EPA Region 5 Records Ctr.
377387

Five-Year Review Report

for

Delavan Well #4

City of Delavan

Walworth County, Wisconsin

September 2010

PREPARED BY:

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Date:

9/23/2010

Five-Year Review Report
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List of Acronyms

AOC	Administrative Order by Consent
ARAR	Applicable, Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
AWQC	Ambient Water Quality Criteria
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIC	Community Involvement Coordinator
City	City of Delavan
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program (EPA-approved contract laboratories)
DCA	Dichloroethane
FSP	Field Sampling Plan
EPA	United States Environmental Protection Agency
ES	Enforcement Standard (State of Wisconsin)
ESD	Explanation of Significant Differences
FCOR	Final Closeout Report - documents completion of Remedial Action
FR	Federal Register
FS	Feasibility Study
FY	Fiscal Year
GIS	Geographic Information System
HDPE	High-Density Polyethylene
IRIS	Integrated Risk Information System
ICs	Institutional Controls
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
MW	Monitoring Well
NCP	National Contingency Plan
NPL	National Priorities List
NR	Natural Resources (as in "NR 140.28, WAC")
NRWQC	National Recommended Water Quality Criteria
O&M	Operation and Maintenance
ORC	Office of Regional Counsel (Region 5)
OSWER	Office of Solid Waste and Emergency Response
PALs	Preventive Action Limits
PCE	Perchloroethylene or Tetrachloroethylene

PCOR	Preliminary Closeout Report
Ppb	Parts per billion or ug/L (water) and ug/kg (soil/sediment)
Ppm	Parts per million, or mg/L (water) or mg/kg (soil/sediment)
PRPs	Potentially Responsible Parties
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act of 1976
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RP	Responding Party
RPM	Remedial Project Manager (U.S. EPA)
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
SEWRPC	Southeast Wisconsin Regional Planning Commission
SMCL	Secondary Maximum Contaminant Level
SOW	Statement of Work
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TBC	To Be Considered
TCA	Trichloroethane
TCE	Trichloroethylene
TCL	Target Compound List
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UAO	Unilateral Administrative Order
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources

Second Five-Year Review Report
Executive Summary
September 2010

Delavan Municipal Well #4
Walworth County, Wisconsin

The assessment of this second Five-Year Review found that the remedy was implemented in accordance with the requirements of the Record of Decision (ROD). The Wisconsin Department of Natural Resources (WDNR), with concurrence of the United States Environmental Protection Agency (EPA) selected the remedy in the September 28, 2000 ROD. The trigger action for this second Five-Year Review is September 27, 2005, issuance date of the first Five-Year Review.

The remedy selected in the September 28, 2000 ROD has been implemented and is No Action based on the ROD's assessment that response actions previously implemented at the Site, including an Interim Action (IA) remedy implemented pursuant to a contract (WDNR SF-90-02) between Sta-Rite Industries, Inc. (sole potentially responsible party (PRP)) and WDNR, adequately addressed the threats to human health and the environment posed by groundwater contamination impacting Delevan Municipal Well No. 4. The ROD determined that no further action was necessary other than continued operation and maintenance of these response actions implemented under State authorities: soil vapor extraction in three source areas, ground water extraction and treatment and groundwater monitoring. The WDNR IA remedy implemented in June, 1994, in conjunction with previously implemented response actions, is protective of human health and the environment in the short term because no groundwater exceeding PALs is migrating beyond the Sta-rite property boundary and reaching the Delevan Municipal Well No. 4. Contaminants of Concern (COCs) are no longer present in Delavan Municipal Well No. 4. Volatile Organic Compound (VOCs) in soils on the Sta-Rite property has been remediated to levels that are protective for industrial use. Remedy requirements must be reviewed relative to whether performance standards will allow for Unlimited Use/ Unrestricted Exposure (UU/UE) and whether Institutional Controls (ICs) are required for soils and groundwater. Decision documents do not currently require ICs. If needed, EPA and WDNR will amend the remedy decision and require an IC work plan from Sta-Rite. The ongoing response actions taken under the State's authorities are expected to meet the response action objectives identified in the 2000 ROD. All immediate threats at the Site have been addressed through the actions performed under the State's authorities. There is no current use of contaminated Site ground water.

Long-term protectiveness requires site monitoring, including ground water monitoring and will be achieved when ground water cleanup standards have been and will continue to be achieved throughout the plume and, if needed, when effective land and ground water use restrictions are implemented, monitored, maintained and enforced at the Site. The ROD did not call for ICs on the Sta-Rite property to restrict exposure. EPA and WDNR will review the need for ICs and amend or clarify the remedy decision document, if required.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: **Delavan Well No. 4**		
EPA ID *(from WasteLAN)*: **WID980820062**		
Region: **5**	State: **WI**	City/County: **Delavan/Walworth, Wisconsin**

SITE STATUS	
NPL status: **X Final ☐ Deleted ☐ Other (specify) Five Year Review**	
Remediation status **(choose all that apply): ☐ Under Construction X Operating ☐ Complete**	
Multiple OUs?* **☐ YES X NO**	Construction completion date: **6/16/1994**
Has site been put into reuse? **☐ YES X NO**	

REVIEW STATUS	
Lead agency: **☐ EPA X State Tribe ☐ Other Federal Agency**	
Author name: **Thomas A. Wentland**	
Author title: **Remedial Project Manager**	Author affiliation: **Wisconsin DNR**
Review period:** **09/28/2005 to 06/30/2010**	
Date(s) of site inspection: **10/22/2009**	
Type of review: **X Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion**	
Review number: **☐ 1 X 2 (second) ☐ 3 (third) ☐ Other (specify)**	
Triggering action: **☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#____ ☐ Construction Completion X Previous Five-Year Review Report ☐ Other (specify)**	
Triggering action date *(from WasteLAN)*: **09/27/2005**	
Due date *(five years after triggering action date)*: **09/27/2010**	

Issues:

Conduct sampling and analysis to determine whether PALs are being met and will continue to be met at all points of compliance pursuant to Ch NR 140.22. Determine whether PALs are being met and will continue to be met at points of compliance upon shutting down the groundwater extraction /treatment system on an extended probationary or permanent basis.
Remedy requirements must be reviewed relative to whether performance standards will allow for Unlimited Use/Unrestricted Exposure (UU/UE) and whether ICs are required for soils and groundwater. The current decision documents do not specifically include need for ICs.
Certain groundwater areas under and near the Sta-Rite property may exceed PALs and require interim groundwater use restrictions until groundwater standards are achieved. Soils in certain areas of the Sta-Rite property have been cleaned up to levels that are protective of industrial uses but are not protective of non-industrial uses.

Recommendations and Follow-up Actions:

Continue to conduct sampling and analysis. EPA will review remedy decision documents to determine if performance standards will allow for UU/UE and whether ICs are required in order to ensure long-term protectiveness of human health and the environment. If needed the remedy decision document will be clarified or amended. If needed, require IC work plan from potentially responsible party (PRP) to:
1) prohibit groundwater use until groundwater cleanup standards are achieved and
2) implement a restrictive covenant/environmental easement prohibiting non-industrial uses on areas where residual VOC contamination remains at the Sta-Rite property.

Protectiveness Statement(s):

The state's remedy is protective of human health and the environment in the short term because no groundwater exceeding PALs is migrating beyond the Sta-rite property boundary. COCs are no longer present in Delavan Municipal Well No. 4 site. VOCs in soils have been remediated to levels that are protective for industrial use. The remedy requirements must be reviewed relative to whether performance standards will allow for UU/UE and whether ICs are required for soils and groundwater. (Decision documents do not currently require ICs.) If needed, EPA and WDNR will amend the remedy decision and require an IC work plan from Sta-Rite.

Long term protectiveness requires site monitoring, including groundwater and will be achieved when groundwater cleanup standards have been and will continue to be achieved throughout the plume and. if needed, when effective land and groundwater use restrictions are implemented, monitored, maintained and enforced at the Site. The ROD did not call for ICs on the Sta-Rite property to restrict exposure. EPA and WDNR will review the need for ICs and amend or clarify the remedy decision document, if required.

Other Comments:

None

I. Introduction

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of such reviews are documented in the site-specific five-year review reports. In addition, five-year review reports identify issues or deficiencies, if any, found during the review process for the site, and provide recommendations to address or correct them.

The WDNR is preparing this site-wide five-year review in consultation with EPA pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The EPA interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The WDNR has conducted a site-wide five-year review of the remedial action (RA) implemented at the City of Delavan Municipal Well No. 4 in Delavan, Wisconsin (the "Site"). The review for this Site was conducted from September 2009 through June 2010, by the WDNR Remedial Project Manager (RPM), with assistance from the EPA. This report documents the results of the review. As part of this review, the RPM reviewed all data collected under the regular monitoring under operation and maintenance (O&M) for the Site to evaluate the current Site status.

The triggering action for this policy review was the issue date of the last five-year review September 27, 2005. This policy five-year review was specifically activated by the presence of hazardous substances, pollutants and contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

Event	Date
Sta-Rite facility constructed.	1958
WDNR Random municipal well sampling program.	March 1982
City of Delavan takes Well No. 4 out of service.	July 1982
Sta-Rite identified as potential source.	1982
City of Delavan Well No. 4 nominated to NPL	1983
City and Sta-Rite perform hydrogeological investigations.	1983
City of Delavan Well No. 4 listed on NPL	1984
Sta-Rite and WDNR enter into contract for RI/FS & RD/RA	September 21, 1990
Sta-Rite conducts Site Evaluation Report	1990
Sta-Rite prepares Project Work Plans	1991
Sta-Rite conducts Monitoring Well Evaluation	1991
Sta-Rite conducts Remedial Investigation	1993
Sta-Rite prepares Focused Feasibility Study for Interim Remedial Action	1993
Interim Remedial Action put in operation	June 16, 1994
Record of Decision signed	September 28, 2000
First Five Year Report Completed	September 28, 2005

III. Background

Physical Characteristics

The Delavan Municipal Well No. 4, Superfund Site is located within the corporate limits of the City of Delavan, Wisconsin and is defined as the contaminated aquifer used by the Delavan Municipal Well No.4. The portion of the aquifer that was contaminated is generally located on the property occupied by Sta-Rite Industries Inc. The area encompasses approximately 70 acres and is located in the SE1/4 of Section 17 in Delavan Township (T2N. R16E), and is bordered on the south by a commercial strip shopping center, on the west by Wright Street and on the north by the Wisconsin Calumet Railroad. The west side of Wright Street, adjacent to the site, is occupied by industrial and commercial properties, and Municipal Well No. 4. Sta-Rite has operated manufacturing facilities located at 293 Wright Street since 1958. Two major plants on the site produce high quality water pumps and related products. Plant No.1 is located approximately 1000 feet northeast of Municipal Well No. 4 and Plant No. 2 is located approximately 400 feet east of Municipal Well No. 4. The City installed Municipal Well No. 4 in 1968.

Land and Resource Use

The Site is located near the intersection of Interstate Highway I-43 and State Trunk Highway 50. The land use in the area is currently mixed use and includes commercial, residential and light industrial. The site is located on the far east side of the City of Delavan and borders on agricultural land use. The City of Delavan has a population slightly less than 8,500 and is expected to grow at an increasing rate.

History of Contamination

Various solvents were used in manufacturing processes at the Sta-Rite facilities. Trichloroethylene (TCE) was used throughout both plants in various manufacturing and cleaning processes up until 1977. Other solvents used at the facilities included Trichloroethane (TCA) and Tetrachloroethylene (PCE). The compounds detected in the greatest concentrations and which are the most prevalent at the site are TCE, TCA, and PCE. These three compounds were preliminarily identified as the compounds of greatest potential concern based on their potential toxicity and concentrations observed at the site. The other organic compounds which are less prevalent at the site and which have occurred at relatively low concentrations in ground-water samples probably represent miscellaneous, small volume releases of organic solvents, and/or degradation products.

A series of floor drains and sumps in Plant #1 were used from 1958 to 1976 to collect spills and other discharges and to separate sludge and solids from the spills prior to their discharge to the storm sewer system. Because the sumps were constructed of concrete block, leakage to the surrounding soils was possible. From 1982 through 1984, most of the sumps and floor drains were permanently sealed. These areas comprise the previously known release areas.

Other areas were reported to be historical sites of spills or releases of spent solvents and other waste liquids, including open pits and the ground surface south of Plant #1, below or just south of an area currently covered by a plant expansion constructed in 1974. The area beneath the existing addition was investigated and no areas of residual impacts were noted; except for a location immediately south of the existing plant #1 expansion. Spent solvents were also reportedly released onto cast iron chips in the area southeast of Plant #1; however the exact release locations were uncertain. The areas of these reported releases were evaluated using soil gas, soil, and ground water sampling.

Pervasive low levels of volatile organic compounds (VOC) appeared to exist below Plant #1, and several of the former disposal sumps had residual VOC impacts to soils. The areas investigated beneath the Plant #1 structures, however, appeared to be relatively minor sources as the monitor wells installed up gradient of these known release areas and trends in VOC concentration gradients indicated a source of greater impacts probably existed southeast of Plant #1. One source area was confirmed at the former cast iron chip storage area southeast of Plant #1. This area is located immediately up gradient of the site monitor wells which had the highest concentrations of VOCs impacts. The size of this area is approximately 100 feet by 200 feet.

Previous investigative work documented that from 1968 to 1977 solvents were discharged to a sump adjacent to the north wall of Sta-Rite Plant #2. The former unlined sump functioned as a release area for waste to soils via a floor drain in an adjacent solvent storage area inside Plant #2.

In addition, a drainage swale off the edge of the pavement southeast of Plant #2 was a suspected source area, based on interviews with Sta-Rite personnel, and review of historical aerial photographs. Liquid waste was known to have been released in this area. The general area encompassed by this source is approximately 180 feet by 50 feet, based on soil gas and soil analytical data. Remedial investigation activities at Plant #2 verified that these two areas had residual soil impacts, which have impacted ground-water quality.

In March 1982, during a random public well sampling program by the WDNR, TCE was detected in the City of Delavan Municipal Well No.4. The TCE exceeded the suggested levels for water quality standards as set by the Wisconsin Department of Health and Social Services. Subsequent samplings also identified TCA and PCE in City of Delavan Municipal Well No. 4. WDNR subsequently recommended that City of Delavan Municipal Well No. 4 be removed from the municipal water supply system. The City of Delavan complied in July 1982.

EPA subsequently performed a hazard assessment and as a result, the City of Delavan Municipal Well No. 4 was nominated to the National Priority List (NPL) in 1983 and listed in 1984. Sta-Rite Industries, Inc., was identified as a potential source of the ground water contamination entering Municipal Well No. 4. Subsequent to the nomination of the City of Delavan Municipal Well No. 4 to the NPL in 1983, both the City of Delavan and Sta-Rite performed hydrogeological investigations of the source(s) of impacts to City of Delavan Municipal Well No. 4. The studies identified an area near Sta-Rite Plant #2, which contained concentrations of TCE in the soil and ground water apparently due to a former solvent disposal sump. TCE and TCA were also found in the soil and ground water around Plant #1. Since 1983 additional investigations were conducted at the site by Sta-Rite to further define the extent of the impacts and to identify and

implement appropriate remedial technologies. In 1984 Sta-Rite installed a ground water extraction system to remove contaminated ground water and to hydraulically control migration of contaminated ground water off its property. In 1988, Sta-Rite installed a soil vapor extraction system at the former sump location at Plant #2.

Initial Response

Following the initial investigations, several corrective measures were implemented by Sta-Rite from 1983 to 1988 to remove and/or contain VOC impacts on Sta-Rite property.

The sump area at Plant No. 2 was excavated and removed in 1983. Visibly impacted soils were excavated from the sump area. A portion of the soils were removed for disposal and the remainder were aerated and used as backfill. An in-situ soil vapor extraction system was installed in this area in May, 1988 and operated until 1998 when a heated soil vapor extraction system was added to enhance VOC removal. This system operated until December 2003.

A ground water extraction system, consisting of five groundwater extraction wells at Plant No. 1 and two extraction wells at Plant No. 2, was installed in 1984 to remove impacted groundwater. The groundwater extraction system is also used hydraulically to control off-site migration of impacted water. This system is still in place and operating. All extracted water is discharged to the storm sewer after nozzle aeration treatment.

A spray irrigation flushing system was installed in 1984 to spray a portion of the groundwater extracted by Extraction Well EX-1 onto the ground surface at the Plant No. 2 sump area so that infiltrating water would enhance the removal of solvent from impacted soils. A gravel trench was installed in the vicinity of the former trench to assist in infiltration. The spray irrigation of groundwater ceased in the late 1980's and all extracted groundwater was then discharged to the storm sewer. Groundwater monitoring wells were installed to monitor all source areas.

Basis for Taking Action

In 1983, EPA proposed the Site for listing on the National Priorities List. The Site listing was finalized in 1984. Sta-Rite and WDNR executed a contract (SF-90-02) on September 21, 1990 to conduct a Remedial Investigation/Feasibility Study (RI/FS) and Remedial Design/Remedial Action (RD/RA) on Delavan City Municipal Well No. 4 NPL site. The goal of the RI/FS was to identify the source(s) of contaminants in groundwater impacting the City of Delavan Well No.4 and to present cleanup alternatives for reducing the risks to human health and the environment. The purpose of the RI/FS was also to determine the nature and extent of contamination, assess the potential for risks to human health and the environment, determine the need for further investigation, and, if deemed necessary, provide data for design and implementation of selected remedies to remediate the impacts. The PRP contractor performing the RI was Geo Trans, Inc.

During the RI, samples were taken from surface and subsurface soils, monitoring wells, residential/municipal wells, surface water, and sediment. In 1993, after completion of the RI/FS, the WDNR in consultation with the EPA approved an Interim RA. The Interim RA consisted of installing two separate extraction systems at the areas on the Sta-Rite property found to be sources of the contamination. These extraction systems consisted of combination soil vapor and

groundwater extraction wells installed in the former chip storage (chip storage extraction system) and drainage swale (southeast extraction system) source areas. These systems were installed in 1994.

Based on the 1993 RI report and the 2000 ROD, the primary contaminants or COCs affecting the soil and groundwater were organic compounds. Specifically, primary COCs were identified as:

TCE	Trichloroethylene
TCA	1,1,1-Trichloroethane
PCE	Tetrachloroethylene

Monitoring wells were installed the Sta-Rite property to ascertain the location of areas of chemical concentration contributing to the contamination of City of Delavan Municipal No 4. Groundwater was determined to be moving in a southwest direction from the site toward the City of Delavan Municipal No 4. Sampling of the Well No. 4 indicated that the raw water intake at the well exceeded the suggested levels for water quality standards as set by the Wisconsin Department of Health and Social Services. At that time the well was removed from the municipal system of the City of Delavan.

The RI concluded that the Site posed a risk to human health by allowing contaminated groundwater to enter the municipal system.

IV. Remedial Actions

Remedy Selection

Following the conclusion of the RI, Sta-Rite performed a focused feasibility study for Interim Remedial Action to address the impacts to Municipal Well No. 4. WDNR, in consultation with EPA, approved an Interim Remedial Action in 1993. The Interim Remedial Action, constructed in June 1994, consisted of construction of dual soil vapor and groundwater extraction wells in the former chip storage area and in the drainage swale east of Plant No. 2. These two systems were called the chip storage extraction system (CSES) and the southeast extraction system (SES), respectively. This interim remedial action was operated in addition to the existing soil vapor extraction system at the Plant No. 2 sump area and the site-wide groundwater extraction system, installed in 1984.

WDNR, in consultation with EPA, issued a ROD for the final remedy on September 28, 2000. The ROD selected no further action under CERCLA authorities because the existing and planned response action under state authorities (including operation and maintenance of the original extraction system and interim remedial action of soil vapor/groundwater extraction wells) was progressing to meet the remedial action objectives of the ROD. The ROD states that no further action is necessary for the Site other than the continued operation and maintenance of the existing soil vapor and groundwater extraction and treatment systems and groundwater monitoring.

Remedial Action Goals

The primary goals of the remedial actions at City of Delavan Municipal No. 4 Site as described in the ROD were: 1) to meet groundwater PALs pursuant to Ch NR 140, Wis. Adm. Code; and 2) to remediate unsaturated soil in accordance with Ch NR 720, Wis. Adm. Code (see page 6 of the ROD) to ensure that contaminants in soils migrating to groundwater to not cause an exceedance of Wisconsin Groundwater PALs.

Remedy Implementation

The Interim Remedial Action was designed as a dual soil vapor and groundwater extraction system. A central vacuum unit located near the southeastern corner of Plant No. 2 was fitted with three independent vacuum header pipes each serving a separate source area; the chip storage area, the southeast swale area, and the former sump area. The areas were piped independently in order to provide flexibility in operation. Twenty-nine soil vapor extraction wells were installed in the former chip storage area and ten soil vapor extractions wells were installed in the southeast extraction system area. The previously existing SVE system at the former Plant 2 sump area had four soil vapor extraction wells.

In addition to the soil vapor extraction wells, six groundwater extraction wells were installed in the chip storage area and four were installed in the southeast extraction system area. The extracted groundwater is aerated and discharged to a storm sewer system. The groundwater discharge is regulated under the Wisconsin Pollutant Discharge Elimination System.

Since the final remedy was implemented Sta-Rite has prepared annual operation and maintenance reports. These reports have shown a steady decline in the COCs in groundwater and soils at the site. Sampling of the raw water intake at the City of Delavan Municipal No 4 demonstrated that COCs are no longer present and Well No. 4 is back on line and fully functional.

Institutional Controls

Institutional controls may be required to ensure the protectiveness of the remedy. ICs are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for exposure to contamination and protect the integrity of the remedy. Compliance with ICs is required to assure long-term protectiveness for any areas which do not allow for UU/UE.

The ROD did not require implementation of ICs to protect the integrity of the remedy or minimize potential for exposure to contamination in ground water or soils. If ground water or soils on the Sta-rite property are currently or will ultimately remain at levels that do not allow for UU/UE, ICs may be necessary to protect human and environmental receptors on the property from such exposure. EPA and WDNR will review the ROD and decide whether the remedy should be modified or clarified to include the need for ICs on soil and groundwater. If the current

soil COC concentrations do allow for UU/UE, then ICs would not be required on the property to restrict land use. Although the groundwater remedy would allow for eventual unlimited use of groundwater that will take many years. A review of the need for interim ICs will be conducted to ensure protectiveness of human health and the environment to possibly restrict groundwater and soil use at the Site.

Areas that may not support UU/UE and for which ICs may be required are noted in the Table below.

Table: Institutional Controls Summary Table

Media, Engineered Controls, & Areas that Do Not Support UU/UE Based on Current Conditions	IC Objective	IC instrument
Groundwater on Sta-Rite property current area that exceeds groundwater cleanup standards.	Prohibit groundwater use until cleanup standards are met.	Requirement Under Review
Soils remediated at Sta-RIte Property	Under Review	Requirement Under Review
Other remedy components such as transmission lines, treatment plant and monitoring wells	Prohibit interference with remedy components	Requirement under review

Status of ICs and Follow-up Actions Required

Initial IC evaluation activities have revealed that additional steps must be taken to evaluate whether ICs are required to ensure that the remedy continues to function as intended. The decision documents do not address whether or not ICs are required. The remedy requirements must be reviewed relative to whether performance standards will allow for UU/UE and whether ICs are required for soils and groundwater. Certain groundwater areas under the Sta-Rite property exceed PALs and may require interim groundwater use restrictions until groundwater standards are achieved. Soils in certain areas of the Sta-Rite property have been cleaned up to levels that are protective of industrial uses but are not protective of non-industrial uses. Those areas may require ICs to prevent non-commercial/industrial uses.

Within one year, EPA and WDNR will conduct IC evaluation activities, and if needed: 1) clarify or amend the remedy decision document, and 2) require Sta-rite to prepare an IC work plan to ensure that effective ICs are implemented, monitored, maintained and enforced. If needed, the IC work plan will require the following actions:

1) prohibit groundwater use with interim ICs until groundwater cleanup standards are achieved, and

2) implement a restrictive covenant/environmental easement prohibiting non-industrial uses in areas where residual VOC contamination remains on the Sta-Rite property.

Long-Term Stewardship: Long-term protectiveness at the Site requires long-term stewardship (LTS) to assure the remedy continues to function as intended. If ICs will be required, then the decision document will be clarified and effective ICs will be implemented, monitored, maintained and enforced. Planning for long-term stewardship requires assuring that effective procedures are in place to properly maintain, monitor, and enforce any ICs determined to be needed, along with monitoring of the groundwater. A LTS plan shall be developed (or the O&M Plan updated) that includes procedures for long-term stewardship.

System Operations / Operations and Maintenance (O&M)

SVE from the CSES and SES areas of Sta-Rite Plant 1 was discontinued on March 18, 2002 per the recommendation made in the February 1999 through April 2001 progress report (GeoTrans, Inc., July 6, 2001), which was approved by the WDNR in a letter dated February 13, 2002. Groundwater has not been extracted from the dual SVE/GWE wells in the SES area since 2002 because none of the submersible pumps in the dual SVE/GWE wells were operational. Fine-grained sediment that entered the wells during the operation of the dual SVE/GWE system clogged the well screens and caused the pumps in the dual SVE/GWE wells to fail. Attempts to remove the submersible pumps from the dual SVE/GWE wells in the SES area in 2003 were unsuccessful due to the presence of the fine-grained sediment in the wells. Groundwater extraction from the dual SVE/GWE wells in the CSES area was also stopped on December 23, 2003. The suspension of groundwater extraction from the SES and CSES areas was approved by the WDNR in a letter dated April 22, 2004.

The SVE system which is located in the former sump source area at Plant 2 was discontinued on December 9, 2003 per the recommendation made in the 2003 Annual Progress Report for the Delavan facility (GeoTrans, March 29, 2004). SVE was stopped because soil sample analytical results for soil samples collected from the former sump source area in 2003 indicated there were only approximately four pounds of VOC impacts remaining in the soil above the water table. This recommendation was approved by the WDNR in a letter dated April 22, 2004.

In accordance with the recommendation made in the May 2001 through December 2002 progress report (GeoTrans, January 28, 2003), a groundwater investigation was performed in the CSES and SES areas in 2003. Four temporary monitor wells (TW-303, TW-304, TW-305 and TW-306) were installed in and around the SES area and two rounds of groundwater samples were collected from the temporary monitor wells to document the degree and extent of residual groundwater impacts. Three temporary monitor wells were also to be installed around the CSES, but the wells were unable to be installed in this area due to the presence of cobbles and boulders at depth. Because the temporary monitor wells were unable to be installed around the CSES area, two rounds of groundwater samples were collected from the operational SVE/GWE wells in the CSES and from existing monitor well MW-1026, which is located approximately 113 feet downgradient

of the CSES. Groundwater samples were also collected from the temporary monitor wells installed in the SES area on September 17, 2004. The groundwater analytical results from the groundwater investigation conducted in the CSES and SES areas and the sampling round conducted in September 2004 showed TCE is the only contaminant present above its Chapter NR140 enforcement standard (ES) in both areas. Groundwater samples have also been collected from the monitor wells and groundwater extraction wells that are part of the groundwater monitoring program for the Delavan facility. The analytical results from 2004 show stabilized or continued declining VOC concentrations in groundwater both at Plant 1 and Plant 2.

On-site groundwater monitoring since the last five year review has shown a steady declining trend in the three contaminants of concern, PCE, TCA and TCE. In the last five years monitoring results from four monitoring wells in the Plant 1 area showed PCE concentrations in the groundwater exceeding the NR 140 PAL limit of 0.5 ug/L in only 3 samples out of a total sample number of 20 with the maximum exceedance being 0.09 ug/L and the last exceedance occurring in 2008. Wells in the Plant 2 area showed no detect or decreases in NR 140 levels in four out of seven monitoring wells with only slight increases in three wells. Monitoring wells in the Plant 1 and 2 areas have shown either no detect or a decreasing trend for TCA. Results for TCE have showr a decreasing trend for the entire site.

V. Progress Since the Last Review

Because of the significant reductions in VOC impacts observed in the site monitoring wells operation of the SVE/GWE system has been discontinued. Operation of the site-wide groundwater extraction system (previously explained in Section III, Initial Response) will remain in operation to control off site migration of groundwater.

Based on the data collected and evaluated during this five year review, no groundwater exceeding Wisconsin ground water protection standards (PALs) is migrating beyond the Sta-Rite property boundary. Sampling of the raw water intake at the City of Delavan Munipal Well No. 4 demonstrates that COCs are no longer present in ground water entering the well. Based upon existing monitoring data, the ongoing response action taken under the state's authorities is expected to meet the response action objectives identified in the ROD. NR 140 ground water PALs for all COCs are currently met near the boundary of the Sta-Rite boundary. However, groundwater currently exceeds the PAL for TCE at a few locations on the Sta-Rite facility. In accordance with Ch. NR 140, 22 Wis. Adm. Code, the ground water should achieve PALs at all monitoring points within the plume, including on the Sta-rite property. The original groundwater extraction system that was installed in 1984 by Sta-Rite will continue in operation to ensure that groundwater exceeding NR 140 standards is contained on the Sta-rite property until the standards are continuously met at all points of compliance . Ground water and effluent monitoring will occur until it is demonstrated that the groundwater cleanup standards have been and will continue to be met at all points of compliance throughout the plume.

Based on evaluation of annual operational reports the combination soil vapor extraction/ground water extraction wells installed in the 1994 interim remedial action, as well as the SVE system at

the plant #2 former sump source area were taken out of operation in 2002 and 2003, respectively, because of the significant reductions in VOC impacts observed in the site monitoring wells. The discontinuation of these systems has had no significant effect on groundwater quality; the last five years of monitoring data continue to show declines in concentrations of TCE and other COCs in groundwater at the facility. Thus the operation of these wells appears to no longer be needed to achieve groundwater cleanup standards.

VI. Five-Year Review Process

Administrative Components

The EPA legal and community involvement staff, the WDNR and Sta-Rite were notified of the five-year review Site inspection on October 22, 2009. The RPM established the components of the Review, which included:

- Community Notification
- Document Review
- Data Review
- Site Inspection/Community Interviews
- Five-Year Review Report Development and Review

The review Site inspection date was coordinated among the various representatives from EPA, WDNR and Sta-Rite and set for October 22, 2009. The City of Delavan was notified of the initiation of the five-year review on November 5, 2009 via a notice that was placed in the local paper, the Delavan Enterprise. The Sta-Rite five-year review team was led by the WDNR Site Manager, Thomas Wentland, EPA Superfund Remedial Project Manager, David Linnear and included EPA's Community Information Coordinator (CIC) Susan Pastor, PRP Representative Jon Raymound of Sta-Rite.

Community Notification

Activities to involve the community in the five-year review process were initiated on November 5, 2009 in the form of a notification by the Region 5 Superfund CIC for the Site, Susan Pastor. A notice announcing the initiation of the five-year review process and soliciting Site information and concerns from the community was published on November 5, 2009, in the Delavan Enterprise, a weekly newspaper serving the City of Delavan.

Historically, there have been few community concerns regarding the Delavan Sta-Rite Site. This is the only Superfund site in Walworth County. Past community relation activities for the Site have included a public meeting held August 23, 2000, prior to issuing the ROD. A public comment period was held from August 17 to September 18, 2000. Fact sheets were routinely distributed to update the community of the cleanup progress. WDNR has also maintained an administrative record document repository in the community throughout the cleanup process at the Aram Public Library in Delavan Wisconsin.

Document Review

The five-year review included a review of the relevant documents such as the RI/FS, RD/RA, Statement of Work (SOW), ROD, all enforcement documents, state groundwater quality standards, and risk-based levels to protect human health and the environment. Also, post-RA documents such as the Preliminary Close-Out Report (PCOR), and applicable EPA and WDNR guidance.

Data Review

The following information was reviewed in the preparation of this Five-Year Review.

- City of Delavan Well No. 4 Annual Report, January 2006 through December 2006
- City of Delavan Well No. 4 Annual Report, January 2007 through December 2007
- City of Delavan Well No. 4 Annual Report, January 2008 through December 2008
- City of Delavan Well No. 4 Annual Report, January 2009 through December 2009
- WDNR, Drinking Water System, Sample History Report, 01/01/1980 to 10/07/2009

Site Inspection

A site inspection was conducted on October 22, 2009. Mr. Dave Mirek, Environmental Engineer, Sta-Rite Industries, LLC, Mr. L. Lindloff, Chief of Maintenance, Sta-Rite Industries, LLC, Mr. Mark Manthey, Hydrogeologist, Geotrans and Mr.Thomas A. Wentland WDNR Project Manager conducted the inspection reviewing the treatment process at the three soil vapor/groundwater extraction areas. The purpose of the inspection was to assess the protectiveness of the remedy, including the condition of site security to restrict access, and the condition of the Site itself, i.e., soil vapor / groundwater extraction system, monitoring wells, and the surrounding land.

Site Interviews

Mr. T. Ratarasarn, P.E. Drinking Water Engineer with WDNR and Mr. James Piester, Chief Operator City of Delavan Water Utility were interviewed in conjunction with raw water quality of the City of Delavan Well No.4. Information interviews were used to determine protectiveness.

VII. Technical Assessment

Question A: *Is the remedy functioning as intended by the decision documents?*

Remedial Action Performance

Based on a review of relevant documents, applicable or relevant and appropriate requirements (ARARs), risk assumptions, and the results of the Site inspection, the remedy currently appears to be functioning as intended by the ROD and is expected to continue in this manner. The effectiveness and progress of the remedy has been tracked through the monitoring program. Site

monitoring has been performed since October 1994. These data indicate that the Site presently does not pose an immediate threat to human health or the environment.

The ROD selected no further action under CERCLA authorities because the existing response action under state authorities (including Wisconsin's agreement with Sta-Rite Industries) was progressing adequately to meet the remedial action objectives of the ROD. The ROD states that the remedial action objective for contaminated groundwater at the site was to meet Ch NR 140, Wis. Adm. Code regarding groundwater PALs for all contaminants of concern. Ch NR 140.22 identifies the following points of compliance for groundwater PALs: a) any point of present groundwater use; b) any point beyond the boundary of the property on which the facility, practice or activity is located; c) any point within the property boundaries beyond the 3 dimensional design management zone if one is established by the department at each facility, practice or activity. Monitoring data indicates that PALs are met near the boundary of the Sta-rite property; however contamination exceeds PALs at a few locations on the Sta-rite facility.

The original groundwater extraction system remains in operation to ensure that groundwater contamination is contained within the Sta-rite facility boundary and does not move beyond the Sta-rite boundary. The state lead groundwater remedial action appears to continue to be progressing to meet the groundwater remedial action objective of the ROD.

The ROD states that the soil at the site must be remediated in accordance with Ch NR 720, Wis. Adm. Code. The ROD also states contaminated soil must be addressed so contaminants migrating from soil to groundwater do not cause exceedances of WDNR groundwater standards. The soil vapor extraction systems have been discontinued because of the significant reductions in VOC impacts observed in the Site monitoring wells. Monitoring data continue to show declines in concentrations of TCE and other COCs in groundwater under the Sta-rite property.

Although UU/UE will be available for groundwater once the standards have been met, a review of the need for interim ICs will be conducted to ensure protectiveness of human health and the environment to restrict groundwater use on the Sta-rite property until the cleanup standards have been met throughout the plume. Also, a review of the need for ICs on soils on the Sta-rite property is needed due to the residual soil contamination.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

Changes in Standards and TBCs

There have been no changes in physical conditions of the Site that would affect the protectiveness of the remedy. There have been no changes in the cleanup standards identified in the ROD. No new classes of chemical-specific ARARs were noted since the ROD. While the chemical-specific criteria for surface water were set at the time of the ROD. some of the chemical specific regulatory and guidance levels have been amended since the ROD.

Surface Water

The actual chemical-specific ARARs are discharge standards pertaining to surface water and are the following:

- Water Quality Criteria (AWQC), 40 CFR. Part 131 Quality Criteria for Water, 1986.
- Surface Water Quality Standards (NR 102, NR 105, NR 106 WAC)

Groundwater

Groundwater which is extracted, and subsequently discharged must meet the substantive requirements of NPDES, 40 CFR 122, 125 and the Wisconsin Pollutant Discharge Elimination System (WPDES). Discharge of treated groundwater to the drainage channels adjacent to the Site must meet the substantive requirements of Section 402 of the Clean Water Act and must not exceed discharge limits established by the State of Wisconsin (NR 102, NR 105, NR 106, and NR 207 WAC). Groundwater extraction and monitoring is done in compliance with Wisconsin Groundwater Monitoring and Recovery Requirements (NR 141, NR 181 WAC).

Wisconsin PALs and ESs continue to define acceptable groundwater concentrations at groundwater remediation sites in the State of Wisconsin; however an exceedance of a PAL does not necessarily trigger remedial action as long as protectiveness is maintained. Revisions to chemical-specific PALs have occurred since 1988 groundwater quality standards were issued by WDNR and identified as potential future groundwater ARARs in the 2000 ROD. Annual reports always compare sampling results to current PALs and show a consistent decline in contaminant levels. Therefore the remedy is more protective than originally developed in the ROD.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There are no newly identified ecological risks at this Site. No additional information has come to light that could affect the protectiveness of the remedy, when it is fully implemented.

Technical Assessment Summary

Based on a review of relevant documents, ARARs, risk assumptions, and the results of the site inspection, the response action under state authorities is expected to meet the remedial action objectives identified in the ROD. The effectiveness of the remedy tracked through the monitoring program indicates that the Site presently does not pose an immediate threat to human health and the environment.

VIII. Issues

The following issue was identified as a result of this second five-year review:

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Conduct sampling and analysis to determine whether PALs are being met and will continue to be met at all points of compliance pursuant to Ch NR 140.22. Determine whether PALs are being met and will continue to be met at points of compliance upon shutting down the groundwater extraction /treatment system on an extended probationary or permanent basis. Certain groundwater areas under and near the Sta-Rite property may exceed PALs and require interim groundwater use restrictions until groundwater standards are achieved. Soils in certain areas of the Sta-Rite property have been cleaned up to levels that are protective of industrial uses but are not protective of non-industrial uses.	N	Y

IX. Recommendation and Follow-up Action

The following recommendation and follow-up actions are recommended to resolve the issues identified during this second five-year review:

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
Remedy requirements must be reviewed relative to whether performance standards will allow for UU/UE and whether ICs are required for soils and groundwater. (Decision documents do not currently require ICs.)	Review remedy decision documents to determine if performance standards will allow for UU/UE and whether ICs are required to ensure long-term protectiveness of human health and the environment. If needed, amend remedy decision and require IC work plan from PRP	USEPA / WDNR	US EPA	08 / 2011	N	Y

X. Protectiveness Statement

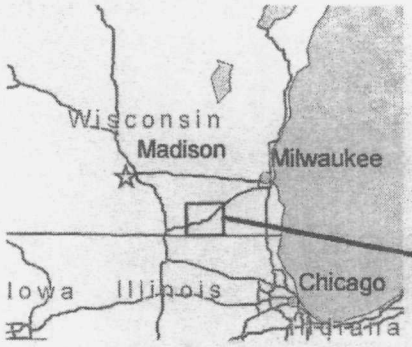
The state's remedy is protective of human health and the environment in the short term because no groundwater exceeding PALs is migrating beyond the Sta-rite property boundary. COCs are no longer present in Delavan Municipal Well No. 4. The extracted and discharged groundwater meets all ARARs, thereby demonstrating the effectiveness of the extraction system. VOCs in soil have been remediated to levels that are protective for industrial use. The remedy requirements must be reviewed relative to whether performance standards will allow for UU/UE and whether ICs are required for soils and groundwater. Decision documents do not currently require ICs. If needed, EPA and WDNR will amend the remedy decision and require IC work plan from Sta-Rite. Long-term protection will be achieved when groundwater cleanup standards have been and will continue to be achieved throughout the plume and, if needed, when effective land and groundwater use restrictions are implemented, monitored, maintained and enforced at the Site.

XI. Next Review

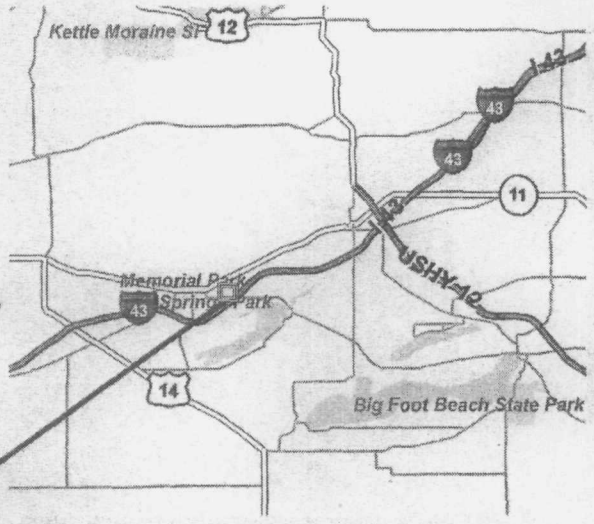
The next five-year review is scheduled to be completed by September 2015.

Delavan Municipal Well #4 Superfund Site

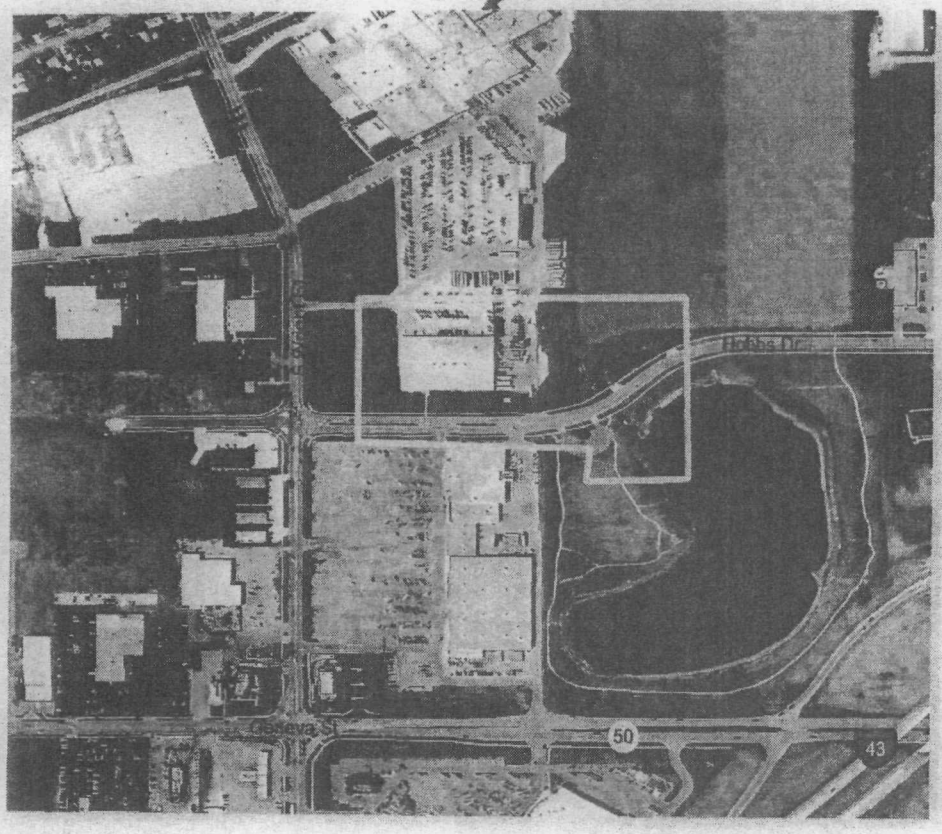
1) State



2) Walworth County



3) Delavan Municipal Well #4



N

Figure 1

Map created by Sarah Backhouse U.S. EPA Region 5 on 9/13/2005

GEOS
Groundwater Evaluation and Optimization System

- Superfund Site Information
- Institutional Controls (ICs)
- Site Documents
- Data Elemant Dictionary (DED)
- Order Superfund Product

Institutional Controls for Delavan Municipal Well #4

CERCLIS ID: WID980820062

Institutional Controls are required for this site. This site requires ICs because a decision document, such as a Record of Decision, has documented some level of contamination and/or remedy component at the site that would restrict use of the site. In order to determine the current status of ICs for this site, the site contacts below should be consulted:

David Linnear, Remedial Project Manager Phone: **312-886-1841** Email: **linnear.david@epa.gov**

ICs are generally defined as administrative and legal tools that do not involve construction or physically changing the site. Common examples of ICs include site use and excavation restrictions put in place through State and local authorities like zoning, permits and easements. ICs are normally used when waste is left onsite and when there is a limit to the activities that can safely take place at the site (i.e., the site cannot support unlimited use and unrestricted exposure) and/or when cleanup components of the remedy remains onsite (e.g., landfill caps, pumping equipment or pipelines). Effective ICs help ensure that these sites can be returned to safe and beneficial use.

Disclaimer: This information is being provided by EPA as an informational tool to further assist the public in determining the types of restrictions that may be in place at National Priorities List sites being addressed by EPA under the Superfund program. In addition to the areas addressed by the institutional controls identified on this web site there may be other areas on

the property that require restrictions on use of the property that are not captured in this EPA database. States and other entities may have implemented laws or restrictions applicable to this site. The information provided herein does not replace a title search or meet "All Appropriate Inquiry" requirements. U.S. EPA encourages users to review the Site files to obtain information regarding remedy components, containment systems and the land use for which cleanup standards were selected for these sites. More information and links can be found on the site profile page from which this page was accessed, and EPA regional offices may also be contacted.

Report generated on **May 19, 2008**

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Holy Communion followed by Breakfast Club.

Wednesday, Nov. 11, 9 a.m., Holy Communion, 9:30 a.m., Bible study.

Christian Life

Sunday, Nov. 8, 9:25 a.m., intercessory prayer; 10 a.m., worship (nursery, pre-school, Kid's Club and youth); He Brews Café after service.

Wednesday, Nov. 11, 6:25 p.m., intercessory prayer; 7 p.m., prayer meeting.

Darien Community Baptist

Sunday, Nov. 8, 9: a.m., Sunday school; 10 a.m., worship.

Wednesday, Nov. 11, 7 p.m., choir practice.

Darien United Methodist

Sunday, Nov. 8, 9 a.m., Sunday school; 10:30 a.m., worship.

Monday, Nov. 9, 5:30-6:30 p.m., Saturday, Nov. 7, 8-11:3 a.m., fall clean-up day.

Sunday, Nov. 8, 8 a.m. and 1 a.m., worship; 8:45 a.m., Christian education; 4:30-6 p.m CAFÉ.

Tuesday, Nov. 10, 9 a.m. quilt group; 6 p.m., nominating committee; 7 p.m., Allelui Circle, Shalom Circle.

Wednesday, Nov. 11, 9:3 a.m., Faith Circle; 7 p.m., Chan cel Choir.

RAN Nov. 5, 2009

EPA To Review Delavan Municipal Well #4 Superfund Site

Delavan, Wisconsin

U.S. Environmental Protection Agency, in cooperation with Wisconsin Department of Natural Resources, is conducting a status review of the Delavan Municipal Well #4 Superfund site. The Superfund law requires regular reviews of sites (at least every five years) where the cleanup is complete or well underway but waste remains managed on-site. These reviews are done to ensure that human health and the environment continue to be protected.

EPA selected several cleanup actions for the site:

- ground water and soil vapor extraction
- air stripping
- thermal soil vapor extraction

The review will include an evaluation of background information, cleanup requirements, effectiveness of the cleanup, and any anticipated future actions. It will also look at ways for EPA and DNR to operate more efficiently.

The five-year review report will be available by May 2010 and will detail the site's progress.

More information can be obtained from:

Susan Pastor
EPA Community Involvement Coordinator
(800) 621-8431 x 31325, weekdays 9 a.m. - 4:30 p.m.
pastor.susan@epa.gov

Thomas Wentland
State Project Manager
(920) 892-8756 Ex. 3028
thomas.wentland@wisconsin.gov

Site-related documents are available for review at:
DNR Service Center
141 N.W. Barstow St., Room 180
(262) 574-2100 (call for appointment)
Waukesha

26573

Community Church Guide

Allens Grove-Darien United Methodist Church

First Baptist Church (ABC)