Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Industrial Surface Water Discharge of Process Wastewater Application

NPDES/SDS Permit Program

Doc Type: Permit Application

The National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit Program regulates wastewater discharges to land and surface waters. This application applies to industrial facilities that discharge process wastewater to a surface water of the state. Any other discharge types will require a different permit application.

Complete the application by typing or printing in black ink. Attach additional sheets as necessary. For more information, please contact the Minnesota Pollution Control Agency (MPCA) at: In Metro Area: 651-296-6300 or Outside Metro Area: 800-657-3864.

Permittee name: United States Steel Corporation **Permit number:** MN 0057207

Facility Information

1. Principal facility activity: Taconite Iron Ore Mining and Processing
2. Product(s) produced: Iron Pellets
3. Amount of product produced per Unit Time (such as tons/year, kilograms/day)*:

   Average: 14 million long tons per year (LT/yr) Maximum: 16.5 million LT/yr
4. Raw material(s) consumed: Iron Ore, Fluxstone (47% limestone, 53% dolomite), Bentonite
5. Amount of product consumed per Unit Time (such as tons/year, kilograms/day)*:

   Average: Crude Ore: 48.5 million LT/yr; Fluxstone: 1.16 million short tons per year (T/yr); Bentonite: 135,000 T/yr

   Maximum: Crude Ore: 53 million LT/yr; Fluxstone: 1.32 million T/yr; Bentonite: 150,000 T/yr

   **Provide both daily maximum and long-term monthly average expected during the five-year permit term. If an effluent limitation guideline applies and is expressed in terms of production (or other measure of operation) please report the expected actual production rates in the units used in the applicable effluent guideline. Consumptive use and/or production rates should be in sufficient detail so as to aid in the development of technology-based effluent limitations. For new discharges, actual production shall be estimated using projected production.*
6. Standard Industrial Classification (SIC) Code Number (list all that apply):

   1011
7. If established, please indicate what you believe to be the applicable federal effluent limitation guideline(s) for your waste stream(s):

   40CFR 440 Ore Mining and Dressing Point Source Category, Subpart A - Iron Ore
8. What date did the facility initiate operation? 1968

Water Supply

9. What is the source of the intake water supply for the facility?

		Rate of supply (gallons/day)
☐ Municipal water supply, city name:		
☐ Ground water, intake location:		
	Tailings Basin	44,300,000
☒ Surface water, name:	Mt. Iron Pit	4,500,000

10. If this is a surface or ground water intake, please provide the Minnesota Department of Natural Resources (DNR) Water Appropriation Permit Number: Tailings Basin: NA - Return Water; Mt. Iron Pit: 1963-0846

11. Is the intake water supply chlorinated or otherwise disinfected? ☒ Yes ☒ No

12. Is the intake water supply treated with a scale and/or corrosion inhibitor? ☒ Yes ☒ No

Wastewater Treatment

13. How does the facility dispose of sewage (sanitary wastewater)?

Sanitary sewage is treated by the main wastewater treatment plant (Main WWTP) regulated by NPDES/SDS Permit No. MN0050504. Treated effluent is discharged to the tailings basin.

14. Does the facility generate process wastewater? ☒ Yes ☐ No

If yes, the process wastewater from the facility is disposed of to: (check all that apply)

☐ Municipal storm sewer
☐ Sanitary sewer
☐ Stormwater retention basin or pond
☐ Septic tank/drainfield
☐ Land
☒ Surface water: Dark River
☐ Other (specify):

15. Provide a complete description of the existing or proposed wastewater treatment system. For existing facilities, indicate what changes, if any, have occurred since the last permit was issued.

See facility description in Section 3.0 of December 2011 permit renewal application. Significant changes are included in Section 3.1.

16. Completely describe the type, amount, and fate of all residual solids, sludge, silage, and by-products generated from facility operations and/or wastewater treatment.

Waste solids from the Main WWTP is periodically removed, transferred and disposed of into the City of Mountain Iron WWTP (NPDES/SDS Permit No. MN0040835). Tailings from taconite processing are disposed of in the tailings basin.

17. Identify the discharge rate in million gallons per day (MGD) and other information for each wastewater outfall discharge point:

Station ID/ Outfall number	Type of wastewater/waste streams	Discharge flow rate, average (MGD)	Discharge flow rate, maximum (MGD)	Discharge frequency	Route to receiving waters
SD001	Tailings Basin Perimeter Dike Seepage	0.14	0.18	Continuous	Dark River
WS001	Main WWTP Effluent	0.035	0.085	Continuous	Internal (Tailings Basin)

18. Attach a topographical map of the route of discharge to the receiving waters. If this is a discharge to a storm sewer, you must show the route of the storm sewer to a receiving water body. A map showing only the discharge to a storm sewer is unacceptable. The map must show how and where the facility's waste stream enters a receiving water body.

Groundwater Monitoring

19. Are there groundwater monitoring wells or lysimeters at your facility? ☒ Yes ☐ No

If yes, describe where were installed and the reason they were installed:

There are a total of 13 groundwater monitoring wells installed outside of the tailings basin perimeter dike, 10 of which are currently monitored on a quarterly basis during non-freezing conditions. Ten of the monitoring wells were installed in 1981 to evaluate the presence of metals in seepage from the tailings basin to groundwater. Seven of the original ten are currently used to monitor for the presence of amine, sulfate and field parameters in groundwater. An additional three monitoring wells were installed in 2012 and 2013 to evaluate compliance with groundwater standards at the property boundary.

Chemical Additives

20. List below all chemical additives that are used or proposed to be used at the facility. This includes the process reagents, flocculants, descalants, corrosion inhibitors, biocides, wastewater treatment chemical additives, chlorine or other disinfectants, detergents, cleaning products, chemical dust suppressants, freeze conditioning agents, etc.

Chemical	Purpose	Location of chemical addition in process (e.g., to raw water supply, at greensand filter, before RO unit #2, etc.)	Amount/duration/frequency of addition (i.e., continuous or slug dosing. If slug dosing give amount/duration and frequency of addition; e.g., slug dosing 13.5 gal/3hours, once every two weeks)	Average rate of use (weight or volume per day)	Maximum rate of use (weight or volume per day)
			See Appedix C of December 2011 permit renewal application. Additional chemical additives approved since January 2011 are listed separately.		

Attach the Material Safety Data Sheets, complete product labels and any other information on chemical composition, aquatic toxicity, human health, and environmental fate for each chemical additive.
An Additional Chemical Additives Attachment is available on the MPCA website at http://www.pca.state.mn.us/water/permits/index.html if more space is needed.

Water Quality Sample Results

21. Attach a list of all pollutants known or reasonably believed to be present at each facility discharge point and provide sample results for those pollutants.

    Pollutants may include, but are not limited to, total suspended solids, biochemical oxygen demand, pH, fecal coliform, temperature (heat), nutrients (phosphorus, ammonia, nitrate, nitrite), metals, salts, cyanide, residual chlorine, fluoride, oil and grease, polychlorinated biphenyls, phenols, polynuclear aromatic hydrocarbons, volatile organic compounds, pesticides and/or radioactivity. Clearly indicate the date, location where sample was taken, types of wastewater sampled, and method(s) of sampling (e.g. grab, composite) for each sample.

    At a minimum, sample results must be provided for total suspended solids (TSS), biochemical oxygen demand (BOD), fecal coliform (if believed present or sanitary wastes will be discharged), pH, and total phosphorus, irrespective of what might be required by an existing permit.

    If this is an application for reissuance of an existing permit, review your existing NPDES/SDS permit to see if it has special testing requirements as part of the application for reissuance process.

22. Certified laboratory analyzing samples: Northeast Technical Services, Pace Analytical, ERA Laboratories, Braun Intertec

    Minnesota Department of Health Certification Number: 027-137-157, 027-053-137, 027-137-152, 027-053-117

Stormwater

23. Is the facility covered by an MPCA stormwater NPDES permit? ☒ Yes ☐ No

    If yes, indicate the permit number (if stormwater discharges are authorized under the stormwater general permit give unique identifying number rather than general permit number): MN G610000

24. Does stormwater contact **any** raw or processed materials, finished products, industrial waste, byproducts, or any other type of materials at the facility? ☒ Yes ☐ No

    If yes, describe these materials: Iron Concentrate (Reclaim), Finished Iron Pellets, Tailings

25. Is any vehicle maintenance, transportation equipment cleaning, or airport deicing conducted at the facility? ☒ Yes ☐ No

26. Indicate where stormwater from the facility discharges to: Dark River via seepage through tailings basin perimeter dike

27. Summarize any treatment or best management practices that are used to regulate stormwater discharges at the facility: Sedimentation and Filtration

Attachments

☐ **Pond Attachment:** If your facility has a pond treatment component (i.e., primary, secondary, aerated, polishing, cooling, etc.), complete the Pond Attachment.

Review the application and ensure all requested items are submitted with this application.

Please make a copy for your records.

Refer to the *Transmittal Form* for mailing instructions.