



**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

Statement of Basis
for
PPG Industries
10800 South 13th Street
Oak Creek, Wisconsin
EPA ID: WID 059972935

TABLE OF CONTENTS

SECTION I: INTRODUCTION AND PURPOSE OF THE STATEMENT OF BASIS	1
SECTION II: FACILITY BACKGROUND	2
SECTION III: SUMMARY OF ENVIRONMENTAL INVESTIGATION AND INTERIM MEASURES	4
SECTION IV: SUMMARY OF RISK EVALUATION	9
SECTION V: CORRECTIVE ACTION OBJECTIVES	11
SECTION VI: PROPOSED FINAL REMEDY	13
SECTION VII. PUBLIC PARTICIPATION AND INFORMATION REPOSITORY	14

ATTACHMENTS

Attachment 1: Figures

- Figure 1. Site Location Map
- Figure 2. Facility Map
- Figure 3. Estimated Extent of LNAPL at Monitoring Well TF-3

Attachment 2: Tables

- Table 1. Summary of BTEX in Groundwater at the TFA Post-Interim Measure
- Table 2. Summary of LNAPL Thickness and Removal at Well TF-3
- Table 3. COCs and Risk Values from 2003 Risk Assessment

Attachment 3: Administrative Record Index

ABBREVIATIONS

AST	Aboveground Storage Tank
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
CAO	Corrective Action Objective
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COC	Constituent of Concern
EI	Environmental Indicator
EPA	United States Environmental Protection Agency
HI	Hazard Index
IC	Institutional Control
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level (Drinking Water)
µg/L	Micrograms per liter
mg/kg	Milligram per kilogram
NCP	National Contingency Plan
ORP	Oxidation-Reduction Potential
PPG	PPG Industries, Inc.
PRG	Preliminary Remediation Goal
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SB	Statement of Basis
SVE/AS	Soil Vapor Extraction/Air Sparging
SWMU	Solid Waste Management Unit
TSDF	Treatment, Storage, and Disposal Facility
TFA	Tank Farm Area
TCG	Target Cleanup Goal
USC	United States Code
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources

SECTION I: INTRODUCTION AND PURPOSE OF THE STATEMENT OF BASIS

This Statement of Basis (SB) explains the United States Environmental Protection Agency's proposed remedy to address soil and groundwater impacts at the PPG Industries, Inc. (PPG) Oak Creek Facility (the Facility).

This SB summarizes information that can be found in greater detail in the Administrative Record available online, at the EPA Region 5 office in Chicago, Illinois, and at the Oak Creek Public Library in Oak Creek, Wisconsin. See Section VII for addresses for these locations. A list of documents referenced in this SB is included in Attachment 3.

This SB is being issued to fulfill the public participation responsibilities under the Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et al., [at 40 Code of Federal Regulations (CFR) § 270.42(c)(2)] and to solicit public input in the selection of the final remedy for the Facility. EPA invites written comments from the public on the proposed remedy during a 60-day comment period. Additionally, if requested by a member of the public, EPA will host a public meeting to answer questions and receive additional comments. Public comments will be used to inform EPA's final decision regarding the remedy selection. Within 30 days after the close of the comment period, EPA will publish a Final Decision and Response to Comments document conveying EPA's decision about how the site will be remediated. See Section VII of the SB for instructions on how to provide comments to EPA on the SB and for the open comment period dates.

Under the RCRA Corrective Action program, EPA oversees investigation and cleanup of RCRA treatment, storage, and disposal facilities (TSDFs) with releases of hazardous constituents that pose a risk to human health and the environment. The proposed remedy detailed in this SB was determined to be protective of human health and the environment, considering current and anticipated future uses of Facility property. The Facility manufactures paints and coatings and is a research and development center.

Remedy Summary

After reviewing soil and groundwater sampling results, past environmental practices, historical investigations, and remedial activities, EPA is proposing the following remedies for the Facility, including Light Non-Aqueous Phase Liquid (LNAPL) monitoring and abatement, groundwater monitoring, and Institutional Controls (ICs) restricting groundwater use at the Facility.

LNAPL Monitoring and Abatement. PPG shall continue to monitor LNAPL present near monitoring well TF-3 in the Tank Farm Area (TFA). PPG shall measure LNAPL thickness at

TF-3 and verify that wells surrounding TF-3 have not been impacted. If PPG finds LNAPL at TF-3, PPG shall remove LNAPL, including, but not limited to, removal with a bailer/pump or installation of an absorbent sock. PPG shall monitor this well on a quarterly basis (every three months) for two years. After two years (or eight monitoring events), PPG and EPA will review the sampling results and determine if there continues to be recoverable LNAPL in the wells requiring further monitoring, or if the ICs in place at the Facility (discussed below) are adequate to address the remaining LNAPL.

Groundwater Monitoring. PPG shall monitor groundwater quarterly in the TFA for two years, concurrent with the LNAPL monitoring discussed above. PPG shall measure groundwater levels and sample groundwater for benzene, toluene, ethylbenzene, total xylenes (BTEX) and arsenic, at select wells agreed upon by PPG and EPA. After two years (or eight monitoring events), the sampling results will be reviewed and EPA will determine if conditions are stable and monitoring can end. The monitoring will confirm whether the flow path of groundwater is stable, and confirm BTEX and arsenic have not migrated from the area surrounding well TF-3 in the TFA.

Institutional Controls. ICs are non-engineered administrative and legal controls that help minimize the potential for human exposure to contamination. To prevent exposure to the residual LNAPL and arsenic present, PPG shall record a notation on the Facility's property deed preventing groundwater use in the TFA. PPG shall also record a land use restriction on the deed, restricting the use of the entire Facility property to industrial and commercial. PPG shall record these notices per 40 CFR Part 264.119 and Wisconsin Administrative Code NR § 725.07. This will adequately address remaining soil contamination in the TFA.

SECTION II: FACILITY BACKGROUND

Location and Setting

The Facility is located at 10800 South 13th Street in Oak Creek, Milwaukee County, Wisconsin approximately 5 miles west of Lake Michigan (Figure 1). The Facility is in a rural area in the southwestern part of Oak Creek, bordered by farmland to the north, northeast, and west, and by municipality-owned parcels on the south and east. The nearest residential developments are approximately 0.25 miles to the north and 0.66 miles to the east. A small creek located on the eastern edge of the Facility drains south to the Root River. The Facility was constructed from 1973 to 1975 (completed in December 1975) and covers approximately 51 acres.

Ownership History

PPG has owned and operated at the Facility since its construction in 1975. Prior to construction, the Facility property was farmland.

Manufacturing and Release History

Since its construction, the Facility has manufactured paint, coatings, and resins. Raw materials and paint are transported to and from the Facility primarily via large truck shipments. The major components of the Facility include a resin plant, a paint production plant, a former Tank Farm Area (TFA), and a former stormwater impoundment basin. Administrative buildings, laboratories, raw materials warehouses, and finished goods warehouses are also located at the Facility. A railroad spur that is no longer in use is in the southeast quadrant of the Facility. See Figure 2 for a map of the Facility.

The TFA, the focus of this SB, is in the southeastern portion of the Facility and is approximately seven acres in size. The historical use of this area was for bulk solvents, organic acids, and raw materials storage. The TFA contained both underground storage tanks (USTs) and aboveground storage tanks (ASTs). All USTs at the Facility were closed in 1999 in accordance with Wisconsin Department of Natural Resources (WDNR) and Wisconsin Department of Commerce regulations; some were removed and others closed in-place. The TFA is underlain by an under-drain system installed during construction to create a depression in the groundwater surface, such that any material leached to groundwater from the TFA would be collected and sent to the local public wastewater treatment works with other discharged water. The ASTs currently used around the TFA have concrete curbing and other secondary containment. The under-drain system was deactivated in the fall of 2006 and remains inactive. A railroad spur runs along the north side of the TFA and was historically used for limited resin plant loading operations, but is no longer used.

Environmental Indicators

EPA developed two Environmental Indicators (EIs) to track conditions that affect human health and groundwater impacts at RCRA facilities early in the Corrective Action process. The Current Human Exposures Under Control EI is used to identify whether there are any unacceptable human exposures to contamination at the site. The Migration of Contaminated Groundwater Under Control EI is used to identify whether any contaminated groundwater from the site is stabilized and not migrating. These EIs are used to assess whether early intervention (such as an interim measure to prevent people drinking contaminated groundwater) is needed. The EI evaluations use available environmental data, such as measurements of contaminants in groundwater, within a decision matrix. PPG assessed the available information for the Facility and submitted documentation on the status of human exposure and migration of contaminated groundwater at the Facility. EPA reviewed the information and determined that both EIs had been met.

The Facility met the necessary milestones for the Current Human Exposure and Migration of Contaminated Groundwater EIs on January 20, 2000.

SECTION III: SUMMARY OF ENVIRONMENTAL INVESTIGATION AND INTERIM MEASURES

RCRA Facility Investigation

The purpose of a Corrective Action RFI is to determine whether hazardous waste or hazardous constituents were released into the environment at the Facility, and if so, to evaluate the significance of the releases in terms of risk to human health and the environment. The investigation involves examining physical characteristics, sources of contaminants, their fate and transport, affected environmental media, and potentially exposed people (in categories such as office and construction workers) and ecological receptors (plants and animals). During the investigation phases, environmental media such as soil, groundwater, surface water, sediments, and biota are sampled and analyzed for contamination. Where contaminated media are found, subsequent sampling is usually conducted to define the extent of contamination (how far it may have traveled and how deeply), and to collect enough information for analysis of exposure effects in risk assessments. After each sampling event or investigation phase, EPA evaluates the data to determine its adequacy for supporting decision-making. If found to be inadequate, additional data collection is necessary.

The PPG Oak Creek Facility is subject to regulations promulgated under RCRA. On March 31, 1992 the EPA issued a RCRA Permit (EPA ID WID 059972935) to the Oak Creek Facility as an operating Treatment, Storage, and Disposal Facility, with an effective date of May 4, 1992. This permit included a requirement for conducting a RCRA Facility Investigation (RFI) at ten identified Solid Waste Management Units (SWMUs).

Due to changes in operations, PPG submitted a request to terminate their RCRA permit to WDNR in June 2004; the request was subsequently approved by WDNR on June 30, 2004. Corrective Action provisions of the previous federal portion of the permit, however, required PPG to implement corrective measures at identified SWMUs; these provisions remained despite termination of the permit. Consequently, EPA has been overseeing the RCRA Corrective Action activities under the authority of the expired federal RCRA permit. Pursuant to the remaining Corrective Action provisions, PPG has conducted periodic groundwater monitoring since termination of the permit to assess fate and transport of the remaining contamination.

Physical Setting and Facility Characteristics

Soil. Soil in the area around the Facility is primarily composed of poorly- to well-drained silts and silty clay loams, originating from glacial till deposits of the Oak Creek Formation. PPG collected 82 borings at the Facility to characterize local soils, ranging from 10 to 35 feet deep. Facility soils were found to be primarily silty clays and clayey silts, with occasional thin lenses of sand and gravel, originating from (natural) fill put in place at the Facility during construction.

Soils in the TFA are comprised of primarily sand and gravel fill, ranging in depth from 10 to 20 feet below the ground surface (bgs).

Groundwater. Shallow groundwater at the Facility typically exists at depths ranging from 5 to 10 feet bgs. Groundwater flows in a southeasterly direction, toward a small creek east of the Facility and the Root River south of the Facility. Until the under-drain system was deactivated in 2006, groundwater in the TFA was confined and ultimately drained to a sump, which discharged TFA groundwater to the local wastewater treatment facility. Since deactivation, natural groundwater flow patterns have returned to the TFA, with groundwater flowing in the southeasterly direction.

Surface Water and Stormwater. Surface water near the Facility consists of a small unnamed creek located immediately east of the Facility, which drains to the Root River located approximately one-half mile south of the Facility. There are no surface water bodies on-site at the Facility. Stormwater collects at several points at the Facility. PPG has a WDNR Stormwater Industrial Tier 2 Permit (permit number S067857) regulating the discharge of stormwater at the Facility, and regularly samples stormwater prior to discharging to the aforementioned creek.

Water Supplies and Groundwater Use. The Oak Creek Water and Sewer Utility (OCWS) provides the City of Oak Creek with drinking water sourced from Lake Michigan. A well survey conducted during the RFI (see the *RFI Report* for details) indicates that few private wells are located within a half-mile radius of the Facility, and the wells that do exist are installed in deep aquifers located far below the shallow groundwater (100 feet or greater bgs).

Ecological Setting. The Facility is primarily paved, with some grassy areas. Potential locations of ecological significance are the unnamed creek east of the Facility and the Root River.

Site Investigation Summary of Results

In August of 1997, PPG submitted the *RFI Report* that presented the results of the investigation conducted in the autumn of 1996 and assessment of human health and ecological risks. The *RFI Report* concluded that three of ten SWMUs required further work; however, during preparation of the *RFI Report*, SWMU 17 (a 210,188-gallon concrete impoundment basin) was removed to install new above-ground storage tanks. Thus, approving the *RFI Report* in July of 1998, EPA determined that eight SWMUs did not require further Corrective Action (CA). The two remaining SWMUs, SWMU 8 and 18, are located within the TFA and are the focus of the presumptive remedy implementation, described below:

- SWMU 8 includes three 15,000-gallon ASTs. Two of these ASTs are used to contain spent paint-related solvents, and the third is used to contain spent resin solvent. The ASTs are surrounded by a concrete secondary containment. Releases and some staining have been reported in the past at these ASTs.

- SWMU 18 consists of a 3,770-gallon concrete under-drain sump for the TFA. The sump collects groundwater and surface water from the under-drain system.

The *RFI Report* identified the following seven volatile organic compounds (VOCs) in soils for which at least one sample exceeded initial screening levels (EPA soil screening levels or Region 5 Data Quality Levels): xylenes, toluene, ethylbenzene, styrene, methylene chloride, 1,1,2,2-tetrachloroethane, and tetrachloroethylene (also called perchloroethylene or PCE). Most exceedances involved xylenes, toluene, and ethylbenzene, which is consistent with the storage tank inventory.

At the time the RFI was conducted, the under-drain system was in use and working as designed. The groundwater was higher surrounding the TFA and formed a depression at the under-drain center. This prevented migration of VOCs beyond the limits of the TFA. Groundwater sampling performed in the TFA identified 19 compounds, primarily from shallow wells screened from 5 to 15 feet bgs.

Interim Measures

Interim Measures are corrective measures necessary to control current human exposures to contamination or to stabilize the migration of contaminated groundwater, undertaken by a facility prior to determination of a Final Remedy by EPA.

As part of conditional approval of the *RFI Report* in July 1998, EPA required PPG to initiate Interim Measures to address contaminated soil and groundwater in the TFA. In November of 1999, PPG submitted a *Corrective Measures Study (CMS) Presumptive Remedy Implementation Report (CMS Report)*. This report proposed remedies for soil and groundwater where levels of contaminants exceeded relevant human health and environmental criteria. It set in place an Interim Measure for soil, and justified it based on EPA criteria for presumptive remedies. Presumptive remedies are actions/technologies which EPA has determined to be effective for similar types of contamination based on past experience. The Interim Measure selected for the TFA was soil vapor extraction (SVE), which is commonly used as a presumptive remedy. Air Sparging (AS) was conducted concurrently with the SVE to enhance remediation of the groundwater. Included in the *CMS Report* was an 18-month operation schedule, monitoring plan, operation and maintenance schedules and checklists, and financial assurance to operate and install the SVE/AS system.

At the end of the 18-month operation of the Interim Measure, a target compliance/confirmatory sampling event was conducted (January 2001) to confirm results of the SVE/AS remedy. Two of the VOC constituents in groundwater (benzene and ethylbenzene) and three in soil (toluene, ethylbenzene, and total xylenes) measured during the January 2001 confirmatory sampling event had maximum concentrations that exceeded target cleanup goals (TCGs).

Additional groundwater samples were collected in May 2002 from seven existing Facility monitoring wells and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). While all BTEX parameters were identified in at least one groundwater sample, none of the concentrations exceeded the TCGs. Additionally, concentrations of all BTEX were non-detect in four of the seven wells sampled.

To further monitor and assess the remaining groundwater contamination present in the TFA after concluding operation of the Interim Measure, PPG implemented semiannual groundwater sampling in July 2004 with the under-drain system active. Eight existing Facility monitoring wells were sampled in July 2004, January 2005, July 2005, and January 2006. Groundwater was analyzed for BTEX. During this sampling period, groundwater concentrations from the monitoring wells were either stable or declining.

In March 2006, PPG submitted a *Corrective Measures Implementation Report (CMI Report)* summarizing data collected during the 18-month SVE/AS operating period and subsequent groundwater monitoring events. As discussed in the *CMI Report*, of the estimated 8,226 pounds of VOCs initially present in the TFA soils and 76 pounds of VOCs in TFA groundwater, 6,900 pounds were removed by the SVE/AS system. Performance checks conducted on the system during the operating period showed 99% or greater VOC destruction efficiency during operation.

Additionally in the *CMI Report*, a risk evaluation was conducted on constituents remaining in the soil and groundwater at the TFA after concluding operation of the Interim Measure. The risk evaluation determined that risk levels for all remaining contamination in the TFA was within acceptable EPA guidelines. See Section IV for further discussion of the risk evaluation.

Hydrogeological Evaluation and Groundwater Monitoring

PPG deactivated the TFA under-drain system in the fall of 2006. The under-drain system created a depression in the groundwater, such that material leached from soil to groundwater around the storage tanks would be collected and sent to the local public treatment works with other water discharged from the Facility. To assess any changes in groundwater flow and contaminant transport in the TFA because of deactivation of the under-drain system, PPG submitted a Hydrogeological Evaluation Work Plan to EPA on October 19, 2006. The plan provided details and schedules for semiannual monitoring of groundwater elevations and sampling for benzene, toluene, ethylbenzene, and total xylenes (BTEX) at the TFA.

Quarterly groundwater monitoring was implemented in November 2006 and ended in September 2008, after which semiannual sampling was initiated. The EPA-approved plan called for continued groundwater monitoring for two years; PPG continued to monitor the area voluntarily on a semi-annual basis until 2011. Except for monitoring well TF-3, the results showed that the

concentrations were stable or declining for all BTEX constituents. A summary of the 2004 – 2011 post-Interim Measure groundwater results is provided in Table 1. After concluding semiannual monitoring in 2011, EPA and PPG began discussing final corrective measures necessary to address the residual contamination at the Facility, and EPA began drafting the Statement of Basis.

In the spring of 2016, EPA requested PPG conduct a single groundwater monitoring event to confirm current groundwater conditions at the TFA, and that none of the Constituents of Concern (COCs) identified in the RFI have re-appeared because of the under-drain system being deactivated. PPG sampled 11 wells (excluding well TF-3, discussed in the following section) in the TFA for BTEX, as well as select metals, VOCs, and semi-volatile organic compounds. The results indicated non-detections for BTEX compounds, consistent with trends observed in previous sampling events. Five wells, located within or upgradient of the TFA, contained levels of arsenic exceeding the federal MCL of 10 micrograms per liter ($\mu\text{g/L}$); arsenic in all 11 wells ranged from non-detected to 16.2 $\mu\text{g/L}$. Arsenic was detected in TFA soils during the RFI, but was eliminated from cleanup goals due to the levels being statistically comparable to statewide background levels for arsenic in soil (see *RFI Report*). As discussed in Section VI, arsenic will be included in the planned groundwater monitoring as part of the final remedy. See the 2016 report *Groundwater Sampling in Support of the Statement of Basis* included in the Administrative Record for more information.

Groundwater monitoring conducted since deactivation of the TFA under-drain system in 2006 shows that excluding well TF-3, remaining groundwater contamination above risk levels in the TFA is isolated to arsenic present above the federal MCL.

LNAPL Investigation

In September 2008, PPG identified LNAPL (lighter-than-water liquid) in monitoring well TF-3, located within the TFA. In March 2009, PPG began monitoring and removing LNAPL from the water table at TF-3 and continued until September 2011. Between June 2011 and September 2011, LNAPL measurements ranged from 1.5 inches to just above 3 inches. A summary of the LNAPL monitoring at well TF-3 is provided in Table 2.

Figure 3, titled “Estimated Extent of LNAPL at Monitoring Well TF-3,” shows the approximate area where the LNAPL existed at the TFA. Concentrations of BTEX in Monitoring Well TF-3 show an upward trend between 2005 and 2008 (see Table 1), and are likely a result of LNAPL partially dissolving into the groundwater at TF-3. Since 2008, sampling at TF-3 has not always been conducted on schedule due to the presence of LNAPL. Results from groundwater monitoring wells further along in the direction of groundwater flow of the TFA (along the south and eastern property lines) have consistently shown that there is no indication of migration of BTEX away from the TFA area and, therefore, off-site.

In the autumn of 2017, EPA requested that PPG install two temporary observation wells to the northwest of well TF-3 to confirm that no LNAPL existed in the area surrounding well TF-3. See Figure 3 for the locations of these two wells (OW-1 and OW-2). PPG monitored these wells for a 60-day period and observed no measurable LNAPL in either well. At the end of the 60-day monitoring period, PPG sampled both wells for VOCs and found no detectable concentration of VOCs (including BTEX). See the 2018 report “Observation Well Installation and Light Non-Aqueous Phase Liquid Monitoring” in the Administrative Record for additional information.

SECTION IV: SUMMARY OF RISK EVALUATION

Human Health Risk Evaluation

EPA has developed a cancer risk range that it deems acceptable to protect the public. Cancer risk is often expressed as the maximum number of new cases of cancer projected to occur in a population due to exposure to the cancer-causing substance over a 70-year lifetime. For example, a cancer risk of one in one million means that in a population of one million people, not more than one additional person would be expected to develop cancer because of the exposure to the substance causing that risk. EPA uses the acceptable exposure level, or “risk goal” defined within the National Contingency Plan (NCP) for site enforcement and cleanup decisions (40 CFR Part 300 et al.). The NCP defines the acceptable excess upper lifetime cancer risk as generally a range between 1×10^{-6} and 1×10^{-4} (one person in a million to one in ten thousand) for determining remediation goals. If the contaminants are noncancerous but could cause other health problems, then a hazard index quotient is used. The hazard index is the ratio of the concentration of a contaminant to the EPA Human Health Screening Value for the contaminant. To be acceptable to the EPA, the hazard index (HI) quotient for every contaminant must be less than one.

Risk assessments are typically conducted by identifying possible exposure pathways (for example, skin contact with soil, inhalation of vapors from groundwater inside a building, etc.) and possible receptor populations (for example, construction workers, indoor workers). Estimates for on-site time, time exposed to contaminated media, and various aspects of body composition are factored into a calculation of total cancer risk or hazard index.

PPG submitted a report to EPA entitled *Risk Evaluation of Tank Farm Area* on March 28, 2003. The risk evaluation was based on the residual and historical concentrations of constituents in soil and residual concentrations of constituents in groundwater present in the TFA. The risk evaluation was performed in 2003 because it was at the end of the AS/SVE system’s operation and asymptotic (steady and unchanging) removal rates were observed. Surface water was not evaluated, since there was no evidence or history of nearby streams being affected. Constituents

which exceeded relevant screening criteria for each possible exposure pathway were listed as COCs. Table 3 lists COCs for each exposure pathway considered in the risk evaluation report.

For exposure to constituents in soil, an industrial worker or a construction/utility worker may be exposed through incidental ingestion, inhalation, and dermal contact; additionally, an indoor worker may be exposed to vapors from constituents in the soil below a building. Each individual was identified as a potential receptor, and associated risks and hazards were calculated. For the TFA, carcinogenic and non-carcinogenic health risks from soil for these receptors were within acceptable EPA guidelines.

For exposure to constituents from groundwater, current and historical groundwater data for the monitoring wells along the eastern property boundary show that constituents in groundwater are not migrating off-site; therefore, risks due to off-site exposure were not calculated. However, based on the concentrations of chemicals found on-site, health risks were calculated from groundwater exposure for industrial workers and construction workers and found to be within the acceptable range. Risks to a potential future on-site indoor worker were evaluated for groundwater vapor inhalation. Risks to a potential future on-site construction worker were evaluated for groundwater dermal exposure. Potential exposures were within acceptable ranges for all individuals.

A groundwater fate and transport model was developed to address the potential for offsite migration of constituents in groundwater. The groundwater fate and transport model estimated that the maximum concentrations of benzene and ethylbenzene in groundwater at the property boundary would be 9.5 micrograms per liter ($\mu\text{g/L}$) and 33 $\mu\text{g/L}$, respectively. While the 9.5 $\mu\text{g/L}$ modeled concentration of benzene at the eastern property line is higher than the groundwater TCG for benzene (5 $\mu\text{g/L}$), actual historical groundwater results from samples collected from monitoring wells near the eastern property line (MW-10, MW-11, and MW-12) have not detected benzene at levels above the analytical detection limits, except for a single event in March 2009, where elevated benzene (160 $\mu\text{g/L}$) was detected at well MW-10. However, this well was re-sampled a month later and was non-detect for benzene. The spike of benzene at MW-10 was attributed to cross-contamination of field sampling equipment. The under-drain system appears to have prevented the off-site migration of constituents in groundwater while operating, and constituent concentrations in the source area have trended lower over time, further reducing the likelihood of future impacts exceeding TCGs at the property line.

The estimated incremental cancer risks for all receptors were one or two orders of magnitude below EPA's target risk range of 1×10^{-6} to 1×10^{-4} (one person in a million to one in ten thousand). At the PPG Facility, hazard indices for the evaluated receptors were below 1.0 (see Table 3 for specific values). The EPA considers non-carcinogenic hazard indices that are less

than one (1.0) to be an acceptable level of risk (a hazard index of less than 1.0 is considered to represent safe exposure for individual receptors). EPA approved the *Risk Evaluation of Tank Farm Area* report on March 9, 2004.

Ecological Risk Evaluation

PPG conducted an ecological risk assessment as part of their 1997 RFI. Since there was no evidence of any off-site migration of COCs, it was determined that no ecological risks were posed by the Facility to the unnamed creek east of the Facility or the Root River. Given that there are no significant habitats present at the Facility, it was also determined that there are no on-site ecological risks.

SECTION V: CORRECTIVE ACTION OBJECTIVES

The proposed final remedy and associated remedial goals are designed to protect human health and the environment by mitigating risk to current and potential future receptors. Below are the cleanup objectives, or Corrective Action Objectives (CAOs), for the affected media on and off-site.

Soil

Historical sampling data and sampling data from the *RFI Report* were evaluated to determine analytes to monitor during cleanup. WDNR Chapter 720 Soil Cleanup Standards were used to determine cleanup goals for soil in the TFA, which EPA found adequate and appropriate. Accordingly, soil target cleanup goals were established for xylenes, toluene, and ethylbenzene, given their prevalence relative to other contaminants in the soil, and recognizing that the other less-commonly detected compounds would be reduced along with these three targeted compounds. CAOs for soil are the TCGs (in milligrams per kilogram [mg/kg]) for each COC identified in Facility soils, referenced from the *CMS Report* and summarized below:

Constituent	Soil TCG (mg/kg)
Total Xylenes	4.1
Toluene	1.5
Ethylbenzene	2.9

CAOs for soil were reached at many points in the TFA; however, some residual xylene, toluene, and ethylbenzene remains adsorbed to soil based on confirmatory sampling conducted in January 2001 (after shutting down the SVE Interim Measure) and discussed in the *CMS Report*.

As discussed in the *Risk Evaluation of the Tank Farm Area*, and Section IV of this SB, restricting use of the land to industrial and commercial scenarios would reduce potential soil

exposures to acceptable risk levels. This is included in the Proposed Remedy discussed in Section VI of this SB.

Groundwater

EPA selects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the circumstances of the project. For facilities associated with aquifers that are either currently used for water supply or have the potential to be used for water supply, EPA will require the groundwater be remediated to National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs) promulgated pursuant to 42 USC §§ 300f *et seq.* of the Safe Drinking Water Act and codified at 40 CFR Part 141, or to EPA Regional Screening Levels for tap water for chemicals for which there are no applicable MCLs. Given that groundwater at the Facility is not currently used, and the Oak Creek area’s drinking water is sourced from Lake Michigan, the target cleanup goals (TCGs) for groundwater at the Facility are conservative and protective. The TCGs, based on federal MCLs, are discussed in the *CMS Report* and provided below:

Constituent	TCG (µg/L)
Benzene	5
Ethylbenzene	700
Toluene	1,000
Total Xylenes	10,000
Styrene	100
Methylene Chloride	5
1,1,2,2-Tetrachloroethane	0.5
Tetrachloroethylene	5

Historical groundwater data at the Facility shows that TCGs for groundwater have been attained, excepting the area of LNAPL present around monitoring well TF-3.

Recent groundwater monitoring shows elevated arsenic, as discussed in Section III of this SB. PPG has historically not monitored groundwater for arsenic due to it not being included as a COC in the RFI, so current arsenic data is limited to the 2016 groundwater monitoring event.

A potential explanation for the elevated arsenic in the groundwater surrounding well TF-3 is the chemical environment. The oxidation-reduction potential (also known as “redox potential” or ORP) is a measure of the likelihood for electrons to transfer between constituents in the water and change their properties. The redox potential measured at the wells with elevated arsenic was negative during the 2016 monitoring event, while it was positive at most of the other wells monitored. Negative ORP tends to increase the rate at which arsenic in soil dissolves into groundwater. The pH of the water (a measure of the level of acidity in the water) also effects

arsenic's solubility¹. Arsenic has been shown to be prevalent in shallow soils throughout Wisconsin², and well data suggests the pH and ORP are consistent with arsenic levels observed. To address this residual arsenic in groundwater above federal MCL levels, PPG will monitor for geochemical parameters during the Final Remedy, as discussed in Section VI of this SB.

SECTION VI: PROPOSED FINAL REMEDY

The goal of the Final Remedy is to achieve Corrective Action Objectives and TCGs, and ensure adequate future protection of human health and the environment.

Groundwater Monitoring

PPG shall continue to monitor groundwater in the TFA, using the same methods and sampling the same wells from the 2016 *Groundwater Sampling in Support of the Statement of Basis* report. PPG shall monitor the wells for metals and BTEX compounds. PPG shall also monitor pH, ORP, and additional geochemical parameters at the wells to assess the chemical environment and determine if geochemical conditions are causing the elevated arsenic in the wells surrounding TF-3. PPG shall concurrently monitor the level of LNAPL at monitoring well TF-3 and at any surrounding wells where LNAPL may be detected. PPG will monitor LNAPL layer thickness and remove any LNAPL in the well using a bailer, absorbent sock, or similar method.

The purpose of the monitoring is to confirm that the remaining LNAPL present, and arsenic levels which exceed the federal MCL standard of 10 µg/L, are confined to the area immediately surrounding well TF-3, and that there is no migration of this residual contamination toward the Facility boundaries. PPG shall conduct this monitoring on a quarterly basis (every 3 months) for a two-year period. After two years EPA and PPG will evaluate the monitoring data to determine if additional actions are necessary. If no migration of contamination is found beyond current extents, the ICs in place at the Facility will be considered to adequately address the remaining contamination and be protective of human health and the environment.

Institutional Controls

IC remedies restrict land or resource use at a site through legal instruments. ICs are distinct from engineered or constructed remedies. ICs prevent or minimize exposures to contamination or protect the integrity of a remedy by limiting land or resource use through means such as rules, regulations, building permit requirements, well-drilling prohibitions, and other types of ordinances. For an IC to become part of a remedy, there must be binding documentation such as

¹ Masscheleyn, P. (1991). Effect of redox potential and pH on arsenic speciation and solubility in a contaminated soil. *Environ. Sci. Technol.*, 25(8), 1414-1419.

² Stensvold, K. (2012). *Distribution and variation of arsenic in Wisconsin surface soils, with data on other trace elements: U.S. Geological Survey Scientific Investigations Report 2011-5202*. United States Geological Survey.

land-use restrictions in the property deed, local zoning restrictions, or rules restricting private wells (40 CFR Part 264.119).

Institutional controls proposed for the PPG Facility will include a notation on the Facility deed 1) restricting current and future use of Facility land to industrial and commercial usages, and 2) preventing use of groundwater at the Facility. The land use restriction will restrict any future use of the Facility land to industrial use. If ever the Facility land is considered for unlimited (*e.g.* residential) use, the EPA must be notified and additional remediation measures must be taken (workers on commercial and industrial property are typically exposed to Facility soils and groundwater for shorter durations and less often than people in residences, and therefore a higher level of residual contamination is acceptable and within EPA risk limits). The groundwater use restriction has a similar goal of preventing exposure of site workers to the residual LNAPL and arsenic present around well TF-3 at the TFA.

SECTION VII. PUBLIC PARTICIPATION AND INFORMATION REPOSITORY

EPA requests feedback from the community on the proposed Final Remedy for the Facility. On August 31, 2018, EPA placed an announcement, both in the Racine Journal Times and online at <https://www.epa.gov/publicnotices/ppg-industries-public-comment-period>, to notify the public of the availability of this Statement of Basis document and its supporting Administrative Record. The public comment period will last sixty (60) calendar days from the date of the public notification in the Racine Journal Times, from August 31, 2018 to October 31, 2018. We encourage community members to submit any comments regarding the proposed remedy in writing by October 31, 2018. EPA will also host a public meeting at the Oak Creek Public Library on October 2, 2018, to receive feedback directly from the public. Send comments to EPA in writing at the EPA address below. To submit comments or to request a public meeting, contact EPA Project Manager Zachary Sasnow (see contact information below).

Following the 60-day public comment period, EPA will prepare a Final Decision and Response to Comments (FD/RC) document that will identify the selected remedy for the Facility. The Response to Comments document will address all significant written comments and any significant oral comments generated at a public meeting, if a meeting is held. Comments will be considered in creating the FD/RC document and the document may reflect new information leading to an altered remedy. EPA will make the FD/RC document available to the public. If comments or other relevant information would cause EPA to propose **significant changes** to the currently proposed remedy, EPA will seek additional public comments on any proposed revised remedy.

The Administrative Record contains all information considered when making this proposal. The Administrative Record (documents about the site) may be reviewed online at <https://www.epa.gov/publicnotices/ppg-industries-public-comment-period>, and at these locations (please call for hours):

Oak Creek Public Library 8040 S. 6th Street Oak Creek, WI 53154 414-766-7900 http://www.oakcreeklibrary.org/	EPA Region 5 Office EPA Records Center 77 W. Jackson Blvd., 7th Floor Chicago, IL, 60604 (312) 886-4253
--	---

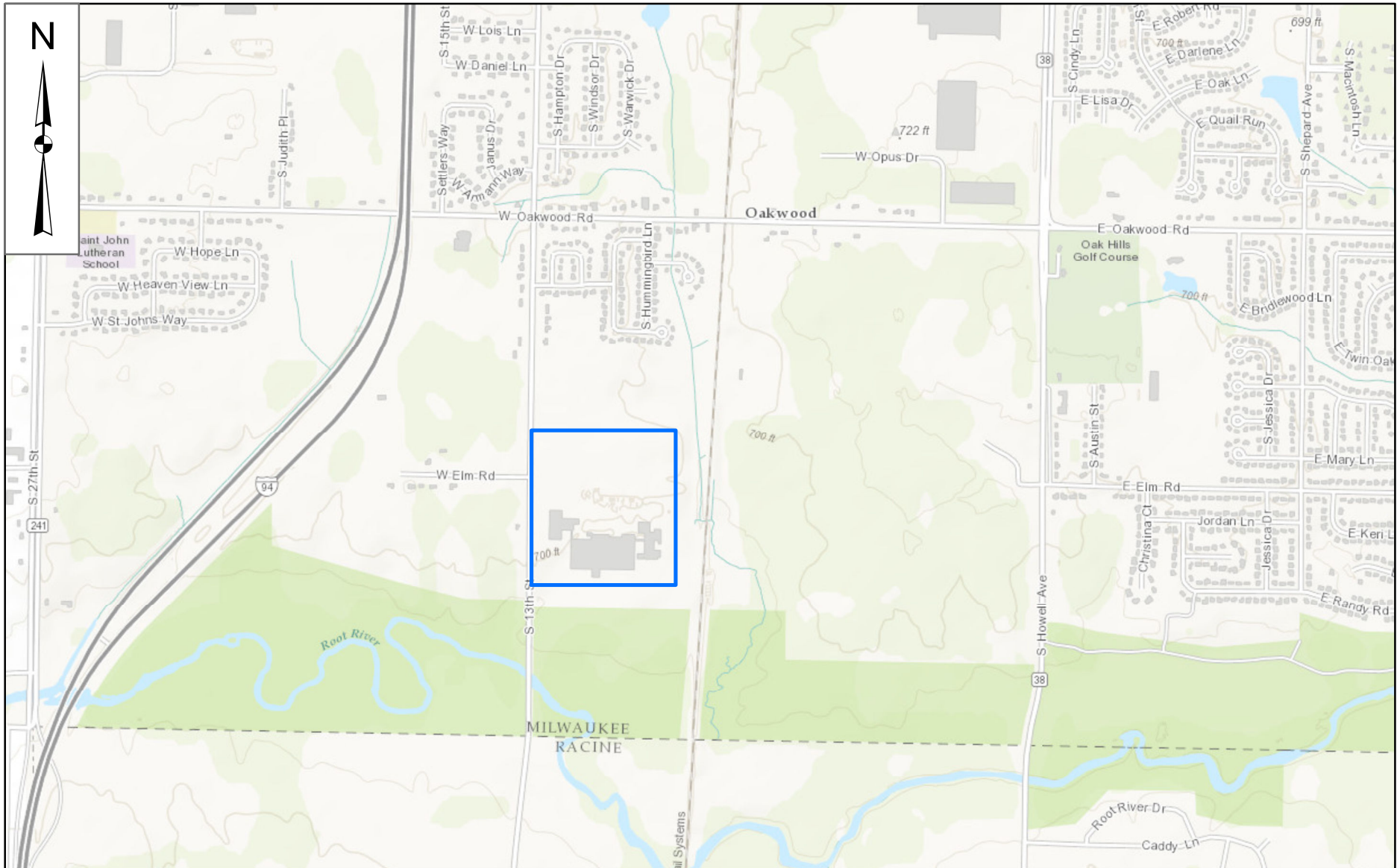
The Response to Comments and Final Decision document will become part of the EPA Administrative Record. To send written comments or obtain further information, contact:

Zachary Sasnow
Mail Code LU-16J
77 W. Jackson Blvd
Chicago, IL 60604
(312) 886-0258
sasnow.zachary@epa.gov

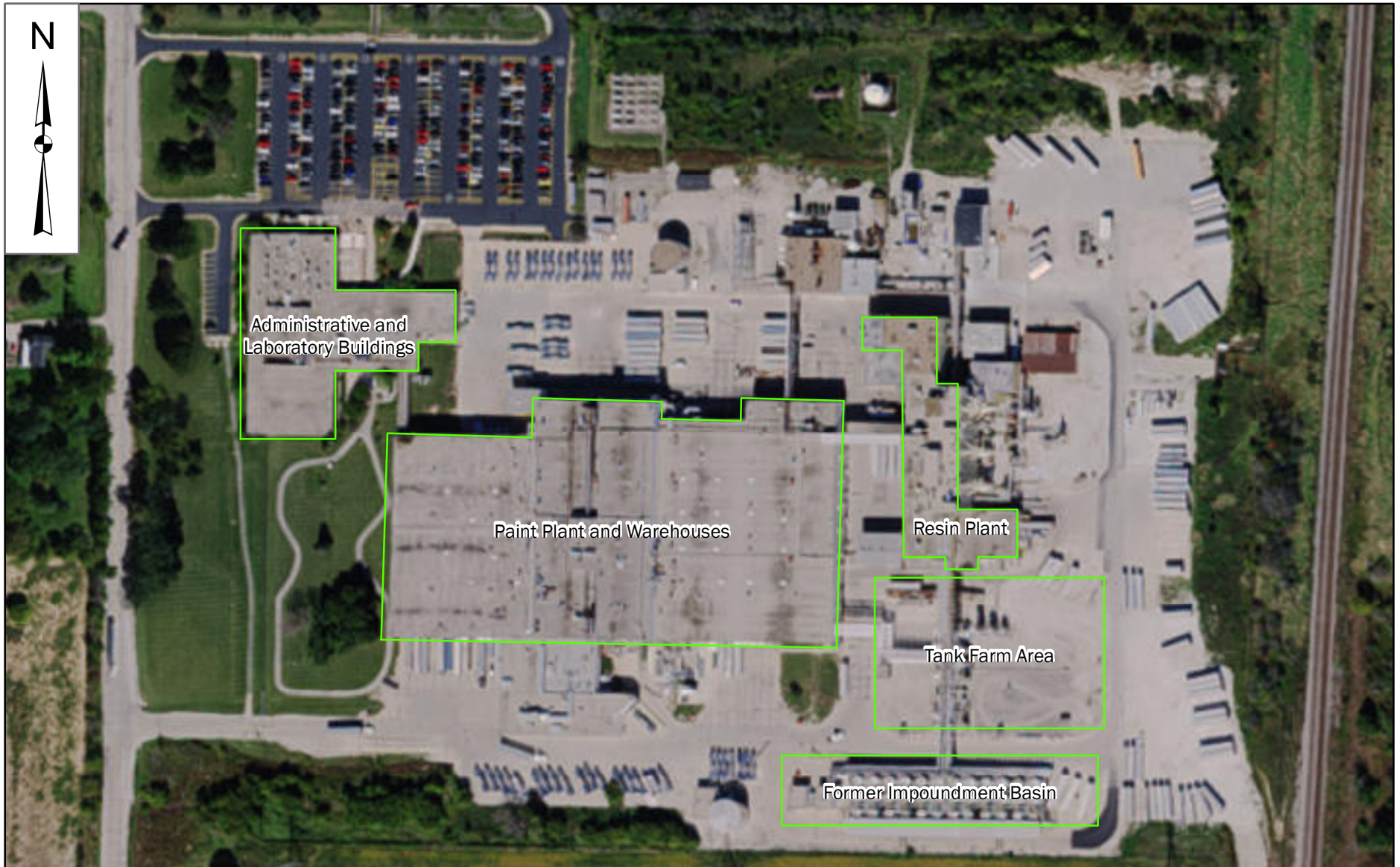
ATTACHMENT 1: FIGURES

**Statement of Basis for
PPG Industries**
10800 South 13th Street
Oak Creek, Wisconsin
EPA ID: WID 059972935

PPG Oak Creek - Figure 1 - Site Location





PPG Oak Creek - Figure 2 - Site Map

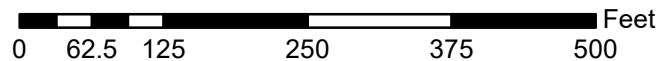


PPG Oak Creek - Figure 3 - Estimated Extent of LNAPL



Legend

-  Monitoring Well
-  Estimated Extent of LNAPL



ATTACHMENT 2: TABLES

**Statement of Basis for
PPG Industries**
10800 South 13th Street
Oak Creek, Wisconsin
EPA ID: WID 059972935

Table 1. Summary of BTEX in Groundwater at the TFA Post-Interim Measure

Federal MCL (µg/L)		Constituent (µg/L)				Federal MCL (µg/L)		Constituent (µg/L)				
		5	700	1,000	10,000			5	700	1,000	10,000	
Monitoring Well ³	Sampling Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes ¹	Monitoring Well ³	Sampling Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes ¹	
LW-2	7/26/2004	5 ND	5 ND	5 ND	5 ND	MW-12	7/26/2004	5 ND	5 ND	5 ND	5 ND	
	1/31/2005	5 ND	5 ND	5 ND	5 ND		1/31/2005	5 ND	5 ND	5 ND	5 ND	
	7/5/2005	5 ND	5 ND	5 ND	5 ND		7/5/2005	5 ND	5 ND	5 ND	5 ND	
	1/23/2006	0.4 ND	5 ND	5 ND	5 ND		1/23/2006	0.4 ND	5 ND	5 ND	5 ND	
	7/26/2006	0.4 ND	0.4 J	5 ND	5 ND		7/26/2006	0.4 ND	5 ND	5 ND	5 ND	
	11/16/2006	0.4 ND	0.39 J	0.36 J	0.36 J		11/16/2006	0.4 ND	5 ND	5 ND	5 ND	
	2/21/2007	0.4 ND	5 ND	5 ND	5 ND		2/21/2007	0.4 ND	5 ND	5 ND	5 ND	
	7/18/2007	0.4 ND	5 ND	5 ND	5 ND		7/18/2007	0.4 ND	5 ND	5 ND	5 ND	
	9/25/2007	0.4 ND	5 ND	5 ND	5 ND		9/25/2007	0.4 ND	5 ND	5 ND	5 ND	
	12/13/2007	0.4 ND	0.33 J	5 ND	5 ND		12/13/2007	0.4 ND	5 ND	0.26 J	0.84 J	
	3/27/2008	0.4 ND	5 ND	0.78 J	0.78 J		3/27/2008	0.4 ND	5 ND	0.57 J	5 ND	
	6/26/2008	0.4 ND	5 ND	5 ND	5 ND		6/26/2008	0.4 ND	5 ND	5 ND	5 ND	
	9/24/2008	0.4 ND	5 ND	5 ND	5 ND		9/24/2008	0.4 ND	5 ND	5 ND	5 ND	
	3/27/2009	0.4 ND	5 ND	5 ND	5 ND		3/27/2009	0.23 J	5 ND	5 ND	5 ND	
	9/23/2009	0.4 ND	5 ND	5 ND	5 ND		4/30/2009	0.4 ND	5 ND	5 ND	5 ND	
	3/10/2010	0.4 ND	5 ND	5 ND	5 ND		9/23/2009	0.4 ND	5 ND	5 ND	5 ND	
9/14/2010	0.4 ND	5 ND	5 ND	5 ND	3/10/2010	0.4 ND	5 ND	5 ND	5 ND			
3/25/2011	0.4 ND	5 ND	5 ND	5 ND	9/14/2010	0.4 ND	5 ND	5 ND	5 ND			
9/20/2011	0.4 ND	5 ND	5 ND	5 ND	3/25/2011	0.4 ND	5 ND	5 ND	5 ND			
9/20/2011	0.4 ND	5 ND	5 ND	5 ND	9/20/2011	0.4 ND	5 ND	5 ND	5 ND			
LW-3	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND	MW-13	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND	
LW-5	7/26/2004	0.49	99.7	5 ND	6.27	MW-14	7/18/2007	0.4 ND	5 ND	5 ND	5 ND	
	1/31/2005	0.54	36.8	5 ND	0.878		9/25/2007	0.4 ND	5 ND	5 ND	5 ND	
	7/5/2005	0.314	13.8	5 ND	1.52		12/13/2007	0.4 ND	5 ND	5 ND	5 ND	
	1/23/2006	0.39	0.51	5 ND	5 ND		3/27/2008	0.4 ND	5 ND	0.61 J	5 ND	
	7/26/2006	0.39 J	1.9 J	0.33 J	1.1 J		6/26/2008	0.4 ND	5 ND	0.8 J	5 ND	
	11/16/2006	0.36 J	66	5 ND	7.6		9/24/2008	0.4 ND	5 ND	5 ND	5 ND	
	2/21/2007	0.23 J	120	5 ND	5.7		3/27/2009	0.29 J	5 ND	5 ND	5 ND	
	7/18/2007	0.13 J	5.3	5 ND	2 J		4/30/2009	2.1	5 ND	5 ND	5 ND	
	9/25/2007	0.26 J	3.4 J	5 ND	0.87 J		9/23/2009	0.4 ND	5 ND	5 ND	5 ND	
	12/13/2007	0.23 J	2.1 J	0.29 J	0.91 J		3/10/2010	0.4 ND	5 ND	5 ND	5 ND	
	3/27/2008	0.4 ND	0.27 J	0.47 J	0.89 J		9/14/2010	0.4 ND	5 ND	5 ND	5 ND	
	6/26/2008	0.4 ND	1.1 J	5 ND	5 ND		3/25/2011	NS	NS	NS	NS	
	9/24/2008	0.4 ND	0.4 J	5 ND	5 ND		9/20/2011	0.4 ND	5 ND	5 ND	5 ND	
	3/27/2009	0.15 J	0.31 J	5 ND	0.8 J		10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND	
	9/23/2009	0.13 J	5 ND	5 ND	5 ND		MW-16R	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND
	3/10/2010	0.4 ND	5 ND	5 ND	5 ND		TF-1	7/26/2004	0.37	5 ND	5 ND	5 ND
9/14/2010	0.3 J	0.91 J	5 ND	5 ND	1/31/2005	5 ND		5 ND	5 ND	5 ND		
3/25/2011	0.4 ND	5 ND	5 ND	5 ND	7/5/2005	5 ND		5 ND	5 ND	5 ND		
9/20/2011	0.54	1.1 J	5 ND	2.2 J	1/23/2006	0.4 ND		5 ND	5 ND	5 ND		
10/6/2016	1.2 ND	1.2 ND	1.2 ND	3 ND	7/26/2006	0.4 ND		1.3 J	5 ND	4.3 J		
LW-6	7/26/2004	5 ND	5 ND	5 ND	5 ND	11/16/2006		3.8	39	3 J	16	
	1/31/2005	5 ND	5 ND	5 ND	5 ND	2/21/2007		5.9	750	0.85 J	58	
	7/5/2005	5 ND	5 ND	5 ND	5 ND	7/18/2007		2.4	220	6.7 J	110	
	1/23/2006	0.4 ND	5 ND	5 ND	5 ND	9/25/2007		0.9	23	0.56 J	9.5	
	7/26/2006	0.4 ND	5 ND	0.36 J	0.67 J	12/13/2007		2.1	180	0.91 J	120	
	11/16/2006	0.4 ND	0.5 J	5 ND	0.84 J	3/27/2008		2.3	95	1.1 J	53	
	2/21/2007	0.4 ND	5 ND	5 ND	5 ND	6/26/2008		1.6	6.3	0.99 J	10	
	7/18/2007	0.4 ND	5 ND	5 ND	5 ND	9/24/2008		1.8	1.7 J	5 ND	3.6 J	
	9/25/2007	0.4 ND	0.31 J	5 ND	0.65 J	3/27/2009		3.1	9.3	0.7 J	11	
	12/13/2007	0.4 ND	5 ND	0.33 J	0.51 J	9/23/2009		3	5.9	1.9 J	17	
	3/27/2008	0.4 ND	5 ND	5 ND	0.66 J	3/10/2010		5.5	29	1.1 J	19	
	6/26/2008	0.4 ND	5 ND	5 ND	5 ND	9/14/2010	3.4	0.75 J	5 ND	5 ND		
	9/24/2008	0.4 ND	5 ND	5 ND	5 ND	3/25/2011	1.5	13	2.2 J	5.5		
	3/27/2009	0.4 ND	5 ND	5 ND	0.59 J	9/20/2011	1.7	5 ND	5 ND	5 ND		
	9/23/2009	0.4 ND	0.38 J	5 ND	0.81 J	10/6/2016	0.5 ND	0.5 ND	0.5 ND	0.5 ND		
	3/10/2010	0.4 ND	5 ND	5 ND	5 ND	10/6/2016	0.5 ND	0.5 ND	0.5 ND	0.5 ND		
9/14/2010	0.4 ND	5 ND	5 ND	5 ND								
3/25/2011	0.4 ND	5 ND	5 ND	5 ND								
9/20/2011	0.4 ND	5 ND	5 ND	5 ND								

Table 1. Summary of BTEX in Groundwater at the TFA Post-Interim Measure

Federal MCL (µg/L)		Constituent (µg/L)				Federal MCL (µg/L)		Constituent (µg/L)			
		5	700	1,000	10,000			5	700	1,000	10,000
Monitoring Well ³	Sampling Date	Benzene	Ethylbenzene	Toluene	Total Xylenes ¹	Monitoring Well ³	Sampling Date	Benzene	Ethylbenzene	Toluene	Total Xylenes ¹
MW-9R	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND		7/26/2004	0.876	647	5 ND	2160
	7/26/2006	0.4 ND	5 ND	5 ND	0.64		1/31/2005	0.589	74	5 ND	5 ND
	11/16/2006	0.4 ND	5 ND	5 ND	5 ND		7/5/2005	0.805	1.45	5 ND	5 ND
	2/21/2007	0.4 ND	5 ND	5 ND	5 ND		1/23/2006	0.95	37	5 ND	0.58
	7/18/2007	0.4 ND	5 ND	5 ND	5 ND		7/26/2006	0.61	44	5 ND	95
	9/25/2007	0.4 ND	5 ND	5 ND	5 ND		11/16/2006	0.45	1100	0.41 J	89
	12/13/2007	0.4 ND	5 ND	0.65 J	3.9 J		2/21/2007	2 ND	340	25 ND	700
	3/27/2008	0.4 ND	5 ND	5 ND	5 ND		7/18/2007	2 ND	350	25 ND	2700
	6/26/2008	0.4 ND	5 ND	0.83 J	5 ND		9/25/2007	4 ND	88	50 ND	1100
MW-10 ²	9/24/2008	0.4 ND	5 ND	5 ND	5 ND	TF-2	12/13/2007	0.81	79	0.5 J	210
	3/27/2009	160	1.6 J	15	3 J		3/27/2008	2.1	880	5.2	2600
	4/30/2009	0.18 J	5 ND	5 ND	5 ND		6/26/2008	2.2	500 J	2.9 J	3900
	9/23/2009	0.4 ND	5 ND	5 ND	5 ND		9/24/2008	1.9 J	300	50 ND	1700
	3/10/2010	0.4 ND	5 ND	5 ND	5 ND		3/27/2009	4.7	800	3 J	3400
	9/14/2010	0.4 ND	5 ND	5 ND	5 ND		9/23/2009	5.5	170	1 J	250
	3/25/2011	0.4 ND	5 ND	5 ND	5 ND		3/10/2010	2.9	85	5 ND	200
	9/20/2011	NS	NS	NS	NS		9/14/2010	0.8	30	0.34 J	120
	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND		3/25/2011	0.33 J	130	2.6	1000
	7/26/2004	5 ND	5 ND	5 ND	5 ND		9/20/2011	1.4	28	10 ND	420
	1/31/2005	5 ND	5 ND	5 ND	5 ND		10/6/2016	0.5 ND	0.5 ND	0.5 ND	2 J
	7/5/2005	5 ND	5 ND	5 ND	5 ND		10/6/2016	0.5 ND	0.5 ND	0.5 ND	2 J
	1/23/2006	0.4 ND	5 ND	5 ND	5 ND		7/26/2004	2.39	207	190	2190
	7/26/2006	0.4 ND	5 ND	5 ND	5 ND		1/31/2005	4.62	178	256	3890
	11/16/2006	0.4 ND	5 ND	5 ND	5 ND		7/5/2005	6.13	227	384	3680
	2/21/2007	0.4 ND	5 ND	5 ND	5 ND		1/23/2006	1.6	99	32	570
	7/18/2007	0.4 ND	5 ND	5 ND	5 ND		7/26/2006	6.1	600	920	5100
	9/25/2007	0.4 ND	5 ND	5 ND	5 ND		11/16/2006	7.3	1200	290	5500
	12/13/2007	0.4 ND	5 ND	5 ND	5 ND		2/21/2007	27	1900	1500	11000
MW-11 ²	3/27/2008	0.4 ND	5 ND	0.67 J	5 ND	TF-3	7/18/2007	51	4100	9000	45000
	6/26/2008	0.4 ND	5 ND	5 ND	5 ND		9/25/2007	57 J	3400	5100	28000
	9/24/2008	0.4 ND	5 ND	5 ND	5 ND		12/13/2007	38 J	2800	1900	15000
	3/27/2009	0.4	5 ND	5 ND	5 ND		3/27/2008	45 J	3400	6800	32000
	4/30/2009	0.4 ND	5 ND	5 ND	5 ND		6/26/2008	88	6300	15000	78000
	9/23/2009	0.4 ND	5 ND	5 ND	5 ND		9/24/2008	NS	NS	NS	NS
	3/10/2010	NS	NS	NS	NS		3/27/2009	NS	NS	NS	NS
	9/14/2010	0.4 ND	5 ND	5 ND	5 ND		9/23/2009	NS	NS	NS	NS
	3/25/2011	0.4 ND	5 ND	5 ND	5 ND		3/10/2010	200 ND	2300 J	4200	21000
	9/20/2011	0.4 ND	5 ND	5 ND	5 ND		9/14/2010	26 J	2200	2400	15000
	10/5/2016	0.5 ND	0.5 ND	0.5 ND	1 ND		3/25/2011	NS	NS	NS	NS
							9/20/2011	NS	NS	NS	NS
						TF-4	10/6/2016	0.5 ND	0.5 ND	0.5 ND	1 ND

Notes:

Bolded values are values exceeding the Federal MCL standard, provided at the top of each page.

BTEX - Benzene, Toluene, Ethylbenzene, Xylene

TFA - Tank Farm Area

MCL - Maximum Contaminant Level

µg/L - micrograms per liter

J - Estimated value. The laboratory applies this qualifier when there is a potential for instrument interference to affect the instrument reading.

ND - Not Detected. The number given next to this qualifier is the minimum possible concentration the laboratory is capable of detecting.

NS - Not Sampled.

¹ - Samples collected in October 2016 were collected for two separate groups of xylenes - ortho (o-) xylenes and meta & para (m&p-) xylenes. All previous samples collected were analyzed for total xylenes, the sum of o-xylenes and m&p-xylenes. 2016 results were combined to give a total xylene value presented here.

² - Wells MW-10 and MW-11 were abandoned, and new wells MW-10R and MW-11R were installed near the abandoned wells, in October 2016. Groundwater data for MW-10/MW-10R and MW-11/MW-11R are combined as presented on this table.

³ - Please see Figure 3 for monitoring well locations in the TFA.

Table 2. Summary of LNAPL Thickness and Removal at Well TF-3

Date	Depth to Groundwater (feet)	LNAPL Thickness above Groundwater (feet)	Approximate Volume of LNAPL Removed (gallons)	Date	Depth to Groundwater (feet)	LNAPL Thickness above Groundwater (feet)	Approximate Volume of LNAPL Removed (gallons)
3/13/2009	10.19	0.04	10.00	4/22/2010	10.79	0.33	3.00
3/16/2009	10.43	0.18	10.00	4/30/2010	10.57	0.17	2.00
3/23/2009	10.80	0.40	10.00	5/5/2010	10.70	0.12	0.00
3/27/2009	10.70	0.15	8.00	5/18/2010	10.22	0.07	0.00
4/3/2009	10.28	0.18	7.00	5/27/2010	10.86	0.38	2.00
4/15/2009	11.08	0.54	8.00	6/9/2010	9.55	0.08	0.00
4/17/2009	10.75	0.09	8.00	6/17/2010	10.71	0.34	3.00
4/21/2009	9.80	0.00	0.00	7/14/2010	10.80	0.50	2.00
4/26/2009	8.87	0.01	8.00	7/29/2010	10.36	0.41	3.00
5/6/2009	10.99	0.77	8.00	8/13/2010	11.04	0.85	3.00
5/11/2009	10.48	0.23	8.00	8/26/2010	10.66	0.21	2.00
5/20/2009	10.63	0.22	8.00	9/8/2010	10.53	0.08	0.00
5/28/2009	10.15	0.15	8.00	9/14/2010	10.38	0.02	0.00
6/4/2009	10.76	0.16	8.00	9/16/2010	10.48	0.02	0.00
6/10/2009	9.80	0.02	8.00	9/29/2010	10.16	0.10	0.00
6/18/2009	10.40	0.09	8.00	10/14/2010	10.96	0.11	0.00
6/25/2009	10.09	0.11	0.00	10/28/2010	10.33	0.01	0.00
7/7/2009	11.00	0.48	5.00	11/11/2010	10.92	0.02	0.00
7/17/2009	10.56	0.36	4.00	11/23/2010	9.90	0.00	0.00
7/23/2009	10.73	0.07	0.00	12/10/2010	10.85	0.00	0.00
7/30/2009	10.84	0.08	0.00	12/29/2010	10.85	0.00	0.00
8/6/2009	11.05	0.22	4.00	1/12/2011	11.02	0.09	0.00
8/13/2009	9.96	0.01	0.00	1/28/2011	10.94	0.09	0.00
8/20/2009	9.19	0.10	0.00	2/17/2011	9.64	0.00	0.00
8/27/2009	8.21	0.02	0.00	2/24/2011	10.23	0.06	0.00
9/3/2009	9.48	0.03	0.00	3/7/2011	9.78	0.20	0.00
9/16/2009	10.30	0.32	4.00	3/14/2011	10.22	0.53	2.00
9/23/2009	9.20	0.00	0.00	3/25/2011	9.80	0.07	3.00
10/8/2009	8.93	0.01	0.00	4/7/2011	10.16	0.00	0.00
10/15/2009	9.11	0.01	0.00	4/21/2011	10.00	0.14	0.00
10/22/2009	8.33	0.01	0.00	5/5/2011	11.15	1.01	0.00
10/29/2009	7.71	0.00	0.00	5/13/2011	11.25	0.95	3.00
11/13/2009	7.80	0.00	0.00	5/27/2011	10.00	0.10	0.00
11/19/2009	7.45	0.00	0.00	6/1/2011	10.60	0.25	0.00
12/3/2009	8.92	0.01	0.00	6/10/2011	10.30	0.40	0.00
12/11/2009	8.16	0.01	0.00	6/20/2011	11.30	0.80	4.00
12/17/2009	9.18	0.03	0.00	7/6/2011	10.75	0.25	0.00
1/7/2010	8.93	0.03	0.00	7/15/2011	10.75	0.30	0.00
1/15/2010	9.20	0.08	0.00	7/22/2011	8.60	0.05	0.00
1/21/2010	9.55	0.15	0.00	8/2/2011	10.35	0.10	0.00
2/2/2010	9.06	0.01	0.00	8/10/2011	10.60	0.10	0.00
2/11/2010	9.20	0.06	0.00	8/15/2011	10.80	0.30	0.00
2/25/2010	8.81	0.06	0.00	8/23/2011	10.85	0.25	0.00
3/4/2010	9.09	0.09	2.00	9/1/2011	10.65	0.05	0.00
10/3/2010	6.85	0.00	0.00	9/8/2011	10.75	0.10	0.00
3/19/2010	7.94	0.01	0.00	9/16/2011	10.90	0.10	0.00
3/31/2010	9.20	0.10	0.00	9/20/2011	10.85	0.27	5.00
4/9/2010	7.29	0.03	0.00	10/5/2016	7.66	0.07	0.00
4/15/2010	8.58	0.04	0.00	10/17/2016	7.41	0.00	0.00

Notes:

LNAPL - Light Non-Aqueous Phase Liquid

Table 3. Summary of COCs and Risk Values from 2003 Risk Assessment

Constituents of Concern (COCs)	Hazard Index (HI)			Cancer Risk	
	Industrial/ Maintenance Worker	Construction Worker	Indoor Worker	Construction Worker	Indoor Worker
Soil Ingestion Pathway					
Ethylbenzene	0.000000130	0.000000940			
Toluene	0.000000025	0.000000140			
Xylenes	0.000000051	0.000000610			
Dermal Soil Contact Pathway					
Ethylbenzene	0.0000000110	0.000000082			
Toluene	0.0000000021	0.0000000012			
Xylenes	0.0000000043	0.0000000053			
Soil Vapor Inhalation Pathway					
Ethylbenzene			0.00011		
Toluene			0.00015		
Xylenes			0.00019		
Dermal Groundwater Contact Pathway					
Benzene		0.00860		0.00000002	
Ethylbenzene		0.24000			
Xylenes		0.00960			
1,2,4-Trimethylbenzene		0.00180			
Methyl Ethyl Ketone		0.00120			
4-Methyl-2-pentanone		0.05800			
Acetone		0.00045			
Naphthalene		0.00870			
Groundwater Vapor Inhalation Pathway					
Benzene					0.000000065
Ethylbenzene			0.076000		
Xylenes			0.000540		
1,2,4-Trimethylbenzene			0.002000		
Methyl Ethyl Ketone			0.000270		
4-Methyl-2-pentanone			0.018000		
Acetone			0.000032		
Naphthalene			0.000940		
Total Risks and Hazards:	0.0000002	0.3	0.1	0.00000002	0.00000007

ATTACHMENT 3: ADMINISTRATIVE RECORD INDEX

**Statement of Basis for
PPG Industries**
10800 South 13th Street
Oak Creek, Wisconsin
EPA ID: WID 059972935

Date:	To:	From:	Format:	Title:
1 December 10, 1985	EPA	PPG	Report	RCRA Part A and Part B Permit Application
2 September 1, 1992	EPA	PPG	Report	RCRA Facility Investigation: I. Description of Current Conditions and II. Pre-Investigative Evaluation of Corrective Measure Technologies
3 July 31, 1997	EPA	ICF Kaiser, Inc. on behalf of PPG	Report	RCRA Facility Investigation Report
4 November 24, 1999	EPA	IT Corporation on behalf of PPG	Report	Corrective Measures Study (CMS) Presumptive Remedy Implementation Report
5 March 28, 2003	EPA	Shaw Environmental & Infrastructure, Inc. on behalf of PPG	Report	Risk Evaluation of Tank Farm Area Final Report
6 March 31, 2006	EPA	Shaw Environmental & Infrastructure, Inc. on behalf of PPG	Report	Corrective Measures Implementation
7 February 5, 2007 – May 23, 2011	EPA	Shaw Environmental & Infrastructure, Inc. on behalf of PPG	Report	13 voluntary monitoring reports, submitted by Shaw to PPG during voluntary monitoring period (2007-2011)
8 December 21, 2016	EPA	CB&I Federal Services, Inc. on behalf of PPG	Report	Groundwater Sampling in Support of the Statement of Basis
9 February 1, 2018	EPA	APTIM Environmental, LLC on behalf of PPG	Report	Observation Well Installation and Light Non-Aqueous Phase Liquid Monitoring