



Onondaga County Legislature

JAMIE McNAMARA
Clerk

TIMOTHY T. BURTIS
Chairman

TAMMY BARBER
Deputy Clerk

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ENVIRONMENTAL PROTECTION COMMITTEE MINUTES – JULY 15, 2025 **JULIE ABBOTT, CHAIR**

MEMBERS PRESENT: Dr. Kelly, Ms. Cody, Mr. Romeo, Mr. Brown

ALSO ATTENDING: Mr. Knapp, Ms. Hernandez, Chairman Burtis; also see attached list

Chair Abbott called the meeting to order at 1:04 p.m., and the previous meeting's minutes were approved.

1. ONONDAGA COUNTY WATER AUTHORITY:

a. Confirming Reappointment to the Onondaga County Water Authority (Douglas R. Wickman)

- This is to reappoint Mr. Wickman to the OCWA Board
- Mr. Wickman is currently a retired Engineer and would like to continue on the Board

A motion was made by Dr. Kelly, seconded by Ms. Cody, to approve this item. Passed unanimously; MOTION CARRIED.

2. OFFICE OF ENVIRONMENT: Elizabeth Bough-Martin, Director Office of Environment; Ed Michalenko, Director Onondaga Environmental Institute

a. INFORMATIONAL: Tully Mudboils

MUDBOIL FEASIBILITY STUDY REPORT

The Mudboil Feasibility Study (MBFS) was developed to evaluate the following three alternatives for mitigating sediment and salinity-loading to Onondaga Creek:

- *Offline Settling with Polishing Wetlands*
- *Inline Settling with Polishing Wetlands*
- *Creek Relocation with At-Source Settling*

In the end, all three alternatives were found to pose challenges that made them unfeasible for implementation at this time. It was recommended by the Design Team that none of the alternatives proceed to further design and that a return to more localized, smaller-scope projects be examined as possible solutions to mitigating mudboil discharges. This includes development and implementation of an Operation and Maintenance Plan for existing features and infrastructure, such as the directional drill, in the mudboil corridor that reduce sediment loading and saline inputs to Onondaga Creek (see below).

DIRECTIONAL DRILL OPERATION AND MAINTENANCE PLAN

In 2018, a Directional Drill (DD) was installed in the Mudboil Depression Area (MDA) as part of a pilot restoration project implemented by U.S. Geological Survey (USGS) and Onondaga County Soil and Water Conservation District (OCSWCD). The goal of the project was to redirect MDA surface discharges away from the larger Rogue Mudboil Area (RMA) to alleviate sediment transport and reduce sediment loading to Onondaga Creek.

History of the DD and the RMA

- **2018** - An 8 inch pipe is installed via DD drilling in the MDA. Subsequent monitoring of the area reveals a continuing decrease in sediment loading to Onondaga Creek. Levels at Otisco Road initially average less than 1.5 tons per day, an 89% decrease from pre-construction conditions.
- **2021** – A major storm event, along with several other factors, raises water levels at the site to a level that prevents regular maintenance. The persistently high water levels lead to the degradation of protective fencing around the DD pipe and an increased occurrence of debris blockages that reduce the flow capacity of the DD.
- **2024** – A DD Recovery Project is undertaken and construction is completed in August to relieve the high water levels in the MDA. The blockages are removed and the DD conduit is flushed. However, a water valve is found to have deteriorated due to the saline environment in the high water and is removed. The project also takes the following steps:
 - The existing DD conduit is cut downstream of the valve flange that supported the now removed water valve.
 - A basin is excavated to stabilize the new inlet and the bottom is layered with concrete slabs to more easily facilitate future sediment removal
 - A woven wire fence is placed upstream of the inlet basin to prevent vegetation and other debris from flowing to and clogging pipe.
- **2025** – Noticeable beaver activity (a beaver dam), identified in the area in August 2024, is observed to have been wiped out by a period of prolonged rainfall in the spring. Additional vegetative growth and dislodgement impacts the flow to and through the pipe.

Current Status of DD and MDA

Once the DD became fully operational again, surface flows and sediment loading at the MDA began to decrease. However the pipe remains without a shutoff valve and the debris gates have been removed due to excessive corrosion, which makes the pipe susceptible to debris clogs and a hazard to fish and wildlife. It is apparent that the current state of the DD in the MDA is untenable and a new configuration is necessary, along with a broader strategy for long term operation and maintenance.

“A Proposal to Perform Directional Drill Capital Improvement to Site Operation and Maintenance”

To this end, Onondaga Environmental Institute (OEI) and DuLac Engineering have outlined the following proposal for the Mudboil Technical Advisory Group (TAG):

- **Step 1: DD Rehabilitation and MDA Stabilization**
 - Task 1: Finalize Phase 1 Designs – Designs and associated operation and maintenance have been delineated into two phases. The first phase focuses on improving access to existing infrastructure in the MDS and stabilizing the DD inlet.
 - Task 2: Construction Contract Administration – OEI will solicit construction quotes and a site visit will be held for prospective contractors. The most qualified and affordable contractor will be selected and notified by OEI, with input from the TAG.
 - Task 3: Implement Phase 1 Design Plans – Implementation of Phase 1 work will occur following review and authorization by the TAG. OEI will also coordinate with property owner Honeywell to obtain permission to perform the work. Anticipated start date in early fall 2025.
 - Task 4: Inspection and Operational Testing - OEI and DuLac Engineering will provide construction oversight, site inspection, and regular updates to the TAG and Honeywell. Post-construction, the project team will test the shutoff valve, appurtenances, and shielding apparatus to ensure proper, long-term operation.
- **Step 2: Project Closeout** – OEI will provide final project approval and invoicing for the contractor. A final progress report, including site photos and relevant data, will be prepared and submitted to the TAG for review. Upon approval by the TAG, the project will be considered closed.

- **Schedule**

<i>Step 1, Task 1 – Finalize Designs</i>	<i>7/15-7/31/2025</i>
<i>Step 1, Task 2 – Construction Contract Administration</i>	<i>8/1-8/31/2025</i>
<i>Step 1, Task 3 – Project Implementation</i>	<i>9/1-9/30/2025</i>
<i>Step 1, Task 4 – Inspection and Operational Testing</i>	<i>10/1-10/15/2025</i>
Step 2 – Project Closeout	10/15-10/31/2025

- **Budget**

○ <i>Project Management, Correspondence, Meetings</i>	\$ 16,614.00
○ <i>Phase 1 Plans</i>	\$ 42,2123.00
○ <i>Construction Contract</i>	\$ 5,303.00
○ <i>Construction</i>	\$ 4,078.00
○ <i>Inspection and Testing</i>	\$ 7,268.00
○ Total Budget	\$ 75,477.00

The following was presented by Ms. Bough-Martin:

- Ed Michelenko is project director and reports to the Tully Mudboils Advisory Group
 - Advisory Group consists of DEC, USGS, OCOE (Onondaga County Office of Environment), CNYRPD (CNY Regional Planning and Development Board)
- Part of the money from Consent Order goes to CNYRPD to fund operations, maintenance or other types of projects at the Tully Mudboils

The following was presented by Legislator David Knapp (District 12):

- Bill Kappel from USGS is considered an expert and has devoted his career to studying mudboils
- This deep valley is an extra Finger Lake that never filled in
- In the 1880's, the Solvay Company discovered massive salt deposits several hundred feet down
- They did not have the ability to mine, so water was pushed down shafts into the salt deposits
- Dissolved salt was pumped back up and piped to Solvay through gravity fed wooden pipes that leaked
- Solvay Process, Allied Chemical, and Honeywell put in a water system because wells are saline (brackish)
- Over the course of 100 years the amount of salt removed created a cavern
- Cavern fills up with water, and valley has pulled away from rocky sides of hills
- Part of Route 81 had to be repaired because it was starting to go down the hill due to instability of the soil
- Considerable amounts of rain water will go sub terrain instead of flowing across valley into Onondaga Creek
- The sub terrain water creates pressure in the cavern and causes mudboils in weak spots
- There is debate as to whether Solvay Process created this
 - Although not clear, old Native American text refers to the possibility of mudboils prior
- Many solutions have been tried
 - Capping - When one is capped, another one comes up where there is a weak spot in the RMA
 - Diversion – Divert water from the mudboils to swampland and filter before it gets to the creek;
 - This system worked until the pipe plugged up
- Onondaga Creek is pristine and instantly turns brown where the mudboil meets the creek
- The fineness of the clay sediment is the reason it does not settle until it gets to Onondaga Lake where it settles and creates a delta
- Salt and sediment are two bad things for Onondaga Lake

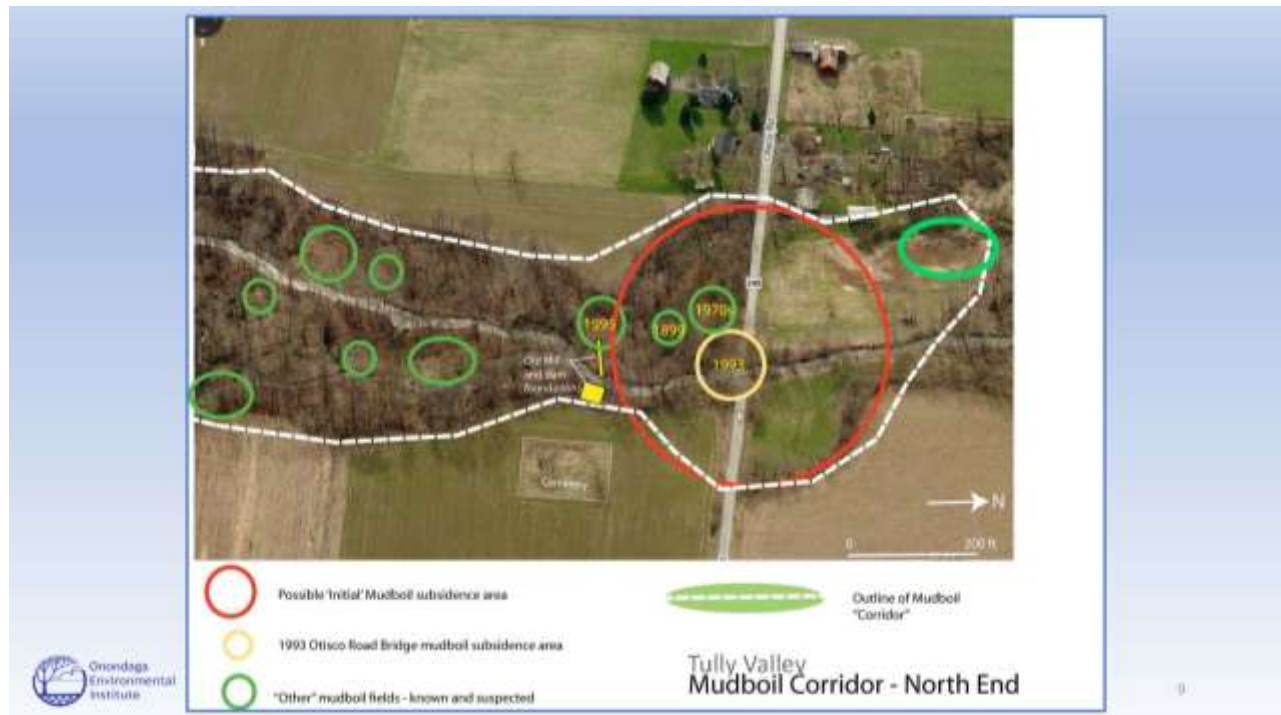
Questions/Comments from the Committee:

- Is the money being put towards the mudboil project working?
 - Honeywell has taken over ownership
 - Trying not to add further harm to the residents impacted
 - Sedimentation and instability are a big part of the picture
 - USGS is studying how far the water intrusion went
 - CNYRPD dealing with DD and deposit area

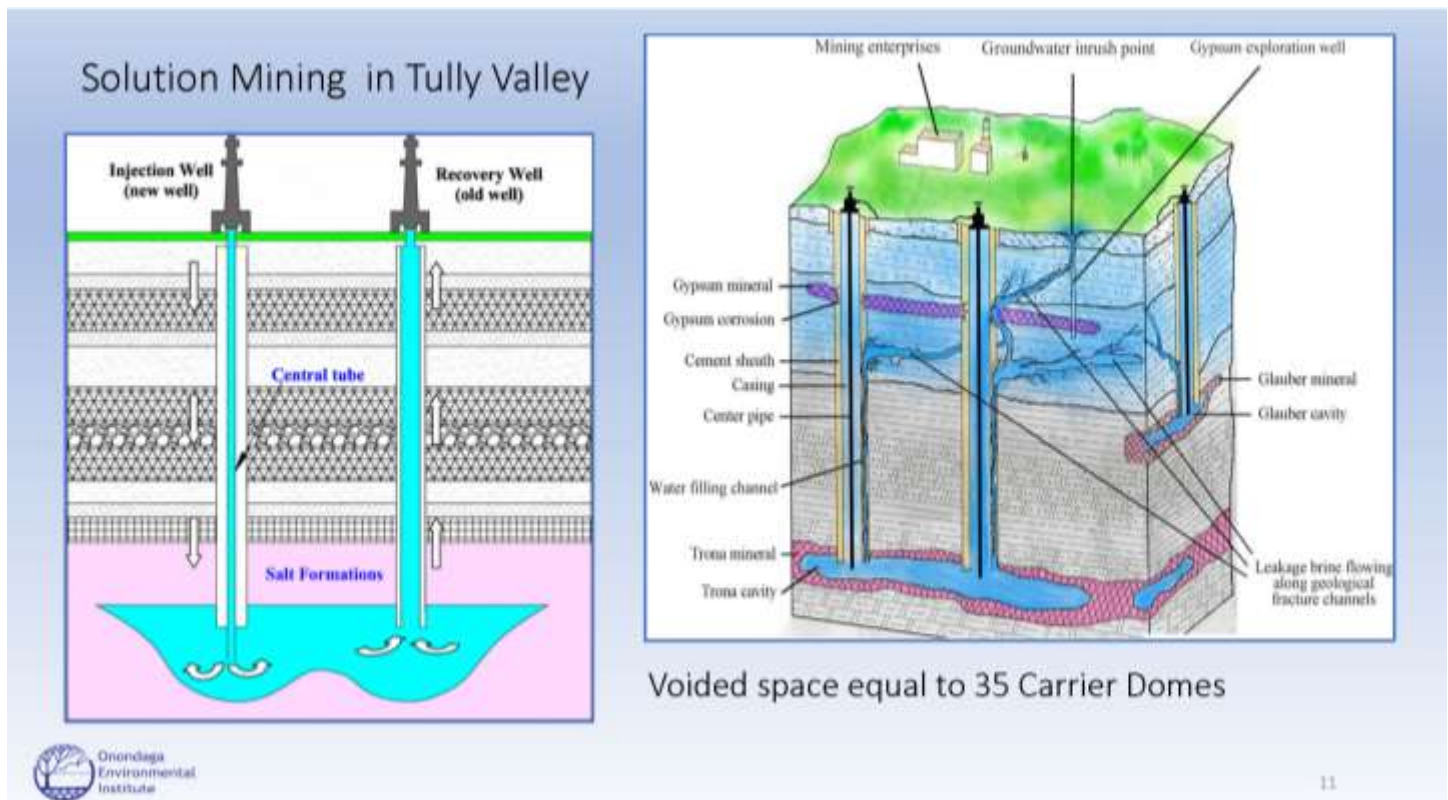
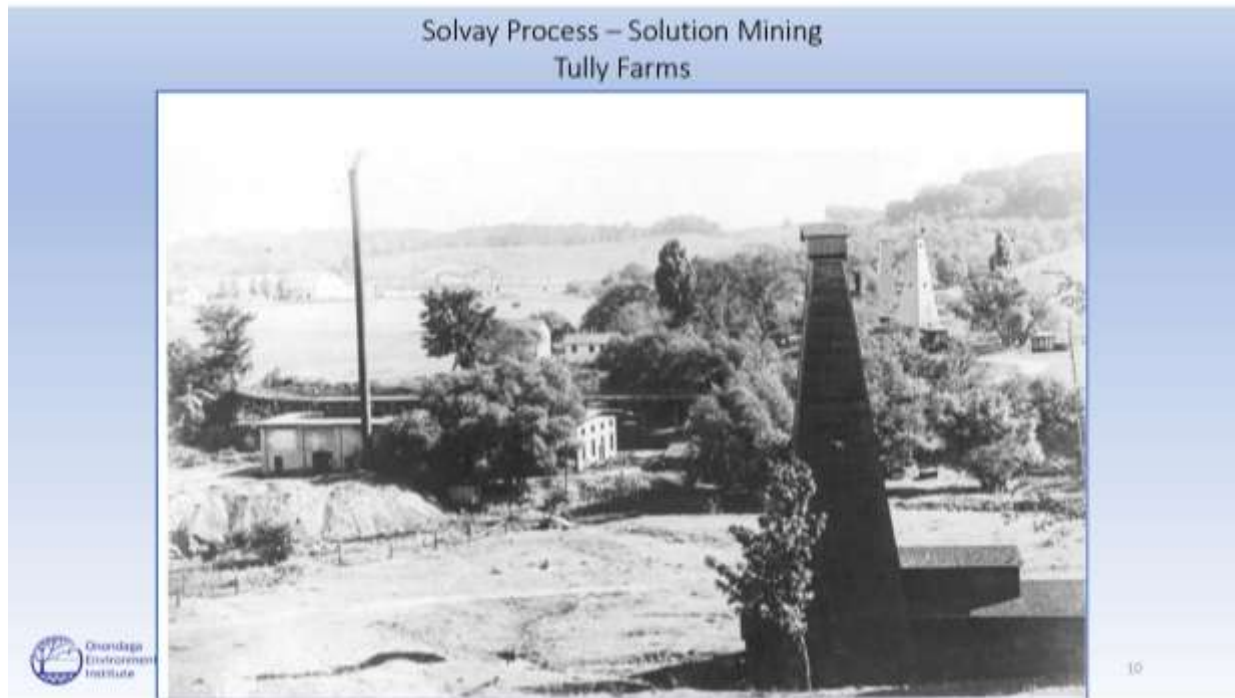
- A continual depression can be seen in the ground surface where there are mudboils
- Can lose 30-40 tons of ground material in a day that ultimately flows to Onondaga Creek
- The brown area in the water is where the mudboil meets the creek



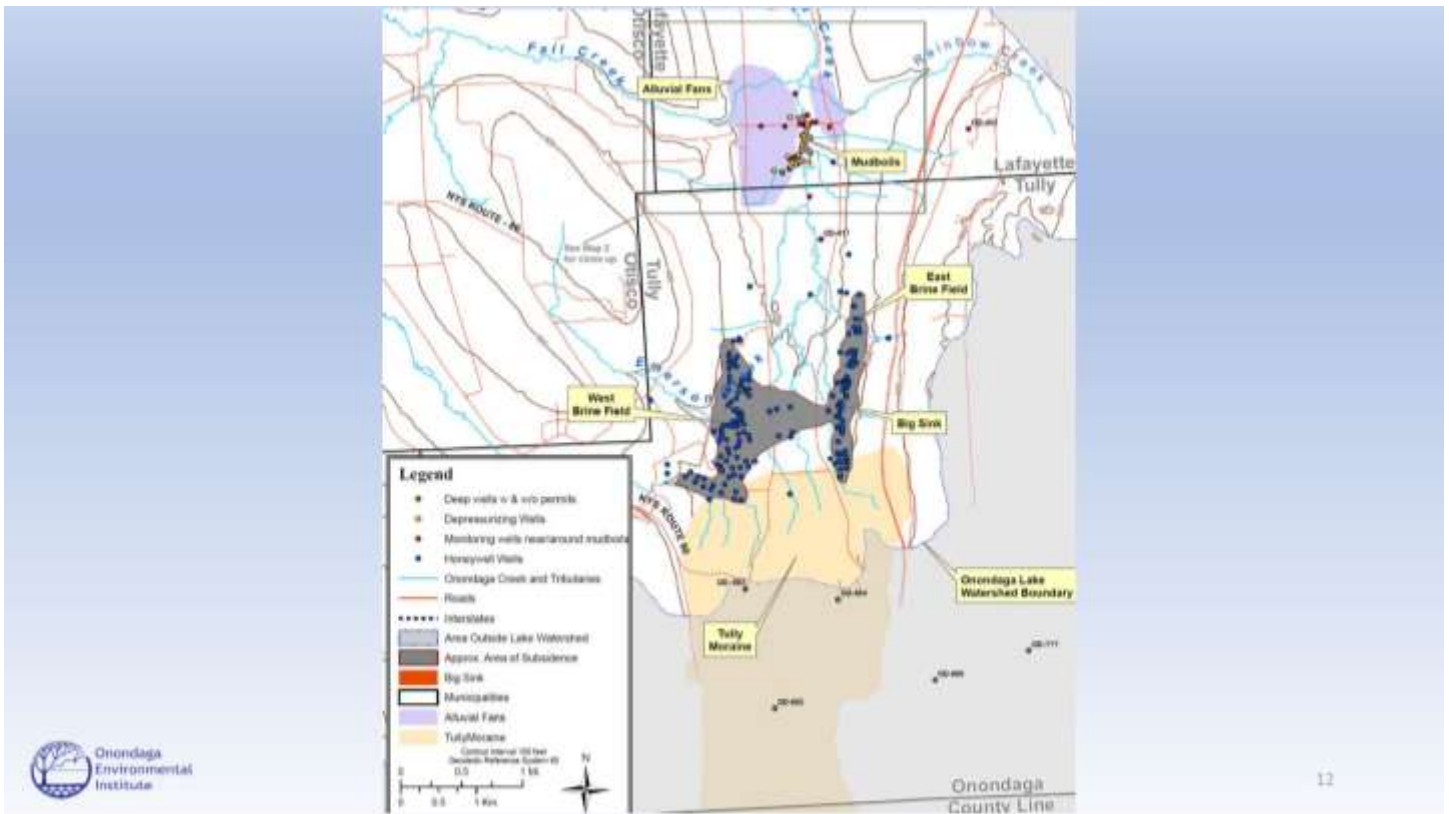
- 67% of sediment in Onondaga Lake originates from the mudboils



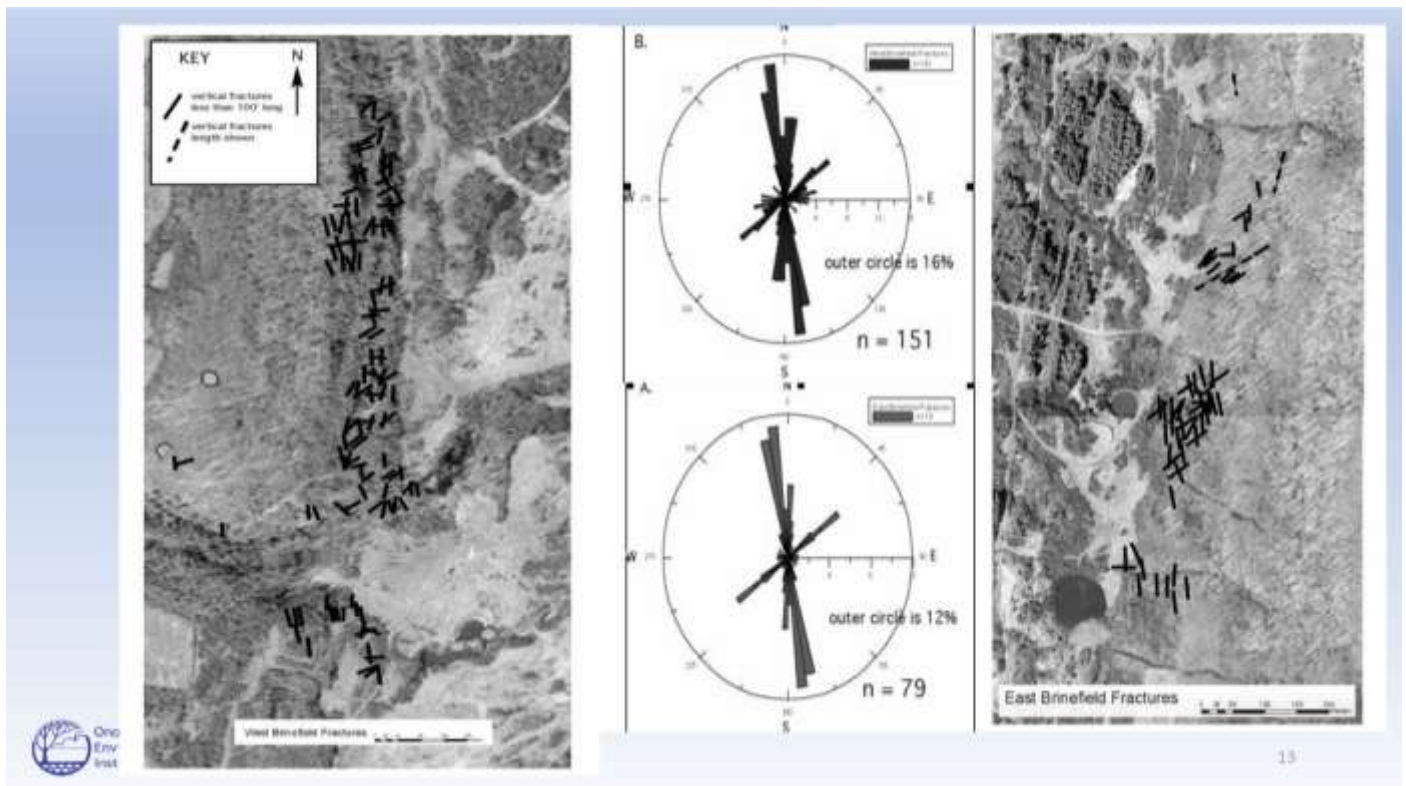
- Slide shows active mudboils along the creek



- USGS official position is that “mudboils are a natural phenomenon caused by ground water pressure off the valley walls exacerbated by solution mining”
- Solvay Process was formed for 2 reasons: limestone and salt (needed 100% brine)
 - Source of salt was found in the Tully Valley
- The salt industry produced around Onondaga Lake was from ground water with saturation of 60-80%
- Voided space is equal to 35 Carrier Domes



- Purple area shows mudboil activity
- Gray area shows where solution mining took place
 - Couple hundred wells on the east and west slopes of the Valley wall and close to Tully Moraine



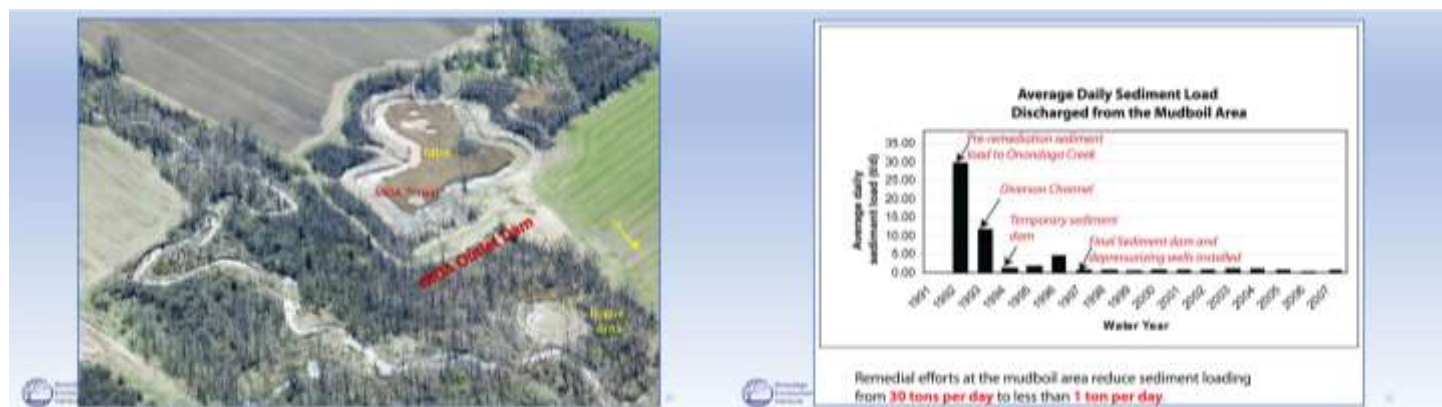
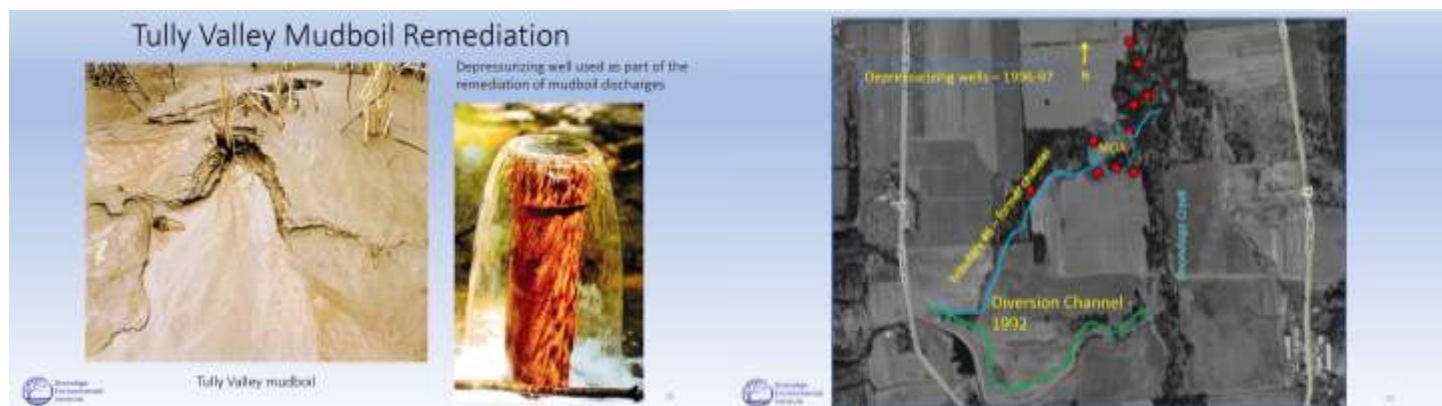
- Slide shows land surface fractures in the area of the wells
- Will not likely be a catastrophic collapse of the mining areas
- Will always be a continual ratcheting in to fill the voids where salt was mined



- Surface water runoff (snow melt and rain events) get back into the layers of salt through these fissures
- Fissures can extend 2,000 feet below the land surface



- 1991 road collapse due to mudboil extraction of the sub surface
- Today, there is no bridge and most of the bridge footers have sunk into the ground

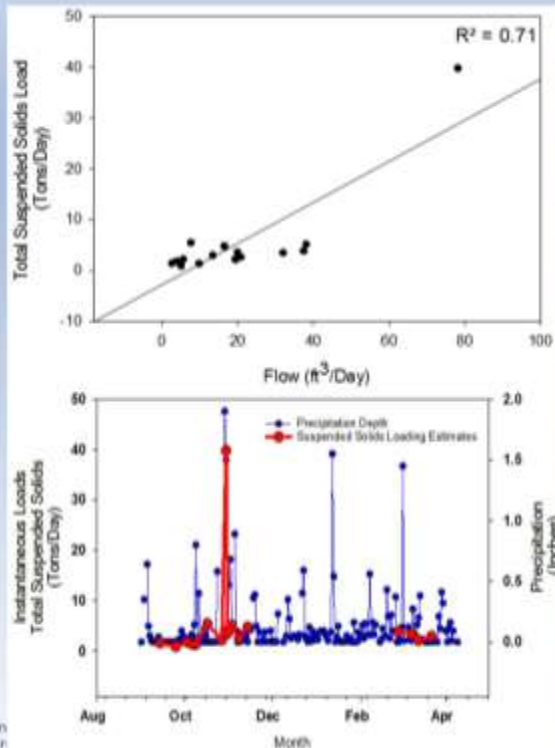


- Mudboil Remediation program started in the early 1990's
- Tributary was relocated in 1992 to reduce sediment by avoiding water running through the mudboils
- In the mid 1990's a series of depressurizing wells were put around the MDA to relieve pressure by allowing clean water to come up
 - A dam was built inside the MDA to contain the mudboils
 - Pre-remediation sediment load was close to 30 tons per day
 - Post-remediation was less than ½ ton per day and continued with those fixes until the late 2000's when the RMA broke out
 - Mudboils are now a chronic problem in the RMA



- Some of the depressurizing wells were in the RMA area
- Water coming up from the depressurizing wells washed out the soil around wells, the wells collapsed and fell into the ground and caused mudboils
- The lesson learned was the need to be very careful where depressurizing wells are located





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Mudboil Sediment Loading

- Otisco Rd: August 2017 – March 2018
- **Loading Estimates (tons/day):**
 - Minimum = 0.90
 - Average = 5.18
 - Maximum = 39.80
- Increases in precipitation generally correspond with an increase in sediment loads



What do mudboils discharge? besides “mud”

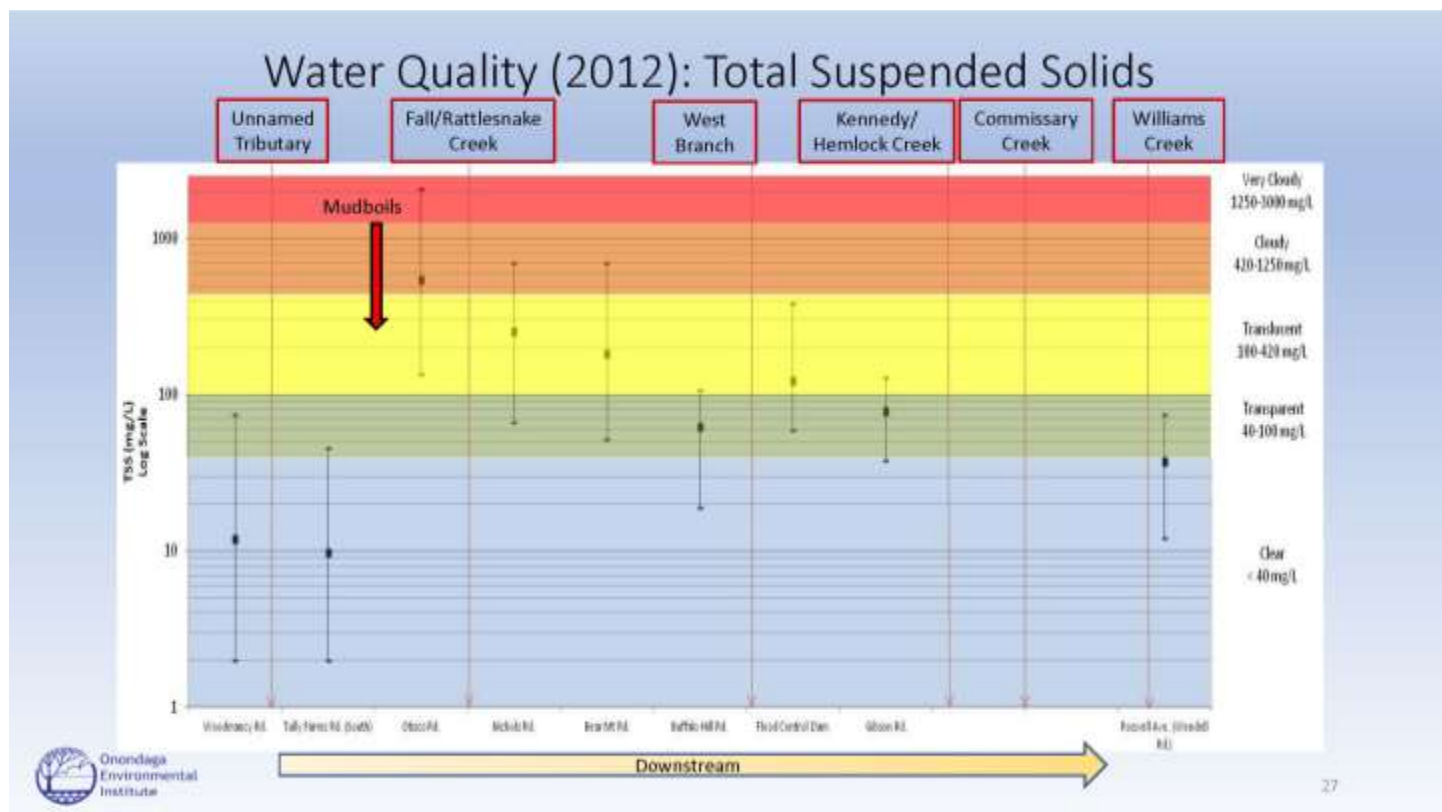
Mud:

- **Total Suspended Solids** = particles suspended in water (visible)

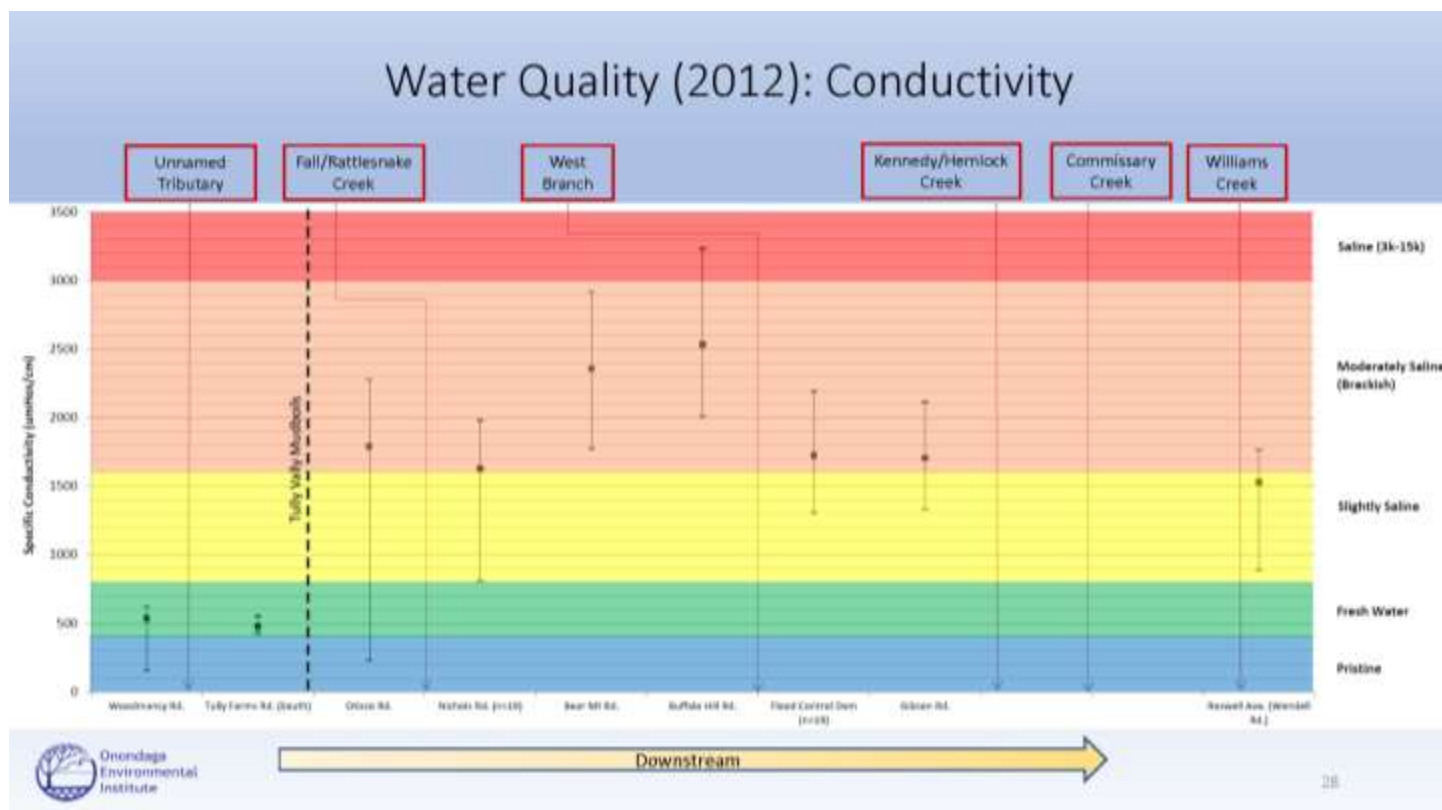
Salts:

- **Total Dissolved Solids** = particles dissolved in water (minerals, salts, metals; not visible)
- **Conductivity** = ability for water to pass electrical current
 - Particles in water
 - More particles > conductivity
 - Salts are a large contributor to conductivity
- **Salinity** = amount of dissolved salts in water

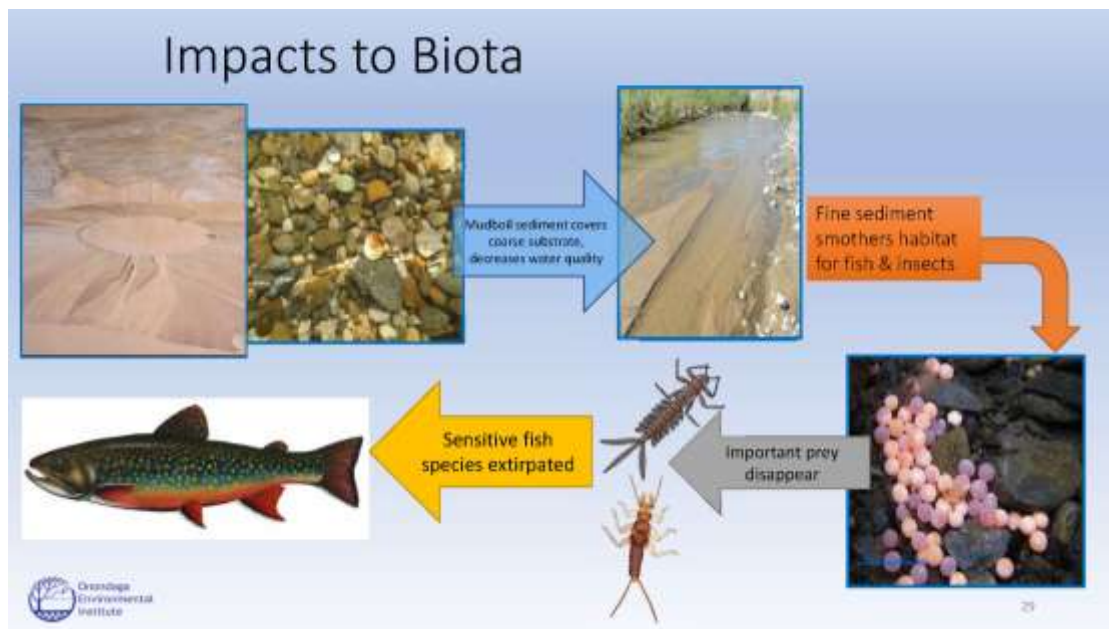
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- Blue is good
- Green is ok
- Warm colors are not good



- Conductivity is a surrogate measure for salt
- Blues and greens are upstream of mudboils
- Yellows and reds are downstream



Mudboil Impacts Summary

- Water quality is negatively impacted
- Significant negative effects on macroinvertebrate community
- Fish abundance not negatively impacted, but...
 - Loss of sensitive, coldwater species such as trout



- Center of Haudenosaunee Confederacy



- Tadodaho joined confederacy on lake shore
- Tree of Peace planted near lake shore
- Hiawatha created wampum at Tully Lakes

Onondaga Nation: importance of Onondaga Lake & Creek



Indigenous subsistence fishing

- Trout
- Salmon
- Eel
- Smelt
- Whitefish, etc.



ANGUS LABORGNE'S WALLEYE: HOW TWO DOZEN SPEARED FISH CAN OFFER LESSON IN HISTORY TO NEW YORK STATE
APRIL 11, 2022



Mudboil Technical Advisory Group (TAG)

Current Initiatives

1. Directional Drill Project
2. Alternatives Analysis - Feasibility Study
3. Source Water Study

Mudboil Technical Advisory Group (TAG)

- Representatives of the Onondaga Nation
- Region 2 of U.S. Environmental Protection Agency (USEPA)
- U.S Geological Survey (USGS)
- New York State Department of Environmental Conservation (NYSDEC)
- New York State Office of the Attorney General (NYSAG)
- Central New York Regional Planning & Development Board (CNYRPDB)
- Onondaga County
- City of Syracuse



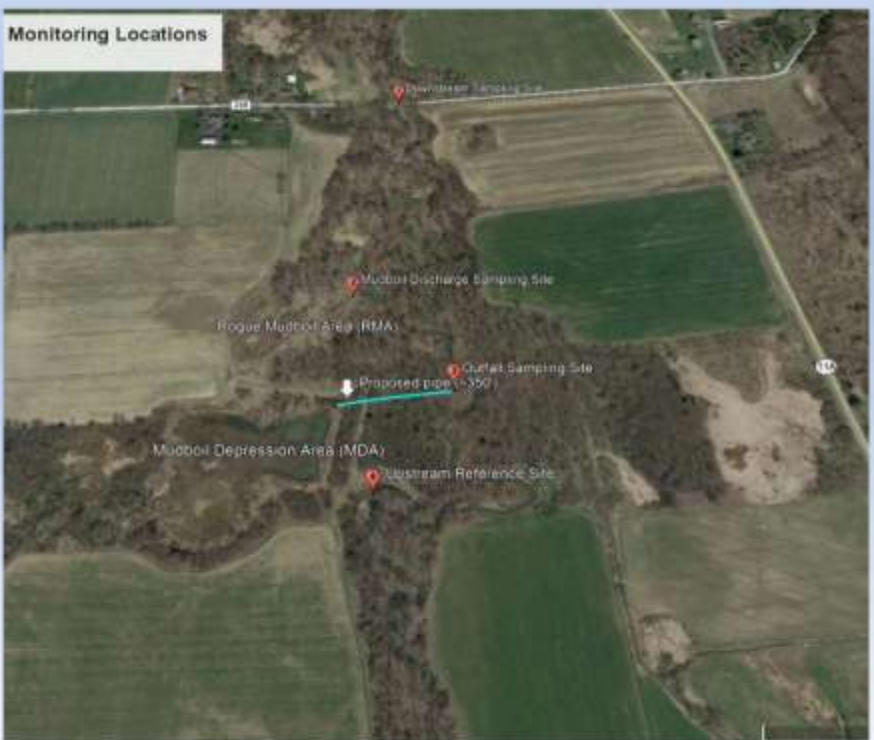
1. Directional Drill Project

Where: Mudboil Depression Area (MDA), south of Otisco Rd

Why: Divert water from MDA to Onondaga Creek upstream of Rogue mudboils

How: Install ~350' of pipe

Who: USGS, OCSWCD, OEI







- Directional Drill drains the MDA around the RMA

Directional Drill Outlet



2. Alternatives Analysis –Feasibility Study

What: Identify & assess restoration/engineering options

Why: To mitigate effects of mudboil discharges

Who: Design Team

How: Data review & analysis

- Develop & implement selection criteria
- Screening of alternatives
- Evaluation of technologies

When: Ongoing





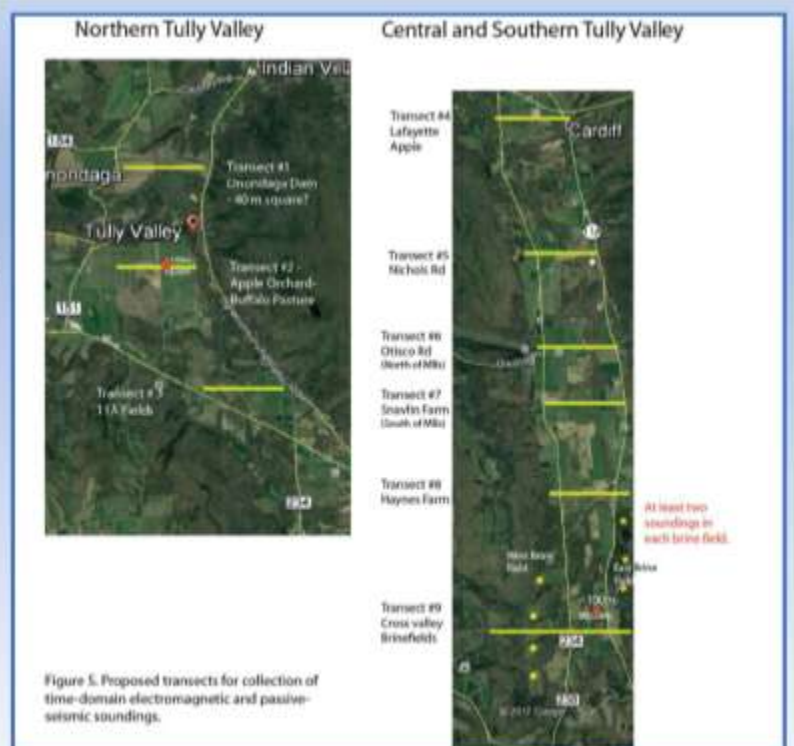


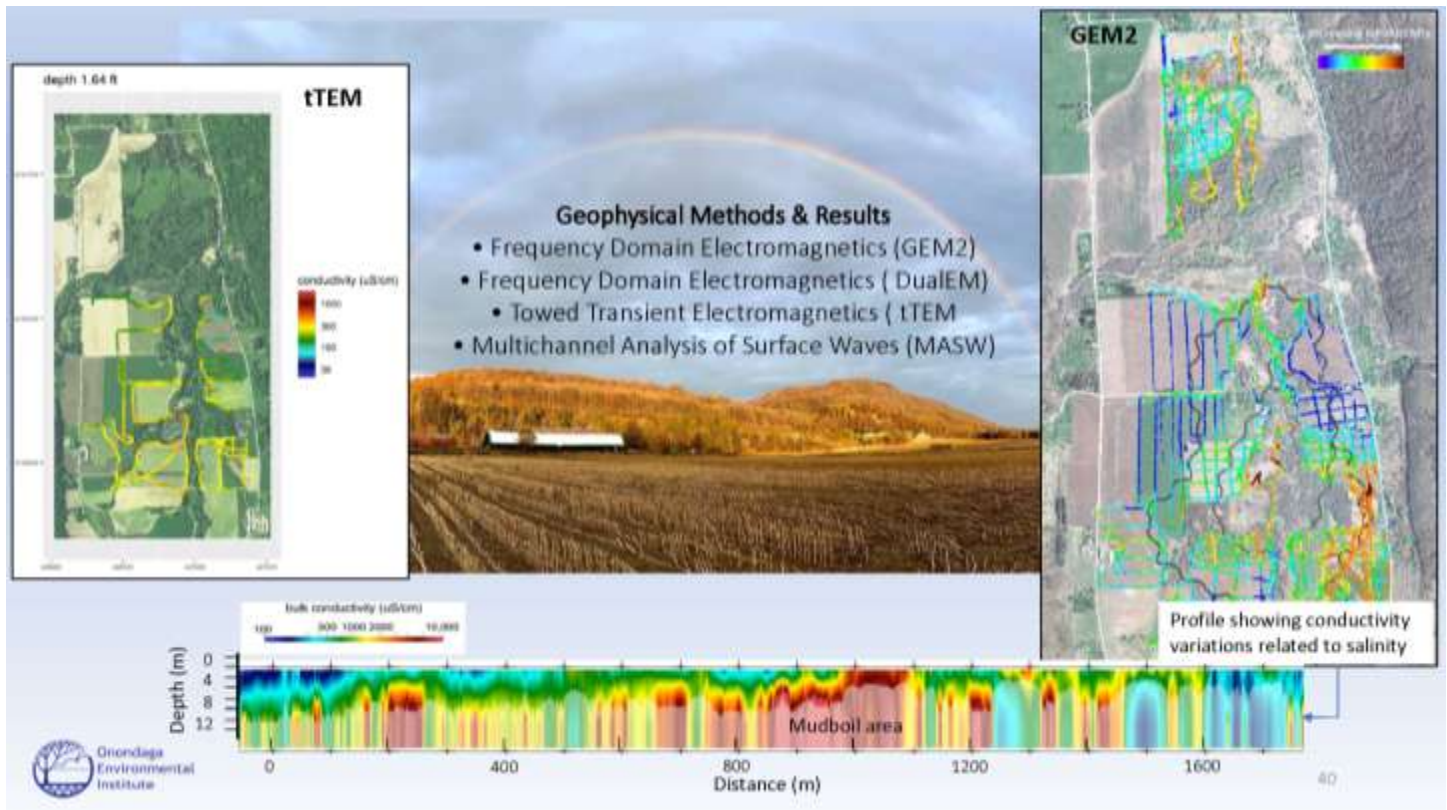
Three Selected Alternatives:

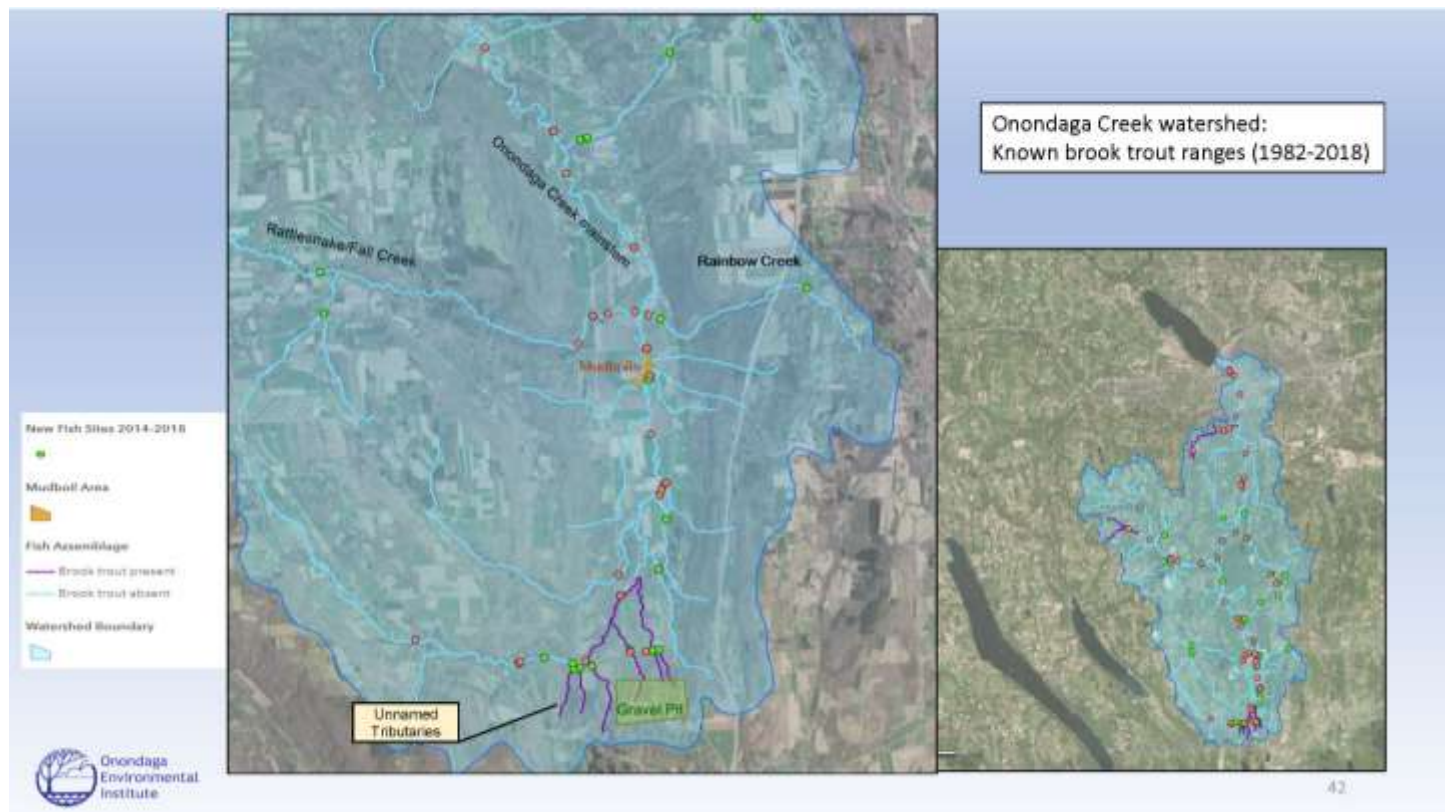
1. Alternative 1: Offline settling with post-settling polishing wetlands
2. Alternative 2: Creek relocation with at-source settling
3. Alternative 3: Inline settling with at-source settling

3. Source Water Study

- **What:** evaluate source, flow, & transport of groundwater
- **Why:** mudboil groundwater discharge historically freshwater, increasingly saline overtime
- **Who:** USGS
- **How:**
 1. Non-invasive Time-Domain Electromagnetics (TEM) surface-geophysical soundings
 2. Targeted groundwater sampling
 3. Develop groundwater model







Onondaga Creek – Brook Trout Restoration by the numbers



Upper Onondaga Creek Conclusions

- Mudballs persist
- Remedial strategies are being evaluated
- Regionally unique in character & habitat
- Capable of supporting brook & brown trout
- Important resource in establishment of cold & cool water fisheries in Onondaga Lake
- Profound cultural & spiritual significance to Onondaga Nation

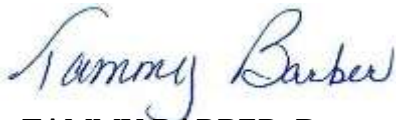
Questions/Comments from the Committee:

- A large dam was built on the edge of the Onondaga Nation to protect the Nation in case of a major flood
- The thought was to close the dam and let the water build up and settle, then dredge it out
 - The dam is on Nation territory and would need their buy in on any solutions
 - There has been discussion internally as well as with the Nation about turning it into a lake
 - The dam was built in the late 1940's and was oversized at the time
 - The Valley was completely logged off for farming and agriculture
 - The dam was designed to hold back water to protect the Southside and Valley
 - The area around Green Hills was notorious for flooding from the creek
 - Would lose flood control if dam was filled with water and then a high event occurred
 - The understanding is that the Nation would like the dam removed

b. Tour: Offsite Tour to Tully Mudboils

The meeting was adjourned at 1:59 p.m.

Respectfully submitted,



TAMMY BARBER, Deputy Clerk
Onondaga County Legislature

ATTENDANCE**COMMITTEE: ENVIRONMENTAL PROTECTION**

DATE: JULY 15, 2025

NAME (Please Print)	DEPARTMENT/AGENCY
John DeSantis	Leg
Tim Burtis	LEG
RYAN Ockensten	LAW
Ben Maus	LAW
Elizabeth Baughman	Environment
Grant Becker	Environment
Dbbie Kaminski	Leg
Dave Krapp	Leg
Tim Beebe	Leg
Dan Krantz	CE
Aaron McKenna	CNY RPD B