

July 27, 2021

Phone No.: (651) 201.6394
E-mail: Lee.Zettler@state.mn.us
MDA-CIS Document No.: LMZ-101207395

Ms. Karlene French
Canadian Pacific Railway
Soo Line Railroad Company
120 South 6th Street, Suite 700
Minneapolis Minnesota 554402

**SUBJECT: APPROVAL OF RESPONSE TO COMMENTS ON 2020 ANNUAL
GROUNDWATER MONITORING REPORT**

RE: SITE NAME: **CEDAR SERVICE, INC., SHOREHAM FACILITY, MINNEAPOLIS, MINNESOTA**
MDA PROJECT NO: **RWA253128**

Dear Ms. French:

Minnesota Department of Agriculture (MDA) Incident Response Unit staff has reviewed Golder's April 21, 2021 Response to MDA Comments on the 2020 Annual Groundwater Monitoring Report (Report) for the Cedar Service Site in Minneapolis, Hennepin County, Minnesota.

Based on the review, MDA staff approve the report contingent on the incorporation of the following comments:

- The MDA appreciates the revised analysis and figures submitted in response to the MDA Comments on the 2020 Annual Groundwater Monitoring Report. The revised analysis, figures, and graphs are helpful to understand the dynamics of contaminant and groundwater flow at the Site. However, the MDA contends that there are data gaps in the well network at the Site and several areas where the pentachlorophenol (PCP) contaminant plume has not been delineated. These areas should be addressed in order to determine the nature and extent of the PCP contamination in groundwater and the risk to potential receptors.
- The MDA approves of recommendations and analyses submitted for MDA Comments 2, 3 and 4.
- Comment 1B addressed the MDA request for a monitoring well to be installed in the outwash unit downgradient of MW-121. Based on the submitted response and revised cross sections, the MDA agrees that an additional monitoring well is not required in this location.

- Comment 1A addresses the MDA request for a monitoring well to be installed in the upper portion of the St. Peter Mudstone downgradient of MW04-41-MS. The MDA does not agree with the interpretations and recommendations regarding this data gap provided by your consultant, Golder Associates Inc. (Golder). Golder contends that if contamination were present at a higher elevation in the St. Peter Mudstone, there would be detections of this contamination at MW05-68-MS. PCP was detected at a concentration of 1,410 micrograms per liter (ug/L) in in MW04-41-MS in May 2020. Figures 3, 4, and 6 show a slight upward trend in groundwater flow in the St. Peter Mudstone between wells MW04-41-MS and MW05-68-MS during the August 2019, October 2019 and May 2020 monitoring events. While it is possible that plume dispersion may cause detections at MW05-68-MS, as suggested by Golder, this possibility should be estimated via dispersion calculations based on available data. PCP concentrations and groundwater flow data imply that contamination found at MW04-41-MS would flow primarily to the upper St. Peter Mudstone formation, at a higher elevation in the groundwater column than that intercepted in wells MW05-68-MS and MW05-67-MS. The MDA therefore recommends that an upper St. Peter Mudstone monitoring well be installed in the location of MW05-68-MS or between MW05-68-MS and MW05-67-MS.

In addition, Figure 6 shows the boundary of the hypothetical PCP contaminant plume in the St. Peter Mudstone. The MDA does not agree with this depiction of the plume and is concerned that this depiction overgeneralizes the shape and extent of the PCP contaminant plume. There is inadequate data to determine the upward limits of the plume. A more helpful depiction of the plume in this cross section would be an isoconcentration map with boundaries drawn based on available well data. Complete isoconcentration cross section figures would be helpful to understanding the contaminant profile in groundwater at the site, and the MDA recommends that isoconcentration cross section figures be completed for the 2021 Annual Groundwater Monitoring Report.

- Comment 1C addresses the MDA request for a monitoring well to be installed west of monitoring well MW03-59-OPD. While the MDA appreciates the revised East-West cross section across the Site, the MDA does not agree with Golder's interpretation and recommendation regarding this data gap. PCP is present in this area in the Prairie du Chien Group (OPD) unit at wells MW03-64-OPD, MW03-59-OPD, MW04-41-OPD and MW04-79-OPD at concentrations above the Minnesota Department of Health (MDH) Health Risk Limit (HRL) of 0.3 ug/L. As shown in revised Figure 3, groundwater flow direction in the OPD is generally to the west towards the Mississippi River. Concentrations of PCP in OPD wells south of this area have generally been lower. While the well network is generally extensive for the Site, there is a data gap existing to the west towards the Mississippi River. There is not a clean well in the westward direction in the OPD unit. While the Hard Chrome well is shown in this figure to the west, it is screened over multiple units as opposed to just the OPD and has PCP

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concentrations above the MDH HRL. Therefore, an additional monitoring well should be installed in the OPD unit west of MW03-59-OPD or in the location of MW01-01-BR to determine the nature and extent of PCP contamination in this location and to determine the risk to potential receptors.

Thank you for your cooperation in responding to this incident and helping to preserve and protect Minnesota's natural resources. If you have any questions on this project, please contact MDA project manager, Lee Zettler at (651) 201-6394 or Lee.Zettler@state.mn.us.

Sincerely,

A handwritten signature in cursive script that reads "Lee Zettler". The signature is written in black ink on a white background.

Lee Zettler, Project Manager
Pesticide and Fertilizer Management Division
Incident Response Unit

cc: Jennifer Schoenstein, Golder Associates, Inc.
Heather Lin, Golder Associates, Inc.
Mark Bergeon, Golder Associates, Inc.
Stuart Orłowski, MDA