,000	<25,000	<64,000	<13,000	37,000	21,000	6,600
n-Butylbenzene	9,100	77,000	<32,000	<12,000	<32,000	6,500	30,000	14,000	7,500
n-Propanol	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	28,000	110,000	38,000	16,000	37,000	21,000	54,000	28,000	13,000
p-Isopropyltoluene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	2,200
sec-Butylbenzene	5,200	<32,000	<32,000	<12,000	<32,000	<6,400	13,000	6,000	2,700
Styrene	<3,200	<32,000	<32,000	<12,000	<32,000	<13,000	<22,000	<12,000	<2,900
Tetrachloroethene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	**46,000**	**43,000**	6,300
Tetrahydrofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	340,000	3,200,000	4,300,000	1,400,000	2,900,000	990,000	1,200,000	740,000	310,000
trans-1,2-Dichloroethene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
Trichloroethene	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	**46,000**	**28,000**	2,200
Trichlorofluoromethane	<3,200	<32,000	<32,000	<12,000	<32,000	<6,400	<11,000	<5,900	<1,400
Vinyl chloride	<4,400	<45,000	<45,000	<17,000	<45,000	<9,000	<15,000	<8,300	<2,000
Xylenes (total)	370,000	4,000,000	1,700,000	890,000	2,400,000	820,000	1,800,000	780,000	440,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-226	GP-227	GP-228	GP-229	GP-230	GP-231
Depth (feet)	4-6'	2-4'	2-4'	6-8'	2-4'	2-4'
Sample Date	10/07/08	10/07/08	10/07/08	03/06/09	03/06/09	03/06/09
DRO (mg/kg)						
Diesel Range Organics	NA	NA	NA	NA	NA	NA
VOCs (µg/kg)						
1,1,1-Trichloroethane	31,000	120,000	33,000	58,000	9,900	17,000
1,1-Dichloroethane	1,900	<12,000	<6,200	<14,000	<2,800	<14,000
1,1-Dichloroethene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
1,2,4-Trimethylbenzene	47,000	350,000	83,000	170,000	190,000	260,000
1,2-Dichlorobenzene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
1,2-Dichloroethane	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
1,3,5-Trimethylbenzene	16,000	100,000	29,000	44,000	45,000	72,000
1,4-Dichlorobenzene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
2-Butanone	NA	NA	NA	NA	NA	NA
2-Butoxy ethanol	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	6,000	<25,000	<12,000	250,000	<5,500	<28,000
4-Chlorotoluene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA
Benzene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
Bromobenzene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
Butyl alcohol	NA	NA	NA	NA	NA	NA
Chloroform	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
cis-1,2-Dichloroethene	18,000	140,000	17,000	20,000	8,400	45,000
Cyclohexane	NA	NA	NA	NA	NA	NA
Ethylbenzene	**55,000**	**380,000**	**76,000**	**230,000**	**190,000**	**310,000**
Ethylene glycol	NA	NA	NA	NA	NA	NA
Hexane	NA	NA	NA	NA	NA	NA
Isopropylbenzene	4,200	30,000	11,000	<14,000	8,500	<14,000

Footnotes on Page 22.

Table 5. Summary of Soil Results SWMU F, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Location ID	GP-226	GP-227	GP-228	GP-229	GP-230	GP-231
Depth (feet)	**4-6'**	**2-4'**	**2-4'**	**6-8'**	**2-4'**	**2-4'**
Sample Date	**10/07/08**	**10/07/08**	**10/07/08**	**03/06/09**	**03/06/09**	**03/06/09**
VOCs (µg/kg) (continued)						
Methylcyclohexane	NA	NA	NA	NA	NA	NA
Methylene chloride	<3,100	<25,000	<12,000	**53,000**	<5,500	**57,000**
Naphthalene	8,800	93,000	<12,000	<29,000	17,000	<28,000
n-Butylbenzene	5,300	68,000	<6,200	21,000	8,000	30,000
n-Propanol	NA	NA	NA	NA	NA	NA
n-Propylbenzene	9,800	68,000	18,000	37,000	33,000	<14,000
p-Isopropyltoluene	1,900	14,000	<6,200	<14,000	<2,800	<14,000
sec-Butylbenzene	2,300	17,000	<6,200	<14,000	5,400	<14,000
Styrene	<3,100	<25,000	<12,000	<29,000	<5,500	<28,000
Tetrachloroethene	<1,500	<12,000	<6,200	**46,000**	<2,800	<14,000
Tetrahydrofuran	NA	NA	NA	NA	NA	NA
Toluene	330,000	2,400,000	1,300,000	1,100,000	450,000	1,200,000
trans-1,2-Dichloroethene	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
Trichloroethene	<1,500	<12,000	<6,200	**70,000**	<2,800	<14,000
Trichlorofluoromethane	<1,500	<12,000	<6,200	<14,000	<2,800	<14,000
Vinyl chloride	<2,200	<17,000	<8,700	<20,000	<3,900	<20,000
Xylenes (total)	340,000	2,700,000	930,000	1,200,000	1,300,000	1,700,000

	Exceeds the WDNR Residual Contaminant Level as established in NR 720.
	Exceeds the Groundwater Migration SSL.
Bold	Exceeds the Inhalation of Vapors SSL.
Italic	Exceeds the Ingestion SSL.
Underline	Exceeds the Inhalation of Dust SSL.
µg/kg	Micrograms per kilogram.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter.
NA	Not analyzed.
NC	Not calculated; insufficient toxicological data.
NE	Not established.
RCL	Residual Contaminant Level.
SSL	Soil Screening Levels, calculated using USEPA website.
TCLP	Toxicity Characteristic Leaching Procedure.
VOCs	Volatile Organic Compounds.
WDNR	Wisconsin Department of Natural Resources.

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring Sample Depth Sample Date Analyte	WDNR RCL Criteria	Site-specific Groundwater Criteria	Site-specific Injestion Criteria	Site-specific Vapor Inhalation Criteria	AB-1 1-1.5' 07/13/05	AB-2 1-1.5' 07/13/05	AB-3 1-1.5' 07/13/05	AB-4 1-1.5' 07/13/05
VOC (µg/kg)								
1,1,1-Trichloroethane	NE	280	204,000,000	14,000,000	18,000	34	<680	<27
1,1-Dichloroethane	NE	330	102,000,000	3,600,000	<1,300	<28	<680	<27
1,1-Dichloroethene	NE	5	4770	230	<1,300	<28	<680	<27
1,2,4-Trimethylbenzene	NE	NC	NC	NC	14,000	280	13,000	100
1,2-Dichlorobenzene	NE	910	92,000,000	8,300,000	3,500	<28	5,600	30
1,2-Dichloroethane	4.9	1.6	31,400	1300	<1,300	<28	<680	<27
1,3,5-Trimethylbenzene	NE	NC	NC	NC	3,200	130	6,100	<27
1,4-Dichlorobenzene	NE	230	119,000	29,000,000	<1,300	<28	<680	<27
2-Chlorotoluene	NE	2,700	20,400,000	NE	250,000	1,100	190,000	450
Acetone	NE	520	102,000,000	NE	NA	NA	NA	NA
Benzene	5.5	2.8	52,000	2,800	<1,300	<28	<680	<27
Carbon tetrachloride	NE	NC	NC	NC	12,000	<28	<680	<27
Chlorodibromomethane	NE	NC	NC	NC	89,000	<28	<680	<27
cis-1,2-Dichloroethene	NE	27	10,200,000	NC	11,000	140	10,000	<27
Ethylbenzene	2,900	1,500	102,000,000	39,000	NA	NA	NA	NA
Hexane	NE	19,000	61,300,000	580,000	12,000	1,100	10,000	280
Isopropylbenzene	NE	NC	NC	NC	<1,300	<28	<680	<27
Methylcyclohexane	NE	NC	NC	NC	NA	NA	NA	NA
Methylene chloride	NE	1.6	382,000	45,000	<2700	<56	<1,400	<54
Naphthalene	NE	340	20,400,000	470,000	16,000	<56	5,600	170
n-Butylbenzene	NE	NC	NC	NC	<1,300	<28	<680	<27
n-Propylbenzene	NE	NC	NC	NC	<1,300	<28	<680	<27
p-Isopropyltoluene	NE	NC	NC	NC	<1,300	29	780	<27
sec-Butylbenzene	NE	NC	NC	NC	<1,300	<28	<680	33
Styrene	NE	190	204,000,000	3,800,000	<1,300	<28	1,400	<27
tert-Butylbenzene	NE	NC	NC	NC	<1,300	<28	<680	<27
Tetrachloroethene	NE	4.1	55,000	35,000	*120,000*	350	*70,000*	<27
Toluene	1,500	490	204,000,000	4,600,000	34,000	330	19,000	110
trans-1,2-Dichloroethene	NE	98	20,400,000	NE	<1,300	<28	<680	<27
Trichloroethene	NE	3.7	260,000	15,000	32,000	240	1,900	<27
Trichlorofluoromethane	NE	29,000	307,000,000	2,900,000	<1,300	<28	<680	<27
Vinyl chloride	NE	0.13	2,040	930	<1,900	<39	<960	<38
Xylenes (total)	4,100	11,000	2,040,000,000	NC	59,000	2,500	65,000	180

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring	AB-5	GP-116	GP-120	GP-123	GP-27		GP-28	GP-29
Sample Depth	6-8'	14-16'	8-10'	0-4'	4-6'	8-10'	6-8'	4-6'
Sample Date	07/13/05	05/16/02	05/17/02	05/22/02	07/13/05	07/13/05	07/13/05	07/13/05
Analyte								
VOC (µg/kg)								
1,1,1-Trichloroethane	<28	<290	<290	<300	<29	<28	<28	<300
1,1-Dichloroethane	<28	<290	<290	<300	<29	<28	<28	760
1,1-Dichloroethene	<28	<290	<290	<300	<29	<28	<28	<300
1,2,4-Trimethylbenzene	4,000	<290	<290	69 J	30	43	<28	2,400
1,2-Dichlorobenzene	<28	<290	<290	85 J	<29	<28	<28	<300
1,2-Dichloroethane	<28	<290	<290	<300	<29	<28	<28	<300
1,3,5-Trimethylbenzene	1,600	<290	<290	100 J	<29	<28	<28	690
1,4-Dichlorobenzene	<28	<290	<290	<300	<29	<28	<28	<300
2-Chlorotoluene	2,300	<290	<290	110 J	140	310	<56	<600
Acetone	NA	350 J	<1,200	760 J B	NA	NA	NA	NA
Benzene	<28	<290	<290	<300	690	250	<28	<300
Carbon tetrachloride	<28	<290	<290	<300	<29	<28	<28	<300
Chlorodibromomethane	<28	<290	<290	<300	<29	<28	<28	<300
cis-1,2-Dichloroethene	<28	<150	<150	<150	<29	28	<28	38,000
Ethylbenzene	NA	<290	<290	380	290	200	<28	6,500
Hexane	<28	<290	<290	420	NA	NA	NA	NA
Isopropylbenzene	66	<290	<290	<300	<29	<28	<28	<300
Methylcyclohexane	NA	<580	<580	130 J	NA	NA	NA	NA
Methylene chloride	<56	99 J	<290	<300	<59	<56	<56	<600
Naphthalene	1,300	<290	<290	<300	<59	<56	<56	740
n-Butylbenzene	<28	<290	<290	<300	<29	<28	<28	<300
n-Propylbenzene	190	<290	<290	<300	<29	<28	<28	530
p-Isopropyltoluene	390	<290	<290	<300	<29	<28	<28	<300
sec-Butylbenzene	390	<290	<290	<300	<29	<28	<28	1,500
Styrene	<28	<290	<290	<300	<29	<28	<28	<300
tert-Butylbenzene	<28	<290	<290	<300	<29	<28	<28	<300
Tetrachloroethene	<28	<290	<290	<300	65	43	<28	470
Toluene	<28	91 J	<290	630	32	440	<28	32,000
trans-1,2-Dichloroethene	<28	<150	<150	<150	<29	<28	<28	2,600
Trichloroethene	<28	<290	<290	<300	<29	28	<28	<300
Trichlorofluoromethane	<28	<290	85 J	<300	<29	<28	<28	<300
Vinyl chloride	<39	<290	<290	<300	<41	<40	<39	*2,300*
Xylenes (total)	<95	<290	<290	590	780	640	<95	24,000

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring	GP-30		GP-31		IW-23		IW-24		IW-25
Sample Depth	0-2'	8-10'	4-6'	8-10'	3-5'	9-11'	1-3'	5-7'	3-5'
Sample Date	07/14/05	07/14/05	07/14/05	07/14/05	04/25/05	04/25/05	04/25/05	04/25/05	04/25/05
Analyte									
VOC (µg/kg)									
1,1,1-Trichloroethane	<1,600	<29	<29	<29	<300	<29	2,000	150	<29
1,1-Dichloroethane	<1,600	100	<29	<29	<300	<29	<280	<30	<29
1,1-Dichloroethene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
1,2,4-Trimethylbenzene	22,000	<29	<29	<29	1,200	<29	710	140	<29
1,2-Dichlorobenzene	4,000	<29	<29	<29	<300	<29	<280	<30	<29
1,2-Dichloroethane	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
1,3,5-Trimethylbenzene	5,700	<29	<29	<29	<300	<29	530	100	<29
1,4-Dichlorobenzene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
2-Chlorotoluene	160,000	<58	<59	<57	<590	<58	<560	<60	660
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<1,600	310	<29	<29	<300	<29	<280	<30	<29
Carbon tetrachloride	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Chlorodibromomethane	<1,600	<29	<29	<29	<300 C	<29 C	<280 C	<30 C	<29
cis-1,2-Dichloroethene	<1,600	<29	<29	<29	<300	<29	<280	100	<29
Ethylbenzene	240,000	810	<29	<29	19,000	<29	11,000	670	3,300
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2,100	<29	<29	<29	<300	<29	2,300	310	39
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<3,100	<58	<59	<57	<590	<58	<560	<60	<59
Naphthalene	13,000	<58	<59	<57	3,500	<58	<560	<60	<59
n-Butylbenzene	6,300	<29	<29	<29	<300	<29	<280	<30	<29
n-Propylbenzene	3,800	<29	<29	<29	<300	<29	450	90	<29
p-Isopropyltoluene	2,100	<29	<29	<29	<300	<29	<280	<30	<29
sec-Butylbenzene	2,300	<29	<29	<29	<300	<29	<280	<30	<29
Styrene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
tert-Butylbenzene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Tetrachloroethene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Toluene	48,000	3,800	<29	<29	<300	<29	<280	<30	<29
trans-1,2-Dichloroethene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Trichloroethene	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Trichlorofluoromethane	<1,600	<29	<29	<29	<300	<29	<280	<30	<29
Vinyl chloride	<1,600	<40	<41	<40	<410	130	<390	<42	<41
Xylenes (total)	57,000	1,900	<100	<98	84,000	180	59,000	2,800	12,000

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring	IW-25 (continued)	IW-26		IW-27		IW-28		IW-29	
Sample Depth	7-9'	7-9'	9-11'	3-5'	7-9'	1-3'	7-9'	3-5'	7-9'
Sample Date	04/25/05	04/25/05	04/25/05	04/26/05	04/26/05	04/26/05	04/26/05	04/26/05	04/26/05
Subsample									
VOC (µg/kg)									
1,1,1-Trichloroethane	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
1,1-Dichloroethane	<29	<30	<30	<30	<30	<1,500	570	<30	<30
1,1-Dichloroethene	<29	<30	<30	<30	<30	<1,500	430	<30	<30
1,2,4-Trimethylbenzene	<29	<30	<30	130	<30	11,000	<150	<30	<30
1,2-Dichlorobenzene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
1,2-Dichloroethane	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
1,3,5-Trimethylbenzene	<29	<30	<30	89	<30	3,700	<150	<30	<30
1,4-Dichlorobenzene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
2-Chlorotoluene	<57	<60	<59	<59	<59	3,100	<300	<59	<60
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
Carbon tetrachloride	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
Chlorodibromomethane	<29 C	<30 C	<30	<30	<30	<1,500	<150	<30 C	<30
cis-1,2-Dichloroethene	450	510	56	38	<30	<1,500	210,000	75	630
Ethylbenzene	29	110	<30	52	<30	88,000	<150	<30	<30
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	<29	<30	<30	<30	<30	2,800	<150	<30	<30
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<57	<60	<59	<59	<59	<2900	<300	<59	<60
Naphthalene	<57	<60	<59	980	<59	12,000	<300	<59	<60
n-Butylbenzene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
n-Propylbenzene	<29	<30	<30	48	<30	2,300	<150	<30	<30
p-Isopropyltoluene	<29	<30	<30	32	<30	<1,500	<150	<30	<30
sec-Butylbenzene	<29	<30	<30	42	<30	<1,500	<150	<30	<30
Styrene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
tert-Butylbenzene	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
Tetrachloroethene	<29	<30	<30	<30	<30	<1,500	3,100	<30	<30
Toluene	<29	130	<30	<30	<30	11,000	<150	<30	<30
trans-1,2-Dichloroethene	<29	<30	<30	<30	<30	<1,500	6,400	<30	51
Trichloroethene	<29	<30	<30	<30	<30	<1,500	5,500	<30	<30
Trichlorofluoromethane	<29	<30	<30	<30	<30	<1,500	<150	<30	<30
Vinyl chloride	85	1,000	180	<42	<41	<2,100	*7,400*	<41	75
Xylenes (total)	120	<100	<100	<100	<100	370,000	<520	<100	<100

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring	IW-30		IW-31		IW-32		IW-33		IW-34
Sample Depth	1-3'	3-5'	1-3'	9-11'	3-5'	9-11'	3-5'	7-9'	1-3'
Sample Date	04/26/05	04/26/05	04/26/05	04/26/05	04/27/05	04/27/05	04/27/05	04/27/05	04/27/05
Analyte									
VOC (µg/kg)									
1,1,1-Trichloroethane	<29	<30	<28	<28	<120	<110	<29	230	13,000
1,1-Dichloroethane	<29	<30	<28	<28	<120	<110	<29	49	<1,500
1,1-Dichloroethene	<29	<30	<28	<28	<120	<110	<29	<29	<1,500
1,2,4-Trimethylbenzene	<29	<30	<28	<28	8,300	20,000	<29	<29	130,000
1,2-Dichlorobenzene	<29	<30	<28	<28	<120	<110	<29	<29	23,000
1,2-Dichloroethane	<29	<30	<28	54	<120	<110	<29	<29	<1,500
1,3,5-Trimethylbenzene	<29	<30	<28	<28	1,700	4,800	<29	<29	24,000
1,4-Dichlorobenzene	<29	<30	<28	<28	<120	<110	<29	<29	4,600
2-Chlorotoluene	430	160	<57	<56	<240	1,100	<58	<58	430,000
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<29	<30	<28	230	160	<110	71	310	<1,500
Carbon tetrachloride	<29	<30	<28	<28	<120	<110	<29	<29	<1,500
Chlorodibromomethane	<29	<30	<28	<28	<120	<110	<29	<29	<1,500
cis-1,2-Dichloroethene	<29	<30	<28	73	5,400	<110	1,200	6,600	16,000
Ethylbenzene	<29	<30	33	<28	1,200	1,800	<29	<29	130,000
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	<29	<30	<28	<28	260	730	<29	<29	12,000
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<57	<60	<57	<56	<240	<230	<58	<58	<3,000
Naphthalene	<57	<60	<57	<56	4,900	3,000	<58	<58	16,000
n-Butylbenzene	<29	<30	83	<28	<120	<110	<29	<29	<1,500
n-Propylbenzene	<29	<30	<28	<28	820	2,000	<29	<29	30,000
p-Isopropyltoluene	<29	<30	<28	<28	440	1,300	<29	<29	4,800
sec-Butylbenzene	<29	<30	<28	<28	580	1,400	<29	<29	7,000
Styrene	<29	<30	<28	<28	<120	<110	<29	<29	<1,500
tert-Butylbenzene	<29	<30	<28	<28	<120	1,600	<29	<29	<1,500
Tetrachloroethene	<29	<30	<28	<28	500	2,100	<29	<29	<1,500
Toluene	<29	<30	<28	<28	<120	<110	<29	35	140,000
trans-1,2-Dichloroethene	<29	<30	<28	<28	<120	<110	29	140	<1,500
Trichloroethene	<29	<30	<28	<28	<120	<110	780	23,000	<1,500
Trichlorofluoromethane	<29	<30	<28	<28	<120	<110	<29	<29	<1,500
Vinyl chloride	<40	<42	<40	<39	<170	<160	<41	330	<2,100
Xylenes (total)	<97	<100	<97	<95	<410	6,100	<98	<98	590,000

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls,

Well/Boring	IW-34 (continued)	IW-35		IW-36		IW-37		IW-38	
Sample Depth	5-7'	3-5'	7-9'	1-3'	5-7'	5-7'	7-9'	3-5'	7-9'
Sample Date	04/27/05	04/27/05	04/27/05	04/28/05	04/28/05	04/28/05	04/28/05	04/28/05	04/28/05
Analyte									
VOC (µg/kg)									
1,1,1-Trichloroethane	3,200	<30	<280	<150	<110	<30	<30	<31	<30
1,1-Dichloroethane	1,800	<30	<280	<150	<110	<30	<30	<31	<30
1,1-Dichloroethene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
1,2,4-Trimethylbenzene	13,000	46	470	14,000	7,200	<30	<30	<31	<30
1,2-Dichlorobenzene	8,900	<30	<280	<150	<110	<30	<30	<31	<30
1,2-Dichloroethane	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
1,3,5-Trimethylbenzene	2,900	<30	<280	4,100	1,000	<30	<30	<31	<30
1,4-Dichlorobenzene	1,900	<30	<280	<150	<110	<30	<30	<31	<30
2-Chlorotoluene	150,000	360	<560	<300	<230	<59	<60	<62	<60
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	2,300	190	<280	<150	<110	38	<30	33	<30
Carbon tetrachloride	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
Chlorodibromomethane	<1,500	<30	<280	<150	<110 C	<30 C	<30 C	<31C	<30
cis-1,2-Dichloroethene	34,000	<30	780	<150	<110	480	210	<31	<30
Ethylbenzene	18,000	3,500	7,000	5,700	3,100	<30	<30	<31	<30
Hexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	<1,500	330	1,500	790	360	<30	<30	<31	<30
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	12,000	<60	<560	<300	<230	<59	<60	<62	<60
Naphthalene	<3,000	<60	<560	<300	<230	<59	<60	<62	<60
n-Butylbenzene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
n-Propylbenzene	3,100	140	1,100	1,900	1,100	<30	<30	<31	<30
p-Isopropyltoluene	<1,500	<30	<280	800	330	<30	<30	<31	<30
sec-Butylbenzene	<1,500	<30	<280	790	350	<30	<30	<31	<30
Styrene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
tert-Butylbenzene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
Tetrachloroethene	8,700	<30	<280	<150	<110	<30	<30	<31	<30
Toluene	30,000	36	6,500	<150	<110	<30	<30	<31	<30
trans-1,2-Dichloroethene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
Trichloroethene	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
Trichlorofluoromethane	<1,500	<30	<280	<150	<110	<30	<30	<31	<30
Vinyl chloride	<2,100	<42	<390	<210	<160	<42	<42	<43	<42
Xylenes (total)	58,000	8,500	130,000	21,000	6,300	<100	<100	<100	<100

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Table 6. Summary of Soil VOC Results from 2005 Investigation at SWMUs A, B, C, D, and E, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

	Value exceeds the WDNR RCL.
	Value exceeds the Site-specific groundwater critiera.
B	Detected in associated blank.
Bold	Value exceeds the Site-specific vapor inhalation critiera.
C	Calibration verification recovery was above method control limit for this analyte. Anyalyte not detected, data not impacted.
Italics	Value exceeds the Site-specific ingestion critiera.
J	Estimated result.
µg/kg	Micrograms per kilogram.
NA	Not analyzed.
NC	Not calculated.
NE	Not established.
R2	The RPD exceeded the acceptance limit.
RCL	Residual Contaminant Level.
RPD	Relative percent difference.
VOC	Volatile organic compounds
WDNR	Wisconsin Department of Natural Resources.

ARCADIS

Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	Preventive Action Limit	Enforcement Standard	MW-122	MW-123		MW-123 Dup	MW-123	MW-124	MW-126
				5/19/10	5/19/10	8/11/10	8/11/10	11/17/10	5/19/10	5/19/10
VOCs (µg/L)										
Acetone	67-64-1	200	1,000	<25	**39,400**	**57,600**	**56,300**	**20,000**	<25	<25
Benzene	71-43-2	0.5	5	<1.0	**170 J**	**152 J**	**154 J**	**139 J**	<1.0	<1.0
2-Butanone	78-93-3	90	460	<5.0	**19,900**	**32,900**	**33,300**	**17,300**	<5.0	<5.0
n-Butylbenzene	104-51-8	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
sec-Butylbenzene	135-98-8	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
tert-Butylbenzene	98-06-6	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Carbon disulfide	75-15-0	200	1,000	<2.0	<1,000	<1,000	<1,000	<1,000	<2.0	<2.0
Chlorobenzene	108-90-7	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Chloroethane	75-00-3	80	400	<2.0	**3,130**	**3,680**	**3,470**	**2,630**	<2.0	<2.0
Chloroform	66-67-3	0.6	6	<1.0	**279 J**	<500	<500	<500	<1.0	<1.0
Chloromethane	74-87-3	0.3	3	<2.0	<1,000	<1,000	<1,000	<1,000	<2.0	<2.0
2-Chlorotoluene	95-49-8	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
4-Chlorotoluene	106-43-4	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Cyclohexane	110-82-7	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,2-Dichlorobenzene	95-50-1	60	600	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,3-Dichlorobenzene	541-73-1	125	1250	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,4-Dichlorobenzene	106-46-7	15	75	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,1-Dichloroethane	75-34-3	85	850	<1.0	**782**	**370 J**	**387 J**	**424 J**	<1.0	<1.0
1,2-Dichloroethane	106-93-4	0.5	5	<1.0	<500	<500	<500	<500	<1.0	<1.0
cis-1,2-Dichloroethene	156-59-2	7	70	<1.0	**928**	**308 J**	**285 J**	**627**	<1.0	<1.0
trans-1,2-Dichloroethene	156-60-5	20	100	<1.0	**240 J**	<500	<500	<500	<1.0	<1.0
1,2-Dichloropropane	78-87-5	0.5	5	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,4-Dioxane	123-91-1	Not listed	Not listed	<250	<130,000	<130,000	<130,000	<100,000	<250	<250
Ethyl acetate	141-78-6	Not listed	Not listed	<10	<5,000	<5,000	<5,000	<5,000	<10	<10
Ethyl ether	60-29-7	Not listed	Not listed	<5.0	<2,500	<2,500	<2,500	<2,500	<5.0	<5.0
Ethylbenzene	100-41-4	140	700	<1.0	**2,860**	**1,950**	**1,870**	**1,350**	<1.0	<1.0
Hexachlorobutadiene	87-68-3	Not listed	Not listed	<2.0	<1,000	<1,000	<1,000	<1,000	<2.0	<2.0
Isopropylbenzene	98-82-8	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
p-Isopropyltoluene	99-87-6	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Methylcyclohexane	108-87-2	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Methylene chloride	75-09-2	0.5	5	<5.0	<2,500	<2,500	<2,500	<2,500	<5.0	<5.0
Methyl-tert-butyl ether	1634-04-4	12	60	<1.0	<500	<500	<500	<500	<1.0	<1.0
4-Methyl-2-pentanone	108-10-1	50	500	<5.0	**14,700**	**32,200**	**31,200**	**26,700**	<5.0	<5.0
Naphthalene	91-20-3	8	40	<5.0	<2,500	<2,500	<2,500	<2,500	<5.0	<5.0

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Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	Preventive Action Limit	Enforcement Standard	MW-122 5/19/10	MW-123 5/19/10	MW-123 8/11/10	MW-123 Dup 8/11/10	MW-123 11/17/10	MW-124 5/19/10	MW-126 5/19/10
VOCs (µg/L)										
n-Propylbenzene	103-65-1	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
Tetrahydrofuran	109-99-9	10	50	<5.0	<2,500	<2,500	<2,500	<2,500	<5.0	<5.0
Toluene	108-88-3	200	1,000	<1.0	**44,200**	**47,800**	**46,600**	**31,900**	<1.0	<1.0
1,2,3-Trichlorobenzene	87-61-6	Not listed	Not listed	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,1,1-Trichloroethane	71-55-6	40	200	<1.0	**118 J**	<500	<500	<500	<1.0	<1.0
Trichloroethene	79-01-6	0.5	5	<1.0	<500	<500	<500	<500	<1.0	<1.0
1,2,4-Trimethylbenzene	95-63-6	Not listed	Not listed	<2.0	<1,000	<1,000	<1,000	<1,000	<2.0	<2.0
1,3,5-Trimethylbenzene	108-67-8	Not listed	Not listed	<2.0	136 J	<1,000	<1,000	<1,000	<2.0	<2.0
Vinyl chloride	75-01-4	0.02	0.2	<1.0	<500	<500	<500	<500	<1.0	<1.0
Xylenes (total)	1330-20-7	1,000	10,000	<3.0	**15,700**	**10,800**	**10,500**	**8,570**	<3.0	<3.0
Total VOCs		Not listed	Not listed	ND	142,543	187,760	184,066	109,640	ND	ND
2-Butoxy ethanol (mg/L)	111-76-2	Not listed	Not listed	< 5.0	0.58 J	0.92 J	NA	< 5.0	< 5.0	< 5.0

Shade	Value (shaded) exceeds the Wisconsin Department of Natural Resources Enforcement Standard.
Bold	Value (bold) exceeds the Wisconsin Department of Natural Resources Preventative Action Limit.
B	Detected in blank.
CAS	Chemical Abstracts Service.
Dup	Duplicate.
J	Estimated results.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter
NA	Not analyzed.
ND	Not detected.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

	CAS	MW-128	MW-132				MW-133			MW-134
Analyte	**Number**	**5/19/10**	**2/17/10**	**5/20/10**	**8/10/10**	**11/17/10**	**2/17/10**	**5/19/10**	**11/17/10**	**8/11/10**
VOCs (µg/L)										
Acetone	67-64-1	<25	<25	<25	<25	<25	**383 J**	<1,300	<2,500	<500
Benzene	71-43-2	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
2-Butanone	78-93-3	<5.0	<5.0	<5.0	<5.0	<5.0	**302**	<250	<500	<100
n-Butylbenzene	104-51-8	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
sec-Butylbenzene	135-98-8	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
tert-Butylbenzene	98-06-6	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Carbon disulfide	75-15-0	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
Chlorobenzene	108-90-7	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Chloroethane	75-00-3	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
Chloroform	66-67-3	<1.0	<1.0	<1.0	<1.0	<1.0	<20	**25.7 J**	<100	<20
Chloromethane	74-87-3	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
2-Chlorotoluene	95-49-8	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
4-Chlorotoluene	106-43-4	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Cyclohexane	110-82-7	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,2-Dichlorobenzene	95-50-1	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,3-Dichlorobenzene	541-73-1	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,4-Dichlorobenzene	106-46-7	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,1-Dichloroethane	75-34-3	0.41 J	3.3	1.9	1.6	2.4	<20	<50	<100	<20
1,2-Dichloroethane	106-93-4	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
cis-1,2-Dichloroethene	156-59-2	<1.0	<1.0	<1.0	<1.0	<1.0	**806**	**4,780**	**5,420**	**1,720**
trans-1,2-Dichloroethene	156-60-5	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	11.0 J
1,2-Dichloropropane	78-87-5	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,4-Dioxane	123-91-1	<250	<250	<250	<250	<200	<5,000	<13,000	<20,000	<5,000
Ethyl acetate	141-78-6	<10	<10	<10	<10	<10	<200	<500	<1,000	<200
Ethyl ether	60-29-7	<5.0	<5.0	<5.0	<5.0	<5.0	84.0 J	<250	119 J	83.2 J
Ethylbenzene	100-41-4	<1.0	<1.0	<1.0	<1.0	<1.0	35.7	**149**	57.9 J	62.8
Hexachlorobutadiene	87-68-3	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
Isopropylbenzene	98-82-8	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
p-Isopropyltoluene	99-87-6	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Methylcyclohexane	108-87-2	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Methylene chloride	75-09-2	<5.0	<5.0	<5.0	<5.0	<5.0	**87.3 JB**	<250	**202 J**	<100
Methyl-tert-butyl ether	1634-04-4	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
4-Methyl-2-pentanone	108-10-1	<5.0	<5.0	<5.0	<5.0	<5.0	<100	<250	<500	<100
Naphthalene	91-20-3	<5.0	<5.0	<5.0	<5.0	<5.0	<100	<250	<500	<100

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Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

	CAS	MW-128	MW-132				MW-133			MW-134
Analyte	**Number**	**5/19/10**	**2/17/10**	**5/20/10**	**8/10/10**	**11/17/10**	**2/17/10**	**5/19/10**	**11/17/10**	**8/11/10**
VOCs (µg/L)										
n-Propylbenzene	103-65-1	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Tetrahydrofuran	109-99-9	<5.0	<5.0	<5.0	<5.0	<5.0	**360**	<250	<500	<100
Toluene	108-88-3	<1.0	<1.0	<1.0	<1.0	<1.0	<20	23.2 J	<100	<20
1,2,3-Trichlorobenzene	87-61-6	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
1,1,1-Trichloroethane	71-55-6	<1.0	<1.0	<1.0	<1.0	<1.0	<20	<50	<100	<20
Trichloroethene	79-01-6	<1.0	<1.0	<1.0	<1.0	<1.0	**156**	**125**	**410**	**167**
1,2,4-Trimethylbenzene	95-63-6	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
1,3,5-Trimethylbenzene	108-67-8	<2.0	<2.0	<2.0	<2.0	<2.0	<40	<100	<200	<40
Vinyl chloride	75-01-4	<1.0	<1.0	<1.0	<1.0	<1.0	**233**	**548**	**720**	**388**
Xylenes (total)	1330-20-7	<3.0	<3.0	<3.0	<3.0	<3.0	18.8 J	129 J	<300	29.6 J
Total VOCs		0.41	3.3	1.9	1.6	2.4	2,465.8	5,779.9	6,928.9	2,461.6
2-Butoxy ethanol (mg/L)	111-76-2	< 5.0	<5.0	< 5.0	< 5.0	< 5.0	<5.0	< 5.0	< 5.0	< 5.0

Shade	Value (shaded) exceeds the Wisconsin Department of Natural Resources Enforcement Standard.
Bold	Value (bold) exceeds the Wisconsin Department of Natural Resources Preventative Action Limit.
B	Detected in blank.
CAS	Chemical Abstracts Service.
Dup	Duplicate.
J	Estimated results.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter
NA	Not analyzed.
ND	Not detected.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-136 5/20/10	MW-138 2/17/10	MW-138 Dup 2/17/10	MW-138 5/20/10	MW-138 Dup 5/20/10	MW-138 8/11/10	MW-138 11/17/10	MW-140 5/19/10	MW-142 5/20/10
VOCs (µg/L)										
Acetone	67-64-1	<25	**140,000**	**135,000**	<13,000	<13,000	<5,000	**42,500**	**40,700**	<25
Benzene	71-43-2	**1.9**	**474 J**	**563 J**	**157 J**	**126 J**	**80.5 J**	**150 J**	**467 J**	**0.54 J**
2-Butanone	78-93-3	<5.0	**40,500**	**39,800**	<2,500	<2,500	<1,000	**15,900**	**11,900**	<5.0
n-Butylbenzene	104-51-8	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
sec-Butylbenzene	135-98-8	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	1
tert-Butylbenzene	98-06-6	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	1.1
Carbon disulfide	75-15-0	<2.0	<2,000	<2,000	<1,000	<1,000	<400	<1,000	<1,000	<2.0
Chlorobenzene	108-90-7	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
Chloroethane	75-00-3	6.2	**3,110**	**3,410**	<1,000	<1,000	**563**	**2,100**	**4,320**	6.6
Chloroform	66-67-3	<1.0	<1,000	<1,000	**301 J**	**281 J**	<200	<500	**254 J**	<1.0
Chloromethane	74-87-3	<2.0	<2,000	<2,000	<1,000	<1,000	<400	<1,000	<1,000	<2.0
2-Chlorotoluene	95-49-8	<1.0	1,140	1,170	822	720	1,220	717	608	4.4
4-Chlorotoluene	106-43-4	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
Cyclohexane	110-82-7	2.2	<1,000	<1,000	<500	<500	195 J	<500	<500	8.9
1,2-Dichlorobenzene	95-50-1	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
1,3-Dichlorobenzene	541-73-1	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
1,4-Dichlorobenzene	106-46-7	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
1,1-Dichloroethane	75-34-3	3.4	**9,460**	**9,640**	**2,320**	**2,190**	**1,330**	**771**	**586**	<1.0
1,2-Dichloroethane	106-93-4	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
cis-1,2-Dichloroethene	156-59-2	2	**35,400**	**35,800**	**7,830**	**7,320**	**1,790**	**4,840**	**9,620**	<1.0
trans-1,2-Dichloroethene	156-60-5	<1.0	<1,000	<1,000	<500	<500	<200	<500	**244 J**	<1.0
1,2-Dichloropropane	78-87-5	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
1,4-Dioxane	123-91-1	<250	<250,000	<250,000	<130,000	<130,000	<50,000	<100,000	<130,000	<250
Ethyl acetate	141-78-6	<10	<10,000	<10,000	<5,000	<5,000	<2,000	<5,000	<5,000	<10
Ethyl ether	60-29-7	<5.0	<5,000	<5,000	<2,500	<2,500	<1,000	<2,500	<2,500	<5.0
Ethylbenzene	100-41-4	<1.0	**4,610**	**4,780**	**2,550**	**2,470**	**1,830**	**2,180**	**1,880**	86.6
Hexachlorobutadiene	87-68-3	<2.0	<2,000	<2,000	<1,000	<1,000	<400	<1,000	<1,000	<2.0
Isopropylbenzene	98-82-8	<1.0	<1,000	<1,000	<500	<500	48.1 J	<500	<500	6.2
p-Isopropyltoluene	99-87-6	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	4.7
Methylcyclohexane	108-87-2	<1.0	<1,000	<1,000	<500	<500	521	<500	<500	15.2
Methylene chloride	75-09-2	<5.0	**3,800 J**	**4490 J**	<2,500	<2,500	<1,000	<2,500	<2,500	<5.0
Methyl-tert-butyl ether	1634-04-4	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
4-Methyl-2-pentanone	108-10-1	<5.0	**20,800**	**21,500**	<2,500	<2,500	<1,000	**7,010**	**10,000**	<5.0
Naphthalene	91-20-3	<5.0	<5,000	<5,000	<2,500	<2,500	<1,000	<2,500	<2,500	**18.3**

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Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-136 5/20/10	MW-138 2/17/10	MW-138 Dup 2/17/10	MW-138 5/20/10	MW-138 Dup 5/20/10	MW-138 8/11/10	MW-138 11/17/10	MW-140 5/19/10	MW-142 5/20/10
VOCs (µg/L)										
n-Propylbenzene	103-65-1	<1.0	<1,000	<1,000	<500	107 J	<200	148 J	<500	4.8
Tetrahydrofuran	109-99-9	<5.0	<5,000	<5,000	<2,500	<2,500	<1,000	<2,500	<2,500	<5.0
Toluene	108-88-3	<1.0	**87,100**	**92,900**	**36,700**	**34,900**	**23,200 E**	**39,100**	**35,700**	<1.0
1,2,3-Trichlorobenzene	87-61-6	<1.0	<1,000	<1,000	<500	<500	<200	<500	<500	<1.0
1,1,1-Trichloroethane	71-55-6	<1.0	**466 J**	**488 J**	**510**	**461 J**	**229**	<500	<500	<1.0
Trichloroethene	79-01-6	<1.0	**969 J**	<1,000	<500	<500	<200	<500	<500	<1.0
1,2,4-Trimethylbenzene	95-63-6	<2.0	<2,000	<2,000	495 J	502 J	842	<1,000	604 J	68.1
1,3,5-Trimethylbenzene	108-67-8	<2.0	228 J	220 J	202 J	174 J	269 J	210 J	189 J	<2.0
Vinyl chloride	75-01-4	**2.2**	**1,660**	**1,580**	<500	<500	**424**	<500	**1,870**	<1.0
Xylenes (total)	1330-20-7	8.6	**28,100**	**28,700**	**16,600**	**15,300**	**17,400**	**14,700**	**19,200**	2.1 J
Total VOCs		26.5	377,817	380,041	68,487	64,551	49,942	130,326	138,142	228.54
2-Butoxy ethanol (mg/L)	111-76-2	< 5.0	0.90 J	NA	< 5.0	NA	< 5.0	< 5.0	< 5.0	< 5.0

Shade	Value (shaded) exceeds the Wisconsin Department of Natural Resources Enforcement Standard.
Bold	Value (bold) exceeds the Wisconsin Department of Natural Resources Preventative Action Limit.
B	Detected in blank.
CAS	Chemical Abstracts Service.
Dup	Duplicate.
J	Estimated results.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter
NA	Not analyzed.
ND	Not detected.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-148 5/20/10	MW-149 5/20/10	MW-151 5/20/10	MW-152 5/20/10	MW-153 5/20/10	MW-155 5/20/10	MW-156 5/20/10	MW-156 Dup 5/20/10
VOCs (µg/L)									
Acetone	67-64-1	<25	<25	<25	<250	<250	<25	<25	<25
Benzene	71-43-2	<1.0	<1.0	<1.0	**34.7**	**3.5 J**	<1.0	<1.0	<1.0
2-Butanone	78-93-3	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0
n-Butylbenzene	104-51-8	<1.0	<1.0	<1.0	24.1	<10	<1.0	<1.0	<1.0
sec-Butylbenzene	135-98-8	<1.0	<1.0	<1.0	16.1	<10	<1.0	<1.0	<1.0
tert-Butylbenzene	98-06-6	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
Carbon disulfide	75-15-0	<2.0	<2.0	<2.0	<20	<20	<2.0	<2.0	<2.0
Chlorobenzene	108-90-7	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
Chloroethane	75-00-3	13.8	<2.0	<2.0	**438**	**1,320**	<2.0	<2.0	<2.0
Chloroform	66-67-3	<1.0	<1.0	<1.0	**5.4 J**	**4.5 J**	<1.0	<1.0	<1.0
Chloromethane	74-87-3	<2.0	<2.0	<2.0	<20	<20	<2.0	<2.0	<2.0
2-Chlorotoluene	95-49-8	<1.0	<1.0	<1.0	23.3	<10	<1.0	<1.0	<1.0
4-Chlorotoluene	106-43-4	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
Cyclohexane	110-82-7	<1.0	<1.0	<1.0	11.9	<10	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	95-50-1	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	541-73-1	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	106-46-7	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,1-Dichloroethane	75-34-3	<1.0	1.7	<1.0	<10	2.5 J	<1.0	<1.0	<1.0
1,2-Dichloroethane	106-93-4	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	156-59-2	<1.0	<1.0	<1.0	<10	<10	1	1.5	1.6
trans-1,2-Dichloroethene	156-60-5	<1.0	<1.0	<1.0	15.7	<10	<1.0	<1.0	<1.0
1,2-Dichloropropane	78-87-5	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,4-Dioxane	123-91-1	<250	<250	<250	<2,500	<2,500	<250	<250	<250
Ethyl acetate	141-78-6	<10	<10	<10	<100	<100	<10	<10	<10
Ethyl ether	60-29-7	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0
Ethylbenzene	100-41-4	<1.0	<1.0	<1.0	**506**	<10	<1.0	<1.0	<1.0
Hexachlorobutadiene	87-68-3	<2.0	<2.0	<2.0	<20	<20	<2.0	<2.0	<2.0
Isopropylbenzene	98-82-8	<1.0	<1.0	<1.0	71.7	<10	<1.0	<1.0	<1.0
p-Isopropyltoluene	99-87-6	<1.0	<1.0	<1.0	6.6 J	<10	<1.0	<1.0	<1.0
Methylcyclohexane	108-87-2	<1.0	<1.0	<1.0	21.1	<10	<1.0	<1.0	<1.0
Methylene chloride	75-09-2	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0
Methyl-tert-butyl ether	1634-04-4	0.60 J	0.63 J	<1.0	<10	<10	<1.0	<1.0	<1.0
4-Methyl-2-pentanone	108-10-1	<5.0	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0
Naphthalene	91-20-3	<5.0	<5.0	<5.0	**174**	<50	<5.0	<5.0	<5.0

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Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-148 5/20/10	MW-149 5/20/10	MW-151 5/20/10	MW-152 5/20/10	MW-153 5/20/10	MW-155 5/20/10	MW-156 5/20/10	MW-156 Dup 5/20/10
VOCs (µg/L)									
n-Propylbenzene	103-65-1	<1.0	<1.0	<1.0	123	<10	<1.0	<1.0	<1.0
Tetrahydrofuran	109-99-9	**22**	<5.0	<5.0	<50	<50	<5.0	<5.0	<5.0
Toluene	108-88-3	<1.0	<1.0	<1.0	11.1	<10	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	87-61-6	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	71-55-6	<1.0	0.50 J	<1.0	<10	<10	<1.0	<1.0	<1.0
Trichloroethene	79-01-6	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	95-63-6	<2.0	<2.0	<2.0	895	<20	<2.0	<2.0	<2.0
1,3,5-Trimethylbenzene	108-67-8	<2.0	<2.0	<2.0	11.4 J	<20	<2.0	<2.0	<2.0
Vinyl chloride	75-01-4	<1.0	<1.0	<1.0	<10	<10	<1.0	<1.0	<1.0
Xylenes (total)	1330-20-7	<3.0	<3.0	<3.0	160	<30	<3.0	<3.0	<3.0
Total VOCs		36.4	2.83	ND	2,549.1	1,330.5	1	1.5	1.6
2-Butoxy ethanol (mg/L)	111-76-2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA

Shade	Value (shaded) exceeds the Wisconsin Department of Natural Resources Enforcement Standard.
Bold	Value (bold) exceeds the Wisconsin Department of Natural Resources Preventative Action Limit.
B	Detected in blank.
CAS	Chemical Abstracts Service.
Dup	Duplicate.
J	Estimated results.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter
NA	Not analyzed.
ND	Not detected.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-157 5/20/10	MW-157 Dup 5/20/10
VOCs (µg/L)			
Acetone	67-64-1	<25	<25
Benzene	71-43-2	<1.0	<1.0
2-Butanone	78-93-3	<5.0	<5.0
n-Butylbenzene	104-51-8	<1.0	<1.0
sec-Butylbenzene	135-98-8	<1.0	<1.0
tert-Butylbenzene	98-06-6	<1.0	<1.0
Carbon disulfide	75-15-0	<2.0	<2.0
Chlorobenzene	108-90-7	<1.0	<1.0
Chloroethane	75-00-3	<2.0	<2.0
Chloroform	66-67-3	<1.0	<1.0
Chloromethane	74-87-3	<2.0	<2.0
2-Chlorotoluene	95-49-8	<1.0	<1.0
4-Chlorotoluene	106-43-4	<1.0	<1.0
Cyclohexane	110-82-7	<1.0	<1.0
1,2-Dichlorobenzene	95-50-1	<1.0	<1.0
1,3-Dichlorobenzene	541-73-1	<1.0	<1.0
1,4-Dichlorobenzene	106-46-7	<1.0	<1.0
1,1-Dichloroethane	75-34-3	<1.0	0.25 J
1,2-Dichloroethane	106-93-4	<1.0	<1.0
cis-1,2-Dichloroethene	156-59-2	<1.0	<1.0
trans-1,2-Dichloroethene	156-60-5	<1.0	<1.0
1,2-Dichloropropane	78-87-5	<1.0	<1.0
1,4-Dioxane	123-91-1	<250	<250
Ethyl acetate	141-78-6	<10	<10
Ethyl ether	60-29-7	<5.0	<5.0
Ethylbenzene	100-41-4	<1.0	<1.0
Hexachlorobutadiene	87-68-3	<2.0	<2.0
Isopropylbenzene	98-82-8	<1.0	<1.0
p-Isopropyltoluene	99-87-6	<1.0	<1.0
Methylcyclohexane	108-87-2	<1.0	<1.0
Methylene chloride	75-09-2	<5.0	<5.0
Methyl-tert-butyl ether	1634-04-4	<1.0	<1.0
4-Methyl-2-pentanone	108-10-1	<5.0	<5.0
Naphthalene	91-20-3	<5.0	<5.0

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Table 7. Summary of Monitoring Well Analytical Results, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Analyte	CAS Number	MW-157 5/20/10	MW-157 Dup 5/20/10
VOCs (µg/L)			
n-Propylbenzene	103-65-1	<1.0	<1.0
Tetrahydrofuran	109-99-9	<5.0	<5.0
Toluene	108-88-3	<1.0	<1.0
1,2,3-Trichlorobenzene	87-61-6	<1.0	<1.0
1,1,1-Trichloroethane	71-55-6	<1.0	<1.0
Trichloroethene	79-01-6	<1.0	<1.0
1,2,4-Trimethylbenzene	95-63-6	<2.0	<2.0
1,3,5-Trimethylbenzene	108-67-8	<2.0	<2.0
Vinyl chloride	75-01-4	<1.0	<1.0
Xylenes (total)	1330-20-7	<3.0	<3.0
Total VOCs		ND	0.25
2-Butoxy ethanol (mg/L)	111-76-2	< 5.0	NA

Shade	Value (shaded) exceeds the Wisconsin Department of Natural Resources Enforcement Standard.
Bold	Value (bold) exceeds the Wisconsin Department of Natural Resources Preventative Action Limit.
B	Detected in blank.
CAS	Chemical Abstracts Service.
Dup	Duplicate.
J	Estimated results.
µg/L	Micrograms per liter.
mg/L	Milligrams per liter
NA	Not analyzed.
ND	Not detected.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	CAS	Preventive	Enforcement	IW-1						
Sample Date	Number	Action Limit	Standard	2/23/06	5/31/06	8/29/06	11/20/06	2/27/07	5/29/07	8/22/07
VOCs (µg/L)										
Acetone	67-64-1	200	1,000	NA	**29,000**	**31,000**	**17,000**	**23,000**	**11,000**	**12,000 B**
Benzene	71-43-2	0.5	5	**3,900**	**3,600**	**2,800**	**2,600**	**2,700**	**3,200**	**2,600**
2-Butanone	78-93-3	90	460	NA	**2,900 J**	**3,000 J**	**2,500 J**	**2,200 J**	<2,000	**1,400 J**
n-Butylbenzene	104-51-8	Not listed	Not listed	<50	<500	<500	<620	<420	<200	<330
sec-Butylbenzene	135-98-8	Not listed	Not listed	<62	<500	<500	<620	<420	<200	<330
tert-Butylbenzene	98-06-6	Not listed	Not listed	<50	<500	<500	<620	<420	<200	<330
Carbon disulfide	75-15-0	200	1,000	NA	<500	<500	<620	<420	<200	<330
Chlorobenzene	108-90-7	Not listed	Not listed	<50	<500	<500	<620	<420	<200	<330
Chloroethane	75-00-3	80	400	**2,200**	**2,000**	**1,600**	**1,400**	**2,600**	**1,800**	**1,700**
Chloromethane	74-87-3	0.3	3	<50	<500	<500	<620	<420	<200	<330
2-Chlorotoluene	95-49-8	Not listed	Not listed	2,800	1,800	1,700	2,200	1,900	2,500	2,200
4-Chlorotoluene	106-43-4	Not listed	Not listed	<50	110 J	98 J	110 J	100 J	150 J	150 J
Cyclohexane	110-82-7	Not listed	Not listed	NA	<500	<500	<620	<420	<200	<330
1,2-Dichlorobenzene	95-50-1	60	600	**120 J**	**120 J**	**140 J**	**140 J**	**140 J**	**180 J**	**170 J**
1,4-Dichlorobenzene	106-46-7	15	75	<50	<500	<500	<620	<420	<200	<330
1,1-Dichloroethane	75-34-3	85	850	**2,000**	**980**	**710**	**380 J**	**330 J**	**890**	**510**
1,2-Dichloroethane	107-06-2	0.5	5	<120	<500	<500	<620	<420	<200	<330
1,1-Dichloroethene	75-35-4	0.7	7	<120	<500	<500	<620	<420	<200	<330
cis-1,2-Dichloroethene	156-59-2	7	70	**15,000**	**9,700**	**3,400**	**8,700**	**1,800**	**5,400**	**3,500**
trans-1,2-Dichloroethene	156-60-5	20	100	**520**	**470 J**	**250 J**	**240 J**	**180 J**	**330**	**210 J**
1,1-Dichloroethene	75-35-4	0.7	7	<120	<500	<500	<620	<420	<200	<330
1,4-Dioxane	123-91-1	Not listed	Not listed	NA	<100,000	<100,000	<120,000	<83,000	<40,000	<67,000
Ethyl acetate	141-78-6	Not listed	Not listed	NA	NA	NA	NA	<1,700	<800	<1,300
Ethyl ether	60-29-7	Not listed	Not listed	NA	320 J	250 J	170 J	210 J	260 J	290 J
Ethylbenzene	100-41-4	140	700	**2,000**	**1,700**	**1,400**	**1,600**	**1,500**	**1,900**	**1,500**
Hexachlorobutadiene	87-68-3	Not listed	Not listed	<120	<500	<500	<620	<420	<200	<330
2-Hexanone	591-78-6	Not listed	Not listed	NA	<5,000	<5,000	<6,200	<4,200	<2,000	<3,300
Isopropylbenzene	98-82-8	Not listed	Not listed	58 J	<500	<500	<620	<420	80 J	<330
p-Isopropyltoluene	99-87-6	Not listed	Not listed	<50	<500	<500	<620	<420	<200	<330
Methylcyclohexane	108-87-2	Not listed	Not listed	NA	<500	<500	<620	<420	<200	<330
Methylene chloride	75-09-2	0.5	5	**400 J**	**350 J**	<500	<620	**310 J B**	**270 B**	**520**
4-Methyl-2-pentanone	108-10-1	50	500	NA	**13,000**	**14,000**	**13,000**	**12,000**	**10,000**	**8,200**
Naphthalene	91-20-3	8	40	<62	<500	<500	<620	<420	<200	<330

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	CAS	Preventive	Enforcement	IW-1						
Sample Date	Number	Action Limit	Standard	2/23/06	5/31/06	8/29/06	11/20/06	2/27/07	5/29/07	8/22/07
VOCs (µg/L) (continued)										
n-Propylbenzene	103-65-1	Not listed	Not listed	<120	<500	<500	<620	<420	70 J	<330
Tetrachloroethene	127-18-4	0.5	5	<120	<500	<500	<620	<420	**97 J**	<330
Tetrahydrofuran	109-99-9	10	50	NA	**1,200 J**	**1,600 J**	**850 J**	**950 J**	**1,500**	**1,300 J**
Toluene	108-88-3	200	1,000	**16,000**	**16,000**	**13,000**	**13,000**	**12,000**	**13,000**	**11,000**
1,1,1-Trichloroethane	71-55-6	40	200	**460**	**220 J**	<500	<620	<420	**220**	<330
Trichloroethene	79-01-6	0.5	5	<50	<500	<500	<620	<420	<200	<330
1,2,4-Trimethylbenzene	95-63-6	Not listed	Not listed	320	270 J	240 J	290 J	280 J	330	330
1,3,5-Trimethylbenzene	108-67-8	Not listed	Not listed	<50	<500	<500	<620	<420	71 J	57 J
Trimethylenzene (total)	---	96	480	**320**	**270 J**	**240 J**	**290 J**	**280 J**	**401 J**	**387 J**
Vinyl chloride	75-01-4	0.02	0.2	**18,000**	**12,000**	**5,800**	**3,900**	**1,800**	**9,800**	**2,000**
Xylenes (total)	1330-20-7	1,000	10,000	**13,000**	**13,000**	**11,000**	**12,000**	**11,000**	**15,000**	**11,000**
Total VOCs	---	---	---	76,778	108,740	91,988	80,080	75,000	78,048	60,637
2-Butoxyethanol (mg/L)	111-76-2	Not listed	Not listed	NA	5.4	5.3	<5.0	3.9 J	2.7 J	2.7 J
Dissolved Gases (µg/L)										
Ethane	74-85-1	Not listed	Not listed	250	240	260	88	220	290	110
Ethene	74-84-0	Not listed	Not listed	5,800	7,100	3,800	750	5,100	4,700	950
Methane	74-82-8	Not listed	Not listed	16,000	15,000	13,000	17,000	22,000	20,000	12,000
Field Measurements										
Conductance (µS/cm)	---	Not listed	Not listed	NM	1,763	2,877	2,538	2,592	2,305	3,068
Dissolved Oxygen (mg/L)	---	Not listed	Not listed	NM	0.71	0.25	2	2.33	0.92	0.9
ORP (mV)	---	Not listed	Not listed	NM	-69	-85.1	-79.5	-69.5	-81.7	-77.9
pH	---	Not listed	Not listed	NM	6.44	6.44	6.64	6.34	6.37	6.24
Specific Conductivity (µS/cm)	---	Not listed	Not listed	NM	2,357	3,192	3,217	3,777	3,103	3,716
Temperature (C)	---	Not listed	Not listed	NM	11.8	19.81	13.94	9.25	11.55	15.88
Natural Attenuation Parameters (mg/L)										
Nitrate as N	84145-82-4	2	4	NA	NA	NA	NA	NA	NA	NA
Sulfate	66-31-3	125	250	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	7440-44-0	Not listed	Not listed	579	410	395	<0.220	467	453	313

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-1 (continued)								IW-4		
Sample Date	**11/28/07**	**2/28/08**	**5/6/08**	**8/21/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**5/31/06**	**8/30/06**	**11/17/06**
VOCs (µg/L)											
Acetone	**23,000**	**9,100**	**7,400**	**9,400**	**4,500**	**4,500**	**2,500 B**	**2,600**	35 J	<3,300	**600**
Benzene	**2,200**	**2,600**	**2,400**	**2,000**	**2,300**	**1,700**	**2,200**	**1,900**	**520**	**1,100**	**450**
2-Butanone	**2,500 J**	**1,100 J**	**1,300 J**	**1,100 J**	**780 J**	**680 J**	<1,000	**390 J**	<150	<3,300	**95 J**
n-Butylbenzene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
sec-Butylbenzene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
tert-Butylbenzene	280 J B	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Carbon disulfide	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Chlorobenzene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Chloroethane	**1,600**	**2,000**	**1,000**	**1,400**	**1,700**	**1,200**	**960**	**1,200**	<15	<330	<18
Chloromethane	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
2-Chlorotoluene	1,500	1,700	2,500	1,200	1,900	1,500	2,500	2,400	<15	<330	<18
4-Chlorotoluene	<500	110 J	130 J	75 J	100 J	90 J	140	130 J	<15	<330	<18
Cyclohexane	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
1,2-Dichlorobenzene	**140 J**	**130 J**	**160 J**	**110 J**	**130 J**	**120 J**	**170 B**	**180 J**	<15	<330	<18
1,4-Dichlorobenzene	<500	<400	<330	<250	<330	<330	**36 J B**	<200	<15	<330	<18
1,1-Dichloroethane	**220 J**	**440**	**1,400**	**430**	**160 J**	**230 J**	**690**	56 J	<15	<330	<18
1,2-Dichloroethane	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
1,1-Dichloroethene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
cis-1,2-Dichloroethene	**1,200**	**3,400**	**9,900**	**2,200**	**490**	**1,300**	**5,500**	**94 J**	<15	<330	<18
trans-1,2-Dichloroethene	**110 J**	**190 J**	**180 J**	**140 J**	**110 J**	**74 J**	**130**	**76 J**	<15	<330	<18
1,1-Dichloroethene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
1,4-Dioxane	<100,000	<80,000	<67,000	<50,000	<67,000	<67,000	<20,000	<40,000	<3,100	<67,000	<3,600
Ethyl acetate	<2,000	<1,600	<1,300	<1,000	<1,300	<1,300	<400	<800	NA	NA	NA
Ethyl ether	440 J	440 J	560 J	330 J	340 J	280 J	260	190 J	5.5 J	<670	<36
Ethylbenzene	**920**	**1,500**	**1,800**	**1,100**	**1,500**	**1,100**	**1,600**	**1,400**	**230**	**700**	**240**
Hexachlorobutadiene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
2-Hexanone	<5,000	<4,000	<3,300	<2,500	<3,300	<3,300	<1,000	<2,000	<150	<3,300	<180
Isopropylbenzene	<500	64 J	79 J	52 J	56 J	<330	62 J	36 J	3.7 J	<330	7.1 J
p-Isopropyltoluene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Methylcyclohexane	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Methylene chloride	**700**	**160 J**	**310 J**	**140 J**	<330	**150 J B**	**48 J**	<200	<15	<330	<18
4-Methyl-2-pentanone	**12,000**	**8,700**	**13,000**	**7,300**	**3,100 J**	**7,300**	**3,200**	**2,600**	<150	<3,300	<180
Naphthalene	<500	<400	<330	<250	**220 J B**	<330	**27 J B**	<200	<15	<330	8.0 J

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-1 (continued)								IW-4		
Sample Date	**11/28/07**	**2/28/08**	**5/6/08**	**8/21/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**5/31/06**	**8/30/06**	**11/17/06**
VOCs (µg/L) (continued)											
n-Propylbenzene	<500	<400	66 J	<250	250 J	<330	61 J	41 J	2.9 J	<330	7.2 J
Tetrachloroethene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
Tetrahydrofuran	**1,400 J**	**1,700 J**	**2,300**	**1,500**	**1,300 J**	**1,100 J**	**950**	**800 J**	<77	<1,700	<91
Toluene	**10,000**	**14,000**	**12,000**	**9,900**	**10,000**	**8,500**	**8,600**	**8,000**	**250**	**11,000**	**650**
1,1,1-Trichloroethane	<500	**160 J**	**190 J**	<250	<330	<330	**130**	<200	<15	<330	<18
Trichloroethene	<500	<400	<330	<250	<330	<330	<100	<200	<15	<330	<18
1,2,4-Trimethylbenzene	230 J	260 J	360	210 J	270 J	230 J	330 B	290	9.3 J	55 J	41
1,3,5-Trimethylbenzene	<500	<400	76 J	42 J	200 J	<330	69 J	67 J	<15	<330	<18
Trimethylenzene (total)	**230 J**	**260 J**	**436 J**	**252 J**	**470 J**	**230 J**	**399 B**	**357 J**	9.3 J	55 J	41
Vinyl chloride	**1,300**	**3,100**	**4,900**	**1,400**	**1,200**	**840**	**3,000**	**130 J**	<15	<330	<18
Xylenes (total)	**7,700**	**18,000**	**15,000**	**11,000**	**15,000**	**8,000**	**12,000**	**11,000**	750	**2,200**	610
Total VOCs	67,440	68,854	77,011	51,029	45,606	38,894	45,163	33,580	1,806.4	15,055	2,708.3
2-Butoxyethanol (mg/L)	2.9 J	3.4 J	2.6 J	2.2 J	1.2 J	2.4 J	0.94 J	0.91 J	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)											
Ethane	73	170	240	160	130	100	290	160	140	140	76
Ethene	570	2,600	1,600	1,200	510	420	1,500	140	0.49	6.4	3.9
Methane	14,000	24,000	22,000	16,000	16,000	22,000	23,000	15,000	16,000	17,000	13,000
Field Measurements											
Conductance (µS/cm)	2,305	2,542	2,471	3,108	997	1,047	2,647	4,593	1,032	2,200	2,516
Dissolved Oxygen (mg/L)	0.14	1.81	0.79	0.59	0.68	5.31	0.61	1.2	1.02	1.61	0.4
ORP (mV)	-81.3	1,148.4	-58.3	-54.4	-108.6	-34.8	-65.9	-9.6	-86.3	-73.9	-106.2
pH	6.1	6.19	6.61	6.35	6.99	7.65	6.63	6.3	6.79	6.77	6.5
Specific Conductivity (µS/cm)	2,814	3,701	3,435	3,358	1,268	1,734	3,409	4,794	1,458	2,673	3,081
Temperature (C)	15.53	8.61	10.29	21.1	12.79	4.21	13.28	22.79	9.7	15.74	13.05
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	NA	<0.15	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	<1.5	NA	NA	NA	NA
Total Organic Carbon (mg/L)	392	461	382	548	414	276	238	241	7 J	237	<0.220

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-4 (continued)										IW-25
Sample Date	5/31/07	8/22/07	11/28/07	11/28/07	5/6/08	8/21/08	11/20/08	2/10/09	5/19/09	8/25/09	6/1/06
VOCs (µg/L)											
Acetone	**460 J B**	**730 J**	**7,000 B**	**7,700 B**	**3,300**	<590	<200	**5,100**	**3,800 B**	49 J	<57
Benzene	**420**	**350**	**380**	**370**	**200**	**450**	**300**	**320**	**620**	**480**	<5.7
2-Butanone	**240 J**	**350 J**	**640 J**	**640 J**	89 J	<590	<200	<1,000	<400	<400	<57
n-Butylbenzene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
sec-Butylbenzene	<200	<170	<110	<110	<56	<59	<20	<100	5.5 J B	<40	<5.7
tert-Butylbenzene	<200	<170	64 J	64 J	<56	<59	<20	<100	<40	<40	<5.7
Carbon disulfide	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Chlorobenzene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Chloroethane	<200	<170	53 J	73 J	42 J	**160**	75	**85 J**	68	52	1.9 J
Chloromethane	<200	<170	**42 J B**	**39 J B**	<56	<59	<20	<100	<40	<40	<5.7
2-Chlorotoluene	<200	<170	<110	<110	<56	32 J	12 J	<100	26 J	15 J	<5.7
4-Chlorotoluene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Cyclohexane	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,2-Dichlorobenzene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,4-Dichlorobenzene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,1-Dichloroethane	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	1.3 J
1,2-Dichloroethane	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,1-Dichloroethene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
cis-1,2-Dichloroethene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	**130**
trans-1,2-Dichloroethene	<200	<170	<110	<110	<56	14 J	6.5 J	<100	<40	<40	4.7 J
1,1-Dichloroethene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,4-Dioxane	<40,000	<33,000	<22,000	<22,000	<11,000	<12,000	<4,000	<20,000	<8,000	<8,000	<1,100
Ethyl acetate	<800	<670	<440	<440	<220	<240	<80	<400	<160	<160	NA
Ethyl ether	<400	<330	<220	<220	<110	<120	<40	<200	<80	<80	90
Ethylbenzene	**300**	**400**	**440**	**410**	**680**	**490**	**330**	**190**	**550**	**390**	<5.7
Hexachlorobutadiene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
2-Hexanone	<2,000	<1,700	<1,100	<1,100	<560	<590	<200	<1,000	<400	<400	<57
Isopropylbenzene	<200	<170	<110	<110	11 J	17 J	11 J	<100	18 J	13 J	<5.7
p-Isopropyltoluene	<200	<170	<110	<110	<56	<59	11 J B	<100	<40	<40	<5.7
Methylcyclohexane	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Methylene chloride	<200	**87 J B**	<110	<110	<56	**26 J**	<20	**34 J B**	<40	<40	<5.7
4-Methyl-2-pentanone	<2,000	<1,700	**100 J**	**96 J**	<560	<590	<200	<1,000	<400	<400	<57
Naphthalene	<200	<170	<110	<110	<56	<59	**15 J B**	<100	<40	<40	<5.7

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-4 (continued)										IW-25
Sample Date	**5/31/07**	**8/22/07**	**11/28/07**	**11/28/07**	**5/6/08**	**8/21/08**	**11/20/08**	**2/10/09**	**5/19/09**	**8/25/09**	**6/1/06**
VOCs (µg/L) (continued)											
n-Propylbenzene	<200	<170	<110	<110	12 J	20 J	15 J	<100	25 J	18 J	<5.7
Tetrachloroethene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Tetrahydrofuran	<1,000	<830	<560	<560	<280	**59 J**	**26 J**	<500	<200	<200	5.3 J
Toluene	**5,800**	**5,000**	**4,400**	**4,200**	**2,200**	**2,300**	96	140	**3,100**	76	<5.7
1,1,1-Trichloroethane	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
Trichloroethene	<200	<170	<110	<110	<56	<59	<20	<100	<40	<40	<5.7
1,2,4-Trimethylbenzene	34 J	44 J	44 J	40 J	42 J	110	75	47 J	110 B	84	<5.7
1,3,5-Trimethylbenzene	<200	<170	<110	<110	<56	<59	14 J	<100	11 J	9.4 J	<5.7
Trimethylenzene (total)	34 J	44 J	44 J	40 J	42 J	**110**	89 J	47 J	**121 JB**	93.4 J	<5.7
Vinyl chloride	<200	<170	<110	<110	<56	**21 J**	<20	<100	<40	<40	**54**
Xylenes (total)	950	**1,400**	**1,700**	**1,600**	**3,600**	**2,000**	**1,500**	810	**2,300**	**2,500**	<5.7
Total VOCs	8,204	8,361	14,863	15,232	10,176	5,699	2,486.5	6,726	10,633.5	3,686.4	287.2
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	NA	<5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	<5.0
Dissolved Gases (µg/L)											
Ethane	29	11	3.8	NA	9.3	15	9.1	7.6	19	17	4.1
Ethene	2.5	0.56	1.1	NA	4.2	10	0.39	0.36	0.27	< 0.025	5.1
Methane	20,000	15,000	14,000	NA	16,000	18,000	18,000	19,000	21,000	18,000	410
Field Measurements											
Conductance (µS/cm)	1,768	2,640	2,076	NM	2,678	2,482	1,500	1,669	2,660	4,441	1,929
Dissolved Oxygen (mg/L)	0.27	0.17	0.13	NM	0.66	1.61	0.96	0.54	0.97	1.33	2.05
ORP (mV)	-59.5	-54.1	84.9	NM	-62.4	-44.2	-138.6	-59.2	-41.6	5.71	93.2
pH	6.1	6.09	5.99	NM	6.88	6.32	6.17	6.5	6.46	6.64	6.85
Specific Conductivity (µS/cm)	2,492	3,390	2,646	NM	3,575	2,881	1,976	2,434	3,488	4,862	2,625
Temperature (C)	9.79	13.41	13.71	NM	10.64	17.74	12.37	8.54	12.53	20.44	10.41
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	<0.15	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	1.9 Ja	NA	NA
Total Organic Carbon (mg/L)	248	153	NA	NA	19	26.1	17.3	17.9 ET	18.4	7.87 ET	3 J

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-25 (continued)				IW-25 Dup			IW-25			
Sample Date	**8/30/06**	**11/17/06**	**2/26/07**	**5/29/07**	**5/29/07**	**8/22/07**	**11/27/07**	**2/28/08**	**5/6/08**	**8/19/08**	**11/21/08**
VOCs (µg/L)											
Acetone	<120	<95	9.2 J	58	39 J B	100	20	39	170	8.2 J	10 J
Benzene	<12	<9.5	<4.0	<2.5	<8.0	<8	**0.71 J**	**0.57 J**	<5.0	**0.79 J**	**1.6 J**
2-Butanone	<120	<95	54	**460**	**290**	**380**	56	**150**	**260**	3.1 J	1.9 J
n-Butylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
sec-Butylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
tert-Butylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Carbon disulfide	<12	<9.5	<4.0	<2.5	<8.0	<8	2	<2.5	<5.0	<1.7	<2.5
Chlorobenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Chloroethane	<12	<9.5	<4.0	<2.5	<8.0	<8	1.2	<2.5	<5.0	0.48 J	0.73 J
Chloromethane	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
2-Chlorotoluene	<12	<9.5	<4.0	3.8	3.9 J	3 J	1.5	0.63 J	1.2 J	1.7	0.72 J
4-Chlorotoluene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Cyclohexane	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,2-Dichlorobenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,4-Dichlorobenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,1-Dichloroethane	<12	2.2 J	0.95 J	0.69 J	<8.0	<8	0.65 J	0.72 J	<5.0	0.39 J	2.9
1,2-Dichloroethane	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,1-Dichloroethene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
cis-1,2-Dichloroethene	**350**	**250**	**75**	**15**	**15**	<8	2	<2.5	1.4 J	0.53 J	**72**
trans-1,2-Dichloroethene	**26**	9.7	2.5 J	0.80 J	<8.0	<8	0.37 J	0.58 J	<5.0	0.64 J	6.7
1,1-Dichloroethene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,4-Dioxane	<2,500	<1,900	<800	<500	<1,600	<1,600	<200	<500	<1,000	<330	<500
Ethyl acetate	NA	NA	<16	<10	<32	<32	<4	<10	<20	<6.7	<10
Ethyl ether	49	29	130	110	120	92	39	79	130	46	8.8
Ethylbenzene	<12	<9.5	<4.0	50	52	32	22	6.2	13	18	4.8
Hexachlorobutadiene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
2-Hexanone	<120	<95	<40	<25	<80	<80	<10	<25	<50	<17	<25
Isopropylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
p-Isopropyltoluene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Methylcyclohexane	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Methylene chloride	<12	<9.5	<4.0	<2.5	<8.0	**5.8 J B**	<1	<2.5	<5.0	<1.7	<2.5
4-Methyl-2-pentanone	<120	<95	<40	1.0 J	<80	<80	1.2 J	1.3 J	6.8 J	1.8 J	<25
Naphthalene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-25 (continued)				IW-25 Dup		IW-25				
Sample Date	**8/30/06**	**11/17/06**	**2/26/07**	**5/29/07**	**5/29/07**	**8/22/07**	**11/27/07**	**2/28/08**	**5/6/08**	**8/19/08**	**11/21/08**
VOCs (µg/L) (continued)											
n-Propylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Tetrachloroethene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Tetrahydrofuran	5.8 J	<48	5.5 J	5.2 J	6.3 J	5.6 J	2.8 J	5.9 J	**11 J**	6.4 J	2.6 J
Toluene	<12	<9.5	<4.0	0.63 J	<8.0	<8	0.66 J	0.44 J	<5.0	<1.7	<2.5
1,1,1-Trichloroethane	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Trichloroethene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,2,4-Trimethylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
1,3,5-Trimethylbenzene	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Trimethylenzene (total)	<12	<9.5	<4.0	<2.5	<8.0	<8	<1	<2.5	<5.0	<1.7	<2.5
Vinyl chloride	**130**	**100**	**62**	**31**	**29**	<8	**0.61 J**	**0.61 J**	**1.8 J**	**0.53 J**	**70**
Xylenes (total)	<12	<9.5	<8.0	130	150	70	44	12	27	32	3.5 J
Total VOCs	560.8	390.9	339.15	866.12	705.2	688.4	194.7	296.95	622.2	120.56	186.25
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)											
Ethane	12	13	12	65	NA	84	48	69	51	34	39
Ethene	6.1	7.5	37	38	NA	0.22	0.54	0.87	0.55	0.44	40
Methane	1,100	1,500	980	2,900	NA	13,000	20,000	16,000	19,000	17,000	9,000
Field Measurements											
Conductance (µS/cm)	2,546	1,318	2,224	5,237	NM	4,807	3,211	4,905	6,753	7,139	3,408
Dissolved Oxygen (mg/L)	2.55	6.94	3.34	2.66	NM	0.06	0.32	1.95	1.04	4.58	1.96
ORP (mV)	66.4	76.6	-67	-78.4	NM	-69.1	-129.5	1,082.5	-43.3	-78.8	-97.2
pH	6.87	6.76	6.87	6.37	NM	6.54	7.4	7.07	7.37	6.86	6.75
Specific Conductivity (µS/cm)	3,143	1,718	3,270	7,242	NM	6,082	4,102	7,392	9,464	9,017	4,037
Temperature (C)	15.05	12.81	8	10.51	NM	1,403	13.62	7.44	9.84	14.11	12.87
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	3.21	<0.220	137	457	NA	311	11.7	102	86.4	13.4	2.47

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-25 (continued)				IW-27						
Sample Date	**2/10/09**	**5/19/09**	**8/25/09**	**11/10/09**	**6/1/06**	**8/30/06**	**11/17/06**	**2/26/07**	**5/29/07**	**8/21/07**	**11/27/07**
VOCs (µg/L)											
Acetone	<10	55 B	7.1 J	30.2	<10,000	<10	<10	<10	<10	<10	1.7 J
Benzene	**0.64 J**	0.35 J	0.39 J	**0.82 J**	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
2-Butanone	<10	7 J	1.2 J	7.9	**840 J**	<10	<10	<10	<10	<10	<10
n-Butylbenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
sec-Butylbenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
tert-Butylbenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Carbon disulfide	0.51 J	1.3	0.41 J	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Chlorobenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Chloroethane	<1	<1	<1.0	<2.0	**520 J**	6.3	4.5	1.1	2.6	1.8	1.5
Chloromethane	<1	<1	<1.0	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
2-Chlorotoluene	0.43 J	4	1.1	0.80 J	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
4-Chlorotoluene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Cyclohexane	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
1,2-Dichlorobenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
1,4-Dichlorobenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
1,1-Dichloroethane	0.59 J	0.4 J	0.48 J	1.9	**1,300**	6.2	2.3	1.8	1.1	1.6	1.4
1,2-Dichloroethane	<1	<1	<1.0	<1.0	<1,000	0.37 J	0.42 J	0.19 J	0.35 J	0.22 J	<1
1,1-Dichloroethene	<1	<1	<1.0	<1.0	<1,000	0.18 J	<1.0	<1.0	<1.0	<1	<1
cis-1,2-Dichloroethene	<1	**15**	5.5	**24.7**	**37,000**	**13**	**7.7**	4	2.2	4.6	4.1
trans-1,2-Dichloroethene	0.86 J	1.3	1.2	6.6	**590 J**	0.71 J	0.37 J	<1.0	<1.0	<1	<1
1,1-Dichloroethene	<1	<1	<1.0	<1.0	<1,000	0.18 J	<1.0	<1.0	<1.0	<1	<1
1,4-Dioxane	<200	<200	<200	<250	<200,000	17 J	69 J	19 J	19 J	30 J	<200
Ethyl acetate	<4	<4	<4.0	<10	NA	NA	NA	<4.0	<4.0	<4	<4
Ethyl ether	36	4.6	15	7.2	<2,000	<2	<2.0	<2.0	<2.0	<2	<2
Ethylbenzene	4.5	38	12	3.3	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Hexachlorobutadiene	<1	<1	<1.0	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
2-Hexanone	<10	<10	<10	<10	<10,000	<10	<10	<10	<10	<10	<10
Isopropylbenzene	<1	0.2 J	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
p-Isopropyltoluene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Methylcyclohexane	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Methylene chloride	<1	<1	<1.0	<5.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
4-Methyl-2-pentanone	<10	1.3 J	0.64 J	<5.0	**350 J**	<10	<10	<10	<10	<10	<10
Naphthalene	<1	<1	<1.0	<5.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-25 (continued)				IW-27						
Sample Date	**2/10/09**	**5/19/09**	**8/25/09**	**11/10/09**	**6/1/06**	**8/30/06**	**11/17/06**	**2/26/07**	**5/29/07**	**8/21/07**	**11/27/07**
VOCs (µg/L) (continued)											
n-Propylbenzene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Tetrachloroethene	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Tetrahydrofuran	3.9 J	**18**	4.9 J	2.7 J	<5,000	**32**	**24**	**15**	**16**	**12**	**20**
Toluene	0.18 J	0.31 J	<1.0	<1.0	**940 J**	<1	<1.0	<1.0	<1.0	<1	<1
1,1,1-Trichloroethane	<1	<1	<1.0	<1.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Trichloroethene	<1	<1	<1.0	<1.0	<1,000	**1.7**	**0.97 J**	**0.69 J**	0.48 J	0.4 J	0.32 J
1,2,4-Trimethylbenzene	<1	<1	<1.0	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
1,3,5-Trimethylbenzene	<1	<1	<1.0	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Trimethylenzene (total)	<1	<1	<1.0	<2.0	<1,000	<1	<1.0	<1.0	<1.0	<1	<1
Vinyl chloride	**0.53 J**	**9.5**	**10**	**42**	**10,000**	**2.5**	**2.2**	**0.92 J**	**2.8**	**3.1**	**3.8**
Xylenes (total)	3.5	70	6.8	4	<1,000	<1	<1.0	<2.0	<2.0	<2	<2
Total VOCs	51.64	226.26	66.72	132.12	51,540	80.14	111.46	42.7	44.53	53.72	32.82
2-Butoxyethanol (mg/L)	<5.0	<5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)											
Ethane	58	13	17	11	200	76	17	7.1	26	15	14
Ethene	23	4.2	8.4	21	3,800	0.82	2.4	0.87	6.2	0.92	1.8
Methane	11,000	3,300	5,100	3,000	14,000	2,600	710	220	1,900	940	750
Field Measurements											
Conductance (µS/cm)	13,249	9,556	1,716	NM	2,158	1,657	1,601	3,553	1,138	922	989
Dissolved Oxygen (mg/L)	0.2	3.4	1.48	NM	0.56	2.58	2.68	NM	8.32	1.67	0.86
ORP (mV)	-80.9	-89.4	-11.2	NM	-61.6	14.1	-15.4	-26.9	-3	-49.3	-91.6
pH	6.82	11.59	6.95	NM	6.59	7.17	7.06	7.18	7.62	7.31	7.34
Specific Conductivity (µS/cm)	18,472	12,477	1,903	NM	2,943	2,030	2,106	5,231	1,537	1,250	1,275
Temperature (C)	10.19	12.7	18.47	NM	11.05	15.33	12.47	8.13	11.41	14.22	13.23
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	<0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	20	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	4.75 ET	6.20 ET	3.95 ET	11.4	44 J	3.92	<0.220	3.22 ET	38.7	5.34	4.36

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-27 (continued)								IW-27 Dup	IW-29	
Sample Date	**2/28/08**	**5/7/08**	**8/20/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**	**11/11/09**	**2/23/06**	**6/1/06**
VOCs (µg/L)											
Acetone	3.0 J	<10	4.6 J	**820 J**	3.4 J	<10	<10	<25	<25	NA	<40
Benzene	0.30 J	<1.0	<1	<330	0.23 J	<1	<1.0	<1.0	<1.0	<0.40	<4.0
2-Butanone	0.76 J	0.76 J	<10	<3,300	0.69 J	<10	<10	<5.0	<5.0	NA	<40
n-Butylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
sec-Butylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.50	<4.0
tert-Butylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
Carbon disulfide	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	NA	<4.0
Chlorobenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
Chloroethane	2.8	1.9	0.91 J	**850**	1.7	<1	<1.0	<2.0	<2.0	<2.0	<4.0
Chloromethane	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	<0.40	<4.0
2-Chlorotoluene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
4-Chlorotoluene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
Cyclohexane	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	NA	<4.0
1,2-Dichlorobenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
1,4-Dichlorobenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
1,1-Dichloroethane	1.4	0.49 J	0.57 J	**510**	0.5 J	0.2 J	0.39 J	0.46 J	0.40 J	<1.0	<4.0
1,2-Dichloroethane	0.50 J	0.40 J B	<1	<330	0.48 J	<1	<1.0	<1.0	<1.0	<1.0	<4.0
1,1-Dichloroethene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
cis-1,2-Dichloroethene	2.2	1.3	1.9	**8,000**	2	0.29 J	0.67 J	1.9	1.8	**92**	**91**
trans-1,2-Dichloroethene	0.19 J	<1.0	<1	**310 J**	<1	<1	<1.0	<1.0	<1.0	2.8 J	5.5
1,1-Dichloroethene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
1,4-Dioxane	<200	<200	<200	<67,000	19 J	<200	<200	<250	<250	NA	<800
Ethyl acetate	<4.0	<4.0	<4	<1,300	<4	<4	<4.0	<10	<10	NA	NA
Ethyl ether	<2.0	<2.0	<2	<670	<2	<2	<2.0	<5.0	<5.0	NA	59
Ethylbenzene	<1.0	<1.0	<1	**720**	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
Hexachlorobutadiene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	<1.0	<4.0
2-Hexanone	<10	<10	<10	<3,300	<10	<10	<10	<10	<10	NA	<40
Isopropylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
p-Isopropyltoluene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
Methylcyclohexane	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	NA	<4.0
Methylene chloride	<1.0	<1.0	<1	<330	<1	<1	<1.0	<5.0	<5.0	<2.0	<4.0
4-Methyl-2-pentanone	<10	0.70 J	<10	**150 J**	<10	<10	<10	<5.0	<5.0	NA	<40
Naphthalene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<5.0	<5.0	<0.50	<4.0

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-27 (continued)								IW-27 Dup	IW-29	
Sample Date	**2/28/08**	**5/7/08**	**8/20/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**	**11/11/09**	**2/23/06**	**6/1/06**
VOCs (µg/L) (continued)											
n-Propylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
Tetrachloroethene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
Tetrahydrofuran	**24**	**15**	**11**	<1,700	**24**	4.4 J	1.5 J	<5.0	2.3 J	NA	**11 J**
Toluene	<1.0	<1.0	<1	**8,100**	<1	<1	<1.0	<1.0	<1.0	<0.40	<4.0
1,1,1-Trichloroethane	<1.0	<1.0	<1	<330	<1	<1	<1.0	<1.0	<1.0	<1.0	<4.0
Trichloroethene	0.37 J	<1.0	0.29 J	<330	<1	<1	<1.0	**1.2**	**1.2**	<0.40	<4.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	<0.40	<4.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	<0.40	<4.0
Trimethylenzene (total)	<1.0	<1.0	<1	<330	<1	<1	<1.0	<2.0	<2.0	<0.40	<4.0
Vinyl chloride	**3.5**	**1.7**	**2.2**	**6,000**	**2.2**	<1	**0.48 J**	<1.0	<1.0	**52**	**76**
Xylenes (total)	<2.0	<2.0	<2	**3,600**	<2	<2	<2.0	<3.0	<3.0	<1.0	<4.0
Total VOCs	39.02	22.25	21.47	29,060	54.2	4.89	3.04	3.56	5.7	146.8	242.5
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0	NA	NA	<5.0
Dissolved Gases (µg/L)											
Ethane	53	65	110	400	35	< 0.025	0.47	<0.025	NA	7.6	0.88
Ethene	13	5.4	4.9	1,800	2.6	< 0.025	0.032	0.03	NA	8.5	1.8
Methane	2,400	3,700	2,200	17,000	1,800	0.54	24	0.18	NA	730	170
Field Measurements											
Conductance (µS/cm)	1,529	2,323	1,604	777	3,163	1,739	3,308	2,004	NM	NM	1,397
Dissolved Oxygen (mg/L)	4.18	1.01	4.93	1.46	0.53	0.57	4.1	3.94	NM	NM	3.97
ORP (mV)	1,112.6	152.6	-33.1	-187.9	-45.2	-13.4	154.6	139.5	NM	NM	1.3
pH	7.35	7.29	7.54	6.91	7.22	7.04	6.49	7.34	NM	NM	6.98
Specific Conductivity (µS/cm)	2,783	3,289	2,027	1,098	4,281	2,133	3,748	2,524	NM	NM	1,928
Temperature (C)	7.01	9.6	14.07	9.64	10.59	15.24	18.83	14.23	NM	NM	10.98
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	<0.15	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	45	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	4.27	3.33	4.4	123	3.62 ET	1.73 ET	3.49 ET	4.3	NA	4.32	4

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-29 (continued)						IW-29 Dup	IW-29				
Sample Date	**8/30/06**	**11/17/06**	**2/27/07**	**5/29/07**	**8/22/07**	**11/27/07**	**11/27/07**	**2/28/08**	**5/7/08**	**8/19/08**	**11/21/08**	**2/10/09**
VOCs (µg/L)												
Acetone	<50	<40	4.7 J	15	22 J B	200	190 B	**380**	19	2.7 J	<25	13
Benzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
2-Butanone	<50	<40	<25	4.5 J	3.9 J	63	61	28 J	8.4 J	1.4 J	<25	3.2 J
n-Butylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
sec-Butylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
tert-Butylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Carbon disulfide	<5	<4.0	<2.5	<1.0	<2.5	2.9 J	2.5 J	<9.1	<1.4	<1.4	<2.5	<1
Chlorobenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Chloroethane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Chloromethane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	**2.1 J B**	<9.1	<1.4	<1.4	<2.5	<1
2-Chlorotoluene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
4-Chlorotoluene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Cyclohexane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,2-Dichlorobenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,4-Dichlorobenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,1-Dichloroethane	<5	<4.0	0.55 J	0.99 J	0.88 J	<5.7	<5.7	<9.1	<1.4	0.53 J	0.7 J	0.39 J
1,2-Dichloroethane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,1-Dichloroethene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
cis-1,2-Dichloroethene	**130**	**110**	**33**	**66**	1.3 J	<5.7	<5.7	<9.1	0.34 J	0.76 J	3.2	0.29 J
trans-1,2-Dichloroethene	9.2	7.4	5.3	6.4	<2.5	<5.7	<5.7	<9.1	0.33 J	<1.4	<2.5	<1
1,1-Dichloroethene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,4-Dioxane	<1,000	<800	<500	<200	<500	<1,100	<1,100	<1,800	<290	<290	<500	<200
Ethyl acetate	NA	NA	<10	<4.0	<10	<23	<23	<36	<5.7	<5.7	<10	<4
Ethyl ether	35	42	50	8.9	7.2	37	30	49	45	46	81	35
Ethylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Hexachlorobutadiene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
2-Hexanone	<50	<40	<25	<10	<25	<57	<57	<91	<14	<14	<25	<10
Isopropylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
p-Isopropyltoluene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Methylcyclohexane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Methylene chloride	<5	<4.0	<2.5	<1.0	<2.5	**2.6 J**	<5.7	<9.1	<1.4	<1.4	<2.5	<1
4-Methyl-2-pentanone	<50	<40	<25	0.53 J	<25	<57	4.3 J	<91	0.63 J	<14	<25	<10
Naphthalene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-29 (continued)						IW-29 Dup	IW-29				
Sample Date	**8/30/06**	**11/17/06**	**2/27/07**	**5/29/07**	**8/22/07**	**11/27/07**	**11/27/07**	**2/28/08**	**5/7/08**	**8/19/08**	**11/21/08**	**2/10/09**
VOCs (µg/L) (continued)												
n-Propylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Tetrachloroethene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Tetrahydrofuran	9.9 J	7.1 J	8.2 J	5.6	2.7 J	<29	<29	7.9 J	7.8	10	8 J	6.6
Toluene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	0.34 J	<2.5	<1
1,1,1-Trichloroethane	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Trichloroethene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,2,4-Trimethylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
1,3,5-Trimethylbenzene	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Trimethylenzene (total)	<5	<4.0	<2.5	<1.0	<2.5	<5.7	<5.7	<9.1	<1.4	<1.4	<2.5	<1
Vinyl chloride	**62**	**120**	**58**	**31**	**1.5 J**	**1.5 J**	<5.7	**2.4 J**	**0.70 J**	**0.42 J**	**15**	**0.7 J**
Xylenes (total)	<5	<4.0	<5.0	<2.0	<5	<11	<11	<18	<2.9	<2.9	<5	<2
Total VOCs	246.1	286.5	159.75	138.92	39.48	307	289.9	467.3	82.2	62.15	107.9	59.18
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)												
Ethane	1.4	1.2	1.1	0.44	0.4	5.4	NA	14	16	40	39	25
Ethene	2.9	6.5	25	7.8	46	36	NA	2.6	1.5	0.86	34	0.92
Methane	210	510	420	140	330	2,600	NA	6,700	8,800	5,200	3,200	1,900
Field Measurements												
Conductance (µS/cm)	2,074	2,196	1,433	2,036	1,625	2,611	NM	9,185	4,660	3,683	1,857	5,734
Dissolved Oxygen (mg/L)	2.73	1	90.8	1.57	0.11	1.68	NM	2.5	2.02	8.64	0.56	0.19
ORP (mV)	74.8	-76.5	-115.1	-85.1	-132.1	-75.9	NM	347.8	-50.5	78.6	-151.8	-94.1
pH	7.08	6.82	7.31	7.17	7.37	6.04	NM	6.73	7.18	6.73	6.94	7.04
Specific Conductivity (µS/cm)	2,560	2,859	2,145	2,818	2,070	3,267	NM	13,895	6,723	4,621	2,406	7,902
Temperature (C)	15.05	12.86	7.63	10.47	13.74	14.5	NM	7.36	8.91	14.2	13.04	10.64
Natural Attenuation Parameters (mg/L)												
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	16	<0.220	4.28 ET	454	97.8	1140	NA	11.7	48.6	9.6	5.8	3.09 ET

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-29 Dup	IW-29 (continued)				IW-30						
Sample Date	**2/10/09**	**2/27/09**	**5/19/09**	**8/25/09**	**11/10/09**	**6/1/06**	**8/30/06**	**11/20/06**	**5/29/07**	**8/22/07**	**11/28/07**	**5/6/08**
VOCs (µg/L)												
Acetone	11	<8.3	4.3 J B	2.2 J	<25	<180	<180	<170	<40	<67	**280 B**	26
Benzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	**60**	<4.0	<6.7	**4.8 J**	<1.7
2-Butanone	3.3 J	<8.3	1.8 J	0.72 J	<5.0	<180	<180	<170	<40	<67	50 J	9.3 J
n-Butylbenzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
sec-Butylbenzene	<1	<0.83	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
tert-Butylbenzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Carbon disulfide	<1	<3.3	0.69 J	<1.0	<2.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Chlorobenzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Chloroethane	<1	<3.3	<1	<1.0	<2.0	<18	7.5 J	22	1.8 J	<6.7	3.3 J	1.2 J
Chloromethane	<1	<1.0	<1	<1.0	<2.0	<18	<18	<17	<4.0	<6.7	**3 J B**	<1.7
2-Chlorotoluene	<1	<1.7	0.14 J	<1.0	<1.0	<18	<18	30	<4.0	<6.7	3.9 J	2.3
4-Chlorotoluene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Cyclohexane	<1	<2.0	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
1,2-Dichlorobenzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	5.4 J	<4.0	<6.7	<6.7	<1.7
1,4-Dichlorobenzene	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
1,1-Dichloroethane	0.4 J	0.8	0.37 J	0.56 J	0.74 J	<18	4.3 J	18	1.5 J	1.5 J	<6.7	<1.7
1,2-Dichloroethane	<1	<1.7	<1	<1.0	<1.0	**440**	**570**	**450**	**230**	**190**	**84**	**1.5 J B**
1,1-Dichloroethene	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
cis-1,2-Dichloroethene	0.3 J	0.75	0.78 J	0.48 J	2.3	**13 J**	**21**	**130**	5.7	6.9	**8.7**	0.43 J
trans-1,2-Dichloroethene	<1	<1.7	<1	<1.0	<1.0	<18	<18	9.9 J	<4.0	<6.7	<6.7	<1.7
1,1-Dichloroethene	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
1,4-Dioxane	<200	<100	<200	<200	<250	<3,600	<3,600	<3,300	<800	<1,300	<1,300	<330
Ethyl acetate	<4	<1.7	<4	<4.0	<10	NA	NA	NA	<16	<27	70	<6.7
Ethyl ether	40	NA	7.9	16	26.8	<36	<36	<33	<8.0	<13	<13	<3.3
Ethylbenzene	<1	<1.7	<1	<1.0	<1.0	<18	<18	20	<4.0	<6.7	7	1.6 J
Hexachlorobutadiene	<1	<1.7	<1	<1.0	<2.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
2-Hexanone	<10	<1.7	<10	<10	<10	<180	<180	<170	<40	<67	<67	<17
Isopropylbenzene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
p-Isopropyltoluene	<1	<0.67	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Methylcyclohexane	<1	<2.0	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Methylene chloride	<1	<3.3	<1	<1.0	<5.0	<18	<18	**9.0 J**	<4.0	<6.7	<6.7	<1.7
4-Methyl-2-pentanone	<10	<1.7	0.49 J	<10	<5.0	<180	<180	26 J	<40	<67	<67	1.2 J
Naphthalene	<1	<0.83	<1	<1.0	<5.0	<18	<18	<17	<4.0	<6.7	**16**	4

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-29 Dup	IW-29 (continued)				IW-30						
Sample Date	**2/10/09**	**2/27/09**	**5/19/09**	**8/25/09**	**11/10/09**	**6/1/06**	**8/30/06**	**11/20/06**	**5/29/07**	**8/22/07**	**11/28/07**	**5/6/08**
VOCs (µg/L) (continued)												
n-Propylbenzene	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Tetrachloroethene	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	**2.9 J**	<1.7
Tetrahydrofuran	7.4	<3.3	10	4.9 J	5.6	<91	<91	<83	<20	<33	<33	1.1 J
Toluene	<1	<1.7	0.18 J	<1.0	<1.0	<18	<18	**450**	<4.0	<6.7	36	<1.7
1,1,1-Trichloroethane	<1	<1.7	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
Trichloroethene	<1	0.23	<1	<1.0	<1.0	<18	<18	<17	<4.0	<6.7	<6.7	<1.7
1,2,4-Trimethylbenzene	<1	<0.67	<1	<1.0	<2.0	<18	<18	6.0 J	<4.0	<6.7	26	8.1
1,3,5-Trimethylbenzene	<1	<0.67	<1	<1.0	<2.0	<18	<18	<17	<4.0	<6.7	3.2 J	1.2 J
Trimethylenzene (total)	<1	<0.67	<1	<1.0	<2.0	<18	<18	6	<4.0	<6.7	29.2 J	9.3 J
Vinyl chloride	**0.61 J**	<0.67	**0.32 J**	**0.90 J**	**13.6**	<18	**5.7 J**	**44**	**1.2 J**	**1.6 J**	**3.7 J**	<1.7
Xylenes (total)	<2	<1.7	<2	<2.0	<3.0	<18	<18	120	<8.0	<13	14	1.8 J
Total VOCs	63.01	1.78	26.97	25.76	49.04	453	608.5	1,400.3	240.2	200	616.5	59.73
2-Butoxyethanol (mg/L)	NA	NA	<5.0	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)												
Ethane	NA	NA	27	21	9.5	4.1	16	10	6.5	5.1	11	34
Ethene	NA	NA	0.3	0.85	13	2.1	0.79	27	0.74	4.3	3.1	2.7
Methane	NA	NA	1,200	400	280	560	1,800	1,400	1,300	680	3,400	17,000
Field Measurements												
Conductance (µS/cm)	NM	NM	5,463	6,500	NM	3,086	2,706	2,603	1,496	2,100	3,087	3,011
Dissolved Oxygen (mg/L)	NM	NM	1.2	1.51	NM	8.17	3.28	5.51	4.93	1.03	0.15	0.35
ORP (mV)	NM	NM	-98.7	119.1	NM	133.1	79.5	-2.8	23.8	-51.4	-80.3	-42.6
pH	NM	NM	7.78	6.85	NM	7.07	7.12	6.95	7.2	7.4	5.53	7.04
Specific Conductivity (µS/cm)	NM	NM	7,241	7,440	NM	2,816	3,347	3,446	2,053	2,674	3,867	4,036
Temperature (C)	NM	NM	12.11	18.37	NM	11.49	14.95	12.19	10.8	13.77	14.43	11.71
Natural Attenuation Parameters (mg/L)												
Nitrate as N	NA	NA	<0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	16	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	NA	NA	5.38 ET	5.17 ET	8.7	9	4.83	6.62	28.1	10.9	1260	26.6

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-30 (continued)						IW-37			IW-37 Dup	IW-37	IW-37 Dup
Sample Date	**8/19/08**	**11/20/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**	**2/22/06**	**5/31/06**	**8/30/06**	**8/30/06**	**11/17/06**	**11/17/06**
VOCs (µg/L)												
Acetone	4.7 J	<10	<10	16 B	1.2 J	17.4 J	NA	<57	21 J	16 J	120	110
Benzene	<1	0.28 J	<1	<1	0.30 J	<1.0	**8**	**7.9**	**10**	**12**	**15**	**14**
2-Butanone	1.5 J	<10	2.7 J	3.2 J	<10	3.7 J	NA	<57	<100	<100	**180**	**160**
n-Butylbenzene	0.58 J	0.85 J	<1	<1	0.28 J	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
sec-Butylbenzene	<1	0.21 J	<1	<1	<1.0	<1.0	<0.50	<5.7	<10	<10	<6.7	<5.7
tert-Butylbenzene	0.14 J	0.18 J	<1	<1	<1.0	<1.0	1.2 J	<5.7	<10	<10	<6.7	<5.7
Carbon disulfide	0.62 J	<1	0.53 J	0.52 J	<1.0	0.57 J	NA	<5.7	<10	<10	<6.7	<5.7
Chlorobenzene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
Chloroethane	2.8	0.55 J	1.4	0.78 J	1.3	<2.0	4.1 J	3.3 J	<10	<10	12	12
Chloromethane	<1	<1	<1	<1	<1.0	<2.0	<0.40	<5.7	<10	<10	<6.7	<5.7
2-Chlorotoluene	1.3	5.4	0.46 J	0.51 J	2.6	1	<1.0	<5.7	<10	<10	<6.7	<5.7
4-Chlorotoluene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
Cyclohexane	<1	<1	<1	<1	<1.0	<1.0	NA	<5.7	<10	<10	<6.7	0.92 J
1,2-Dichlorobenzene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
1,4-Dichlorobenzene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
1,1-Dichloroethane	<1	<1	<1	<1	<1.0	<1.0	4.4	3.8 J	3.8 J	4.2 J	4.6 J	4.8 J
1,2-Dichloroethane	**1.2**	**6.3**	**4.6**	**7.6**	**11**	**12.5**	<1.0	<5.7	<10	<10	<6.7	<5.7
1,1-Dichloroethene	<1	<1	<1	<1	<1.0	<1.0	<1.0	<5.7	<10	<10	<6.7	<5.7
cis-1,2-Dichloroethene	0.4 J	0.51 J	<1	<1	0.48 J	0.55 J	**150**	**150**	**26**	**26**	**120**	**150**
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1.0	<1.0	8.7	9.5	4.4 J	4.6 J	4.2 J	5.1 J
1,1-Dichloroethene	<1	<1	<1	<1	<1.0	<1.0	<1.0	<5.7	<10	<10	<6.7	<5.7
1,4-Dioxane	<200	<200	<200	<200	<200	<250	NA	<1,100	<2,000	<2,000	<1,300	<1,100
Ethyl acetate	<4	<4	<4	<4	<4.0	<10	NA	NA	NA	NA	NA	NA
Ethyl ether	<2	<2	<2	<2	<2.0	<5.0	NA	15	14 J	16 J	26	25
Ethylbenzene	1.2	0.69 J	0.19 J	<1	0.26 J	<1.0	<1.0	1.2 J	2.5 J	2.9 J	1.3 J	1.2 J
Hexachlorobutadiene	<1	<1	<1	<1	<1.0	<2.0	<1.0	<5.7	<10	<10	<6.7	<5.7
2-Hexanone	<10	<10	<10	<10	<10	<10	NA	<57	<100	<100	<67	<57
Isopropylbenzene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
p-Isopropyltoluene	<1	0.56 J B	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
Methylcyclohexane	<1	<1	<1	<1	<1.0	<1.0	NA	<5.7	<10	<10	<6.7	<5.7
Methylene chloride	<1	<1	<1	<1	<1.0	<5.0	<2.0	<5.7	<10	<10	<6.7	<5.7
4-Methyl-2-pentanone	<10	<10	<10	<10	<10	<5.0	NA	<57	4.2 J	4.9 J	**190**	**170**
Naphthalene	3.6	2.2 B	<1	<1	<1.0	<5.0	<0.50	<5.7	<10	<10	<6.7	<5.7

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-30 (continued)						IW-37			IW-37 Dup	IW-37	IW-37 Dup
Sample Date	**8/19/08**	**11/20/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**	**2/22/06**	**5/31/06**	**8/30/06**	**8/30/06**	**11/17/06**	**11/17/06**
VOCs (µg/L) (continued)												
n-Propylbenzene	<1	<1	<1	<1	<1.0	<1.0	<1.0	<5.7	<10	<10	<6.7	<5.7
Tetrachloroethene	<1	<1	<1	<1	<1.0	<1.0	<1.0	<5.7	<10	<10	<6.7	<5.7
Tetrahydrofuran	<5	<5	<5	3.8 J	2.3 J	<5.0	NA	4.1 J	7.9 J	9.3 J	**54**	**44**
Toluene	<1	<1	<1	0.2 J	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
1,1,1-Trichloroethane	<1	<1	<1	<1	<1.0	<1.0	<1.0	<5.7	<10	<10	<6.7	<5.7
Trichloroethene	<1	<1	<1	<1	<1.0	<1.0	<0.40	<5.7	<10	<10	<6.7	<5.7
1,2,4-Trimethylbenzene	5.4	3.8	0.42 J	<1	0.49 J	<2.0	1.7	1.0 J	2.0 J	2.5 J	0.93 J	0.75 J
1,3,5-Trimethylbenzene	<1	<1	<1	<1	<1.0	<2.0	<0.40	<5.7	<10	<10	<6.7	<5.7
Trimethylenzene (total)	5.4	3.8	0.42 J	<1	0.49 J	<2.0	1.7	1.0 J	2.0 J	2.5 J	0.93 J	0.75 J
Vinyl chloride	<1	<1	<1	<1	<1.0	<1.0	**64**	**54**	**16**	**18**	**74**	**74**
Xylenes (total)	1.2 J	1 J	<2	<2	<2.0	<3.0	<1.0	<5.7	<10	<10	<6.7	<5.7
Total VOCs	24.64	22.53	10.3	32.61	20.21	35.72	242.1	249.8	111.8	116.4	802.03	771.77
2-Butoxyethanol (mg/L)	<5.0	<5.0	2.9 J	<5.0	< 5.0	< 5.0	NA	<5.0	<5.0	NA	<5.0	NA
Dissolved Gases (µg/L)												
Ethane	39	13	10	4.4	13	4.4	31	24	42	NA	30	NA
Ethene	0.27	0.63	0.92	0.34	0.6	0.28	17	13	57	NA	25	NA
Methane	18,000	4,000	1,600	1,100	2,100	640	5,000	6,800	7,900	NA	6,300	NA
Field Measurements												
Conductance (µS/cm)	3,282	1,719	3,486	2,043	6,001	2,510	NM	1,761	2,899	NM	4,691	NM
Dissolved Oxygen (mg/L)	9.46	0.73	1.29	0.78	1.28	1.3	NM	0.9	2.23	NM	0.37	NM
ORP (mV)	-62.1	-131.7	-29.3	-49.5	78.9	-9.7	NM	-34.1	-87.7	NM	-66.5	NM
pH	6.48	6.33	7.13	7.23	6.71	7.53	NM	6.62	6.46	NM	6.05	NM
Specific Conductivity (µS/cm)	4,084	2,204	4,978	2,625	6,394	3,209	NM	2,481	3,585	NM	6,059	NM
Temperature (C)	14.71	13.45	9.23	13.38	19.03	11.6	NM	9.82	14.99	NM	13.17	NM
Natural Attenuation Parameters (mg/L)												
Nitrate as N	NA	NA	NA	<0.15	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	91	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	19.6	7.55	102 ET	8.92 ET	15.5 ET	13.1	7.8	7 J	8.89	NA	723	NA

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-37 (continued)							IW-37 Dup	IW-37		IW-37 Dup
Sample Date	**2/26/07**	**5/31/07**	**8/22/07**	**11/28/07**	**5/6/08**	**8/19/08**	**11/20/08**	**11/20/08**	**2/10/09**	**5/19/09**	**5/19/09**
VOCs (µg/L)											
Acetone	**310**	**490 B**	**240**	**450 B**	**530**	**5,000**	130 J	120 J	38 J B	95 B	120 B
Benzene	**8.5**	**22**	**9.9**	**11**	**11**	**100**	**13 J**	**12 J**	**6.8**	**47**	**54**
2-Butanone	82	**320**	**100**	**160**	**160**	**940**	21 J	21 J	<67	<33	<33
n-Butylbenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
sec-Butylbenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	0.49 J B	0.44 J B
tert-Butylbenzene	<5.0	<12	<4	6.1 J	<6.7	<71	<17	<17	<6.7	0.67 J B	0.86 J B
Carbon disulfide	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	1.3 J	0.94 J
Chlorobenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
Chloroethane	5.6	29	13	18	22	**230**	8.2 J	6.8 J	3.3 J	**86**	**110**
Chloromethane	<5.0	<12	<4	**4 J B**	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
2-Chlorotoluene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
4-Chlorotoluene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
Cyclohexane	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	3.3 B	3.3 B
1,2-Dichlorobenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
1,4-Dichlorobenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
1,1-Dichloroethane	1.3 J	14	10	19	18	**200**	12 J	12 J	4.4 J	7.8	8.1
1,2-Dichloroethane	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	**2.2 J**	<3.3
1,1-Dichloroethene	<5.0	<12	**3.5 J**	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
cis-1,2-Dichloroethene	**29**	**38**	**82**	**180**	**170**	**610**	**570**	**560**	**210**	**150**	**150**
trans-1,2-Dichloroethene	0.92 J	<12	1.6 J	3.7 J	2.9 J	16 J	19	19	4.9 J	7.9	9.1
1,1-Dichloroethene	<5.0	<12	**3.5 J**	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
1,4-Dioxane	<1,000	<2,500	<800	<2,000	<1,300	<14,000	<3,300	<3,300	<1,300	<670	<670
Ethyl acetate	53	170	<16	<40	<27	<290	<67	<67	<27	<13	<13
Ethyl ether	13	50	45	61	45	69 J	32 J	32 J	11 J	15	17
Ethylbenzene	1.4 J	12	2.9 J	4.2 J	3.5 J	32 J	<17	<17	<6.7	12	15
Hexachlorobutadiene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
2-Hexanone	<50	<120	<40	<100	<67	<710	<170	<170	<67	<33	<33
Isopropylbenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	0.72 J	0.79 J
p-Isopropyltoluene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
Methylcyclohexane	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	0.53 J	0.55 J
Methylene chloride	**1.2 J B**	**6.5 J B**	**7.1 B**	**15**	**10**	**33 J**	<17	<17	<6.7	<3.3	**1.5 J**
4-Methyl-2-pentanone	**170**	**460**	**130**	**160**	**320**	**2,100**	37 J	34 J	6.6 J	**380**	**450**
Naphthalene	<5.0	<12	1 J	<10	<6.7	<71	<17	<17	<6.7	1.5 J B	1.9 J B

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-37 (continued)							IW-37 Dup	IW-37		IW-37 Dup
Sample Date	**2/26/07**	**5/31/07**	**8/22/07**	**11/28/07**	**5/6/08**	**8/19/08**	**11/20/08**	**11/20/08**	**2/10/09**	**5/19/09**	**5/19/09**
VOCs (µg/L) (continued)											
n-Propylbenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	0.9 J	1 J
Tetrachloroethene	<5.0	<12	**68**	**3.2 J**	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
Tetrahydrofuran	**29**	**94**	**25**	**34 J**	**32 J**	**150 J**	**11 J**	**12 J**	3.7 J	**50**	**62**
Toluene	<5.0	<12	1.4 J	<10	<6.7	<71	<17	<17	<6.7	1.9 J	2.2 J
1,1,1-Trichloroethane	<5.0	<12	**130**	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
Trichloroethene	<5.0	<12	**39**	<10	<6.7	<71	<17	<17	<6.7	<3.3	<3.3
1,2,4-Trimethylbenzene	1.4 J	7.7 J	2.3 J	3.2 J	3.0 J	20 J	<17	<17	<6.7	11 B	13 B
1,3,5-Trimethylbenzene	<5.0	<12	<4	<10	<6.7	<71	<17	<17	<6.7	1.4 J	1.7 J
Trimethylenzene (total)	1.4 J	7.7 J	2.3 J	3.2 J	3.0 J	20 J	<17	<17	<6.7	12.4 JB	14.7 JB
Vinyl chloride	**12**	**56**	**44**	**130**	**100**	**400**	**220**	**210**	**96**	**110**	**110**
Xylenes (total)	<10	12 J	3.4 J	4.2 J	3.8 J	34 J	<33	<33	<13	16	19
Total VOCs	718.32	1781.2	962.6	1,266.6	1,431.2	9934	1,073.2	1,038.8	384.7	1,002.61	1,152.38
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0	1.1 J	<5.0	NA	0.62 J	<5.0	NA
Dissolved Gases (µg/L)											
Ethane	22	32	18	20	21	25	49	NA	52	64	NA
Ethene	7.3	26	24	35	35	77	47	NA	40	130	NA
Methane	11,000	13,000	15,000	19,000	20,000	18,000	13,000	NA	19,000	17,000	NA
Field Measurements											
Conductance (µS/cm)	2,768	3,629	5,229	3,157	2,201	4,671	2,063	NM	1,099	3,544	NM
Dissolved Oxygen (mg/L)	NM	0.62	0.27	0.18	0.65	3.96	2.04	NM	2.16	1.26	NM
ORP (mV)	-67.7	-32.2	-34.1	-44.4	-27.4	-54.5	-158.5	NM	-27.7	-28.9	NM
pH	6.05	5.77	5.63	6.02	6.99	6.06	6.09	NM	7.6	6.5	NM
Specific Conductivity (µS/cm)	4,616	5,075	6,715	3,963	2,308	5,555	2,621	NM	1,826	4,483	NM
Temperature (C)	4.04	10.09	13.42	14.34	8.47	16.64	13.86	NM	4.66	14.02	NM
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.15	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA
Total Organic Carbon (mg/L)	797	1240	243	231	79.3	565	7.7	NA	17.8	10.2 ET	NA

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-37 (continued)		MW-130							MW-130 Dup	MW-130	
Sample Date	**8/25/09**	**11/11/09**	**2/22/06**	**5/31/06**	**8/29/06**	**11/20/06**	**2/27/07**	**5/31/07**	**8/22/07**	**8/22/07**	**11/28/07**	**2/28/08**
VOCs (µg/L)												
Acetone	24 J	<130	1.2 J	<110	<170	<67	8.8 J	29 J	69	74 B	**3,100 B**	**5,200**
Benzene	**10 J**	**7.9**	**11**	**32**	**20**	**14**	**17**	**26**	**6.6**	**5.6**	<40	<80
2-Butanone	<170	<25	<10	<110	41 J	**120**	14 J	**140**	**190**	**180**	**2,500**	**2,100**
n-Butylbenzene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
sec-Butylbenzene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
tert-Butylbenzene	<17	<5.0	1	5.1 J	9.1 J	4.8 J	5.1 J	5.7 J	3.2 J	3.4	25 J	<80
Carbon disulfide	<17	<10	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Chlorobenzene	<17	<5.0	<1	4.4 J	6.5 J	3.6 J	3.8 J	5.0 J	1.8 J	1.7 J	<40	<80
Chloroethane	5.8 J	<10	8.2	11	<17	3.5 J	8.1	13 J	1.5 J	1 J	<40	<80
Chloromethane	<17	<10	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	**16 J B**	<80
2-Chlorotoluene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
4-Chlorotoluene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Cyclohexane	<17	<5.0	3.5	38	64	35	28	51	16	15	16 J	11 J
1,2-Dichlorobenzene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,4-Dichlorobenzene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,1-Dichloroethane	7.2 J	6.2	0.48 J	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,2-Dichloroethane	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,1-Dichloroethene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
cis-1,2-Dichloroethene	**340**	**351**	0.76 J	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
trans-1,2-Dichloroethene	5.4 J	10.6	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,1-Dichloroethene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,4-Dioxane	<3,300	<1,300	<200	<2,200	<3,300	<1,300	<1,600	<2,900	<1,000	<670	<8,000	<16,000
Ethyl acetate	<67	<50	NA	NA	NA	NA	<32	<57	<20	<13	<160	<320
Ethyl ether	22 J	16.1 J	<2	<22	<33	<13	<16	<29	<10	<6.7	14 J	<160
Ethylbenzene	<17	<5.0	12	**370**	**470**	**250**	**230**	**370**	120	100	93	80
Hexachlorobutadiene	<17	<10	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
2-Hexanone	<170	<50	<10	<110	<170	<67	<80	<140	<50	<33	<400	<800
Isopropylbenzene	<17	<5.0	0.18 J	3.9 J	9.2 J	7.3	6.1 J	7.4 J	3.2 J	3.2 J	<40	<80
p-Isopropyltoluene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Methylcyclohexane	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Methylene chloride	<17	<25	**0.6 J B**	<11	<17	<6.7	**1.6 J B**	**43 B**	<5	<3.3	<40	**29 J B**
4-Methyl-2-pentanone	6.2 J	<25	<10	<110	<170	<67	4.6 J	9.7 J	16 J	18 J	**230 J**	**620 J**
Naphthalene	<17	<25	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	**43 J B**

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	IW-37 (continued)		MW-130							MW-130 Dup	MW-130	
Sample Date	**8/25/09**	**11/11/09**	**2/22/06**	**5/31/06**	**8/29/06**	**11/20/06**	**2/27/07**	**5/31/07**	**8/22/07**	**8/22/07**	**11/28/07**	**2/28/08**
VOCs (µg/L) (continued)												
n-Propylbenzene	<17	<5.0	<1	2.6 J	8.1 J	4.2 J	5.4 J	7.0 J	2.5 J	2.6 J	<40	<80
Tetrachloroethene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Tetrahydrofuran	7.3 J	<25	0.65 J	<56	<83	<33	2.6 J	4.8 J	5.7 J	4.6 J	**26 J**	**100 J**
Toluene	<17	<5.0	<1	<11	<17	<6.7	<8.0	4.1 J	<5	<3.3	<40	<80
1,1,1-Trichloroethane	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Trichloroethene	<17	<5.0	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
1,2,4-Trimethylbenzene	<17	<10	0.35 J	27	60	41	53	74	33	29	18 J	19 J
1,3,5-Trimethylbenzene	<17	<10	<1	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Trimethylenzene (total)	<17	<10	0.35 J	27	60	41	53	74	33	29	18 J	19 J
Vinyl chloride	**220**	**149**	**1.4**	<11	<17	<6.7	<8.0	<14	<5	<3.3	<40	<80
Xylenes (total)	<33	<15	<1	420	520	270	260	460	160	130	110	97 J
Total VOCs	647.9	540.8	41.32	914	1,207.9	753.4	648.1	1,249.7	628.5	568.1	6,148	8,299
2-Butoxyethanol (mg/L)	< 5.0	< 5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<5.0	0.60 J
Dissolved Gases (µg/L)												
Ethane	47	51	NA	19	26	5.1	4.7	4.3	0.23	NA	0.081	0.22
Ethene	39	38	NA	0.061	3.8	1.4	15	1.1	0.36	NA	0.065	0.054
Methane	8,600	8,000	NA	13,000	20,000	24,000	26,000	23,000	10,000	NA	16,000	23,000
Field Measurements												
Conductance (µS/cm)	5,953	3,821	NM	838	1,155	1,275	1,473	1,951	1,111	NM	1,870	2,673
Dissolved Oxygen (mg/L)	1.18	1.44	NM	1.2	1.98	1.46	2.91	1.52	2.04	NM	1.34	4.05
ORP (mV)	0.5	12.1	NM	-59.1	-61.4	-70	-85.8	-72.5	-68.7	NM	-24.1	359.9
pH	6.39	7.08	NM	6.58	6.53	6.61	6.63	6.32	6.62	NM	6.16	6.26
Specific Conductivity (µS/cm)	6,168	5,003	NM	1,164	1,452	1,768	2,203	2,345	1,304	NM	2,657	3,951
Temperature (C)	23.16	12.63	NM	10.32	14.26	10.41	7.65	16.17	17.24	NM	9.51	8.09
Natural Attenuation Parameters (mg/L)												
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	5.72 ET	13.1	NA	11 J	45.2	93.5	17.3 ET	275	176	NA	742	785

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-130 (continued)						MW-130 Dup	MW-130	MW-133	MW-133 Dup	MW-133
Sample Date	**5/6/08**	**8/21/08**	**11/20/08**	**2/9/09**	**5/19/09**	**8/25/09**	**8/25/09**	**11/10/09**	**6/1/06**	**6/1/06**	**8/29/06**
VOCs (µg/L)											
Acetone	**930**	**11,000**	**1,200**	13 J	<67	<110	11 J B	<130	<250	<180	<910
Benzene	<20	<170	**16 J**	**13**	**20**	**24**	**28**	**35**	<25	<18	<91
2-Butanone	**440**	**2,500**	**270 J**	7.1 J	<67	<110	<50	<25	<250	<180	<910
n-Butylbenzene	<20	<170	<29	<10	<6.7	<11	1.1 J B	<5.0	<25	<18	<91
sec-Butylbenzene	<20	<170	<29	12	<6.7	2.0 J	2.6 J B	2.1 J	<25	<18	<91
tert-Butylbenzene	<20	<170	<29	2.4 J	<6.7	<11	<5.0	5.2	<25	<18	<91
Carbon disulfide	<20	<170	<29	<10	<6.7	<11	<5.0	<10	<25	<18	<91
Chlorobenzene	<20	<170	<29	<10	2.1 J	2.8 J	3.3 J	<5.0	<25	<18	<91
Chloroethane	6.5 J	**160 J**	**150**	**120**	15	54	73	**170**	<25	<18	<91
Chloromethane	<20	<170	<29	<10	<6.7	<11	<5.0	<10	<25	<18	<91
2-Chlorotoluene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
4-Chlorotoluene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
Cyclohexane	5.5 J	<170	7.2 J	7.7 J	10	22	31 B	25.9	<25	<18	<91
1,2-Dichlorobenzene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
1,4-Dichlorobenzene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
1,1-Dichloroethane	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
1,2-Dichloroethane	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	**410**	<91
1,1-Dichloroethene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
cis-1,2-Dichloroethene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	**580**	**12 J**	**3,500**
trans-1,2-Dichloroethene	<20	<170	<29	<10	<6.7	<11	1.4 J	3.3 J	4.7 J	<18	18 J
1,1-Dichloroethene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
1,4-Dioxane	<4,000	<33,000	<5,700	<2,000	<1,300	<2,200	<1,000	<1,300	<5,000	<3,600	<18,000
Ethyl acetate	<80	<670	<110	<40	<27	<44	<20	<50	NA	NA	NA
Ethyl ether	6.2 J	74 J	54 J	22	<13	8.7 J	15	26	17 J	<36	75 J
Ethylbenzene	28	92 J	72	66	**170**	**430**	**440**	**257**	<25	<18	<91
Hexachlorobutadiene	<20	<170	<29	<10	<6.7	<11	<5.0	<10	<25	<18	<91
2-Hexanone	<200	<1700	<290	<100	<67	<110	<50	<50	<250	<180	<910
Isopropylbenzene	<20	<170	<29	1.7 J	5.4 J	9.6 J	14	8.4	<25	<18	<91
p-Isopropyltoluene	<20	<170	14 J B	<10	2.9 J	<11	1.4 J B	<5.0	<25	<18	<91
Methylcyclohexane	<20	<170	<29	<10	<6.7	<11	2.1 J B	<5.0	<25	<18	<91
Methylene chloride	**9.4 J**	**99 J**	**24 J**	**13 B**	**4.5 J B**	<11	<5.0	<25	<25	<18	<91
4-Methyl-2-pentanone	**380**	**4,300**	**2,100**	**580**	6.2 J	<110	<50	<25	<250	<180	<910
Naphthalene	<20	<170	<29	<10	3.2 J B	<11	2.3 J	<25	<25	<18	<91

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-130 (continued)						MW-130 Dup	MW-130	MW-133	MW-133 Dup	MW-133
Sample Date	**5/6/08**	**8/21/08**	**11/20/08**	**2/9/09**	**5/19/09**	**8/25/09**	**8/25/09**	**11/10/09**	**6/1/06**	**6/1/06**	**8/29/06**
VOCs (µg/L) (continued)											
n-Propylbenzene	<20	<170	<29	<10	2.8 J	14	14	10.1	<25	<18	<91
Tetrachloroethene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
Tetrahydrofuran	**37 J**	**390 J**	**200**	**110**	9 J	**52 J**	**80**	**185**	**21 J**	<91	**100 J**
Toluene	4.1 J	<170	4.9 J	<10	<6.7	<11	1.6 J	2.1 J	<25	<18	<91
1,1,1-Trichloroethane	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	<25	<18	<91
Trichloroethene	<20	<170	<29	<10	<6.7	<11	<5.0	<5.0	**670**	<18	**900**
1,2,4-Trimethylbenzene	7.1 J	27 J	14 J	14	37 B	160	150	98.7	<25	<18	<91
1,3,5-Trimethylbenzene	<20	<170	<29	<10	2.6 J	33	1.0 J	<10	<25	<18	<91
Trimethylenzene (total)	7.1 J	27 J	14 J	14	39.6 JB	**193**	**151 J**	**98.7**	<25	<18	<91
Vinyl chloride	<20	**60 J**	**9.9 J**	<10	<6.7	<11	<5.0	<5.0	**35**	<18	**470**
Xylenes (total)	44	120 J	92	68	240	590	630	380	<25	<18	<91
Total VOCs	1,897.8	18,822	4,228	1,049.9	530.7	1,402.1	1,502.8	1,208.80	1,327.7	422	5,063
2-Butoxyethanol (mg/L)	<5.0	1.7 J	<5.0	<5.0	<5.0	< 5.0	NA	< 5.0	<5.0	NA	<5.0
Dissolved Gases (µg/L)											
Ethane	0.26	0.24	4.3	4.9	6.6	7.3	NA	9.5	1.4	NA	4.8
Ethene	0.19	1.5	3.7	0.076	0.078	< 0.025	NA	0.069	11	NA	47
Methane	20,000	19,000	18,000	23,000	21,000	22,000	NA	23,000	43	NA	80
Field Measurements											
Conductance (µS/cm)	1,401	3,885	NM	2,022	4,206	3,603	NM	NM	1,449	NM	1,439
Dissolved Oxygen (mg/L)	2.06	1.25	NM	2.65	1.48	1.25	NM	NM	0.94	NM	2.51
ORP (mV)	65.4	-68.3	NM	-81.9	-61.2	107.5	NM	NM	82.5	NM	15.9
pH	7.1	6.24	NM	7.3	6.39	6.37	NM	NM	6.72	NM	6.81
Specific Conductivity (µS/cm)	2,063	3,065	NM	2,883	5,750	3,781	NM	NM	1,994	NM	1,709
Temperature (C)	8.74	13.93	NM	9.4	13.26	22.49	NM	NM	10.71	NM	16.69
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	<0.50	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	<5.0	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	129	395	83.6	23.5	7.67 ET	24.5	NA	33	3	NA	4.88

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-133 (continued)												
Sample Date	**11/17/06**	**2/26/07**	**5/29/07**	**8/21/07**	**11/27/07**	**2/27/08**	**5/7/08**	**8/20/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**
VOCs (µg/L)													
Acetone	<710	<1,700	<200	<770	**240 J B**	<1,000	<500	<910	<1,200	<1,000	<100	<1,200	<500
Benzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
2-Butanone	<710	<1,700	<200	<770	<1,000	<1,000	<500	<910	<1,200	<1,000	<100	<1,200	<100
n-Butylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
sec-Butylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
tert-Butylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Carbon disulfide	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
Chlorobenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Chloroethane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
Chloromethane	<71	<170	<20	<77	**30 J B**	<100	<50	<91	<120	<100	<10	<120	<40
2-Chlorotoluene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
4-Chlorotoluene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Cyclohexane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,2-Dichlorobenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,4-Dichlorobenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,1-Dichloroethane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	2.3 J	<120	<20
1,2-Dichloroethane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,1-Dichloroethene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
cis-1,2-Dichloroethene	**2,300**	**3,600**	**1,400**	**2,100**	**2,100**	**2,300**	**1,300**	**2,200**	**4,200**	**1,800**	**610**	**2,600**	**1,340**
trans-1,2-Dichloroethene	16 J	<170	11 J	<77	<100	<100	11 J	<91	**27 J**	<100	4.6 J	<120	10.2 J
1,1-Dichloroethene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,4-Dioxane	<14,000	<33,000	<4,000	<15,000	<20,000	<20,000	<10,000	<18,000	<25,000	<20,000	<2,000	<25,000	<5,000
Ethyl acetate	NA	<670	<80	<310	<400	<400	<200	<360	<500	<400	<40	<500	<200
Ethyl ether	49 J	95 J	29 J	47 J	68 J	52 J	38 J	47 J	100 J	36 J	7.5 J	42 J	23.6 J
Ethylbenzene	23 J	<170	38	94	47 J	33 J	76	23 J	<120	89 J	19	55 J	29.2
Hexachlorobutadiene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
2-Hexanone	<710	<1,700	<200	<770	<1,000	<1,000	<500	<910	<1,200	<1,000	<100	<1,200	<200
Isopropylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
p-Isopropyltoluene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Methylcyclohexane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Methylene chloride	<71	<170	**5.3 J B**	<77	<100	<100	<50	<91	<120	<100	<10	<120	<100
4-Methyl-2-pentanone	<710	<1,700	<200	<770	<1,000	<1,000	<500	<910	<1,200	<1,000	<100	<1,200	<100
Naphthalene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<100

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-133 (continued)												
Sample Date	**11/17/06**	**2/26/07**	**5/29/07**	**8/21/07**	**11/27/07**	**2/27/08**	**5/7/08**	**8/20/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**	**11/11/09**
VOCs (µg/L) (continued)													
n-Propylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Tetrachloroethene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Tetrahydrofuran	**43 J**	**120 J**	**34 J**	**64 J**	<500	**70 J**	**38 J**	**52 J**	**62 J**	<500	7.6 J	<620	<100
Toluene	<71	<170	4.1 J	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
1,1,1-Trichloroethane	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<20
Trichloroethene	**600**	**930**	**820**	**450**	**520**	**860**	**670**	**890**	**1,200**	**560**	**560**	**600**	**697**
1,2,4-Trimethylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
1,3,5-Trimethylbenzene	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
Trimethylenzene (total)	<71	<170	<20	<77	<100	<100	<50	<91	<120	<100	<10	<120	<40
Vinyl chloride	**240**	**350**	**170**	**300**	**400**	**220**	**300**	**340**	**390**	**170**	**61**	**290**	**247**
Xylenes (total)	<71	<330	52	120 J	32 J	<200	66 J	<180	<250	58 J	17 J	<250	24.1 J
Total VOCs	3,271	5,095	2,563.4	3,175	3,437	3,535	2,499	3,552	5,979	2,713	1,289	3,587	2,371.10
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	< 5.0	< 5.0
Dissolved Gases (µg/L)													
Ethane	1.7	20	6.1	25	37	25	11	16	15	13	3.4	6.8	12
Ethene	46	290	70	92	97	55	45	51	43	28	11	24	21
Methane	150	5,500	3,100	4,200	4,000	5,700	4,600	7,500	10,000	5,200	1,700	3,000	4,800
Field Measurements													
Conductance (µS/cm)	1,612	1,111	1,078	1,347	1,246	902	893	1,243	780	945	4,111	2,770	996
Dissolved Oxygen (mg/L)	0.97	3.61	1.44	0.55	1.26	3.45	0.8	2.32	0.7	0.23	1.72	2.02	1.24
ORP (mV)	-87	-101.2	-79	-71.4	-62.1	1,195.2	-6.1	-117.6	-183	-38.1	-30.8	166.3	40.1
pH	6.62	6.82	7.11	6.33	6.45	6.84	6.9	6.89	6.61	6.97	7.46	6.63	7.67
Specific Conductivity (µS/cm)	2,165	1,745	1,538	1,737	1,616	1,428	1,318	1,551	1,031	1,489	5,718	2,500	1,293
Temperature (C)	11.65	5.99	9.34	13.24	13.02	6.5	8.12	14.64	12.24	5.87	14.08	20.16	12.97
Natural Attenuation Parameters (mg/L)													
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.15	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	NA	NA
Total Organic Carbon (mg/L)	46.4	43.6	46.3	15.1	3.75	2.8	3.01	3.48	4.43	3.23 ET	2.35	2.49 ET	2.7

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-134								MW-134 Dup	MW-134	
Sample Date	**6/1/06**	**8/30/06**	**11/17/06**	**5/29/07**	**8/21/07**	**11/27/07**	**2/28/08**	**5/7/08**	**5/7/08**	**8/20/08**	**11/21/08**
VOCs (µg/L)											
Acetone	<1,000	<330	<710	<670	<400	80 B	<180	<200	<20	60 J	<40
Benzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
2-Butanone	<1,000	<330	<710	<670	<400	24 J	<180	<200	<20	**2,500**	<40
n-Butylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
sec-Butylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
tert-Butylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Carbon disulfide	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Chlorobenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Chloroethane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Chloromethane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
2-Chlorotoluene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
4-Chlorotoluene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Cyclohexane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,2-Dichlorobenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,4-Dichlorobenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,1-Dichloroethane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,2-Dichloroethane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,1-Dichloroethene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
cis-1,2-Dichloroethene	**2,400**	**690**	**2,200**	**4,500**	**97**	<7.7	**160**	**300**	**80**	**73**	**96**
trans-1,2-Dichloroethene	**280**	**68**	**240**	**370**	**200**	11	**63**	**83**	17	**45 J**	16
1,1-Dichloroethene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,4-Dioxane	<20,000	<6,700	<14,000	<13,000	<8,000	<1,500	<3,600	<4,000	<400	<10,000	<800
Ethyl acetate	NA	NA	NA	<270	<160	<31	<73	<80	<8.0	<200	<16
Ethyl ether	190 J	40 J	160	220	240	220	240	160	17	110	15
Ethylbenzene	27 J	18 J	94	**250**	**370**	**180**	**160**	75	4	110	4.7
Hexachlorobutadiene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	1.5 J
2-Hexanone	<1,000	<330	<710	<670	<400	<77	<180	<200	<20	<500	<40
Isopropylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
p-Isopropyltoluene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	2 J B
Methylcyclohexane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Methylene chloride	<100	<33	<71	**14 J B**	**16 J**	<7.7	<18	<20	<2.0	<50	<4
4-Methyl-2-pentanone	<1,000	<330	<710	<670	<400	<77	<180	<200	<20	<500	<40
Naphthalene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	2.8 J B

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-134								MW-134 Dup	MW-134	
Sample Date	**6/1/06**	**8/30/06**	**11/17/06**	**5/29/07**	**8/21/07**	**11/27/07**	**2/28/08**	**5/7/08**	**5/7/08**	**8/20/08**	**11/21/08**
VOCs (µg/L) (continued)											
n-Propylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Tetrachloroethene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Tetrahydrofuran	**93 J**	**31 J**	**94 J**	**140 J**	**140 J**	**130**	**390**	**250**	**83**	**94 J**	**13 J**
Toluene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	18 J	<4
1,1,1-Trichloroethane	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Trichloroethene	**36 J**	**20 J**	**20 J**	<67	<40	<7.7	<18	<20	**0.59 J**	<50	**1.1 J**
1,2,4-Trimethylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
1,3,5-Trimethylbenzene	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Trimethylenzene (total)	<100	<33	<71	<67	<40	<7.7	<18	<20	<2.0	<50	<4
Vinyl chloride	**940**	**220**	**800**	**1,200**	**1,100**	**6.1 J**	**430**	**460**	**47**	**520**	**110**
Xylenes (total)	<100	<33	<71	39 J	49 J	23	28 J	36 J	<4.0	<100	<8
Total VOCs	3,966	1,087	3,608	6,733	2,212	674.1	1,471	1,364	248.59	3,530	262.1
2-Butoxyethanol (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Gases (µg/L)											
Ethane	2	1.6	1.1	2	0.52	1.7	2.1	0.38	NA	1.4	1.4
Ethene	72	49	42	100	180	1,200	1,500	160	NA	590	480
Methane	16	16	9.8	32	3.6	1,200	240	22	NA	70	55
Field Measurements											
Conductance (µS/cm)	728	582	740	4,817	1,530	2,039	NM	2142	NM	2,496	806
Dissolved Oxygen (mg/L)	2	3.28	3.49	3.11	1.34	0.78	NM	1.54	NM	1.83	2.1
ORP (mV)	-19.9	48.6	-68.2	-81	-94.5	-98.1	NM	14.3	NM	-108.1	-167.7
pH	6.99	7.34	6.98	7.1	96.92	6.59	NM	6.86	NM	6.85	6.42
Specific Conductivity (µS/cm)	927	653	1,068	6,170	1,731	2,840	NM	3155	NM	2,904	1,111
Temperature (C)	13.78	19.31	8.9	13.52	18.93	10.24	NM	8.18	NM	17.63	9.87
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	4	2.88	2.29	85.4	30.4	170	5.53	3.02	NA	4.31	1.85

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-134 Dup	MW-134 (continued)		MW-135							
Sample Date	11/21/08	5/19/09	8/25/09	5/31/06	8/29/06	11/20/06	2/27/07	5/29/07	8/22/07	11/28/07	5/8/08
VOCs (µg/L)											
Acetone	<170	<170	<620	**57,000**	**42,000**	**26,000**	**42,000**	**19,000**	**6,400**	**60,000**	**33,000**
Benzene	<17	<17	<62	**4,400**	**3,600**	**3,500**	**3,400**	**3,000**	**850**	**2,900**	**2,700**
2-Butanone	<170	<170	<620	**4,500 J**	**4,500 J**	**3,200 J**	**3,100 J**	**2,400**	**600 J**	**4,800 J**	**2,800 J**
n-Butylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	60 J	<170	<1,000	390 J B
sec-Butylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	340 J
tert-Butylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
Carbon disulfide	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
Chlorobenzene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
Chloroethane	<17	<17	<62	**4,900**	**4,000**	**3,700**	**3,800**	**2,700**	**800**	**2,200**	**2,700**
Chloromethane	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
2-Chlorotoluene	<17	<17	<62	1,400	1,300	1,800	1,600	1,200	440	980 J	910
4-Chlorotoluene	<17	<17	<62	<1,000	<1,000	130 J	<710	77 J	32 J	<1,000	<500
Cyclohexane	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
1,2-Dichlorobenzene	<17	<17	<62	**360 J**	**310 J**	**380 J**	**390 J**	**320**	**110 J**	**270 J**	**230 J**
1,4-Dichlorobenzene	<17	<17	<62	<1,000	<1,000	<620	<710	**82 J**	<170	<1,000	<500
1,1-Dichloroethane	<17	<17	<62	**2,600**	**710 J**	**1,900**	**910**	**460**	81 J	**710 J**	**200 J**
1,2-Dichloroethane	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
1,1-Dichloroethene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
cis-1,2-Dichloroethene	**140**	**530**	**450**	**14,000**	**800 J**	**11,000**	**5,600**	**690**	**79 J**	**6,700**	**240 J**
trans-1,2-Dichloroethene	**25**	**100**	**100**	**940 J**	**530 J**	**640**	**720**	**490**	**97 J**	**340 J**	**220 J**
1,1-Dichloroethene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
1,4-Dioxane	<3,300	<3,300	<12,000	<200,000	<200,000	<120,000	<140,000	<40,000	<33,000	<200,000	<100,000
Ethyl acetate	<67	<67	<250	NA	NA	NA	<2,900	<800	<670	<4,000	1,600 J
Ethyl ether	24 J	170	130	230 J	<2,000	<1,200	<1,400	130 J	58 J	<2,000	190 J
Ethylbenzene	11 J	**200**	**170**	**500 J**	**460 J**	**620**	**740**	**580**	**190**	**530 J**	**640**
Hexachlorobutadiene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
2-Hexanone	<170	<170	<620	<10,000	<10,000	<6,200	<7,100	<2,000	<1,700	1,400 J	<5,000
Isopropylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	370 J
p-Isopropyltoluene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	360 J
Methylcyclohexane	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
Methylene chloride	<17	<17	<62	**6,600**	**1,100**	**3,100**	**1,100 B**	**640 B**	**210**	**1,800**	**480 J**
4-Methyl-2-pentanone	<170	<170	<620	**18,000**	**22,000**	**16,000**	**12,000**	**13,000**	**2,900**	**15,000**	**13,000**
Naphthalene	<17	<17	<62	<1,000	<1,000	**480 J**	**120 J**	**94 J B**	<170	<1,000	**400 J**

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-134 Dup	MW-134 (continued)		MW-135							
Sample Date	**11/21/08**	**5/19/09**	**8/25/09**	**5/31/06**	**8/29/06**	**11/20/06**	**2/27/07**	**5/29/07**	**8/22/07**	**11/28/07**	**5/8/08**
VOCs (µg/L) (continued)											
n-Propylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	35 J	<170	<1,000	320 J
Tetrachloroethene	<17	<17	<62	<1,000	<1,000	<620	<710	**150 J**	<170	<1,000	<500
Tetrahydrofuran	**23 J**	**110**	**88 J**	**1,300 J**	**1,900 J**	**1,100 J**	**1,000 J**	**1,100**	**280 J**	**430 J**	**1,300 J**
Toluene	<17	<17	<62	**15,000**	**11,000**	**19,000**	**20,000**	**15,000**	**4,900**	**18,000**	**12,000**
1,1,1-Trichloroethane	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
Trichloroethene	<17	<17	<62	<1,000	<1,000	<620	<710	<200	<170	<1,000	<500
1,2,4-Trimethylbenzene	<17	<17	<62	410 J	370 J	510 J	540 J	380	120 J	360 J	610
1,3,5-Trimethylbenzene	<17	<17	<62	<1,000	<1,000	<620	<710	75 J	<170	<1,000	380 J B
Trimethylenzene (total)	<17	<17	<62	**410 J**	**370 J**	**510 J**	**540 J**	**455 J**	**120 J**	**360 J**	**990 JB**
Vinyl chloride	**200**	**950**	**1,200**	**12,000**	**1,000**	**7,000**	**6,400**	**830**	**150 J**	**6,300**	**450 J**
Xylenes (total)	<33	24 J	<120	**2,000**	**1,900**	**2,700**	**3,100**	**2,700**	830	**2,200**	**2,400**
Total VOCs	423	2,084	2,138	146,140	97,480	102,760	106,520	65,193	19,127	124,920	78,230
2-Butoxyethanol (mg/L)	NA	<5.0	< 5.0	12	11	<5.0	8.2	7.8	2.1 J	6.9	5.0 J
Dissolved Gases (µg/L)											
Ethane	NA	4.3	2.2	340	330	420	320	340	140	120	350
Ethene	NA	170	300	12,000	13,000	21,000	14,000	14,000	3,300	6,400	4,200
Methane	NA	1,600	410	21,000	16,000	16,000	18,000	18,000	7,000	12,000	20,000
Field Measurements											
Conductance (µS/cm)	NM	4,901	1,861	2,153	3,395	3,439	2,981	2,372	2,659	2,145	2,605
Dissolved Oxygen (mg/L)	NM	1.91	2.12	0.62	0.22	1.14	2.26	1.57	0.03	0.12	0.61
ORP (mV)	NM	-46.1	159.3	-93.6	-118.8	-89.8	-67.8	-67.5	-86.2	-91	-26.8
pH	NM	7.88	6.62	6.22	6.23	6.28	6.24	6.38	6.29	6.1	7.34
Specific Conductivity (µS/cm)	NM	6,846	2,068	2,922	4,213	4,387	4,319	3,263	3,402	2,693	3,708
Temperature (C)	NM	13.9	19.46	11.21	14.86	13.68	8.78	10.71	13.57	14.36	10.56
Natural Attenuation Parameters (mg/L)											
Nitrate as N	NA	0.55	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	NA	13	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L)	NA	1.91 ET	2.63	790	856	991	832	769	155	1,000	515

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-135 (continued)				
Sample Date	**8/21/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**
VOCs (µg/L)					
Acetone	**6,900**	**21,000**	**17,000 B**	**6,700 B**	**12,000**
Benzene	**1,700**	**2,200**	**2,500**	**2,800**	**2,300**
2-Butanone	**720 J**	**1,700 J**	**1,800 J**	**940 J**	**1,100 J**
n-Butylbenzene	100 J	<500	<500	70 J B	<500
sec-Butylbenzene	<250	<500	<500	<200	<500
tert-Butylbenzene	<250	<500	<500	<200	<500
Carbon disulfide	<250	<500	<500	<200	<500
Chlorobenzene	<250	<500	<500	<200	<500
Chloroethane	**2,000**	**3,200**	**3,400**	**3,500**	**3,700**
Chloromethane	<250	<500	<500	<200	<500
2-Chlorotoluene	1,100	1,000	990	1,500	1,200
4-Chlorotoluene	72 J	<500	<500	100 J	<500
Cyclohexane	<250	<500	<500	<200	<500
1,2-Dichlorobenzene	**250**	**270 J**	**250 J**	**340 B**	**300 J**
1,4-Dichlorobenzene	**70 J**	<500	<500	**76 J B**	<500
1,1-Dichloroethane	**110 J**	**130 J**	<500	<200	<500
1,2-Dichloroethane	<250	<500	<500	<200	<500
1,1-Dichloroethene	<250	<500	<500	<200	<500
cis-1,2-Dichloroethene	**180 J**	**200 J**	**390 J**	<200	**130 J**
trans-1,2-Dichloroethene	**86 J**	**240 J**	**350 J**	**230**	**310 J**
1,1-Dichloroethene	<250	<500	<500	<200	<500
1,4-Dioxane	<50,000	<100,000	<100,000	<40,000	<100,000
Ethyl acetate	<1,000	<2,000	<2,000	<800	<2,000
Ethyl ether	<500	<1,000	<1,000	90 J	<1,000
Ethylbenzene	**480**	**530**	**710**	**910**	**810**
Hexachlorobutadiene	<250	<500	<500	<200	<500
2-Hexanone	<2500	<5,000	<5,000	<2,000	<5,000
Isopropylbenzene	<250	<500	<500	<200	<500
p-Isopropyltoluene	<250	240 J B	<500	<200	<500
Methylcyclohexane	<250	<500	<500	<200	<500
Methylene chloride	**180 J**	<500	**370 J B**	<200	<500
4-Methyl-2-pentanone	**3,400**	**6,500**	**8,300**	**5,700**	**5,300**
Naphthalene	**79 J B**	**370 J B**	<500	**110 J B**	<500

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Table 8. Summary of 2006-2009 Injection Well Groundwater Results, Brenntag Great Lakes Facility, Menomonee Falls, Wiscosnin.

Well	MW-135 (continued)				
Sample Date	**8/21/08**	**11/21/08**	**2/10/09**	**5/19/09**	**8/25/09**
VOCs (µg/L) (continued)					
n-Propylbenzene	<250	<500	<500	39 J	<500
Tetrachloroethene	<250	<500	<500	<200	<500
Tetrahydrofuran	**530 J**	**740 J**	**890 J**	**980 J**	**690 J**
Toluene	**9,000**	**13,000**	**18,000**	**18,000**	**19,000**
1,1,1-Trichloroethane	<250	<500	<500	<200	<500
Trichloroethene	<250	<500	<500	<200	<500
1,2,4-Trimethylbenzene	390	310 J	370 J	520 B	390 J
1,3,5-Trimethylbenzene	80 J	270 J	180 J	95 J	<500
Trimethylenzene (total)	**470 J**	**580 J**	**550 J**	**615 JB**	**390 J**
Vinyl chloride	**210 J**	**300 J**	**680**	<200	**280 J**
Xylenes (total)	**2,200**	**2,400**	**2,900**	**4,100**	**3,700**
Total VOCs	29,837	54,600	59,080	46,800	51,210
2-Butoxyethanol (mg/L)	2 J	4.1 J	4.6 J	4 J	3.8 J
Dissolved Gases (µg/L)					
Ethane	630	500	290	460	240
Ethene	4,700	6,300	6,500	6,700	5,800
Methane	19,000	19,000	19,000	23,000	18,000
Field Measurements					
Conductance (µS/cm)	1,946	1,393	1,587	2,292	4,267
Dissolved Oxygen (mg/L)	1.14	0.56	0.31	1.25	0.71
ORP (mV)	-52.2	-124.9	-67.4	-32.8	-11.1
pH	6.44	7.13	6.51	6.49	6.36
Specific Conductivity (µS/cm)	2,233	1,791	2,202	3,001	4,490
Temperature (C)	18.26	13.37	10.37	12.68	22.37
Natural Attenuation Parameters (mg/L)					
Nitrate as N	NA	NA	NA	<0.15	NA
Sulfate	NA	NA	NA	<1.5	NA
Total Organic Carbon (mg/L)	205	374	270	232	272

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Table . Summary of 2006-2009 Injection Well Groundwater Results, MILSOLV Facility, Menomonee Falls, Wiscosnin.

	Exceeds the WDNR Enforcement Standard.
Bold	Exceeds the WDNR Preventive Action Limit.
B	Analyte was detected in an associated blank.
C	Celsius
CAS	Chemical abstracts service.
DUP	Duplicate sample.
E	Exceeds the upper instrument calibration limit.
ET	Matrix interference in sample is causing an endpoint timeout.
J	Estimated Result.
Ja	Result reported between method detection limit (MDL) and limit of quantitation (LOQ) are less certain than results at or above the LOQ.
µg/L	Micrograms per liter.
µS/cm	Microsiems per centimeter.
mg/L	Milligram per liter.
mV	Millivolts.
NA	Not available.
ND	No detect.
NM	Not measured.
VOCs	Volatile Organic Compounds.

ARCADIS

Table 9. Summary of Current Groundwater Sampling Program, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Sample Date	Monitoring Wells	Remedial System	Water Supply Wells
February	MW-123, MW-132, MW-133, MW-138, IW-1, IW-27, IW-30	EW-2, EW-5, EW-6, EW-7	None
May	MW-122, MW-123, MW-124, MW-125, MW-126, MW-128, MW-132, MW-133, MW-136, MW-138, MW-140, MW-142, MW-148, MW-149, MW-151, MW-152, MW-153, MW-155, MW-156, MW-157, IW-1, IW-27, IW-30	EW-2, EW-5, EW-6, EW-7	MILSOLV Office Well, MILSOLV Maintenance Well, MILSOLV LUWA Well, Build All Fabricators, Volkmann #1, Steepe Equipment, Unipump, R.L. Ryerson
August	MW-123, MW-132, MW-133, MW-138, IW-1, IW-27, IW-30	EW-2, EW-5, EW-6, EW-7	None
November	MW-123, MW-132, MW-133, MW-138, IW-1, IW-27, IW-30	EW-2, EW-5, EW-6, EW-7	MILSOLV Office Well, Steppe Equipment

Note: Program reflects wells that were removed during 2009 construction activities.

ARCADIS

Table 10. Summary of Carbon Amendment Solution Injection Events, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Injection Well	June 6, 2006		July 24-26, 2006		September 11-12, 2006		November 6-8, 2006		December 18-19, 2006	
	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)
IW2	---	---	2.5-3.0	65	5.0	90	1.0-4.0	150	2.0-3.0	150
IW3	3.0-5.0	58	2.5-3.0	105	2.0-3.0	90	1.0-4.0	145	2.0-3.0	130
IW5	3.0-5.0	46	2.5-3.5	105	2.0-2.5	90	1.0-4.0	150	2.0-3.0	25
IW6	---	---	2.5-3.0	12	2.0-3.0	6	1.0-4.0	25	2.0-3.0	20
IW7	---	---	4.25	10	---	---	1.0-4.0	10	2.0-3.0	20
IW8	---	---	2.5-3.6	15	2.0-3.0	40	1.0-4.0	140	2.0-3.0	---
IW9	2.0	58	2.5-3.0	60	2.0-3.0	100	1.0-4.0	150	2.0-3.0	130
IW10	---	---	2.0	8	2.0-3.0	80	1.0-4.0	25	2.0-3.0	80
IW11	---	---	---	---	---	---	---	---	---	---
IW12	1.0-2.0	88	2.5-3.5	75	2.0-3.0	80	1.0-4.0	105	2.0-3.0	30
IW13	1.0-2.0	50	2.5-3.0	55	---	---	1.0-4.0	30	2.0-3.0	20
IW16	2.0	68	2.5-3.5	55	2.0-3.0	100	1.0-4.0	125	2.0-3.0	25
IW17	2.0	72	2.5-3.0	15	2.0-3.0	30	1.0-4.0	15	2.0-3.0	15
IW18	---	---	---	---	---	---	---	---	---	---
IW21	---	---	2.0-3.0	5	---	---	1.0-4.0	20	2.0-3.0	15
IW22	2.0	72	2.5-3.0	100	2.0-3.0	40	1.0-4.0	30	2.0-3.0	15
IW23	1.0-2.0	72	2.5-3.0	30	2.0-3.0	40	1.0-4.0	20	2.0-3.0	20
IW24	2.0	34	2.5-3.0	105	2.0-3.0	60	1.0-4.0	125	2.0-3.0	215
IW25	---	---	---	---	---	---	---	---	---	---
IW26	2.0	---	2.5-3.0	10	2.0-3.0	30	1.0-4.0	10	2.0-3.0	25
IW28	---	---	2.5-3.0	45	2.0-3.0	40	1.0-4.0	15	2.0-3.0	15
IW31	2.0	58	2.5-3.5	105	2.0-3.0	100	1.0-4.0	30	2.0-3.0	105
IW32	2.0	58	2.5-3.5	105	2.0-3.0	50	1.0-4.0	100	2.0-3.0	100
IW33	2.0	68	2.5-3.0	5	4.0	100	1.0-4.0	150	2.0-3.0	120
IW34	---	---	2.5-3.0	60	2.0-3.0	90	---	---	2.0-3.0	---
IW35	2.0	82	2.5-3.0	60	<1.0	100	1.0-4.0	150	2.0-3.0	60
IW36	2.0	16	2.5-3.0	30	1.0-2.0	10	1.0-4.0	75	2.0-3.0	---
IW37	---	---	2.5-3.0	60	---	---	---	---	2.0-3.0	120
IW38	2.0	100	2.5-3.5	105	2.0-3.0	90	1.0-4.0	145	2.0-3.0	145
IW39	---	---	2.5-3.0	25	2.0-3.0	6	1.0-4.0	75	2.0-3.0	20
IW40	---	---	2.5-3.0	35	2.0-3.0	14	1.0-4.0	25	2.0-3.0	20
IW41	---	---	2.5-3.0	35	2.0-3.0	24	1.0-4.0	20	2.0-3.0	35
	Total Solution Injected/Event	**1,000**		**1,500**		**1,500**		**2,000**		**1,500**

ARCADIS

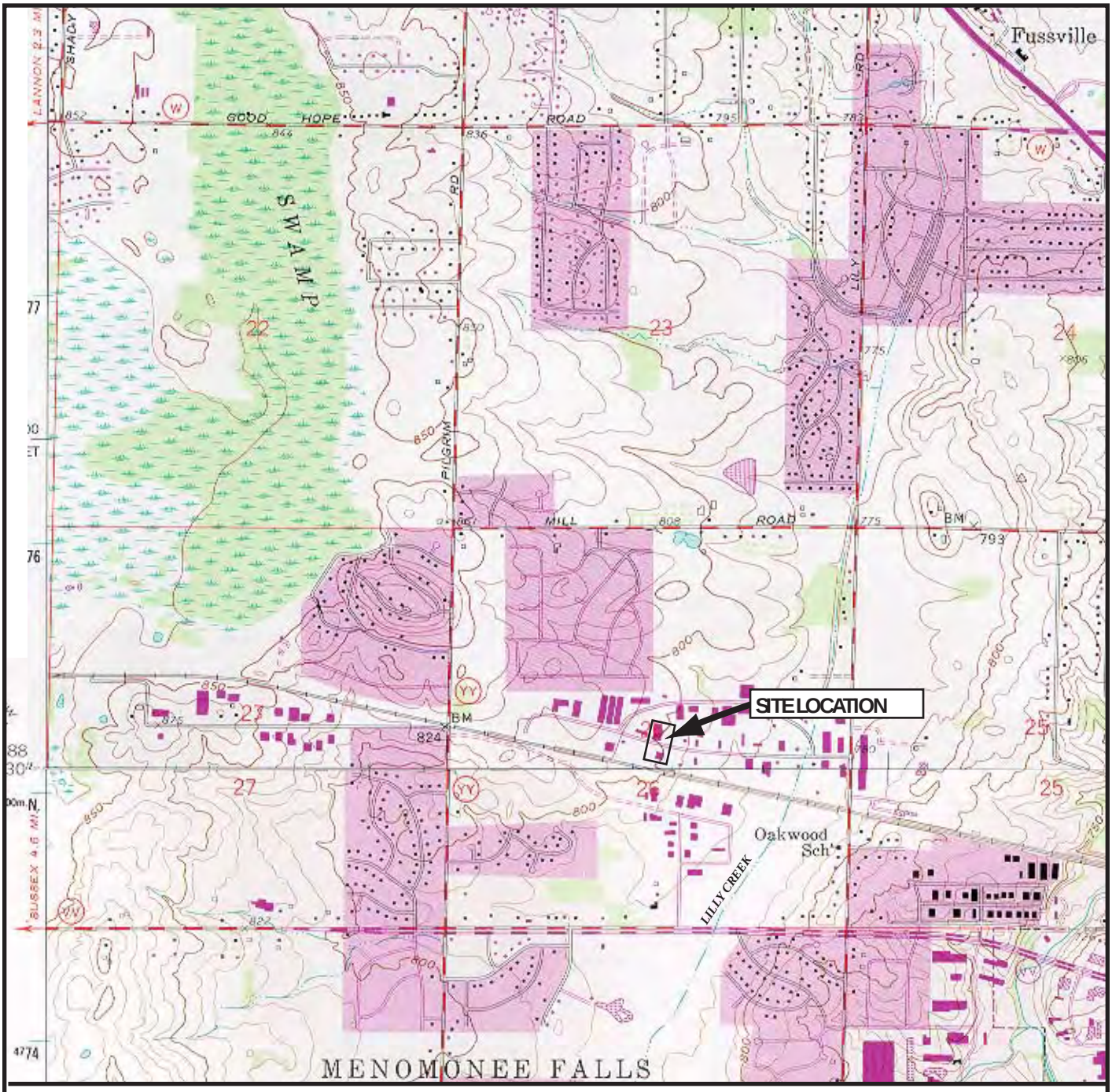
Table 10. Summary of Carbon Amendment Solution Injection Events, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Injection Well	February 13-14, 2007		March 19-20, 2007		April 16-17, 2007		May 21-22, 2007		June 18-19, 2007	
	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)
IW2	240	3.0	1.5-3.0	110	2.0-2.5	190	2.0-2.5	170	2.0-2.5	125
IW3	---	---	---	---	---	---	1.5-2.0	125	---	---
IW5	140	2.5-3.0	2.0-3.0	140	1.7-2.0	80	2.0-2.5	100	2.0-2.5	100
IW6	15	2.5	1.5-2.5	110	2.0-2.5	20	1.0-2.0	100	1.0-1.5	35
IW7	---	---	1.0-2.0	10	---	---	1.0-2.0	15	---	---
IW8	---	---	1.5-2.0	25	1.4-2.0	20	1.0-2.0	15	1.0-2.0	25
IW9	240	3.0	---	---	2.0-3.0	205	3.0-3.5	120	2.0-3.0	100
IW10	---	---	2.0-3.0	190	1.5-2.0	100	2.0-2.5	100	---	---
IW11	---	---	2.0-2.5	10	0.5-1.0	10	1.0-2.0	15	1.0-2.0	30
IW12	---	---	2.0-2.5	30	1.0-2.0	30	1.5-2.0	55	1.5-2.0	125
IW13	---	---	2.0-2.5	15	1.0-2.0	20	1.5-2.0	35	1.0-2.0	30
IW16	20	2.0	1.0-2.3	20	1.0-2.0	10	2.0	25	---	---
IW17	---	---	1.0-2.0	10	1.0-2.0	10	1.0-2.0	15	1.0-2.0	10
IW18	---	---	2.0-2.5	15	1.0-2.0	10	1.0-2.5	15	1.5-2.0	15
IW21	---	---	---	---	---	---	---	---	---	---
IW22	35	2.0	1.0-2.0	10	1.0-2.0	10	1.0-2.0	20	1.5-2.0	20
IW23	25	2.0	1.0-2.0	15	1.0-2.0	20	---	---	---	---
IW24	---	---	2.0-3.0	110	2.0-3.0	150	1.5-2.0	50	2.0-2.5	175
IW25	---	---	2.0-2.5	10	1.0-2.0	20	---	---	---	---
IW26	25	2.0	1.0-3.0	10	1.0-2.0	10	1.5-2.0	15	1.5-2.0	20
IW28	25	2.0	2.0	10	1.0-2.0	10	1.5-2.0	15	1.5-2.0	10.0
IW31	70	2.5-3.0	2.0-2.5	110	2.0-2.5	100	1.0-2.0	50	2.0-2.5	40
IW32	160	2.5-2.8	2.0-3.5	110	1.2-2.0	120	1.0-2.0	120	2.0-2.5	100
IW33	240	3.0	2.0-2.5	140	2.0-2.5	100	2.5-3.0	120	2.0-3.0	100
IW34	---	---	---	---	---	---	---	---	---	---
IW35	60	2.5	2.0-3.0	105	2.0-2.5	25	2.0-2.5	175	2.0-2.5	50
IW36	---	---	---	---	1.8-2.0	110	2.0-2.5	120	2.5-3.0	150
IW37	---	---	---	---	---	---	---	---	---	---
IW38	160	3.0-4.0	4.0	105	3.0-3.5	20	2.0	65	2.0-2.5	150
IW39	---	---	1.0-2.5	30	1.10-1.30	70	0.5-2.0	15	1.5-2.0	75
IW40	20	1.0	1.0-2.5	20	1.5-2.0	10	0.5-2.0	15	1.0-1.5	10
IW41	25	1.0	2.0-2.5	30	1.4-1.5	20	0.5-1.0	15	1.0-1.5	5
	Total Solution Injected/Event	**1,500**		**1,500**		**1,500**		**1,700**		**1,500**

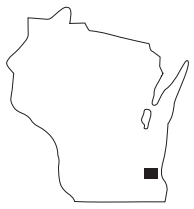
ARCADIS

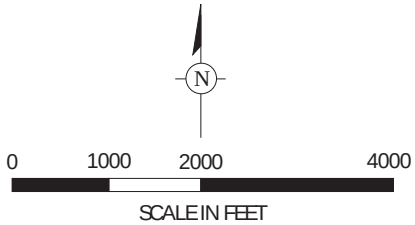
Table 10. Summary of Carbon Amendment Solution Injection Events, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Injection Well	July 16-18, 2007		August 13-14, 2007		September 10-12, 2007	
	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)	Injection Rate (gpm)	Injection Volume (gallons)
IW2	1.0-2.0	150	2.0-3.0	120	2.0-2.5	150
IW3	---	---	---	---	---	---
IW5	1.0-2.0	120	1.5-2.5	100	1.0-2.0	100
IW6	1.0-2.0	10	1.5-2.0	70	1.0-2.0	70
IW7	0.5-1.0	15	1.0-2.0	10	1.0-1.5	10
IW8	1.0-2.0	15	1.5-2.0	5	1.0-1.5	15
IW9	1.0-2.0	120	2.0-3.0	120	2.0-2.5	150
IW10	---	---	2.0-3.0	30	2.0-2.5	150
IW11	0.5-1.0	20	1.0-2.0	10	1.0-1.5	10
IW12	1.0-2.0	150	1.0-2.0	75	1.5-2.0	120
IW13	1.0-2.0	25	1.5-2.0	20	0.5-1.0	10
IW16	---	---	---	---	1.0-1.5	10
IW17/17R	1.0-2.0	15	1.0-2.0	10	1.0-1.5	10
IW18	1.0-2.0	25	2.0-2.5	20	1.0-1.5	40
IW21	---	---	---	---	---	---
IW22	1.0-2.0	10	1.5-2.0	20	1.0-1.5	20
IW23	1.0-2.0	15	---	---	0.5-1.0	15
IW24	1.0-2.0	160	1.5-2.5	175	1.5-2.0	150
IW25	---	---	---	---	0.5-1.0	10
IW26	1.0-2.0	20	1.5-2.0	10	0.5-1.0	10
IW28	0.5-2.0	25	1.5-2.0	10	1.0-1.5	10
IW31	2.0-2.5	115	2.0-3.0	60	1.5-2.0	120
IW32	1.0-2.0	25	2.0-2.5	100	1.5-2.0	120
IW33	2.0-2.5	125	2.0-3.0	100	1.5-2.0	100
IW34	---	---	---	---	---	---
IW35	1.0-2.0	150	2.5-3.5	100	1.0-2.5	100
IW36	---	---	2.0-2.5	85	1.5-2.5	100
IW37	---	---	---	---	---	---
IW38	2.0-2.5	100	2.5-4.0	100	3.0-3.5	150
IW39	0.5-1.0	60	1.5-2.5	100	1.5-2.5	130
IW40	1.0-2.0	25	1.5-3.0	30	1.0-2.0	10
IW41	1.5-2.0	20	1.0-2.0	20	1.0-2.0	10
	Total Solution Injected/Event	**1,500**		**1,500**		**1,900**
					Cumulative Solution Injected	**20,100**



SOURCE: Composite of USGS 7.5 Minute Topographic Maps, MENOMONEE FALLS (1994) and WAUWATOSA (1994), WISCONSIN Quadrangles





BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

SITE LOCATION

ARCADIS

FIGURE
1

20APR09 - ENVIRONMENT-PL-LMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2009\WI_SITE.AI

BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

MONITORING WELL LOCATION PLAN

ARCADIS

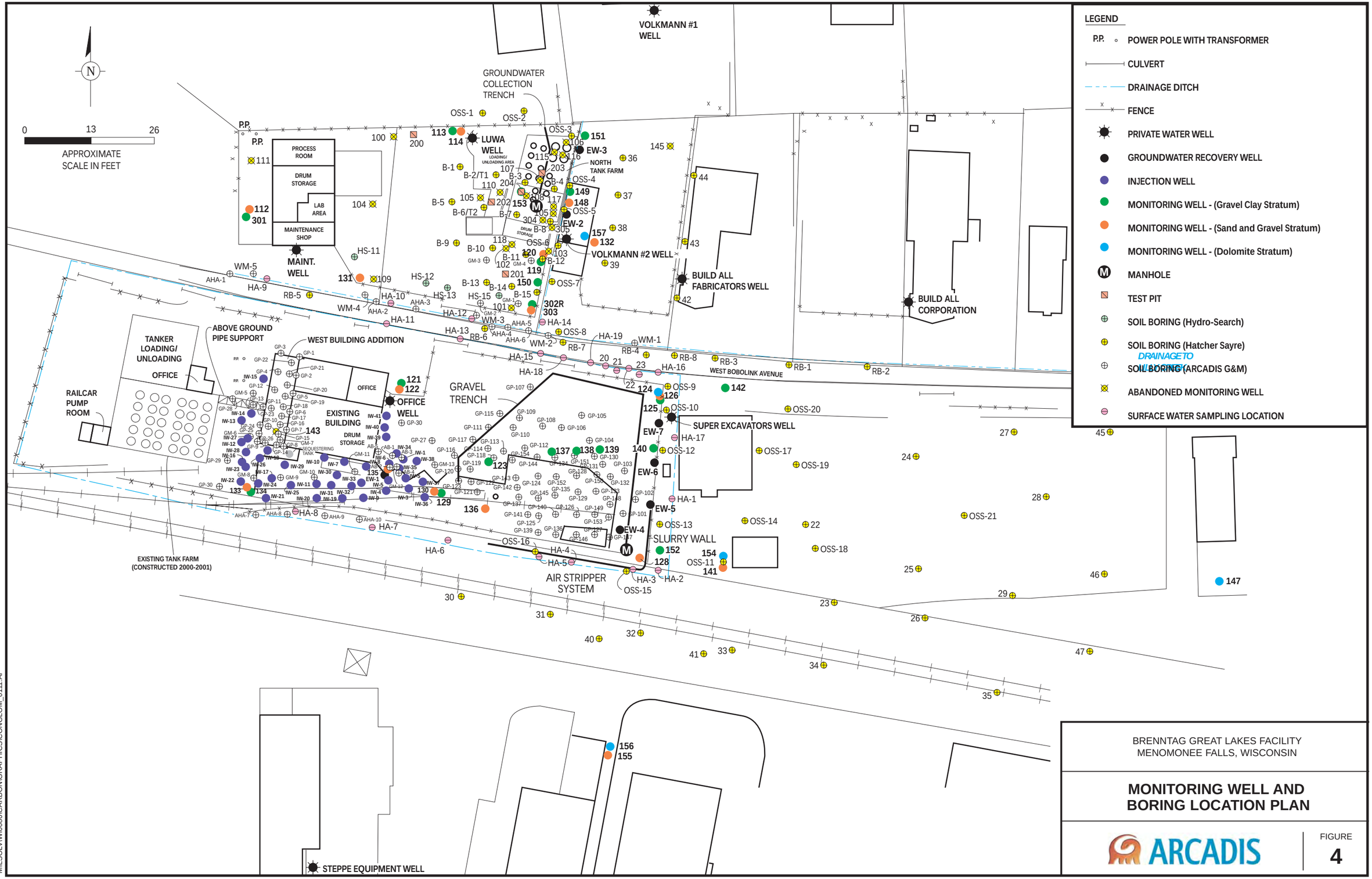
FIGURE 2

BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

LOCATIONS OF SOLID WASTE MANAGEMENT UNITS

ARCADIS

FIGURE 3



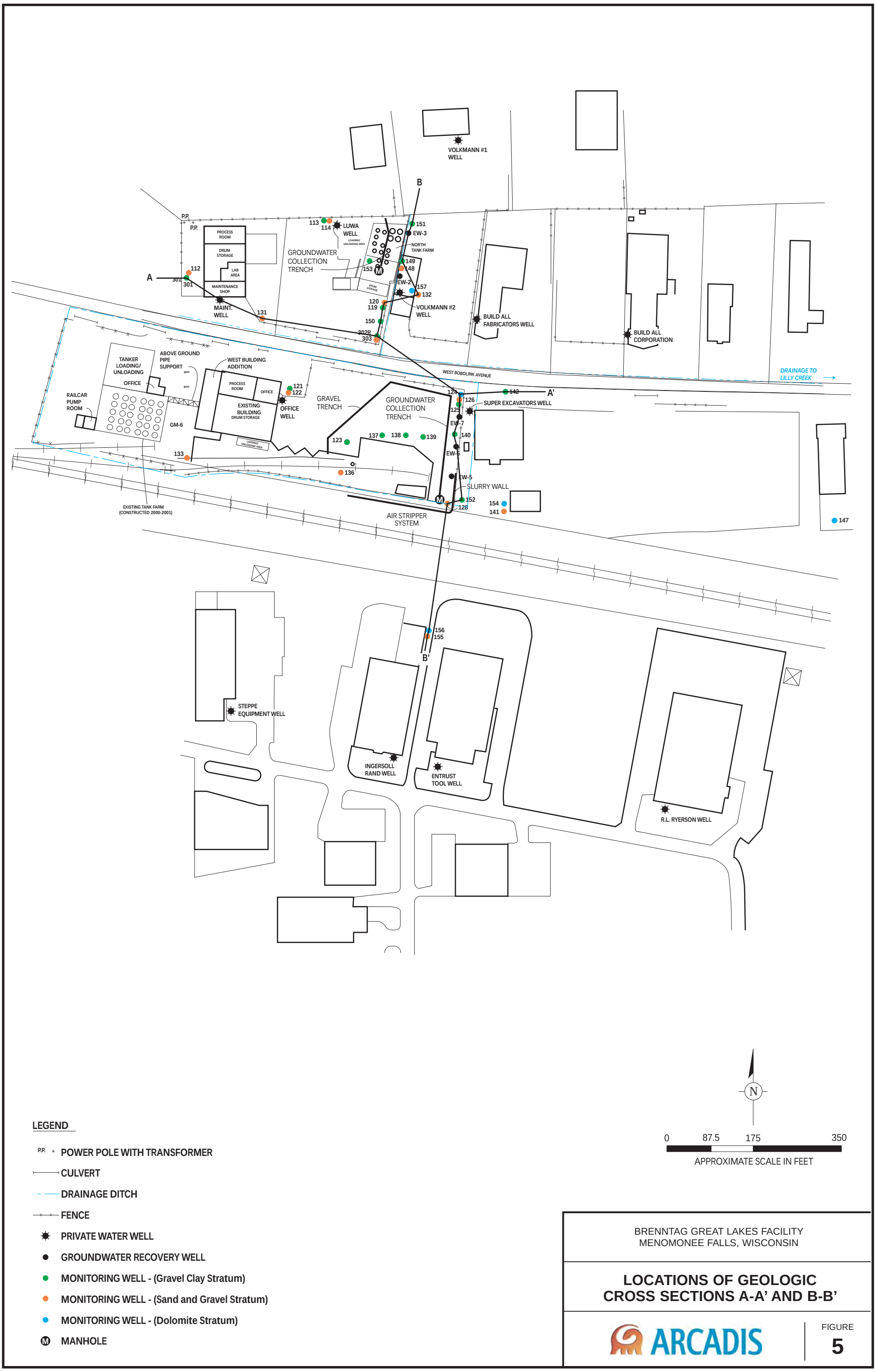
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

MONITORING WELL AND BORING LOCATION PLAN

ARCADIS

FIGURE 4

24JAN11\ENVIRONMENT\EABLMB
MILSOLVWI0686\CARBON\GRAPHICS\CONGLOM_0111.AI



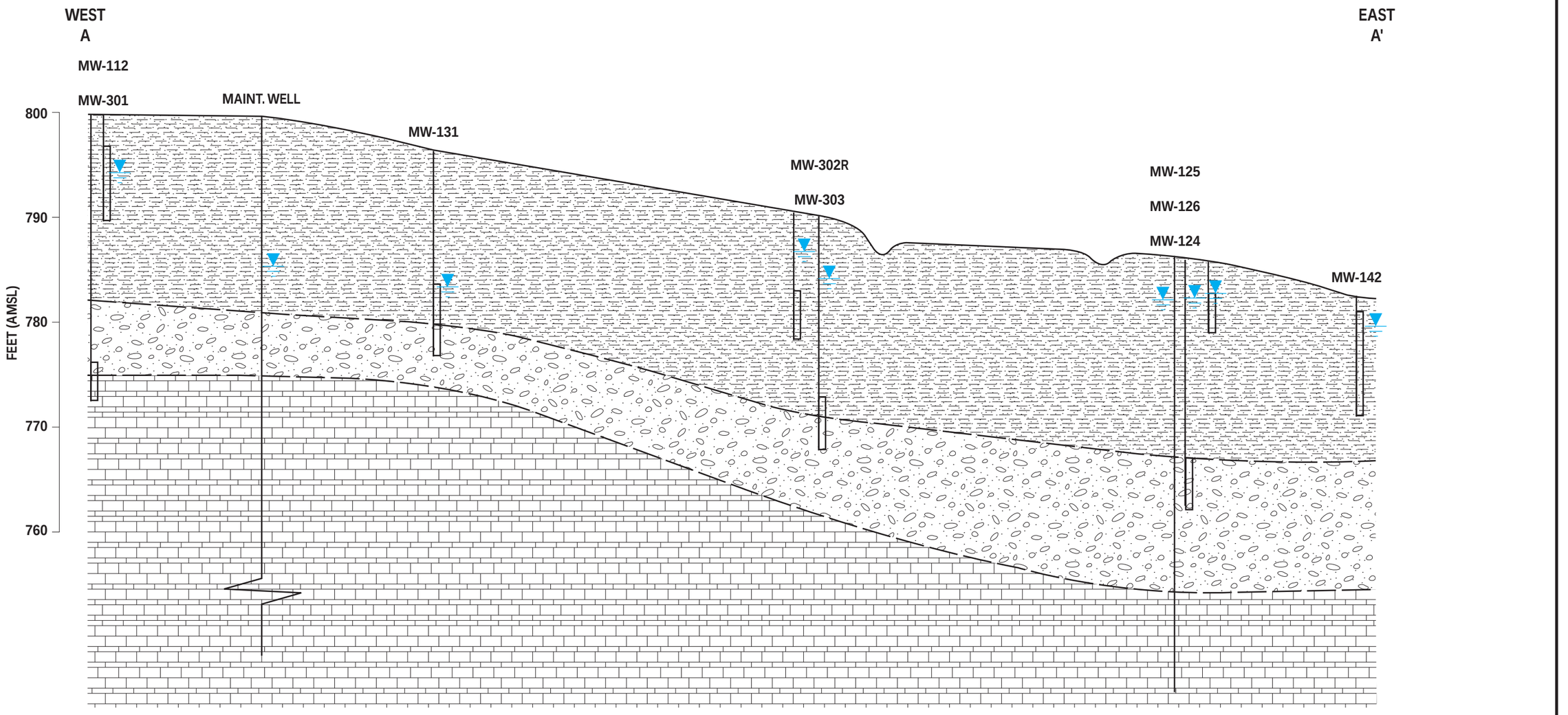
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

LOCATIONS OF GEOLOGIC CROSS SECTIONS A-A' AND B-B'

ARCADIS

FIGURE
5

14OCT10\ENVIRONMENT\EAB\LMB
MILSOLVWI0686\CARBON\GRAPHICS\GEOXSEC_A 1010.AI



LEGEND

MW-131 MONITORING WELL NUMBER

SCREENED INTERVAL

APPROXIMATE UNIT CONTACTS

WATER TABLE (May 11, 2009)

GRAVEL/CLAY

SAND & GRAVEL

FRACTURED DOLOMITE

0 30 60 120

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 6X

BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

GEOLOGIC CROSS SECTION A-A'

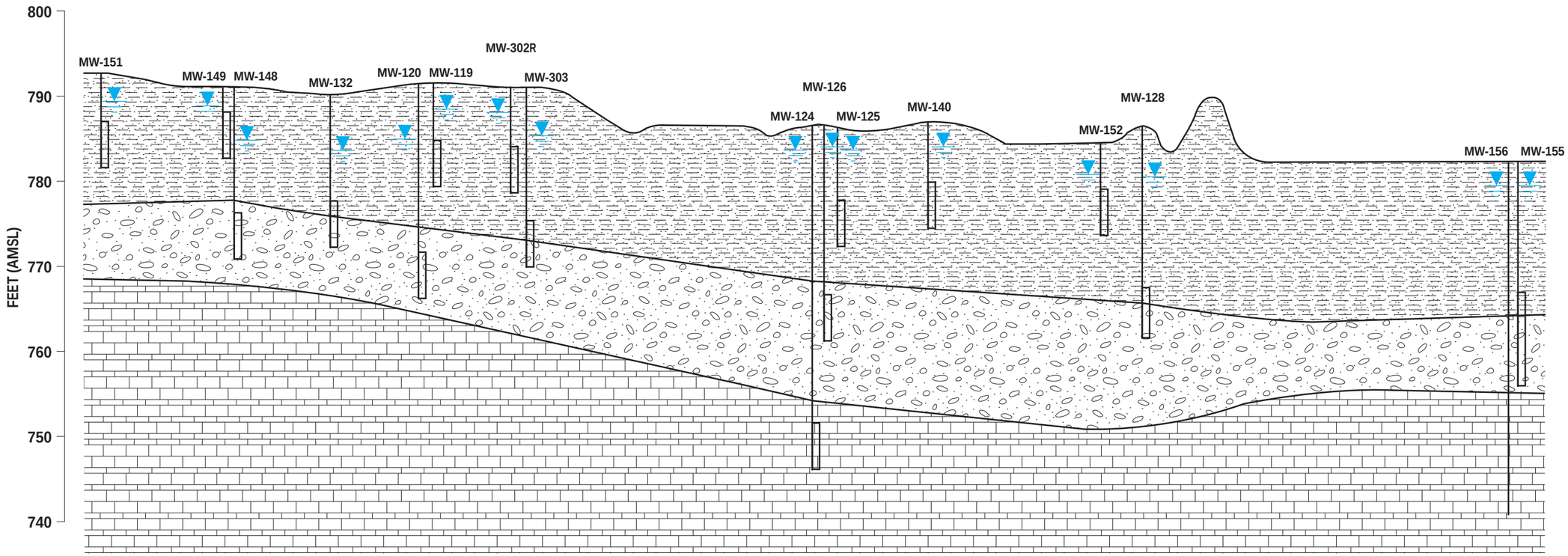
ARCADIS

FIGURE
6

02AUG11\ENVIRONMENT\TSI.MB
MILSOLVWI06801\COR_ACTN\GRAPHICS\2009\XSEC_AA.AI

NORTH
B

SOUTH
B'



LEGEND

MW-131 MONITORING WELL NUMBER

SCREENED INTERVAL

APPROXIMATE UNIT CONTACTS

WATER TABLE (May 11, 2009)

GRAVEL/CLAY

SAND & GRAVEL

FRACTURED DOLOMITE

0 30 60 120

HORIZONTAL SCALE IN FEET

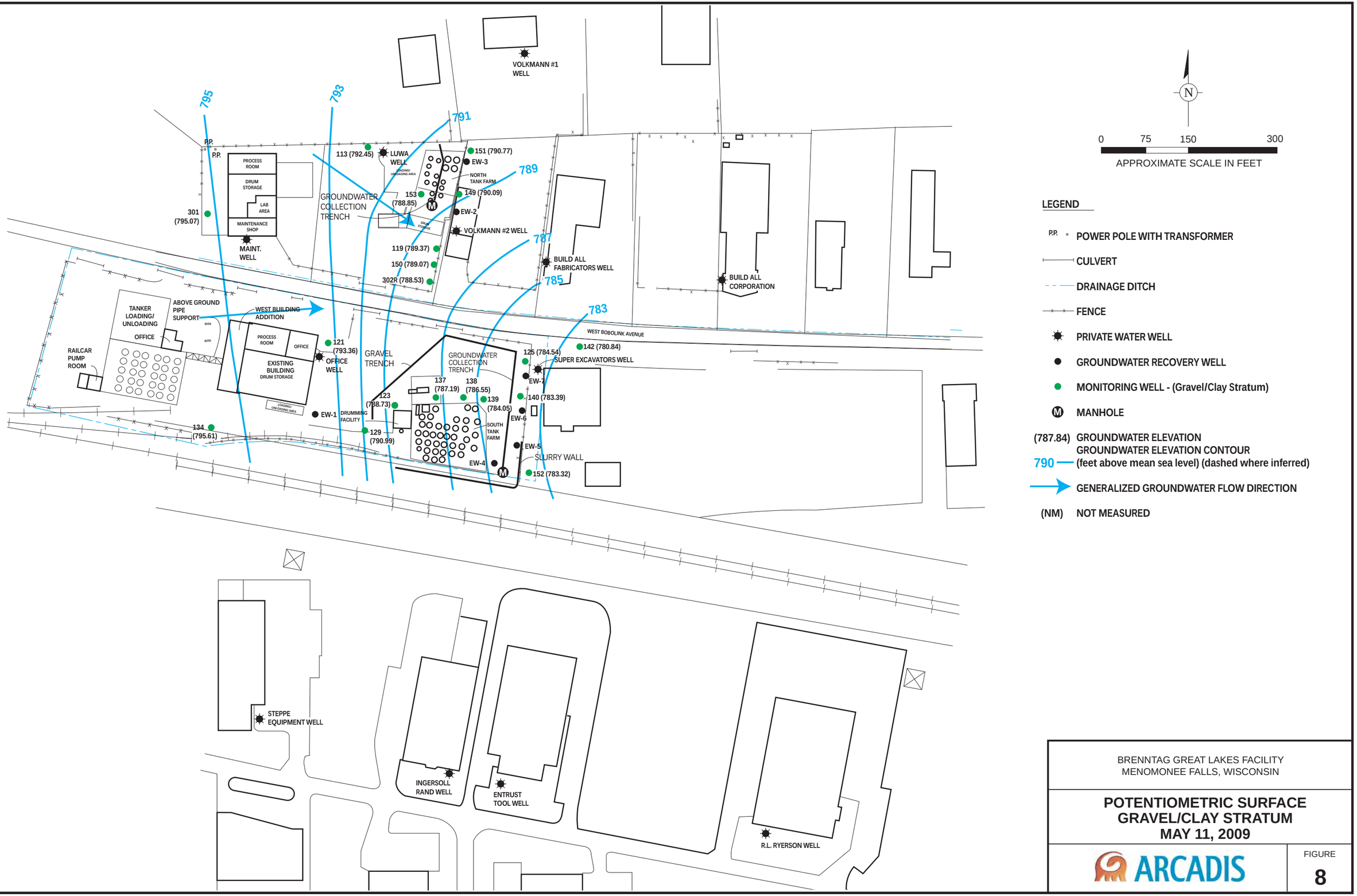
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

GEOLOGIC CROSS SECTION B-B'

ARCADIS

FIGURE
7

02AUG11ENVIRONMENTITSLMB
MILSOLVIW\0680\COR_ACTN\GRAPHICS\2009\XSEC_BB.AI



LEGEND

- P.P. ○ POWER POLE WITH TRANSFORMER
- CULVERT
- DRAINAGE DITCH
- FENCE
- PRIVATE WATER WELL
- GROUNDWATER RECOVERY WELL
- MONITORING WELL - (Gravel/Clay Stratum)
- (M) MANHOLE
- (787.84) GROUNDWATER ELEVATION
- 790 GROUNDWATER ELEVATION CONTOUR (feet above mean sea level) (dashed where inferred)
- GENERALIZED GROUNDWATER FLOW DIRECTION
- (NM) NOT MEASURED

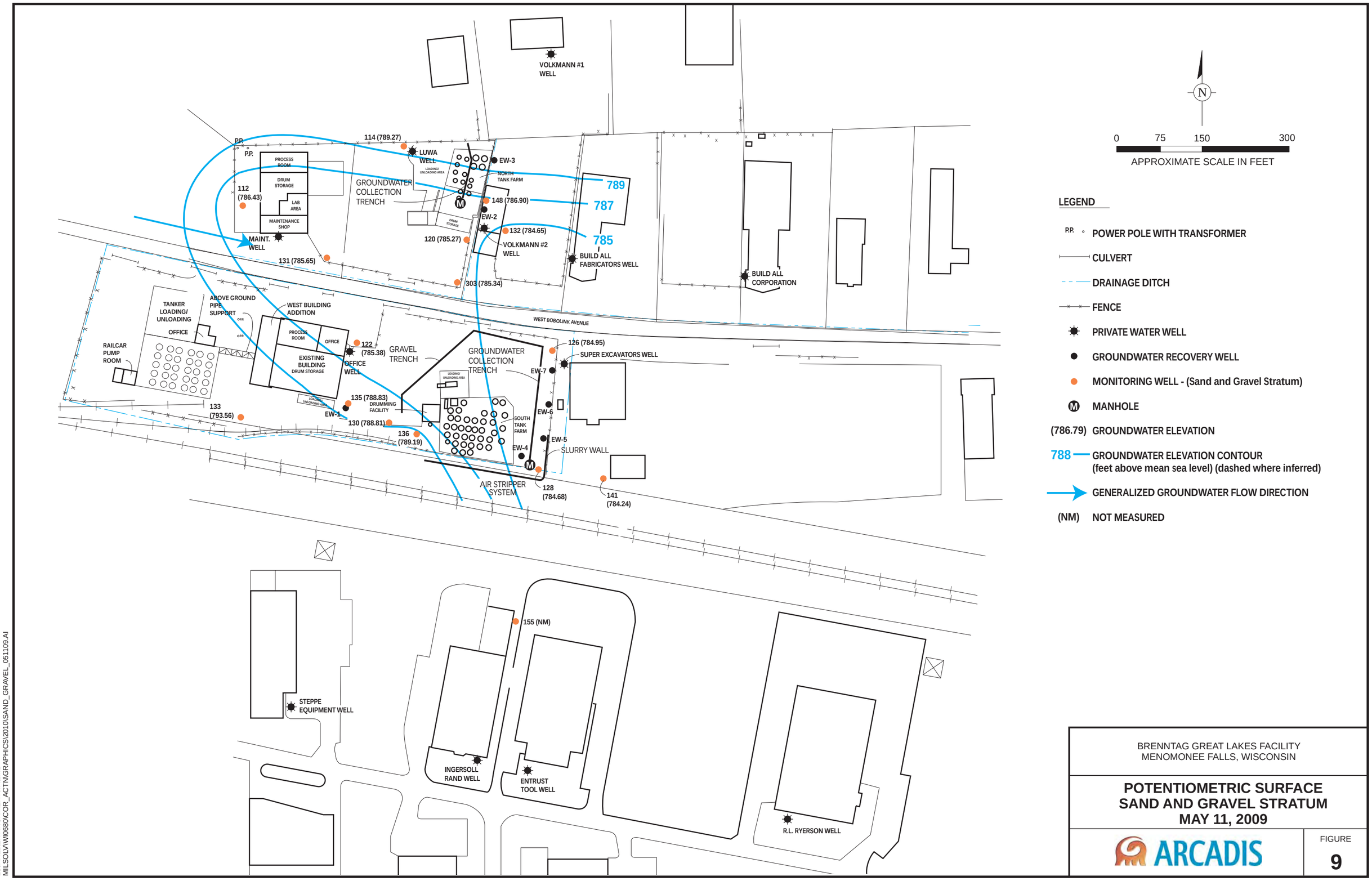
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

POTENTIOMETRIC SURFACE GRAVEL/CLAY STRATUM MAY 11, 2009

ARCADIS

FIGURE **8**

25JAN11\ENVIRONMENT\TALMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2010\GRAVEL_CLAY_051109.AI



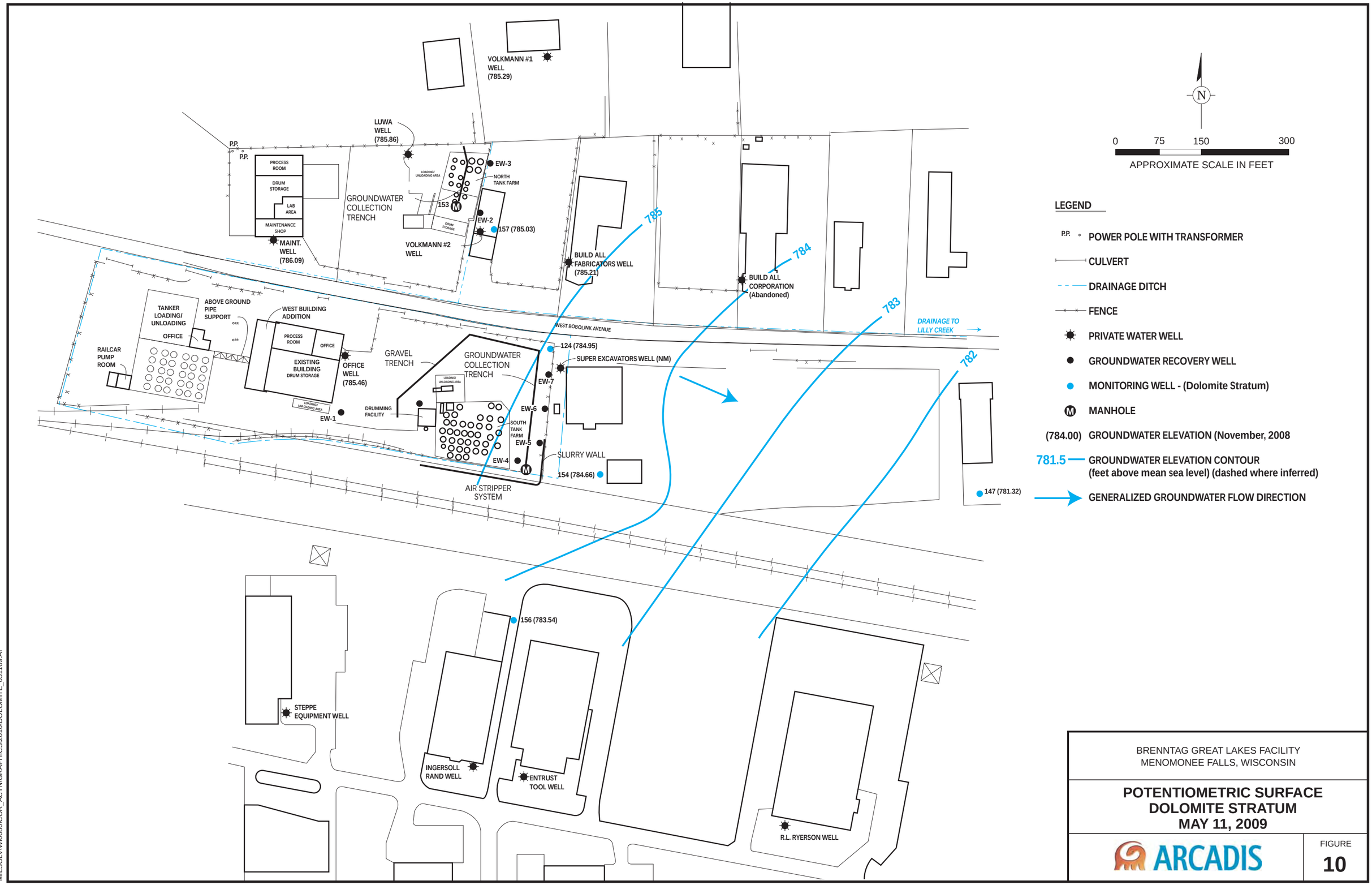
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

POTENTIOMETRIC SURFACE SAND AND GRAVEL STRATUM MAY 11, 2009

ARCADIS

FIGURE 9

25JAN11\ENVIRONMENT\TAILMB
MILSOLVWI0680\COR_ACTNGRAPHICS\2010\SAND_GRAVEL_051109.AI



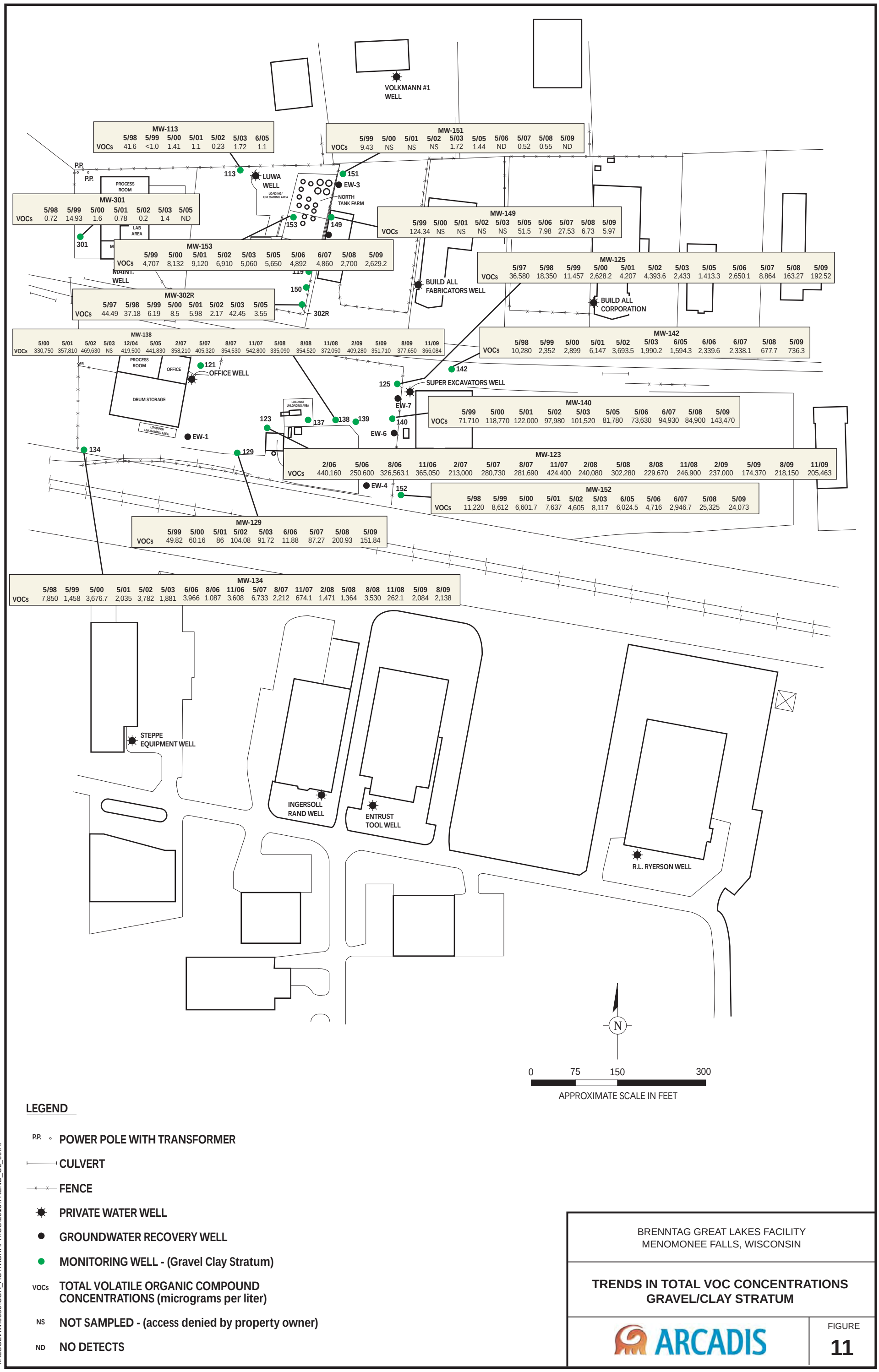
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

POTENTIOMETRIC SURFACE DOLOMITE STRATUM MAY 11, 2009

ARCADIS

FIGURE **10**

16AUG11\ENVIRONMENT\TATS\LMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2010\DOLOMITE_051109.AI



LEGEND

- P.P. ∘ POWER POLE WITH TRANSFORMER
- CULVERT
- FENCE
- PRIVATE WATER WELL
- GROUNDWATER RECOVERY WELL
- MONITORING WELL - (Gravel Clay Stratum)
- VOCs TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (micrograms per liter)
- NS NOT SAMPLED - (access denied by property owner)
- ND NO DETECTS

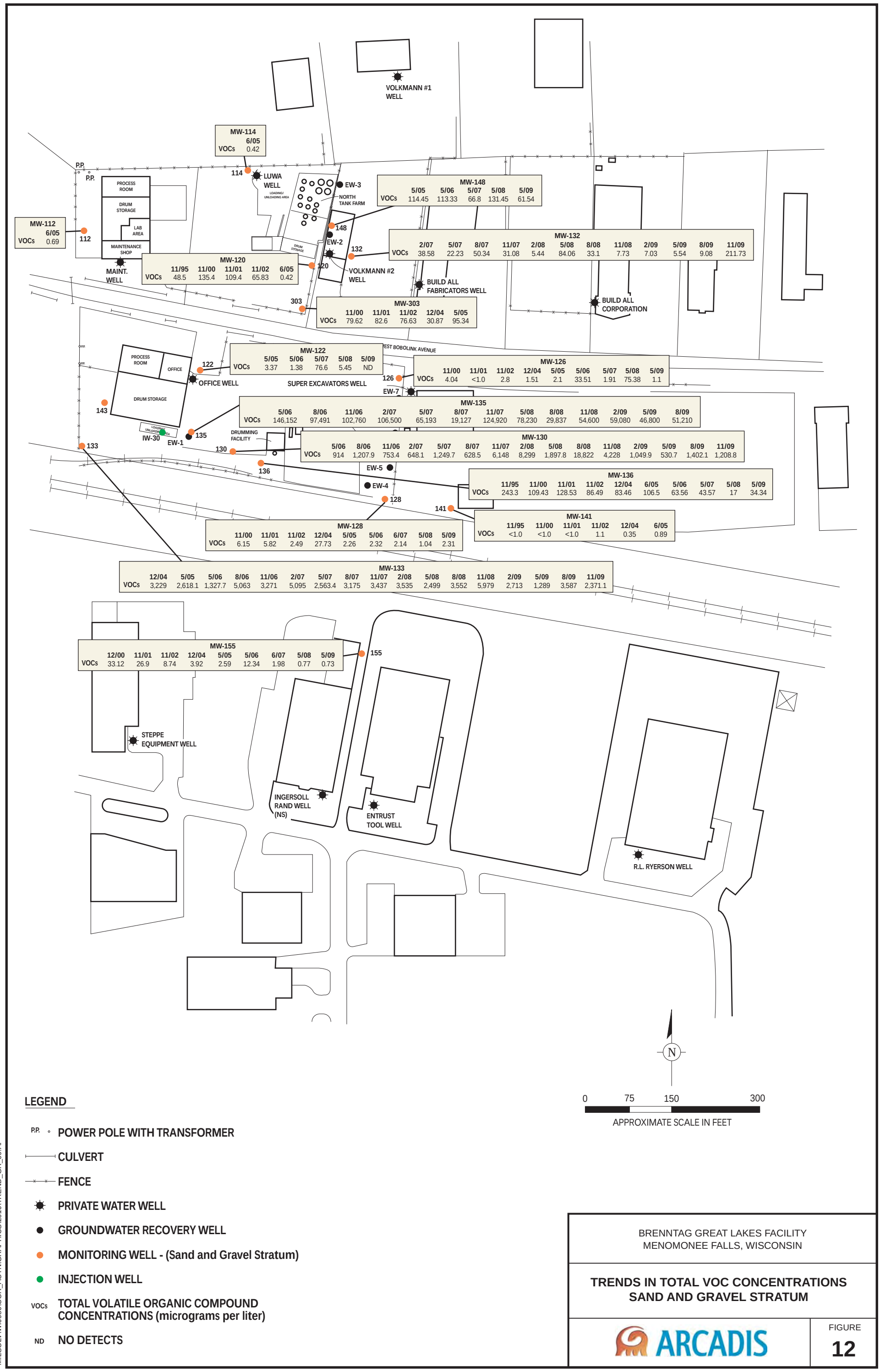
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

TRENDS IN TOTAL VOC CONCENTRATIONS GRAVEL/CLAY STRATUM

ARCADIS

FIGURE 11

24JAN11\ENVIRONMENT\TAILMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2010\TREND_CL_09.AI



LEGEND

- P.P. ○ POWER POLE WITH TRANSFORMER
- CULVERT
- FENCE
- PRIVATE WATER WELL
- GROUNDWATER RECOVERY WELL
- MONITORING WELL - (Sand and Gravel Stratum)
- INJECTION WELL
- VOCs TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (micrograms per liter)
- ND NO DETECTS

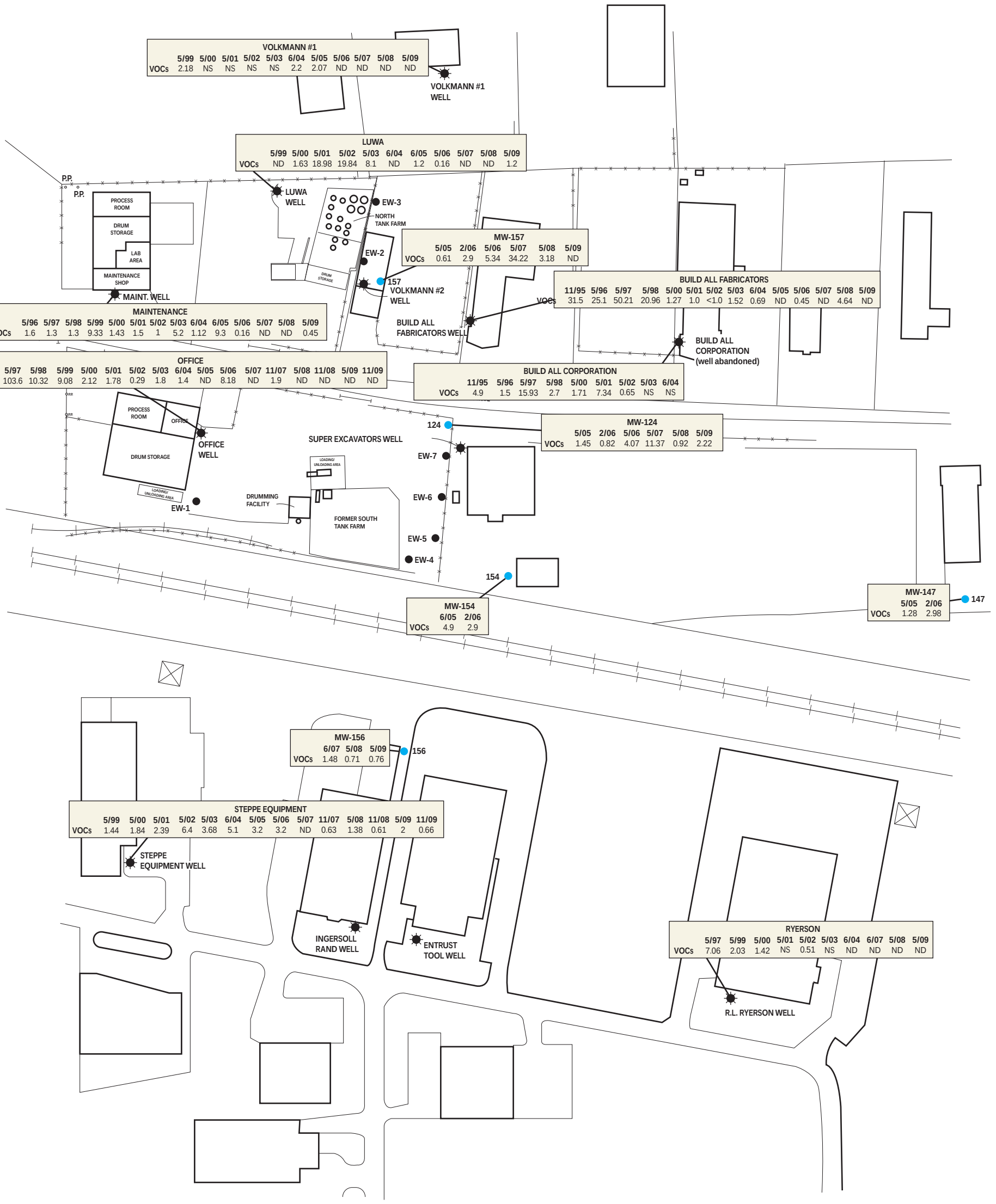
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

TRENDS IN TOTAL VOC CONCENTRATIONS SAND AND GRAVEL STRATUM

ARCADIS

FIGURE
12

18FEB11\ENVIRONMENT\TAILMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2010\TREND_GR_09.AI



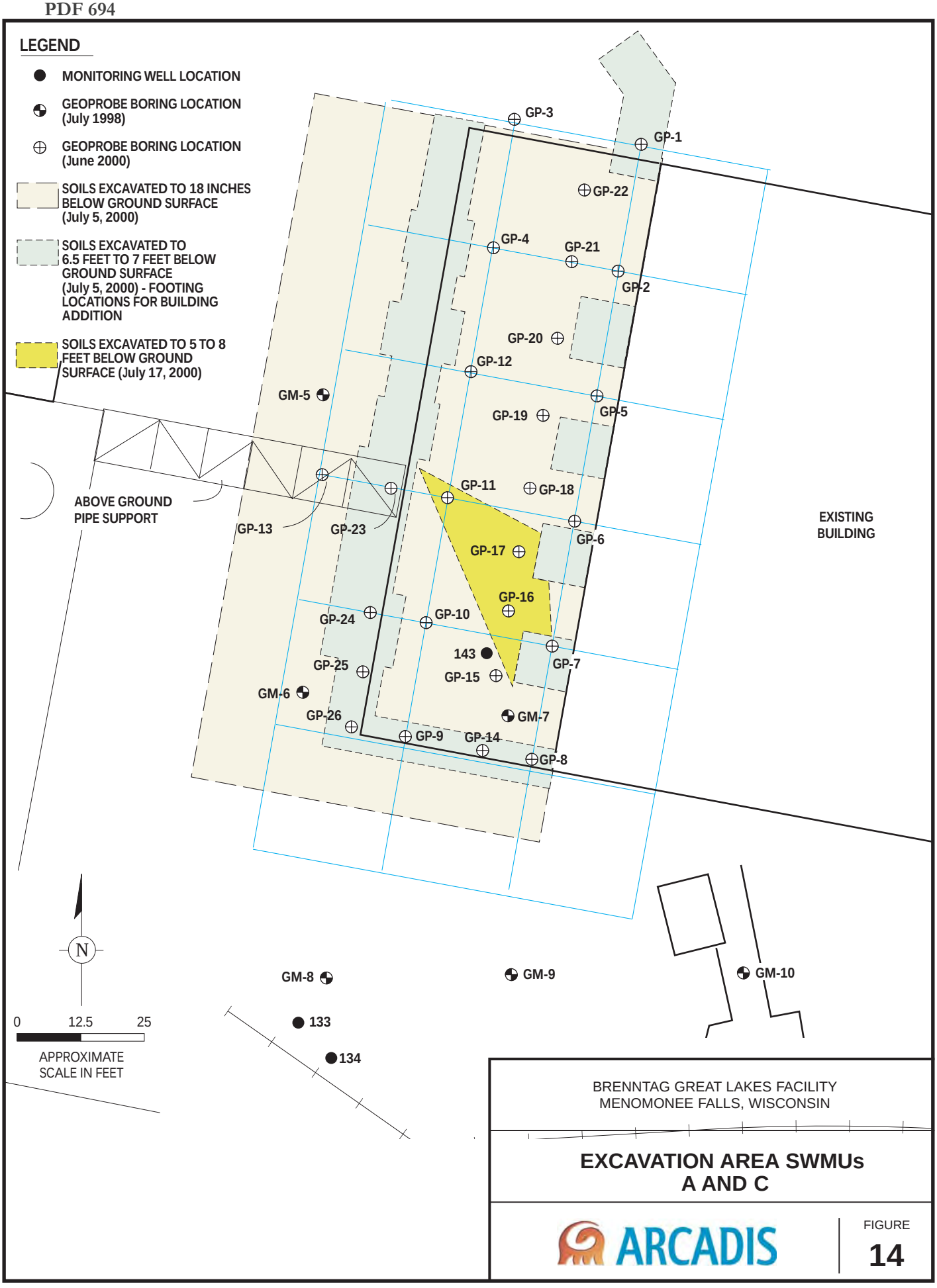
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

TRENDS IN TOTAL VOC CONCENTRATIONS DOLOMITE STRATUM

ARCADIS

FIGURE
13

19FEB10\ENVIRONMENT\TAILMB
MILSOLVWI0680\COR_ACTN\GRAPHICS\2010\DOLO_09.AI



BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

EXCAVATION AREA SWMUs A AND C

ARCADIS

FIGURE
14

26SEP12\ENVIRONMENT\EAB\LMB
MILSOLVWI0686\CARBON\GRAPHICS\EXCAV 700.AI

N

0 15 30 60

APPROXIMATE SCALE IN FEET

BOBOLINK AVENUE

UNDERGROUND GRAVEL TRENCHES

APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK AREA

UNDERGROUND GROUNDWATER COLLECTION TRENCH

LOADING/ UNLOADING AREA

8,000 GALLON UNDERGROUND STORAGE TANK ABANDONED IN PLACE

DRUMMING FACILITY

CONCRETE BERM

SUPER EXCAVATORS

REMEDIATION SHED

GP-107 GP-115 GP-105 GP-109 GP-225 GP-216 GP-201 GP-229 GP-108 GP-106 GP-111 GP-200 GP-110 GP-224 GP-202 GP-223 GP-231 GP-230 GP-117 GP-104 GP-114 GP-112 GP-113 MW-137 MW-138 MW-139 GP-116 GP-118 GP-144 GP-134 GP-151 GP-130 MW-123 GP-154 GP-131 GP-120 GP-119 GP-206 GP-227 GP-226 GP-203 GP-124 GP-209 GP-103 GP-216 GP-217 GP-207 GP-152 GP-128 GP-150 GP-143 GP-204 GP-208 GP-210 GP-132 GP-123 GP-122 GP-205 GP-222 GP-228 GP-211 GP-142 GP-212 GP-129 GP-133 GP-145 GP-135 GP-218 GP-137 GP-214 GP-213 GP-102 GP-148 GP-101 GP-141 GP-125 GP-140 GP-126 GP-149 GP-153 GP-220 GP-219 GP-139 GP-221 GP-136 GP-146 GP-127 GP-147

MW-124 MW-126 MW-125 EW-7 MW-140 EW-6 EW-5 EW-4 MW-130 MW-129 GP-121 MW-136 MW-128

LEGEND

- FENCE
- SOIL BORING
- APPROXIMATE EXTRACTION WELL LOCATION
- APPROXIMATE MONITORING WELL LOCATION
- BOUNDARY OF NONHAZARDOUS WASTE SOIL EXCAVATION (0 TO 8 FEET DEEP) PROPOSED IN WORK PLAN
- BOUNDARY OF NONHAZARDOUS WASTE SOIL EXCAVATION (8 TO 15 FEET DEEP) PROPOSED IN WORK PLAN
- ACTUAL NONHAZARDOUS WASTE SOIL EXCAVATION LIMITS (0 TO 8 FEET)
- ACTUAL HAZARDOUS WASTE SOIL EXCAVATION LIMITS (0 TO 8 FEET)
- ACTUAL NONHAZARDOUS WASTE SOIL EXCAVATION LIMITS (8 TO 15 FEET)
- CONSTITUENT(S) DETECTED AT CONCENTRATIONS ABOVE THE VAPOR INHALATION SOIL SCREENING LEVEL
- CONSTITUENT(S) DETECTED AT CONCENTRATIONS ABOVE THE INGESTION SOIL SCREENING LEVEL

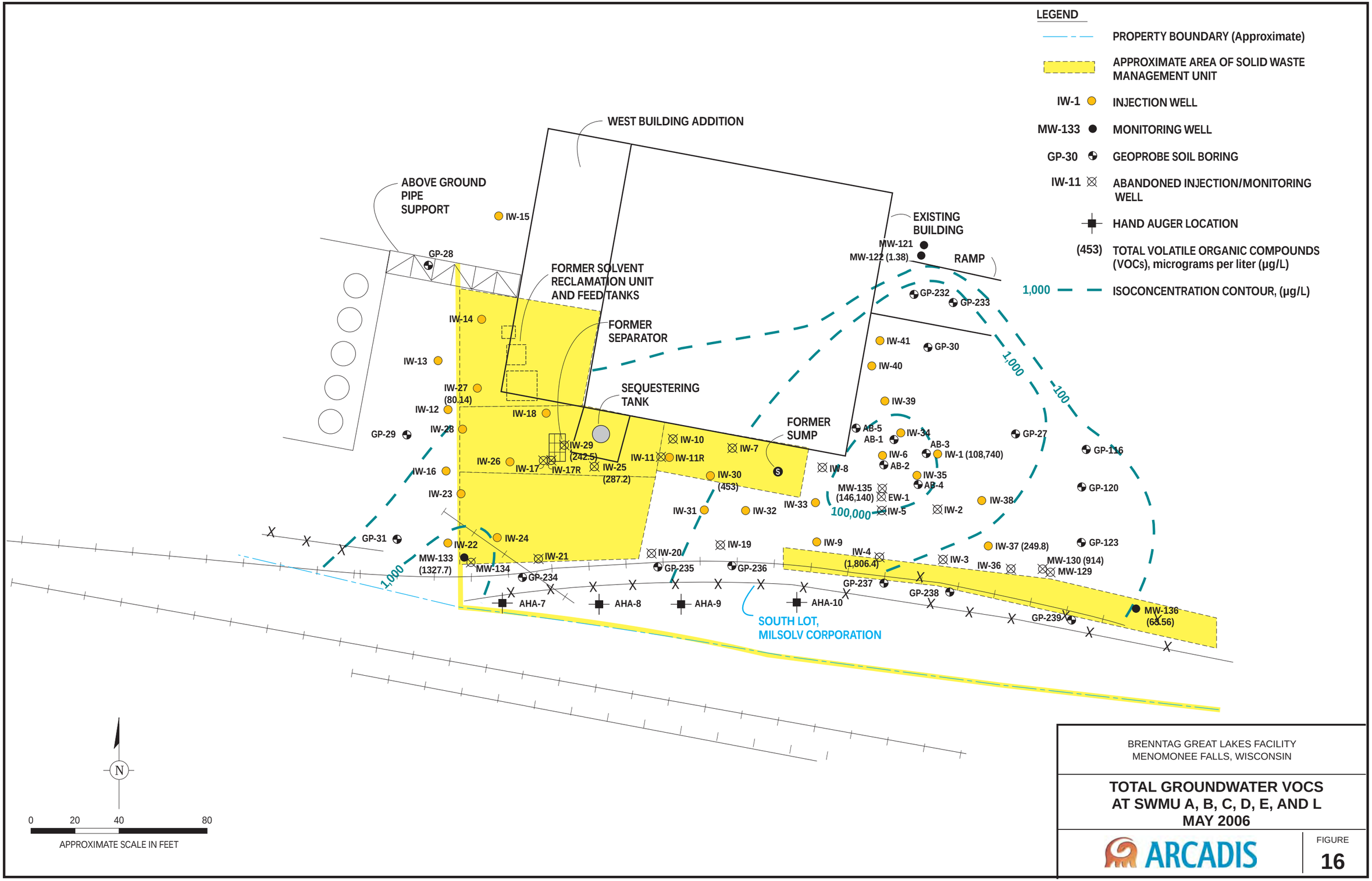
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

SWMU F EXCAVATION AREA

ARCADIS

FIGURE 15

27JUNE11\ENVIRONMENT\TAL\MB MILSOLVWI0680\COR_ACT\NGRAPHICS\2011\EXCAVATION LIMIT_0611.AI



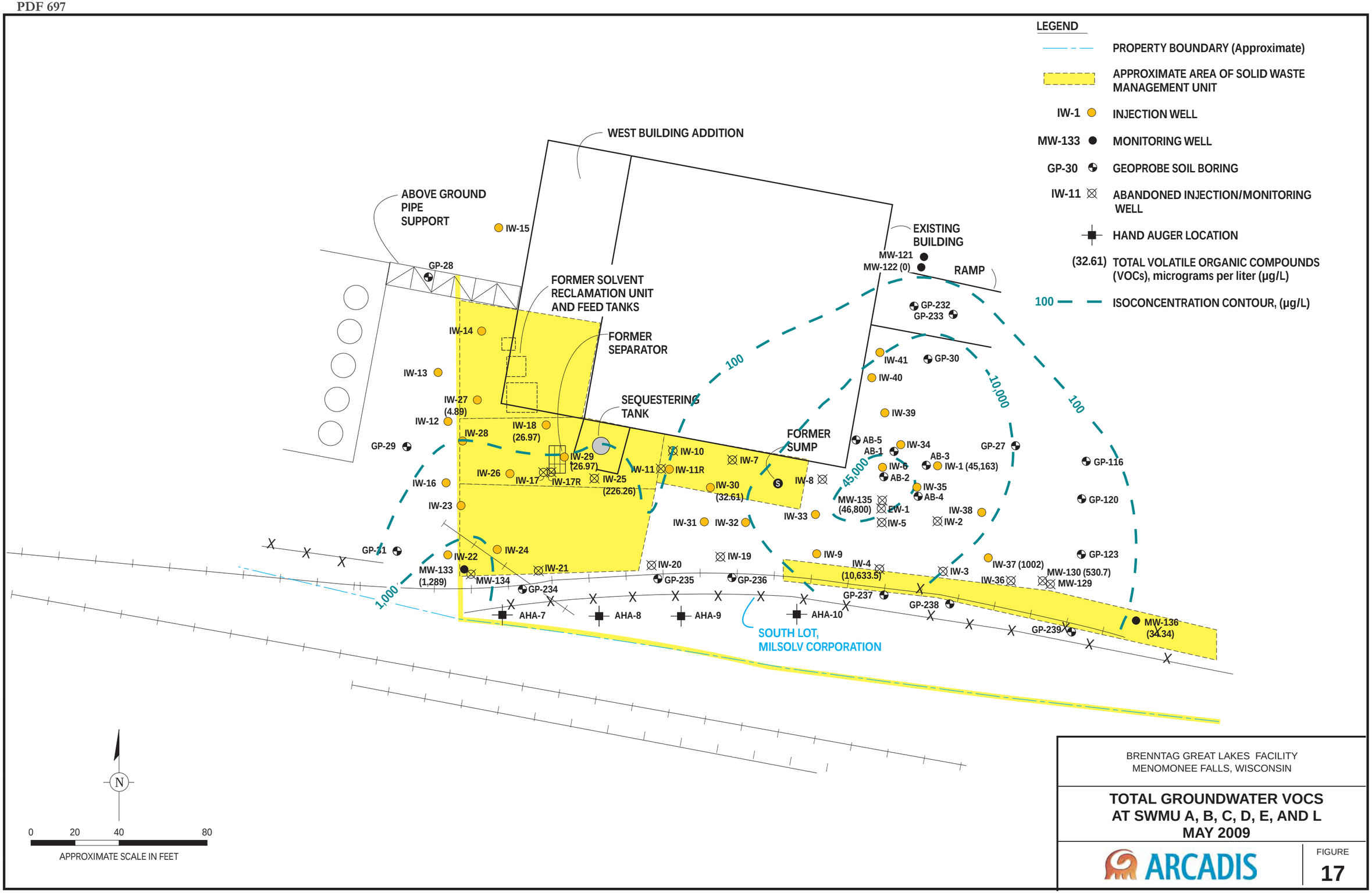
BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

TOTAL GROUNDWATER VOCS AT SWMU A, B, C, D, E, AND L MAY 2006

ARCADIS

FIGURE 16

26OCT11\ENVIRONMENT\TAILMB
MILSOLV\WI0686\CARBON\GRAPHIS\GW VOCS 5-06.AI



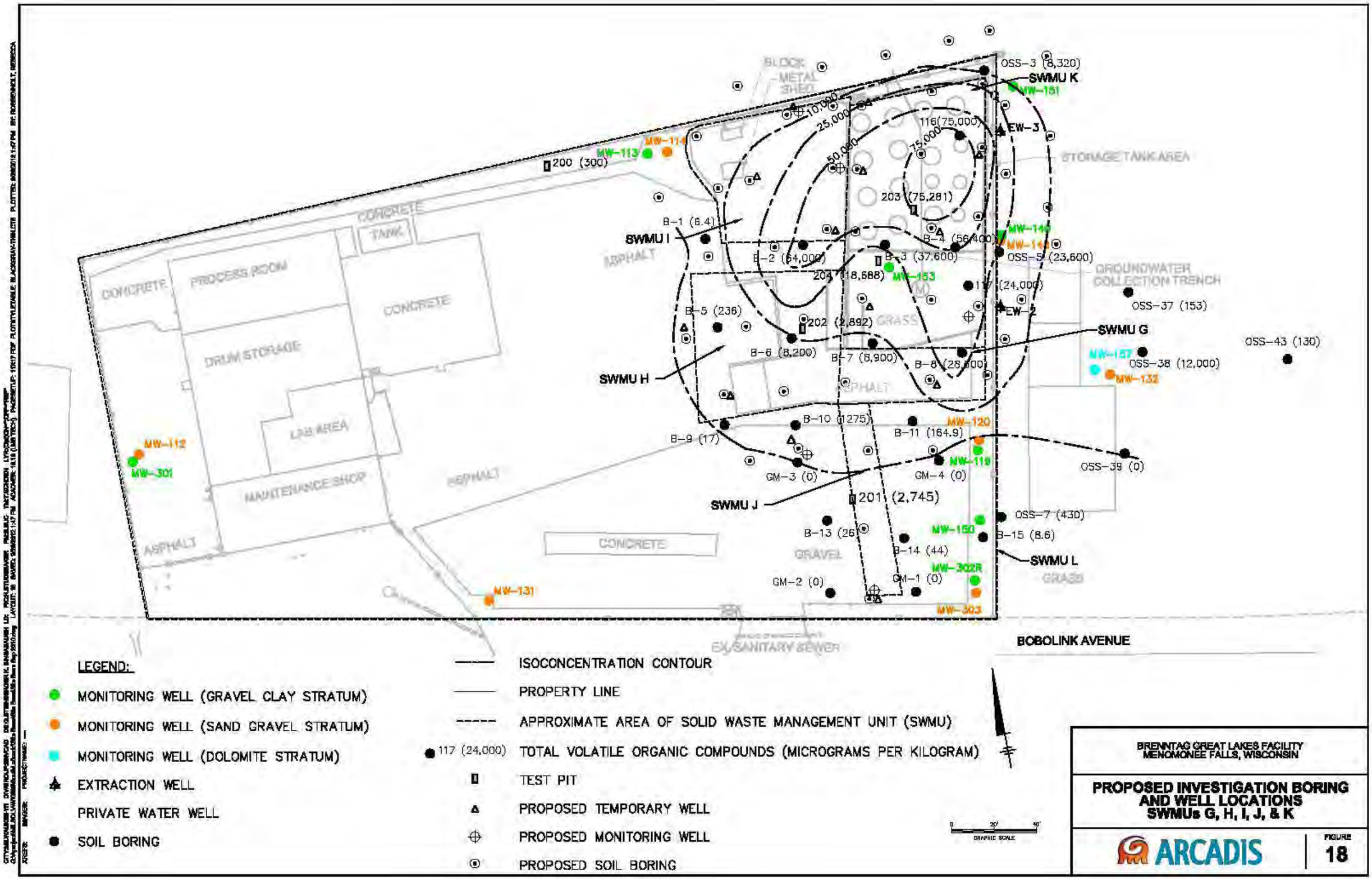
01FEB11\ENVIRONMENTTAILMB
MILSOLVWI0686\CARBON\GRAPHIS\GW VOCS 5-09.AI

BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

TOTAL GROUNDWATER VOCS AT SWMU A, B, C, D, E, AND L MAY 2009

ARCADIS

FIGURE
17



LEGEND:

- MONITORING WELL (GRAVEL CLAY STRATUM)
- MONITORING WELL (SAND GRAVEL STRATUM)
- MONITORING WELL (DOLOMITE STRATUM)
- EXTRACTION WELL
- PRIVATE WATER WELL
- SOIL BORING
- ISOCONCENTRATION CONTOUR
- PROPERTY LINE
- APPROXIMATE AREA OF SOLID WASTE MANAGEMENT UNIT (SWMU)
- 117 (24,000) TOTAL VOLATILE ORGANIC COMPOUNDS (MICROGRAMS PER KILOGRAM)
- TEST PIT
- PROPOSED TEMPORARY WELL
- PROPOSED MONITORING WELL
- PROPOSED SOIL BORING

0 20' 40'
GRAPHIC SCALE

BRENNTAG GREAT LAKES FACILITY
MENOMONEE FALLS, WISCONSIN

PROPOSED INVESTIGATION BORING AND WELL LOCATIONS SWMUs G, H, I, J, & K

ARCADIS

FIGURE 18

ARCADIS

Appendix A

Historical Facility Releases

BRRTS on the Web Activity Details for MILSOLV CORP

Printed Wed, 14 Jul 2010 09:19:26 CDT

Activity No: 04-68-248621
Activity Name: MILSOLV CORP
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 01/04/2000
End Date: 01/04/2000
Last Action: 01/04/2000
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
01/04/2000	Spill Incident Occurred	-
01/04/2000	Spill Reported to DNR	-
01/04/2000	Spill Closed	-

Impacts

Type	Comment
Concrete/Asphalt	-
Contained/Recovered	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Non-Chlorinated Solvents	VOC	51 G

Spill Info

Incident Date	Reported Date	Investigator	Source
01/04/2000	01/04/2000	UNKNOWN	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: operator error, spill into containment area
Comments: NONE

Spiller Actions

Action	Comment
No Action Needed	
Cleanup Method - Absorbent	recovery

Who

Responsible Party:
MILSOLV/ BRENNTAG N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051

BRRTS data comes from various sources, both internal and external to DNR. There may be ommissions and errors in the data and possible delays in updating new information. Please see the legal notices and disclaimers page on BRRTS on the Web for more information.

BRRTS on the Web Activity Details for BRENNTAG GREAT LAKES LLC

Printed Wed, 14 Jul 2010 09:37:20 CDT

Activity No: 04-68-550293
Activity Name: BRENNTAG GREAT LAKES LLC
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 06/27/2001
End Date: 06/27/2001
Last Action: 06/27/2001
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
06/27/2001	Spill Incident Occurred	-
06/27/2001	Spill Reported to DNR	-
06/27/2001	Spill Closed	SCOOT CLOSED SMALL SPILL

Impacts

Type	Comment
Soil Contamination	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Jet Fuel	Petroleum	1 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
06/27/2001	06/27/2001	UNKNOWN	Oil/Gas Pipeline/Pumping or Transfer Station

Cause: DISSASSEMBLE PIPE AND SPILLED METHNOL ACCIDENTALLY LEFT IN PIPE
Comments: NONE

Spiller Actions

Action	Comment
Containment	
Cleanup Method - Absorbent	

Who

Responsible Party:
BRENNTAG GREAT LAKES BUTLER, WI 53007
RP Contact/Agent:
MIKE SCHICK 14765 W BOBOLINK AVE MENOMONEE FALLS, WI 53051
Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

BRRTS on the Web Activity Details for BRENNTAG GREAT LAKES LLC

Printed Wed, 14 Jul 2010 09:37:46 CDT

Activity No: 04-68-550083
Activity Name: BRENNTAG GREAT LAKES LLC
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 02/27/2001
End Date: 03/12/2001
Last Action: 03/12/2001
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
02/27/2001	Spill Incident Occurred	-
02/27/2001	Spill Reported to DNR	-
03/12/2001	Spill Closed	-

Impacts

Type	Comment
Concrete/Asphalt	-
Contained/Recovered	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Unknown Substance	Unknown	30 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
02/27/2001	02/27/2001	UNKNOWN	Industrial Facility (Foundry/Factory/Plating/Manufacturing)

Cause: DRUM FELL OFF OF SKID BEING MOVED AND SPILLED
Comments: NONE

Spiller Actions

Action	Comment
Cleanup Method - Absorbent	
Containment	
Products/Waste Removed	

Who

Responsible Party:
MILSOV CORP 14765 W. BOBOLINK AVE. MENOMINEE FALLS, WI 53051
RP Contact/Agent:
JUDY NINKE N59 W14776 BOBOLINK AVE MENOMONEE FALLS, WI 53051
Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

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Wisconsin Department of Natural Resources

BRRTS on the Web Activity Details for PETERS TRUCKING

Printed Wed, 14 Jul 2010 09:35:19 CDT

Activity No: 04-68-524752
Activity Name: PETERS TRUCKING
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 10/29/2001
End Date: 05/15/2004
Last Action: 05/15/2004
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
10/29/2001	Spill Incident Occurred	-
10/29/2001	Spill Reported to DNR	-
05/15/2004	Spill Closed	LETTER RECEIVED

Impacts

Type	Comment
Concrete/Asphalt	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Non-Chlorinated Solvents	VOC	15 G

Spill Info

Incident Date	Reported Date	Investigator	Source
10/29/2001	10/29/2001	UNKNOWN	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: Puncture in 55-gal metal drum due to bouncing around
Comments: NONE

Spiller Actions

Action	Comment
Contractor Hired	In-house

Who

Responsible Party:
PETERS TRUCKING N63 W 14960 POCAHONTAS DR MENOMONEE FALLS, WI 53051

RP Contact/Agent:
DAWN ASHLEY N63 W14960 POCAHONTAS DR MENOMONEE FALLS, WI 53051

Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

BRRTS on the Web Activity Details for BRENNTAG GREAT LAKES LLC

Printed Wed, 14 Jul 2010 09:35:41 CDT

Activity No: 04-68-542922
Activity Name: BRENNTAG GREAT LAKES LLC
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 05/27/2004
End Date: 06/01/2004
Last Action: 06/01/2004
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
05/27/2004	Spill Incident Occurred	-
05/27/2004	Spill Reported to DNR	-
06/01/2004	Spill Closed	-

Impacts

Type	Comment
Soil Contamination	-
Surface Water Contamination	LITTLE LILLY CREEK

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Acid	Industrial Chem	151 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
05/27/2004	05/28/2004	UNKNOWN	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: PLASTIC TOTE FULL OF CITRIC ACID DAMAGED BY ACCUMULATION OF RAINWATER ON ITS TOP

Comments: NONE

Spiller Actions

Action	Comment
No Action Taken	

Who

Responsible Party:
BRENNTAG GREAT LAKES BUTLER, WI 53007

RP Contact/Agent:
BUD DOUTHITT PO BOX 444 BUTLER, WI 53007

Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

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BRRTS on the Web Activity Details for BRENNTAG GREAT LAKES LLC

Printed Wed, 14 Jul 2010 09:36:26 CDT

Activity No: 04-68-549846
Activity Name: BRENNTAG GREAT LAKES LLC
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 10/18/2006
End Date: 12/20/2006
Last Action: 12/20/2006
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments:
EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec ?, T?N, R??

Actions

Date	Name	Comment
10/18/2006	Spill Incident Occurred	-
10/18/2006	Spill Reported to DNR	-
12/20/2006	Spill Closed	-

Impacts

Type	Comment
Surface Water Contamination	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Other Industrial Chemicals	Industrial Chem	250 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
10/18/2006	10/18/2006	UNKNOWN	

Cause: SOAP SOLUTION WAS BEING TRANSPORTED W/FORKLIFT - FELL OFF FORKS
Comments: SEE SPILL FORM

Spiller Actions

Action	Comment
Cleanup Method - Absorbent	
Containment	

Who

Responsible Party:
MILSOLV/ BRENNTAG N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051

RP Contact/Agent:
MIKE SCHICK 14765 W BOBOLINK AVE MENOMONEE FALLS, WI 53051

Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

BRRTS on the Web Activity Details for QUALITY CARRIERS SPILL

Printed Wed, 14 Jul 2010 09:38:13 CDT

Activity No: 04-68-551233
Activity Name: QUALITY CARRIERS SPILL
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 08/07/2007
End Date: 04/01/2008
Last Action: 03/28/2010
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: N/A
Plot Size: UNKNOWN
Comments: *** AUTO-POPULATED FROM SPILL SERTS SYSTEM. SPILL ID: 20070807SE68-1
***

EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec 0, T?N, R??

Actions

Date	Name	Comment
08/07/2007	Spill Incident Occurred	-
08/07/2007	Spill Reported to DNR	-
04/01/2008	Spill Closed	-
03/28/2010	Spills QA/QC Completed	-

Impacts

Type	Comment
Concrete/Asphalt	-
Soil Contamination	-
Storm Sewer Contamination	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Acid	Industrial Chem	30 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
08/07/2007	08/07/2007	S FERGUSON	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: OPERATOR ERROR - DRIVER FAILED TO SECURE VALVE DURING UNLOADING
Comments: NONE

Spiller Actions

Action	Comment
Flushed	

Who

Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212
Responsible Party:
QUALITY CARRIERS 1607 W 2ND ST APPLETON, WI 54914

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BRRTS on the Web Activity Details for BRENNTAG GREAT LAKES LLC SPILL

Printed Wed, 14 Jul 2010 09:38:44 CDT

Activity No: 04-68-553616
Activity Name: BRENNTAG GREAT LAKES LLC SPILL
Type: SPILL
Status: CLOSED
Jurisdiction: DNR-RR
Start Date: 04/01/2009
End Date: 05/13/2009
Last Action: 03/28/2010
Location: BRENNTAG GREAT LAKES LLC
FID: 999986020
Address: N59 W14765 BOBOLINK AVE
Municipality: MENOMONEE FALLS
County: WAUKESHA
WI Region:
Commerce No: NONE
EPA ID: NONE
Risk: UNKNOWN
Plot Size: UNKNOWN
Comments: *** AUTO-POPULATED FROM SPILL SERTS SYSTEM. SPILL ID: 20090402SE68-1
***

EPA NPL?: No
Commerce Tracked?: No
PECFA Eligible?: No
AST?: No
Drycleaner?: No
Co-Contamination?: No
Geo-Located?:
PLSS: ? 1/4 of the ? 1/4 of Sec 0, T?N, R??

Actions

Date	Name	Comment
04/01/2009	Spill Incident Occurred	-
04/02/2009	Spill Reported to DNR	-
05/13/2009	Spill Closed	-
03/28/2010	Spills QA/QC Completed	-

Impacts

Type	Comment
Concrete/Asphalt	-

Scoring

Type	Date	Score

Substances

Substance Name	Category	Released Amt
Other Industrial Chemicals	Industrial Chem	1 Gal

Spill Info

Incident Date	Reported Date	Investigator	Source
04/01/2009	04/02/2009	L FOX	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: LEAKED FROM HOSE

Comments: SUBMITTED VIA SERTS WEB FORM REF # 4289 ON MAY 7, 2009, LARRY FOX CALLED MIKE SCHICK AND LEFT A RECORDED MESSAGE FOR A CALL BACK. FOX DECIDED THAT THIS SPILL COULD BE CLOSED AFTER SPEAKING WITH MIKE SCHICK.

Spiller Actions

Action	Comment
Cleanup Method - Absorbent	BRENNTAG GREAT LAKES LLC
Contractor Hired	BRENNTAG GREAT LAKES LLC
Waste Destination	BRENNTAG TSDF - 5-GAL BUCKET OF WASTE

Who

Responsible Party:
MILSOLV/ BRENNTAG N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051

RP Contact/Agent:
MIKE SCHICK 14765 W BOBOLINK AVE MENOMONEE FALLS, WI 53051

Project Manager:
SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

Wisconsin Department of Natural Resources

Environmental Cleanup & Brownfields Redevelopment

BRRTS on the Web

The Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web is a searchable database containing information on the investigation and cleanup of potential and confirmed contamination to soil and groundwater in Wisconsin.

Navigation: BOTW Home >> Basic Search >> Search Results >> 04-68-546841 Activity Details

04-68-546841 BRENNTAG GREAT LAKES LLC

SPILL - CLOSED

Location Name (Click name to view details and other activities)				County	WDNR Region
BRENNTAG GREAT LAKES LLC				WAUKESHA	SOUTHEAST
Address				Municipality	
N59 W14765 BOBOLINK AVE				MENOMONEE FALLS	
Public Land Survey System			Latitude	Google Maps	RR Sites Map
NOT AVAILABLE					
Additional Location Description			Longitude	Facility ID	Size (Acres)
ON GRAVEL ALONG RAILWAY				999986020	UNKNOWN
Jurisdiction	PECFA No.	EPA Cercla ID	Start Date	End Date	Last Action
DNR RR			2005-06-03	2005-06-23	2005-06-23

Characteristics

EPA NPL Site?	DSPS Tracked?	Eligible for PECFA Funds?	Above Ground Storage Tank?	Drycleaner?	Co-Contamination?	On GIS Registry?
No	No	No	No	No	No	No

Actions
Place Cursor Over Code to View Description

Date	Code	Name	Comment
2005-06-03	1	Spill Incident Occurred	-
2005-06-03	5	Spill Reported to DNR	-
2005-06-23	11	Spill Closed	-

Impacts

Type	Comment
Soil Contamination	-

Spill Information

Incident Date	Reported Date	Investigator	Source
06/03/2005	06/03/2005	UNKNOWN	Railroad Property (Yards/Tracks/Roundhouse/and ROW)

Cause: CALLER STATES THAT SPILL OCCURRED ALONG RAILWAY DUE TO JARRING OF RAILCAR WHEN CONNECTING TO ENGINE

Comment: NONE

Spiller Actions

Action	Comment
Cleanup Method - Excavation	
Waste Destination	SOLID HAZ WASTE FACILITY

Substances

Substance	Type	Amount Released	Units
Non-Chlorinated Solvents	VOC	1	Gal

Who
Click Project Manager Name to Compose Email

Role	Name/Address
Responsible Party	BRENNTAG GREAT LAKES LLC N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051
Project Manager	SCOTT FERGUSON 2300 N DR MLK JR DR MILWAUKEE, WI 53212

Quick Response Codes
Scan to Transfer Information to Your Wireless Device

Wisconsin Department of Natural Resources

Environmental Cleanup & Brownfields Redevelopment

BRRTS on the Web

The Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web is a searchable database containing information on the investigation and cleanup of potential and confirmed contamination to soil and groundwater in Wisconsin.

Navigation: BOTW Home >> Basic Search >> Search Results >> 04-68-557183 Activity Details

04-68-557183 BRENNTAG GREAT LAKES SPILL

SPILL - CLOSED

Location Name (Click name to view details and other activities)				County	WDNR Region
BRENNTAG GREAT LAKES LLC				WAUKESHA	SOUTHEAST
Address				Municipality	
N59 W14765 BOBOLINK AVE				MENOMONEE FALLS	
Public Land Survey System			Latitude	Google Maps	RR Sites Map
? 1/4 of the ? 1/4 of Sec 0, T?N, R??					
Additional Location Description			Longitude	Facility ID	Size (Acres)
NONE				999986020	UNKNOWN
Jurisdiction	PECFA No.	EPA Cerclis ID	Start Date	End Date	Last Action
DNR RR			2011-05-10	2011-06-09	2012-03-25

Comments

*** AUTO-POPULATED FROM SPILL SERTS SYSTEM. SPILL ID: 20110510SE68-1 ***

Characteristics

EPA NPL Site?	DSPS Tracked?	Eligible for PECFA Funds?	Above Ground Storage Tank?	Drycleaner?	Co-Contamination?	On GIS Registry?
No	No	No	No	No	No	No

Actions

Place Cursor Over Code to View Description

Date	Code	Name	Comment
2011-05-10	1	Spill Incident Occurred	-
2011-05-10	5	Spill Reported to DNR	-
2011-06-09	11	Spill Closed	-
2012-03-25	999	Spills QA/QC Completed	-

Impacts

Type	Comment
Concrete/Asphalt	-
Soil Contamination	-

Spill Information

Incident Date	Reported Date	Investigator	Source
05/10/2011	05/10/2011	R REED	Chemical Company (Production/Processing/Storage/Repackaging)

Cause: STAINLESS STEEL IBC CONTAINER TIPPED OVER, LEAKED OUT TOP LID LANDING ON A CONCRETE PAD GOING INTO GRASS/DIRT.

Comment: A LETTER DATED MAY 24, 2011 WAS SENT TO WDNR FROM MIKE SCHICK, BRENNTAG.

Spiller Actions

Action	Comment
Cleanup Method - Absorbent	
Boom	
Cleanup Method - Excavation	
Contractor Hired	VEOLIA ES
Contractor Hired	ARCADIS G&M

Substances

Substance	Type	Amount Released	Units
Non-Chlorinated Solvents	VOC	220	Gal

Who

Click Project Manager Name to Compose Email

Role	Name/Address
Responsible Party	BRENNTAG GREAT LAKES LLC N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051
RP Contact/Agent	MIKE SCHICK N59 W14765 BOBOLINK AVE MENOMONEE FALLS, WI 53051

ARCADIS

Appendix B

Financial Projections for Corrective Action

ARCADIS

Summary of Financial Estimates for Corrective Action, 2013 to 2022, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Site Investigation Activities		
Solid Waste Management Units G, H, I, J and K		$124,000
	Subtotal, Investigation Activities	$124,000
Remediation and Interim Action		
Vapor Extraction, SWMU K		$95,050
	Subtotal, Remediation and Interim Action	$95,050
Groundwater Monitoring		
Sitewide Monitoring Program - 2013		$71,000
Sitewide Monitoring Program - 2014		$71,000
Sitewide Monitoring Program - 2015		$71,000
Sitewide Monitoring Program - 2016		$71,000
Sitewide Monitoring Program - 2017		$71,000
Sitewide Monitoring Program - 2018		$71,000
Sitewide Monitoring Program - 2019		$71,000
Sitewide Monitoring Program - 2020		$71,000
Sitewide Monitoring Program - 2021		$71,000
Sitewide Monitoring Program - 2022		$71,000
	Subtotal, Groundwater Monitoring	$710,000
	Total Financial Estimate License Period 2013 to 2022	$929,050

Table 2. Order of Magnitude Cost Estimate, Investigation and Interim Action, North Lot, Brenntag Great Lakes, Menomonee Falls, Wisconsin.

Task		Totals
Investigation, North Lot		
Work Plan Preparation, Submittal, and Regulatory Discussions		
ARCADIS Services		$13,100
Field Coordination, Utility Location		
ARCADIS Services		$2,600
Subcontracted Utility Locator		$675
Investigation - Geoprobe Borings and Temporary Well Sampling		
ARCADIS Services		$15,500
Subcontracted Concrete Coring		$0 to $1,500
Subcontracted Geoprobe Driller		$15,300
Subcontracted Laboratory		$20,000 to $31,000
Investigation - Monitoring Well Installation		
ARCADIS Services		$4,400
Subcontracted Driller		$6,700
Surveying		
Subcontracted Surveyor		$3,500
Monitoring Well Sampling		
ARCADIS Services		$6,400
Subcontracted Laboratory		$2,700
Investigation-Derived Waste Management		
ARCADIS Services		$800
Subcontracted Laboratory		$750
Subcontracted Transportation and Disposal		$900
Investigation Report		
ARCADIS Services		$18,000
	Subtotal, Investigation	$111,325 to $123,825
Interim Action		
Interim Soil Vapor Extraction (SVE) System - Installation and Startup		
ARCADIS Services		$8,500
Subcontracted Electrical Contractor		$7,850
Subcontracted Laboratory		$1,900
Interim Venting System Operation, 2 Years		
ARCADIS Services		$18,000
SVE Trailer Usage		$23,000
Electrical Costs		$9,600
Subcontracted Laboratory		$7,200

Footnotes on Page 2.

Table 2. Order of Magnitude Cost Estimate, Investigation and Interim Action, North Lot, Brenntag Great Lakes, Menomonee Falls, Wisconsin.

Task		Totals
Interim SVE System, Decommissioning		
ARCADIS Services		$3,000
Groundwater Recovery System Decommissioning		
ARCADIS Services		$3,200
Interim Action Completion Report		
ARCADIS Services		$10,000
	Subtotal, Interim Action	$92,250
	Total Estimated Cost	**$203,575 to $216,075**

Investigation assumes installation of 40 geoprobe soil borings, 13 temporary wells, and five monitoring wells.

One round of groundwater samples will be collected from the five newly installed monitoring wells and 13 existing monitoring wells on the eastern portion of the North Lot.

It is assumed that the facility will manage all water generated during well development and sampling.

The cost-to-closure estimates for the North Lot Investigation ranged from $92,000 (likely case) to $124,000 (planning case). The order-of-magnitude estimate above is based on 1) what regulatory agency will likely require, and 2) that field screening results will require that two analytical samples be collected from each boring. Final analytical costs will be based on the number of actual samples collected for analysis.

The cost-to-closure estimate for the interim action venting system ranged from $90,000 (likely case) to $165,000 (planning case). The order-of-magnitude estimate above is based on the November 2009 meeting with the regulatory agency, and that the interim action would only operate for 1 to 2 years.

Table 3. Cost Estimate Remediation Groundwater Monitoring Program, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

ARCADIS Services		
Groundwater Sampling - May 2012		$14,000
Reporting - March through May 2012		$5,000
Groundwater Sampling - August 2012		$6,000
Reporting - June through August 2012		$3,200
Groundwater Sampling - November 2012		$6,000
Reporting - September through November 2012		$3,200
Groundwater Sampling - February 2013		$6,000
Reporting - December 2012 through February 2013		$3,200
Annual Report - 2012		$8,900
	Subtotal, ARCADIS Services	$55,500
Subcontracted Analytical Testing Services (Billed Through ARCADIS)		
Groundwater Analysis - May 2012		
Monitoring Well Samples		
2-Butoxyethanol[1]	28 samples @ $112/each	$3,136
Ethene/Ethane/Methane[2]	2 samples @ $84/each	$168
Injection Well Monitoring Samples		
2-Butoxyethanol[1]	3 samples @ $112/each	$336
Ethene/Ethane/Methane[2]	3 samples @ $84/each	$252
Groundwater Extraction Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448
Groundwater Analysis - August 2012		
Monitoring Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448
Ethene/Ethane/Methane[2]	2 samples @ $84/each	$168
Injection Well Monitoring Samples		
2-Butoxyethanol[1]	3 samples @ $112/each	$336
Ethene/Ethane/Methane[2]	3 samples @ $84/each	$252
Groundwater Extraction Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448
Groundwater Analysis - November 2012		
Monitoring Well Samples		
2-Butoxyethanol[1]	6 samples @ $112/each	$672
Ethene/Ethane/Methane[2]	2 samples @ $84/each	$168
Injection Well Monitoring Samples		
2-Butoxyethanol[1]	3 samples @ $112/each	$336
Ethene/Ethane/Methane[2]	3 samples @ $84/each	$252
Groundwater Extraction Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448

Footnotes on Page 3.

Table 3. Cost Estimate Remediation Groundwater Monitoring Program, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Groundwater Analysis - February 2013		
Monitoring Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448
Ethene/Ethane/Methane[2]	2 samples @ $84/each	$168
Injection Well Monitoring Samples		
2-Butoxyethanol[1]	3 samples @ $112/each	$336
Ethene/Ethane/Methane[2]	3 samples @ $84/each	$252
Groundwater Extraction Well Samples		
2-Butoxyethanol[1]	4 samples @ $112/each	$448
	Subtotal, Analytical Services Billed through ARCADIS	$9,520
	Subtotal, Estimated Costs Billed trough ARCADIS	*$65,020*
Subcontracted Analytical Testing Services (Direct Billed to Brenntag)		
Groundwater Analysis - May 2012		
Monitoring Well Samples		
Volatile Organic Compounds[3]	28 samples @ $68/each	$1,904
Quality Control Samples	3 samples @ $68/each	$204
Total Organic Carbon[3]	2 samples @ $20/each	$40
Injection Well Monitoring Samples		
Volatile Organic Compounds3	3 samples @ $68/each	$204
Total Organic Carbon[3]	3 samples @ $20/each	$60
Groundwater Extraction Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
Groundwater Analysis - August 2012		
Monitoring Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
Quality Control Samples	1 sample @ $68/each	$68
Total Organic Carbon[3]	2 samples @ $20/each	$40
Injection Well Monitoring Samples		
Volatile Organic Compounds[3]	3 samples @ $68/each	$204
Total Organic Carbon[3]	3 samples @ $20/each	$60
Groundwater Extraction Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
Groundwater Analysis - November 2012		
Monitoring Well Samples		
Volatile Organic Compounds[3]	6 samples @ $68/each	$408
Quality Control Samples	1 sample @ $68/each	$68
Total Organic Carbon[3]	2 samples @ $20/each	$40

Footnotes on Page 3.

Table 3. Cost Estimate Remediation Groundwater Monitoring Program, Brenntag Great Lakes Facility, Menomonee Falls, Wisconsin.

Injection Well Monitoring Samples		
Volatile Organic Compounds[3]	3 samples @ $68/each	$204
Total Organic Carbon[3]	3 samples @ $20/each	$60
Groundwater Extraction Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
Groundwater Analysis - February 2013		
Monitoring Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
Quality Control Samples	1 sample @ $68/each	$68
Total Organic Carbon[3]	2 samples @ $20/each	$40
Injection Well Monitoring Samples		
Volatile Organic Compounds[3]	3 samples @ $68/each	$204
Total Organic Carbon[3]	3 samples @ $20/each	$60
Groundwater Extraction Well Samples		
Volatile Organic Compounds[3]	4 samples @ $68/each	$272
	Subtotal, Analytical Services	$5,568
	TOTAL ESTIMATED COST	**$70,588**

Note: Tetrahydrofuran, n-hexane, and 1,4-dioxane will be quantified with the volatile organic compounds analysis, using USEPA Method 8260.

1 Samples will be analyzed by TestAmerica, Inc.

2 Samples will be analyzed by Microseeps, Inc.

3 Samples will be analyzed by Accutest Laboratories, Inc.

APPENDIX Q

BUFFER ZONE DOCUMENTATION FOR DRUM STORAGE BUILDING

- Agreement Between Brenntag and Volkmann R.R.
- Previous Agreement Between MILSOLV and United Sewer and Water
- Village of Menomonee Falls Letter Regarding Easements
- Menomonee Falls Engineering Department Drawing Showing Easements
- Menomonee Falls Fire Department Requirements

May 29, 2013

Mr. Mike Ellenbecker
State of Wisconsin /Department of Natural Resources
Sturtevant Service Center
9531 Rayne Road, Suite IV
Sturtevant, WI 53177

Subject: Agreement between Brenntag Great Lakes, LLC and Volkmann regarding a 50 foot setback requirement for a Hazardous Waste Storage Building.

Dear Mr. Ellenbecker,

The undersigned have agreed to the conditions as outlined in order that Brenntag Great Lakes, LLC might comply with the requirements of NR 640.14 Wisconsin Administrative Code:

1. Volkmann Railroad Builders will not allow the use or storage of ignitable or reactive materials within 50 feet of the Brenntag Great Lakes, LLC hazardous waste storage building and tanker parking on east containment pad.

2. Access to this area of the property will be limited to employees of Volkmann Railroad Builders and these employees will be instructed as to the limited access requirements.

3. Signs will be posted on Volkmann Railroad Builders property at 30 foot intervals (East-West) 50 feet north of Brenntag Great Lakes, LLC building and tanker parking on east containment pad stating "DANGER UNAUTHORIZED PERSONNEL KEEP OUT".

4. Volkmann Railroad Builders will not construct, or allow to be constructed, any buildings within 50 feet of Brenntag Great Lakes, LLC hazardous waste container storage building.

Rick Volkmann
President
Volkmann Railroad Builders

Scott Rhodes
Operations Manager
Brenntag Great Lakes, LLC

United Sewer and Water, Inc.

Public Works Contractor

Mr. Patrick Brady
State of Wisconsin/Department of Natural Resources
Southeast District
2300 N. Martin Luther King Drive
P.O. Box 12436
Milwaukee, Wisconsin 53212

Subject: Agreement between Milwaukee Solvents and Chemicals and United Sewer and Water Inc. regarding a 50 foot setback requirement for a Hazardous Waste Storage building.

Dear Mr. Brady

The undersigned have agreed to the conditions as outlined in order that Milwaukee Solvents and Chemicals might comply with the requirements of NR 640.14 Wisconsin Administrative Code:

1. United Sewer and Water will not allow the use or storage of ignitable or reactive materials within 50 feet of the Milwaukee Solvents and Chemicals Hazardous Waste storage building.

2. Access to this area of the property will be limited to employees of United Sewer and Water and these employees will be instructed as to the limited access requirements.

3. Signs will be posted on United Sewer's property at 30 foot intervals (East-West) 50 feet north of the Milwaukee Solvents and Chemicals building stating"DANGER UNAUTHORIZED PERSONNEL KEEP OUT".

4. United Sewer and Water will not construct or allow to be constructed any buildings within 50 feet of Milwaukee Solvents and Chemicals Hazardous Waste Container Storage building.

Marvin Schroeter
President
United Sewer and Water

C. A. Douthitt
Mgr. of Operations
Milwaukee Solvents & Chemicals

N60 W14643 Kaul Avenue Menomonee Falls, Wisconsin 53051
414-252-4800 FAX 414-252-4801

PDF 728

Nick, Chet, Bud, Kevin, R. Lewandowski, Menomonee Falls File
DNR File

VILLAGE OF MENOMONEE FALLS
W156 N8480 Pilgrim Road • Menomonee Falls, WI 53051
Telephone: (414) 255-8300

Menomonee Falls
MORE THAN A VILLAGE

August 7, 1992

Patrick Brady
State of Wisconsin
Department of Natural Resources
2300 North Dr. Martin Luther King Jr. Drive
P.O. Box 12436
Milwaukee, Wisconsin 53212

Re: Milwaukee Solvents & Chemicals Corporation
N59 W14776 Bobolink Avenue

Dear Mr. Brady,

As we discussed by telephone concerning your June 23, 1992 letter, enclosed is a copy of a location map indicating the location of easements on the west side of the Milwaukee Solvents & Chemicals Corporation (MILSOLV) property on Bobolink Avenue and on the east side of the property to the west of MILSOLV. There is a thirty (30.00) foot wide sanitary sewer easement on the west side of the MILSOLV property, and there is a fifteen (15.00) foot wide drainage easement on the east side of the property to the west.

Under normal circumstances, easement areas are to remain open and available for Village equipment to enter the easement area, be able to maneuver, and maintain the Village's facilities. In fifteen foot wide easements, there is usually not room to maneuver properly if there is a fence surrounding the easement. It may be possible to have MILSOLV work with the owner to the west to eliminate the fence along the common property line and relocate it so that it surrounds the entire easement area. Whenever there is a fence around an easement, a gate must be provided. Locks would be provided by the Menomonee Falls Department of Public Works so that Village Staff would have access to the area.

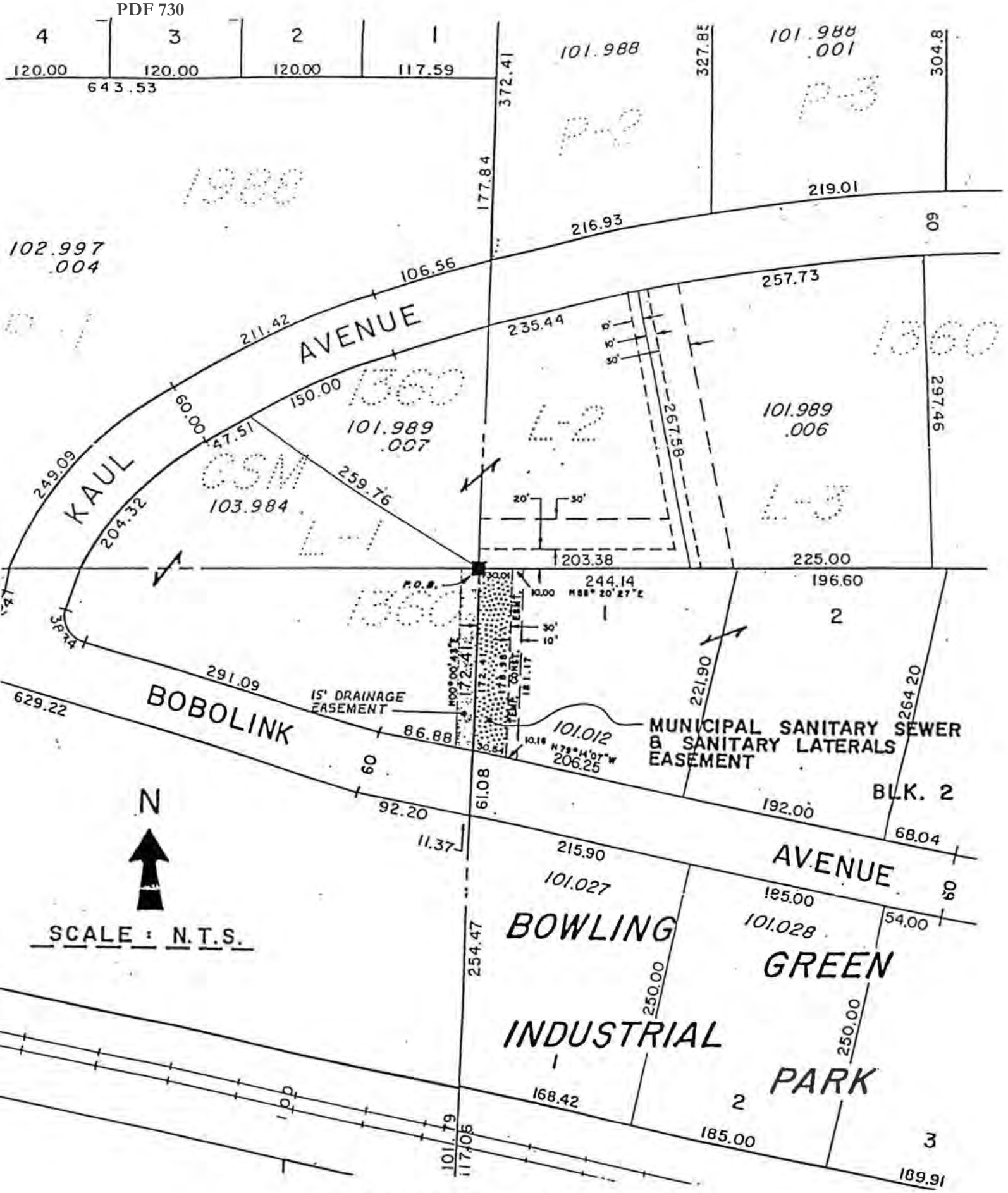
I hope this adequately addresses this matter. If you need additional information, please let me know.

Very truly yours,
VILLAGE OF MENOMONEE FALLS

William E. Freisleben

William E. Freisleben
Director of Community Development
Telephone (414) 255-8323
Facsimile (414) 255-5320

cc: Richard A. Farrenkopf, Village Manager
Jerome Brahm, Superintendent of Engineering
Albert L. Walker, Superintendent of Development
JoEllen Mulder, Assistant to the Village Manager
Patricia A. Struve, Village Clerk
Max A. Vogt, Director of Public Works
Village Attorney
C.A. Douthitt, Milwaukee Solvents & Chemicals



PREPARED BY :
MENOMONEE FALLS ENGINEERING DEPARTMENT

VILLAGE OF MENOMONEE FALLS
W156 N8480 Pilgrim Road • P.O. Box 100 • Menomonee Falls, WI 53051-0100
Telephone: (414) 255-6300

July 28, 1992

State of Wisconsin
Department of Natural Resources
Southeast District
2300 North Dr, Martin Luther King Dr Jr.
Milwaukee, WI 53212

Dear Mr. Patrick Brady,

This letter is being written in response to your letter of June 23, 1992 to Mr. C.A. Douthitt of Milwaukee Solvents & Chemicals Corporation.

The Menomonee Falls Fire Department generally approved of the concept of the plan to move the hazardous waste drum storage from its current location on the property into the north warehouse building providing the following conditions are complied with:

1) That the drum storage be limited to a total of 1000 drums and that the drums be stored no more than 4 high in a racked system with sprinklers in between the stored drum levels per NFTA231C standard for rack storage of materials.

2) The building must be modified to meet NFPA 30 Standards for storage of class 1 division 2 storage.

3) Any processing will have to meet NFPA 30 Class 1 division 1 requirements.

4) The sprinkler system must be provided with an outside sump having adequate capacity to meet the surge of sprinkler water should they be required.

5) Any area of the building that will be used for other occupancies shall be separated from the main storage area by four high fire walls described in NFPA 30.

Very truly yours,

John W. Fulcher
Chief

JWF/ds

cc: C.A. Douthitt
Milwaukee Solvents

APPENDIX R

NOT USED

APPENDIX S

DNR CORRESPONDENCE FOLLOWING INITIAL SUBMITTAL

7008 1140 0003 9483 6433

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®
STURTEVANT WI 53177 OFFICIAL USE

Postage	$ $1.32	0021
Certified Fee	$3.10	06
Return Receipt Fee (Endorsement Required)	$2.55	Postmark Here
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $6.97	04/08/2013

Sent To Mr. Michael J. Ellenbecher
Street, Apt. No.; or PO Box No. 9531 Rayne Road, Suite IV
City, State, ZIP+4 Sturtevant, WI 53177

PS Form 3800, August 2006 See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Mr. Michael J. Ellenbecher
Waste Management Specialist
Licensing & Policy Review Coord.
WDNR
9531 Rayne Road, Suite IV
Sturtevant, WI 53177

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X M Moneyfeldt ☒ Agent ☐ Addressee

B. Received by (Printed Name) Michelle Moneyfeldt C. Date of Delivery 04-09-13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7008 1140 0003 9483 6433

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Brenntag Great Lakes, LLC

BRENNTAG

April 5, 2013
CERTIFIED MAIL

Mr. Michael J. Ellenbecker
Waste Management Specialist
Licensing and Policy Review Coordinator
Wisconsin Dept. of Natural Resources
9531 Rayne Road, Suite IV
Sturtevant, WI 53177

SUBJECT: Brenntag Great Lakes, LLC – Menomonee Falls, WI
Hazardous Waste Storage Facility
Notification of Partial Closure Letter 1 of 2
for Existing Licensed Hazardous Waste Storage Tanks

Dear Mr. Ellenbecker:

Brenntag Great Lakes, LLC (Brenntag) operates a hazardous waste container storage and treatment facility at N59 W14706 Bobolink Avenue in the Village of Menomonee Falls, Wisconsin. The Wisconsin Department of Natural Resources (WDNR) issued MILSOLV Corporation an initial operating license on September 28, 1990. The WDNR re-issued Brenntag a hazardous waste operating license on December 9, 2003 after MILSOLV Corporation had been purchased by Brenntag. The 10-year effective period for this license ends on December 9, 2013. Therefore, Brenntag's current schedule for submittal of their revised FPOR is by June 9, 2013.

At our meeting with you on December 5, 2012, we reviewed the schedule required for closure of Brenntag's licensed hazardous waste tanks. Since the revised FPOR is being developed based on the closure of these existing licensed hazardous waste tanks, the tanks need to be taken out of service and closed prior to the WDNR's Final Determination for Brenntag's license renewal, which was projected to be in March of 2014. The WDNR requires a 180-day notification prior to closure and removal of the licensed hazardous waste tanks. Please accept this letter to serve as the 180-day notification required by code. Brenntag intends to begin tank closure activities on or after October 7, 2013. Cleaning of the tanks may occur prior to this date.

Minneapolis/St. Paul, MN
2130 Energy Park Drive
St. Paul, MN 55108
651-204-4300
651-204-4391 Fax

Chicago, IL
4801 South Austin Avenue
Chicago, IL 60638
773-586-2000
708-594-5678 Fax

Milwaukee, WI
4420 Harley Davidson Ave.
Wauwatosa, WI 53222
262-252-3550
262-252-5250 Fax

Grand Rapids, MI
2751 Courier Court N.W.
Grand Rapids, MI 49544
616-453-9555
616-453-9599 Fax

Des Moines, IA
1979 N.E. 54th Avenue
Des Moines, IA 50313
515-265-6019
515-265-1683 Fax

Omaha, NE
3720 D Street
Omaha, NE 68107
402-731-1720
402-731-7495 Fax

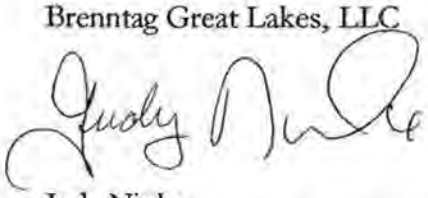
A summary of the licensed hazardous waste tanks that Brenntag intends on closing includes the following:

- Tank 71 and Mixer - To be cleaned, closed and recycled
- Tank 72 and Mixer - To be cleaned, closed and recycled
- Tank 73 and Mixer - To be cleaned, closed and recycled
- Tank 74 - To be cleaned, closed and recycled
- Tank 75 - To be cleaned, closed and reused for Reclaim / Raw Material Storage Tank
- Tank 76 - To be cleaned, closed and recycled
- Tank 77 - To be cleaned, closed and recycled
- Tank 78 - To be cleaned, closed and recycled
- Tank 79 - To be cleaned, closed and reused for Reclaim / Raw Material Storage Tank
- Tank 80 - To be cleaned, closed and reused for Reclaim / Raw Material Storage Tank
- Tank 81 - To be cleaned, closed and recycled

We trust that this letter provides the WDNR with the required 180-day notification for closure of the licensed hazardous waste storage tanks at the Brenntag Great Lakes Menomonee Falls Facility. If you have any questions regarding this letter, please call Jeff Noll or Renee Smits at Spectrum Engineering at (262) 783-7725, or me at (262) 252-6464.

Sincerely,

Brenntag Great Lakes, LLC



Judy Ninke
Regional Manager of Environmental Services

Cc: Kevin Bagin/Brenntag Great Lakes
Renee Smits/Spectrum Engineering
Jeff Noll/Spectrum Engineering

Brenntag Great Lakes, LLC

BRENNTAG

April 8, 2013
CERTIFIED MAIL

Mr. Michael J. Ellenbecker
Waste Management Specialist
Licensing and Policy Review Coordinator
Wisconsin Dept. of Natural Resources
9531 Rayne Road, Suite IV
Sturtevant, WI 53177

SUBJECT: Brenntag Great Lakes, LLC – Menomonee Falls, WI
Hazardous Waste Storage Facility
Notification of Partial Closure Letter 2 of 2
for Non-licensed and Ancillary Equipment

Dear Mr. Ellenbecker:

Brenntag Great Lakes, LLC (Brenntag) operates a hazardous waste container storage and treatment facility at N59 W14706 Bobolink Avenue in the Village of Menomonee Falls, Wisconsin. Brenntag previously submitted a 180-day Notification for Partial Closure Letter 1 of 2 (dated 4/5/13) for their existing licensed hazardous waste storage tanks. This letter is being forwarded to the WDNR for partial closure of the non-licensed equipment along with equipment items ancillary to licensed equipment currently installed at the plant.

Brenntag intends to apply for renewal of their hazardous waste operating license, but plans to complete partial closure of specific equipment and processing areas at the facility prior to being issued the license renewal. In order to more clearly define Brenntag's intent with the existing equipment, the attached *Partial Closure Plan – Supplemental Data Summary Sheet (Summary Sheet)* has been included as an attachment to this letter for reference. This Summary Sheet has been color-coded to designate the final operating or closure status of each piece of equipment or processing/storage area. In addition, the summary sheet designates the equipment destined for Partial Closure at this time, indicated by an **X** in the far left column. This equipment includes the following items:

- Roper Solvent Pump (Ancillary to Licensed Equip.) – To be cleaned, closed and recycled
- Strainer No. 1 (Small) (Ancillary to Licensed Equip.) - To be cleaned, closed and reused
- Strainer No. 2 (Large) (Ancillary to Licensed Equip.) – To be cleaned, closed and reused
- LUWA TFE w/ Condensers (Not Licensed) – To be sold
- LUWA Vacuum Pump (Not Licensed) – To be sold or recycled
- LUWA Vacuum Tank (Not Licensed) – To be sold or recycled
- LUWA Feed Pump (Ancillary to Licensed Equip.) – To be cleaned, closed and sold or recycled
- LUWA Still Bottoms Pump (Not Licensed) – To be sold or recycled
- LUWA Distillate Pump (Not Licensed) – To be sold or recycled
- LUWA Hot Oil Boiler (Not Licensed) – To be cleaned and recycled
- Trough (Ancillary to Licensed Equip.) – To be cleaned, closed and recycled
- Arde Pumps (Ancillary to Licensed Equip.) – To be cleaned, closed and recycled
- Lobe Pumps (Ancillary to Licensed Equip.) – To be cleaned, closed and recycled
- Vaughn Pumps (Ancillary to Licensed Equip.) – To be cleaned, closed and recycled

Minneapolis/St. Paul, MN
2130 Energy Park Drive
St. Paul, MN 55108
651-204-4300
651-204-4391 Fax

Chicago, IL
4801 South Austin Avenue
Chicago, IL 60638
773-586-2000
708-594-5678 Fax

Milwaukee, WI
4420 Harley Davidson Ave.
Wauwatosa, WI 53222
262 252-3550
262-252-5250 Fax

Grand Rapids, MI
2751 Courier Court N.W.
Grand Rapids, MI 49544
616-453-9555
616-453-9599 Fax

Des Moines, IA
1979 N.E. 54th Avenue
Des Moines, IA 50313
515-265-6019
515-265-1683 Fax

Omaha, NE
3720 D Street
Omaha, NE 68107
402-731-1720
402-731-7495 Fax

Any of the above equipment items that is *Not Licensed*, will be recycled or sold as part of the LUWA Thin Film Evaporator (TFE) system. Any of the above equipment that is *Ancillary to Licensed Equipment*, will be cleaned, closed and either recycled, reused or sold. The closure of these ancillary equipment items will include photo documentation and lab analysis of the final rinsate in order to document closure before reuse or recycling. The *Licensed* Storage Tanks will continue to operate through the summer of 2013 and will be closed in late 2013, as documented in the Notification of Partial Closure Letter 1 of 2.

In addition to the *Summary Sheet* we have developed color-coded *Spectrum Engineering Drawings G-1 and G-5*, which designate final operating or closure status for each piece of equipment or processing area. For clarity, this equipment has been highlighted in the same colors as shown on the attached *Summary Sheet.*

We trust that this Supplemental Data Information provides the WDNR with ample notification for the closure of the equipment items that are ancillary to the licensed hazardous waste storage tanks, or are non-licensed. If you have any questions regarding this letter and the Supplemental Data provided, please call Jeff Noll or Renee Smits at Spectrum Engineering at (262) 783-7725, or me at (262) 252-6464.

Sincerely,

Brenntag Great Lakes, LLC

Judy Ninke
Regional Manager of Environmental Services

Attachments:
Partial Closure Plan Equipment Inventory and Storage/Processing Areas – Summary Sheet
Spectrum Engineering Drawings G-1 & G-5

Cc: Kevin Bagin/Brenntag Great Lakes
Renee Smits/Spectrum Engineering
Jeff Noll/Spectrum Engineering

PDF 739

BRENNTAG GREAT LAKES, LLC

PARTIAL CLOSURE PL/ SUPPLEMENTAL DATA

EQUIPMENT INVENTORY AND STORAGE PROCESSING AREAS SUMMARY SHEET

PARTIAL CLOSURE	EQUIPMENT TYPE	LICENSED?	NUMBER AND CAPACITY	LOCATION	CLOSURE STATUS
X	Tank 71 and Mixer	Licensed	One - 6,000 gallons w/ Mixer	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 72 and Mixer	Licensed	One - 6,000 gallons w/ Mixer	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 73 and Mixer	Licensed	One - 6,000 gallons w/ Mixer	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 74	Licensed	One - 2,600 gallons	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 76	Licensed	One - 2,000 gallons	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 77	Licensed	One - 2,000 gallons	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 78	Licensed	One - 2,000 gallons	Tank Farm	To be cleaned, closed and recycled (1)
X	Tank 79	Licensed	One - 5,000 gallons	Tank Farm	To be cleaned, closed and reused for Reclaim / Raw Material Tank Storage
X	Tank 80	Licensed	One - 5,000 gallons	Tank Farm	To be cleaned, closed and reused for Reclaim / Raw Material Tank Storage
X	Tank 81	Licensed	One - 2,000 gallons	Tank Farm	To be cleaned, closed and recycled (1)
X	Roper Solvent Pump	Ancillary to Licensed Equip.	One - 5 HP	Tank Farm	To be cleaned, closed and recycled (1)
X	Strainer No. 1 (Small)	Ancillary to Licensed Equip.	One	Tank Farm	To be cleaned, closed and reused
X	Strainer No. 2 (Large)	Ancillary to Licensed Equip.	One	Tank Farm	To be cleaned, closed and reused
X	Tank Farm Secondary Containment	Ancillary to Licensed Equip.	Ten Haz. Waste - Five Reclaim Tanks	Tank Farm	To be cleaned, closed and reused for Reclaim / Raw Material Tank Storage
	Tanker Unloading Containment	Ancillary to Licensed Equip.	Six Tankers	Tank Farm	To continue use for hazardous waste tanker storage and transfer area
X	LUWA TFE w/ Condensers	Not Licensed	One	Reclamation Facility	To be cleaned and sold or recycled
X	LUWA Vacuum Pump	Not Licensed	One	Reclamation Facility	To be cleaned and sold or recycled
X	LUWA Vacuum Tank	Not Licensed	One	Reclamation Facility	To be cleaned and sold or recycled
X	LUWA Feed Pump	Ancillary to Licensed Equip.	One	Reclamation Facility	To be cleaned, closed and sold or recycled (1)
X	LUWA Still Bottoms Pump	Not Licensed	One	Reclamation Facility	To be cleaned and sold or recycled
X	LUWA Distillate Pump	Not Licensed	One	Reclamation Facility	To be cleaned and sold or recycled
	LUWA Cooling Tower	Not Licensed	Two - 150 Tons each	Reclamation Facility	Previously cleaned, removed and sold to WR&R in 2004 (2)
X	LUWA Hot Oil Boiler	Not Licensed	One - 5 mmBtu/hr	Reclamation Facility	To be closed and removed (3)
	Spill Collection Tank	Not Licensed	One - 6,000 gallons	Drum Storage and Processing Building	To continue use for hazardous waste drum storage and processing rooms
X	Tank 75 and Mixer	Licensed	1,300 gallon tank w/ 2 HP mixer	Drum Storage and Processing Building	To be cleaned, closed and reused for Reclaim / Raw Material Tank Storage
	Conveyors and Access Platforms	Not Licensed	Four - 32 feet each	Drum Storage and Processing Building	Previously cleaned, removed and reused at another BGL Facility (4)
	Shredder	Ancillary to Licensed Equip.	One - 10 HP	Drum Storage and Processing Building	Previously removed and scrapped; was never used due to OSHA concerns
X	Trough	Ancillary to Licensed Equip.	One	Drum Storage and Processing Building	To be cleaned, closed and recycled (1)
X	Arde Pumps	Ancillary to Licensed Equip.	Two - 30 HP each	Drum Storage and Processing Building	To be cleaned, closed and recycled (1)
X	Lobe Pumps	Ancillary to Licensed Equip.	Two - 5 HP	Drum Storage and Processing Building	To be cleaned, closed and recycled (1)
X	Vaughn Pump	Ancillary to Licensed Equip.	One - 7.5 HP	Drum Storage and Processing Building	To be cleaned, closed and recycled (1)
X	Filters	Ancillary to Licensed Equip.	Two (2) filters	Drum Storage and Processing Building	To be cleaned, closed and reused
	Drum Storage Room	Ancillary to Licensed Equip.	55,000 gallons in containers	Drum Storage and Processing Building	To continue use for hazardous waste container storage
	Drum Processing Room	Ancillary to Licensed Equip.	Varies	Drum Storage and Processing Building	To continue use for hazardous waste receiving, processing &staging
X	Inter-connecting Piping	Ancillary to Licensed Equip.	(4) C.S. 2" Pipelines	Outside Between Building & Tank Farm	Previously cleaned w/NMP; to be closed and reused for Reclaim

(1) After proper cleaning and sampling is complete, if not sold, equipment will be recycled by a scrap / demolition contractor that will provide a Certificate of Destruction for each piece of equipment removed from the site.

(2) Cooling Towers provided non-contact cooling to the LUWA TFE and were not in contact with any hazardous waste.

(3) Boiler provided non-contact hot oil loop to the LUWA TFE and was not in contact with any hazardous waste.

(4) Equipment was cleaned with wire brushing to remove all dried solid hazardous waste. Waste solids were then disposed of as solid hazardous waste.

= Areas/Equipment to remain in hazardous waste operation

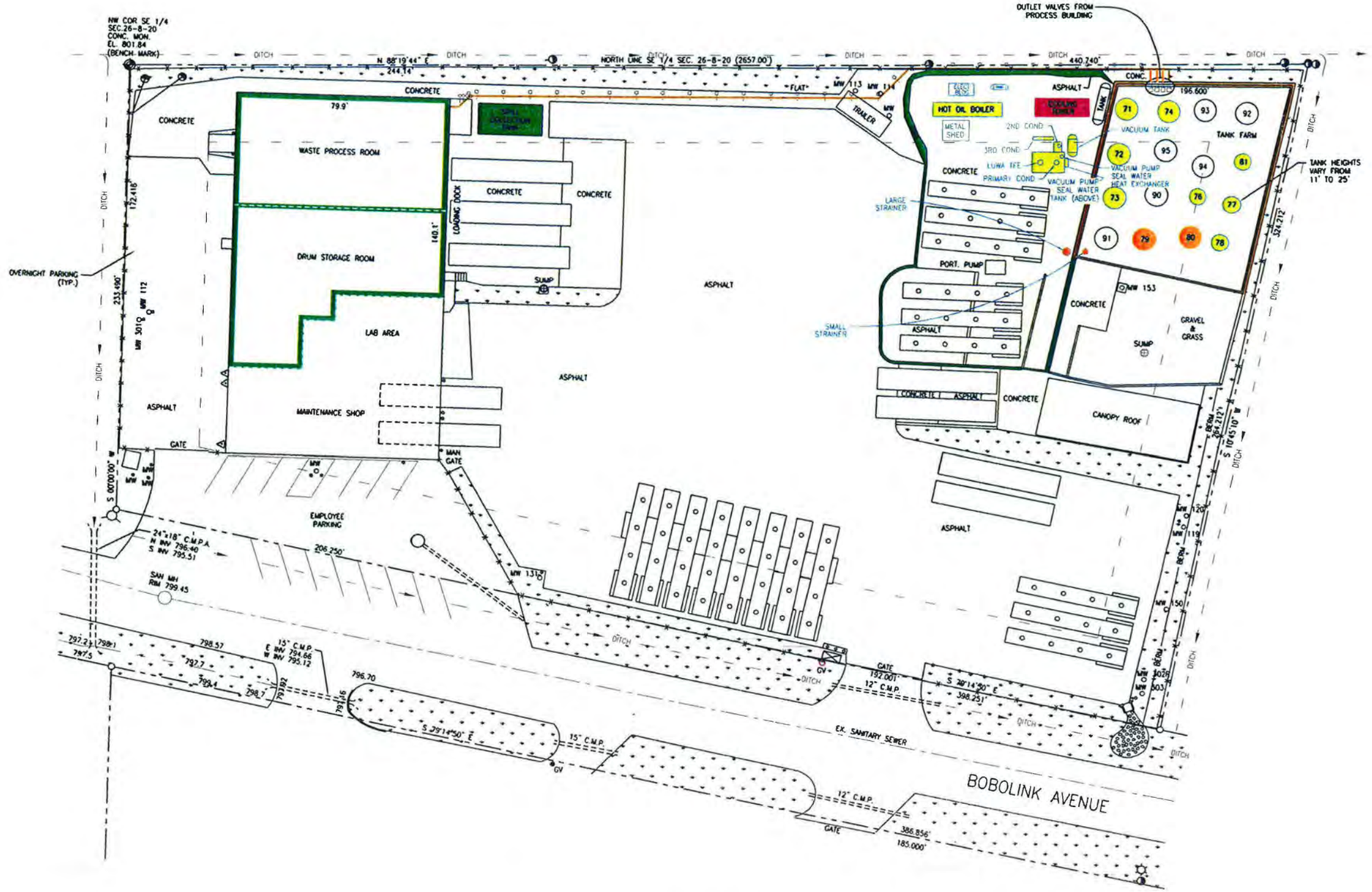
= Areas/Equipment to be cleaned, (closed) and recycled

= Areas/Equipment to be cleaned, closed and remain in operation for alternate use

= Equipment previously cleaned and removed from the site.

Proj. No. 12047

4/8/2013



SITE PLAN
SCALE: 1/16" = 1'-0"

LEGEND

- 804.06 = EXISTING ELEVATIONS
- = UTILITY POLE
- = FIRE HYDRANT
- = WATER VALVE
- = LIGHT POLE
- = GUARD POST
- = ELECTRIC METER
- MW 140 = MONITORING WELL
- = CHAIN LINK FENCE
- = GAS METER
- GV = GAS VALVE
- SUMP = CATCH BASIN
- = 30' BUILDING SETBACK LINE
- = PROPERTY LINE
- = GRASS AREA
- = EQUIPMENT SCHEDULED FOR CLOSURE

NOTE:

THIS DRAWING HAS BEEN PREPARED FOR GENERAL INFORMATION PURPOSES TO SHOW THE GENERAL LOCATIONS OF HAZARDOUS WASTE EQUIPMENT AND STORAGE CONTAINERS. ALL INFORMATION REGARDING PROPERTY LINES, FACILITY BUILDINGS, AND ROADS HAVE BEEN TRACED FROM SURVEYING PROVIDED BY JAHNKE & JAHNKE ASSOCIATES, INC. (JOB NO. S-4969 DATED 5/22/00), AND (JOB NO. S7745 DATED 6/18/2009), AND SPECTRUM ENGINEERING HAS NOT VERIFIED NOR PROVIDES ANY WARRANTY REGARDING THE COMPLETENESS AND ACCURACY OF SUCH INFORMATION. PLEASE ALSO NOTE THAT LOCATION OF ALL UTILITIES (ABOVE AND BELOW GROUND) ARE NOT SHOWN ON THIS DRAWING AND MUST BE VERIFIED BY CONTRACTOR/OWNER PRIOR TO CONDUCTING WORK

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Brookfield, Wisconsin 53045

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

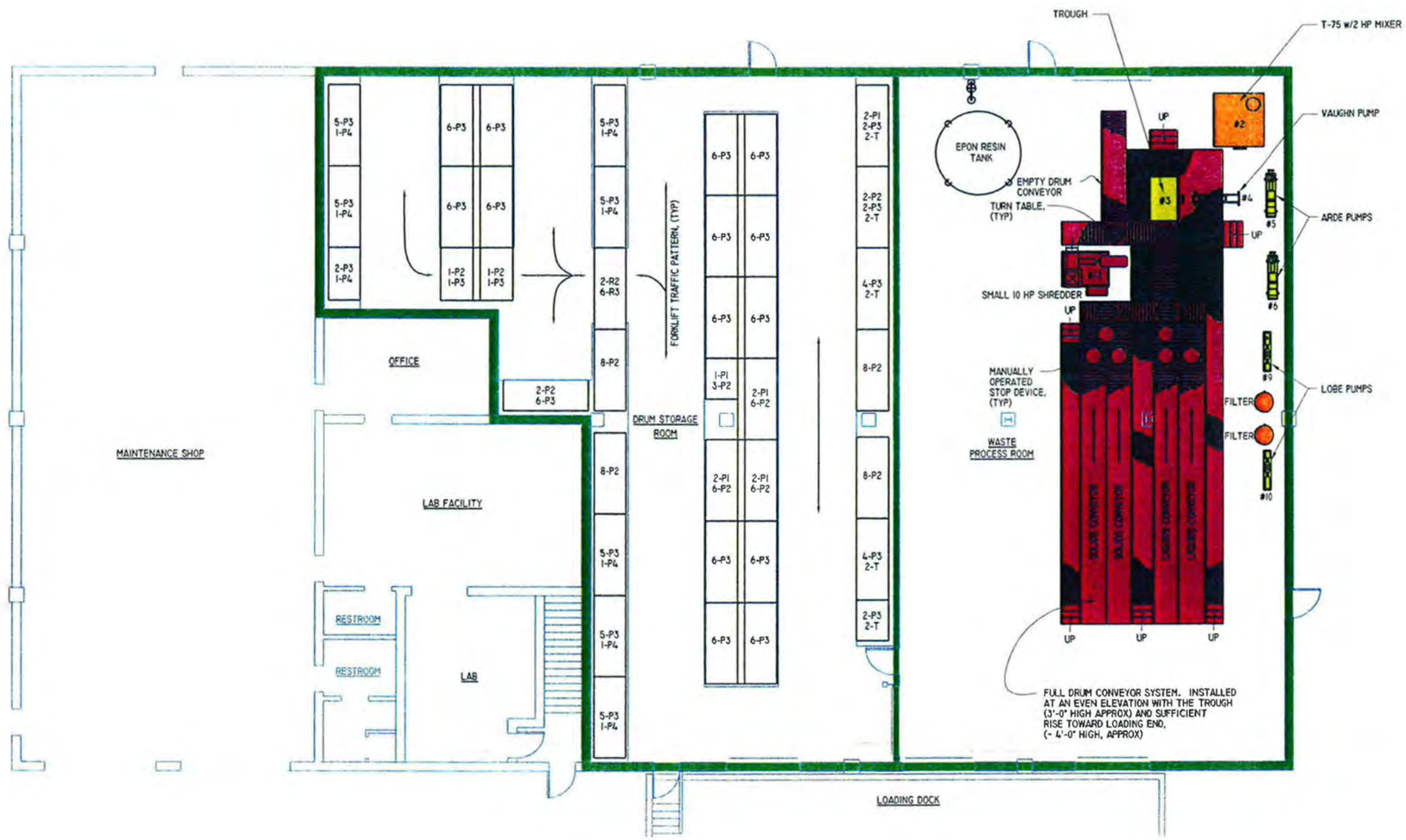
NO.	DATE	BY	REVISION
1	4/8/13	J.M.N.	REVISED FOR PARTIAL CLOSURE NOTIFICATION LETTER DATED 4/8/13

DRAWN BY: S.A.H. CHECKED BY: R.B.S./F.W.
DESIGNED BY: J.M. HOLL, P.E.
PROJECT MANAGER: R.B. SMITS, P.E.

BRENNTAG
Brenntag Great Lakes, LLC
Menomonee Falls Facility

HAZARDOUS WASTE STORAGE FACILITY
GENERAL SITE PLAN

DRAWING NUMBER	G-1
DATE	1/14/00
PROJECT NUMBER	99576
SHEET NUMBER	1 OF 8



PLAN VIEW
SCALE: 3/16" = 1'-0"

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NO.	DATE	BY	REVISION
1	4/8/13	JJM/RJ	REVISED FOR PARTIAL CLOSURE MODIFICATION LETTER, DATED 4/8/13

DRAWN BY: S.A.M.	CHECKED BY: R.B.S./P.M.
DESIGNED BY: J.M. NOLL, P.E.	
PROJECT MANAGER: R.B. SMITS, P.E.	

BRENNTAG
Brenntag Great Lakes, LLC
Menomonee Falls Facility

HAZARDOUS WASTE STORAGE FACILITY
DRUM STORAGE AND PROCESSING BUILDING
PROCESS EQUIPMENT AND RACK LAYOUT

DRAWING NUMBER	G-5
DATE	3/14/00
PROJECT NUMBER	95075
SHEET NUMBER	5 OF 8