

# TAMARACK NICKEL PROJECT UPDATE

TALON  
METALS CORP



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Dr. Etienne Dinel, Vice President, Geology of Talon, and Mark Groulx, Vice President, Mine Engineering are Qualified Persons within the meaning of National Instrument 43-101. Dr. Dinel and Mr. Groulx are satisfied that the analytical and testing procedures used are standard industry operating procedures and methodologies, and they have reviewed, approved and verified the technical information in this presentation, including sampling, analytical and test data underlying the technical information.

Please see the technical report entitled “NI 43-101 Technical Report Updated Preliminary Economic Assessment (PEA) #3 of the Tamarack North Project – Tamarack, Minnesota” with an effective date of January 8, 2021 prepared by independent “Qualified Persons” (as that term is defined in National Instrument 43-101) Leslie Correia (Pr. Eng), Andre-Francois Gravel (P. Eng.), Tim Fletcher (P. Eng.), Daniel Gagnon (P. Eng.), David Ritchie (P. Eng.), Oliver Peters (P. Eng.), Volodymyr Liskovych (P.Eng.), Andrea Martin (P. E.) and Brian Thomas (P. Geo.) for information on the QA/QC, analytical and testing procedures at the Tamarack Project. Copies are available on the Company’s website ([www.talonmetals.com](http://www.talonmetals.com)) or on SEDAR at ([www.sedar.com](http://www.sedar.com)).

# FORWARD-LOOKING INFORMATION

This presentation contains certain “forward-looking statements”. All statements, other than statements of historical fact that address activities, events or developments that Talon believes, expects or anticipates will or may occur in the future are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of Talon based on information currently available to Talon. Such forward-looking statements include, among other things, statements relating to future exploration potential at the Tamarack Project; the potential for the Tamarack Project to be the USA’s only domestic source of high-grade nickel and the expansion of environmental monitoring, testing and sampling.

Forward-looking statements are subject to significant risks and uncertainties and other factors that could cause the actual results to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on Talon. Factors that could cause actual results or events to differ materially from current expectations include, but are not limited to: changes in commodity prices, including nickel; the Company’s inability to raise capital; the lack of electric vehicle adoption or in the event of such adoption, such not resulting in an increased demand for nickel or there being a nickel deficit; negative metallurgical results; changes in interest rates; risks inherent in exploration results, timing and success, including the failure to identify mineral resources or mineral reserves; the uncertainties involved in interpreting geophysical surveys, drilling results and other geological data; inaccurate geological and metallurgical assumptions (including with respect to the size, grade and recoverability of mineral reserves and mineral resources); uncertainties relating to the financing needed to further explore and develop the Tamarack North Project or to put a mine into production; the costs of commencing production varying significantly from estimates; unexpected geological conditions; changes in power prices; unanticipated operational difficulties (including failure of plant, equipment or processes to operate in accordance with specifications, cost escalation, unavailability of materials, equipment and third-party contractors, inability to obtain or delays in receiving government or regulatory approvals, industrial disturbances or other job action, and unanticipated events related to health, safety and environmental matters); political risk, social unrest, and changes in general economic conditions or conditions in the financial markets.

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# NICKEL FOR ELECTRIC VEHICLES IN THE USA



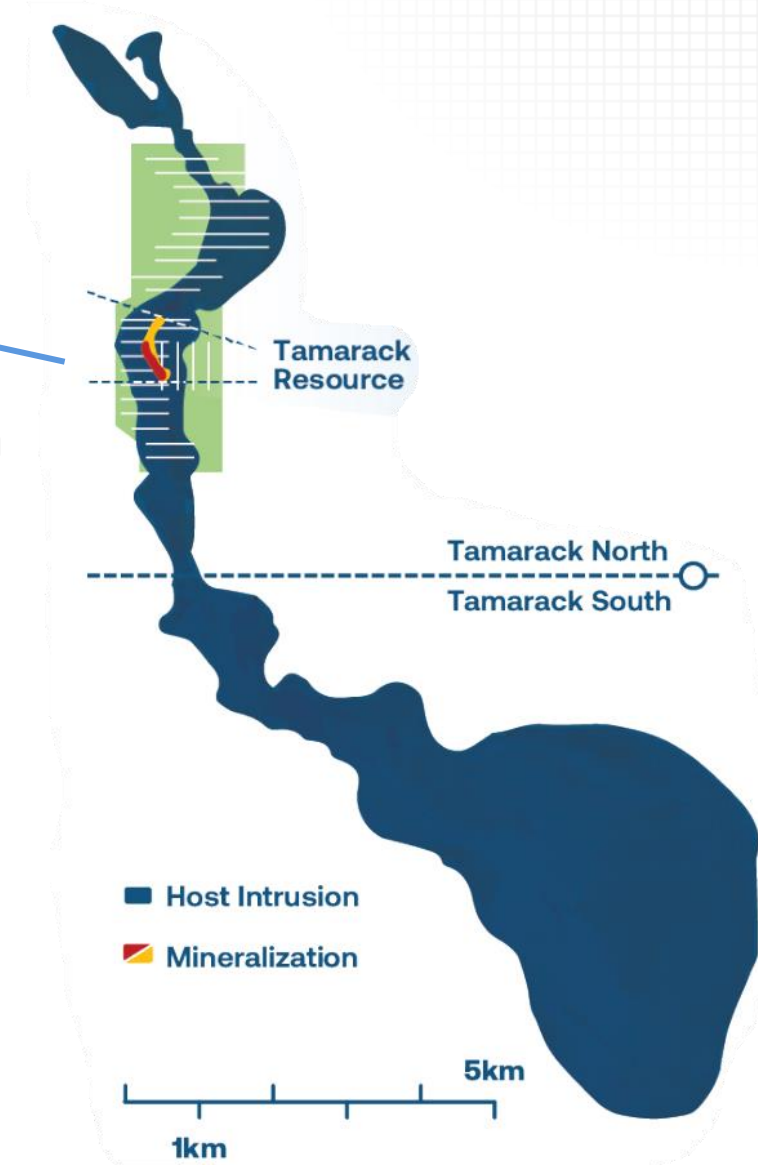
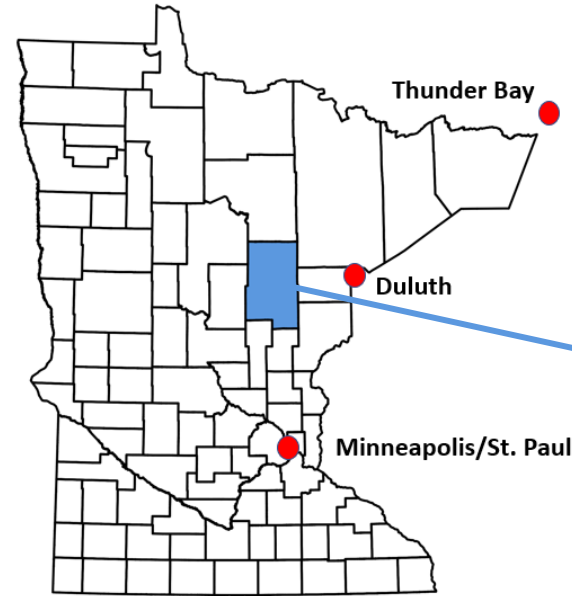
- ✓ Tamarack has the potential to be the USA's only domestic source of high-grade nickel
- ✓ Nickel is a key metal for batteries in electric vehicles
- ✓ Goal to create battery nickel's first traceable supply chain



July 2021 – Talon Team at the core shed in Tamarack, MN

# PROJECT OVERVIEW

- Intrusion size is about an **11 mile strike-length long** and ranging **0.5 to 3 miles wide**
- Current resource spans for **0.5 miles** of the **11 miles**
- High-grade nickel deposit
- Project History
  - Rio Tinto (Kennecott) began exploration in 2002
  - Talon Metals joined in 2014
  - Talon became operator in 2019



# RECENT ON-SITE ACTIVITIES

- ✔ Continuous drill program through 2021 with plans to continue into 2022
- ✔ Advancing the environmental baseline monitoring program

## ADDITIONAL ACTIVITIES

- Constructing a core storage building on Main Street, Tamarack
- Summer internship program for local graduates
- Now up to 42 Talon employees working in Tamarack
  - Meet and Greet- September 22<sup>nd</sup>

## IN THE NEWS

- Partnership with US Steelworkers for future workforce development, local skills improvement and project permitting



Elisabeth Kachinske Talon 2021  
Summer Internship Program

# CURRENT DRILLING ACTIVITIES

# TALON'S EXPLORATION PROCESS

➔ In-house geophysics team surveys the area and models targets for drilling

➔ In-house drill crew drills the target areas for core samples

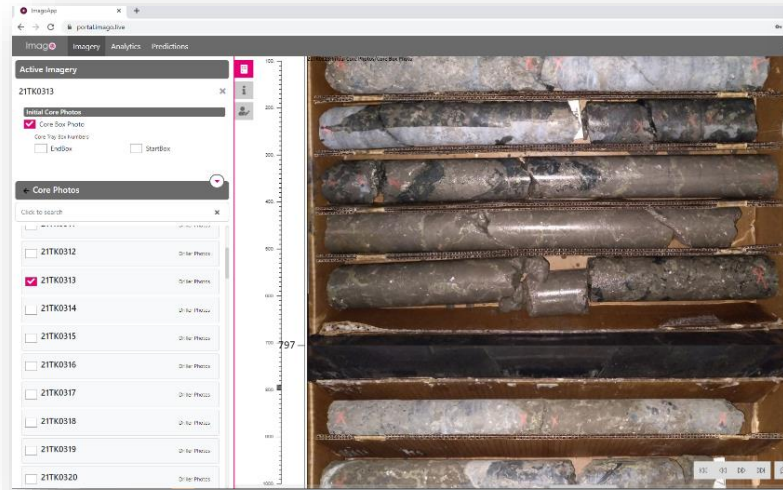
➔ Geologists examine the core samples, collect data, then ship to the lab for assays (%)

➔ Data is incorporated into the geological model for:

- Updating the resource model
- Improving mine plans
- Improving metallurgical testing
- Updating financial model



Geophysics – Surface and Borehole Electro-Magnetic surveys



Driller core photos taken at the rig for remote Geotech analysis



# EXPANDING THE CURRENT RESOURCE

➔ **25,000 – 30,000 meter drilling program throughout 2021 (3 drill rigs in operation)**

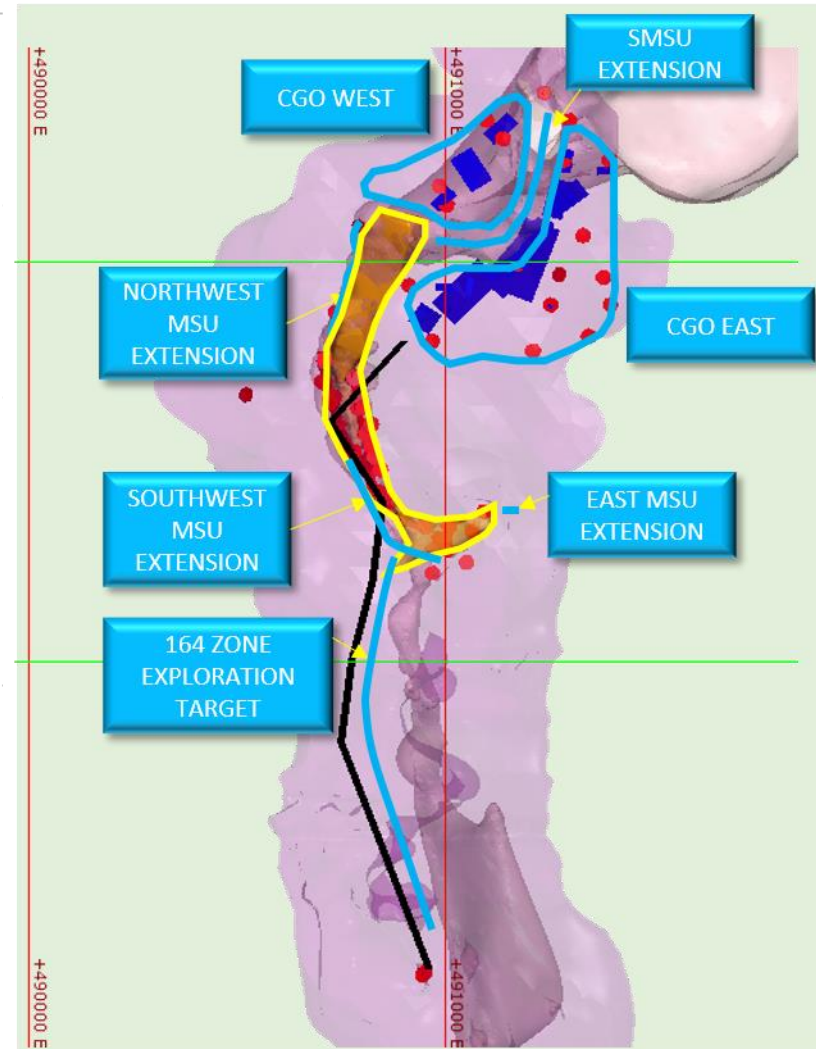
➔ **Collect the required level and amount of data necessary to conduct feasibility studies**

➔ **CGO East & CGO West target areas**



- **Shallow mineralization (700-800 feet vs. 1,600-2,000 feet)**
- **About 1,000 feet outside resource area**

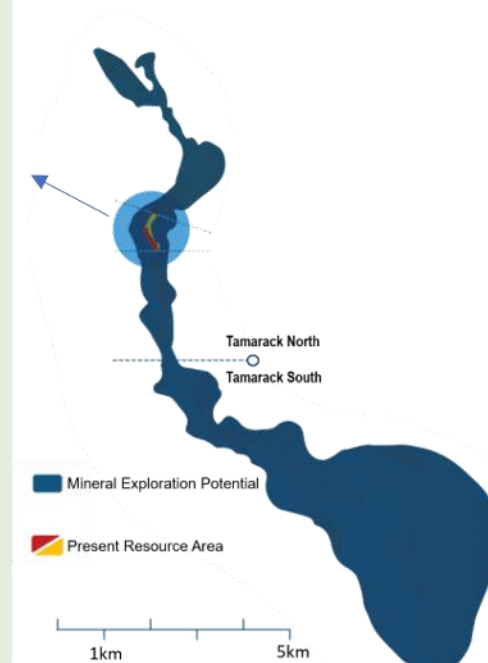
## ***Why is this Important?:***

*Drilling helps us to understand how much nickel and other critical minerals are in the deposit and where they are most highly concentrated. Understanding this helps to plan future mining to minimize impacts on the environment while maximizing the contribution of vital minerals to the domestic electric battery supply chain.*



## ***Legend:***

-  2021 drill program target areas for resource expansion
-  Current Resource Area: Effective January 8, 2021



# ENVIRONMENTAL WORK

# Current Activities

## Environmental Work



Summary Baseline Environmental Data				
Resource	Start Date	End Date	Data	Details
Surface water	2006	continuous	Flow, water quality	19 surface water sites
Ground water – Quaternary aquifer	2008	continuous	Water level, water quality, pump test	12 sampling wells 1 Pump test
Bedrock Hydrogeology	2008	continuous	Pore pressure, water levels Initial bedrock aquifer property testing	2 VWP's 4 Hydrophysical logging and packer tests
Wetlands	2008	2012	Wetland delineation, vegetations survey, threatened & endangered species	236 acres
Geotechnical studies	2008	continuous	Geotechnical logging, rock strength and property testing, acoustic televiewer	4200 m logged 2300 point load tests 103 lab tests ATV in 29 holes
Work plan development in 2021				
Geotechnical data collection	Wetlands	Hydrology and Hydrogeology	Air Quality	Limnology

# Surface Water Monitoring Program

- ◆ **Program objective:**
  - Collect baseline data to support SEAW, NEPA, & MEPA review (MN Permitting Process)
- ◆ **In process of expanding/refining monitoring program:**
  - Stream and lake monitoring locations
  - Monitoring parameters
  - Monitoring frequency
  - Monitoring procedures

## ***Why is this Important?:***

*Collecting data now gives us a baseline to compare to in the future. Strong baseline data will let regulators and the community have a point of comparison when the mine is operating to quickly spot any environmental issues.*

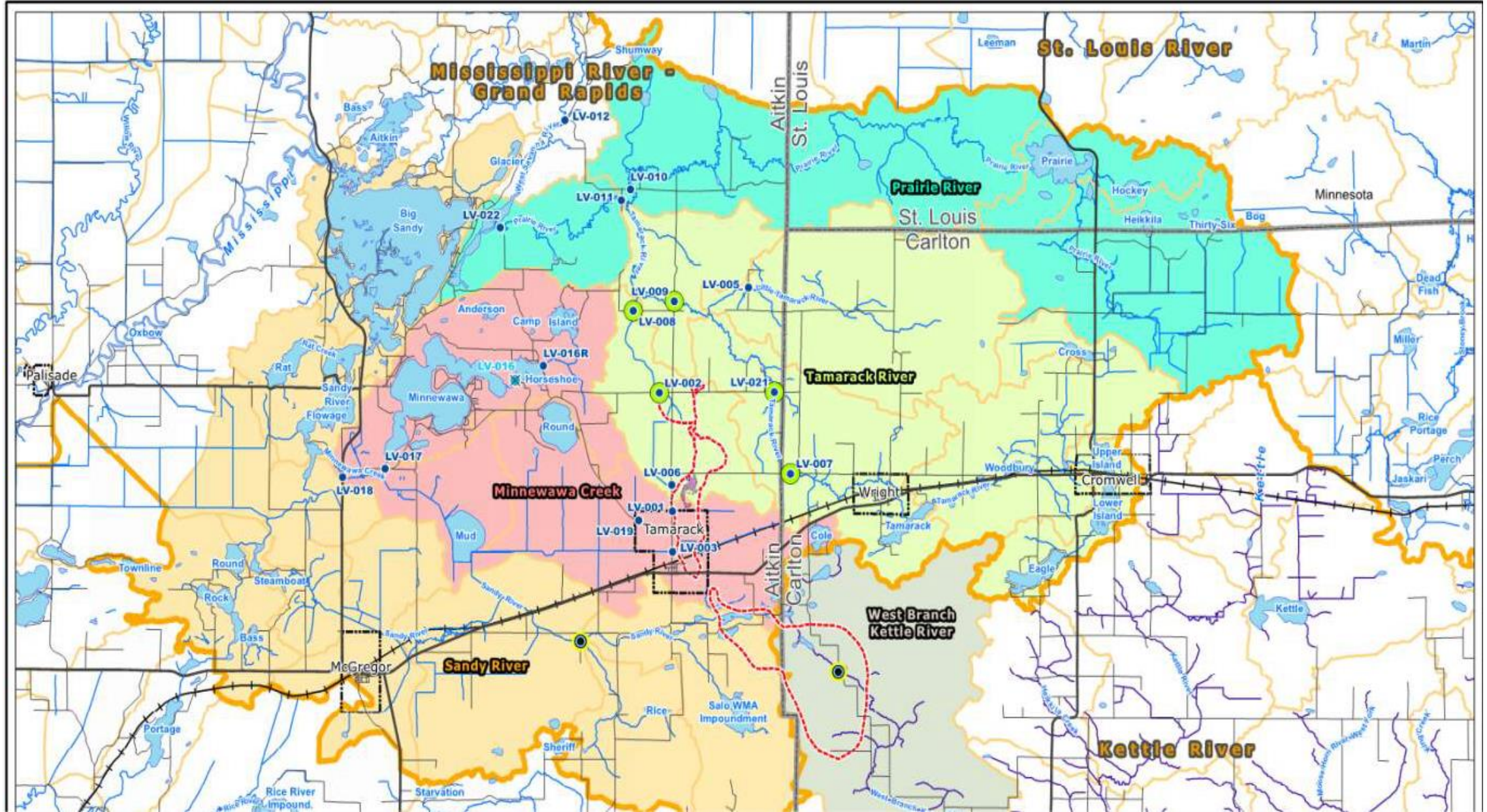


# Historical Surface Water Monitoring Program

- ◆ **Flow & water quality data from 2006**
- ◆ **Included:**
  - **17 stream locations**
    - Stream flow (3x / yr)
    - Water quality field parameters (3x / yr)
    - Water quality lab parameters (1x / yr)
  - **2 lake locations**
    - Water quality field parameters (3x / yr)
    - Water quality lab parameters (1x / yr)



# Stream Monitoring Program



## Parameters (cont'd)

- Existing field water quality: DO, ORP, pH, Specific Cond., Temp., Turbidity
- Expanded lab parameter list: existing + additional analytes

## Frequency

- 2021: May, July, September, November
- 2022: April (freshet), May, July, September, November



# Lake Monitoring Program

## ◆ Parameters

- **Field water quality: DO, ORP, pH, Specific Cond., Temp., Turbidity**
- **Profile thermo/chemoclines by sampling field parameters at depth (BSL only):**
  - **Locations: 3 new, plus LV-004**
- **Lab water quality (list below)**

## ◆ Frequency

- **2021: May, July, September, November**
- **2022: April (freshet), May, July, September, November**





# Field & Laboratory Analytes

- Lab water quality – parameter suite based on:
  - Analytes with potential applicable water quality criteria
  - Consistency with the groundwater quality monitoring program
  - Consideration of future needs and data usage

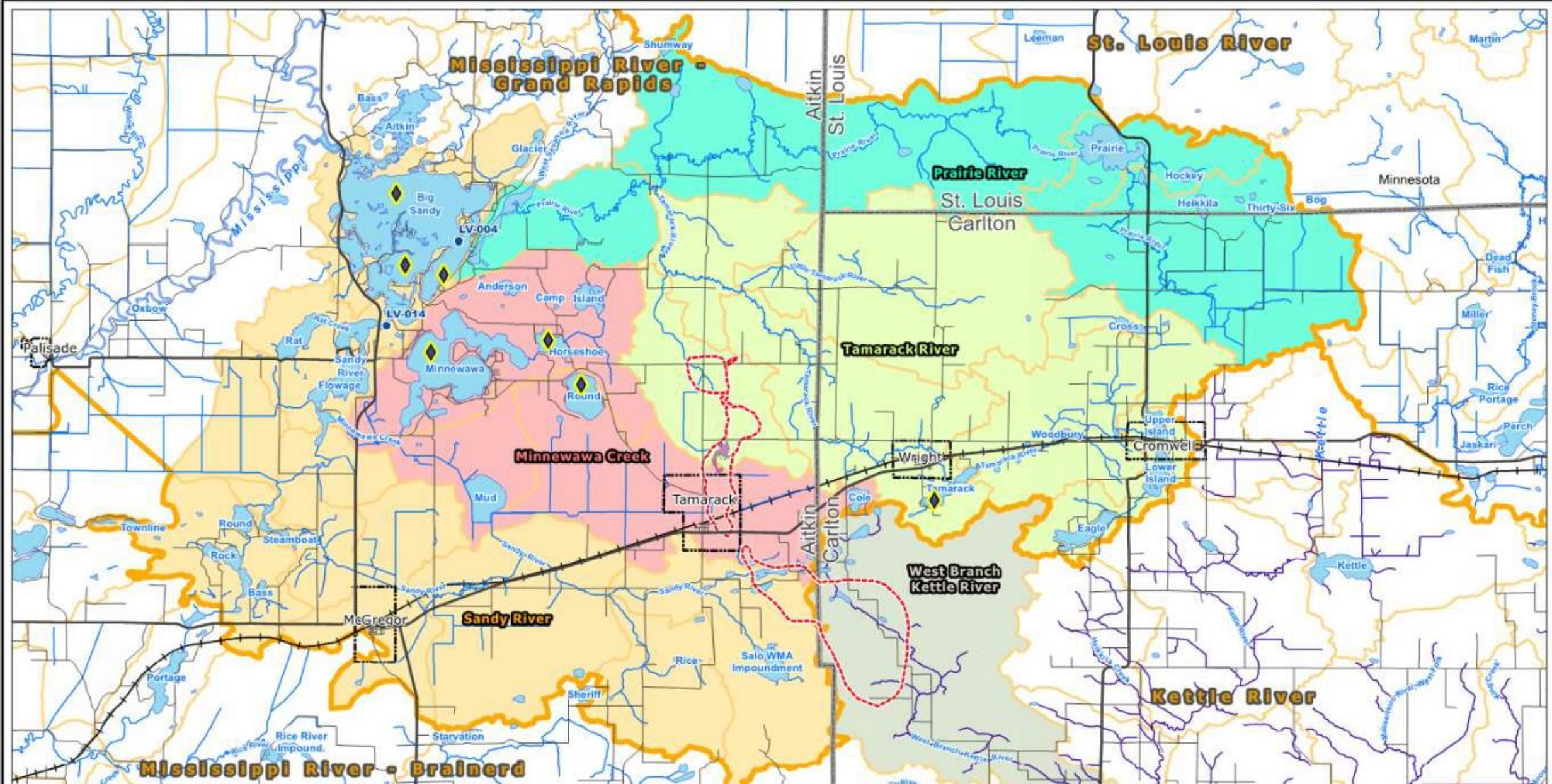


Surface Water	Method
<i>General Parameters - Field</i>	
Dissoved Oxygen <sup>(1)</sup>	field
Oxidation Reduction Potential	field
pH <sup>(1)</sup>	field
Specific Conductance	field
Temperature <sup>(1)</sup>	field
Turbidity	field
<i>General Parameters</i>	
Ammonia (un-ionized as N) <sup>(1)</sup>	350.1
Alkalinity, Total	2320B
Alkalinity, Bicarbonate as CaCO3 <sup>(1)</sup>	2320B
Bromide	4500
Chloride <sup>(1)</sup>	4500
Chlorine <sup>(1)</sup>	4500-CL
Chlorophyll-a <sup>(1)</sup>	10200 H
Cyanide, free <sup>(1)</sup>	USEPA 335.4
Dissolved Organic Carbon	5310
Fluoride <sup>(1)</sup>	4500
Hardness (Ca+Mg) <sup>(1)</sup>	2340B
Nitrate (as NO <sub>3</sub> -N) <sup>(1)</sup>	300.0
Nitrate (as N) <sup>(1)</sup>	4500
Nitrite (as N) <sup>(1)</sup>	4500
Nitrate + Nitrite (as N) <sup>(1)</sup>	4500
Phosphorus, total <sup>(1)</sup>	4500
Sodium <sup>(1)</sup>	6020A
Sulfate <sup>(1)</sup>	300
Total Dissolved Solids (TDS) <sup>(1)</sup>	2540C
Total Salinity <sup>(1)</sup>	2520
Total Suspended Solids (TSS) <sup>(1)</sup>	2540D

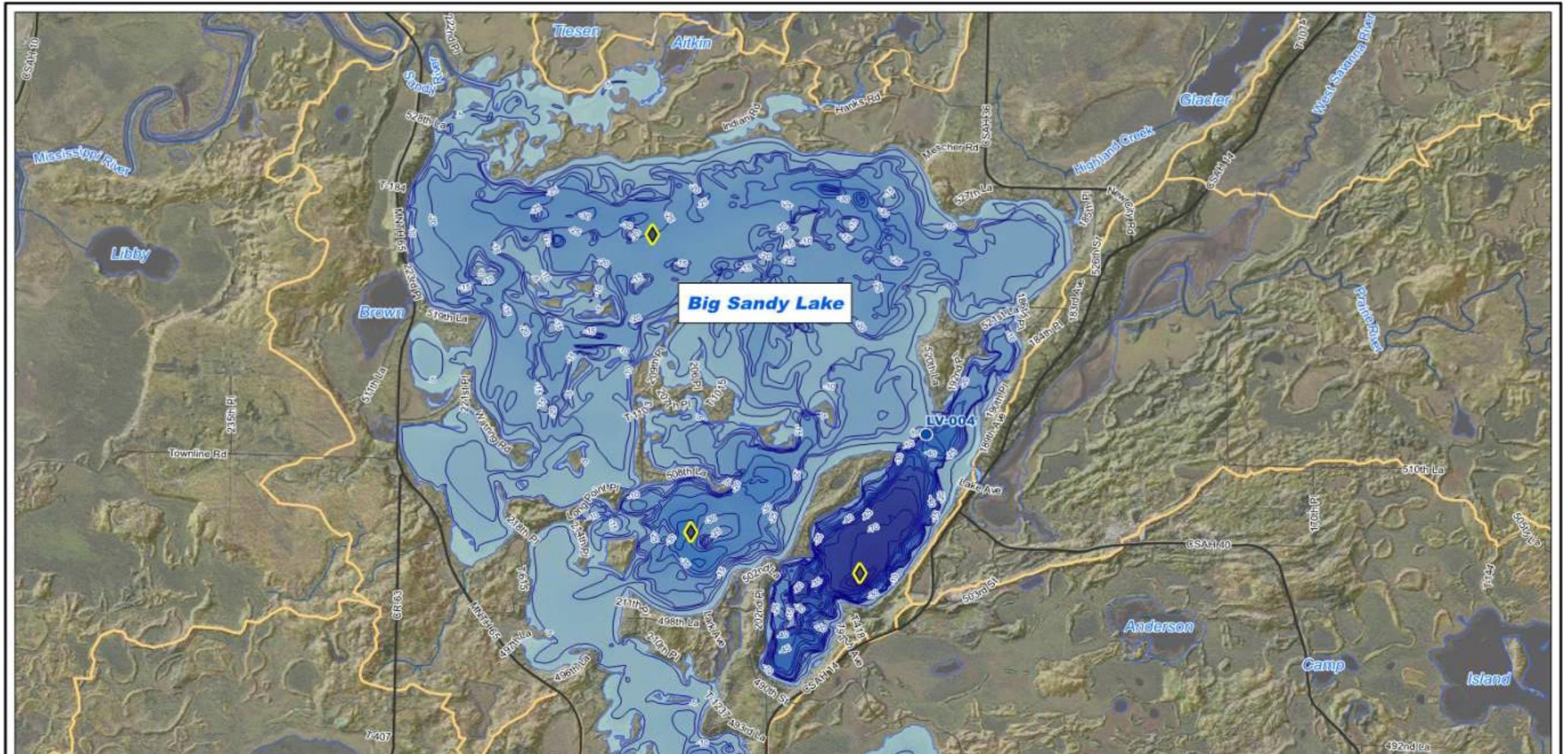
<i>Metals</i>	
Aluminum, Total and Dissolved <sup>(1)</sup>	6020
Antimony, Total and Dissolved <sup>(1)</sup>	6020
Arsenic, Total and Dissolved <sup>(1)</sup>	6020
Barium, Total and Dissolved <sup>(1)</sup>	6020
Beryllium, Total and Dissolved <sup>(1)</sup>	6020
Boron, Total and Dissolved <sup>(1)</sup>	6020
Cadmium, Total and Dissolved <sup>(1)</sup>	6020
Calcium, Total and Dissolved	6020
Chromium, total <sup>(1)</sup>	200.8
Chromium +3, Total and Dissolved <sup>(1)</sup>	200.8
Chromium +6, Total and Dissolved <sup>(1)</sup>	200.8
Cobalt, Total and Dissolved <sup>(1)</sup>	6020
Copper, Total and Dissolved <sup>(1)</sup>	6020
Iron, Total and Dissolved <sup>(1)</sup>	6020
Lead, Total and Dissolved <sup>(1)</sup>	6020
Lithium, Total and Dissolved	6020
Manganese, Total and Dissolved <sup>(1)</sup>	6020
Magnesium, Total and Dissolved	6020
Mercury, Low Level <sup>(1)</sup>	1631E
Methyl Mercury, Total	1630
Molybdenum, Total and Dissolved	6020
Nickel, Total and Dissolved <sup>(1)</sup>	6020
Potassium, Total and Dissolved	6020
Selenium, Total and Dissolved <sup>(1)</sup>	6020
Silver, Total and Dissolved <sup>(1)</sup>	6020
Strontium, Total and Dissolved <sup>(1)</sup>	6020
Thallium, Total and Dissolved <sup>(1)</sup>	6020
Tin, Total and Dissolved <sup>(1)</sup>	6020
Uranium, Total and Dissolved <sup>(1)</sup>	6020
Vanadium, Total and Dissolved <sup>(1)</sup>	6020
Zinc, Total and Dissolved <sup>(1)</sup>	6020

1) Parameters with potentially applicable water quality criteria

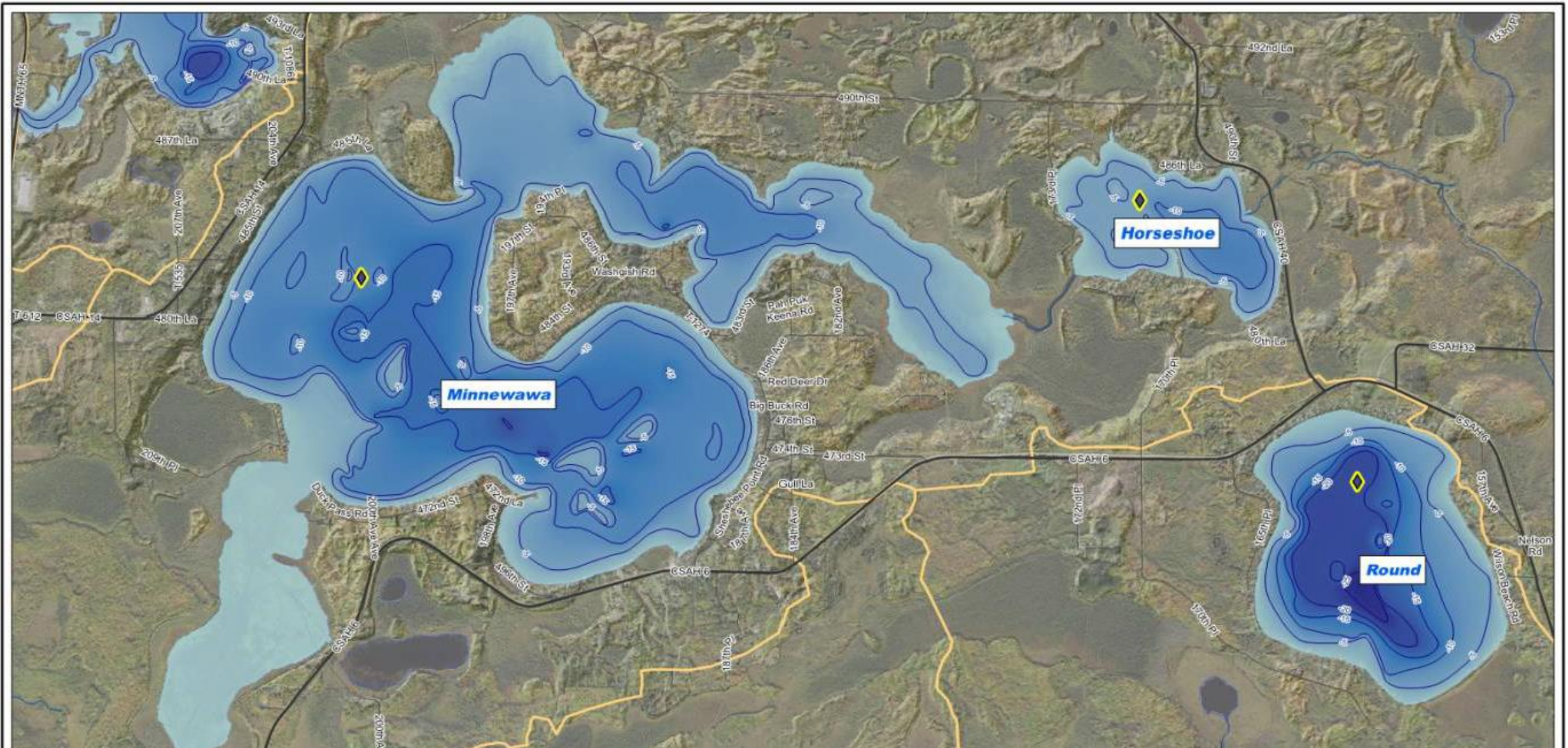
# Lake Monitoring Locations



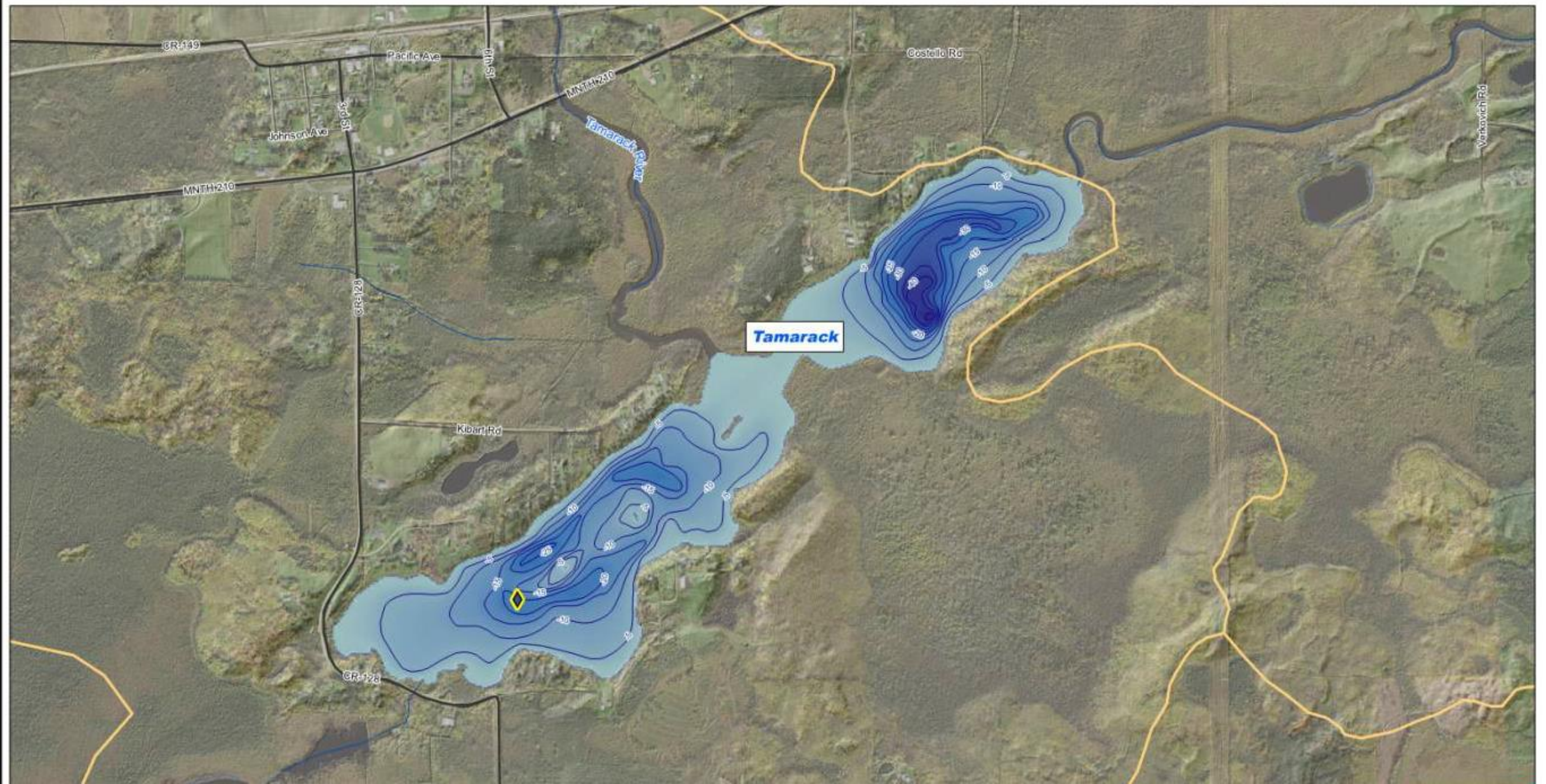
# Lake Monitoring Locations



# Lake Monitoring Locations



# Lake Monitoring Locations



# Hydrogeology Work Plan

**This workplan will focus on collecting comprehensive data to understand properties of each of the below aquifers:**

- **1. Quaternary (High Flow)**
  - Flow occurs in granular porous medium
  - Surface water-groundwater interaction
  - Unconfined predominantly
  - High porosity (i.e. 20 to 30 % is not uncommon)
  - Relatively high K ( $>10^{-6}$  m/s is common) in coarse grained-units
- **2. Shallow Bedrock (top of bedrock to 150 ft below top of bedrock)**
  - Flow occurs in fractures
  - Includes horizontal, exfoliation fractures
  - Confined
  - Low porosity (1 to 0.1 % is common)
- **3. Deep Bedrock (> 150 feet below top of bedrock)**
  - Flow occurs in fractures
  - Fractures that transmit water generally very rare
  - Confined
  - Low porosity (0.1 to 0.001 % is common)



# 1. Quaternary

## Quaternary Monitoring Wells

- Currently have 12 existing monitoring wells in the Quaternary Aquifer
- Additional monitoring wells planned to compliment current network
- Identified locations will have a **Shallow** (+-20 ft) and **Deep** (80 – 120 ft)
- Sandy high flow zones will be targeted and isolated for water level and quality monitoring and flow model
- 2 long term pump tests to be done in selected location

## Nested VWP (Vibrating Wire Piezometers) 2 selected locations

- High resolution data to evaluate for vertical connectivity of aquifers
- Collective data set used to compute horizontal and vertical gradients

## Use data to:

- Develop 3D regional model of shallow aquifer
- Once completed, assess for gaps and compliment existing regional program as needed



# 2. Shallow Bedrock

**Install two sets of nested wells throughout the catchment area to quantify shallow aquifer properties**

- **Nested wells are isolated in a specific position down the hole to only monitor the water level and quality of that specific zone**

Set 1:

- wells from top of bedrock to about 50 ft that is hypothesized to include majority of the exfoliation fractures

Set 2:

- wells from 100 to 150 feet below top of bedrock that includes significantly less exfoliation fractures

**This will allow us to evaluate:**

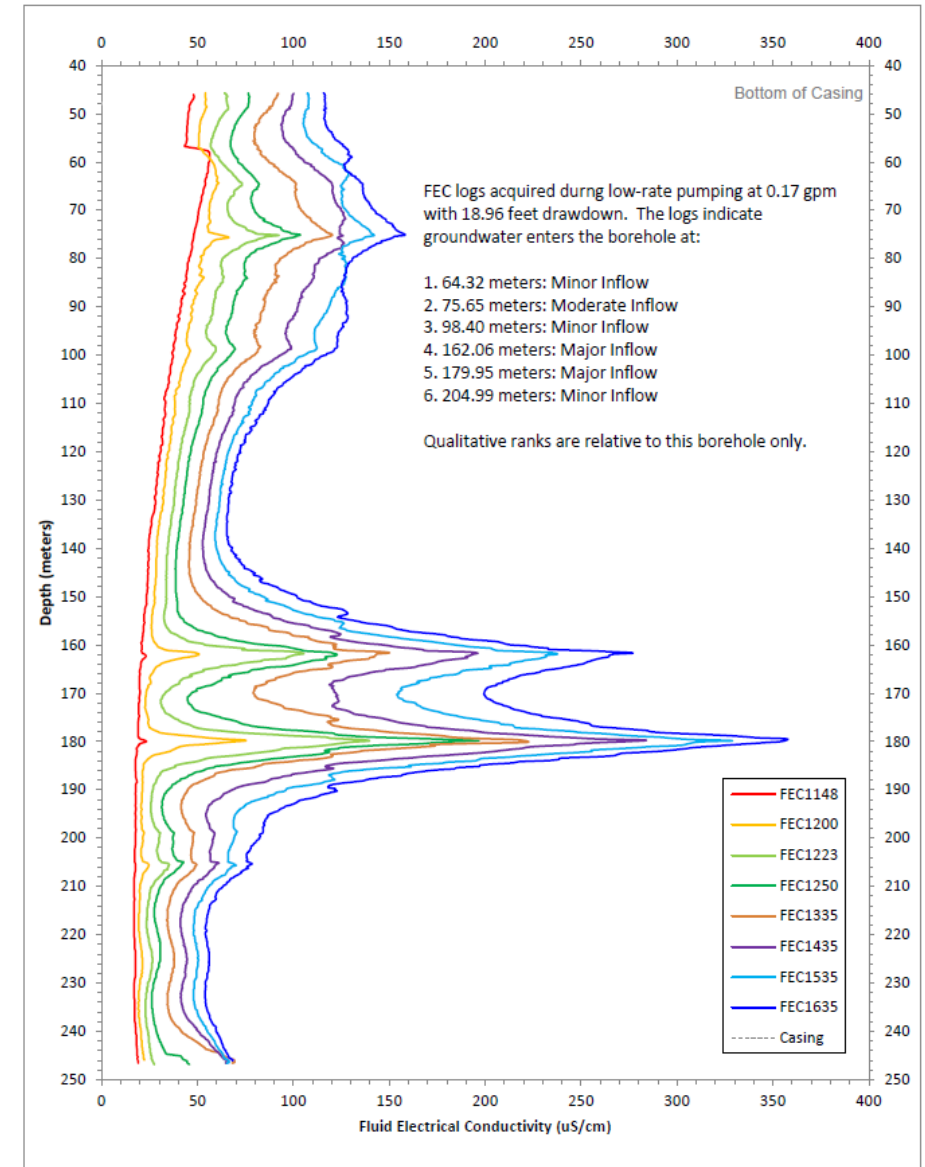
- Differences in chemistry and can be used to demarcate boundary between intermediate and deep flow regimes
- Permeability of each zone with slug and pumping tests
- Seasonal variation water quality and water levels
- Long term water level and quality monitoring



# 3. Deep Bedrock

## Flow in the deep bedrock aquifer relies on Enhanced Permeability Zones (EPZ's) only. These are usually fracture zones

- Rare presence of EPZs in Deep Bedrock and often hard to locate
- Perform flow logging to identify the location of EPZs
- Perform packer testing to evaluate for hydraulic properties extent
- Install nested VWP's to evaluate for depth of seasonal variations in water levels and evaluate for connectivity of EPZs



# Additional Studies

Resource Topic	Supporting Reports	Content
Geology & Minerals	Project Geology Crown Pillar Stability	Baseline Description of Bedrock Geology, Resource, Geotechnical and Structural Characteristics Analysis of Subsidence, Stability & Mine Induced Changes to Hydraulic Characteristics
Geochemistry	Waste Characterization Work Plan Baseline Waste Characterization Geochemical Modeling of Mine Waters	Work Plan Required by Nonferrous Mining Rules Report on Static, Kinetic and Mineralogical Testing Program and Tailings and Waste Rock Report on Assessment of Water Quality for Tailings Facility, Underground Mine, Influent to WWTP
Water Resources	Baseline Groundwater and Surface Water Hydrology Baseline Bedrock Hydrogeology Baseline Wetland Hydrology Groundwater Impact Assessment Wetland Hydrology Impacts Environmental Water Balance Water Quality Impacts to Wild Rice	Focused on Quaternary system groundwater, streams and lakes Bedrock characterization of hydraulic conductivity of rock mass, fractures, faults, etc. Groundwater surface water interactions in wetlands Dewatering impacts to groundwater, streams. Water Quality impacts to groundwater from tailings facility and closed Impacts to wetland hydrology due to underground & surface operations Impacts to watershed and subwatershed water balance Impact water quality in wild rice designated waters
Wetlands	Baseline Wetlands Study Wetland Indirect Impact Assessment Wetland Mitigation Plan	Project specific delineations, regional mapping, habitat assessment etc. Assessment of Indirect Impacts to Wetlands Values and Functions surrounding Project Based on wetland impacts
Air Quality	Baseline Air Quality Air Quality Impact Analysis	Document baseline air quality based on regional data and site specific monitoring Results of AERMOD Dispersion Analysis vs. Standards, Deposition Analysis
Biota	Baseline Terrestrial Ecology Baseline Aquatic Ecology Wild Rice Impact Assessment	Baseline assessment of terrestrial fauna & flora, habitat communities, listed species Baseline assessment of aquatic fauna & flora, aquatic communities, listed species Baseline assessment of wild rice water and water quality related data Impact Assessment to Terrestrial Flora and Fauna

# Additional Studies

Resource Topic	Supporting Reports	Content
Aesthetic Resources	Visual Baseline Noise Baseline Visual Impact Assessment Noise Impact Assessment	Document viewsheds at receptor points. Document baseline noise in vicinity of Project Assess impacts to viewsheds at receptor points Assess impacts to baseline noise from Project (modeling study)
Cultural Resources	Baseline Cultural Resources Impacts to Cultural Resources	Document cultural resources based on historic documentation, site specific testing Assess impacts to cultural resources due to project development
Socioeconomics	Socioeconomic Impact Assessment	Assess socioeconomic impacts (jobs, taxes, housing, public services, etc)
Land Use, Access & Transportation	Impact Assessment	Describe alterations of land use, access and public transportation
Cumulative Impacts Related	Cumulative Impacts Health Impact Assessment Ecological Risk Assessment	Cumulative impacts from project and other reasonable foreseeable events HIA may be required May be required
Other Studies/Plans	Tailings Management & Surface Infrastructure Mine Plan Water Management Plan/WWTP Reclamation & Closure Plan, Financial Assurance Alternatives Analysis (LEDPA)	Derived from PFS/FS Stream of Work Derived from PFS/FS Stream of Work Incorporates PFS/FS Operations Water Balance Coordinated document from PFS/FS Team and ER/EP Team Prepared by ER/EP Team w Input from PFS/FS Team

**FOR MORE INFORMATION**  
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