

# Canisteo Mine Pit Water Outlet Construction FAQ

## What is the Canisteo Mine Pit?

The Canisteo Legacy Mine Pit (Canisteo) is a mine pit formed in a complex of several inactive iron ore mine pits in Itasca County north of the cities of Coleraine, Bovey, and Taconite. Active mining operations, including pit dewatering, managed Canisteo water levels. However, mining has ceased, and no company currently manages Canisteo water levels. Over time, the Canisteo's water levels continued to rise naturally from groundwater and precipitation.

## How have Canisteo water levels been managed so far?

In 2022, the Iron Range Resources and Rehabilitation Board funded a contingency pumping project overseen by the DNR. Over two winter seasons, more than 4.7 billion gallons of water were pumped from the Canisteo into nearby Holman Lake and a wetland complex.

Winter pumping kept water levels below 1,318 feet, ensuring that the Bovey drain tile system continued diverting groundwater away from residential structures in Bovey. Seasonal pumping between 2022 and 2024 has controlled Canisteo water levels until an engineered outlet is permanently in place.

## Why is the DNR constructing a water outlet at the Canisteo?

Water naturally rises in the pit due to rainfall, snowmelt, and groundwater. Now that no company is actively dewatering the pit for mining operations, the DNR Lands and Minerals Division is closely monitoring both the Canisteo water level and the surrounding groundwater levels. This monitoring provides valuable insight into how the pit water level increases over time. The information collected by DNR staff indicates that we need an engineered outlet structure.

Winter pumping has been a short-term solution to control the water levels at the Canisteo. Now that we've secured funding from the legislature, we are breaking ground on a state-of-the-art permanent water outlet. This will allow us to manage Canisteo water levels year-round and prevent water from overtopping the pit without relying on pumping.

## How is the water outlet construction funded?

In 2023, the Minnesota legislature approved \$8.875 million in a General Fund appropriation for constructing an outlet at the Canisteo.

## How will the water outlet function?

The outlet system is designed to work with gravity. This means that water from the Canisteo will flow out of the pit all on its own, without needing any pumps. It's all about the height difference; the water moves because there's a higher point where it starts and a lower point where it will flow into the Prairie River.

We teamed up with contractors to create an outflow system with a sand filtration mechanism. So, when water from the Canisteo flows through the pipeline, it goes through several layers

### **How will the water outlet function?**

of sand with different grain sizes. This setup acts like a sieve, catching invasive organisms like zebra mussels along the way.

### **What construction work is happening now?**

Construction crews have been working near Itasca County Highway 61. This winter, they removed trees, moved a stockpile, and cleared land along the entire outlet path.

The crews are working on ditching and culvert installation starting in the west and progressing east through the wetland areas. Old culverts have been replaced along the outlet route with new, properly sized culverts.

### **What about access or recreation near the construction site?**

Mine pits are unique features created by mining and aren't natural lakes, which means they might be reopened for mining activities in the future. The future uses of the complex of inactive mine pits in the Canisteo area are still uncertain. If mining resumes here, keeping the site closed is best for private landowners and public safety.

While building the permanent water outlet, you might see contractors using the public roads to get to the Canisteo and nearby areas. If you're outdoors, keep an eye out for construction equipment or crews in that area. And don't forget—make sure to get permission from landowners if you're thinking of exploring any nearby spots.

### **When will the permanent outlet be completed?**

The outlet will be substantially complete by the summer of 2025.

### **How will Canisteo water levels and temperatures be monitored after the outlet is completed?**

Water levels at Canisteo Pit will continue to be monitored while crews are constructing the new water outlet structure. Once the permanent outlet is in place, Canisteo water levels, as well as those downstream at the West Hill and Lind Pits, will be monitored. To keep things safe, the flow route of the Canisteo will need to be monitored for any blockages, preventing possible flooding at culverts or outlet sites. Additionally, the Prairie River flow where the Canisteo outlet discharges will likely be monitored.

At Canisteo, water temperatures will be monitored to determine when to bypass the sand filtration system. During the winter months, when temperatures drop below 50 degrees, water from the Canisteo will not need to be filtered since immature zebra mussels, known as veligers, are usually absent from cold waters.

Biological sampling at Canisteo will ensure that the filtration system effectively filters zebra mussels when water temperatures rise above 50 degrees. This sampling will help determine when the sand filtration system can be bypassed each winter when temperatures fall below this important threshold.