5:30 – Sign-in, sign-up by 6:15 if you'd like to make an oral comment.

6:00-6:30 p.m. – Welcome, presentation from MPCA staff

6:30-7:00 p.m. - Q&A session with MPCA staff. Audience members will be invited to ask questions about the permits and the variance request.

7:05-8:20 p.m. – Oral comments will be accepted during this time. These comments will be official and accepted as part of the public record. Audience members are asked to clarify whether their comments are on the permit or on the variance.

8:30 – Close of meeting

Ground rules

- **Be respectful:** Please keep comments respectful and constructive, no personal attacks.

- **Disagree with dignity:** Treat everyone with dignity, even those you disagree with. All viewpoints are welcome at this meeting.

- **No applause or cheering/booing:** Please hold applause, shouting, or other reactions to ensure everyone feels safe to speak and that we can use our time effectively.

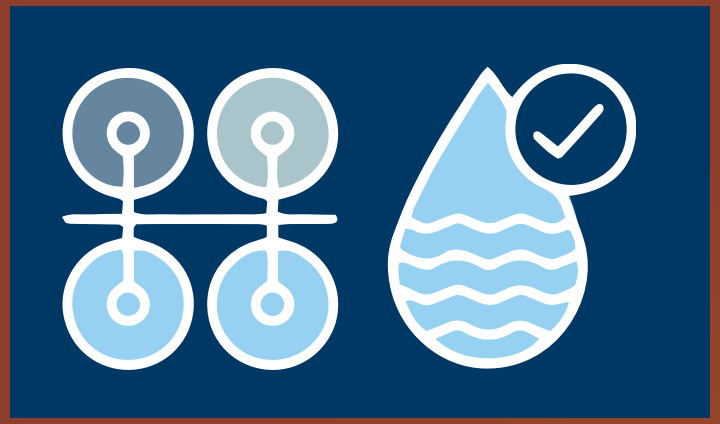
- **Time limit:** Questions during Q&A are limited to **one minute**. During public comment, each speaker has **two minutes**. Time cues will be given. Please stop when your time is called.

U.S. Steel Keetac wastewater permits and variance request

Sept. 3, 2025

MINNESOTA POLLUTION CONTROL AGENCY

Keetac industrial wastewater permit reissuances



Why we are here

U.S. Steel Keetac wastewater permits and sulfate variance request are on public notice from **July 8** through **Sept. 22**.

Engagement goals

Your voices are heard, and valuable public comments result in an improved final permit.

Agenda

1. Facility background
2. Permit overview
3. Sulfate & variance request
4. Compliance schedule
5. Functional equivalency
6. Public comment period
7. Questions & answers
8. Oral comment

Facility background

- Keetac began operations in 1967.
- The facility produces ~ 6 million tons of taconite pellets per year.
- Keetac holds two industrial wastewater permits: one for the mining area and plant and one for the tailings basin.
- The most recent NPDES permits were issued in 2011 and expired in 2016.

U.S. Steel photo

Mine and plant overview

There are four permitted discharges:

- **SD 001** – water treatment plant discharge
  sulfate monitoring not required.
- **SD 002** – plant & stockpile runoff
  12-month sulfate range: 134 – 190 mg/L
  Average sulfate concentration: 165 mg/L
- **SD 003** – mine pit dewatering
  12-month sulfate range: 61 mg/L - 81 mg/L
  Average sulfate concentration: 69 mg/L
- **SD 012** – mine pit dewatering
  12-month sulfate range: 20 mg/L - 25 mg/L
  Average sulfate concentration: 22 mg/L

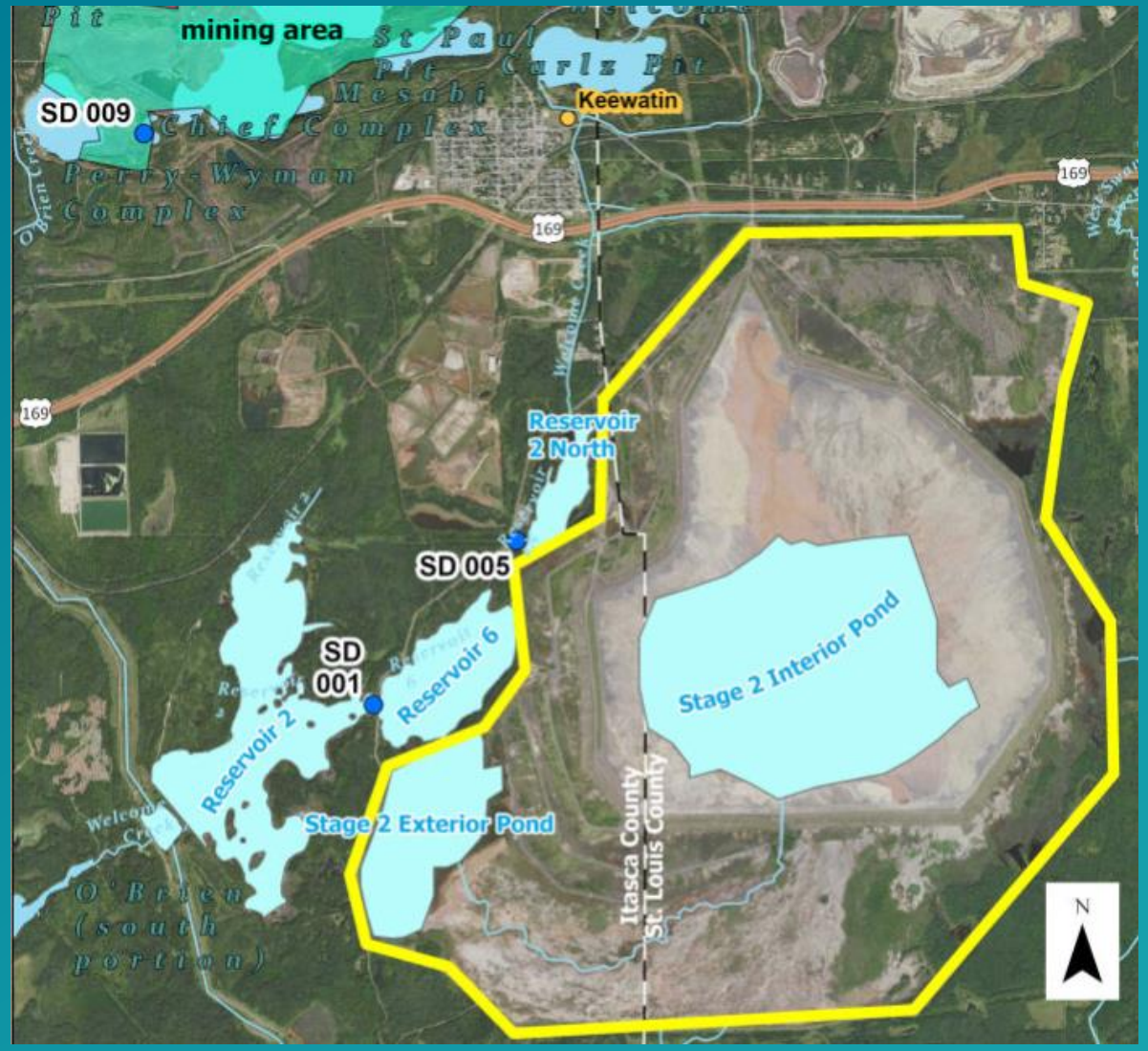
Tailing basin overview

There are three permitted discharges:

- **SD 001** – siphon (tailings basin discharge)
  Rarely used. No discharge for over 10 years.

- **SD 005** –tailings basin discharge
  12-month sulfate range: 111 mg/L - 139 mg/L
  Average sulfate concentration: 124 mg/L

- **SD 009** – mine pit dewatering
  No discharge. Outfall not constructed.



2025 draft permits overview

Both permits require Keetac to:

- comply with all existing sulfate limits
- monitor for mercury
- **test wastewater toxicity at the mine pit and tailings basin (new)**
- **conduct a PFAS inventory at each site (new)**
- **monitor for additional nutrients (new)**
- **conduct an annual public meeting (new)**

2025 draft permits overview

The tailings basin permit requires Keetac to:

- monitor biology in the Hay Creek watershed (new)
- monitor surface water quality at eight new locations (new)
- add two internal waste stream monitoring locations (new)
- evaluate tailings basin seepage to groundwater for equivalency to a point-source discharge to surface waters (new)

Wild rice sulfate standard history

- 1973 – The 10 mg/L sulfate standard to protect wild rice was adopted, codified in Minnesota rule, and approved by the U.S. EPA (CWA §303(c)(2)(A)).
- 2011-2016 – State Legislature session laws directed the MPCA to study and revise the sulfate standard and limited the MPCA's authority to implement the sulfate standard in wastewater permits.
  - The MPCA embarked on scientific research and proposed a sulfate standard revision in 2017.
- 2018 – An administrative law judge disallowed the MPCA's proposed wild rice sulfate standard rulemaking, so the MPCA did not submit the revised rule to the EPA for approval.
  - *This left the 10 mg/L sulfate standard in effect.*
- 2022 – The EPA explicitly directed the MPCA to implement the existing sulfate standard across Clean Water Act programs, including as required in wastewater permits (CWA §301(b)(1)(C)).

Wild rice sulfate standard

- The sulfate standard of 10 mg/L protects waters used for production of wild rice (Minn. R. 7050.0224, subp. 2).
- The standard is in Minnesota rule and must be enforced as required by the federal Clean Water Act (40 CFR 122.44(d)(1)(i)).
- Changing the standard requires a separate administrative process and federal approval (40 CFR 131.5(a), 131.6, and 131.21).
  - The MPCA cannot legally modify the wild rice sulfate standard as part of the Keetac wastewater permit reissuance.

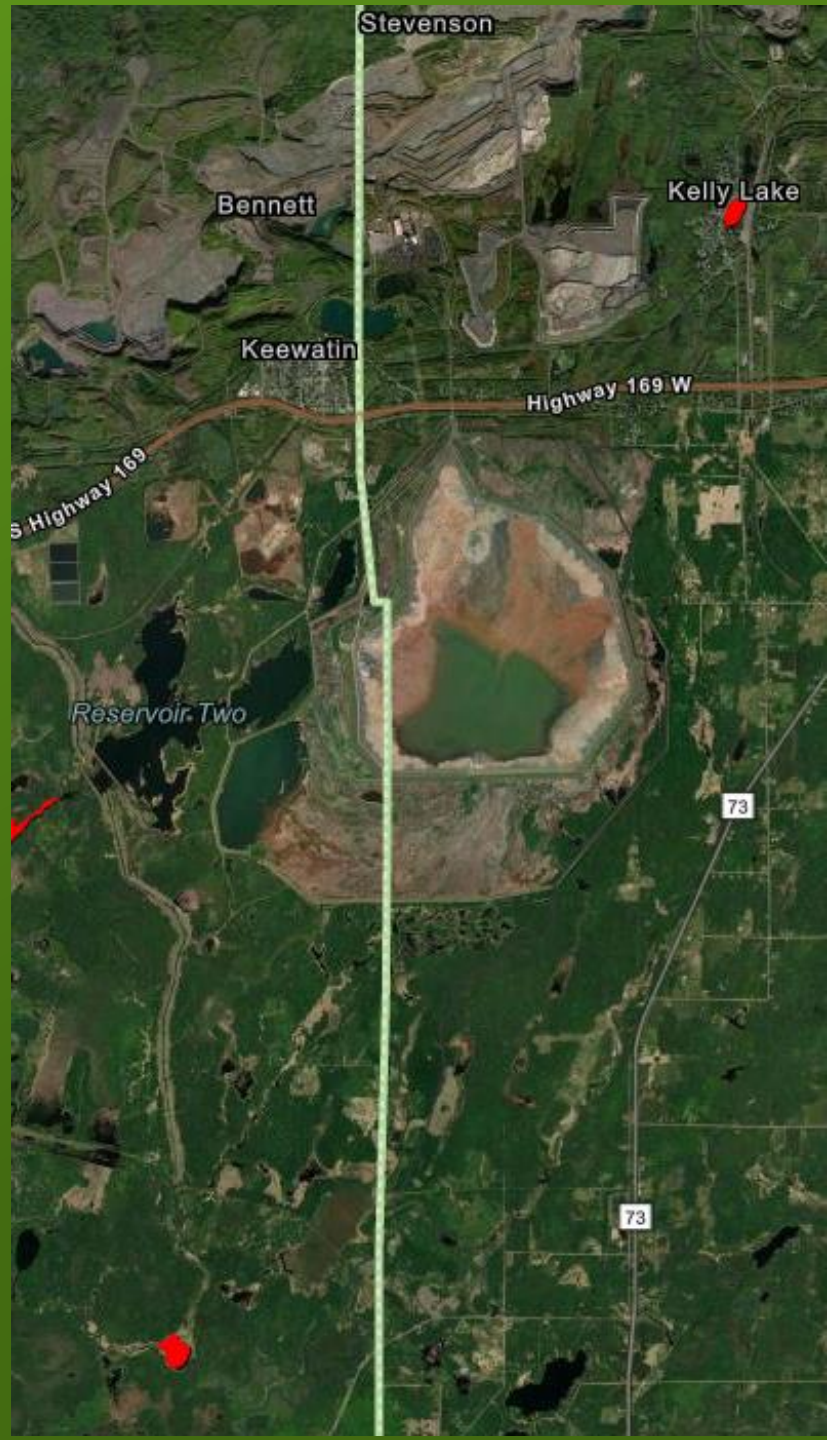
Sulfate effluent limits

The draft wastewater permits contain the same sulfate limits as the 2011 permits:

- 14 mg/L as a monthly average
- 24 mg/L as a daily maximum

The limits are derived from the water quality standard that protects waters in which wild rice grows.

- In 2011 limits were set to protect Hay Lake which is the first wild rice water downstream of the facility.



MPCA cannot remove existing sulfate limits

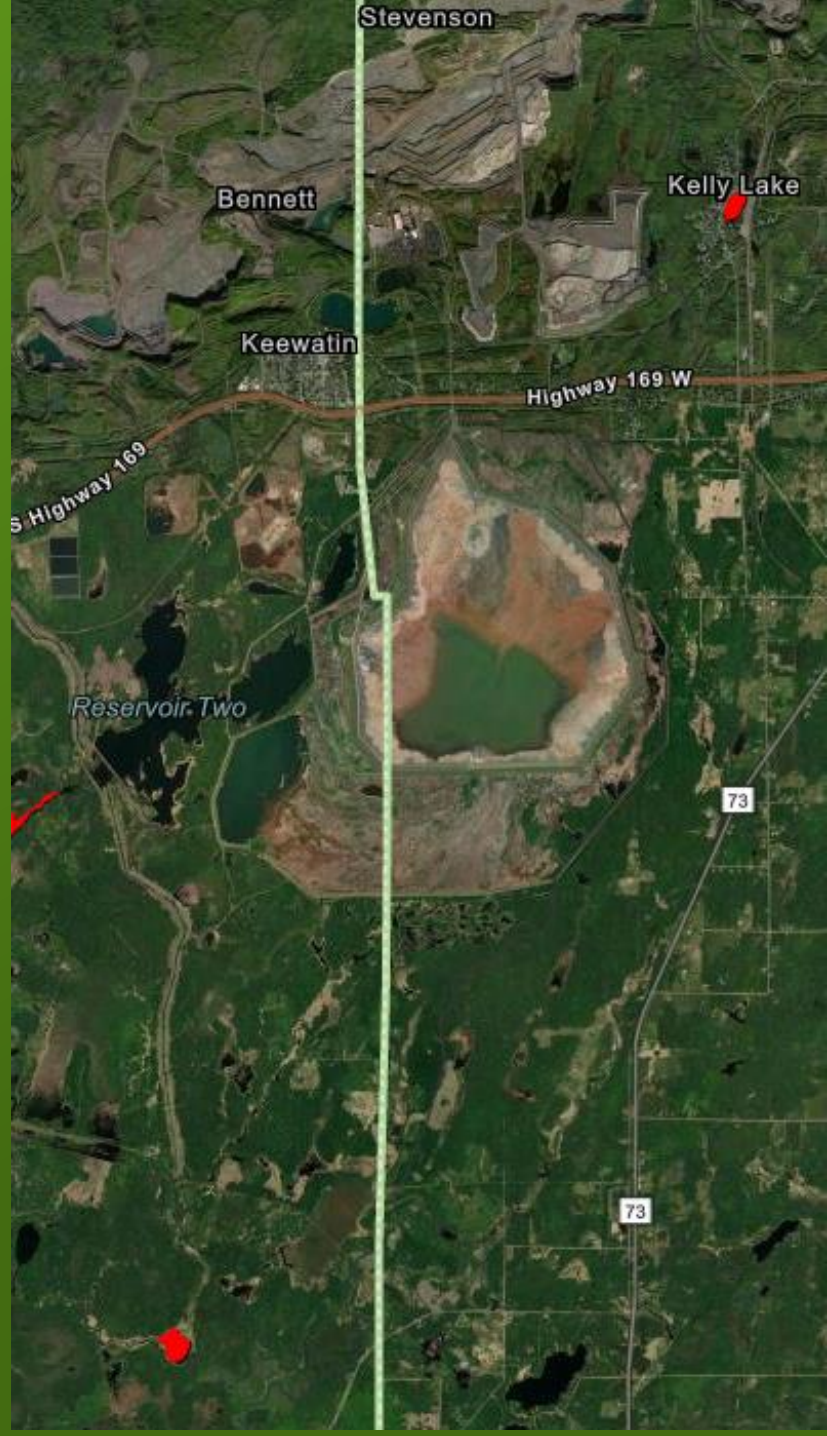
- State and federal anti-backsliding rules govern removing limits in NPDES permits.
- Removing sulfate limits would not comply with anti-backsliding.

7053.0275 ANTIBACKSLIDING.

§ Subpart 1. **Antibacksliding applies.** Any point source discharger of sewage, industrial, or other wastes for which a national pollutant discharge elimination system permit has been issued by the agency that contains effluent limits more stringent than those that would be established by parts 7053.0215 to 7053.0265 shall continue to meet the effluent limits established by the permit, unless the permittee establishes that less stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.

Final sulfate limits

- Currently, the facility is not designed to treat its wastewater for sulfate.
- Keetac must comply with the final sulfate limits per the compliance schedule.



Sulfate variance request

The Clean Water Act allows facilities to request a variance from a water quality standard under specific circumstances (40 CFR 131.14).

A variance is:

- a time-limited modification of a water quality standard
- for a specific pollutant, discharger, and body of water

Facilities still need to work toward compliance with the final limits in the permit.

Sulfate variance request

In May 2025, U.S. Steel requested a variance from the sulfate water quality standard. The request was made based on two eligibility factors:

- human-caused conditions that would cause more environmental damage to correct than leave in place (factor 3)
- substantial and widespread economic and social impact (factor 6)

40 CFR § 131.10(g) & Minn. R. 7050.0190 supb. 4

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

(4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

Human-caused conditions factor eligibility

A factor 3 variance justification must demonstrate both:

1) that the pollution preventing attainment is the result of human-caused conditions
2) that either the pollutant cannot be remedied or treating the pollution will cause more environmental damage to correct than to leave in place

U.S. Steel's variance application:

1) did not explain how the sulfate pollution is human-caused and not caused or contributed by its own process
2) demonstrated that the pollutant can be remedied with the identified treatment technology and did not sufficiently evaluate the benefits of treatment to make a sufficient comparison regarding environmental damage

Economics: public vs. private sector criteria

EPA's criteria for public sector variances

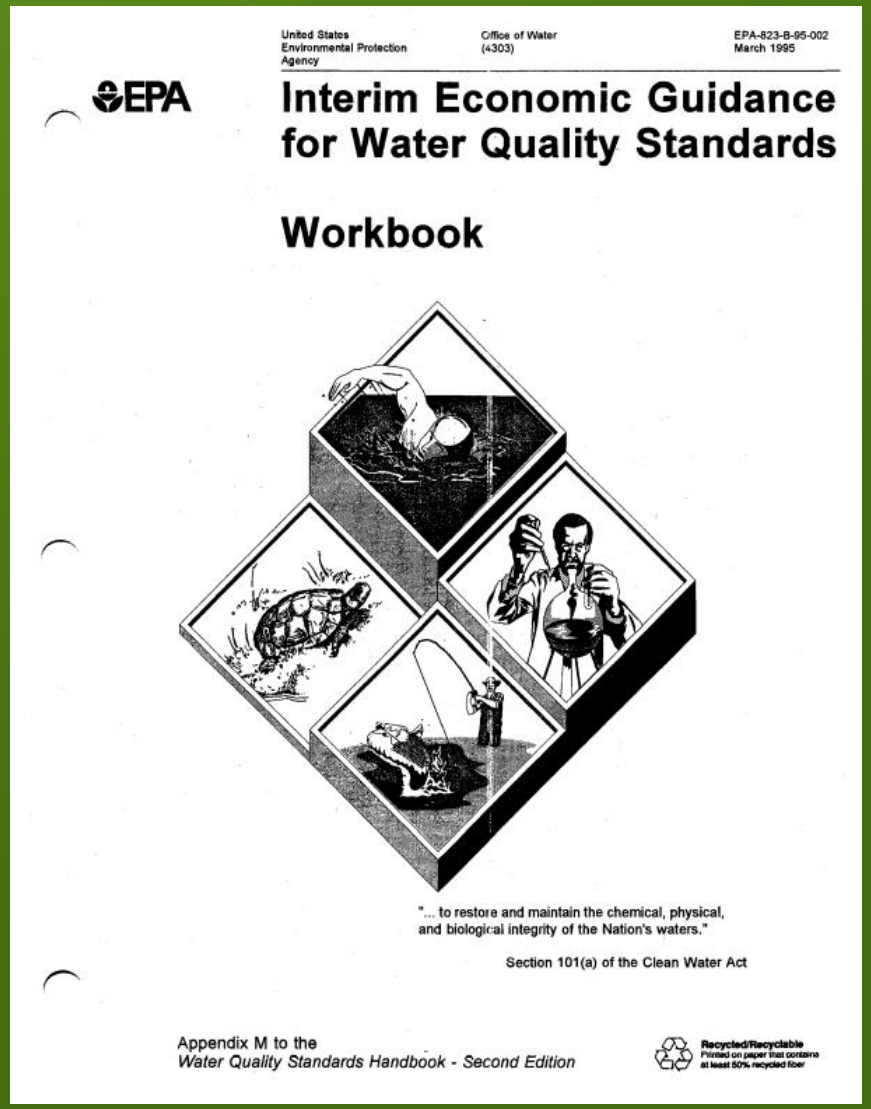
Affordable rates - Wastewater treatment costs must be less than 2% of the community's median household income.

- Example: If the median household income is $55,000/yr, then if a homeowner's rate is greater than $92/month, it is unaffordable and the discharger is eligible for an economic variance.

EPA's criteria for private sector variances

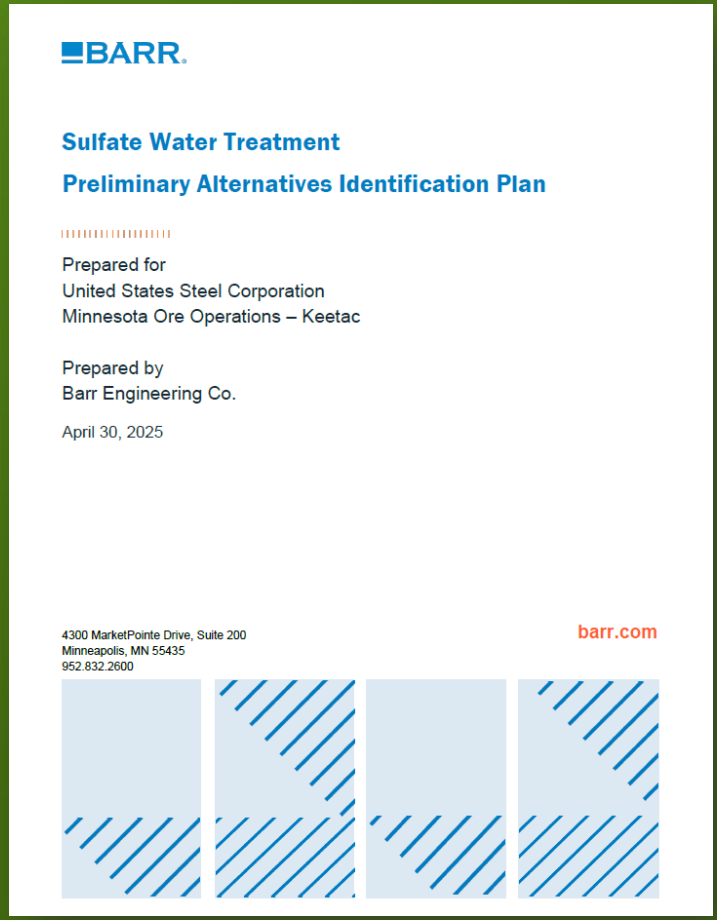
Profit – How much will profits decline due to pollution control expenditures?

- If the discharger expects continued profitability with pollution controls, it can afford the treatment and is not eligible for an economic variance.
- If the discharger expects negative or substantially reduced profits with pollution controls, it is potentially eligible for an economic variance.
    - Additional substantial and widespread economic analysis is required.



Sulfate treatment costs

- Sulfate's chemistry makes it difficult to treat.
- U.S. Steel retained Barr Engineering to estimate sulfate treatment costs.
  - The MPCA agrees with the engineering analysis.
- U.S. Steel's chosen compliance strategy requires building four treatment plants that use:
  - membrane treatment to remove sulfate
  - an evaporator and crystallizer to further concentrate sulfate salts for landfill disposal


BARR.

Sulfate Water Treatment

Preliminary Alternatives Identification Plan

Prepared for
United States Steel Corporation
Minnesota Ore Operations – Keetac

Prepared by
Barr Engineering Co.

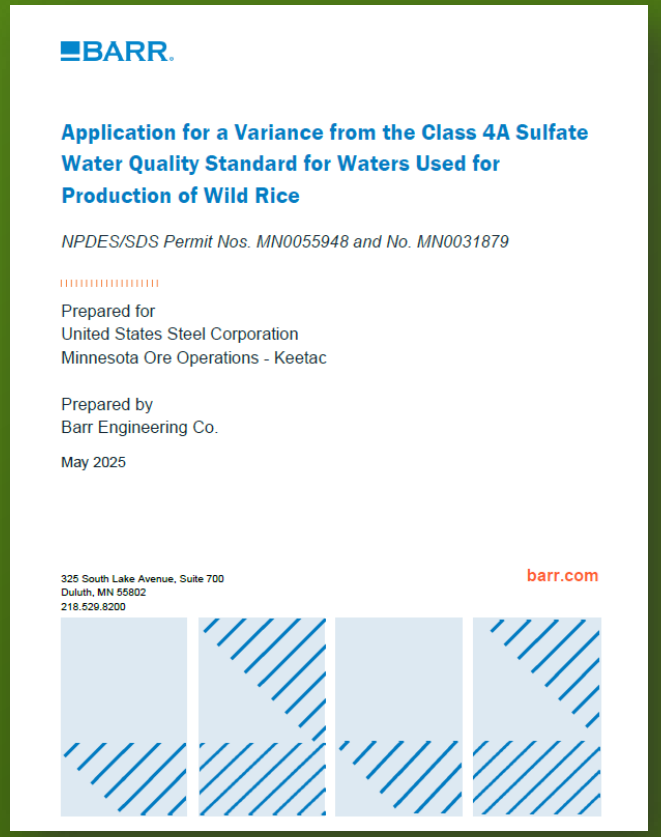
April 30, 2025

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600

barr.com

U.S. Steel's variance eligibility analysis

- **U.S. Steel used EPA's private sector variance eligibility guidance.**
- **Profitability - primary variance eligibility metric**
  - U.S. Steel reported profitability the past three years:
    - $384 million to $2.524 billion in profit per year
- **Secondary variance eligibility metrics**
  - U.S. Steel's financial metrics are sufficiently strong to afford treatment.
- **U.S. Steel reported continued profitability with estimated sulfate treatment costs.**
- **U.S. Steel did not provide written evidence that treatment costs would cause a slowdown or shutdown at Keetac, therefore the MPCA could not consider that as part of the variance evaluation.**



BARR

Application for a Variance from the Class 4A Sulfate Water Quality Standard for Waters Used for Production of Wild Rice

NPDES/SDS Permit Nos. MN0055948 and No. MN0031879

Prepared for
United States Steel Corporation
Minnesota Ore Operations - Keetac

Prepared by
Barr Engineering Co.

May 2025

325 South Lake Avenue, Suite 700
Duluth, MN 55802
218.529.8200

barr.com

Sulfate variance request

The MPCA made the preliminary decision to deny the variance request.

- U.S. Steel did not demonstrate how the sulfate pollution is a human-caused condition outside its control.
- Following EPA guidance and information provided by U.S. Steel, the MPCA determined there is not sufficient evidence of substantial economic impact to the company.

Compliance schedule

- Compliance schedules are allowed by state and federal rules when the facility cannot immediately comply with permit requirements upon permit issuance.
- Federal and state rules require that the facility complies with permit requirements as soon as possible.

Compliance schedule - history

- The 2011 permits included compliance schedules that required the company to meet final effluent limits for sulfate of 14 mg/L (monthly average) and 24 mg/L (monthly maximum) by 2018 and 2019.
- Minnesota Session Law Passed, 2016.
  - Minn. Laws 2016, Chapter 165, S.F. No. 3376, Section 1. Sulfate Effluent Compliance
- Compliance schedule delayed.
- EPA Letter, 2022.
- MPCA begins work on permit reissuance, 2023.

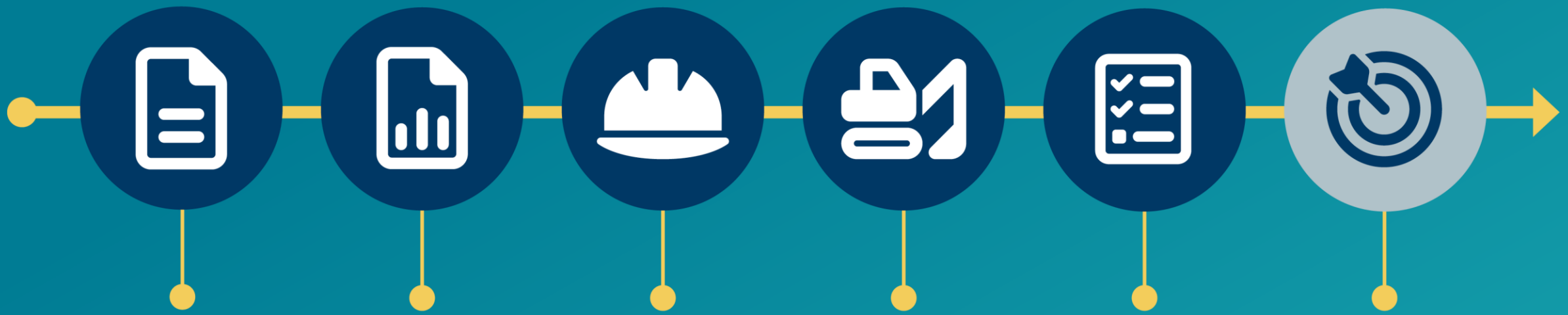
Compliance schedule – permits (2011)

- The 2011 Keetac permits include effluent limits for sulfate of 14 mg/L (monthly average) and 24 mg/L (monthly maximum), applicable at the mining area and tailings basin permit outfalls. The permits also include:
  - Water Management Study – October 2010
  - Sulfate Reduction Strategy Study – October 2010
  - Sulfate Reduction Strategy Plan – October 2012; Revised in 2013 and 2014
  - Sulfate Reduction Plan – August 2017
  - Requirement to meet final effluent limitations as soon as possible and no later than Aug. 17, 2018, for non-tailings basin discharges and Aug. 17, 2019, for tailings basin discharges

Compliance schedule – draft permits (2025)

- The draft Keetac permits include the same sulfate effluent limits as the 2011 permits: 14 mg/L (monthly average) and 24 mg/L (monthly maximum), applicable at the mining area and tailings basin permit outfalls.
- The limits are derived from the Class 4A water quality standard that is protective of wild rice waters.
- The facility is not currently designed to treat wastewater from these outfalls for sulfate.
- Keetac must comply with the final effluent limits as soon as possible, but no later than April 30, 2030.

Compliance Schedule – Draft Permits (2025)



Dec. 1, 2026
Final sulfate compliance plan

April 1, 2027
Final plans and specifications

May 1, 2028
Start construction

April 1, 2029
Complete construction

Sept. 1, 2029
Initiate operation

April 30, 2030
Attain compliance with final effluent limits

Research and Grant Funding Efforts

2023 Minnesota Legislature “Innovative Solutions for Managing Pollutants” grant

- Provided funding to NRRI for research and money for taconite companies to study treatment options for difficult-to-treat pollutants (sulfate, mercury, and greenhouse gases).
  - Appropriated funding July 1, 2024 – June 30, 2027
  - $19.1 Million with a 1:1 grant match by grantee
  - NRRI received: $2.1 million
  - Grants: $16.7 million
- NRRI and grantees developed workplans for MPCA review and approval.

Research and Grant Funding

U.S. Steel submitted four applications for its two Minnesota facilities (Keetac and Minntac)

- USS Keetac Plant Site:
  - Awarded $1.4 million to complete a pilot study of activated carbon injection within the furnace gas stream to reduce mercury emissions.
  - This is currently the only project that is proposed for/underway at Keetac.
- USS Minntac Tailings Basin:
  - Injection of biological materials to the tailings basin berm to study reductions in sulfate. (workplan and contract under review; $500,000; completed by June 2027)
  - Pilot wastewater treatment facility at the tailings basin to treat for sulfate. (workplan under review; requested $9 million; completed by June 2027)
  - Geotechnical feasibility studies of a hydrologic barrier to direct water toward the proposed water treatment facility. (workplan underway; $6.18 million; completed by Dec. 31, 2026).

Functional equivalency

2020 U.S. Supreme Court

County of Maui v. Hawaii Wildlife Fund
140 S. Ct. 1462 (2020), (Maui)

- Requires consideration of whether discharges to groundwater are "functionally equivalent" to direct discharges to surface water.

2025 draft permit requirements

- new surface water monitoring
- functional equivalent evaluation

Timeline for draft permit: 2023-2024

September 2023
- Keetac submitted updated permit applications

November 2023-June 2024
- Monthly engagement with U.S. Steel

July 2024
- Tribal engagement

August 2024
- Tribal engagement
- Pre-public notice of draft permit sent to Keetac, EPA, and Tribal contacts

September 2024
- Keetac commented
- Grand Portage commented
- Fond du Lac commented
- Tribal and EPA engagement
- EPA commented

October 2024
- Tribal engagement

November 2024
- Tribal and EPA engagement

December 2024
- Tribal and EPA engagement

Today
- **Sept. 3, 2025**

In-person meeting at ITMEC in Virginia, Minnesota.

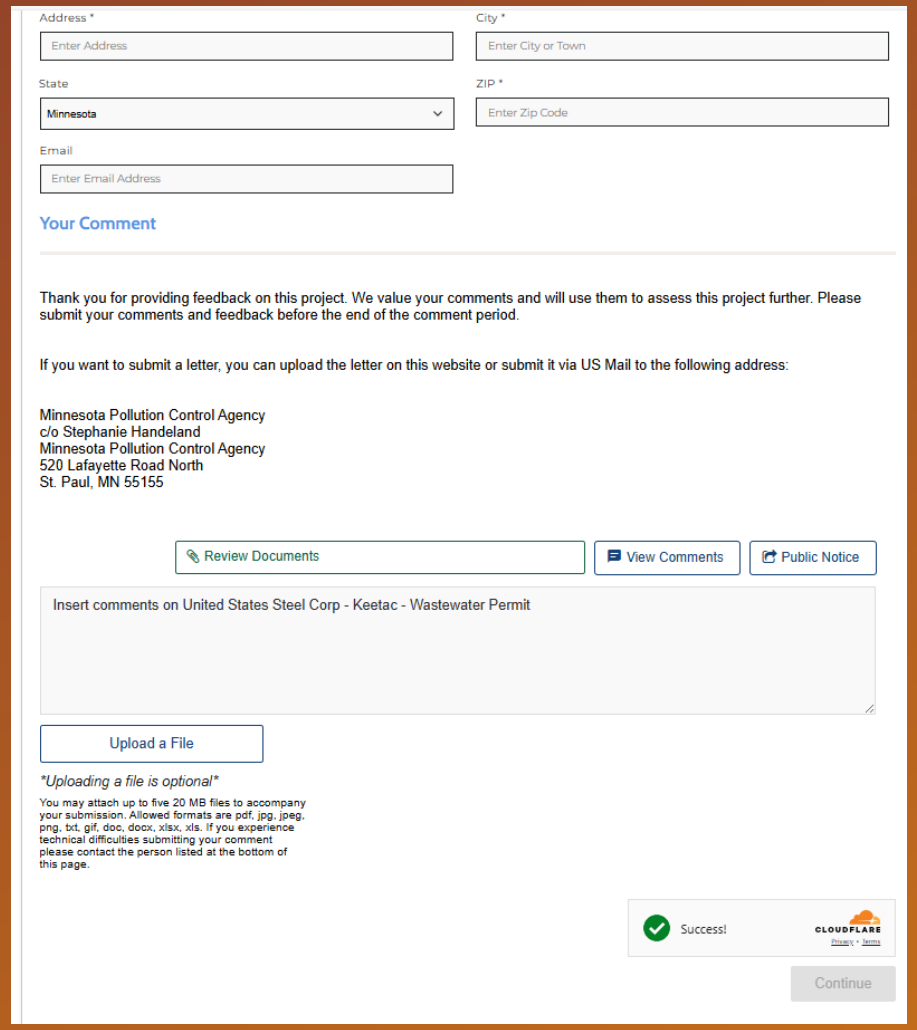

Effective Public
Comments

Commenting on a draft permit

Enter public comments at the QR code or link below!

https://mpca.commentinput.com

Commenting on a draft permit



Tips for effective comments

- Tell the agency who you are and what your interest is in the permit.
- Offer specific comments about the permit.
- If you offer comments about the facility's operation, be sure to have details to support your points.
- Offer alternatives to items you don't agree with.
- Attach related supporting information.
- Provide your contact information.

Comments received during public notice

What do MPCA staff do with my comment?

- Read all comments.
- Evaluate each concern raised.
- Add every comment to the permit record.
- Provide a formal response – either individual or grouped by topic.
- Fix errors or gaps in draft comment.

Comments may or may not result in permit revisions.

Thank you!

Final reminder that the comment period closes on Sept. 22, 2025, at 11:59 p.m. CT

MINNESOTA POLLUTION CONTROL AGENCY

Question and answer period

- Questions of clarification about the permits or variance.
- Raise your hand and the moderator will call on you.
- Introduce yourself.
- Please be concise: one person, one minute, one question.
- Public comments are next. Please hold your public comments until that time.

Oral public comment

- Please line up at the microphones according the order displayed on the screen.
- When it is your turn:
  - State your name (first and last) for the record.
  - State whether you are commenting on the permits or variance.
- Keep your comment to two minutes.
  - To track time, a yellow card will be raised at 90 seconds and a red card at two minutes.
  - You must stop at the two-minute mark.

Ground rules

- **Be respectful:** Please keep comments respectful and constructive, no personal attacks.

- **Disagree with dignity:** Treat everyone with dignity, even those you disagree with. All viewpoints are welcome at this meeting.

- **No applause or cheering/booing:** Please hold applause, shouting, or other reactions to ensure everyone feels safe to speak and that we can use our time effectively.

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MINNESOTA POLLUTION CONTROL AGENCY