



4 June 2025

Ms. Dereth Glance
Regional Administrator
Region 7, NYSDEC
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by e-mail and by post

Subject: Improving Transparency and Risk Communication Regarding Cargill's Mining Operations Under Cayuga Lake or Mine Closure

Dear Ms. Glance,

I am writing to share our findings about the information flow from Cargill and from the DEC's mining consultant, John T. Boyd Inc., to the DEC and to the public regarding Cargill's mining operations beneath Cayuga Lake. While we have observed some positive trends, others are cause for concern.

Members of the CLEAN Steering Committee and our technical consultants would welcome the opportunity to meet with you and your staff to discuss how the current information-sharing process might be improved. Our goal is to enhance the understanding of, and reduce the risks to, Cargill's workers, the regional economy, and Cayuga Lake. There currently exists no credible mine closure plan.

Since 2003, Cargill has submitted Annual Reports to the DEC, and each year John T. Boyd Company has produced corresponding reviews. The attached spreadsheet summarizes trends in these reports. Notably, most of Cargill's consultant reports have been withheld from public release under trade secret claims. We believe this practice must be reconsidered.

Key Findings

- 1) **Shrinking Cargill Annual Reports.** The average length of Cargill's Annual Reports to the DEC has decreased by 69%, from 13 pages (2003–2008) to 4 pages (2019–2023). (See Rows 7 & 15 of the spreadsheet.)
- 2) **Lengthening Boyd Reviews.** Conversely, Boyd's reviews have grown by 62.5%, from 8 to 13 pages during the same timeframes—a welcome development. (Rows 11 & 16.)

- 3) **Faster Review Turnaround.** The average delay between Cargill’s report and Boyd’s review has decreased from 130 to 111 days. (Rows 12 & 17.)¹
- 4) **Redaction 1.** In 2016, Boyd’s review had five extraction ratios and four tunnel life expectancy figures redacted (p. 4), the only instance we’ve found across 21 years of reviews.
- 5) **Redaction 2.** In 2024, for the first time in 22 years, a full page (presumably the 3-year mine plan map) of Cargill’s Annual Report was blacked out in the FOIL-released copy.²
- 6) **Shaft No. 1 Leakage.** Leakage from Shaft #1 has increased from 11 gallons per minute in 2003 to 33 gpm in 2024. Cargill has seemingly abandoned its 2018 plan to capture and process this leakage above ground. (Row 21.)
- 7) **Personnel Shift at Boyd:** From 2003–2022, Dr. Vincent Scovazzo signed Boyd’s reviews. In 2023, Dr. Keith Heasley (Ph.D., P.E.) and Boyd COO Ronald Lewis signed the report. Heasley appears to lack direct salt mining experience.

Commentary and Recommendations

1 & 5. Decline in Cargill Reporting & the 2024 Redaction

Has the DEC noted the substantial reduction in report content from Cargill? Why has DEC not required more robust disclosure, including third-party hydrogeological and limnological assessments to examine long-term risks to Cayuga Lake post-mine closure as well as release of all Cargill consultant reports?

An Environmental Impact Statement (EIS) is urgently needed. It must evaluate options such as flooding the mine post-decommissioning or maintaining dry voids to mitigate collapse risk and preserve future potential uses such as carbon sequestration. Cargill’s repetitive claim that “nothing has changed” belies their own data: ongoing anomalous room closure rates, proximity to geological anomalies, and changes in pillar technology—all of which should trigger heightened scrutiny, including an EIS of the entire mining operation.

The redaction of the presumed 3-year mine plan in 2024 is unprecedented. Cargill continues to use outdated mining technology, unlike its New York competitor, American Rock Salt, which is transitioning to a continuous mining system. There is no credible argument for keeping Cargill’s mine plan or their annual consultant reports hidden from the public or from prospective buyers. We are concerned that secrecy around the 3-Year mine plan and the consultant reports may reflect Cargill’s legal risk management rather than operational necessity. DEC’s role is to protect public resources, not to shield corporations from private liability.

2, 3 & 4. Boyd Reviews and redacted safety metrics.

We appreciate the improved comprehensiveness and timeliness of Boyd’s reviews. However, redactions—especially those related to extraction ratios and tunnel lifespans—suggest troubling

¹ Unfortunately, we have already waited 121 days for release of the Boyd review of the 2024 Annual Report.

² CLEAN intends to appeal the redaction of the mining map under the Freedom of Information Law.

omissions. High extraction ratios could point to safety compromises. Projections of eventual tunnel collapse (from Cargill’s consultant RESPEC) have been suppressed. Despite the inevitability of such collapses, Cargill has not commissioned public studies on whether collapse-triggered rubble chimneys—similar to those that occurred following the Retsof Mine collapse in 1994--could create direct hydraulic links to Cayuga Lake, an invaluable US Drinking Water resource currently relied on by about 100,000 people. In 1980, such a link between freshwater Lake Peigneur in Louisiana with the salt mine beneath it, resulted in the permanent salinization of that lake. Why hasn’t DEC required such studies, which clearly fall under DEC’s remit and not under that of the Mine Safety and Health Administration?

A mine expert shared with us that (paraphrasing) “the 4-level mine will eventually collapse into the 6-level mine—it’s just not going to happen while Cargill is down there.” Whether or not Cargill’s 4-level brine pond maps sent to the DEC intentionally lack features enabling the viewer to see that some brine ponds extend under the lake, DEC must demand transparency and commission an independent EIS designed and contracted out by the DEC and the EPA to evaluate potential risks to US drinking water resources.

6) Leakage Management for Shaft No. 1 and for U-12 Decompression Boreholes.

Cargill’s apparent abandonment of its Shaft #1 grouting and brine recovery plan raises serious environmental and safety concerns. After partial success reducing leakage in 2015–2016, Cargill appears to have stopped further grouting efforts, despite the leakage rate reaching 33 gpm in 2024.

Mining experts confirm that grouting must be an ongoing process, not a one-time fix. Cargill may be deferring costly grouting maintenance to make annual net revenue numbers more appealing to possible purchasers of the mine. Or, Cargill may have concluded that the aged concrete shaft walls can no longer safely withstand the pressures required to successfully inject grouting cement behind the shaft walls.

In Cargill’s 2024 Annual Report, there appears to be persuasive evidence that decompression borehole leakage into mining panel U-12 consists entirely of fossil brine.³

We recommend that DEC require:

- Immediate grouting or replacement of Shaft #1 or mine closure;

³ *“The Cayuga Mine maintains cased boreholes in Unit 12. Brine chemistry, isotopic characterization, and low hydrostatic pressures of the fully saturated brine from these boreholes support the conclusion that this fluid was trapped at the time of salt deposition. Helium isotope age dates of the fluid put it at >3 million years old, which is consistent with the likelihood that it is Silurian aged (~400 million years old). The details of this characterization have been provided to BOYD.”*

- Continuous real-time monitoring and disclosure of flow and detailed water chemistry data for both decompression boreholes above mining panel U-12 and from all levels of leakage within Shaft No. 1; (Has the near surface aquifer become salinized?)
- Removal of all brine from ponds in the 4-level mine and from the requested S-3 disposal zone in the 6-level mine under the lake.
- As part of an EIS, a study should be conducted to determine whether the reported 364 million gallons of inflow into the mine since 2003 is evidence of an aggravated and on-going depletion of US ground water resources within the Town of Lansing.⁴
- A \$10 billion environmental bond be held by NY State until the mine voids have safely closed, a process that one Cargill consultant estimates could take >200 years.

7) Changes at Boyd and Loss of Salt-Specific Expertise

We respect Dr. Heasley's credentials in mining engineering but note the apparent lack of salt-specific experience.⁵ Dr. Scovazzo had decades of salt mining expertise, while Dr. Heasley's background is in coal mining. While there is some overlap, salt mining presents unique hydrogeological and structural risks, especially beneath an invaluable lake.

Given Cargill's enhanced role in managing the Boyd consultancy since a 2021 permit change, we worry that Boyd's independence may be compromised. In addition to our notable consultants, Dr. Raymond Vaughan, P.G. and Dr. Andrew Michalski, CGWP, PG⁶, CLEAN has been fortunate to work with Dr. John K. Warren, a global expert in evaporite geology. Springer published his 1,829-page book, **Evaporites: a geological compendium**, in 2016 and presents a global review of salt mining. His [seven reports and documents on Cayuga Salt Mine](#)⁷ total about 186 pages.

⁴ The increasing severity of Harmful Algal Bloom events in the Finger Lakes and their potential for microcystin-contamination of lake water make it essential to safeguard our underground drinking water resources. Regarding the borehole decompression inflows reported since 2019, Dr. Andrew Michalski suggests that Cargill may not have thought through possible adverse consequences of drilling up into a brine pocket. He writes in a May 13, 2025, e-mail:

"We'd like to get data on time series of the salinity (electrical conductivity) and flowrate for that inflow. While they say that draining the "pocket" is intended to relieve pressure in the roof, relieving the fluid pressure results in transfer of stress from the fluid to the rock phase, in accordance with the effective stress principle. So, increases in the creep (roof closure) rate and surface subsidence would be expected."

⁵ [This list of recent](#) publications has none that appear to relate to salt mining per se.

⁶ Some Vaughan and Michalski documents are in our [website document library](#).

⁷ Warren-authored documents are accessible under the heading, Saltwork Consultants Pty Ltd documents.

We respectfully urge the DEC to ensure that independent oversight is provided by consultants with comparable qualifications—especially when the lives of miners and the drinking water of over 100,000 residents may be at risk.

Conclusion

The current pattern of secrecy, declining disclosure, and apparent regulatory leniency is unsustainable. We urge the DEC to mandate an EIS, hold a public hearing on the mine operations including the flooding of the S3 Zone, increase public access to consultant reports, increase environmental bonding, implement more rigorous oversight of mine operations—particularly as Cargill may seek to transfer ownership without any effective environmental bonding in place, and, lastly, consider whether non-renewal of the mine permit should be formalized.

We look forward to the opportunity to meet with you and your team to discuss these matters further

Warm regards,

John V. Dennis for CLEAN Steering Committee

Copies by e-mail:

- Michael Martucci, Regional Administrator, Region 2, Environmental Protection Agency; michael.martucci@epa.gov
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- Tom Rigley, Mineral Resources Specialist, Region 7 DEC, thomas.rigley@dec.ny.gov
- Margaret Sheen, Regional Attorney, Region 7 DEC, margaret.sheen@dec.ny.gov
- John T. Boyd, President, John T. Boyd Co., jtb2@jtboyd.com
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- Brian Sikes, Cargill CEO, President & Chairman of the Board, Brian_Sikes@cargill.com
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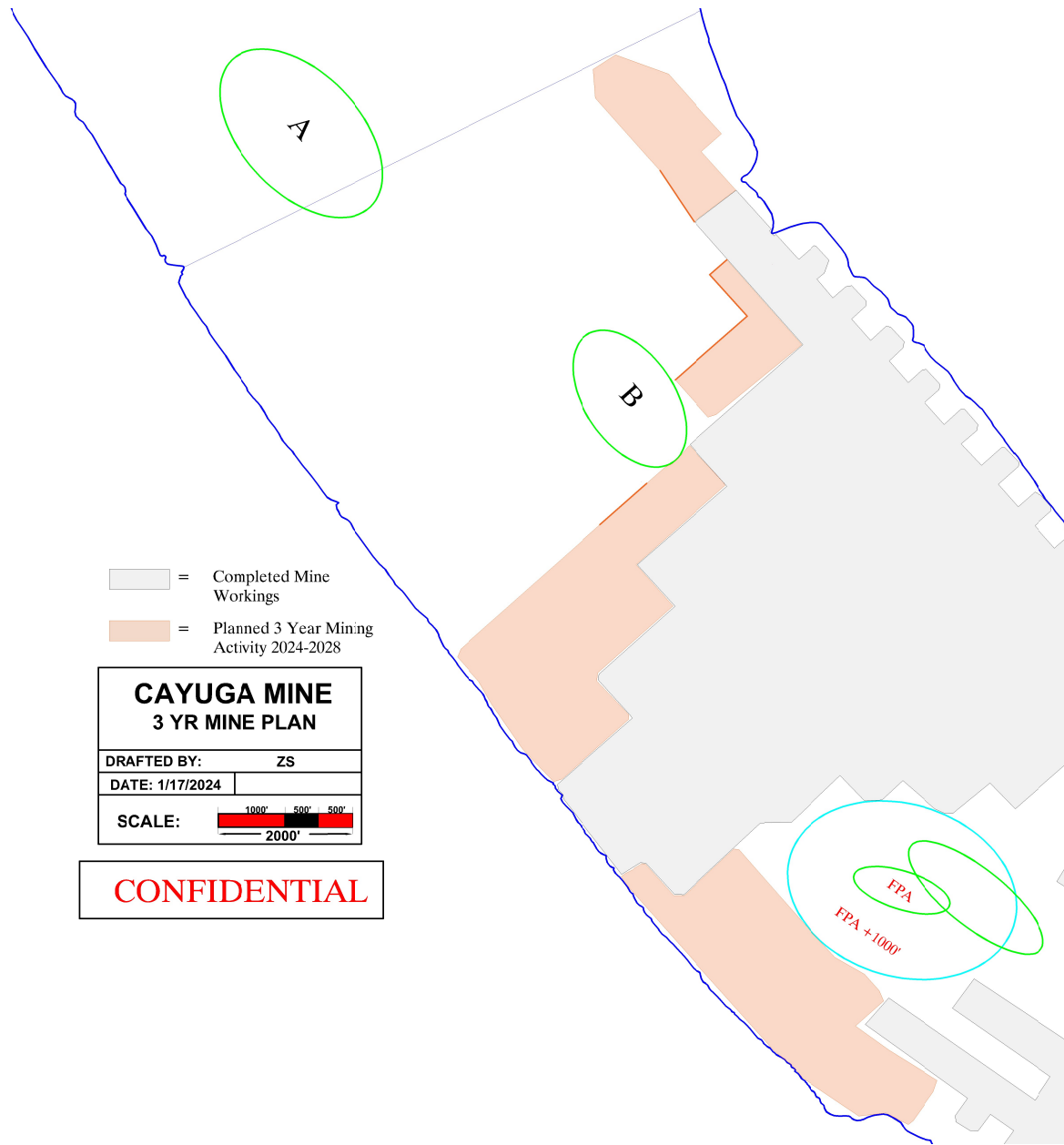
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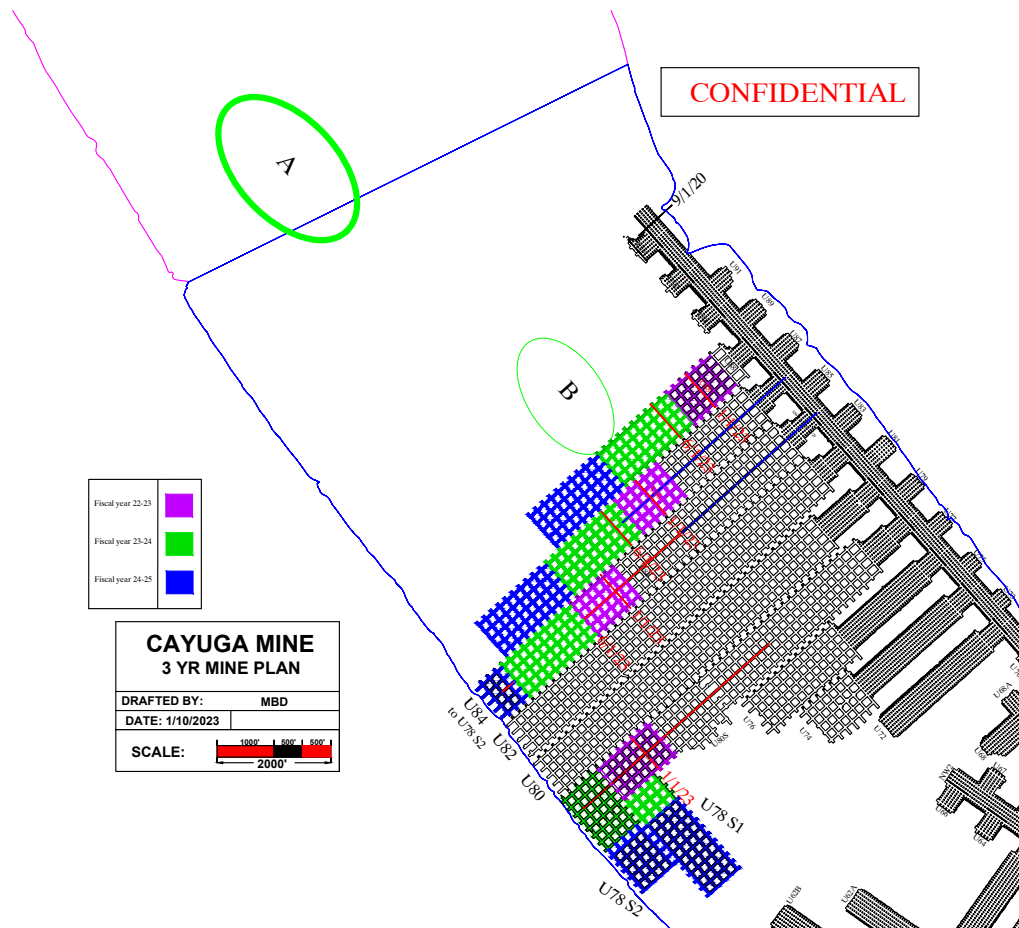
- redacted page as released by DEC FOIL on April 25, 2025, and presumed to be Cayuga Mine 3-year mine plan, 2025-2028
- Cayuga Mine 3-year mine plan, 2024-27 (dated Jan 17, 2024)
- Cayuga Mine 3-year mine plan, fiscal 2022-25 (dated Jan 10, 2023)
- Cayuga Mine 3-year mine plan, 2018-21 (dated Nov 15, 2018; the last year with mining setbacks from the shoreline)
- Spreadsheet describing Cargill Annual Reports and John T. Boyd Reviews of same

Spreadsheet is attached as an excel file to the e-mail.

Spreadsheet & Review Parameters of Interest

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