



July 7, 2022

(sent via email only to gprom@mnpower.com)

Mr. Greg Prom
Superior Water Light and Power Company
2915 Hill Avenue
Superior, WI 54880

SUBJECT: Draft Remedial Action Options Report – Sediment Area
Superior Water Light and Power (SWL&P) Manufactured Gas Plant
Winter Street and USH 53, Superior, WI
BRRTS ID: 02-16-275446

Dear Mr. Prom,

The Wisconsin Department of Natural Resources (DNR) has completed a review of the April 27, 2022 Draft Remedial Action Options Report – Sediment Area, submitted to the DNR on your behalf by Foth Infrastructure and Environment, LLC (Foth) on May 5, 2022 (RAOR). The RAOR is for the remedial action of sediment contamination from the former Manufactured Gas Plant (MGP) site referenced above (Site). The DNR received a \$1050 fee for review of the RAOR.

The term “Site” is used in this letter as defined in § NR700.03 (56) and includes the area of contamination near the former MGP, gas holder, and Hortonsphere as well as the MGP discharge area north and east of the former MGP including the BNSF right of way, City of Superior property, wastewater treatment plant (WWTP) property and retention pond, Cutler Laliberte McDougal Corporation properties, Lakehead Concrete Works, and the area of contaminated sediment in the slip west of the WWTP (C-Street Slip) where contamination from MGP and subsequent gas storage, distribution, and metering operations was detected.

The DNR Remediation and Redevelopment Program reviewed the RAOR for compliance with Wis. Stats. ch. 292 and Wisconsin Administrative Code (Wis. Admin. Code) chs. NR700 – NR799. The DNR’s review is not an engineering review of the document.

The DNR did not complete a detailed review nor is it providing specific comments on Appendix B of the RAOR in this letter. Nothing in this letter constitutes approval of the RAOR or the contents of Appendix B.

General Comments:

- The RAOR references remediation of sediment contaminated with polynuclear aromatic hydrocarbons (PAHs). Volatile organic compounds (VOC) contamination from the former MGP is present in the sediments as well. The RAOR does not address VOCs detected in the sediment samples. Discussion of VOCs and adjustment of the remedial action to account for VOC contamination must be included in the design of the remedial action.
- The remedial action and/or the dredge area and depth (dredge prism) may need to be revised following the DNR’s 2022 sediment sampling activities. Also, based on the results of the DNR’s sediment sampling activities, additional remedial actions may be needed outside of the Sediment Area Boundary depicted in

the RAOR. The DNR does not intend to approve a remedial action design until the DNR has completed its 2022 sediment sampling and the results are incorporated into the design.

- Foth mentions in the RAOR that some of the sediment analytical data was not used in its modeling of the dredge prism due to poor vertical control. Although vertical control may be an issue for modeling of the area and depth of contamination, all previous data must be considered to determine the dredge prism estimates. As part of its 2022 sampling efforts, the DNR will be sampling sediment in some of the areas where data was not used by Foth to confirm whether contamination greater than the Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application, DNR Pub. RR-088 (CBSQGs) exists.
- An Executive Summary is required under Wis. Admin. Code § NR722.13(2)(b). Include an Executive Summary in the final RAOR.

Specific Comments:

Section 1, First Paragraph, Second Sentence:

State the report was prepared in accordance with Wis. Admin. Code ch. NR722 instead of the general reference given.

Section 1.1, First Paragraph, Last Sentence:

The DNR is currently not a partner in this project. The DNR is the regulatory oversight agency. This sentence should be clear on the current roles of the various parties involved in the project. Note, as previously communicated, DNR is interested in a partnership with EPA and SWL&P for a broader project that fully addresses contaminated sediment and beneficial use impairments in the C-Street Slip.

Section 1.1, Second and Third Paragraph:

These paragraphs should be moved to the Executive Summary (see general comment on an Executive Summary above).

Section 1.1, Second Paragraph, Second Sentence:

Add reference for the CBSQGs Midpoint Effect Concentration (MEC) in text. The correct reference is "*Consensus-Based Sediment Quality Guidelines, Recommendations for Use & Application (DNR Pub. RR-088)*".

Section 1.2.1, First Paragraph, Third Sentence:

MGP impacts are not limited to the head of the slip as described by Foth. MGP impacts were detected at other locations within the slip at concentrations that may not require remedial action but are considered part of the Contaminated Site Boundary as that term is defined in Wis. Admin. Code § NR700.03(6m). MGP impacts were also detected beneath the WWTP berm on the east side of the slip. Due to the structural impediment of the WWTP pond, additional investigation in this area was not conducted.

Section 1.2.1, Second Paragraph, First Sentence:

The slip should be called the "C-Street Slip" so the designation is the same as used by the DNR.

Section 1.2.3, Fifth Paragraph, First Sentence:

Change "WNDR" to "WDNR".

Section 1.3, First Paragraph, Second to Last Sentence:

The RAOR is to be prepared in accordance with all requirements of Wis. Admin. Code ch. NR722, not just NR722.07. Correct this citation.

Section 2.1.2, Second Paragraph:

This paragraph describes obtaining surface water elevation using the stilling well and a National Oceanic and Atmospheric Administration (NOAA) Station gage. Add an explanation of how the discrepancies in the elevations were compensated for during the PDI to establish vertical control.

Section 2.1.6, First Paragraph, Last Two Sentences:

The RAOR presents the current understanding of the conceptual site model (CSM). Add the information from the transducers and the associated determination to the CSM section of the final RAOR.

Section 2.2:

Define the contaminants of concern (COCs) for this Site in a table and include in the final RAOR.

Section 2.2.1, Fourth Paragraph, Fourth Sentence:

It has not been shown to the satisfaction of the DNR that the groundwater contaminant concentrations are “stable”. This will need to be demonstrated following active remedial action if natural attenuation is proposed as a final remedial action for the upland area. Clarify this sentence to describe natural attenuation monitoring following the active remedial action.

Section 2.2.1, Fourth Paragraph, Fifth Sentence:

The work on the upland area of the Site has not shown to the satisfaction of the DNR that site chemistry and microbiology favor continued and consistent reductions in benzene, ethylbenzene, toluene, and xylene (BTEX) and PAH concentrations as a result of natural attenuation. This will need to be demonstrated following active remedial action if natural attenuation is proposed as a final remedial action for the upland area. Clarify this sentence to describe natural attenuation monitoring following the active remedial action.

Section 2.2.2

Discuss preferential flow of contaminants from the upland portion of the Site to the C-Street Slip via pipe bedding as a potential on going source of contamination to the C-Street Slip. This issue is mentioned in Section 2.2.1, third paragraph.

Section 2.2.2, First Paragraph, First Sentence:

The use of the phrase “other potential continuing sources of COCs which have the potential to impact environmental media at and/or within the vicinity of the Site...” appears to vaguely imply there have been hazardous substance discharges from the sources mentioned in this paragraph. This has not been shown to be the case nor does the DNR have evidence of hazardous substance discharges from other sources mentioned in the RAOR.

Section 2.2.2, Last Paragraph, Last Sentence:

The DNR is not providing any liability clarification regarding future hazardous substance discharges in this letter or in any approval of a RAOR for this Site. Responsibility for a hazardous substance discharge is explained in Wis. Stats ch. 292 and the regulations governing the response to a hazardous substance discharge, Wis. Admin. Code chs. NR700-799. If there is documented recontamination of the C-Street Slip following remedial action the DNR will use the tools available in Wisconsin Stats. and Wis. Admin. Code to determine responsibility. At that time SWL&P may request a liability clarification if necessary.

Section 2.3.1, Upland Pathways, Overwater Activities:

The DNR is not aware of any current vessel fueling activities at the Graymont facility. Provide documentation of this activity occurring in the final RAOR.

Section 2.3.1, In-Water Pathways, First Bullet, Last Sentence:

Remove “the Graymont” from this sentence. The DNR is not aware of any vessels owned by Graymont using the C-Street Slip.

Section 2.3.2, First Paragraph:

This paragraph references possible recontamination from PAHs but does not mention volatile organic compounds (VOCs). Include a discussion of possible recontamination from VOCs from the former MGP operations, gas storage, and Hortonsphere areas.

Section 2.3.2, First Paragraph, Last Sentence:

If the active remedial action conducted on the upland portion of the Site is inadequate to control contaminant discharge to the C-Street Slip, the DNR may require additional investigation and remedial action under Wis. Stats. Ch. 292 and Wis. Admin. Code chs. NR700-799.

Section 2.3.2, First Paragraph:

It has not been shown to the satisfaction of the DNR that the impacts to soil/groundwater are “stable/immobile”. Remove or clarify this statement. This sentence also mentions the nature of the “fill sediments” when discussing soil and groundwater contamination. Fill on the upland portion of the Site is not considered sediment under Wis. Stats. or Wis. Admin. Code.

Section 2.3.2, Second Paragraph, Last Sentence:

See comment for Section 2.2.2, Last Paragraph, Last Sentence.

Section 2.3.2, Third Paragraph:

There is no explanation of how the presumed soil impacts are going to be addressed as part of the upland or sediment remediation. Contamination between the effective area of the air sparge system and the head of the slip appears to not be addressed by either the upland remedial action or the sediment remediation. This area of the Site must not be ignored. Add a discussion of soil contamination at the head of the C-Street Slip and how the proposed remedial actions are going to address this area.

Section 2.3.2, Fourth Paragraph, Last Sentence:

Since the MEC is being used to define the PAH dredge prism, this sentence should reference and discuss MEC exceedances, not the probable effects concentrations (PEC).

Section 2.3.2, Fifth Paragraph, First Sentence:

The DNR will evaluate future hazardous substance discharges to the C-Street Slip using the requirements of Wis. Admin. Code chs. NR700-799. The DNR typically does not allow the use of averaging of soil contaminant concentrations during site investigations.

Section 2.3.2, Fifth Paragraph:

DNR has not approved a surface weighted average (SWAC) in this application. The SWAC value and calculation procedures should be detailed in the RAOR and tied to the remedial action objectives. Include in a final version of the RAOR.

Section 2.4, Third Paragraph, Second Sentence:

Although it appears recreational use of the C-Street Slip is limited, it is not restricted. Recreational use of the C-Street slip must be considered when selecting and designing a remedial action.

Section 2.4, Third Paragraph, Last Sentence:

Delete the statement “which are not related to this Site”. Elevated mercury concentrations have been detected in the C-Street Slip. The C-Street Slip is considered part of the “Site” as that term is defined in Wis. Admin. Code § NR700.03(56). A discussion of the COCs associated with MGP operations and gas metering should be included in Section 2.2 (see comment for Section 2.2). Also, although evidence is not available at this time that MGP operations or gas storage and metering directly caused the mercury contamination detected in the C-Street Slip, mercury was historically used in metering operations at MGPs. See Hathaway, A. W., 2012. *Remediation of Former Manufactured Gas Plants and Other Coal Tar-Sites*. CRC Press. Taylor & Francis Group.

Section 2.4, Fourth Paragraph:

The environment at the Site has already been affected by hazardous substance discharges of VOCs and PAHs to the soil, groundwater, and sediments. There is surficial soil contamination greater than the Wis. Admin. Code ch. NR720 residual contaminant levels (RCLs) for direct contact and groundwater protection, sediment contamination greater than the PECs, and groundwater contamination greater than the Wis. Admin. Code ch. NR140 groundwater quality enforcement standards. These conditions pose a substantial risk to human health and the environment. The DNR does not agree this Site is “low risk” as stated by Foth. Remove or rephrase this sentence.

Section 2.5.2:

Discussion of the sampling results from previous investigations is vague. Analytical results of all previous investigations and analytes should be compared to their respective CBSQGs threshold effect concentration (TEC), MEC, and PEC and discussed in this section and analytical results from all previous investigations, including VOCs, should be included in the tables.

Section 2.5.2, First Bullet, 1997 MPCA Sediment Assessment of Hotspot Areas in The Duluth/Superior Harbor:

This section states in sentence four that samples were analyzed for PAHs, polychlorinated biphenyls (PCBs), and metals. The fifth sentence states that PAHs were only analyzed in one sample. Clarify these statements. Also, add a discussion of the concentration of all contaminants detected and a comparison to the CBSQGs TEC, MEC, and PEC and include these results in the tables.

Section 2.5.2, Second Bullet, 2001 WDNR Preliminary Sediment Evaluation Memo:

Analytical results from the sediment samples in this report are not discussed in detail. Analytical results from sediment samples SPG-1 and SPG2 contained total PAH concentrations up to 270,000 µg/kg. These locations are not included in the proposed dredge area. Further discussion on these sample analytical results is needed. Also, add a discussion of the concentration of all contaminants detected and a comparison to the CBSQGs TEC, MEC, and PEC and include these results in the tables.

Section 2.5.2, Third Bullet 2004 ENSR Sediment Investigation Report:

Analytical Results from the sediment samples in this report are not discussed in detail. Analytical results from the SD-1 and SD-3 samples contained total PAH concentrations up to 35,960 µg/kg. These locations are not included in the proposed dredge prism. Also, add a discussion of the concentration of all contaminants detected and a comparison to the CBSQGs TEC, MEC, and PEC and include these results in the tables.

Section 2.5.2, Third Bullet, 2004 ENSR Sediment Investigation Report:

The 2004 ENSR Sediment Investigation Report does not state in the conclusions that the concentrations of total PAHs were similar to typical urban runoff. The report discussed the possibility the PAHs may have been derived from typical urban runoff. Subsequent investigations have shown the connection to MGP, gas storage, distribution, and metering operations. Correct the language in this sentence. Also, add a discussion of the concentration of all contaminants detected and a comparison to the CBSQGs TEC, MEC, and PEC and include these results in the tables.

Section 2.5.2, Third Bullet, 2004 ENSR Sediment Investigation Report:
Add a definition of “bml”.

Section 2.5.4, First Paragraph, First Sentence:
Verify and correct references numbers for Sections 2.2.2 and 2.2.3 as necessary. Section 2.2.2 describes recontamination potential and Section 2.2.3 does not exist.

Section 2.5.4, Second Paragraph, First Sentence:
Limiting the assessment to only PAH impacts “at the head of the boat slip” as stated by Foth may not be depicting an accurate description of the degree and extent of contamination associated with the former MGP, gas storage and metering activities. The assessment of contamination associated with the Site must include all data collected including the data from the DNR’s upcoming 2022 sediment sampling. Previous data cannot be ignored solely on the basis that it may not be suitable for computer modeling.

Section 2.5.4, Second Paragraph, First Sentence:
Further discussion is needed on how Foth determined whether there was sufficient vertical control in the data set. This is not explained here nor is it explained adequately in Section 2.5.4.1.

Section 2.5.4.1:
Foth did not use any sediment data collected prior to the 2016 EA Site Characterization Report for interpolation of the extent of sediment contamination due to Foth’s assertion of lack of vertical control. Lack of vertical control does not mean contamination is absent in these areas nor does it mean this contamination does not require remediation. The DNR understands Foth’s predesign investigation (PDI) cores are located in the general areas where pre-2015 data was collected, however, this does not mean the pre-2015 data can be ignored. The DNR intends to include sediment cores in these areas during its 2022 sediment sampling effort to further define the sediment contamination. It will be necessary to account for contamination in the pre-2015 data in a final version of the RAOR and in design of the remedial action.

Section 2.5.4.1, Fifth Bullet:
Foth chose to archive the sample from PDI core MGP-C-SW15, 1-1.6. Omitting this sample does not provide sufficient information to make the statement that the PDI core reflects the current condition at this location. The DNR intends to resample this location during its 2022 sampling efforts.

Section 2.5.5:
Sediment data need to be compared to the CBSQGSs, TECs, MECs, and PECs for both PAH and VOCs for all sediment samples collected. This comparison will need to include the results from the DNR’s sampling efforts in 2022 as well as all previously collected sample results.

Section 2.6:
The conceptual site model will need to be updated following the DNR’s sediment sampling activities in 2022.

Section 2.6, Second Paragraph (below bullets), Second Sentence:
PAH impacts were detected at all locations mentioned by Foth in this sentence (MGP-C-5, MGP-GT-4, MGP-C-7, MGP-C-8, MGP-C-10, and MGP-C-13). Change this sentence to say PAH impacts were detected at these locations and compare this data to the CBSQGS.

Section 3, First Paragraph, Last Sentence:
Applicable or Relevant and Appropriate Requirements (ARARs) is USEPA Superfund terminology. Wis. Admin. Code does not use the term ARARs and a complete list of ARARs has not been developed or agreed to by the DNR. The list of ARARs presented does not include all of the requirements of Wis. Admin. Code ch. NR700-799

nor does it contain reference to Wis. Admin. Code chs. NR102 and NR106 which is specifically required in Wis. Admin. Code §NR722.09(2). Add the above citations to the first paragraph. Adding the above citations will not necessarily constitute a complete list of ARARs for the Site.

Section 3, Third Paragraph:

The DNR will evaluate the investigation and remediation of this Site using the requirements of Wisconsin Stats. ch. 292 and Wis. Admin. Code chs. NR700-799. The DNR will not agree to or approve Site-specific remedial action objectives (RAOs) that do not reference the requirements of Wis. Stats. 292 and Wis. Adm. Code chs. NR700-799. The RAOs at an absolute minimum should specify the COCs, exposure routes and receptors, and an acceptable contaminant concentration or range of concentrations for each exposure route (i.e., a preliminary remediation goal). Only stating that PAH concentrations will be reduced is not adequate. Also, the remedial action is being conducted to remediate contamination caused by operations at the MGP and subsequent gas storage and distribution activities. Based on our current understanding of the Site, contamination includes both VOCs as well as PAHs. The RAOs should also specifically address the beneficial use impairments (BUIs) of the St. Louis River Area of Concern (SLRAOC).

Section 3.1, First Paragraph:

All sediment data from the site, not just the PDI data, will need to be compared to the CBSQGs in the final RAOR. This includes the results of the DNR's 2022 sampling efforts. The evaluation will need to include VOCs as well as PAHs. Tables in the final RAOR should include all sediment sample results from all sediment samples collected at the Site.

Section 3.2, Second Paragraph, Second Sentence:

Although Foth did present their findings from the PDI investigation during a meeting to discuss the site, the DNR did not provide comment or input on the dredge prism depicted in Figure 2-10 at that time. This sentence is structured such that it implies regulatory agreement or approval. The final dredge prism will not be approved by the DNR until completion of the DNR sampling efforts in 2022 and Foth's incorporation of this data and all sediment data from the Site into a final proposed dredge prism.

Section 4.3.3.1:

Control of sheen and product is not mentioned. Add a discussion of sheen and product control in this section.

Section 4.3.3.1, First Paragraph, Fourth Sentence:

Add a discussion of pretreatment prior to discharge of water to a wastewater treatment facility.

Section 4.3.3.2:

See comment for Section 4.3.3.1.

Section 4.3.4, First Paragraph, Last sentence:

This sentence only discussed PAH contamination. Add a discussion about amendment use with VOC contamination.

Section 4.3.4, Sixth Paragraph:

The DNR may require proof of financial responsibility at sediment cleanup sites when an engineering control is part of the remedial action, or when a structural impediment prevented the investigation of the extent of residual contamination and cleanup (Wis. Stat. § 292.12(2)(d)2.). Add a discussion of this to this section.

Section 4.3.9:

Change the title and language in this section to "continuing obligations" to match the language of Wis. Admin. Code chs. NR700-799. The use of the term "continuing obligations" instead of "AULs" should be consistent throughout the document.

Section 4.5.1:

Change this option to “No Action” throughout the document. “No Further Remedial Action” implies that some remedial action has already taken place which is not correct.

Section 4.5.1:

Remedial Option A would not be an approvable remedial action under Wisconsin Admin. Code ch. NR722 due to the time required to reduce PAH concentrations to the MEC. Foth should state this alternative is carried forward for comparative analysis only.

Section 4.5.1, First Paragraph, Last Sentence:

There are currently no fish consumption advisories in place for PAHs in the SLRAOC. Remove this statement.

Section 4.5.2 First Paragraph, Third Sentence:

It is not clear if all sediment with PAH contamination greater than the MEC will be able to be removed using the referenced slope given the current understanding of the extent of contamination. Clarification is needed.

Section 5.1.6:

There is more detail that is needed for each of the topics in this section and in the evaluation of each option in Section 5.2. It may be better to split this section into engineering controls (with a discussion of potential financial assurance referenced in the comment on Section 4.3.4, Sixth Paragraph), continuing obligations, and stakeholder and community acceptance.

Section 5.2.2:

SWL&P and Foth should consider and evaluate an option where contaminated soil is removed behind the sheet pile wall, The DNR is concerned there is a volume of contaminated soil between the effective radius of the air sparge system and the proposed sheet pile wall that will be a potential source of recontamination of the slip as well and not remediated by the remedial action proposed for the upland portion of the Site.

Section 5.2.2.1:

Explain how recontamination could take place considering the proposed upland remedial action. This section, and other portions of the RAOR, discuss this potential. If the expected contamination remaining following the upland remedial action is such that recontamination is a possibility, then it is possible a more aggressive remedial action is needed for the upland portion of the site and/or removal of contaminated soil near the head of the slip may make recontamination less likely. Following the active remedial action activities on the upland portion of the site, the DNR will require soil confirmation samples be collected and groundwater monitoring conducted between the air sparge system and the head of the slip to confirm remedial action is successful on this area of the Site.

Section 5.5.2, Second Paragraph:

Shoreline erosion is identified in 2.3.1 as a recontamination pathway for COCs. Add discussion in this section or add an alternative that removes contamination between the sheet pile wall and the anticipated effective radius of the air sparge system. It is not clear that the anticipated effective radius of the air sparge system reaches the contaminated soil behind the sheet pile wall.

Section 5.3, Third Paragraph:

Remedial Option A would not be an approvable remedial action under Wisconsin Admin. Code ch. NR722 due to the time required to reduce PAH concentrations to the MEC.

Section 5.3.1, First Paragraph, First Sentence

Physical Risks are not removed in Option A in a reasonable period of time. The DNR does not agree that Option A is an approvable remedial action option.

Tables:

Include all data from all previous sediment sampling activities. A summary of the nature and degree of contamination based on the data gathered during the site investigation is required under Wis. Admin. Code § NR722.13(2)(c)(3).

Table 4-2, Remedial Action Option, column A:

Change “No Further Remedial Action” to “No Action”. See comment on Section 4.5.1 above.

Figure 2-2:

Sediment core SPG-1 is not labeled on figure 2-2.

The DNR appreciates the opportunity to comment on the draft RAOR. Please contact me at john.sager@wisconsin.gov or call me at 715-919-7239 if you have questions or if you would like to discuss the contents of this letter.

Sincerely,

A handwritten signature in cursive script, appearing to read "John Sager".

John Sager
Hydrogeologist
Remediation and Redevelopment Program

- C: File
Steve Garbaciak, Foth
Erin Hughes, Foth
Chris Saari, DNR
Joe Graham, DNR
Erin Endsley, DNR
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