

## U.S. Steel – Minntac Case Status Summary

Objective: To outline key case facts including identification of CWA point source, unauthorized discharges, pollutants, and receiving waters; and identify enforcement options.

### Point Source Identification

*Minntac Tailings Basin is a point source. The tailings basin is a container that holds tailings and wastewater.* Few cases have directly ruled on the issue of whether a tailings pond or basin is a point source, however those that have ruled on this issue have concluded that tailings ponds are point sources. Various courts indicate that the term is to be interpreted broadly. USS estimates approximately 2,000 - 3,000 gallons of wastewater per minute are being discharged from tailings basin to surface waters.

### Unauthorized Discharges

#### **1) Groundwater discharge from Tailings Basin to Sand Creek/Twin Lakes, Dark River, and Timber Creek watersheds.**

Pollutants: specific conductance, TDS, hardness, alkalinity (bicarbonate as CaCO<sub>3</sub>), and sulfate(?). USS reported average concentrations of these pollutants above WQS.

Supporting facts: Numerous USS studies and reports discuss the hydraulic connection between the tailings basin and receiving waters. Excerpts from these studies and reports include:

- *The Minntac Tailings Basin serves as the source of water for these three watersheds [Dark River, Sand River, and Johnson Creek];*
- *Groundwater primarily discharges to wetlands and eventually to surface water bodies (i.e., the rivers and the lakes), and further downstream to the Sand River;*

USS modeled groundwater discharge from tailings basin to surface water and concluded that groundwater migrates from basin to wetland area in approximately 10-25 years. Groundwater discharging to wetland reaches Twin Lakes via surface water flow processes. Model report includes figures with groundwater flow paths and discharge locations. USS also modeled total groundwater discharge 1,809 gpm from tailings basin to Twin Lakes. USS model estimated SC&R seep collection system captures ~545 gpm.

Additional information needed: EPA expert review of modeling and confirmation of groundwater discharge from basin to surface waters, estimated travel time, and pollutant concentrations. Request modeling files via 308.

#### **2) Seep discharge from Tailings Basin to Dark River watershed.**

Pollutants: specific conductance, TDS, hardness, alkalinity (bicarbonate as CaCO<sub>3</sub>), and sulfate (downstream trout reach). USS reported average concentrations of these pollutants above WQS.

Supporting facts: USS completed a 2014 study for Western basin seeps including the coordinates, ID, and flow rate of ten seeps. Report concluded that 2.3 MGD discharged from the ten Western seeps to

surface water. Numerous USS studies and reports discuss the hydraulic connection between the tailings basin and the Dark River. Excerpts from these studies and reports include:

- *The Minntac tailings basin discharge essentially serves as the headwaters to the Dark River;*
- *The Dark River originates from beneath the tailings basin, dissecting the western perimeter dam, and flows towards the northwest.*
- *The headwaters of the Dark River is located at the toe of the U. S. Steel Minntac tailings basin perimeter dike in close proximity to surface seep discharge monitoring site SD001*

USS is under a State Schedule of Compliance to develop a seep collection system for the west side seeps. The draft NPDES permit requires completion of west side seep collection system by December 2017. With the exception of seep location SD001, the west side seeps were not identified or covered under original (and effective) 1987 permit and the 1989 permit modification.

Additional information needed: Location of all known seeps, with flow data, and water quality data going back 5 years. Via 308. Potentially fill in any data gaps with sampling inspection.

### **3) Seep discharge from Tailings Basin to Timber Creek watershed.**

Pollutants: specific conductance, TDS, hardness, alkalinity (bicarbonate as CaCO<sub>3</sub>), and sulfate (downstream trout reach on Dark River). USS reported average concentrations of these pollutants above WQS.

Supporting facts: USS completed a 2014 study for Western basin seeps including the coordinates, ID, and flow rate of ten seeps. Report concluded that 2.3 MGD discharged from Western seeps. Numerous USS studies and reports discuss the hydraulic connection between the tailings basin and surface water, including *“The Tailings Basin pools are surface water bodies that create a mounding condition forcing groundwater flow in a primarily radial direction approximately perpendicular to the perimeter dike surrounding the Tailings Basin pools towards the drainage surrounding surface water system formed by the wetlands, creeks/rivers, and lakes.”*

USS identified ten discharging seeps along the western basin berm perimeter, including three seeps in what USS identified as the Timber Creek watershed. USS is under a State Schedule of Compliance to develop a seep collection system for the west side seeps. The draft NPDES permit requires completion of west side seep collection system by December 2017. The three west side seeps discharging to the Timber Creek watershed were not identified or covered under original (and effective) 1987 permit and the 1989 permit modification. The permits made no reference to Timber Creek as a receiving water.

Additional information needed: Location of all known seeps, with flow data, and water quality data going back 5 years. Via 308. Potentially fill in any data gaps with sampling inspection.

## Options and Next Steps

- 1. Modeling Support.** Need to make a decision on support for expert groundwater and pollutant transport modelling analysis. Options include ORD Ada Lab, NEI funding for contractor support, and in-house modeling support.
- 2. Identification of preliminary injunctive relief measures.** Should we invest in NEI-funded contractor support to develop potential IR options for potential referral, or plan to go with develop and implement approach for now? Sulfate standard in flux until at least next year so identifying IR options at this point may be difficult.
- 3. Information Request.** As discussed above, issue 308 for seep information; Dark River, Timber Creek, and Sand River water quality data; and groundwater modeling files.
- 4. Inspection.** Fill in any data gaps with sampling inspection, or possibly a follow-up 308 requiring facility to collect data.
- 5. Assess information and consider enforcement options.**