

FIFTH FIVE-YEAR REVIEW REPORT
For
Moss-American Superfund Site
Milwaukee County, Wisconsin



Prepared by

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

12/11/2019

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LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
BTEX	Benzene, Toluene, Ethylbenzene, and/or Xylene(s)
CA	Cooperative Agreement
CAMU	Corrective Action Management Unit
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
COCs	Contaminants of Concern
Corps	U.S. Army Corps of Engineers
CPAH	Carcinogenic Polycyclic Aromatic Hydrocarbon(s)
ELCR	Excess Lifetime Cancer Risk
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-year Review
ICs	Institutional Controls
KMC	Kerr-McGee Chemical Corporation
LTTD	Low Temperature Thermal Desorption
LTS	Long-Term Stewardship
MCL	Maximum Contaminant Level
mg/kg	milligram per kilogram
NAPL	Non-aqueous Phase Liquid
NCP	National Contingency Plan
NPL	National Priorities List
NR	Wisconsin Natural Resources Rule Citation
O&M	Operation and Maintenance
PAH	Polycyclic Aromatic Hydrocarbon(s)
PALs	Preventive Action Limits
PCOR	Preliminary Closeout Report
ppb	part per billion
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RCL	Residual Contaminant Level
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RPM	Remedial Project Manager
RSE	Remedial System Evaluation
SDWA	Safe Drinking Water Act
Site	Moss-American Superfund Site
SWRAU	Sitewide Ready for Anticipated Use
TBC	To Be Considered
µg/L	microgram per liter
UU/UE	Unlimited Use/Unrestricted Exposure
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The United States Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

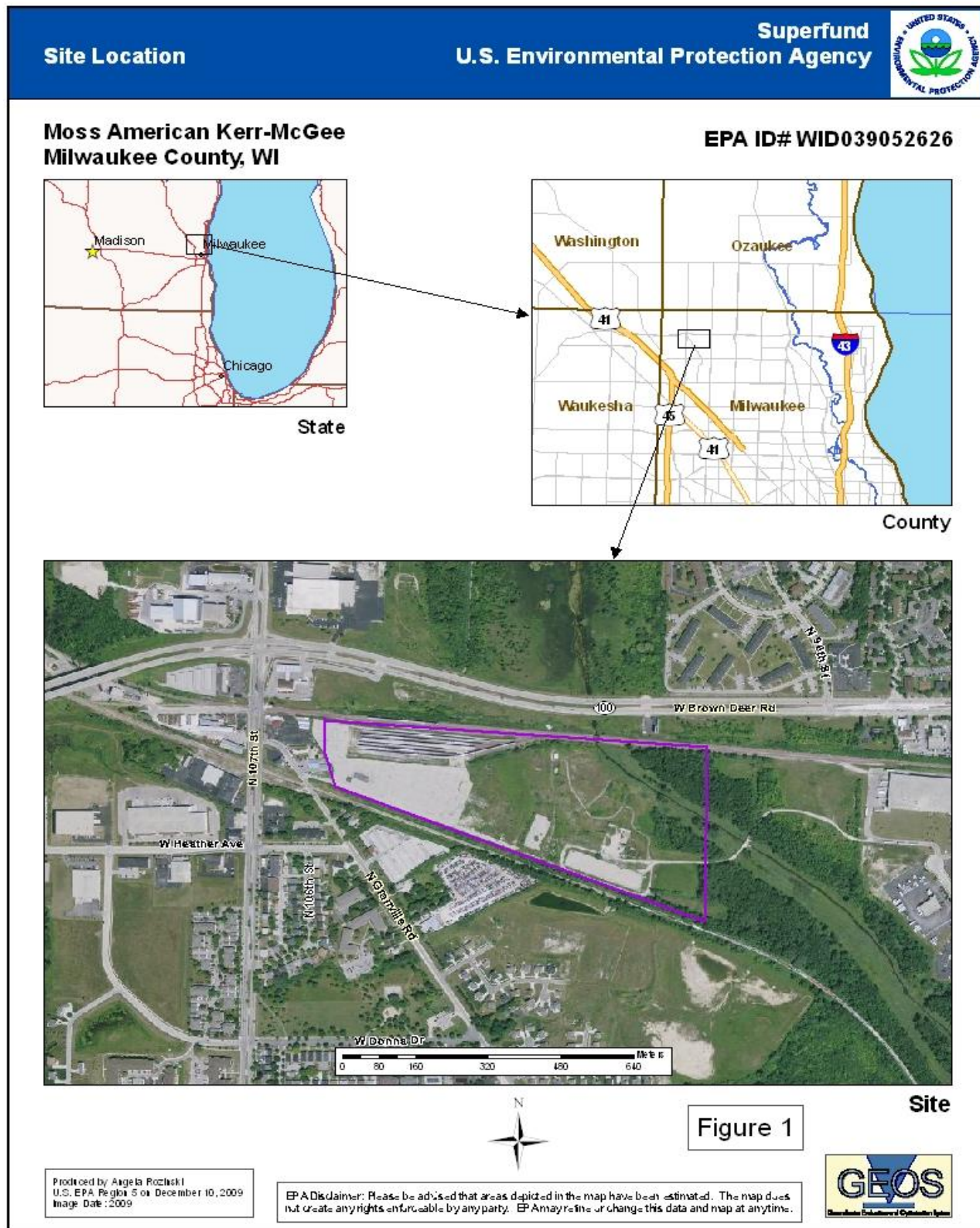
This is the fifth FYR for the Moss-American Superfund Site (“Site”). The triggering action for this policy review is the completion date of the previous FYR on March 18, 2015. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The Site consists of one operable unit (OU) which is addressed in this FYR.

The Moss-American Superfund Site FYR was led by EPA’s remedial project manager (RPM), Ross del Rosario. Participants included the Wisconsin Department of Natural Resources (WDNR) site manager and EPA’s community involvement coordinator (CIC). Tronox LLC f/k/a Kerr-McGee Chemical Corp. (Tronox), the site’s potentially responsible party (PRP), is no longer involved with the site, having declared bankruptcy in 2009. The government reached a settlement agreement with Tronox in its Chapter 11 bankruptcy proceeding in 2012. This review began on March 21, 2019, with EPA’s written notification to the State of its intent to begin the next FYR of the Site (see Attachment 1).

Site Background

The 88-acre Moss-American Site is located on 8716 N. Granville Road in the northwestern section of the City of Milwaukee, Wisconsin (see Figure 1) and encompasses a former wood-treating facility, plus several miles of the Little Menomonee River and its adjacent floodplain. It is bounded by the intersection of Brown Deer and Granville Roads on the west, and Brown Deer Road and 91st Street on the east. Twenty-three (23) acres are industrially-zoned and owned by the Union Pacific Railroad, which used the property as a loading and storage area. Milwaukee County (County) owns the remaining sixty-five (65) acres containing part of the former wood-treating facility, plus the parklands/floodplain corridor. The County’s part of the Site features recreational hiking and bicycle trails along the 5-mile stretch of the Little Menomonee River. The former wood-treating facility began operating in 1921 and was originally owned by the T.J. Moss Tie Company, which was then sold to Kerr-McGee Corporation (KMC) in 1963. Tronox, a spinoff of Kerr-McGee, assumed ownership in 2006. In 2009, Tronox declared Chapter 11 bankruptcy. The federal government subsequently obtained settlements that addressed the site in the Tronox bankruptcy case on February 14, 2012, and in the litigation with Anadarko Petroleum on January 21, 2015. In 1983, EPA proposed the Site for inclusion in the Superfund National Priorities List (NPL), and placed the Site on the NPL in September 1984. EPA issued a Record of Decision (ROD) on September 27, 1990, that called for 1) excavation and onsite treatment/disposal of highly contaminated soil, 2) removal and disposal of

Figure 1: Site Map



contaminated sediments from the river and diverting river flow into a new channel, 3) collecting and treating contaminated groundwater, and 4) fencing and institutional controls (ICs) to minimize dermal contact.

Five-year Review Summary Form

SITE IDENTIFICATION		
Site Name: Moss-American Superfund Site		
EPA ID: WID039052626		
Region: 5	State: WI	City/County: Milwaukee
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA <i>[If "Other Federal Agency", enter Agency name]:</i>		
Author name (Federal or State Project Manager): Ross del Rosario		
Author affiliation: EPA		
Review period: 3/21/2019 - 9/30/2019		
Date of site inspection: 3/28/2019		
Type of review: Policy		
Review number: 5		
Triggering action date: 3/18/2015		
Due date (five years after triggering action date): 3/18/2020		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

EPA conducted a baseline human health and ecological risk assessment as part of the remedial investigation effort for the Site. Major site contaminants fell into the chemical groups of polycyclic aromatic hydrocarbons or PAHs and BTEX (benzene, toluene, ethylbenzene, xylene) compounds. PAHs are a primary component of creosote blends and have been associated with lung, stomach, and skin cancers. As for the BTEX compounds, benzene has been associated with occurrences of leukemia, while toluene and xylenes appear to cause depression of the human central nervous system.

According to the risk assessment, EPA defined three exposure scenarios to describe potential human exposures for current site conditions and potential future uses. These were:

- Site trespass (Current)
- Recreational use of the river (Current)
- Residential development (Potential)

Site Trespass – Soil

Risks from direct contact/ingestion of contaminated soil associated with site trespass ranged from an excess lifetime cancer risk (ELCR) of 3×10^{-4} to 5×10^{-6} , with carcinogenic PAHs (CPAH) being the driving force on risk. Inhalation exposure had an ELCR less than 1×10^{-7} .

Recreational Use – River Sediment Exposure

Exposure to site sediments varied in each of the stream “segments” downstream from the former creosote processing area. The term “segment” denotes an area between major east-west highway bridges over the river at approximately one- to one and a quarter-mile intervals. Sediment exposure risks to humans were higher in segments 1, 2, and 3 - on the order of 1×10^{-4} ELCR due to CPAH exposure. In river segments 4 and 5, the ELCRs dropped to 5×10^{-5} and 3×10^{-5} , respectively. Based on human exposure alone, exposure to CPAHs in sediment presented an ELCR at the upper (1×10^{-4}) range of EPA’s acceptable risk range (1×10^{-6} to 1×10^{-4}). However, sediments also presented an unacceptable risk to aquatic habitat. While not viewed as an applicable or relevant and appropriate requirement (ARAR) at the time of the risk assessment, literature cited by WDNR indicated that 388 milligrams per kilogram (mg/kg) of CPAHs in sediment should be a “to be considered” (TBC) value for acceptable long-term aquatic habitat protection.

Residential Development – Soil

ELCRs associated with residential development ranged from 2×10^{-2} to 2×10^{-4} , with CPAHs being the main driving force.

Response Actions

Based on the results of the risk assessment in the remedial investigation/feasibility study (RI/FS) EPA conducted in 1985-1990, unacceptable risks in site soil and groundwater, along with sediments throughout the 5-mile stretch of the river, were documented. The following remedial action objectives (RAOs) were established in the RI/FS to mitigate these risks on a media-specific basis:

- **On-site soil:** Minimize threats to human health and the environment from on-site contaminants via direct contact, inhalation, or ingestion and to prevent further contaminant migration into the groundwater and subsequently to the river;
- **Contaminated sediment in the Little Menomonee River:** Minimize direct contact or ingestion of contaminants in sediment; minimize acute and chronic effects on aquatic life from contaminants; and minimize migration of contaminants downstream to the Menomonee River; and,

- **Groundwater:** Prevent release of contaminants through the surficial groundwater aquifer to the Little Menomonee River surface water or sediment and remove contaminants from groundwater such that concentrations do not exceed applicable State groundwater standards.

EPA selected a remedy for the Site in the September 27, 1990 ROD to address the unacceptable risks found at the Site and included the following components:

- Excavation of highly-contaminated soil with treatment in a bioslurry vessel;
- Disposal and cover of treated soil and lesser-contaminated soils on-site, with re-vegetation of the excavated areas;
- Fencing and ICs to minimize potential dermal contact (ICs, in the form of deed restrictions, were further addressed in a 1998 ROD Amendment);
- Removal and off-site disposal of highly-contaminated sediments from the Little Menomonee River, creating a new channel in the vicinity of the Little Menomonee River and then diverting flow into the new channel, and filling the dewatered existing channel with soils from the new channel excavation; and
- Collection and treatment of contaminated site groundwater, presumably using a biological treatment system.

Cleanup Goals:

Soil: Because no chemical-specific ARARs have been defined for CPAHs, EPA selected the concentration level that correlates to the 1×10^{-4} ELCR level (6.1 mg/kg) as the contaminant-specific goal for the soil cleanup goal.

Sediment: To meet the sediment RAOs, a new channel for the river will prevent contact with, or ingestion of, contaminated sediment by human or aquatic life. The target concentrations and volume of sediment removed in the old channel as part of the re-channelization efforts was also based on an ELCR level of 1×10^{-4} , corresponding to 388 mg/kg CPAHs in sediment. In addition, in areas where sediment was excavated in lieu of rerouting the river (mostly in the downstream portion of the river), sediments exceeding the calculated CPAH background level (15 mg/kg) would be removed.

Groundwater: EPA based groundwater cleanup levels for the COCs on preventative action levels (PALs) established in Wisc. Admin. Code Ch. NR 140. PALs were derived primarily to inform the regulatory agency of potential groundwater contamination problems and are applicable both to controlling new releases as well as to restoring groundwater quality contaminated by past releases of contaminants. Table 1 below lists the cleanup goals for Site COCs:

Table 1: Groundwater Cleanup Goals

Contaminant of Concern	Cleanup Concentration (parts per billion, ppb or micrograms per liter, ug/L)
Anthracene	600
Benzo(a)pyrene	0.02
Benzo(b)fluoranthene	0.02
Chrysene	0.02
Fluoranthene	80
Fluorene	80
Naphthalene	10
Pyrene	50
Benzene	0.067
Toluene	68.6
Ethylbenzene	272
Xylene	124

Amendments to the ROD

April 1997 ESD: In April 1997, EPA signed, with WDNR concurrence, an Explanation of Significant Differences (ESD) concerning the collection and treatment of contaminated groundwater at the Site. Predesign results indicated that, compared to groundwater management originally described in the ROD, a funnel and gate system could offer certain advantages. While exhibiting certain heterogeneity, soils at the Site generally were relatively fine-grained, resulting in slow groundwater movement. This allows adequate time for contaminant treatment as water is directed through a gate. Design information indicated that, once optimum nutrient/air dosages were established, groundwater contaminants at the Site could undergo effective aerobic degradation.

September 1998 ROD Amendment: EPA issued a ROD Amendment in September 1998 which changed the soil treatment technology from the bioslurry technology to low-temperature thermal desorption (LTTD). Pilot testing done by KMC indicated reasonably good soils treatment of the lighter PAH soil contaminants using the bioslurry technology, but saw reduced treatment efficiency for the larger PAH compounds. Thus, EPA determined that a change to LTTD from the bioslurry technology was appropriate. The 1998 ROD Amendment also incorporated more recently developed State cleanup standards for soil related contaminants. It allowed for non-residential direct contact cleanup exposure scenarios if appropriate deed restrictions were recorded.

In addition, the ROD Amendment withdrew a waiver of State liner/leachate provisions, but provided for a Corrective Action Management Unit (CAMU) under the Resource Conservation and Recovery Act (RCRA). Based on review of groundwater monitoring network analyses and related soils data, the ROD Amendment also added some additional COCs, such as naphthalene.

The ROD Amendment also addressed compliance with Wis. Admin. Code Ch. NR 700, requiring protection of groundwater from site contaminants that pose a threat as a source of groundwater contamination. The ROD Amendment provided for groundwater protection from residual contaminant levels (RCLs) in the soil where attainment of groundwater PALs was not being realized. It provided

groundwater protection component RCLs for naphthalene, fluorene, benzo(a)pyrene, toluene, xylene(s), ethylbenzene, and benzene. The ROD Amendment also provided for protection from soil contamination through direct contact under industrial exposure scenarios. Finally, the ROD Amendment considered floodplain portions that might be affected by soil remediation technology, as well as possible recreational use of portions of the Site.

2007 ESD: In November 2007, EPA issued an ESD acknowledging that rerouting of Reach 4/5 would not be necessary or efficient to achieve Site cleanup goals. Instead, EPA selected intermittent dredging of hot spot areas of contaminated sediments, along with off-site disposal of the contaminated sediments for Reach 4/5.

Status of Implementation

All response actions have been completed, including the remedy components prescribed in the ROD and the additional response action the State completed in 2018 and described below (see Attachment 2). In 1999, Kerr-McGee started work on constructing the remedy, pursuant to a 1996 Consent Decree (CD) with EPA and the State of Wisconsin. Tronox subsequently took over the remediation work when it assumed ownership of the site in 2006. Soil remediation, construction of the groundwater treatment system, and most of the sediment excavation/channel diversion work (covering approximately 4 out of 5 miles of river) were completed when Tronox filed for Chapter 11 bankruptcy in 2009. EPA took over the remaining sediment remediation work and completed it on November 19, 2009. EPA issued a preliminary close-out report (PCOR) on November 25, 2009, and declared the Site “site-wide ready for anticipated use” (SWRAU) on May 5, 2011.

Finally, as part of a cooperative agreement (CA) with EPA, the State conducted a response action in 2018 to remove remaining sources of groundwater contamination at the Site (i.e., NAPL in soil), which were preventing compliance with groundwater cleanup goals in the 1990 ROD. To accomplish this, the State implemented recommendations made in the 2011 Remediation System Evaluation (RSE) prepared by the U.S. Army Corps of Engineers for EPA. This involved excavation of over 7,000 tons of NAPL-contaminated soil and disposing those soils off-site. In addition, soil amendments in the form of oxidizing agents were added to promote enhanced biodegradation of remaining contaminants in the soil. This work was completed in July 2018. Finally, the State, in cooperation with EPA, is planning to conduct groundwater sampling to determine if groundwater cleanup goals have been met and other minor work (e.g., installing gates, removing invasive species, removing some sheet piles around the site) outlined in an amended work plan in the CA, with the work starting in late 2019 (see Attachment 3).

Institutional Controls

Table 2 below provides a summary of implemented ICs. As presented in the table, there are four (4) deed restrictions (proprietary controls) in place covering the former wood-treating facility (floodplain and non-floodplain) and the floodplain areas along the 5-mile stretch of the Little Menomonee River. In addition, a governmental control in the form of a city ordinance is in effect for some properties not covered by a deed restriction along the river floodplain. While the previous FYR determined that no additional ICs are needed and that they were enforceable under State law, it recommended that EPA conduct a title review and finalize the IC map, along with development of a long-term stewardship (LTS) Plan to ensure the remedy remains effective. EPA completed the title review in March 2018, and prepared a finalized IC map (see Attachment 4). EPA is currently reviewing a draft LTS plan for the Site (see Attachment 5).

Table 2: Summary of Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective(s)	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Former wood treating Site - floodplain portion (County-owned)	Prohibit 1) Excavating or grading of land surface 2) penetration of existing cap(s)/cover(s) 3) Filling on covered areas 4) Construction, installation, or removal of a building, pipe, road, or any structure with a foundation that would sit on the cover 5) Plowing for agricultural cultivation 6) Extraction of groundwater for consumption or any purpose other than monitoring 7) Any activity that may damage any constructed remedy or impair its effectiveness. Limited to recreational use only.	Title: <i>Declaration of Restrictions and Notice to Future Purchasers</i> . Recorded in Milwaukee County Register's Office on June 30, 2000. Reference No. 7931311. SEMS Doc ID: 351351
Soil	Yes	Yes	Former wood treating Site – Non-floodplain property (County-owned)	Prohibit non-industrial use. Prohibit 1) Excavating or grading of land surface 2) penetration of existing cap(s)/cover(s) 3) Filling on covered areas 4) Construction, installation, or removal of a building, pipe, road, or any structure with a foundation that would sit on the cover 5) Plowing for agricultural cultivation 6) Extraction of groundwater for consumption or any purpose other than monitoring 7) Any activity that may damage any constructed remedy or impair its effectiveness.	Title: <i>Declaration of Restrictions and Notice to Future Purchasers</i> . Recorded in Milwaukee County Register's Office on June 30, 2000. Reference No. 7931310. SEMS Doc ID: 351350

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective(s)	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Former wood treating site – Non-floodplain property owned by the railroad	Prohibit non-industrial use. Prohibit 1) Excavating or grading of land surface 2) penetration of existing cap(s)/cover(s) 3) Filling on covered areas 4) Construction, installation, or removal of a building, pipe, road, or any structure with a foundation that would sit on the cover 5) Plowing for agricultural cultivation 6) Extraction of groundwater for consumption or any purpose other than monitoring 7) Any activity that may damage any constructed remedy or impair its effectiveness. Limited to industrial use only.	Title: <i>Deed Restriction and Notice to Future Purchasers</i> . Recorded in Milwaukee County Register’s Office on July 26, 2000. Reference No. 8756 SEMS Doc ID: 351352
Soil	Yes	Yes	Floodplain downstream from former wood treating Site	Prohibit any installation, construction, or removal of structures around areas remediated during response action (i.e., areas rerouted). Prohibit use of area for any activity that may damage or impair the response action.	Title: <i>Amended Declaration of Restriction on Use of Real Property</i> . Recorded in Milwaukee County Register’s Office on June 30, 2000. Reference No. 7931309 SEMS Doc ID: 949372
Groundwater	Yes	Yes	Former wood treating Site	Prohibit consumption or other uses of groundwater. Note: No one in the area currently is using groundwater. Residents are connected to city water. According to the RI, the contaminated shallow groundwater does not have adequate capacity to be a drinking water source. Prohibit extraction of groundwater for consumption or any purpose other than groundwater monitoring or remediation.	Title: <i>Amended Declaration of Restriction on Use of Real Property</i> . Recorded in Milwaukee County Register’s Office on June 30, 2000. Reference No. 7931309. Also see Reference Nos. 791311 and 791310 above. SEMS Doc ID: 949372

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective(s)	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	Entire Site including the three privately-owned parcels downstream from the former wood treating site	Requires abandonment or permits for wells on parcels connected to the public water supply and connection of sold parcels adjacent to water main.	MILWAUKEE, WIS., CODE §§ 225-22, 225-23 and 225-39 SEMS Doc ID: 949371

Current Compliance: Based on the FYR inspection conducted on March 28, 2019, the Site 1) is in general good condition; 2) in compliance with present intended uses (i.e., industrial/commercial use in railroad property and non-floodplain portion of County land and recreational use along floodplain portion of County property and along the river); and 3) the work associated with the response action performed by the State appears to be completed.

Long-Term Stewardship: EPA and the State are working on an LTS plan for ICs to ensure the existing remedy remains effective. The State has drafted a draft LTS plan in September 2019, using model language provided by EPA (see Attachment 5). The draft LTS plan is currently under review and, upon approval by EPA, will be incorporated in the existing Operation and Maintenance (O&M) Plan for the Site.

System Operations/Operation & Maintenance

The State is implementing O&M activities, as required by the O&M Plan, which was modified in 2011 when the State took over O&M activities. Fence repair, periodic mowing, and conducting routine inspection of the site were conducted during this period. While recent groundwater data was not available for review during this period, groundwater sampling resumed in October 2019, with results available in early 2020. The groundwater data collected will be primarily to determine if groundwater cleanup goals have been met on a consistent basis.

III. PROGRESS SINCE THE LAST REVIEW

Table 3 lists the protectiveness statement for the Site made in the 2015 FYR and Table 4 lists the status of the recommendations of follow-up actions needed.

Table 3: Protectiveness Determinations/Statements from the 2015 FYR

OU #	Protectiveness Determination	Protectiveness Statement
01/Sitewide	Short-term Protective	The remedy is protective of human health and the environment in the short term because it is functioning as intended. Contaminated soils and sediments have attained cleanup goals and there is no current human exposure to contaminated groundwater. ICs, in the form of deed restrictions, have been recorded to limit future re-use of the former wood-treating facility and the floodplain downstream of the former facility. Long-term protectiveness requires additional remedial action to groundwater in order to achieve the cleanup standards, and ensuring effective ICs are implemented, monitored, maintained, and enforced. To that end, additional IC evaluation activities such as review of title work and finalizing an ICs map will be performed. Also, long term stewardship procedures will be developed and implemented through revision of the O&M Plan. Long-term stewardship involves assuring effective procedures are in place to properly maintain and monitor the Site. Long-term stewardship will ensure effective ICs are maintained and monitored and the remedy continues to function as intended with regard to ICs.

Table 4: Status of Recommendations from the 2015 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
01 Sitewide	The groundwater cleanup goals have not yet been met.	The State should consider implementing the recommendations of the 2011 Remedial Systems Evaluation Report (U.S. Army Corps of Engineers) to address remaining groundwater contamination and achieve current groundwater cleanup standards.	Completed	Contaminant source removal was completed July 2018, in accordance with recommendations from 2011 Corps of Engineers report.	7/18/2018
01 Sitewide	Effective ICs must be monitored, maintained, and enforced. Long term stewardship of ICs has	Review title work and prepare a final IC map. Develop and implement long term stewardship (LTS) procedures through revision of the O&M Plan.	Ongoing	Title work and final IC map completed. EPA and State currently working on acceptable LTS plan. A draft plan is currently under review by EPA. The LTS plan completion is planned for 12/31/2020.	

	not been addressed				
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Significant progress has been made in completing the two activities the previous FYR recommended. On the recommendation regarding achieving groundwater cleanup goals, the State successfully implemented one of the options recommended in the 2011 remediation system evaluation (RSE) report the U.S. Army Corps of Engineers (Corps) prepared for EPA. Specifically, the Corps’ report called for removal of nonaqueous phase liquid (NAPL)-impacted soil near a monitoring well (MW-34S) in the treatment area. The State eventually excavated over 7,000 tons of contaminated soil and disposed those soils off-site to complete this task. In addition, soil amendments in the form of oxidizing agents were added to promote enhanced biodegradation of remaining contaminants in the soil. The Corps report also called for installation of a new treatment gate as part of the work, but analysis by the State indicated this was not necessary since the existing containment system and in-situ treatment operations have effectively contained and remediated the majority of the groundwater contamination in the past. This work was completed in July 2018.

On the recommendation related to ensuring effective ICs are maintained, monitored, and enforced, the only remaining task to complete is development of a LTS plan that will be incorporated into the Site’s existing O&M Plan. EPA has completed the other items mentioned in the FYR recommendation: Title work and finalizing an IC map.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

EPA initiated activities to involve the community in the FYR process on or around March 2019, when the CIC informed the RPM of her intent to update the Agency’s web page for the Site (www.epa.gov/superfund/moss-american-kerr-mcgee), which was completed later that month. EPA also placed a public notice ad on March 26, 2019, in the *Milwaukee Journal Sentinel*. The notice stated that EPA was conducting a FYR and invited the public to submit any comments to EPA (see Attachment 6). The results of the review and the report will be made available at the Site information repository located at the Mill Road Library, 6431 N. 76th Street, Milwaukee, Wisconsin and at www.epa.gov/superfund/moss-american-kerr-mcgee. The notice also provided a toll-free number the public can call about any concerns related to the site, as part of the FYR.

Data Review

No groundwater data was collected during the past 4-5 years since the focus was on implementing recommendations from the 2011 Army Corps of Engineers optimization study dated March 2011. The Corps’ report described the presence of NAPL (contaminant source) in the vicinity of a monitoring well and a stagnant zone due to a low hydraulic gradient as the primary reasons for the inability to meet cleanup goals at some wells in the network. The primary focus of the Corps’ recommendations was removal of NAPL so that the levels of contamination in the affected wells, primarily MW-34s and, to a lesser extent, MW-7s, will be greatly reduced. It is worth noting that, prior to removing the remaining NAPL in 2018, the level of contamination at MW-34S went down significantly from 2008 to 2013 (e.g., benzo(a) pyrene from 160 ppb in 2008 to <18ppb in 2013, with cleanup goal of 0.02 ppb; and naphthalene from 14,000 ppb in 2008 to 4,100 ppb in 2013, with a cleanup goal of 10 ppb). This data

and additional details were reported in the previous FYR (completed in 2015). See Figure 2 for location of the wells at the Site.

With completion of NAPL removal around MW-34S and MW-7S in 2018, confirmatory groundwater sampling is planned as part of the amended work plan in the CA between EPA and the State. Groundwater sampling began in fall 2019 and will be performed on a quarterly basis for at least eight rounds. Results from that groundwater sampling are not yet available and will be considered in the next FYR.

Site Inspection

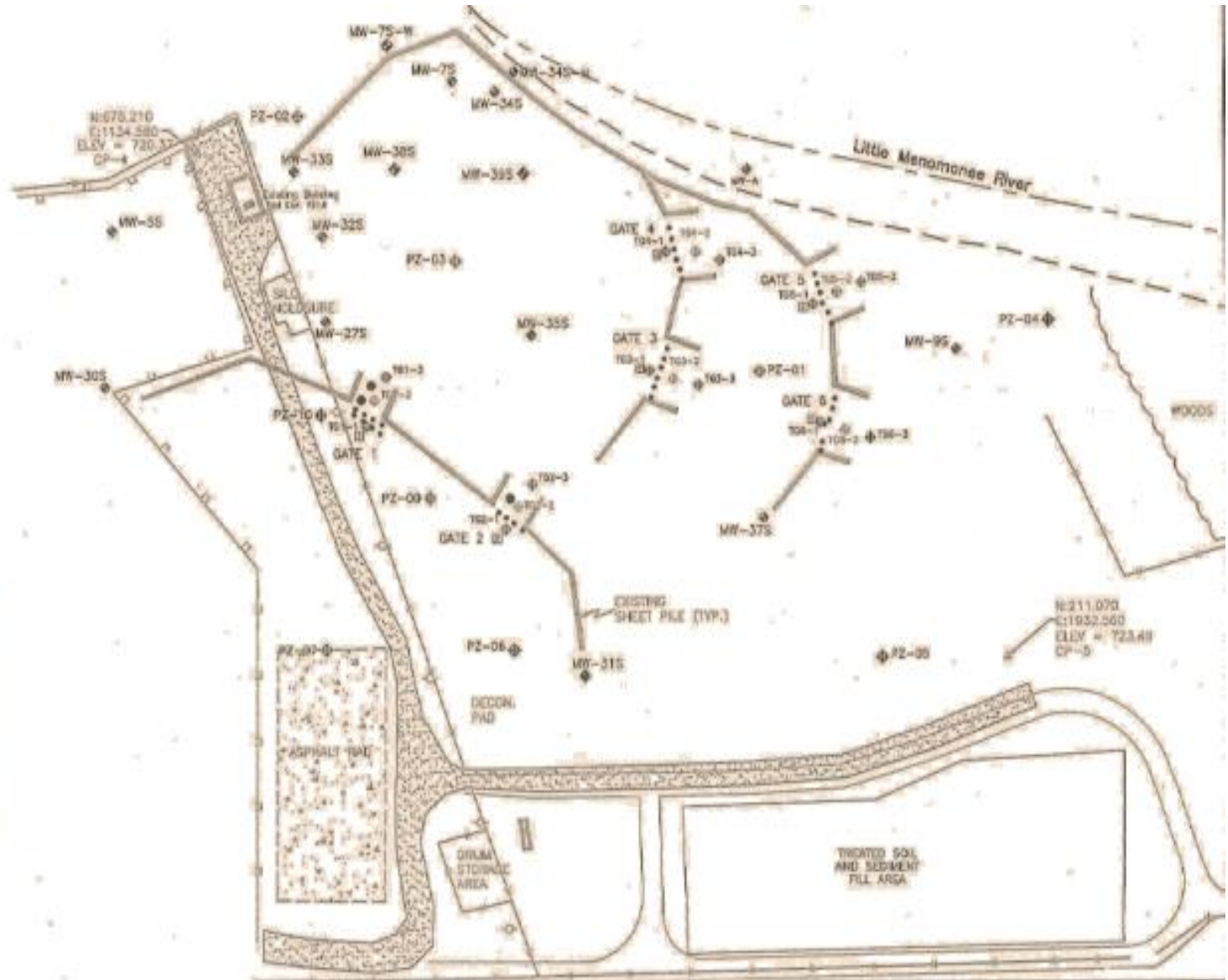
The FYR inspection of the Site was conducted on 3/28/2019 (see Attachment 7). In attendance were Ross del Rosario (RPM), Lauren McCarrell (EPA), and Thomas Wentland (WDNR). The purpose of the inspection was to assess the protectiveness of the remedy. To achieve this objective, the following activities were performed:

- Site reconnaissance along the perimeter fence;
- Inspection of area where State performed response action in 2018;
- Location and identification of some key monitoring wells;
- Inspecting areas along river floodplain outside former wood treating facility; and
- Inspecting site entrance on the County-owned side of the site.

Photographs were taken during the inspection (see Attachment 8). The following observations were made during the FYR inspection:

- Perimeter fencing was in good condition and the gate/lock was working properly;
- With exception of some trash found on the County side, there were no signs of trespassing;
- Monitoring wells appeared to be well maintained (some of them will be removed);
- No visible sheens or obstructions were observed in stream segments visited; and
- Invasive species (phragmites) were present at the former facility and along the river.

EPA personnel also interviewed the State representative during the site inspection, and included the State's responses as part of the inspection report. Finally, EPA sent out a punch list of items that needed State follow-up (Attachment 9).



LEGEND

	CABLE FENCE
	CATCH BASIN
	HYDRANT
	SIGN
	FREE PRODUCT COLLECTION SUMP
	UTILITY POLE
	SAMPLING WANKOLE
	MONITORING WELL
	INJECTION WELL
	CURRENT RIVER CHANNEL
	FORMER RIVER CHANNEL
	PIEZOMETER

<p>THE SIGMA GROUP Single Source. Smart Solutions.</p>	<p>SITE LAYOUT MAP Moss-American Superfund Site 8716 North Grandville Road, Milwaukee, Wisconsin</p>	<p>FORM</p>
		<p>2</p>

V. TECHNICAL ASSESSMENT

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

Yes. The groundwater treatment system (funnel-and-gate) was operating for approximately ten years until early 2011, when EPA and WDNR agreed to temporarily shut down the system to determine the effect of reducing the availability of oxygen in the treatment gates. Groundwater data taken after shutting down the system in 2013 indicated slight improvements in water quality and COC concentrations attenuating on the few remaining wells (MW-34S and MW-7S) which had exceedances of groundwater cleanup goals. The recent groundwater optimization work the State performed (e.g., source removal) should further attenuate the remaining contaminants in that media to below cleanup goals. Additional monitoring will be conducted to assess the impacts of the source removal to the groundwater remedy.

In addition, all necessary ICs are in place and enforceable in compliance with the 1990 ROD. The O&M Plan will be updated to ensure that LTS procedures are developed and implemented so that ICs are properly maintained, monitored, and enforced and, if necessary, additional IC evaluation activities will be conducted. The perimeter fencing at the Site is in generally good condition and all gates leading into the site are locked. There is only one access point to the site, through railroad-owned property, which requires advance notification to the railroad of intent to enter the Site. The other access point, on County property opposite the railroad property, was no longer available as of 2011 because EPA demolished the temporary river crossing used to enter the Site.

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

Yes. The State PALs, which are indicative of the presence of contaminants in the groundwater, have not changed, and are generally more restrictive than respective maximum contaminant levels (MCLs) under the federal Safe Drinking Water Act (SDWA). RAOs established for the Site under the 1990 ROD have also not changed and continue to be valid.

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

No. There is no information that has come to light to call into question the protectiveness of the remedy. The FYR inspection conducted on March 28, 2019 indicated the Site to be in good condition, with no evidence of adverse impacts from natural or man-made forces.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the Five-Year Review:				
None				
Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 01 (Sitewide)	Issue Category: Institutional Controls			
	Issue: Effective ICs must be monitored, maintained, and enforced. Long term stewardship of ICs has not been addressed			
	Recommendation: Develop and implement long-term stewardship procedures through a revision of the O&M Plan.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	State	EPA	12/31/2020

Other Findings

To evaluate the effectiveness of the groundwater optimization work completed by the State in 2018, the State will perform confirmatory groundwater sampling in accordance with the approved amended work plan prepared by the State in 2019 and incorporated in the 2012 cooperative agreement (CA) between EPA and the State. EPA, with State assistance, will review the data collected and determine if the State's response action completed in 2018 has achieved its goal of meeting State groundwater cleanup standards or if additional measures are needed (e.g., if the RAOs and cleanup levels as selected in the ROD are met on a consistent basis, Site deletion activities can proceed).

VII. PROTECTIVENESS STATEMENT

OU 1 & Sitewide Protectiveness Statement
<p><i>Protectiveness Determination:</i> Short-term Protective</p>
<p><i>Protectiveness Statement:</i> The remedy currently protects human health and the environment because it is functioning as intended. Cleanup goals for contaminated soils and sediments have been attained. Although, cleanup goals have not yet been attained in groundwater, there is no current human exposure to contaminated groundwater. ICs, in the form of deed restrictions, have been recorded to limit future reuse of the former wood-treating site and the river floodplain downstream of the former facility. However, in order for the remedy to be protective in the long term, the following action needs to be taken to ensure protectiveness: develop and implement LTS procedures at the Site. An LTS plan, incorporated as part of the Site's O&M Plan, will ensure effective ICs are maintained, monitored, and enforced and the remedy continues to function as intended with regards to ICs.</p>

VIII. NEXT REVIEW

The next FYR report for the Moss-American Superfund Site is required five years from EPA's signature date of this review.

APPENDIX A – REFERENCE LIST

- September 27, 1990 ROD
- March 18, 2015 Five-Year Review Report
- 2011 RSE report from U.S. Army Corps of Engineers
- Existing ICs (4) for the Site
- Relevant State Laws and Regulations (WAC NR 140)
- Cooperative Agreement between EPA and WDNR (2012 and subsequent amendments)
- 2012 IC guidance (Planning, Implementation, Maintenance, and Enforcement or “PIME” of ICs)
- www.epa.gov/Region5/sites/mossamerican
- Remedial action completion report (July 2018)

APPENDIX B – SITE CHRONOLOGY

Event	Date
Initial discovery of contamination	April 1971
Pre-NPL responses (State-enforced removal of creosote-contaminated soil and sediment)	1970s
NPL proposed listing	September 8, 1983
Site placed on NPL	September 21, 1984
RI/FS conducted	September 1985 to May 1990
Proposed Plan issued	May 29, 1990
Record of Decision (ROD) signed	September 27, 1990
RD/RA Consent Decree entered	March 29, 1996
First Explanation of Significant Differences (ESD) signed	April 29, 1997
ROD Amendment signed	September 30, 1998
Second ESD signed	November 28, 2007
Remedial Design Approvals <ul style="list-style-type: none"> - Free product - Funnel-and-gate system - Soil Low Temperature Thermal Desorption (LTTD) - Sediment (river segments) 	May 1995 September 1999 March 2000 - Segment 1 - September 2002 - Segments 2/3 - February 2004 - Segments 4/5 - March 2009
Remedial Action Construction <ul style="list-style-type: none"> - Groundwater funnel-and-gate installed - Soils LTTD work conducted - Sediment removal completed 	<ul style="list-style-type: none"> - November 1999 - June 2000 - May 2001- January 2002 - November 2009
First FYR Report signed Second FYR Report signed Third FYR Report signed	September 18, 2000 September 20, 2005 March 29, 2010
Prefinal Inspection Completed	November 20, 2009

Event	Date
Preliminary Closeout Report (PCOR) signed	November 25, 2009
Fourth FYR Site Inspection completed	July 16, 2014
Fourth FYR Report signed	March 18, 2015
Completion of soil remedial action, per CA	March 19, 2018
Remedial action completion report (State lead)	July 2018
Notification of next five-year review	March 21, 2019
Public notice ad for next five-year review	March 26, 2019
Fifth FYR site inspection completed	March 28, 2019
Fifth FYR Report signed	(Pending)

Attachment 1

Notification to State



March 21, 2019

Thomas Wentland, State Project Manager
Wisconsin Department of Natural Resources
Southeast District Office/Plymouth Service Center
1155 Pilgrim Road
Plymouth, WI 53073

Re: Moss-American Superfund Site – Notification of Five-Year Review Start

Dear Mr. Wentland:

This letter is to notify you that the United States Environmental Protection Agency (EPA) is beginning the process of working on the next five-year review for the Moss-American Superfund Site in Milwaukee, Wisconsin. This review for Moss-American will be conducted according to the requirements of Section 121 of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Its objective is to evaluate the remedy implemented at the site and determine if it remains protective of human health and the environment.

The five-year review report is due no later than March 18, 2020. We are providing you this notification so that EPA and WDNR can begin the necessary coordination activities. At the earliest convenience, I would like to discuss key action items with you, such as the issuance of the required public notice, getting input from the public, and any other issues that are of concern to you. Previously, we have scheduled the onsite review inspection for March 28, 2019.

I look forward working with you on this next five-year review for Moss-American. If you have any questions, you can reach me at (312) 886-6195.

Sincerely,

Ross del Rosario

Ross del Rosario
Remedial Project Manager

cc: Sue Pastor, CIC
Maria Gonzalez, ORC

Attachment 2

State Completion Report

**REMEDIAL ACTION COMPLETION REPORT
PROJECT NO. 241378280**

**SOIL EXCAVATION & OFF-SITE DISPOSAL
AND
LIMITED ON-SITE SOIL TREATMENT

FORMER MOSS-AMERICAN FACILITY
8716 N. GRANVILLE ROAD
MILWAUKEE, WISCONSIN**

**PREPARED FOR:
WISCONSIN DEPARTMENT OF NATURAL RESOURCES**

PREPARED BY:



**THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE, WISCONSIN 53233**

JULY 2018

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EXECUTIVE SUMMARY

The Sigma Group, Inc. (Sigma), was retained by the Wisconsin Department of Natural Resources (WDNR) to design and implement a soil remedial action at the former Moss-American Site in Milwaukee, Wisconsin. This report documents the remedial activities completed at the site during September 2017 through June 2018. The remedial actions implemented at the site were conducted in a manner generally consistent with Sigma's *Remedial Design Report – Final*¹, dated October 24, 2016. The primary objective of the remedial actions was to significantly reduce the mass of identified free product contamination within the site subsurface via targeted soil excavation/off-site management and in-situ soil treatment through chemical oxidation followed by enhanced bioremediation. The following activities were completed at the site between early September 2017 and mid-June 2018:

- Preparation of the site, construction of temporary haul road, staging area, truck decontamination pad and site fencing, and installation of surface water protection measures in advance of commencement of remediation activities;
- Excavation of free product impacted soils from excavation Area 3 and disposal to an off-site hazardous waste facility;
- Excavation of low-level impacted shallow overburden soil from excavation Areas 1 and 2 and stockpiling on site for soil treatment activities;
- Excavation of soil impacted with free product from Area 1 and Area 2, and hauling to an off-site hazardous waste facility for disposal;
- Soil treatment via in-situ chemical oxidation in Area 1 and Area 2 using stockpiled overburden;
- Lime stabilization of the excavation areas following soil treatment activities;
- Dewatering and on-site storage of groundwater/rain water accumulated within the excavations;
- Treatment of stored groundwater/rain water using activated carbon treatment method and discharging at the site;
- Management and hazardous waste disposal of spent activated carbon from water treatment process;
- Abandonment of all injection wells and collection sumps installed during previous remediation work and abandonment of select groundwater monitoring wells located within the excavation areas; and
- Completion of site grading, creek bank restoration, topsoil placement, seeding and erosion control measures implementation.

¹ The Sigma Group, Inc. *Remedial Design Report - Final, Former Moss-American, Milwaukee, Wisconsin. BRRTS # 0241529585 (EPA Cerclis ID WID039052626)*, October 2016.

1.0 INTRODUCTION

The Sigma Group, Inc. (Sigma), on behalf of Wisconsin Department of Natural Resources (WDNR), has completed the implementation of a soil remedial action plan at the former Moss-American Facility located at 8716 N. Granville Road, Milwaukee, Wisconsin. This report documents the remedial activities completed at the site during September 2017 through June 2018 in conformance with the design plans approved by the WDNR.

2.0 BACKGROUND

The 88-acre former Moss-American Superfund Site, located in Milwaukee's northwest side, includes the former location of the Moss-American facility, several miles of the Little Menomonee River (a portion of which flows through the eastern half of the site) and the adjacent floodplain. Beginning 1921 through 1976 the facility preserved railroad ties, poles and fence posts with creosote. The facility discharged wastes to on-site settling ponds that ultimately discharged to the Little Menomonee River. In 1983, the site was placed on the National Priority List and the EPA initiated a remedial investigation and feasibility study under the Superfund program. The EPA's environmental studies concluded that the previous creosote operation had contaminated soil, groundwater, and sediment in the Little Menomonee River. Several phases of remedial action activities were completed in the early 1990's through early 2000's which included: river rerouting; dredging, treatment and disposal of contaminated river sediments; excavation, treatment and disposal of contaminated soil; pumping of free product from the subsurface; and, in situ treatment of contaminated groundwater. A long-term groundwater monitoring program was implemented to evaluate the result of the remedial actions. Based on groundwater monitoring data, the EPA concluded additional remedial action would be needed to address residual Creosote Free Product identified at the site.

3.0 REMEDIAL ACTION SELECTION, DESIGN AND CONTRACTOR PROCUREMENT

In March 2011, the US Army Corps of Engineer, on behalf of the USEPA, completed a remedial system evaluation of the Moss-American Superfund Site² and recommended the following:

- Installation of additional monitoring wells at select locations of the site to better define the extent of the groundwater impacts;
- Investigation to further define the extent of the free phase creosote products with two areas of the site; and,
- Additional remedial measures to address the identified free phase product.

Based on the recommendation the WDNR, in cooperation with the USEPA, retained Sigma to provide additional site investigation and remedial design services to address the residual free product. Sigma's activities included the installation of additional monitoring wells, completion of an extensive soil and groundwater investigation within the floodplain area and the adjacent creek area leading to the Little Menomonee River, and development of a remedial screening and implementation plan. Following WDNR and EPA approval of the selected remedy presented in the screening and remediation plan, Sigma completed the design and prepared a remedial action technical specification document. The design plan and specification document was

² Remedial System Evaluation, Moss-American Superfund Site, Milwaukee, Wisconsin, Final Report March 2011, prepared by US Army Corps of Engineers, Environmental and Munitions Center Of Expertise and Seattle District, prepared for USEPA

included in the WDNR bid document and posted for public bidding in May 2017. Following the competitive bidding and selection process, the WDNR awarded the project construction work to Clean Harbors Environmental Services, Inc. (Clean Harbors) of Norwell, Massachusetts and retained Sigma to oversee the implementation. Veolia Waste services was retained by the WDNR for waste profiling and coordination of haul trucks to transport contaminated soils to hazardous waste facility at Wayne Disposal Inc. 49350 N. I-94 Service Drive, Belleville, Michigan 48111³.

4.0 REMEDIAL ACTION IMPLEMENTATION

In accordance with the project technical specifications document⁴, remedial activities were implemented at the site beginning in September 2017. The following sections describe the activities completed in chronological order.

4.1 Site Preparation Works

Clean Harbors mobilized to the site on September 9, 2017 to perform the site preparation work. In accordance with the technical specification, the following activities were completed as part of the site preparation work:

- The site was cleared of shrubs, weeds and other vegetation.
- Temporary roads, a decontamination pad and temporary site fencing were constructed as depicted in **Figure 1**. An additional section of gravel road was constructed between Area 1 and Area 3 to provide better access for haul trucks.
- A truck scale was installed on the decontamination pad to ensure compliance with DOT weight restrictions for laden trucks en route to the landfill.
- Measures were taken to protect the Little Menomonee River from impact resulting from excavation work in Area 3. This consisted of a silt fence erected on the creek bank adjacent to Area 3, and a turbidity curtain installed at the confluence of the creek and the river. Prior to commencement of excavation activities, it was agreed during discussions between WDNR, Sigma and Clean Harbors that the creek upstream of the proposed excavation in Area 3 could be temporarily dammed with sand bags, allowing for the upstream creek to be diverted by pumping around the excavation area.
- As per the contract agreed between the WDNR and Clean Harbors, one 20,000 gallon frac tank was supplied to contain excess groundwater encountered during excavation work.
- New sheet pile installation – Approximately 63 linear feet of steel sheet pile was installed to shore the excavation along the river in Area 1, to an approximate depth of 20 to 22 feet below grade. The sheet pile was provided on a rental basis and was removed on completion of excavation in Area 1.
- Existing sheet pile removal – Approximately 200 linear feet of existing sheet pile was removed from Area 2 in preparation for excavation. The removed sheet pile was temporarily stored on site on a plastic-lined concrete slab prior to disposal to a suitable facility. It was agreed by WDNR and Sigma that the existing sheet pile in Area 3 would remain in place, as Clean Harbors stated

³ Wayne Disposal, Inc. Toxic Substance Control Act (TSCA) and Resource Conservation and Recovery Act (RCRA) Subtitle C landfill located in Belleville, Michigan.

⁴ The Sigma Group, Inc. - *Technical Specifications, Project No. 241378280, Soil Excavation & Off-Site Disposal and Limited On-site Soil Treatment, Former Moss-American Facility, 8716 N. Granville Road, Milwaukee, Wisconsin, Dated May 2017.*

that the excavation work could be completed without sheet pile removal.

- Well abandonment/modification – All previously installed injection wells and select monitoring wells which were located within the proposed excavation work areas, were abandoned prior to commencement of excavation work. Monitoring wells MW-7S-W, MW-34S, TG1-1, and PZ-09 were abandoned, in addition to eight injection wells, and one sump. All abandonments were carried out with the oversight of Sigma in accordance with the WAC NR 141.25. In order to prevent potential damage during sheet pile installation work in Area 1, MW-34S-W was also modified by removing the outer metal riser and approximately 3 foot section of the well casing.

4.2 Remediation of Area 3

4.2.1 Excavation and Disposal

Excavation work commenced in Area 3 on October 9, 2017. The extent of excavation area was confirmed by Sigma using GPS survey equipment. Visual monitoring was carried out during the excavation to ensure removal of the extents of free product insofar as was reasonably practicable. The final excavation area ranged in depth from approximately 6 feet below ground surface (bgs) at the western extent to 9 feet bgs at the eastern end and was larger than initially anticipated due to the volume of observed contaminated soils and the angles of access for the excavator. The northern edge of the excavation extended beyond the creek, which was dammed using sand bags to prevent water ingress (the sand bags were not accounted for in the initial project bid and were approved under Contract Directive No.1 – see **Table 1**). Despite damming the creek, water was still encountered due to percolation through the sides of the excavation and resulted in a relatively wet excavation. In order to minimize water drippage from trucks hauling wet soil, it was decided that relatively low creosote-impacted dry overburden soil from outside the southern extent of the excavation could be mixed with excavated material to dry it sufficiently before loading.

Thirteen truckloads of material were excavated from Area 3 resulting in a total of 298 tons of material (approximately 200 cubic yards) being sent to the disposal facility. Excavation of Area 3 was completed on October 11, 2017. The final extents of the excavation were verified by Sigma using GPS survey equipment and are depicted in **Figure 2 and Appendix A**. Please note, the quantity calculated based on the excavation limits is somewhat less than the tonnage hauled to the landfill due to addition of soil from outside the excavation to dry the load.

4.2.2 Water Management

During the evening of October 10, 2017, a heavy rain event occurred and resulted in the sand bag dam in the creek upstream of the excavation being breached. Upon inspection, no impact was observed to the Little Menomonee River, however, it was necessary to pump the accumulated water in the excavation to the frac tank on site. Additionally, a contractor was engaged by Veolia to provide a vacuum tanker to partially empty the frac tank on becoming full. The upstream section of the creek was diverted around the open excavation using pumps and the surface water from the upstream area was discharged directly to the river.

4.2.3 Backfilling and Bank Restoration

Sigma and the WDNR personnel visually inspected the excavation of Area 3 on October 11, 2017, after the water had been pumped into an on-site frac tank and highly impacted soils were removed for off-site disposal. The area was deemed appropriate for backfilling based on visual inspection and the extent of excavation meeting the designed excavation limits. To backfill the area, Clean Harbors had sourced a silty sand backfill material from Ozinga Materials, which on inspection by Sigma, was deemed unsuitable for restoring the bank of the creek in Area 3. However, the material was considered suitable for placing at the bottom two to four feet of the excavation for Area 3. The silty sand material was also used to create a temporary dam in the creek upstream to divert the rain water away from the excavation. Preliminary backfilling of Area 3 was completed on October 12, 2017. Clean Harbors sourced a suitable silty clay backfill material from Willkomm Excavating and Grading in Racine, Wisconsin. Delivery of this material to the site commenced on October 13, 2017 and final backfilling of Area 3 including the reconstruction of the creek bed and bank was achieved. The southern portion of the restored creek bank was temporarily covered with a Geotextile fabric and held in place with sandbags to prevent bank erosion and the temporary dam was removed, allowing the creek to flow into the Little Menomonee River. Final restoration of Area 3 including topsoil, erosion control mat installation and seeding was undertaken in May and June of 2018.

Photo documentation of the excavation work in Area 3 is included in **Appendix B**.

4.3 Remediation of Area 1

4.3.1 Excavation and Disposal

In accordance with the approved remedial design, the removal and stockpiling of the relatively low-level impacted overburden soil from Area 1 commenced on October 11, 2017. The excavation area was surveyed and marked by Sigma prior to the excavation work. An estimated 655 cubic yards of overburden soil was stockpiled in accordance with WAC NR 713.05, for use during the backfilling and reagent mixing process. **Figure 2** depicts the identified extents of soil excavation in Area 1 based on the Geoprobe investigations and temporary well points sampled by Sigma in 2014 - 2015⁵. Excavation of hazardous soils commenced on October 12, 2017 in the eastern end of Area 1 nearest to the sheet pile and proceeded westward. Relatively impermeable clay and silty clay soils were encountered at approximately 8 feet in the eastern section and from depths of approximately 12 feet in the northwestern part. These soils were not visually observed to be impacted by free product. However, a dark-gray/black stained gravelly sandy layer at 5 feet to 6 feet below grade was facilitating infiltration of groundwater from surrounding soils into the open excavation. The water was visually interpreted to be impacted by hydrocarbon-related compounds and continued to accumulate in the excavation. Excavation dewatering was initiated and the impacted water was pumped into on-site frac tanks for treatment and disposal.

The southern and southwestern sections of Area 1 were found to largely consist of loose, medium-coarse grained sand, which allowed infiltration of groundwater from areas outside the excavation. Groundwater accumulation within the excavation area

⁵ The Sigma Group Inc. *Additional Investigation Activities and Remedial Options Evaluation*, April 13, 2015.

made it difficult to continue excavation and to visually assess the progress due to constant shifting and resettling of the sand. This also led to safety concerns related to undermining of the excavation edges. Clean Harbors excavated additional benched sections of overburden adjacent to the excavation to allow for safer access and reduce the risk of side wall collapse. This material was temporarily stockpiled on site prior to being replaced in its original location during the backfilling process. The excavation of Area 1 achieved a final depth of approximately 8 feet at the eastern end and 14 feet at the western end. Attempts were made to carry out test pits in the sandy area to assess whether it was underlain by clay. A depth of 17 feet was achieved and material still appeared to be largely comprised of sand. However, when standing water was pumped out of the excavation, visual assessment determined that the sand in the base of the excavation did not contain free phase product and appear to be affected by only low level contamination, which could be treated in-place during the OBC™ soil mixing phase.

The accumulated water in the excavation also led to excess moisture in the material hauled off-site, which was reported by the landfill. On October 17, 2017, the disposal facility indicated the soil was too wet to pass a paint filter test and required solidification prior to disposal. The facility also stated that further wet loads would have to be diverted to Michigan Disposal facility for solidification at an additional cost prior to disposal at Wayne Disposal Inc. landfill. In order to minimize the cost, overrun, Sigma recommended using hydrated lime to solidify the wet soil prior to loading. Clean Harbors was subsequently authorized by the WDNR to obtain hydrated lime for on-site solidification. Due to the long lead time for lime delivery by the manufacturer, it was decided to mix low-impacted stockpiled overburden soil to dry the wet load until lime was available and keep the project activities on schedule.

Seven loads of crushed limestone (field lime) delivered to site between October 17 and 19, 2017 (Construction Bulletin No. 4 – October 17, 2017, Table 1) was used to dry the wet loads. It was determined that the field lime was not very effective in absorbing moisture and Clean Harbors was instructed to stop using field lime. On October 23, 2017 hydrated lime (20 tons) was delivered to site (Construction Bulletin No. 7 – October 25, 2017, Table 1) and was immediately deployed to aid in drying soil for loading. All 20 tons of hydrated lime were used for this purpose.

The extent of the excavation area was surveyed by Sigma using GPS equipment on completion of excavation. The final excavation surface area of Area 1 is depicted in **Figure 2** and calculated at 2,450 square feet. A total of approximately 2,500 tons of soil from Area 1 was removed and hauled off-site for hazardous waste landfill disposal. This quantity is more than anticipated in the design and was likely due to the addition of lime and dry overburden soils to several of the wet loads to dry the truck load and meet the paint filter test requirement at the landfill.

4.3.2 Water Management

Throughout the excavation of Area 1, water continued to accumulate rapidly in the excavation. As the frac tank provided by Clean Harbors as part of the original scope of works was already full, approval was granted by WDNR to mobilize a second frac tank to site as per Construction Bulletin 3 (Table 1) which arrived on October 13, 2017. Veolia was again engaged to provide vacuum tankers to dispose of excess water and create as much freeboard space as possible in the frac tanks. Between

October 12 and October 20, 2017, a total of nine vacuum tankers transported 44,650 gallons of water for treatment and disposal to an off-site facility⁶. The waste profile for water disposal is attached as **Appendix C**.

As water continued to accumulate, exacerbated by several heavy rain events, it became evident that the cost of disposal was becoming prohibitive (nearly \$9,000 per truck load). The number of vacuum tanker trucks provided by the hauler was also inadequate to manage the volume generated at the site. In addition, tankers were incurring demurrage charges due to long waiting time at the treatment/disposal facility. Considering the volume of water generated within the excavation, two construction bulletins were issued by the WDNR during October 2017, requesting a total of five additional frac tanks for delivery to the site to store approximately 100,000 gallons of excavation water. The frac tanks were mobilized to site between October 19 and October 25, 2017 and added to the two tanks already present. Clean Harbors continued to pump water from Area 1 throughout the excavation process, which resulted in the generation of approximately 125,000 gallons of contaminated groundwater by October 26, 2017. The stored water was later treated and disposed on site under a WPEDS permit as described in Section 5.0 below.

4.3.3 In-place Soil Treatment and Backfilling

In accordance with the project plan, backfilling using stockpiled low-impact overburden soil and in-place treatment using OBC™ commenced in Area 1 on October 28, 2017 and was completed on October 31, 2017. The stockpiled soil was placed in the excavation in batches of approximately 100 cubic yards and each batch was treated with 2,000 pounds (one supersack) of OBC™ reagent, before being thoroughly mixed by the excavator buckets over a four hour period. A total of seven sacks of OBC™ were used for treatment of stockpiled soil from Area 1. At the direction of Sigma, each batch of the OBC™ reagent was thoroughly blended with the soil and groundwater collected in the excavation to a soupy consistency ensuring appropriate distribution of the reagent throughout each batch. In addition to groundwater accumulating within the excavation water from one frac tank (20,000 gallons) was also used to achieve the desired consistency of the mix. Following completion of reagent treatment, hydrated lime was then mixed with the treated soil to dry and stabilize the material. A total of 22 tons of hydrated lime was used during the stabilization process.

Final backfilling of Area 1 to near original grade was completed from November 10 to 16, 2017 using stiff clay soil supplied by Willkomm. The backfill in Area 1 was sufficiently compacted to permit access by tracked vehicles thereafter.

4.3.4 Removal of Construction Shoring

Following completion of remedial activities and backfilling of the area, steel sheet pile installed in Area 1 to shore the river side of excavation was removed using the crawler crane and vibrating hammer on November 17 and 18, 2017. Extracted sheet pile was cleaned and stored on-site prior to retrieval from the site by United Rentals on November 28 and 29.

Photo documentation of the remediation work in Area 1 is included in **Appendix B**.

⁶ Michigan Disposal Waste Treatment Plant, 49350 N. I-94 Service Drive, Bellville, Michigan 48111.

4.4 Remediation of Area 2

4.4.1 Excavation and Disposal

Excavation of Area 2 commenced on November 2, 2017 with the removal and stockpiling of the relatively low-level impacted overburden soil from 0 to 4 feet bgs. The excavation area was confirmed and marked by Sigma in advance. An estimated 1,350 cubic yards of overburden soil were stockpiled in accordance with WAC NR 713.05, for use during the backfilling and reagent treatment process.

After removal of the overburden, excavation of free product impacted soils for disposal to the hazardous landfill in Michigan took place from November 3 to December 8, 2017. The excavation schedule was severely hindered due to the limited number of haul trucks available for transporting hazardous material. In order to expedite the project activities and complete the removal/disposal and in-place treatment of soil from Area 2 before the on-set of winter weather, it was agreed following a site inspection by WDNR on December 1, that excavated soil could be temporarily stockpiled on the ground near the excavation area instead of loading directly on trucks. This approach allowed the excavator to continue removal of the impacted soil from Area 2 without interruption by the trucking schedule. Clean Harbors coordinated multiple excavators to expeditiously remove the remaining impacted soil from Area 2 and prepare the area for soil treatment.

As excavation progressed, areas of hydrocarbon-impacted soil were observed periodically on the sidewalls of the excavation at typical depths of 5 to 7 feet bgs. Accumulation of a small amount of water was also observed, which initially displayed evidence of hydrocarbon contamination and became cleaner as excavation progressed. A stiff grey silty clay base which appeared to be unimpacted was observed throughout the excavation area, typically at 10 to 14 feet. Several test pits were dug at an additional depth of 4 to 5 feet at various locations of the excavation to ensure that no impacted soil was present at depth. Final excavation depths ranged from approximately 14 feet bgs in the northwest and southeast parts of the excavation to approximately 10 feet in the middle section. The area of excavation was extended slightly northeastwards in the middle section to encompass an area of impacted soil and water observed during the abandonment of one of the product collection sumps on site.

Due to several rain events, the excavated soil was relatively wet and required mixing with hydrated lime to dry it before loading for disposal. Despite the use of lime, the landfill reported that several truckloads had to be sent to a treatment facility for further solidification prior to acceptance for disposal.

A total of approximately 2,855 cubic yards (4,284 tons) of soil was transported to the disposal facility from Area 2. This included the small hotspot excavation to the south of the main Area 2, comprised of approximately 53 cubic yards. The final excavation of Area 2 is depicted in **Figure 3 and Appendix A**. This quantity is more than anticipated in the design and was likely due to the addition of lime and dry overburden soils to several of the wet loads to dry the soil and meet the paint filter test requirement at the landfill.

A summary of all haul trucks, along with final tonnage disposed of at the landfill is included in **Appendix D**. All soil was loaded and hauled off site by December 8, 2017.

4.4.2 Water Management

The volume of groundwater encountered during the excavation of Area 2 was significantly less than that encountered during Area 1 excavation. The main source of water ingress was due to surface flow from two main rain events and subsequent percolation of water through the side walls of the excavation. In anticipation of large volumes of water being encountered, two additional frac tanks had been delivered to site on November 3 as a contingency, as requested by WDNR (Construction Bulletin 8 -Table 1). It is estimated that during the excavation work, approximately 40,000 gallons of water accumulated in Area 2 were pumped and stored in frac tanks for on-site treatment. Details of water treatment operations are discussed in Section 5.0 below.

4.4.3 In-Place Soil Treatment and Backfilling

The backfilling in Area 2 of low-impact overburden soil and treating with OBC™ commenced on December 2, 2017 and was completed on December 6, 2017. Similar to Area 1 treatment, the stockpiled soil was replaced in the excavation in batches of approximately 100 cubic yards and each batch was combined with 2,000 pounds of OBC™ reagent and thoroughly mixed with soil and groundwater by the excavator buckets for a four hour period. A total of 13 sacks of OBC™ (13 tons) were utilized for treatment in Area 2.

Although the volume of excess water entering the open excavation was significantly less than in Area 1, there was a sufficient amount available to allow proper mixing and no additional water was needed to complete the treatment. The reagents, soil, and water were blended to a 'soupy' consistency which is required to adequately complete the soil treatment process. Following the treatment phase, hydrated lime was mixed to solidify the material.

Final backfilling of Area 2 to near original grade was completed on December 12, 2017, using stiff clay soil supplied by Willkomm. This was sufficiently compacted to facilitate reconstruction of the section of gravel road which had been removed during excavation works, and to complete reinstallation of the section of site fencing removed at the beginning of the project.

Photo documentation of the remediation work in Area 2 is included in **Appendix B**.

5.0 ADDITIONAL ACTIVITIES

5.1 On-Site Water Treatment and Disposal

Considering the large volume of water removed from the excavations and stored on site, it was necessary to develop a plan to treat the water in an efficient and cost-effective manner. Based on discussions between WDNR and Sigma, and input from the remedial contractors (Veolia and Clean Harbors) a plan was formulated to treat the water using granular activated carbon, followed by discharge on site. Review of the groundwater quality data indicated that the water likely contained one or more VOCs, RCRA Metals and/or PAH compounds in exceedance of the relevant Preventive Action Limit (PAL) and/or Enforcement Standard (ES). To confirm the contaminant

levels, Sigma collected a composite sample of the water contained in the frac tanks on site on November 6, 2017 and submitted for analysis of RCRA metals and PAHs to Synergy Laboratory, Appleton, Wisconsin. The results of this sample were used to quantify the contaminants of concern, to determine the required degree of treatment and adequately characterize the effluent for discharge permit application purposes. All relevant sample results and chains of custody are included in **Appendix E**. The results of the pre-treatment sample are tabulated in the attached **Table 2**.

Because the on-site water treatment activities were not a part of the initial bids, a change order was required. Both Veolia and Clean Harbors were invited to submit bids for the water treatment work. After review of the bids, the WDNR authorized Clean Harbors to proceed with the water treatment activities. The proposed treatment system was comprised of a 6-bag filter housing capable of capturing Total Suspended Solids (TSS) to 50 microns, followed by a lead treatment vessel containing 3,000 pounds of organoclay and 1,000 pounds of reactivated carbon media, and a lag vessel containing 7,000 pounds of activated carbon media.

The treatment system was mobilized to the site on November 16, 2017 and was operational by November 20, 2018. A WPDES discharge permit was obtained by the WDNR prior to the system start.

In order to evaluate the effectiveness of the treatment system, it was necessary to analyze a pre-discharge sample of the treated water. When the treatment system setup was completed, a trial run was undertaken and treated water was temporarily stored in an empty frac tank. A sample was collected from the post-treatment sample port on the treatment system and submitted to CT Laboratories in Baraboo, Wisconsin for analysis of PVOC, PAH, TSS, and Oils and Greases.

The water sample results were received by Sigma on November 27, 2017, and the data are summarized in the attached **Table 3**. Review of the data indicated that detected constituents were below the relevant Preventive Action Limits (PAL). Clean Harbors was instructed to commence treatment and discharge of water.

Water treatment continued until November 30, 2017 at rates of up to 150 gallons per minute. A total volume of 240,900 gallons were treated and discharged to the nearby creek, with the final 37,300 gallons temporarily retained in the two remaining clean frac tanks on site in the event that additional water was necessary for the reagent mixing process.

The effectiveness of the treatment system was reconfirmed midway through the process on November 28, 2017 by collecting a second sample. The sample was submitted to CT Laboratories for analysis of the same parameters as before. The results determined that the treatment system was still operating efficiently and no breakthrough was occurring with the exception of three PAH compounds. Benzo(a)pyrene, Benzo(b)fluoranthene and Chrysene detected above their respective PALs but below ESs. These results are also tabulated in **Table 3**. All water analysis laboratory reports are attached in **Appendix E**. Daily log sheets documenting the treatment rates and total volume of water treated are also attached in **Appendix F**.

On completion of water treatment activities, the system was drained, disconnected and sealed to await removal of the activated media for disposal. A sample of the spent media was collected by Sigma on December 1, 2017 and sent to Synergy Labs for waste analysis profiling to determine the disposal option. The analysis determined that the spent media was unsuitable for direct landfill disposal and should be profiled for incineration. Veolia was supplied with a further physical sample of the spent treatment media to source a suitable incineration facility which would accept the waste. Veolia confirmed on December 19, that the spent carbon would be transported to its facility in Menomonee Falls to be bulked before finally being transported to Green America in Hannibal, Missouri for solid fuels blending under VESTS Profile Number 185576. The appropriate profile letter is included in **Appendix G**.

5.2 Cleaning of Frac Tanks and Removal of Spent Carbon

After treatment of the water, the frac tanks were thoroughly cleaned to ensure no residual contamination remained within the tank prior to demobilization. Some of the tanks had a small amount of residual untreated water remaining inside due to the locations of the effluent valves. A vacuum tanker was used to remove this residual water, which was disposed of in Area 2 during the reagent mixing process.

Clean Harbors Environmental Field Services of New Berlin, Wisconsin were retained to carry out the frac tank cleaning and removal of carbon from the water treatment system. A change order (CB9) was authorized by the WDNR for this purpose, as the original project bid had not included additional frac tank cleaning and carbon removal activities.

The removal of the carbon from the treatment vessels commenced on December 7, 2017. The work was performed using an air spade and hand tools to break up and dislodge the carbon and organoclay, followed by removal from the vessels by vacuum truck. The vacuum truck drum was then emptied into plastic-lined heavy duty cubic yard boxes mounted on wooden pallets. The removal work was hindered considerably due to freezing temperatures having solidified the treatment media. The treatment media removal work was completed on December 21, 2017. A total of 16 one cubic yard boxes containing the spent media were collected from site by Veolia on January 8, 2018 for transport to Green America in Missouri. The empty treatment system was removed from site by Clean Harbors on December 28, 2017.

5.3 Well Abandonments and Modifications

During the course of the project, select wells and sumps were abandoned by Clean Harbors per the project specifications under the supervision of Sigma. A total count of 58 sampling points, including 36 injection wells, 6 small sumps, 12 large sumps, and 4 wells/piezometers were abandoned.

Monitoring well MW-32S, while not scheduled for abandonment, required abandonment with the consent of WDNR due to damage caused by a haul truck. Monitoring well MW-34S-N was modified prior to sheet pile installation in Area 1 to avoid potential damage. The metal external casing and a section of the well casing were removed to shorten the above ground portion of the well. The well was later restored by Sigma after sheet piling had been removed.

Piezometer PZ-07 was observed during the project to be leaning at an angle, with the well casing protruding above the top of the protective casing. The piezometer was repaired so that the lid of the protective casing could be closed. All well abandonment forms were completed by Clean Harbors and submitted to WDNR during the course of the project.

5.4 Fencing removal and replacement

Removal of the temporary site perimeter fence and replacement of the original permanent fence (as described in Demolition and Removal Plan S-4) took place during December 7 and 8, 2017.

5.5 Final Grading

The site was restored to near original grade with silty clay backfill prior to demobilization by Clean Harbors on December 15, 2017, with final topsoil grading and seeding in excavation areas carried out in the Spring of 2018. Clean Harbors remobilized to site on May 5, 2018 to carry out final site reinstatement activities. Site grading work was commenced using clean soil supplied by Willkomm but was later postponed due to excessive rainfall. Clean Harbors remobilized to site during the week of June 4, 2018 to complete backfilling and grading work. A culvert was constructed under the remaining gravel road west of the fence-line in order to prevent waterlogging on the road itself. During a site visit by Sigma on June 8, 2018, areas of standing water were observed, particularly in the former Area 2 excavation and adjacent to the sheet pile alongside the creek. Clean Harbors decided to postpone seeding of the site till the following week of June 11, 2018 and retained landscaping contractors (The Reesman Company) to complete the work.

5.6 Demolition of Equipment Shed

The remaining building on site which previously housed the earlier treatment system was demolished by Clean Harbors on December 8, 2017, leaving the concrete foundation slab intact. The drain within the slab was abandoned using concrete and gravel. As there was no asbestos or other hazardous material within the building, the resulting rubble was transported off site in general waste roll-offs.

5.7 Survey of Sheet Pile

At the request of WDNR, Sigma completed a survey of the existing sheet pile at the site. The total linear feet of remaining sheet pile on site, was assessed using GPS survey equipment. It was calculated that 1,509 linear feet of sheet pile remained, in nine separate sections. Attached **Figure 5** provides the layout of the existing sheet pile.

5.8 Removal of Temporary Site Roads

According to the scope of work, the temporary gravel roads installed by Clean Harbors were removed and placed on top of the road to the west of the fence to provide further grading and stabilization. Haul road removal work was commenced during the week of May 7, 2018. The majority of gravel from the former roads was scraped off using a front end loader and transported east of the fencing to the remaining site road where it was compacted.

5.9 Stream Bank Reconstruction and Seeding

During the Spring of 2018, The Reesman Company, at the direction of Clean Harbors, mobilized to the site and initiated grading and seeding work along the creek and in

the previously excavated areas. Sigma was present on site to oversee the installation of the erosion control mat on the creek bank. The bank was graded using hand tools and machinery prior to seeding with an appropriate seed mix as recommended in section 02921 of the technical specifications. A Curlex® I Fibrenet erosion control mat supplied by American Excelsior Company® was then installed on the pre-seeded bank. The erosion control mat was secured by wooden stakes of sufficient length. A portion of the Area 3 excavation located south of the sheet pile was also hand-seeded with the appropriate mix. The excavation areas Areas 1 and 2 were then prepared and seeded. The Reesman Company mobilized an Easy-Lawn C95 Hydro-seeder in conjunction with hand-seeding for the purpose of this work.

6.0 SUMMARY AND CONCLUSIONS

Based on the remedial activities detailed above and completed by Clean Harbors under the direction of Sigma, in general accordance with Technical Specification document dated May 2017, the following is a summary of activities:

- Approximately 7,060 tons of creosote impacted characteristically hazardous material was excavated and hauled off-site to a licensed facility for treatment and disposal.
- Clean Harbors completed in place chemical oxidation treatment of an additional 3,000 tons of low-level contaminated soil with 40,000 pounds of granular OBC™ reagent.
- Following mixing and treatment activities, strategies to effectively stabilize the treatment areas were sufficiently completed.
- Approximately 240,900 gallons of creosote-impacted water from the site was successfully removed and treated prior to discharge on site.
- Spent activated carbon used for on-site water treatment process was disposed of to a suitable off-site hazardous waste facility.
- Abandonment of all injection wells and collection sumps throughout the site and abandonment of non-preserveable groundwater monitoring wells within areas of excavation following the guidance of the WDNR Ch. NR 141.
- The site was returned to its natural condition by grading and seeding with appropriate seed mix requested by WDNR.
- The creek bank in the north of the site (in excavation Area 3) was restored to its original condition using appropriate slope stabilization, backfill materials and erosion control measures.

In conclusion, large quantities of soil containing creosote-impacted free product was removed from the site. In addition, a significant quantities of impacted groundwater from the excavation areas were removed and treated. The primary objective of removing creosote impacted free product containing subsurface materials, which

were acting as sources of groundwater contamination, has been met. In-place soil treatment with oxidant/bioenhancer will continue to promote biodegradation of the residual subsurface impacts in Area 1 and Area 2.

FIGURES

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Plymouth Service Center
1155 Pilgrim Road
Plymouth WI 53073

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



March 19, 2018

Mr. DelRosario, Rosario
U.S. EPA Region 5 Mail Code SR-6J
77 West Jackson Boulevard
Chicago IL 60604-3507

Subject: Moss American Substantial Completion

Dear Mr. Delrosario:

I am writing to inform you that the Moss American Groundwater Optimization and Remediation Contract has reached Substantial Completion as evidenced by the attached Certificate of Substantial Completion. This work was carried out to address Recommendation Number 1 of the 2015 Five Year Review for the Moss American site.

If you have questions or comments please contact me at 920-893-8728 or thomas.wentland@wisconsin.gov.

Sincerely,

A handwritten signature in blue ink that reads 'Thomas A. Wentland'.

Thomas A Wentland
Remediation and Redevelopment Program



Bureau for
Remediation and
Redevelopment

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Former Moss-American Facility (Project No. 241378280)

Date December 14, 2017

Contractor Clean Harbor

The Date of Substantial Completion of the Project or designated portion thereof is the date when construction is sufficiently complete, in accordance with the Contract Documents, to provide the Department at its discretion, the full-time use of the Project or designated portion thereof for the purpose for which it was intended.

Project/Designated Portion of the Project includes: include site preparation, excavation, disposal, soil treatment, backfilling, compaction, and partial grading activities.

The work performed under this Contract has been inspected by authorized representatives of the Department, the Engineer, and the Contractor. The Project (or specified part of the Project, as indicated above) has been found to be substantially complete. The Date of Substantial Completion is hereby established as December 14, 2017, which is also the date of commencement of warranties and guaranties required by the Contract Documents and as appended hereto.

ENGINEER

A list of items to be completed or corrected is listed below. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.

(MAFIZUL KARIM) 3/16/18
Engineer Date

CONTRACTOR

The Contractor accepts this Certificate of Substantial Completion and will complete or correct the work on the list of items appended hereto within 150 days from the above Date of Substantial Completion.

[Signature] 3/16/18
Contractor Date

DEPARTMENT

The Department accepts the Project or designated portion thereof as substantially complete and will assume possession thereof on Dec 14, 2017. Responsibilities pending final completion, e.g., security, maintenance, etc., shall be set forth on the attached.

Thomas A. Wentland

3-19-18

Project Manager

Bureau for Remediation & Redevelopment

THOMAS A. WENTLAND

Date

1. List of items to be completed in Spring 2018:

- I. Complete backfilling, if needed due to settlement;
- II. Complete final grading of all areas;
- III. Place topsoil in Area 1 and Area 2 and complete the areas with seeding;
- IV. Reinstall turbidity curtain or sandbag dam to drain the creek for Area 3 finishing;
- V. Re-grade Area 3 along the creek, if necessary and place topsoil and Bionet mat for slope stability and seeding; and,
- VI. Remove any debris left over from fall 2017 remediation work.

Attachment 3

Amended Work Plan for CA

Superfund Cooperative Agreement for Moss-American Superfund Site, Milwaukee, Wisconsin
Work Plan: Post-Remedial Sampling and Site Restoration
April 2019

Introduction

This Work Plan is the next phase in measuring effectiveness of the remedy and restoring the site in preparation for site closure and reuse. The Work Plan includes the following activities:

1. Installation of groundwater monitoring wells which will be followed by 8 events of quarterly groundwater monitoring, well maintenance and reporting,
2. Railroad property excavation and restoration,
3. Sampling to support development of Institutional Controls and Continuing Obligations,
4. Summary report and closure packet preparation,
5. Remedial system sheet piling removal and disposal activities,
6. Provide and install 3 access gates,
7. Debris clean up and restoration of 4.5 acres,
8. Soil pile restoration and
9. Restoration of Calumet Haul Road Removal site, shallow wetland scrape.

Outcome: The expected outcome of this work effort is to finish land surface restoration efforts and complete 8 events of groundwater sampling.

WDNR Staff Responsibilities: WDNR staff shall coordinate and provide site access, oversight and support during the groundwater sampling, and restoration activities.

Estimated Schedule:

WDNR plans to start contractor bidding work in June 2019, with the first round of groundwater sampling to begin Fall of 2019, and quarterly thereafter.

SCOPE OF WORK

Moss American Groundwater Sampling and Site Restoration

Milwaukee, Wisconsin

April 2019

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SCOPE OF WORK

Moss American Groundwater Sampling and Site Restoration

Milwaukee, Wisconsin

April 2019

I. Project Description

This Scope of Work (Scope) contains work items resulting from remedial activities conducted at the Moss American Superfund Site (Site) by Kerr McKee/Tronox, 2000-2010 and the Wisconsin Department of Natural Resources (WDNR), 2017-2018.

The work items set forth in this Scope, when completed, are intended to prepare the Site for closure and meet the conditions of the ROD. The Site is located at 8716 North Granville Road, in the NW¼, NW¼, Section 8, T8N, R21E, Granville Township, Milwaukee County.

The Site is in the northwestern section of the City of Milwaukee. Eighty-eight acres of the Site are comprised of a former creosoting facility location, plus several miles of the Little Menomonee River and its adjacent floodplain soils. The former creosote operation was conducted on land bounded roughly by the intersection of Brown Deer and Granville Roads on the west, and Brown Deer and Ninety First Street on the east. Milwaukee County and the Union Pacific Railroad Company own the land comprising the former creosote facility. As the Little Menomonee River flows approximately 5 miles to its confluence with the Menomonee River, land along the floodplain corridor is owned primarily by the City of Milwaukee, County of Milwaukee, and to a much lesser extent, private owners.

II. Site Sampling and Restoration Goals

1. Groundwater Monitoring Well Installation

During the 2017-2018 active remediation, multiple groundwater monitoring wells were abandoned in areas that were excavated. Some of those monitoring wells will need to be replaced to evaluate remedial effectiveness. The scope and budget estimate shall be based on the installation of up to six NR 141 compliant groundwater monitoring wells to a depth of up to 20 feet bgs each.

2. Quarterly Groundwater Performance Monitoring, Well Maintenance and Reporting (8 events)

As of August 2018, 49 groundwater monitoring points remain and include 29 site monitoring wells, 9 site piezometers, and 11 monitoring wells within the remedial reaches of the river restoration. With six additional monitoring wells being installed (item one), the total number of sampling points within the monitoring network will be 55. The budget estimate should be based on a per well amount for all costs associated with sampling and laboratory analysis for:

- BTEX (benzene, toluene, ethylbenzene, & xylene)
- PAHS (acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzoo(a, h)anthracene, fluorene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene
- field parameters. (groundwater elevation, pH, temperature, turbidity, specific conductance, oxidation-reduction potential, dissolved oxygen)

Data for each groundwater monitoring event shall be summarized, tabulated and submitted to the WDNR within 30 days of receipt of the results from the laboratory. All monitoring wells should be inspected at the time of sampling and their condition included in the report with recommendations for any necessary maintenance or repair work.

3. Railroad Property Excavation and Restoration

The area to be excavated and restored on the railroad property covers approximately 3.2 acres and is a rectangular piece of land, 700 by 200 feet on the eastern boundary of the railroad property adjacent to the Milwaukee County Parks property. Excavation and restoration (Figure 1) will consist of:

- a. Removal, transportation and disposal/recycling of two concrete slabs used in the original site remediation work performed by Kerr McGee/Tronox,
- b. Removal, transportation and disposal/recycling of one asphalt pad used by Kerr McGee/Tronox during the original site remediation and used again during the 2017-2018 groundwater optimization as a staging area for contractor equipment and a truck scale,
- c. Removal, dry-scraping, brushing, transportation and disposal/recycling of approximately 180 linear feet of sheet piling installed approximately 15 feet deep.
- d. grading, covering with top-soil and seeding disturbed areas in accordance with WDNR top soil and seeding specifications, and
- e. treatment and monitoring for invasive plant control to WDNR specifications.

4. Sampling to Support Development of Institutional Controls and Continuing Obligations

Development of institutional controls (ICs) and continuing obligations (COs) will be a cooperative effort between the WDNR and EPA. The existing deed instruments will be reviewed to determine continued applicability. Any data-gaps, particularly in the near-surface direct contact zone, may require limited soil sampling to define the necessary extent of the cap. For budget estimation purposes, provide per foot costs for advancement, sampling, and abandonment of up to 30 soil borings to a depth of 4 feet bgs. Also provide as cost for laboratory analysis (BTEX and PAHs), tabulation and reporting of the results.

5. Summary Report and Closure Packet Preparation

The case file for this site is extensive. It is anticipated that the site will close in the future with ICs and/or COs. Prepare a summary report of all activity associated with this scope of work, and if deemed warranted and directed by the WDNR, prepare a closure packet per NR 726 Wis. Admin. Code.

6. Remedial System Sheet Piling Removal and Disposal Activities

Approximately 1,200 linear feet of sheet piling (Figure 1) is to be removed. The budget estimate for this work item should be on a per linear foot basis for removal, dry-scraping, brushing, transportation, and disposal/recycling of 1,200 linear feet of sheet pile installed to a depth of approximately 15 feet bgs. The sheet pile removal areas are to be filled and graded to match surrounding ground surface, and seeded per WDNR specifications. Imported fill, if needed, shall meet WDNR specifications and be approved by the WDNR project manager.

7. Provide and Install 3 Access Gates: 2-16' Barrier Gates & 1-30' Double Leaf

Three gates will be installed to control access to areas disrupted by the site activities. Gate specifications are provided in Attachment A. The budget estimate should be based on site prep, gate purchase and installation. The location of the gates is planned as follows:

Gate 1 - This gate will control access to Milwaukee County Park property northeast of the source area. It will be located at the western end of West Heather Avenue (See Figure 2). The green star marks the planned gate location.

Gate 2 - This gate will be located near the intersection of Bradley Road and 91st Street and control access to what was used as the main staging area for equipment and office trailers during the Kerr McGee/Tronox phase of the project (See Figure No. 3). The green star marks the proposed gate location.

Gate 3 - This gate will be located on Calumet Road near the Little Menomonee River and a historic haul road. (See Figure 4). The gate is intended to limit access for illegal dumping. The green star marks the proposed gate location.

8. Debris Clean-up of 4.5 Acres

The 4.5-acre parcel is in the NE corner of the former source area, on the north side of the river (Figure 2). The area was used for staging soil and gravel during the initial remediation phase. Clean-up will include removal and proper disposal of waste and debris that has accumulated at the location. For budget estimation, calculate the volume to be removed and provide a unit cost for disposal at a licensed facility.

9. Restoration of 4.5 Acres

Once the metal gate is installed (item #7) and removal and proper disposal of the accumulated waste/debris has occurred (item #8), restoration of the 4.5-acre parcel can begin. The area is to be top-soiled and graded in preparation of seeding the area with a cool season seed mix per WDNR specifications. The final use plan is to return the parcel to a natural area per WDNR specifications.

10. Soil Pile Restoration

Work will take place on a soil pile that was created during the original remediation work carried out by Kerr McGee/Tronox. The soil pile is located north of Calumet Road, on the western edge of the Milwaukee County Parks land (Figure 4). Excess uncontaminated soil from the original remediation was placed here and never used for its original intended purpose. This material will remain in place and the area will be returned to a natural area per WDNR specifications.

11. Restoration of Calumet Haul Road Removal Site, Shallow Wetland Scrape

The southern 500 feet of the former haul road base will be removed to discourage illegal and ecologically damaging activities. A 12-inch deep excavation and planting of native emergent wetland plants and/or seed in this area will be performed per WDNR specifications.

III. Contractor Responsibilities

1. Contractor shall be responsible for ensuring all items under Section II, Site Sampling and Restoration are completed by the Contractor or a sub-contractor.
2. Contractor shall prepare all contract documents and specifications and provide oversight of all work. Standard State of Wisconsin contract documents will be provided to the contractor.
3. Reports

The contractor will prepare a Draft and a Final Work Plan and submit 2 copies of both the Draft and Final to the WDNR Project Managers, Thomas Wentland and Lee Delcore, in the Department's Plymouth Office. The Draft must be submitted within 30 days of the authorization to proceed with the contract.

The reports shall be prepared using currently accepted hydrogeologic and engineering methods and shall be in conformance with the provisions of the NR 500, 600, and 700 series, Wis. Adm. Codes, and other appropriate rules.

The contractor shall, from time to time during the progress of the work, confer with the WDNR and shall prepare and present such information and studies as may be pertinent and necessary or as may be required or requested by the WDNR to enable it to evaluate the features of the work. The contractor shall make such changes, amendments, or revisions in the detail of the work as may be

required by the WDNR. The WDNR reserves the right to select alternative methods to be used and may request additional alternatives be studied.

At the request of the WDNR, and during the progress of the work, the contractor shall furnish such maps, portions of reports, or other information or data relating to this work under this contract as may be required to enable the WDNR to carry out or to proceed with related phases of the project not covered by this contract, or which may be necessary to enable the WDNR to furnish information to the contractor upon which to proceed further with the work.

4. Erosion Control

Site erosion control measures will be undertaken as outlined in applicable portions of the document entitled Wisconsin Construction Site Best Management Practice Handbook (WR-222-89).

5. General Performance Conditions

The work under this contract shall consist of performing those phases or portions of the restoration for the project necessary or incidental to accomplish the project, and which are elsewhere herein specified. Work by the contractor shall proceed continuously and expeditiously through the completion of each phase.

The contractor shall furnish all services and labor necessary to conduct and complete the work, and shall furnish all materials, equipment, supplies, and incidentals other than those which are hereinafter designated to be furnished by others.

The work under this contract shall, at all times, be subject to the review and approval of the WDNR, shall be under the direction of its authorized representative, and shall be in accordance with the requirements contained in the WDNR's guidance documents.

Unless the contract has been terminated prior to the completion of the work, the contract shall not be considered terminated upon the completion and acceptance of the work, or upon final payment thereof, but shall be considered to be in full force and affect for the purposes of requiring the contractor to make such revisions or corrections in the work as are necessary to correct errors made by the contractor in the work, or for the purposes of having the contractor make revisions in the work at the request of the WDNR as a "change order."

6. Notification

The contractor shall notify the WDNR project managers at least 5 working days prior to the start of any drilling or sampling activities.

IV. Work Plan

1. General Requirements

A short workplan shall be prepared in accordance with the requirements of ch. NR 716 and any additional information provided in this scope of work. The Work Plan shall include a time line for all tasks to be completed as well as specific details about the work to be undertaken based on the project Scope.

A Draft Work Plan shall be submitted, within 30 days of award of the Professional Services Contract, based on the review and understanding of this Scope of Work and the site evaluation goals.

2. Work Schedule

The contractor shall submit a work schedule for conducting the work. At minimum, major tasks such as project start-up, soil boring/monitoring well installation, soil/groundwater sampling, sample analyses and site evaluation reports submittal shall be included.

3. Waste Handling Plan

The contractor shall submit a waste handling plan for all potential wastes to be generated during evaluation at the site. The contractor is responsible for all waste determinations and investigative waste disposal. Hazardous wastes must be handled through the State's Hazardous Waste contractor, Veolia Environmental Services.

V. Site Sampling Details

1. Site Surveys

The contractor shall make such surveys as are necessary to accomplish the work under this Scope. Such surveys shall be complete with respect to detail and to such degree of precision and accuracy as necessary to develop the plans for the Site Restoration Report of the project to the usual standards of the WDNR.

2. Monitoring Wells

- a. Monitoring wells shall be installed according to the requirements of ch. NR 141 Wis. Adm. Code.
- b. Water table observations wells shall be installed to adequately provide information on the direction of groundwater flow and contaminant concentrations. The length of screen shall be chosen appropriate for the contaminants of concern and the formation to be monitored.
- c. The locations of the individual wells may be determined according to the results of a geophysical survey and/or field screening techniques as deemed appropriate. Analytical groundwater data of the wells shall be evaluated to verify the results of any screening or surveys performed.
- d. Perched aquifers, if present, shall be identified. Groundwater elevations and monitoring results of any perched aquifers shall be evaluated and related to water table conditions in the study area.
- e. Monitoring wells shall be screened at those depths where contaminants are most likely located. Screens shall be placed such that individual wells only monitor one lithostratigraphic unit. Construction techniques shall be fully described and diagrammed in the workplan.
- f. For each well installed and/or sampled the WDNR Monitoring Well Construction Form (4400-113A), Monitoring Well Development Form (4400-113B), and Groundwater Monitoring Well Information Form (4400-89) shall be completed per instructions on the forms. If a variance to the requirements of ch. NR 141, Wis. Adm. Code, is believed to be necessary, an application will be submitted to the Department.

3. Chemical Analyses

The analyses of samples shall be performed in accordance with the requirements of ch.NR 716 Wis. Adm. Code.

- a. The contractor shall collect and analyze samples to determine contaminant concentrations. All water sample results shall be reported in units of ug/L.
 - b. Groundwater Samples shall be analyzed for the presence of parameters as indicated in Table 2. Copies of analytical results shall be submitted to the WDNR within 10 days of receipt by the contractor. Copies of any field screening results shall be submitted within 10 days of completion of field activities.
4. Water table contour maps shall be drawn based on stabilized water levels. Water level measurements shall be recorded on the same day.
5. Technical Data Section
- a. All technical data such as boring logs, well construction details, geophysical data, WDNR well construction, development, and abandonment forms, well information forms, water level measurements, soil and groundwater sampling results including summary statistics, soil tests, chain of custody documentation, etc., shall be included in the report.
 - b. All physical and chemical analytical results and water level measurements shall be presented in tabular format and presented in the report.

VI. WDNR Responsibilities

The State of Wisconsin through the WDNR agrees to provide the following support:

1. The WDNR will assign Thomas Wentland and Lee Delcore as project managers to serve as an official representative of the WDNR who will resolve in writing any problems of policy and procedure issues and will provide information on the site.
2. The WDNR project managers will be able to conduct on-site inspections with the contractor prior to proposal preparation and during site evaluation activities.
3. The WDNR will be responsible for all public information activities associated with the project. The WDNR retains sole rights to all data collected for this study. No data may be used by the contractor for any other purposes until the final report is released to the public by the WDNR.
4. The WDNR retains the right to request a change of contractor's personnel if it determines those existing personnel cannot adequately perform the required tasks. Any such request will be submitted in writing to the contractor. Within 7 days of receipt of such request, the contractor will provide the WDNR with a list of proposed individuals and their qualifications. The WDNR will evaluate the list and choose a suitable replacement within 7 days. If the WDNR deems that none of the proposed substitutions are acceptable the contract will be declared void and the contractor dismissed. The contractor will be reimbursed for time and materials expended to that point. All data collected will be turned over to the WDNR.

VII. Contractor Evaluation

At the completion of the project, the WDNR may conduct a contractor evaluation. The following criteria will be evaluated:

1. Ability to meet project schedules and budgets.
2. Accuracy & completeness of contract documents or construction work based on contract specifications.
3. Responsiveness to field observations and recommendations by the WDNR Project Manager.
4. Overall professional responsibilities demonstrated.
5. Satisfactory administration of contract billing, proposal preparation, and construction documentation as evidenced by timeliness and completeness.

Attachment A

PROJECT PROPOSAL REQUIREMENTS

A. Proposal

1. Prior to awarding the contract, the Contractor shall submit a Project Proposal based on the elements identified in this Scope of Work. The Proposal shall identify key personnel employed by the Contractor who will be working on the project. A summary of each key employee's educational and work experience shall be provided.
2. A meeting with the Department's Project Managers is required before submitting a Proposal.
3. The Contractor shall identify all subcontractors who will be working on the project. Substitutions of key personnel or subcontractors shall not be allowed without the prior written approval of the WDNR.

B. Cost Estimate

A cost estimate shall be included for the Proposal that itemizes the following for each work item:

1. labor (staff position, title, and labor rates)
2. time
3. materials
4. travel costs
5. equipment and other rental costs

Items a through e shall be provided separately for each item in Table 1.

C. Site Safety Plan

A site safety plan shall be developed and followed by the contractor and subcontractors. This plan shall reference all current Occupational Health and Safety Administration (OSHA) standards for worker safety. The contractor is solely responsible for site safety of its personnel, subcontractors and any bystanders. The contractor is not responsible for liability, claims and costs arising from activities of WDNR personnel or its agents (see item sixteen (16) of the General Terms and Conditions of the Agreement). The Department may review the plan but will not approve or disapprove it.

Attachment B

TABLES

**Table 1
Work Items**

1.) Groundwater Monitoring Well Installation (6)
2.) Quarterly Groundwater Performance Monitoring, Well Maintenance and Reporting (8 events)
3.) Railroad Property Excavation and Restoration
4.) Sampling to Support Development of Institutional Control and Continuing Obligations
5.) Summary Report and Closure Packet Preparation
6.) Remedial System Sheet Piling Removal and Disposal Activities
7.) Provide and Install 3 Access Gates: 2-16' Barrier Gates & 1-30' Double Leaf
8.) Debris Clean-up of 4.5 Acres
9.) Restoration of 4.5 Acres
10.) Soil Pile Restoration
11.) Restoration of Calumet Haul Road Removal Site, Shallow Wetland Scrape

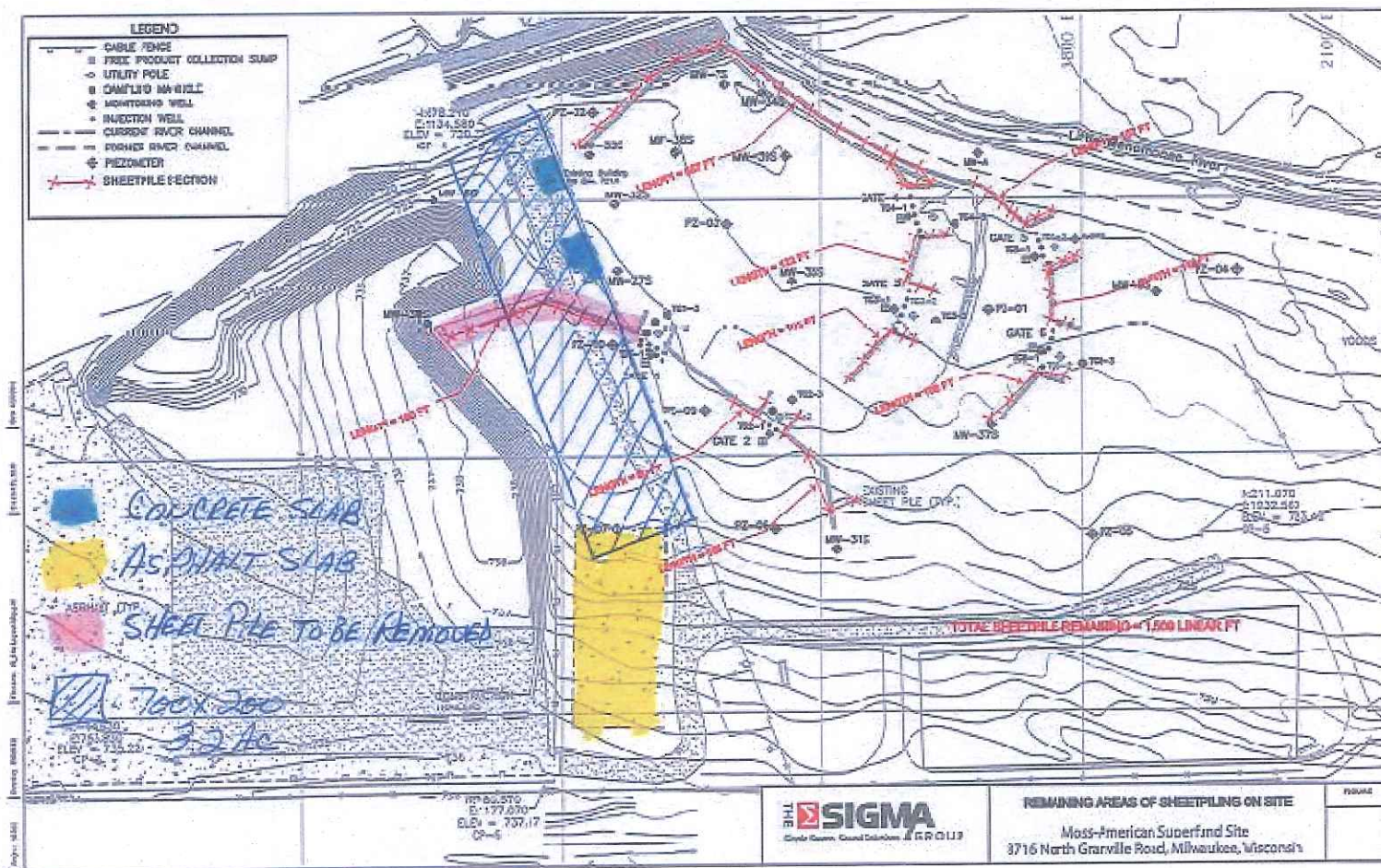
Table 2
Budget Estimate Sheet

	Units	Unit Cost	Total
Draft and Final Workplan	total		
1. Groundwater Monitoring Well Installation	per well		
2a. Quarterly Groundwater Monitoring & Well Maintenance	per well		
2b. Quarterly Groundwater Monitoring & Well Maintenance Report	per report		
3a. Removal, transportation and disposal/recycling of two concrete slabs	lump		
3b. Removal, transportation and disposal/recycling of one asphalt pad	lump		
3c. Removal, dry-scraping, brushing, transportation and disposal/recycling of approximately 180 linear feet of sheet piling	per ft		
3d. Grading, covering with top-soil and seeding areas of removed slabs and sheet pile	sq ft		
3e. Treatment and monitoring for invasive plant control	sq ft		
4a. Development of ICs and COs	review/drafting		
4b. Advancement, sampling, and abandonment of up to 30 soil borings to a depth of 4 feet bgs	per ft		
4c. Laboratory analysis (BTEX and PAHs)	per sample		
4d. Tabulation and Reporting of Results	per report		
5a. Final Report Preparation	per report		
5b. Closure Packet Preparation	per report		
6a. Removal, dry-scraping, brushing, transportation and disposal/recycling of 1,200 linear feet of sheet pile	per foot		
6b. Filling and Grading	sq ft		
6c. Seeding	sq ft		
7. Access Gate site prep, gate purchase and installation	lump		
8a. Removal of waste and debris	lump		
8b. Transport and Disposal of waste and debris	ton		
9a. Restoration Topsoil (4.5 acres)	acre		
9b. Restoration Grading (4.5 acres)	acre		
9c. Restoration Seeding (4.5 acres)	acre		
10. Soil Pile Restoration (1.3 acres)	acre		
11. Restoration of Calumet Haul Road Removal Site, Shallow Wetland Scrape (0.4 acres)	acre		
		Grand Total	

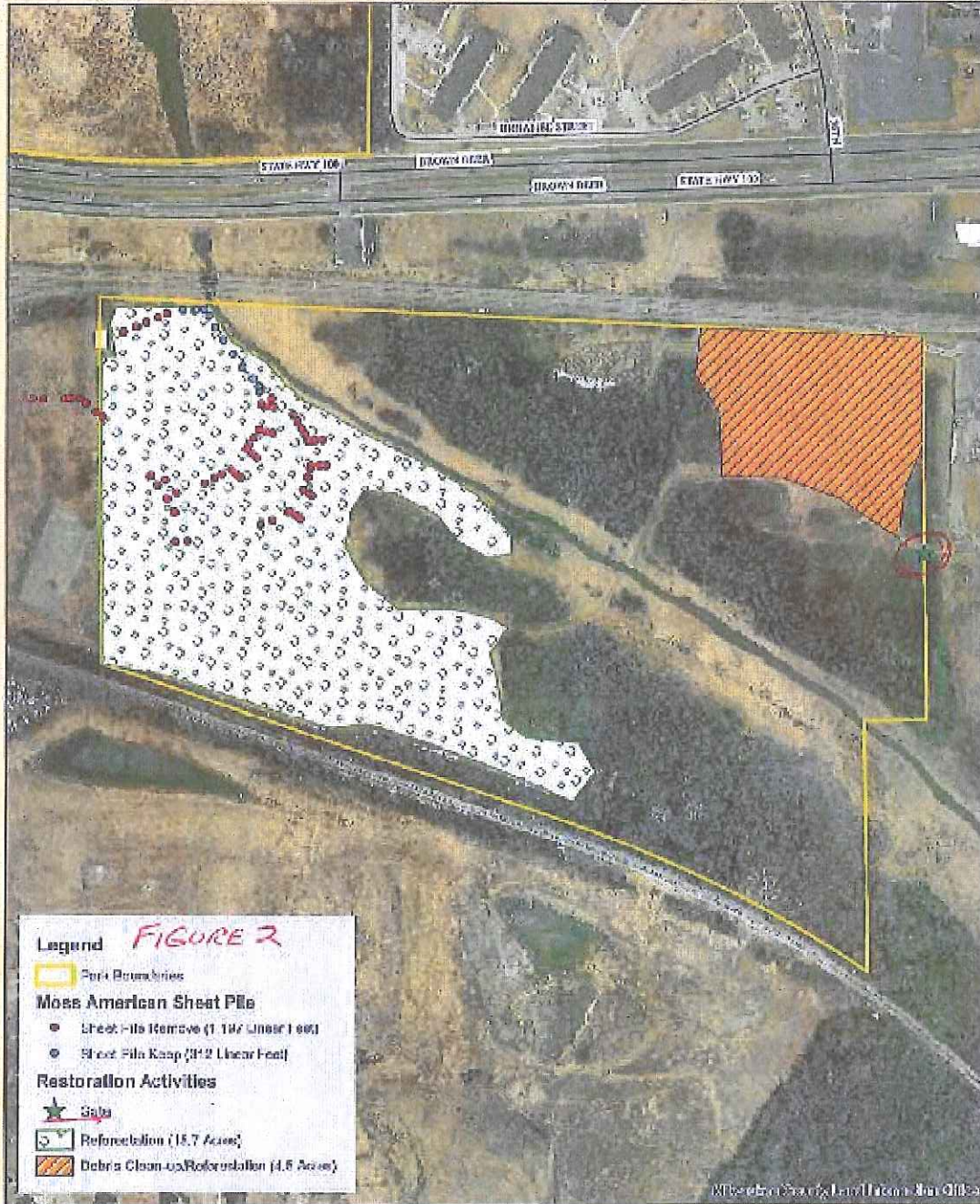
Attachment C

FIGURES

FIGURE 1



Moss American Restoration Proposal Source Area



Legend *FIGURE 2*

- Park Boundaries
- Moss American Sheet Pile**
 - Sheet Pile Remove (1,187 Linear Feet)
 - Sheet Pile Keep (3,112 Linear Feet)
- Restoration Activities**
 - ★ Gate
 - Rehabilitation (18.7 Acres)
 - Debris Clean-up/Rehabilitation (4.6 Acres)



Moss American Restoration Proposal Bradley (2005 Aerial)

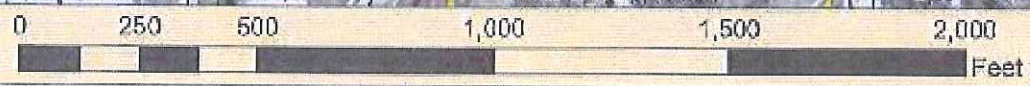


Moss American Restoration Proposal Calumet (2005 Aerial)



Legend *FIGURE 4*

- Park Boundaries
- Phragmites
- Restoration Activities**
- Gate
- Restoration



Attachment D

Gate Specifications

DuraGate DGT-BS Super-Duty Steel Barrier Gate Square Tubular, 16 Ft. Long



Overview:

- Comes 16' Long - Cut to Size you need!
- Prevent Unauthorized Access
- Heavy Duty, Commercial Grade Construction
- Ideal for Farm, Ranch & Rural Road Vehicular Traffic

Complete Kit Includes:

- Hot Dip Galvanized Steel Gate
- Hinge & Lock Posts
- Lock Assembly
- Hinges, Brackets & Hardware

Product Details

DuraGate DGT-BS Barrier Gate Square 16' Long Kit Includes Gate, Hinge Post, Lock Post, Hinge Brackets, Hinges, Hardware, and Lock Assembly (padlock not included). Open position lock post can be purchased separately - order part number DGT-6L. These Barrier Gates are a Gate Depot Exclusive - Ideal for residential, agricultural and industrial properties. The simple design is easy to install in either a single or dual swing gate configuration. A perfect do-it-yourself project!

Features

- 4" x 4" x 4mm Heavy Duty Square Tubular Gate & Posts (120 x 120 x 4mm)
- Manufactured using Hot Dip Galvanized Steel for Durability
- Fully Welded Joints for Strength
- 180° Swing
- Comes 16' long, cut to size you need

<http://www.gatedepot.com/product/duragate-dgt-bs-barrier-gate-square-16-long-kit/>

LiftMaster 14020 Manual Double Leaf Swing Barrier Gate Arm

30 Ft. Long



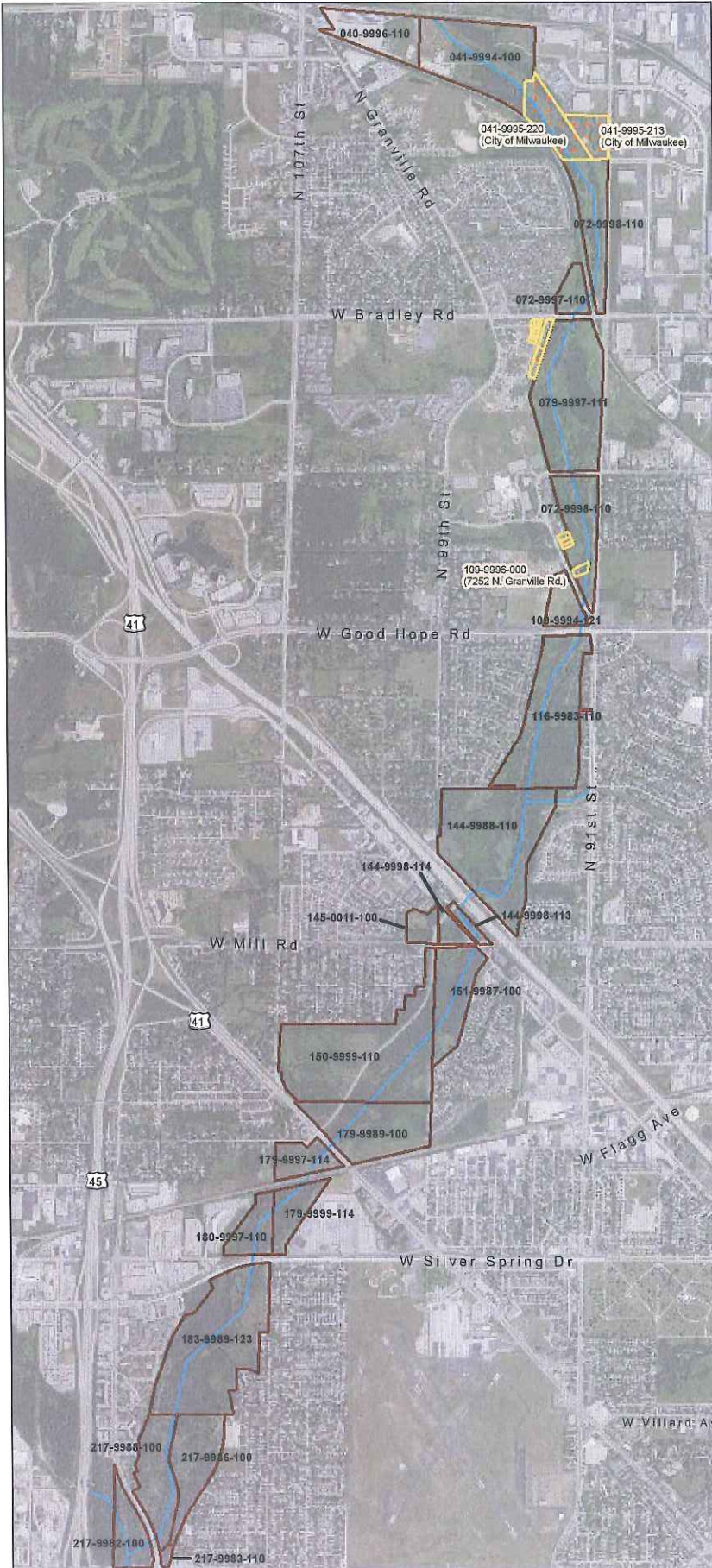
- Galvanized
- Lock assembly to accept a padlock
- Uses Guardian Standard Hinges
- Easy to install in-ground or surface mount
- Receiver Post #14030R REQUIRED for Arms over 15'

ATTACHMENT 4

FINAL IC MAP

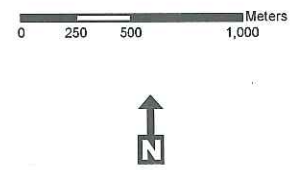


**Moss American Kerr-McGee
 Milwaukee County, WI**
 EPA ID# WID039052626



Legend

- Restricted Parcels (with PIN number)
- Parcels without Restrictions Located within the FEMA 100 Yr. Floodplain, 2008 (with PIN number)
 * See Explanation in Attached Technical Memorandum (Sept. 2, 2010)
- Menomonee River



Produced by Angela Rozinski
 U.S. EPA Region 5 on Feb 18, 2011
 Image Date: 2009

EPA Disclaimer: Please be advised that areas depicted in the map have been estimated. The map does not create any rights enforceable by any party. EPA may refine or change this data and map at any time.

ATTACHMENT 5

DRAFT LTS PLAN (VERSION 1.0)

**Institutional Controls Implementation
and Assurance Plan Including Long-Term Stewardship Procedures
Version No. 1**

For

Moss American
EPA ID:

City of Milwaukee
Milwaukee County, Wisconsin

September 2019

Prepared by:

Wisconsin Department of Natural Resources
Plymouth, Wisconsin

Approved by:

Date:

Name
Title
Affiliation

Institutional Control Implementation and Assurance Plan

Table of Contents

1.0	Purpose and Introduction
2.0	Site Details
3.0	Contaminant Details.....
4.0	IC Properties
5.0	IC Instruments.....
6.0	IC Implementation
7.0	IC Monitoring
8.0	IC Enforcement.....
9.0	IC Modification & Termination

APPENDICES

Copies of Implemented ICs

Maps & Figures

Acronyms and Abbreviations

ICs

Institutional Controls

ICIAP

Institutional Controls Implementation and Assurance Plan

Following are definitions that should be included in the document.

Planning may include activities leading up to implementation of an IC. This stage may include an evaluation of: the type(s) of use restrictions necessary at a site, potential ICs that might be relied upon to implement the selected restrictions, potential parties who may be responsible for long-term IC activities, criteria for terminating the ICs, issues that might impact the effectiveness of the ICs, estimated costs, and funding sources

• **Implementation** may include activities undertaken to put the ICs in place including drafting, negotiating, and signing the specific documents necessary to legally establish the IC.

• **Maintenance** includes long-term monitoring and reporting activities that may be necessary to routinely and critically evaluate the effectiveness of ICs in consideration of cleanup objectives and cleanup goals.

• **Enforcement** can include actions taken to address ICs that have been breached or improperly implemented or maintained. IC enforcement may involve a range of activities, including informal communications and seeking voluntary compliance to more formal, legal steps, when appropriate.

• **Modification/Termination** may include legal or administrative steps taken to modify IC instruments (e.g., changing the area that the IC restricts or modifying monitoring requirements) or terminating the IC because cleanup objectives, cleanup goals, and/or other IC conditions have been met.

1.0 PURPOSE AND INTRODUCTION

This ICIAP (Plan) has been prepared by the **Wisconsin Department of Natural Resources** for the Moss American Site (Site). This Plan describes the implementation, monitoring, and assurance procedures to be carried out at the Site in **Milwaukee, Wisconsin**.

The objective of this Plan is to establish the basis and procedures for (implementing and) managing necessary ICs at the Site for the following media of IC interest: soil and groundwater. The eighty-eight-acre Site includes the former location of the Moss-American creosoting facility, five miles of the Little Menomonee River, a portion of which flows through the eastern half of the site, and the adjacent flood plain soils. The Site is in the northwestern section of the City of Milwaukee, County of Milwaukee, State of Wisconsin, at the southeast corner of the intersection of Brown Deer and Granville roads, at 8716 Granville Road. See Figure 1 for a location map of the Site. Sixty-five acres of the Site are undeveloped Milwaukee County park land. And twenty-three acres are owned by the Union Pacific Railroad Company.

Institutional Controls (ICs) are generally defined as non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action. They typically are used in conjunction with, or as a supplement to, other measures, such as waste treatment or containment. They are typically required for areas which will not allow for unlimited use/ unrestricted exposure (UU/UE) or UU/UE or generally refers to a situation when there is no exposure or use limitations required for the remedy at a site to be protective. An ICIAP is a document designed to systematically: establish and document the activities necessary to implement and ensure the effective ICs are in-place, to ensure long-term stewardship of ICs and to specify the persons and/or organizations that will be responsible for conducting these activities.

Specifically, this document describes how the selected ICs will be [implemented, maintained, enforced, modified and terminated].

There are generally four categories of ICs: governmental controls; proprietary controls; enforcement and permit tools with IC components; and information devices. Of these, the following ICs are proposed (or in-place) for this Site.

This Plan provides the following information.

- Site Details
- Contaminant Details
- IC Properties
- IC Instrument Categories

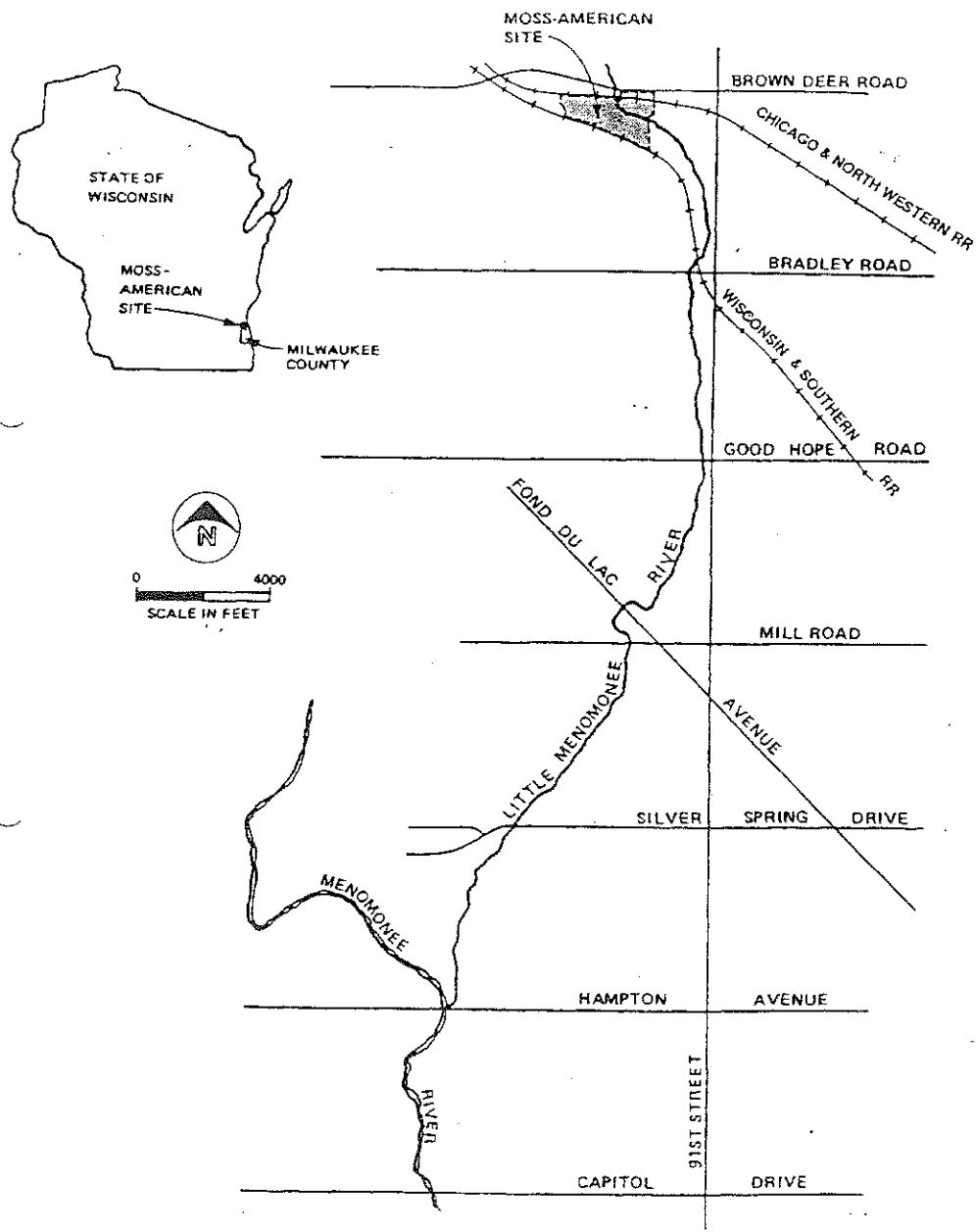


FIGURE 1
LOCATION MAP
MOSS-AMERICAN FS

- IC Implementation
- IC Monitoring

- IC Enforcement
- IC Modification and Termination

As the lead Environmental Regulatory Agency, the EPA Region 5 is one of the primary point of contact for any IC related issues including implementation, monitoring, enforcement, and termination. Next, the state agency may be a point of contact. Furthermore, a local governmental agency may be a point of contact. Last, any PRPs conducting the work or property owners or former property owners, may also serve as primary contacts. To report an IC related issue at this Site, please contact:

Name: Thomas A. Wentland
Title: Waste Management Engineer
Address: Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, Wisconsin 53073
E-mail: Thomas.wentland@wisconsin.gov
Telephone: 920-893-8528

2.0 SITE DETAILS

2.1 Site Description

The eighty-eight-acre Site includes the former location of the Moss-American creosoting facility, five miles of the Little Menomonee River, a portion of which flows through the eastern half of the site, and the adjacent flood plain soils. The Site is in the northwestern section of the City of Milwaukee, County of Milwaukee, State of Wisconsin, at the southeast corner of the intersection of Brown Deer and Granville roads, at 8716 Granville Road. See Figure 1 for a location map of the Site. Sixty-five acres of the Site are undeveloped Milwaukee County park land. And twenty-three acres are owned by the Union Pacific Railroad Company.

2.2 Site History

In 1921, the T. J. Moss Tie Company established a wood preserving facility on twenty-three acres of the Site west of the Little Menomonee River. The plant preserved railroad ties, poles, and fence posts with creosote, a mixture of 200 or more chemical compounds derived from coal tar and fuel oil. The process used a 50/50 mixture of creosote and No. 6 fuel oil. There is no indication that any other chemicals were used at the facility. Kerr-McGee purchased the facility in 1963 and changed the facility's name to Moss-American. The name was changed again in 1974 to Kerr-McGee Chemical Corporation—Forest Products Division. From 1921 to 1971, the facility discharged wastes to settling ponds that ultimately discharged to the Little Menomonee River. These discharges ceased in 1971 when, in response to a City

of Milwaukee order, Moss-American diverted its process water discharge to the Milwaukee sanitary sewerage system. The facility closed in 1976. The eastern part of the property was acquired by Milwaukee County in 1978; Chicago and North Western Railroad bought the western parcel in 1980.

State and national attention came to the Site in 1971 when young people, engaged in an Earth Day clean-up of the river, received chemical burns from a tarry substance while wading more than three miles downriver from the Site. Sampling results indicated that the tarry substance was creosote and that the Moss-American facility was the source of the contamination. Subsequently, under a Wisconsin Department of Natural Resources (WDNR) order, Kerr-McGee cleaned the eight settling ponds and dredged about 1,700 feet of river to remove creosote-contaminated soil and sediment. The settling ponds were filled with clean soil, the discharge pipe to the Little Menomonee River was removed and a twelve-foot-deep underground clay retaining wall was constructed between the ponds and the river, adjacent to the facility.

In 1973, United States Environmental Protection Agency (U. S. EPA) financed the dredging of approximately 5,000 feet of river between the Site and Bradley Road.

In 1974, U. S. EPA (under the Clean Water Act) and Milwaukee County filed a complaint seeking an injunction against Kerr-McGee Chemical Corporation, and to recover costs incurred for studies and cleanup. In 1978, the lawsuit was dismissed due to the discovery that some of the data had been falsified. Milwaukee County reached a settlement with Kerr-McGee in which it received a major portion of the property. This property was added to the existing county park corridor along the Little Menomonee River south of the Site. Between 1977 and 1978, the Southeast District of the Wisconsin Department of Natural Resources (WDNR) regulated the disposal of demolition waste from the facility as it was dismantled by the company. This resulted in the removal and off-Site disposal of 450 cubic yards of creosote-contaminated soil. The water quality and soil/sediment contamination studies done by U.S. EPA and other agencies between 1970 and 1980 indicated that gross creosote contamination was present in the soil and groundwater at the facility as well as in the sediment of the Little Menomonee River. In 1983, the facility was placed on the National Priorities List (NPL) pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Section 9605 with a Hazard Ranking Score (HRS) of 32.14. In April of 1985, notice letters were mailed to the potentially responsible parties (PRPs) which included Kerr-McGee, Chicago and Northwestern Railroad, and Milwaukee County, inviting them to negotiate for the conduct of the Remedial Investigation/Feasibility Study (RI/FS) at the Moss-American Site. All three PRPs attended the meeting held August 8, 1985 but declined to undertake the RI/FS. Under an existing remedial contract, U. S. EPA assigned the consulting firm of CH2M Hill the RI/FS project, which began in 1987. The RI report was completed in December 1989 and the FS approved in May 1990.

2.3 Previous Site Uses:

Prior to 1921 when the T. J. Moss Tie Company was established the Site was used for agricultural purposes.

2.4 Contaminants of Concern:

The contaminants of concern at the Site, are eight carcinogenic polycyclic aromatic hydrocarbons (CPAHs). The CPAHs of concern at the Site are: benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzofa,h]anthracene, benzo[g,h,i]perylene.

2.5 Risk Exposure Pathways:

Exposure to the chemicals of concern and other Site-related contaminants in soil, sediment and surface water can occur through three exposure pathways: direct contact, direct or indirect ingestion, and inhalation of suspended particles.

2.6 Response Action or Cleanup Remedy Summary:

2.6.1 Cleanup Objectives:

The cleanup objectives for soil are to minimize the threats to human health and the environment from on-site contaminants via the exposure pathways of direct contact, inhalation or ingestion and to prevent further migration into the groundwater and subsequently into the river.

2.6.2 Engineering Controls:

(A) Sediment

- 1.) Engineering Controls consisted of on-site treatment of contaminated soils.
- 2.) Removal of contaminated sediment from the then existing river channel exceeding 388 ppm CPAHs. Covering the remaining sediment less than 388 ppm CPAHs with clean soil.
- 3.) Re-routing the river channel within its floodplain to separate it from the buried sediment.
- 4.) Installation of eleven groundwater monitoring wells for future detection of contaminate migration from the original channel.

(B) Groundwater

Physical barriers in the form of steel sheet piling were used to isolate contaminated groundwater in the source area and not allow it to enter the Little Menomonee River until it passed through a Funnel and Gate treatment system. The Funnel and Gate system was constructed of steel sheet piling to create six groundwater collection areas (funnels) which directed the groundwater flow through openings (gates) in the sheet

piling where the groundwater was treated with air sparging and nutrients before it could flow into the river.

2.7 Substantive Use

The portion of the Site that was owned by Mr. T. J. Moss and supported the wood preserving operation covered an area of 23 acres. When wood preserving operations ended in 1971 the eastern part of the property was acquired by Milwaukee County and was added to the existing county park corridor along the Little Menomonee River. The western part of the property was acquired by the Union Pacific Railroad Company and used as a vehicle loading and storage area until approximately 2000 when the loading operation ended, and the parcel became overgrown with brush and invasive plants. The use of both parcels has not changed in the past 20 years.

2.8 Other ICs Necessary to Ensure Long-Term Protectiveness

ICs, in the form of deed restrictions, have been recorded to limit future re-use of the former wood-treating site and the floodplain downstream of the former facility. A Deed Restriction entitled "Amended Declaration of restriction on use of Real Property" was recorded with the Register of Deeds of Milwaukee County under Document Number 7931309 on June 30, 2000. The actual restrictions are as follows:

1. There shall be no use of property at the facility within the area of extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of the response action that interferes with any aspect of the work performed or to be performed under the ROD, Consent Decree, or SOW for the Moss-American Superfund Site, or any activity which may damage any remedial action component contracted or installed pursuant to the ROD, Consent Decree, or SOW or otherwise impair the effectiveness of any work to be performed pursuant to the ROD, Consent Decree, or SOW.
2. There shall be no installation, construction, or removal of any buildings, wells, pipes, roads, ditches or any other structures on property at the facility within the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of the response except as approved by the United States Environmental Protection Agency as consistent with the Consent Decree and ROD.
3. Applicable laws and regulations governing wetland and floodplain habitats shall be complied with.

Additional remedial action to groundwater was carried out in the fall of 2017. Groundwater sampling is scheduled to be conducted by the end of 2019 to determine if the remediation work was successful.

Mapping of Residual Contamination and IC Boundaries:

Site Maps

Provide Maps which illustrate the areas which do not allow for unlimited use/ unrestricted exposure – where ICs are required and areas which are subject to restrictions.

- Provide Map and GIS information of [restricted areas identified in the Table above including area where groundwater exceeds performance standards; area remediated to industrial standards etc.] based on current and up to date monitoring data;
- Provide Map and GIS information of the [legal description covered by an existing restrictive covenant or other proprietary control; and/or areas regulated by governmental controls]; and
- Provide maps and GIS that overlay the information of above.
- Provide other maps useful maps

All maps and GIS information must identify: site boundaries, streets, property ownership and assessors parcel numbers or other plat or survey information. Identify the accuracy of the GIS coordinates (i.e. within 0.01 feet). Format the GIS coordinates into an ESRI polygon-shape file. The shape file shall be projected into the UTM, NAD 83 projection system. Identify the UTM zone. Provide an attribute name in the shape file for each polygon submitted. For example: “site boundary”, “residential use prohibited”, “groundwater use prohibited” and “interference with landfill cap prohibited”.

Figures

Add Figures which helps illustrate the restricted areas such as as-built drawings.

Other Information:

2.3 Current/Future Site Information

Parcel Ownership Information: (include owners and property identification Numbers (PINs)).

Current and Reasonably Anticipated Future Land Uses:

Responsible and Interested Parties: (include RPs and stakeholders)

3.0 CONTAMINANT DETAILS

3.1 Contaminants of Concern Identified in the ROD (or Decision Document)

The contaminants of concern at the Site, are eight carcinogenic polycyclic aromatic hydrocarbons (CPAHs). The CPAHs of concern at the Site are: benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzofa,h]anthracene, benzo[g,h,i]perylene.

3.2 Contaminants Remaining

Contaminants of concern remain on the Site but are isolated from the three exposure pathways; direct contact, direct or indirect ingestion, and inhalation of suspended particles as a result of being covered with clean soil as addressed in the approved remedial action plan.

3.3 Contaminated Media:

Contaminated Media consists of soil, groundwater and sediment.

3.4 Contaminated Site Area:

4.0 IC PROPERTIES

The ROD (and /or ESD) identified IC objectives and use restrictions. Furthermore, additional information may have become available regarding current areas of contamination (above UU/UE), IC objectives and use restrictions. Table 1 provides a matrix which summarizes the IC objectives, use restrictions, and anticipated duration of use restrictions.

Table 1 IC Objectives and Use Restrictions Matrix (Sample Matrix)

Parcel Number	Area of Interest (See Map)*	Contaminants Remaining	Contaminated Media	Engineering Controls	IC Objective	Use Restriction	Anticipated Duration	IC Instruments	
0001	Site	benzo[a]anthracene chrysene benzo[b]fluoranthene benzo[k]fluoranthene benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzofa,h]anthracene, benzo[g,h,i]perylene.	Subsurface Soil Groundwater Sediment	Cap Groundwater Treatment Subsurface Treatment	Prohibit Dermal Contact Prevent Damage to Cap	No excavation may occur unless approved by U.S. Environmental Protection Agency. No groundwater extraction Wells	Until contamination reaches levels for unlimited use or unrestricted exposure. **	Deed Restrictions. Environmental Covenant	
							Until contamination reaches levels for unlimited use or unrestricted exposure. **		

5.0 KEY ELEMENTS FOR ALL PLANNED /IMPLEMENTED IC INSTRUMENTS

Often ICs are more effective if they are layered or implemented in series or layered. Layering can involve using different types of ICs at the same time to help ensure the protectiveness of the response action. The types of overlapping ICs planned / implemented for the site includes: [proprietary controls, governmental controls, enforcement instruments, and / or informational controls/devices. The following short discussion summarizes the types of ICs that will be used: An IC relationship matrix is included in the Table above.

Enforcement & Permit Tools with IC Components: Tools, such as administrative orders or consent decrees, available to EPA under CERCLA and RCRA that can be used to restrict the use of land. Enforcement authority can be used to either (1) prohibit a party from using land in certain ways or from Page 39

carrying out certain activities at a specified property, or (2) require a settling party to put in place some other form of control, such as a proprietary control.

Informational Devices: IC instruments that provide information or notification that residual contamination could remain on site. Common examples include state registries of contaminated properties, notices in deeds, and advisories.

6.0 IC IMPLEMENTATION AND EFFECTIVENESS EVALUATION

6.1 Deed Restrictions such as Restrictive Covenants or Environmental Covenants

A Deed Restriction entitled "Amended Declaration of restriction on use of Real Property" was recorded with the Register of Deeds of Milwaukee County under Document Number 7931309 on June 30, 2000.

6.2 Government Controls

A Consent Decree entitled "United States of America, et al. v. Kerr-McGee Chemical Corp" Case Nos. 91-C-1396/92-C-6 was filed in Federal Court on March 29, 1996.

B. ANALYSIS OF IC EFFECTIVENESS/PROTECTIVENESS:

Governmental Controls in the form of the March 29, 1996 Consent Decree and the June 30, 2000 Deed Restriction adequately implement the objectives/performance standards described above. These restrictions cover the entire area affected by the contamination.

7. Recommendations There are no recommendations presented here since the Deed Restriction and the Consent Decree ensure that the land and groundwater use restrictions described in the Table above are implemented correctly, are maintained and will be protective in the short term and the long term.

7.0 IC MONITORING

7.0.1 LTS Monitoring & Maintenance

Groundwater quality will be monitored annually to evaluate the effectiveness of ICs in consideration of cleanup objectives and cleanup goals.

Annual site visits will be conducted to assure ICs and the Consent Decree are followed.

7.0.2 Periodic IC Assurance Monitoring & Notification

Documents on file with the Milwaukee County Register of Deeds for the site would be reviewed annually to determine if the use restrictions are still in affect and if new restrictions have been added.

7.1 Current Compliance

The existing Deed restriction for the site is in effect and continues to be protective of the remedy for the Site.

Groundwater monitoring of the entire Site is scheduled to be completed by October 31, 2019. Monitoring is planned to be conducted until Record of Decision clean up goals are attained. Monitoring will be conducted by a contractor with the work and the Site under the direction of the Wisconsin Department of Natural Resources.

Affected parties will be notified the ICs and use restrictions remain in place. They will also be notified of any changes to the ICs and use restrictions if they occurred during the previous year.

7.2 Recordkeeping

Recordkeeping will be maintained by the Wisconsin Department of Natural Resources by listing all Site related documents on the Bureau of Remediation and Redevelopment Tracking System (BRRTS). This is an electronic data base that is available for public access and use.

Certification to EPA that ICs are in-place and remain effective and a discussion on how this conclusion was reached will be submitted annually.

7.3 Notification

Changes in land use and ownership, although highly unlikely, will be reported to the U.S. Environmental Protection Agency immediately upon discovery.

8.0 IC ENFORCEMENT

The U.S. Environmental Protection Agency is the Enforcing Entity for the Site and full Legal Authority to enforce the ICs.

9.0 IC MODIFICATION & TERMINATION

Plans do not exist to modify or terminate the ICs.

References:

Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups, Office of Solid Waste and Emergency Response (OSWER) 9355.0-74FS-P, EPA 540-F-00-005, September 2000, (*A Site Manager's Guide to ICs*);

Recommended Evaluation of Institutional Controls: Supplement to the Comprehensive Five-Year Guidance; OSWER Directive 9355.7-18, 2011.;

Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites 2 (PIME) (OSWER/OECA Dec. 2012), available at <https://www.epa.gov/fedfac/institutional-controls-guide-planning-implementing-maintaining-and-enforcing-institutional>.

Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective Over Time (OSWER Sept. 2005).

Enforcement First to Ensure Effective Institutional Controls at Superfund Sites; Memorandum on Enforcement First Policy and Application to Any Actions Needed to Ensure the Implementation and Effectiveness of Institutional Controls; (3/17/06).

Advanced Monitoring Technologies and Approaches for Long-Term Stewardship- Pending

ATTACHMENT 6

PUBLIC NOTICE AD

Give your old BATH a MAKEOVER

BATHTUB TO SHOWER CONVERSION!

As Little As \$4,995



\$3,995

CONVERT YOUR TUB TO A SHOWER IN AS QUICKLY AS A DAY!

With this offer only. Not valid in combination with any other offers. *Some restrictions apply. Offer includes White Base, White Walls, and Chrome Fixtures Only. Subject to approved credit. Expires 3/31/2019.

TOTAL BATHROOM REMODEL

\$9,995

\$7,995*

Remodel Includes:

- Tub • Shower Base • Wall Surround • Vanity • Corian Top
- Fixtures • Duraceramic Flooring • Complete Install

IN LESS THAN 48 HOURS

With this offer only. Not valid in combination with any other offers. *Some restrictions apply. Subject to approved credit. Expires 3/31/2019.



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Greenfield, WI



High court candidates each raise \$1 million

Molly Beck
Milwaukee Journal Sentinel
USA TODAY NETWORK - WISCONSIN

MADISON - State appeals court Judges Brian Hagedorn and Lisa Neubauer have each raised more than \$1 million in their bids for a seat on the state Supreme Court since the race began last year.

Neubauer raised \$1.7 million, leading Hagedorn's \$1.3 million in total fundraising.

Hagedorn and Neubauer — colleagues on the District 2 Court of Appeals — are seeking a 10-year term on the state's highest court in an April 2 election.

The candidates' final fundraising reports ahead of the election are due Monday.

Neubauer's total fundraising includes \$366,030 the campaign raised since February and \$250,000 Neubauer loaned to the campaign at its outset. The campaign has \$615,435 in cash on hand, according to the campaign.

Hagedorn raised \$747,182 in that time, and has \$375,007 in cash, according to his campaign.

Both candidates are seeking to replace retiring liberal Justice Shirley Abrahamson, who has been on the court for 43 years.

Neubauer is getting backing from liberals and Hagedorn from conservatives.

The April election will determine whether conservatives maintain their 4-3 majority or expand it to 5-2.

The candidates' final debate is Tuesday.

Farmers

Continued from Page 1A

cows, investing whatever they could back into the operation.

They raised seven children. Two of their sons, Russell, 55, and Steven, 49, still work on the farm.

For the couple, both 79 years old now, the rural lifestyle they provided their children was exactly what they wanted for their farms.

"As far as I'm concerned, there's nowhere else to raise kids other than out in the country," Mary said. "They learn to respect people, and they learn to respect themselves too."

Inside their home's small dining room, photos of the family and the farm fill the walls. Out a side door, a short path leads to a picturesque red barn, flanked by smaller red outbuildings.

Their farm was founded in the 19th Century, just as a wave of settlers from Europe arrived in Wisconsin and began dairy farming. By 1915, Wisconsin was the top milk producer in the U.S., a title the state held until 1993 when it dropped behind California.

But dairy farming remains central to Wisconsin's identity — and to John and Mary's identity.

Read the Series

The "Dairyland in Distress" series, by the USA TODAY NETWORK-Wisconsin, is examining the crisis facing Wisconsin's dairy industry. For additional stories, photos, videos and interactive graphics — as well as updates on farms we are following this year — go to jsonline.com/dairycrisis.

'We've had hard times, but nothing like this'

John and Mary should be thinking about retirement. Instead, everything they've worked toward their entire lives is at risk.

The price of milk has plummeted in the last few years, leaving them and many other dairy farmers fighting to survive.

"We've had hard times, but nothing like this," Mary said.

John and Mary are still milking 52 cows, but they are struggling with hundreds of thousands of dollars of debt, plus monthly expenses they can't avoid if they want to keep the farm running. They're barely able to get by, Mary said.

"Stress is the one thing that's got to be worse than the work," she said. "It gets to the point where you can't even sleep at night."

Many dairy farmers across Wisconsin find themselves in a similar situation, unable to make money at jobs they've often spent their lives doing.

In January, the state had 8.10 milk cow herds,

according to the state Department of Agriculture, Trade and Consumer Protection, which tracks the number of dairy producer licenses in Wisconsin. That's 691 fewer than a year earlier.

Sarah Grotjan, a dairy educator with the UW-Extension in Outagamie County, said dairy farmers in northeast Wisconsin face the same challenges as farmers elsewhere in the state.

"We're in a situation where all commodities are down," she said. "And they've been down for quite a while."

Most farmers are highly educated and have invested a lot of money to improve their operations, Grotjan said. That has made everything more efficient, leading to more milk production.

But with a massive supply of milk on the market, mixed with uncertainty about exports, prices have suffered.

"We just have a lot of milk and nowhere to go with it," Grotjan said.

Many farmers have become so overwhelmed they have a difficult time making decisions.

"Right now, it seems like everybody that's dairy farming should have an exit plan," she said.

As bills pile up, the couple waits for milk prices to rise

John and Mary are hopeful the prices will come up soon. But they acknowledge that at this point, a small increase won't make much of a difference for them.

A friend helped the couple start a GoFundMe campaign in early January, hoping to raise money to help support their farm.

By late February, they had raised \$150. Their goal was \$50,000.

They're careful to stay away from any unnecessary spending. They haven't gone out to eat in years, Mary said. Some expenses, though, simply can't be avoided.

"The cows have to have their feed," John said. "They need to be fed."

Hopefully, John said, his sons will be able to take over someday — if John and Mary are able to keep the farm going.

"I'm going to try and make it, I guess," John said. "I don't know what else to do."

The Dairyland in Distress series is produced with the support of the Pulitzer Center.



EPA Begins Review Of Moss-American Superfund Site Milwaukee, Wisconsin

U.S. Environmental Protection Agency (EPA) is conducting a five-year review of the Moss-American Superfund site, 8716 N. Granville Road, Milwaukee. The site comprises 88 acres of a former creosote facility at the intersection of Brown Deer and Granville Roads and a portion of the Little Menomonee River adjacent to the former facility. The Superfund law requires regular checkups of sites that have been cleaned up — with waste managed on-site — to make sure the cleanup continues to protect people and the environment. This is the fifth five-year review of this site.

EPA cleaned up polycyclic aromatic hydrocarbon, or PAH, contamination in the site's soil and sediment. About six miles of the river was also rerouted or dredged.

More information is available at the Mill Road Library, 6431 N. 76th St., Milwaukee, and at www.epa.gov/superfund/locations/milwaukee.html. The review should be completed by March 2020.

The five-year-review is an opportunity for you to tell EPA about site conditions and any concerns you have. Contact:

Susan Pastor
Community Involvement
Coordinator
312-333-1323
pastor.susan@epa.gov

Ross Del Rosario
Remedial Project Manager
312-886-6195
drosario.ross@epa.gov

You may also call EPA toll-free at 800-621-8431, 8:30 a.m. to 4:30 p.m., weekdays.

ATTACHMENT 7

FYR INSPECTION REPORT

Site Inspection Checklist

I. SITE INFORMATION													
Site name: Moss-American Superfund Site	Date of inspection: March 28, 2019												
Location and Region: Milwaukee, WI (EPA-R5)	EPA ID: WID039052626												
Agency, office, or company leading the five-year review: EPA-Region 5	Weather/temperature: 55°F/Sunny												
Remedy Includes: (Check all that apply) <table style="width: 100%; margin-left: 20px;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input checked="" type="checkbox"/> Groundwater pump and treatment (Funnel & Gate – discontinued after 2011)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Other: Soil: Low-temp thermal desorption; Sediment: Rerouting and excavation (approx.. 5 mi)</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input checked="" type="checkbox"/> Groundwater pump and treatment (Funnel & Gate – discontinued after 2011)		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other: Soil: Low-temp thermal desorption; Sediment: Rerouting and excavation (approx.. 5 mi)	
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<input checked="" type="checkbox"/> Groundwater pump and treatment (Funnel & Gate – discontinued after 2011)													
<input type="checkbox"/> Surface water collection and treatment													
<input checked="" type="checkbox"/> Other: Soil: Low-temp thermal desorption; Sediment: Rerouting and excavation (approx.. 5 mi)													
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>TOM WENTLAND</u> <u>SITE MGR</u> <u>3/28/19</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. <u>920-893-8528</u> Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													
2. O&M staff <u>N/A</u> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed: <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency WONR
 Contact TOM WENTLAND SITE MGR 920 893-8528
 Name Title Date Phone no.

Problems; suggestions; Report attached See attached responses to questions & figures

Agency _____
 Contact _____
 Name Title Date Phone no.

Problems; suggestions; Report attached _____

Agency _____
 Contact _____
 Name Title Date Phone no.

Problems; suggestions; Report attached _____

Agency _____
 Contact _____
 Name Title Date Phone no.

Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
 O&M manual Readily available Up to date N/A
 As-built drawings Readily available Up to date N/A
 Maintenance logs Readily available Up to date N/A
 Remarks _____

2. **Site-Specific Health and Safety Plan** Readily available Up to date N/A
 Contingency plan/emergency response plan Readily available Up to date N/A
 Remarks _____

3.	O&M and OSHA Training Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
4.	Permits and Service Agreements	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Other permits _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
5.	Gas Generation Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
6.	Settlement Monument Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
7.	Groundwater Monitoring Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A *
Remarks <u>2015 & PRIOR ONLY</u>				
8.	Leachate Extraction Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
9.	Discharge Compliance Records	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				
10.	Daily Access/Security Logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____				

IV. O&M COSTS

1. **O&M Organization**

- State in-house Contractor for State
 PRP in-house Contractor for PRP
 Federal Facility in-house Contractor for Federal Facility
 Other _____

2. **O&M Cost Records**

- Readily available Up to date
 Funding mechanism/agreement in place
 Original O&M cost estimate _____ Breakdown attached

Total annual cost by year for review period if available

From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

N/A

NO unanticipated or unusual cost.

Costs for addnl response action

paid under CA

V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A

A. Fencing

1. **Fencing damaged** Location shown on site map Gates secured N/A
 Remarks _____

B. Other Access Restrictions

1. **Signs and other security measures** Location shown on site map N/A
 Remarks Signs @ railroad side of site

C. Institutional Controls (ICs)

1. **Implementation and enforcement**
 Site conditions imply ICs not properly implemented Yes No N/A
 Site conditions imply ICs not being fully enforced Yes No N/A
 Type of monitoring (e.g., self-reporting, drive by) Sporadic
 Frequency 1/yr
 Responsible party/agency _____
 Contact Tom Wentland Site Mgr 3/28/18 920-893-8528
Name Title Date Phone no.

Reporting is up-to-date Yes No N/A
 Reports are verified by the lead agency Yes No N/A

Specific requirements in deed or decision documents have been met Yes No N/A
 Violations have been reported Yes No N/A

Other problems or suggestions: Report attached

2. **Adequacy** ICs are adequate ICs are inadequate N/A
 Remarks _____

D. General

1. **Vandalism/trespassing** Location shown on site map No vandalism evident
 Remarks Saw some midnight dumping on park entrance side (Heather Ln)

2. **Land use changes on site** N/A
 Remarks _____

3. **Land use changes off site** N/A
 Remarks _____

VI. GENERAL SITE CONDITIONS

A. Roads Applicable N/A

1. **Roads damaged** Location shown on site map Roads adequate N/A
Remarks Access road onsite in good condition

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS Applicable N/A

A. Landfill Surface

1. **Settlement (Low spots)** Location shown on site map Settlement not evident
Areal extent _____ Depth _____
Remarks _____

2. **Cracks** Location shown on site map Cracking not evident
Lengths _____ Widths _____ Depths _____
Remarks _____

3. **Erosion** Location shown on site map Erosion not evident
Areal extent _____ Depth _____
Remarks _____

4. **Holes** Location shown on site map Holes not evident
Areal extent _____ Depth _____
Remarks _____

5. **Vegetative Cover** Grass Cover properly established No signs of stress
 Trees/Shrubs (indicate size and locations on a diagram)
Remarks _____

6. **Alternative Cover (armored rock, concrete, etc.)** N/A
Remarks _____

7. **Bulges** Location shown on site map Bulges not evident
Areal extent _____ Height _____
Remarks _____

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion
4.	Undercutting Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting

5.	Obstructions Type _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____
6.	Excessive Vegetative Growth Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____
D. Cover Penetrations <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Gas Vents <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____

3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	
Remarks _____			
F. Cover Drainage Layer			
		<input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Outlet Pipes Inspected	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A	
Remarks _____			
2.	Outlet Rock Inspected	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A	
Remarks _____			
G. Detention/Sedimentation Ponds			
		<input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Siltation Areal extent _____ Depth _____	<input type="checkbox"/> N/A	
<input type="checkbox"/> Siltation not evident Remarks _____			
2.	Erosion Areal extent _____ Depth _____		
<input type="checkbox"/> Erosion not evident Remarks _____			
3.	Outlet Works	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A	
Remarks _____			
4.	Dam	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A	
Remarks _____			
H. Retaining Walls			
		<input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Deformations <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____		
Remarks _____			
2.	Degradation	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident	
Remarks _____			
I. Perimeter Ditches/Off-Site Discharge			
		<input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Siltation <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident Areal extent _____ Depth _____		
Remarks _____			

2.	Vegetative Growth <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____
3.	Erosion <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____
4.	Discharge Structure <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____
VIII. VERTICAL BARRIER WALLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Settlement <input checked="" type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____
2.	Performance Monitoring Type of monitoring <i>NO monitoring</i> <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____
IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <i>N/A</i> Remarks _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided <i>N/A</i> Remarks _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
 Good condition Needs Maintenance *N/A*
 Remarks _____

3. **Spare Parts and Equipment**
 Readily available Good condition Requires upgrade Needs to be provided *N/A*
 Remarks _____

C. Treatment System Applicable *N/A*

1. **Treatment Train** (Check components that apply)
 Metals removal Oil/water separation Bioremediation
 Air stripping Carbon adsorbers
 Filters _____
 Additive (e.g., chelation agent, flocculent) _____
 Others _____
 Good condition Needs Maintenance
 Sampling ports properly marked and functional
 Sampling/maintenance log displayed and up to date
 Equipment properly identified
 Quantity of groundwater treated annually _____
 Quantity of surface water treated annually _____
 Remarks _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
 N/A Good condition Needs Maintenance
 Remarks _____

3. **Tanks, Vaults, Storage Vessels**
 N/A Good condition Proper secondary containment Needs Maintenance
 Remarks _____

4. **Discharge Structure and Appurtenances**
 N/A Good condition Needs Maintenance
 Remarks _____

5. **Treatment Building(s)**
 N/A Good condition (esp. roof and doorways) Needs repair
 Chemicals and equipment properly stored
 Remarks _____

6. **Monitoring Wells** (pump and treatment remedy)
 Properly secured/locked Functioning Routinely sampled Good condition
 All required wells located Needs Maintenance N/A
 Remarks _____

D. Monitoring Data

1. Monitoring Data
 Is routinely submitted on time Is of acceptable quality

2. Monitoring data suggests:
 Groundwater plume is effectively contained Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
 Properly secured/locked Functioning Routinely sampled Good condition
 All required wells located Needs Maintenance N/A
Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Overall, site remedy appears to be effective. Only thing needed is to see if gw cleanup std being met in treatment area adjacent to gw treatment building)

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Under State performing O&M since 2011

C. Early Indicators of Potential Remedy Problems *N/A*

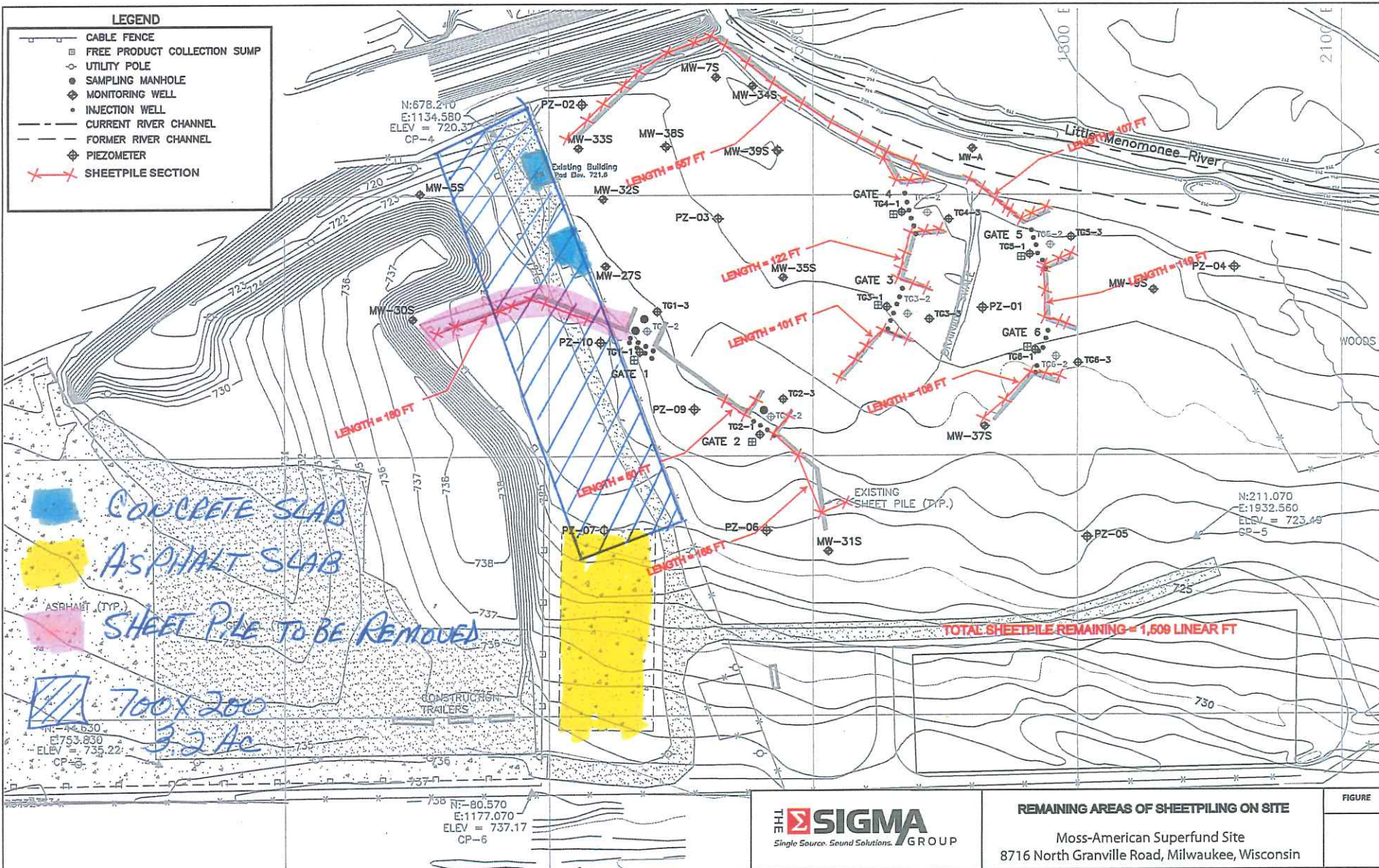
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

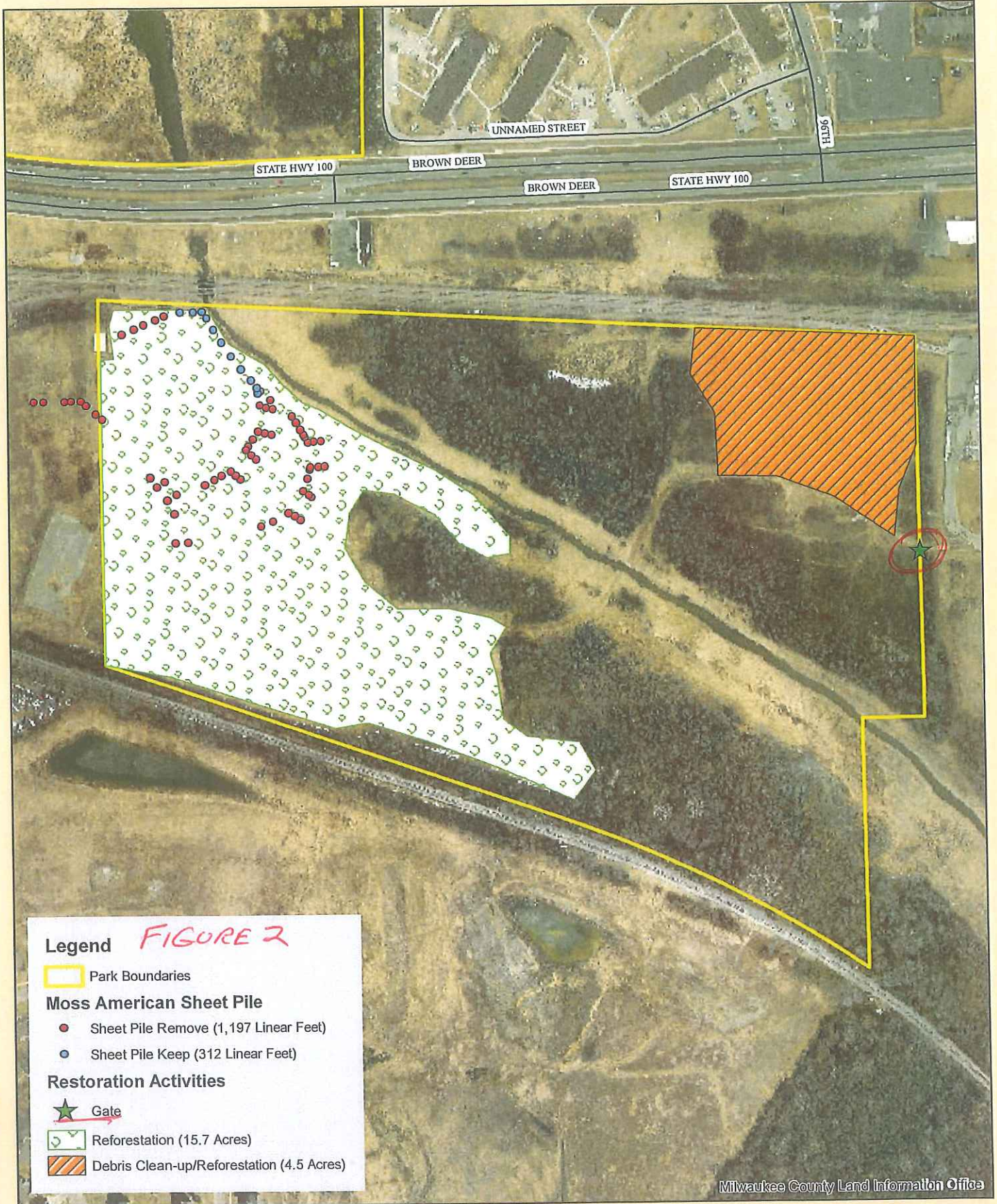
State implemented ²⁰¹¹ optimization recommendations. Completed in 2017-2018. Confirmatory gw sampling needed to determine if work achieved goal.

FIGURE 1



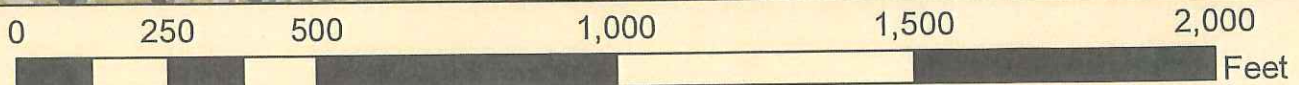
Moss American Restoration Proposal

Source Area

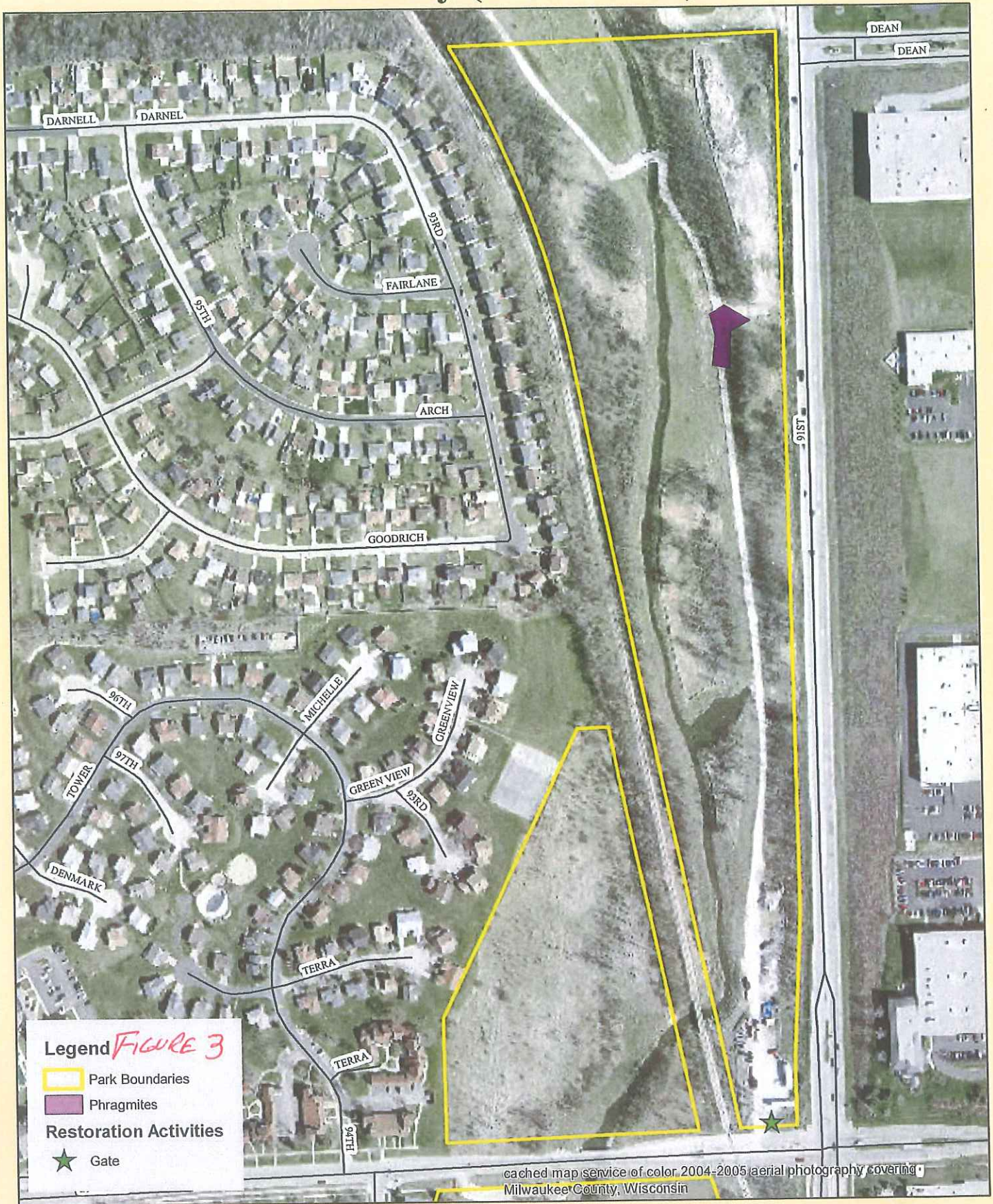


Legend *FIGURE 2*

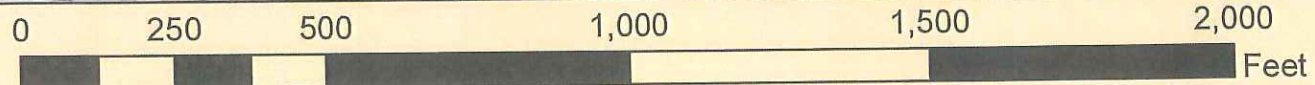
- Park Boundaries
- Moss American Sheet Pile**
 - Sheet Pile Remove (1,197 Linear Feet)
 - Sheet Pile Keep (312 Linear Feet)
- Restoration Activities**
 - ★ Gate
 - Reforestation (15.7 Acres)
 - Debris Clean-up/Reforestation (4.5 Acres)



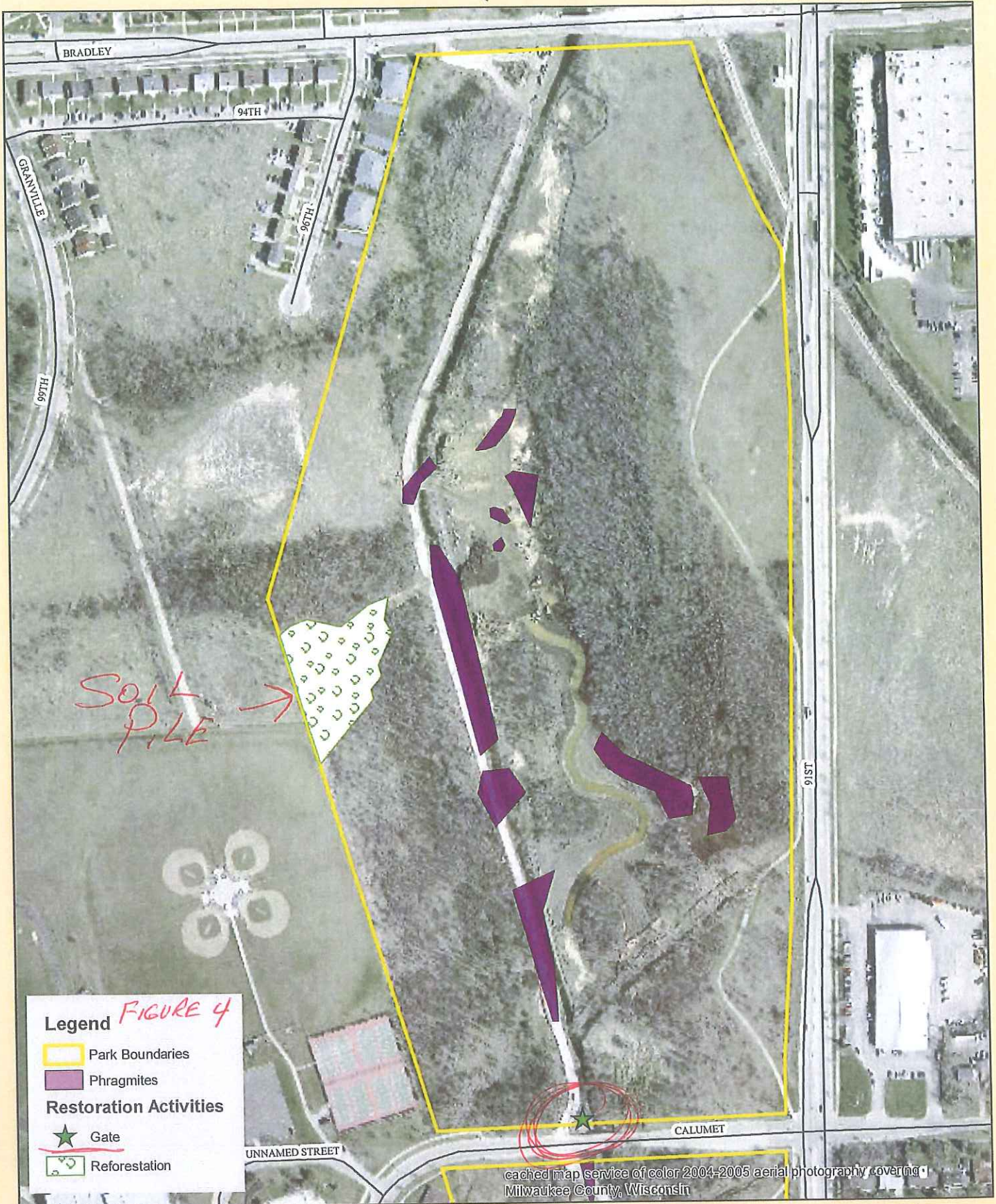
Moss American Restoration Proposal Bradley (2005 Aerial)



cached map service of color, 2004-2005 aerial photography covering Milwaukee County, Wisconsin



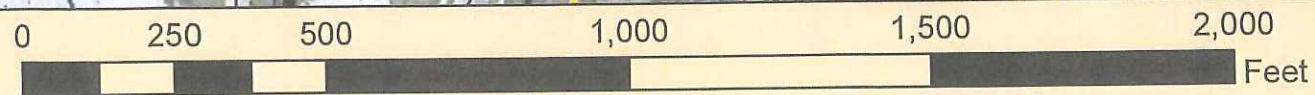
Moss American Restoration Proposal Calumet (2005 Aerial)



SOIL PILE →

FIGURE 4

- Legend**
- Park Boundaries
 - Phragmites
- Restoration Activities**
- ★ Gate
 - Reforestation



cached map service of color 2004-2005 aerial photography covering Milwaukee County, Wisconsin

Moss-American 5th FYR questions for State (to be included in inspection checklist):

Q1: Any changes in State/local laws that may impact protectiveness of remedy at Moss-American?

No changes that I am aware of

Q2: Describe field activities State has performed since last FYR in 2015.

7,059.8 tons of soil contaminated with hazardous PAH waste was excavated and removed from site.

Q3: Any incidents of trespassing/vandalism the State is aware of since last FYR in 2015?

Nothing that I am aware of.

Q4: Describe, if any, interactions the State has had with the public or interested parties since last FYR in 2015.

There have been no inquires from the public

ATTACHMENT 8

SITE PHOTOS

Moss-American Superfund Site Photos (3/28/19)

Entrance to Site from railroad property side



Another view of Site entrance from railroad property

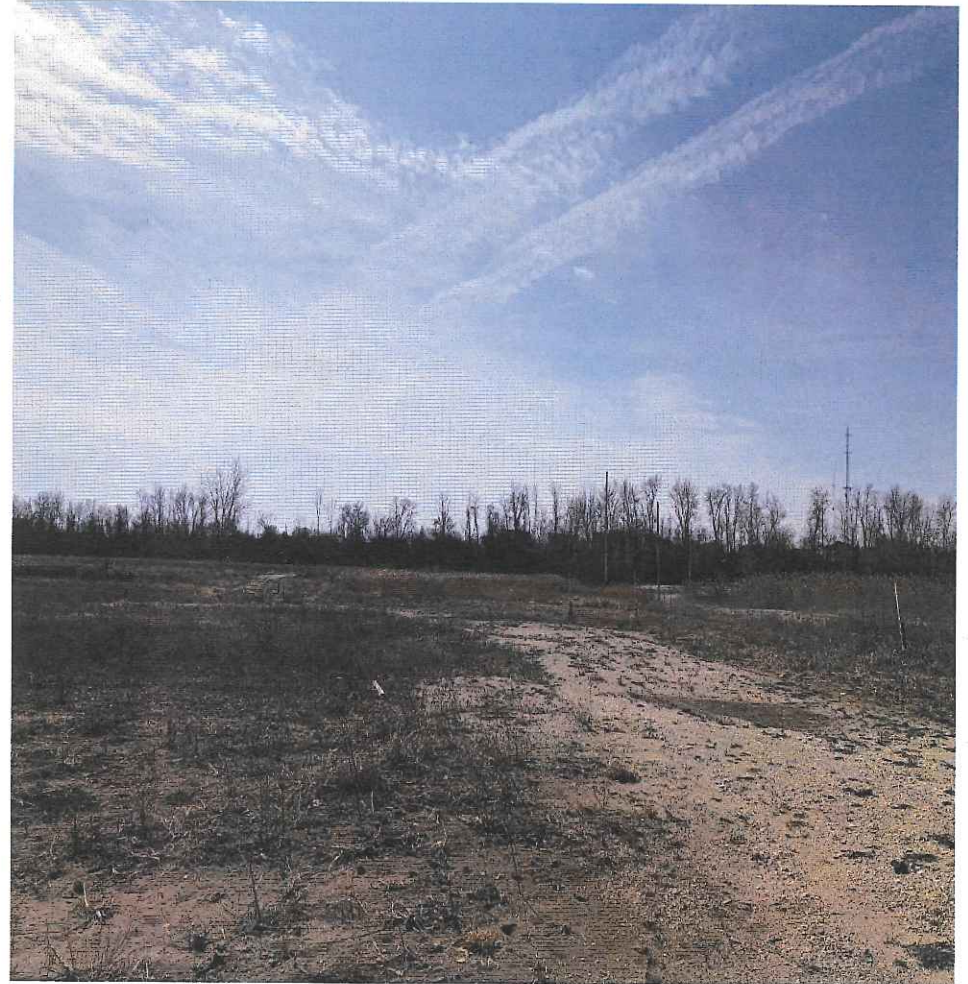


Moss-American Superfund Site Photos (3/28/19)

Concrete pad of former groundwater treatment building



Area of site where State response action occurred in 2017



Moss-American Superfund Site Photos (3/28/19)

Segment of Little Menomonee River onsite



Another segment of Little Menomonee River onsite



Moss-American Superfund Site Photos (3/28/19)

Evidence of dumping on the County side of site

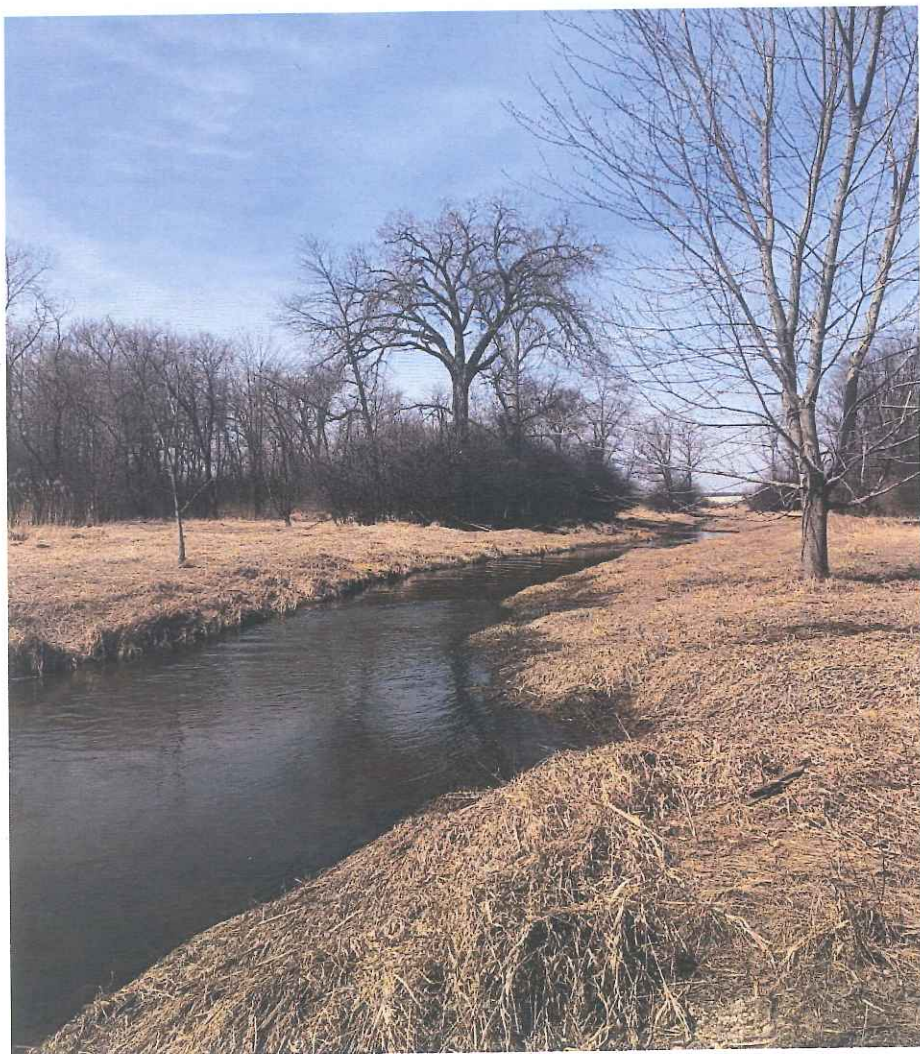


Evidence of dumping on the County side of site

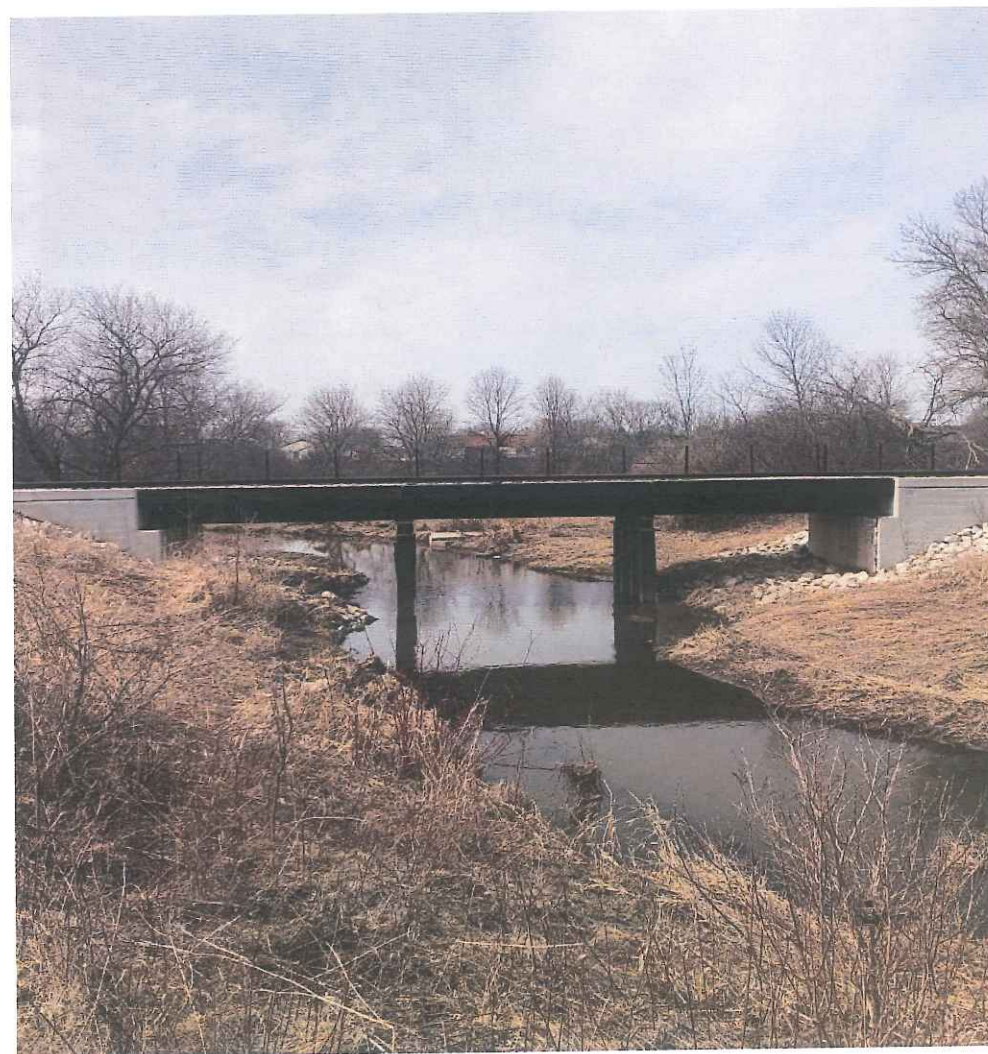


Moss-American Superfund Site Photos (3/28/19)

Segment of Little Menomonee River on County side



Segment of Little Menomonee River downstream of Site



Moss-American Superfund Site Photos (3/28/19)

Picture of monitoring well in the groundwater treatment area



Photo of same well taken from another area



ATTACHMENT 9

EPA PUNCH LIST FOLLOWING FYR INSPECTION



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

April 30, 2019

Thomas Wentland, State Project Manager
Wisconsin Department of Natural Resources
Southeast District/Plymouth Service Center
1155 Pilgrim Road
Plymouth, WI 53073

Re: Moss-American Superfund Site: Follow-up to 3/28/19 Five Year Review Inspection

Dear Mr. Wentland:

The United States Environmental Protection Agency (EPA) would like to thank you for your assistance in conducting the recent five-year review inspection last month. As follow-up to the inspection, our office provides a list of items ("punch list") requiring the State's attention, based on our observations during the inspection:

- Actions to mitigate trash/midnight dumping on the county side of the site;
- A schedule for mowing the expected overgrown vegetative growth at the site later this year; and
- Any revisions/modifications to handouts provided during the inspection (e.g., sheetpile area (Figure 1), Restoration Proposals (Figures 2-4).

Your response to the punch list of items above is requested within thirty (30) days of receipt of this letter is requested. EPA appreciates your cooperation on this matter.

Respectfully,

Ross del Rosario

Ross del Rosario
Remedial Project Manager