

## Appendix H

### ARARs

**DRAFT  
APPLICABLE OR APPROPRIATE AND RELEVANT  
REQUIREMENTS**

For

**US STEEL SITE  
(SEDIMENT AND SURFACE WATER)  
DULUTH, MINNESOTA**

**March 2013**

Bay West, Inc. J120351  
DMS #1587681

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## ACRONYMS AND ABBREVIATIONS

ARAR.....	Applicable or Relevant and Appropriate Requirement	SLRIDT .....	St. Louis River/Interlake/Duluth Tar
BaP .....	benzo(a)pyrene	SLVs .....	Soil Leaching Values
Bay West ....	Bay West, Inc.	SQT .....	Sediment Quality Target
BAZ.....	bioactive zone	SRV .....	Soil Reference Values
CAD .....	confined aquatic disposal	Stat .....	Statute
CERCLA .....	Comprehensive Environmental Response Compensation and Liability Act	TBC.....	to-be-considered
CFR. ....	Code of Federal Regulations	UECA.....	Uniform Environmental Covenants Act
ch.....	chapter	USACE.....	United States Army Corps of Engineers
COPCs .....	contaminants of potential concern	USC .....	United States Code
FS .....	Feasibility Study	USEPA.....	United States Environmental Protection Agency
GLI.....	Great Lakes Initiative	USS .....	United States Steel
HBVs .....	Health-Based Values	WDNR.....	Wisconsin Department of Natural Resources
HRLs.....	Health Risk Limits		
IZ .....	isolation zone		
MDNR.....	Minnesota Department of Natural Resources		
MERLA .....	Minnesota Environmental Response and Liability Act		
MCL .....	Maximum Contaminant Level		
MCLG .....	Maximum Contaminant Level Goal		
MDH .....	Minnesota Department of Health		
Minn.....	Minnesota		
MPCA .....	Minnesota Pollution Control Agency		
NCP .....	National Oil and Hazardous Substances Pollution Contingency Plan		
NPDES .....	National Pollutant Discharge Elimination System		
NPL.....	National Priorities List		
OIRW.....	Outstanding International Resource Water		
OU .....	Operable Units		
PAH .....	polycyclic aromatic hydrocarbon		
PRGs.....	Preliminary Remediation Goals		
pt(s) .....	part/parts		
RCRA .....	Resource Conservation and Recovery Act		
ROD.....	Record of Decision		
SDS .....	State Disposal System		

## **1.0 INTRODUCTION**

Bay West, Inc. (Bay West) has prepared this draft list of Applicable or Relevant and Appropriate Requirements (ARARs) for sediment and surface water at the St. Louis River/United States Steel (USS) Site on behalf of the Minnesota Pollution Control Agency (MPCA). The USS Site is one of two state Superfund sites, along with the St. Louis River/Interlake/Duluth Tar (SLRIDT) Site, that make up the St. Louis River Superfund Site. Both Sites are part of the United States Environmental Protection Agency (USEPA) Deferral Pilot Project and were placed under MPCA jurisdiction in 1995. The Sites are in different phases of the Superfund process, have different Responsible Parties, and different community group interests.

The MPCA is developing this sediment and surface water ARAR document for incorporation into a Feasibility Study and Record of Decision (ROD) Amendment for the following Operable Units (OUs):

- The Unnamed Creek Estuary (OU-N);
- The Wire Mill Pond Delta (OU-R);
- The Non-Native Material in Settling Basin (OU-I);
- The Stream Channel (OU-L);
- The Delta and Stream Channel Area (OU-M);
- The Wire Mill Pond (OU-P);
- The Dredge Spoil Area (OU-Q);
- The Unnamed Pond; and
- The Area Between OU-I and OU-J

USS is working with the USEPA Great Lakes National Program Office and the Great Lakes Legacy Act on OU-N and OU-R to characterize sediment and complete a Feasibility Study (FS) and remedy design. If the implementation of this work is completed with USEPA, the remedy documentation will be addressed under a ROD Amendment after the work is completed.

The following units of government and Tribes will be provided with an opportunity to review and comment on the Site ARARs:

- The Minnesota Department of Health (MDH) and the Minnesota Department of Natural Resources (MDNR) previously provided a list of ARARs for the SLRIDT Site. The SLRIDT ARARs have been used in this document, where appropriate.
- A small portion of the Site is owned by the Fond du Lac Band of Lake Superior Chippewa. This Band has an environmental board that reviews and provides comments on proposed activities, as appropriate.
- The Site is also within the boundaries of the 1854 Ceded Territory. The 1854 Treaty Authority is an Inter-Tribal Resource Management Organization that manages off-reservation hunting, fishing and gathering rights of the Grand Portage and Bois Forte Bands of the Lake Superior Chippewa. The 1854 Treaty Authority reviews and provides comments, as appropriate, for activities that may affect hunting and fishing within the 1854 Ceded Territory.
- The United States Fish and Wildlife Service's Environmental Contaminants Program reviews and provides comments on proposed activities, as appropriate.

## **1.1 Background Information**

The USS Site is bounded by the Morgan Park neighborhood to the north, the St. Louis River (also called Spirit Lake) to the east, and Duluth Missabe and Iron Range Railroad property to the west and south. The St. Louis River discharges into Lake Superior, located approximately eight miles downstream of the Site. From 1915 until 1979, USS operated an integrated steel mill at the Site. Mill operations included coke production, iron and steel making, casting, primary rolling and roughing, hot and cold finishing, and galvanizing. All of these facilities have been demolished and removed; however, many buildings and other infrastructure footings, foundations, sewers, and utility conduits/vaults remain in-place on the Site.

In 1979, the MPCA requested a hydrogeological study of the Duluth Works Site (now referred to as the USS Site). In response to this request, USS submitted two reports: one titled “Soil and Ground Water Investigation” in 1981 and one titled “River Water Quality Impact Investigation” in 1983. In 1982, the USEPA Field Investigation Team inspected the Site. The studies and inspection found that polynuclear aromatic hydrocarbons (PAHs) were discharging into the St. Louis River by surface water drainage and groundwater flowing beneath the Site.

The USS Site was placed on the National Priorities List (NPL) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1983. On 3 October 1983, the MPCA issued a Request for Response Action to USS for the USS Site. The USS Site was placed on the State of Minnesota’s Superfund Permanent List of Priorities (PLP) in 1984. The MPCA executed a Consent Order with USS on 26 March 1985. During the summer of 1985, the final phase of the Remedial Investigation began. The MPCA Commissioner signed a ROD in February 1989 that set forth the clean-up actions USS needed to take. The ROD delineated 18 OUs for remediation.

OU-N and OU-R are associated with river sediments. The other seven OUs are associated with land-side aquatic sediments: OU-I, OU-L, OU-M, OU-P, OU-Q, the Unnamed Pond, and the Area Between OU-I and OU-J. PAHs and metals have been detected in these land-side wetland, pond, and river aquatic sediments. The ARARs listed shall be evaluated by the Responsible Party for their applicability to the land and river sediment, along with surface water, in the development of the FS.

## **1.2 Authority**

MPCA is applying Minnesota Environmental Response and Liability Act (MERLA) regulations and process to the USS site and is not inconsistent with the federal Superfund law, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Remedial actions for releases and threatened releases of hazardous substances and pollutants or contaminants must be selected and carried out in compliance with state and federal legal requirements. CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) require that remedial actions comply not only with applicable environmental laws and rules, but also with legal requirements that are “relevant and appropriate.” Generally, an environmental law or rule may be relevant and appropriate if it addresses circumstances sufficiently similar to those of the release so that compliance would be a reasonable way to assure protection of public health and welfare and the environment. MERLA requires all applicable local, state and federal permits be acquired for applicable response actions at the Site.

The general legal standard that must be met by any remedial action selected and implemented under the Minnesota Environmental Response and Liability Act (MERLA) is that the remedial action must protect public health and welfare and the environment, Minnesota (Minn.) Statute

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(Stat.) § 115B.17, subd. 1. Section 2 identifies a list of ARARs to be used in evaluation of remedial actions performed in the state of Minnesota.

In addition, MERLA requires the MPCA to consider or make some determination about several other issues in order to select a remedy for the Site. These issues include setting requirements for remedy monitoring and maintenance, institutional controls, and other measures that are reasonably necessary to assure the protectiveness of the selected remedy over the long term. MERLA also requires the MPCA to consider the planned use of the property where the release is located when determining the appropriate standards to be achieved by a remedy. It also requires the MPCA to make specific determinations when remedies involve permanent relocation of residents, businesses or community facilities, or off-site transport and disposal of the contaminated material. These other considerations are presented in **Section 3.0**.

## 2.0 ARARS

This Draft ARAR document summarizes the MPCA, MDNR, and MDH ARARs and requirements to be considered (TBC) for aquatic sediment and surface water associated with nine OUs at the USS site. Local and federal ARARs have also been included; however, the list may not include all applicable local and federal ARARs.

ARARs generally fall into one of the following three classifications:

- **Chemical-specific:** These ARARs are usually health- or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of an acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. These requirements provide protective Site remediation levels for the contaminants of potential concern (COPCs) in the designated media. Remedial action objectives specify contaminants and media of concern, potential exposure pathways, and remediation goals. Initially, Site Preliminary Remediation Goals (PRGs) are developed based on readily available information such as chemical-specific ARARs or other reliable information. The Site PRGs are modified, as necessary, as more information becomes available during the FS. Final remediation goals are determined when the remedy is selected; they can be presented in the ROD Amendment.
- **Location-specific:** These ARARs generally restrict certain activities or limit concentrations of hazardous substances solely because of geographical or land use concerns. Requirements addressing wetlands, historic places, floodplains, or sensitive ecosystems and habitats are potential location-specific ARARs.
- **Action-specific:** These ARARs are restrictions on the conduct of certain activities or the operation of certain technologies at a particular site. Examples of action-specific ARARs would be regulations dictating the design, construction, and/or operating procedures for dredging, on-site landfilling, or capping. Action-specific requirements do not themselves determine the cleanup alternative, but define how the chosen cleanup alternative should be achieved.

In addition, criteria, advisories, guidance, and proposed standards developed by federal and state environmental and public health agencies that are not legally enforceable, but contain helpful information, are collectively referred to as TBCs. TBCs can be helpful in carrying out selected remedies or in determining the level of protectiveness of selected remedies. TBCs are meant to complement the use of ARARs, not compete with or replace them. TBCs are included, where appropriate, in the Chemical-, Location-, and Action-specific discussions.

Several federal and state laws govern or provide the framework for remedial actions. Remedial actions must comply with substantive portions of these laws or acts, which were also reviewed during the ARAR development process. A summary of laws and acts that do not readily fall into one of the Chemical-, Location-, or Action-specific classifications, but are applicable to the Site, is included in **Table 1**.

**Table 1 General Federal and State Requirements**

ARAR/TBC	Citation	Description/Potential Application
CERCLA	42 United States Code (USC) §§ 9601 et seq.	Federal Superfund Law
NCP	40 Code of Federal Regulations (CFR) part (pt.) 300	Provides organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants.
MERLA	Minn. Stat. §§ 115B.01 to 115B.20	State Superfund Law
Water Pollution Control Act	Minn. Stat. chapter (ch.) 115	Administration and enforcement of all laws relating to the pollution of any waters of the state.
Duty to Notify and Avoid Water Pollution	Minn. Stat. § 115.061	Requires notification and recovery of discharge pollutants to minimize or abate pollution of the waters of the state.
Pollution Control Agency	Minn. Stat. ch. 116	Provides organizational structure and procedures for responding to problems relating to water, air, and land pollution.
Water Law	Minn. Stat. chs. 103A, 103B, 103C, 103D, 103E; 103F, and 103G	Provides regulations pertaining to any waters of the state, including surface water, wetlands and groundwater.
Safe Drinking Water Act	42 USC §§ 300f et seq.	Established to protect the quality of drinking water (above or underground).
Clean Water Act	33 USC §§ 1251 et seq.	Establishes structure for regulating discharges of pollutants and regulating quality standards for surface waters.
Resource Conservation and Recovery Act (RCRA)	42 USC §§ 6901 et seq.	Establishes RCRA Program and Regulations.
Clean Air Act	42 USC §§ 7401 et seq.	Regulates air remissions from stationary and mobile sources.

## 2.1 Chemical-Specific ARARs and TBCs

The COPCs associated with river and land sediments include metals and PAHs. Chemical-specific ARARs and TBCs for the river and land sediments are presented in **Table 2**. The ARARs and TBCs shall be used to develop site-specific cleanup levels.

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**Table 2 Chemical-Specific ARARs and TBCs**

<b>ARAR/TBC</b>	<b>Citation/Source</b>	<b>Description/Application</b>
<b>Soil</b>		
Tier 1 and Tier 2 Soil Reference Values (SRVs)	Risk-Based Guidance for the Soil - Human Health Pathway, MPCA Risk-Based Site Evaluation (RBSE) Manual (06/09)	For evaluating human health risk caused by exposure to contaminated soil.
Tier 1 and Tier 2 Soil Leaching Values (SLVs)	Risk-Based Guidance for Evaluating the Soil Leaching Pathway, MPCA RBSE Manual (06/05)	For evaluating the risk to groundwater at sites from the soil-to-groundwater leaching pathway.
<b>Sediment</b>		
Sediment Quality Targets (SQTs)	Guidance for the Use and Application of SQTs for the Protection of Sediment-dwelling Organisms in Minnesota	To be used as benchmark values for making comparisons to surficial sediment chemistry measurements
<i>Draft</i> Sediment Screening Values (SSVs)	<i>Draft</i> Report Prepared by MDH for US Steel Site in January 2013	To be used to evaluate human health risks associated with sediments.
<b>Water</b>		
National Primary and Secondary Drinking Water Regulations	40 CFR pts. 141-143	Establishes Federal primary and secondary drinking water standards.
Drinking Water Criteria Spreadsheet (rev. 9/08)	Groundwater Guidance Document, MPCA RBSE Manual	Framework for evaluating groundwater contamination and managing remediation decisions.
Ground Water Protection Act	Minn. Stat. ch. 103H	Non-degradation goal, promotion of best management practices.
Health Risk Limits (HRLs)	Minn. Rules pts. 4717.7810 to 4717.7900; Statutory authority: Minn. Stat. 103H.201.	Establishes human health based groundwater standards (MDH).
Public Water Supplies	Minn. Rules ch. 4720	Regulates public water systems (MDH) and incorporates Federal Primary Drinking Water Regulations.
Waters of the State (both surface and underground)	Minn. Rules ch. 7050	Classifies waters of the state and establishes standards.
Underground Waters	Minn. Rules ch. 7060	Preserves and protects underground waters by preventing new and abating existing pollution. Non-degradation policy and standards.
Tier 1 Surface Water Screening Numbers and Tier 2 Surface Water Standards and Criteria for Classes 2B and 3B Waters	Surface Water Pathway Evaluation User's Guide, Tables 1 and 11, MPCA Risk-Based Site Evaluation Manual	For evaluating potential impacts to human health and the environment.
<b>All Media</b>		
Guidance for estimating health risks from carcinogenic PAHs	MDH Guidance Document updated in March 2012	For estimating health risks from carcinogenic PAHs.
Analysis of carcinogenic PAHs	MPCA Remediation Division Policy (06/11)	Background and situations where extended list of carcinogenic PAH methodology applies
Site screening guidelines	Working Draft Site Screening Evaluation Guidelines. MPCA RBSE Manual (09/98)	Guidelines and criteria for screening human health and ecological risks.

### 2.1.1 Soil

Tier 1 and Tier 2 soil leaching values (SLVs) were developed by the MPCA for evaluating human health risk caused by exposure to contaminated soil. Tier 1 and Tier 2 soil reference values (SRVs) were developed by the MPCA for evaluating the risk to groundwater at sites from soil to groundwater leaching pathway. The most current list of Tier 1 and Tier 2 SLVs and SRVs can be found on the MPCA website (<http://www.pca.state.mn.us/cleanup/riskbasedoc.html>).

Guidance for the appropriate use of these SLVs and SRVs for PAHs can be found at the MDH website (<http://www.health.state.mn.us/divs/eh/risk/guidance/pahmemo.html>).

### 2.1.2 Sediment

To achieve protection and restoration of habitat, minimize exposure of the benthic organisms to contaminated sediments and movement of contaminants up the food chain, Preliminary Sediment Remediation Goals should be developed for use in the FS. The MPCA does not have sediment quality standards. Sediment Quality Targets (SQTs), adopted for use in the St. Louis River Area of Concern, can be used throughout the state as benchmark values for making comparisons to surficial sediment chemistry measurements. For more information about the SQTs, refer to the report on Guidance for the Use and Application of Sediment Quality Targets for the Protection of Sediment-dwelling Organisms in Minnesota, MPCA Document Number: tdr-gl-04, which can be found at <http://www.pca.state.mn.us/water/sediments/index.html>.

In January 2013, the Minnesota Department of Health (MDH) prepared a Draft Public Health Consultation Report that provides updated Sediment Screening Values (SSVs) that provides values for human health screening of sediment concentrations at the US Steel site. This report also explains the appropriate usage of the SQTs and SSVs.

### 2.1.3 Water

The Site is within the Lake Superior Drainage Basin. Minn. Rules chapter (ch.) 7050 includes a classification system of beneficial uses applicable to waters of the state, narrative and numeric water quality standards that protect specific beneficial uses, non-degradation provisions, and other provisions to protect the physical, chemical, and biological integrity of waters of the state. The St. Louis River and the wetlands within or adjacent to the Site are listed in Minn. Rules ch. 7050, Waters of the State (<https://www.revisor.leg.state.mn.us/rules>) and are classified as Class 2B and 3B waters. In accordance with Minn. Rules chs. 7050, preliminary surface water quality standards applicable to the Site shall be based on surface water quality standards for Class 2B and 3B waters.

State and federal regulations provide the statutory basis for conducting remedial investigations of environmental contamination. In accordance with Minn. Rules ch. 7060, all underground waters are best classified for use as potable water supply in order to preserve high quality waters by minimizing spreading of pollutants, by prohibiting further discharges of wastes thereto, and to maximize the possibility of rehabilitating degraded waters for their priority use. Minn. Rules ch. 7060 outlines policy and rule-making, which should be applied when managing contamination of state groundwater. Minn. Stat. Section 103H.201 and Minn. Rules 4717 identify Health Risk Limits (HRLs) which specify concentrations of groundwater contaminants that can be safely consumed daily for a lifetime. These HRLs must be used in consideration with federal standards (Maximum Contaminant Levels [MCLs], 40 CFR. parts (pts) 141–143) and state standards developed to protect environmental receptors (Minn. Rules 7050.0220) when identifying cleanup levels to manage groundwater contamination. Minn. Stat. ch. 103H.001,

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Degradation Prevention Goal, states that it is the goal of the state that groundwater be maintained in its natural condition, free from any degradation caused by human activities.

The policy of the Site Remediation Section is to apply promulgated standards as cleanup levels, stabilize plumes which migrate through aquifers at concentrations that exceed cleanup levels, and implement remedial actions that manage the risk a groundwater plume poses to human health or the environment. The MPCA Ground Water Guidance Document presents the framework through which the MPCA evaluates groundwater contamination problems and manages decisions regarding remedial actions at sites. The guidance is based on managing risk associated with groundwater contamination within the context of state and federal regulations. The Drinking Water Criteria Spreadsheet (rev. 9/08) can be found on the MPCA website (<http://www.pca.state.mn.us/cleanup/riskbasedoc.html>). This spreadsheet contains a list of chemicals and associated HRLs, Health-Based Values (HBVs), MDH Criteria, MCLs and Maximum Contaminant Level Goals (MCLGs).

**2.1.4 All Media**

The MPCA Site Screening and Evaluation Document presents an overall process for conducting a Tier 1 evaluation of the various exposure pathways at a Site. The screening criteria worksheet can be found at MPCA website (<http://www.pca.state.mn.us/cleanup/riskbasedoc.html>).

The MDH guidance for estimating health risks from carcinogenic PAHs for all media, including benzo(a)pyrene (BaP) equivalency calculation worksheets, can be found at the MDH website (<http://www.health.state.mn.us/divs/eh/risk/guidance/pahmemo.html>).

**2.2 Location-Specific ARARs and TBCs**

The Location-Specific ARARs and TBCs for the Site are presented in **Table 3**.

**Table 3 Location-Specific ARARs and TBCs**

ARAR/TBC	Citation/Source	Description/Application
Waters of the State and Groundwater Protection	Minn. Stat. 103G and 103H	Groundwater protection, nondegradation, and best management practices.
Waters of the State (both surface and underground)	Minn. Rules ch. 7050	Classifies waters of the state and establishes standards.
Water Quality Guidance for the Great Lakes System	40 CFR Part 132	Establishes standards for waters within the Great Lakes
Water Standards - Lake Superior Basin	Minn. Rules ch. 7052	Establishes standards and criteria for Great Lakes Initiative (GLI) pollutants within Lake Superior Basin
Location Standards for Hazardous Waste Storage Facilities	40 CFR 264.18(b)	Establishes standards for hazardous waste storage facilities located within a 100-year floodplain
Floodplain Management and Wetlands Protection	40 CFR Part 6, Appendix A, Section 6.a.(1)	Requires agencies to evaluate potential effects of actions in a floodplain to avoid adverse impacts
Shoreland and Floodplain Management	Minn. Rules ch. 6120	Conserves economic and natural environmental values (MDNR)
St. Louis County Land Use Ordinances	St. Louis County Zoning Ordinances, ch. 1003	Floodplain management, Manages on-site waste disposal and other site activities

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<b>ARAR/TBC</b>	<b>Citation/Source</b>	<b>Description/Application</b>
Endangered Species Act	16 USC §1531 et seq. 50 CFR §17.11-12	Conservation of threatened and endangered plants and animals and their habitats.
Endangered, Threatened, Special Concern Species	Minn. Rules ch. 6134 Minn. Statute, Section 84.0895	Protection of endangered, threatened, special concern species (MDNR).
Migratory Bird Treaty Act	16 USC Chapter 7, Subchapter II §§ 703 & 712.2	Protects migratory birds and their ecosystems
MDH Advisory for St. Louis River	MDH	Provides fish consumption advisories.

As stated in **Section 2.1**, the Site is located within the Lake Superior Drainage Basin. Surface water quality standards and provisions for Class 2B and 3B waters apply. In addition, USEPA and the Great Lakes states agreed in 1995 to a comprehensive plan to restore the health of the Great Lakes. The Final Water Quality Guidance for the Great Lakes System, also known as the Great Lakes Initiative (GLI), includes criteria for states to use when setting water quality standards for 29 pollutants, including bioaccumulative chemicals of concern, and prohibits the use of mixing zones for these toxic chemicals. Because the surface water at the Site is within the drainage basin of Lake Superior, the ARARs specified in the GLI, Minn. Rules ch. 7052 are applicable to this Site. The Great Lakes Water Quality Agreement identified the USS site as an Area of Concern in 1989. On 7 September 2012, Canada and the United States amended this agreement. Requirements of the Great Lakes Water Quality Agreement of 2012 apply to this site. In addition, the surface waters adjacent to the Site are identified as an Outstanding International Resource Water (OIRW). The objective for OIRW is to maintain water quality at existing conditions when the quality is better than the water quality standards. Generally, OIRWs are considered surface water quality standards applicable to the St. Louis River for Class 2B and OIRWs, as set forth in Minn. Rules, chs. 7050 and 7052, and to the additional surface water quality standards for the St. Louis River, as set forth in Minn. Rules ch. 7065. The OIRW was established after the ROD was issued.

Oil sheens have been regularly observed in the land sediments and drainages at the Site and as stated in Minn. Rules ch. 7050.0210 Subp. 2.

*Nuisance conditions prohibited. No sewage, industrial waste, or other wastes shall be discharged from either point or nonpoint sources into any waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, visible oil film, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, aquatic habitat degradation, excessive growths of aquatic plants, or other offensive or harmful effects.*

In accordance with Minn. Stat. 103G, it is the goal of the state that groundwater be maintained in its natural condition, free from any degradation caused by human activities. It is recognized that for some human activities this degradation prevention goal cannot be practicably achieved. However, where prevention is practicable, it is intended that it be achieved. Where it is not currently practicable, the development of methods and technology that will make prevention practicable is encouraged. In areas where groundwater pollution is detected, a state agency or political subdivision that regulates an activity causing or potentially causing a contribution to the pollution identified shall promote implementation of best management practices to prevent or minimize the source of pollution to the extent practicable (Minn. Stat. 103H).

Location standards for new facilities where treatment, storage or disposal of hazardous waste will be conducted are established by 40 CFR 264.18(b). A facility located within a 100-year floodplain must be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood.

Title 40 CFR Part 6, Appendix A, Section 6 Requirements, requires federal agencies to evaluate the potential effects of actions taken within a floodplain to avoid adversely impacting floodplains wherever possible.

Title 40 CFR Part 6, Appendix A, Section 6.a.(1) Floodplain/Wetlands Determination -- Before undertaking an Agency action, each program office must determine whether or not the action will be located in or affect a floodplain or wetlands. The Agency shall utilize maps prepared by the Federal Insurance Administration of the Federal Emergency Management Agency (Flood Insurance Rate Maps or Flood Hazard Boundary Maps), Fish and Wildlife Service (National Wetlands Inventory Maps), and other appropriate agencies to determine whether a proposed action is located in or will likely affect a floodplain or wetlands. If there is no floodplain/wetlands impact identified, the action may proceed without further consideration of the remaining procedures set in this section. If floodplain/wetlands impact is identified, this section presents procedures that must be taken.

Shoreland and Floodplain Management (Minn. Rules Ch. 6120) provides standards and criteria intended to preserve and enhance the quality of surface waters, conserve the economic and natural environmental values of shorelands, and provide for the wise use of water and related land resources of the state. St. Louis County Zoning Ordinances, ch. 1003, establish additional floodplain management and manage site activities such as on-site waste disposal.

The Endangered Species Act (16 U.S.C.A. §1531 et seq.) and the Minnesota Endangered, Threatened, Special Concern Species Act (Minn. Rules ch. 6134) protect threatened and endangered plants and animals and their habitats.

Title 16 USC Chapter 7, Subchapter II §§ 703 & 712.2. (The Migratory Bird Treaty Act) protects migratory birds and their ecosystems by specifying the taking, killing, or possessing migratory birds unlawful. Public Law 95-616, an amendment to this act, provides measures to protect identified ecosystems of special importance to migratory birds such as bald eagles against pollution, detrimental alterations, and other environmental degradations.

The MDH has established various fish consumption advisories for the St. Louis River due to the presence of PAHs, PCBs and Resource Conservation and Recovery Act (RCRA) metals in water and sediments.

### **2.3 Action-Specific ARARs and TBCs**

Additional remedial actions may include similar remedies in other contaminated areas of the Site or upgrading the current systems to address a larger area of concern as well new remedial actions to address other media of concern. **Table 4** lists the Action-Specific ARARs for the Site. In addition, Occupational Safety and Health Standards (Minn. Rules ch. 5205) for worker health, safety, and training are applicable to remedial actions performed at the Site.

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**Table 4 Action-Specific ARARs and TBCs**

<b>ARAR/TBC</b>	<b>Citation/Source</b>	<b>Description/Application</b>
Ground Water Protection Act	Minn. Stat. ch. 103H	Non-degradation goal, promotion of best management practices.
Waters of the State (both surface and underground)	Minn. Rules ch. 7050	Surface water quality during remedy construction.
Underground Waters	Minn. Rules ch. 7060	Preservation and protection of underground waters by preventing any new pollution and abating existing pollution. Nondegradation policy, standards.
Wetlands Conservation Act (WCA)	Minn. Stat. §§ 103G.221-.2373	Protection of wetlands.
Wetlands Conservation	Minn. Rules 8420	Protection of wetlands, wetland functions for determining public values.
Floodplain Management Order	Executive Order 11988 and 40 CFR Part 6, Appendix A,	Regulates remedial action implementation in floodplains.
General Permits	Minn. Rules ch. 7001.0010-7001.0210	Establishes permits for the treatment, storage and disposal of hazardous waste.
Hazardous Waste Facility Permits	Minn. Rules ch. 7001.0500 to 7001.0730	Governs the construction of hazardous waste facilities
Land Disposal Restrictions	40 CFR Part 268	Restrictions on the land disposal of hazardous waste.
Section 404 Permit and Section 401 Certification (Clean Water Act)	33 CFR pts 320 and 323; 33 USC §1341	Applies to discharge of dredged or fill material into waters of the United States.
National Pollutant Discharge Elimination System/ State Disposal System (NPDES/SDS) permits	Clean Water Act 33 USC §1342	Surface water quality requirements for discharges of pollutants to waters of the state.
Section 10 (Rivers and Harbors Act of 1899)	33 USC 403	Applies to activities that will obstruct or alter any navigable water of the United States.
Work in Public Waters	Minn. Stat. §103G.245	Permit requirements applicable to work in public waters that will change or diminish its course, current, or cross-section.
Public Water Resources	Minn. Rules ch. 6115	Water appropriation permitting, standards and criteria for alterations to structure of public water (MDNR).
Minnesota Sediment Quality Targets	Guidance for the Use and Application of Sediment Quality Targets for the Protection of Sediment-dwelling Organisms in Minnesota, MPCA Document Number: tdr-gl-04	Establishes procedures for bioactive zone caps and covers.
Western Lake Superior Sanitary District (WLSSD)	WLSSD Industrial Pre-Treatment Ordinance	Requirements for any dredge water discharged into public sanitary sewers.
MDNR Invasive Species Management	Minn. Statutes 84D.02	Requirements for sediment transportation if invasive species are present
Solid Waste	Minn. Rules ch. 7035	Requirements and standards for solid waste facilities.
Hazardous Waste	Minn. Rules ch. 7045	Hazardous waste listing, and generator, transport, and facility standards.
Air Pollution Emissions and Abatement	Minn. Stat. § 116.061	Duty to notify and abate excessive or abnormal unpermitted air emissions.

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ARAR/TBC	Citation/Source	Description/Application
Ambient Air Quality Standards	Minn. Rules ch. 7009	Provides air quality standards.
Preventing Particulate Matter From Becoming Airborne and Emission Standards	Minn. Rule pts. 7011.0150 and 7011.8010	Provides measures to control dust and emission standards for hazardous air pollutants.
Noise Pollution Control	Minn. Rules ch. 7030	Noise standards applicable to remedy construction.

**2.3.1 Water Quality**

Water Quality Standards are presented in **Section 2.1**. Response actions taken at the Site shall comply with Minn. Stat. § 103H Groundwater Protection Act, which states that it is the goal of the state that groundwater be maintained in its natural condition, free from any degradation caused by human activities. Additionally, it requires the MPCA in consultation with local water planning authorities to develop best management practices for the prevention of groundwater degradation for specific activity categories. If any activity associated with the remedial actions results in unregulated release, in accordance with the Water Pollution Control Act and Minn. Stat. 115.061, Duty to Notify, requires notification and recover of any discharge of pollutants to minimize or abate pollution of the waters of the state.

In accordance with Minn. Rules ch. 7050, surface water quality standards for the maintenance and preservation of surface water quality during remedy construction, including discharges from treatment/work and storm water runoff zones, shall be based on surface water quality standards that currently apply to Class 2B and OIRWs, as set forth in Minn. Rules, chs. 7050 and 7052, and to the additional surface water quality standards for the St. Louis River set forth in Minn. Rules ch. 7065. Therefore, if water is discharged directly to the waters on or adjacent to the Site, it shall be treated to a level that meets applicable surface water discharge standards. Groundwater non-degradation and standards for the protection of groundwater during remedy construction are presented in Minn. Rules 7060.

**2.3.2 Wetlands and Shoreland and Floodplain Management**

In accordance with Minn. Rules chs. 7050, wetlands at the Site are classified as unlisted wetlands, Class 2B and 3B waters. In accordance with Minn. Rules ch 8420, compliance with wetland ARARs will involve consultation with the MDNR to determine the category of wetlands present at the Site and any avoidance, mitigation, and replacement that may be necessary. Water quality standards for the maintenance and preservation of surface water quality during remedy construction including discharges from treatment/work and storm water runoff zones shall be based on surface water quality standards that currently apply to Class 2B and 3B waters and shall comply with Minn. Stat. §§ 103G.221-.2373. Standards and specifications applicable to shoreland and floodplain management can be found in Executive Order 11988 and 40 Code of Federal Regulations (CFR) Part 6, Appendix A, Minn. Rules ch. 6120.

Minn. Stat. §103G.222 provides that a wetland replacement plan must be approved by the Local Governmental Unit before any Wetlands Conservation Act (WCA) wetlands may be drained or filled, unless draining or filling falls within the “De Minimis” exemption or another exemption of Minn. Stat. §103G.2241. WCA wetlands are those wetlands that are not public water wetlands regulated by the MDNR and the United States Army Corp of Engineers (USACE). WCA wetlands would be located above the Ordinary High Water Mark. The South St. Louis Soil and Water Conservation District provides additional guidance regarding WCA requirements for the site at the following website: <http://www.southstlouisswcd.org/wcact.html>.

### 2.3.3 Permits and Certifications.

Possible permits for cleanup activities include the following:

- *General:* MPCA procedural rules applicable to permit and certification (except air quality), are described in Minn. Rules ch. 7001. The definitions in part 7000.0100 in the agency's procedural rules apply to the terms used in parts 7001.0010 to 7001.0210 and the definitions in part 7045.0020 in the agency's hazardous waste rules apply to the terms used in parts 7001.0500 to 7001.0730. MPCA air quality permit requirements are described in Minn. Rules ch. 7007.
- Minn. Rules 7001.0500 to 7001.0730 govern the application procedures, the issuance and the conditions of hazardous waste facility permits. Chapter 7000 and parts 7001.0010 to 7001.0210 and 7001.0500 to 7001.0730 complement each other.
- *Section 404 Permit (Clean Water Act):* Required for discharge of dredged or fill material into waters of the United States. The substantive requirements of this permit shall be met for alternatives that dredge or fill waters of the state. USACE evaluates applications for Section 404 permits. Substantive requirements that may be incorporated within a Section 404 permit for off-site activities can be found in 33 CFR Parts 320 and 323.
- *Section 401 Certification:* The Clean Water Act, 33 United States Code (USC) §1341, requires that any application for a Federal permit that may result in a discharge to a navigable water must be accompanied by a certification from the affected state indicating that the discharge will comply with all applicable water quality standards and effluent limitations of the Act. Thus, a Section 401 certification or a 401 certification waiver for remedial action at the Site would be necessary before the USACE may issue a Section 404 permit, and a certification may be necessary before the USACE may issue a Section 10 permit if that permit authorizes a "discharge."
- *National Pollutant Discharge Elimination System (NPDES; Clean Water Act 33 USC §1342):* Discharges of pollutants to waters of the state associated with construction of the selected remedy would be subject to the requirements applicable to a NPDES permit. Discharges could include the discharge of capping material, the discharge of contaminants released and suspended by dredging operations, the discharge of treated dredge water during dredging operations, and the discharge of storm water runoff from shoreland modifications. These types of discharges would be subject to the same regulatory standards and controls that would apply under an MPCA permit. In addition, NPDES General Permit number MNG990000 has been required for managing dredged materials; however, this permit has expired and has not been renewed. According to Managing Dredged Materials in the State of Minnesota (MPCA, 2009), an individual NPDES/State Disposal System (SDS) Dredge Materials Management permit may be required. A NPDES Construction Permit and a Stormwater Pollution Prevention Plan are required by the MPCA if more than one acre of land is disturbed by excavation activities.
- *Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403):* A Section 10 permit is required from the USACE for any construction in or over any navigable water, or the excavation or discharge of material into such water, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The substantive requirements that may be incorporated within a Section 10 permit can be found in 33 CFR Parts 320 and 322.

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- *Work in Public Waters (Minn. Stat. §103G.245):* A permit from DNR is necessary for any work in public waters that will change or diminish its course, current, or cross-section. If an alternative under consideration involves dredging or capping, a public waters permit from the DNR may be required. The substantive requirements that DNR may incorporate within its public waters permit are codified in statute and at Minn. Rules, ch. 6115. These requirements include compensation or mitigation for the detrimental aspects of any major change in the resource. The DNR permits may require restoration of bathymetry (water depth) and habitat substrate (bottom) as part of the public waters permit. The DNR would set the specific cover depth and composition requirements.
- Additionally, if capping of contaminated sediments is conducted, requirements would include specifications for cap construction. In-situ caps constructed for the containment of contaminated sediment must contain an isolation zone (IZ) and a bioactive zone (BAZ). The IZ is the portion of the cap that is applied directly over the contaminated sediments and is designed to isolate and attenuate the site contaminants that could potentially be transported upward into the BAZ at concentrations above the cleanup levels by diffusion or advection transport mechanisms. The BAZ is the area within the cap above the IZ where significant biological activity may potentially be present. The thickness and material specifications for the IZ and BAZ should be determined based on pore water transport and attenuation modeling.
- *Air Emissions and Waste Management Permits:* In accordance with Minn. Stat. § 116.081, a permit is required for the construction, installation or operation of an emission facility, air contaminant treatment facility, treatment facility, potential air contaminant storage facility, storage facility, or system or facility related to the collection, transportation, storage, processing, or disposal of waste, or any part thereof unless otherwise exempted by any agency rule now in force or hereinafter adopted, until plans therefore shall have been submitted to the agency, and a written permit therefore shall have been granted by the agency.
- *On-Site Disposal:* The placement of dredged sediment into an on-site confined aquatic disposal (CAD) area and any subsequent seepage from the CAD is regulated by the MPCA under the requirements applicable to an SDS permit. The legal requirements for an SDS are found in Minn. Stat. § 115.07, Minn. Rules, Parts 7065.0100 to 7065.0160 and in other MPCA water quality rules including Minn. Rules chs. 7050 and 7052.
- *Discharge into Sewers:* A permit from the Western Lake Superior Sanitary District (WLSSD) will be necessary if any dredge water is discharged into the public sewers. Pretreatment standards that would likely apply can be found at <http://www.wlssd.duluth.mn.us/pdf/WLSSDPretreatmentOrdinance.pdf>. The permit will also include requirements to assure there will be no detrimental effects to their bio-solids program. A WLSSD permit would also represent compliance with Minn. Rule, Part 4715.1600 and the MPCA water rules governing indirect discharges.
- *Invasive Species:* A prohibited/regulated invasive species permit will be required to transport sediment to a landfill, if invasive species are present near the proposed work area.

As stated in **Section 1.1**, CERCLA provides for waiving of necessary permits for **on-site** work, provided the work is conducted in compliance with the substantial conditions of such permits.

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Although the permits themselves may not be required on CERCLA sites, compliance with the substantial conditions of these identified permits shall be met.

**Construction and Use of Public Sewers.** Minn. Rules ch. 4715 governing the use of sewers and public water systems would apply if any water associated with remedial activities is disposed of in public sewers.

**Waste Management.** Solid and hazardous waste management requirements and standards can be found in Minn. Rules chs. 7035 and 7045, respectively. USEPA guidance has consistently stated that Superfund remedies involving movement of contaminated material within the area of a Site where such material is already located (sometimes referred to as an “area of concern”) do not create a “waste” that is subject to RCRA (42 USC §§ 6901 et seq.) or other waste management requirements. Remedy alternatives that require contaminated materials to be moved to an off-site land disposal site, are considered to generate waste which must be managed under applicable waste management requirements.

St. Louis County Zoning Ordinances, ch. 1003, establish additional floodplain management and manage site activities such as on-site waste disposal.

**Ambient Air Quality Standards.** Air quality standards applicable to releases into the air from cleanup activities include Min. Stat. 116.061, Air Pollution Emissions and Abatement. During remedy construction, activities such as transportation, storage and placement of capping material may result in particulate matter becoming airborne. Minn. Rules ch. 7009 establishes ambient air quality standards for criteria pollutants regulated under the Clean Air Act. The ambient air quality standards for particulate matter that apply to remedial actions are found at <https://www.revisor.mn.gov/rules/?id=7009.0080>. Compliance points shall be selected in accordance with Minn. Rules ch. 7009.

Control of the generation of airborne particulate matter during remedy construction is regulated in Minn. Rule pt. 7011.0150, *Preventing Particulate Matter from Becoming Airborne*, which includes measures to control dust which may be generated during remedy construction activities such as transportation, storage and placement of capping material shall be addressed in the remedial design plan. Minn. Rules pt. 7011.8010, Site Remediation, incorporates the National Emission Standards for Hazardous Air Pollutants applicable during Site remediation activities.

**Noise Pollution Control.** Minn. Rules ch. 7030 establishes noise standards for various land uses. The noise standards that will apply to the selected remedial action can be found at <https://www.revisor.leg.state.mn.us/rules/?id=7030.0040>. Compliance points will be selected in accordance with Minn. Rules ch. 7030.

### **3.0 OTHER CONSIDERATIONS**

Other considerations under MERLA set forth the regulatory requirements, Response Action Objectives and Cleanup Levels that must be met by a remedy to meet the legal standard for a remedy under MERLA and the threshold criterion for protection of public health and welfare and the environment. A remedy, as defined under MERLA, must also include any monitoring, maintenance and institutional controls and other measures that MPCA determines are reasonably necessary to assure the protectiveness of the selected remedy over the long term.

It is particularly important to consider the requirements for long-term assurance of protectiveness where the remedy alternatives involve the use of capping or containment to manage contaminated media within the site. Some requirements may also be necessary to assure long-term protectiveness of alternatives that involve excavation or dredging and off-site disposal of contaminated soil or sediment.

In addition, MERLA requires the MPCA to consider the planned use of the property where the release of contaminants is located when determining the appropriate standards to be achieved by a remedy.

#### **3.1 Long-term Assurance of Protectiveness**

MERLA requires that a remedy include measures that are reasonably required to assure the ongoing protectiveness of a remedy once the components of the remedy have been constructed and entered their operational phase. Such measures may include, but are not limited to, institutional controls, and monitoring and maintenance requirements. This section discusses the measures that MPCA determines are reasonably necessary to assure long-term protectiveness.

In addition, pursuant to the NCP; 40 CFR § 300.430(f)(4)(ii) “If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.” Therefore, if impacted media remains at the Site, above levels that allow for unlimited use and unrestricted exposure, the selected remedial actions will be subject to review every 5 years to assure that they remain protective in the long-term.

##### **3.1.1 Institutional Controls**

Institutional controls are legally enforceable restrictions, conditions or controls on the use of property, groundwater or surface water at a Superfund site that are reasonably required to assure the protectiveness of a remedy or other response actions taken at the Site. Areas of the Site where contaminated media remains in place after remedial construction, will be subject to institutional controls (such as easements and restrictive covenants) which are legally binding on current and future owners of the property to assure ongoing protection from disturbance of or exposure to the contamination. Restrictions on use may also be required for areas of the Site where contaminated media are treated and/or removed and where some residual contamination may remain.

Minn. Stat. §115B.16, subd. 2, requires an Affidavit Concerning Real Property Contaminated with Hazardous Substances to be recorded with the St. Louis County recorder by the owner of the property. The Uniform Environmental Covenants Act (UECA) and the authority for requiring environmental covenants can be found in Minn. Stat. ch. 114E. This statute requires MPCA approval of environmental covenants (which include restrictive covenants and access) when

there is an environmental response project (which includes superfund cleanups) either overseen by EPA or the MPCA. A template for the covenant can be obtained from the MPCA cleanup website (<http://www.pca.state.mn.us/cleanup/riskbasedoc.html>).

### 3.1.2 Long-term Operation and Maintenance, Monitoring, and Contingency Action

On-site containment facilities, groundwater pump and treat, and capping of impacted media (soil/sediment) or any other alternative that may leave impacted media on-site will require post-construction monitoring, operation and maintenance, and contingency action plan to assure that ARARs, Response Action Objectives and Cleanup Levels that apply to the alternative are fully achieved and maintained over time.

General details of the post-construction monitoring, operation and maintenance, and contingency action plan requirements would be set forth in the FS along with an estimate of the cost to carry out each activity.

### 3.1.3 Planned Use of Property

In a provision entitled “Cleanup Standards” (Minn. Stat. § 115B.17, subd. 2a), MERLA provides that when MPCA determines the standards to be achieved by response actions to protect public health and welfare and the environment from a release of hazardous substances, the agency must consider the planned use of the property where the release is located. The purpose of this provision of MERLA is to allow the MPCA to select cleanup standards that provide a level of protection that is compatible with the uses of the Site property that can be reasonably foreseen.

The specific properties directly affected by the remedies are currently part of treatment or containment facilities considered to be commercial/industrial land use. In addition, impacted areas include wetlands/semi-aquatic and aquatic areas and associated habitat. The cleanup standards must provide protection of public health and welfare and the environment that is consistent with any planned or potential future uses of the property within the Site, including natural resource and habitat restoration, navigation and recreational uses. These cleanup standards are also compatible with the use of the adjacent land for residential, recreational, habitat restoration, or commercial and industrial use.

## **4.0 REFERENCES**

MPCA, 1998. Risk-Based Site Evaluation Manual, September.

MPCA, 2007. Guidance for the Use and Application of Sediment Quality Targets for the Protection of Sediment-dwelling Organisms in Minnesota, tdr-gl-04

MDH, January 2013, Draft Public Health Consultation, Updated Human Health Screening Values for St. Louis River Sediments: US Steel Site.

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