Jonathan Stercho
NYSDEC Region 7 Headquarters
5786 Widewaters Pkwy
Syracuse, NY 13214

Comment.CayugaSaltMine2023@dec.ny.gov

Re: Comments on Cargill’s Application (0-9999-00075/00001) to Renew and Modify its Mined Land Reclamation Permit for the Cayuga Salt Mine

Dear Mr. Stercho,

The following written comments concern the Notice of Complete Application by Cargill Incorporated (“Cargill”) relating to its permit application 0-9999-00075/00001 (the “Application”) to renew and modify its Mined Land Reclamation Permit (the “Permit”) for the Cayuga Salt Mine (the “Mine”). Cargill seeks to renew and modify its Permit to receive a new five-year permit term and to amend its permit in order to dispose of up to 360 million gallons of wastewater (brine) in the 6-level region of the Mine beneath Cayuga Lake. If approved, Cargill’s proposed activities would completely flood the abandoned S3 Zone of the mine underneath the Lake with these wastewaters. After the flooding is completed, which is expected to occur over 15+ years based upon current inflow rates, the inundated area of the mine will no longer be accessible for any other use or purpose, nor will it be accessible for ongoing monitoring for stability as is currently required of every portion of the subsurface mine.

The Department of Environmental Conservation (“DEC”) has declared itself lead agency under the State Environmental Quality Review Act, ECL (“SEQR”) and identified the proposed action as a Type I action, but nonetheless issued a Negative Declaration.

For the following reasons, we respectfully request that DEC deny the Permit. In the alternative, we request that the Negative Declaration be rescinded and an Environmental Impact Statement be prepared, and that a public hearing be held to address the numerous substantive and significant issues presented by Cargill’s Application as described herein. These requests are addressed below in turn.

1. **The Application does not satisfy the criteria for the renewal and major modification of a Mined Land Reclamation Law Permit.**

DEC has correctly determined that Cargill is seeking a major modification of its existing permit under the Mined Land Reclamation Law, ECL Art. 23, Title 27 (“Mining Law”). A request for a major modification is treated the same as a new permit application under the Uniform Procedures Act, and therefore, must be subject to and satisfy the criteria for a new permit. *See* UPA § 70-0115(b)(2). Unlike a standard permit renewal request, Cargill’s Application is subject to “full environmental review” for compliance with the Mining Law and its implementing regulations. *See Guptill Holding Corp. v. Williams*, 140 A.D.2d 12, 19 (3d Dept. 1988).

An application for a new Mined Land Reclamation Permit requires the submission of a Mined Land Use Plan, including both a Mining Plan and Reclamation Plan. ECL § 23-2711. To the extent that Cargill’s Application proposes modifications to either Cargill’s existing Mining Plan or Reclamation Plan, DEC must ensure that any proposed changes are consistent with the Mining Law and DEC’s implementing regulations.

* 1. **Cargill’s Application proposes modifications to its Permit that do not comply with DEC’s Mining Law regulations and which are inconsistent with the existing Mining Plan.**
		1. **DEC must require the mandatory treatment of wastes stored in the S3 Zone in accordance with DEC’s Mining Law regulations and Cargill’s existing Mining Plan.**

DEC’s Mining Law regulations applicable to Mining Plans are set forth at 6 NYCRR Part 422. DEC’s regulations state that the written portion of a Mining Plan must include “a description of the…disposition of materials other than through sale, exchange, commercial, industrial or municipal use.” 6 NYCRR § 422.2(c)(3). DEC’s regulations identify two options for the “disposition of all materials … resulting from mining”: either the wastes are to be disposed of off-site in accordance with DEC’s solid waste management rules, or the materials are to be stored for disposal during reclamation. *Id.* § 422.2(c)(3)(v). In the latter case, which is what Cargill is proposing as part of its Application, the regulations state that the materials “*shall be temporarily treated* to prevent their becoming unstable, hazardous, a source of pollution of the environment, or damaging to other property.” *Id.* § 422.2(c)(3)(v)(b) (emphasis added).

Cargill’s current Application fails to satisfy this mandatory treatment standard. Under basic principles of solution chemistry, a fully saturated solution is a mixture that contains the maximum amount of solute that can dissolve in a given amount of solvent at a specific temperature. An under-saturated brine, however, will continue to dissolve salt, thus eroding the stability of small yielding salt pillars, abutment walls, and notches.

DEC correctly acknowledges that “[b]rine at 26.6% salt is fully saturated.”[[1]](#footnote-1) And yet Cargill proposes to activate its brine making system only “[i]f the brine were to drop below a 22% salinity action level.”[[2]](#footnote-2) Cargill is thus proposing to store brine beneath Cayuga Lake that is not fully treated (*i.e.* brines between 22-26% salinity), and which could result in pollution or mine instability in violation of 6 NYCRR § 422.2(c)(3)(v)(b).

A simple calculation shows that the dissolution effects on the small pillars are likely to be significant. Assuming 30 gpm (16,000,000 gal per year) of shaft leakage is disposed in the S3 Zone, a 4% difference to full brine saturation (26% minus 22%) indicates potential yearly dissolution of ~630,000 gal (or ~84,000 cubic ft) of salt. Assuming small pillar dimensions of 18’x20’x12’, a single pillar volume would be ~4,300 cubic ft. It follows that the leakage would be capable of dissolving an equivalent of ~20 small pillars per year.[[3]](#footnote-3)

Notably, Cargill’s proposal to store under-saturated brines is also inconsistent with Cargill’s existing Mining Plan, which addresses subsurface disposal of runoff within the Level 4 workings. There, Cargill states that “runoff is conditioned to *maximize its saturation*” before disposal.[[4]](#footnote-4) Maximizing its saturation means fully saturated. Accordingly, the Permit must require that brines will be treated to full saturation levels before storage in the S3 Zone.

Cargill has also failed to identify measures for monitoring and treating the subsurface water inflows for hazardous constituents besides salt that may pose a risk of pollution, instability, property damage, etc. Cargill is not simply proposing the disposal of salty water beneath the subsurface. The waters are in all likelihood contaminated with other regulated pollutants. Cargill’s existing Mining Plan states that those waters that are “not treated for discharge to the outfalls *or with treatment still cannot meet SPDES permit standards* is discharged to the subsurface for disposal.”[[5]](#footnote-5) Again, treatment for safe subsurface disposal is *mandatory* under 6 NYCRR § 422.2(c)(3)(v)(b), and therefore, these waters must be monitored and treated for other constituents. Further, Cargill should be made to demonstrate that any waters that cannot be adequately treated for surface disposal in compliance with Cargill’s SPDES permit are nevertheless safe for subsurface disposal beneath Cayuga Lake.

* + 1. **In violation of its current Mining Plan, and in contrast to historical practice, Cargill will not be able to monitor the stability of the S3 Zone after it is flooded.**

Under the Mining Law’s regulations, a Mining Plan must include methods “for preventing pollution…and minimizing the effect of mining on the people of the State.” 6 NYCRR § 422.2(c)(4). In its existing Mining Plan, Cargill commits to several critical practices to “minimize the potential for groundwater impacts associated with the operation of the Cargill Mine,” including especially monitoring mine closure rates, subsidence amounts, and microseismic events throughout the mine “to ensure that the mine remains stable.”[[6]](#footnote-6) Cargill has, for example, stated in support of its Application that “convergence data is extensively monitored throughout the mine.”[[7]](#footnote-7)

This statement will not be accurate, however, as it relates to the S3 Zone that Cargill proposes to flood. Cargill has admitted that it “is not aware of any practical methods to maintain active monitoring stations within the inundated area” to be flooded as proposed.[[8]](#footnote-8) Cargill’s Application is therefore inconsistent with its existing Mining Plan, and it has failed to describe the measures it will use to prevent the risk of groundwater pollution in the S3 Zone proposed to be flooded in accordance with 6 NYCRR § 422.2(c)(4).

In its Negative Declaration, DEC states that DEC and its outside consultant Boyd regularly monitor closure rates and subsidence data in the 4-Level storage area where Cargill disposed of waste brine until February 2023. This is “required,” DEC states, because “the natural movement of unmined rock salt within the mineral deposit will eventually cause mine openings to close. The rate of closure is monitored via convergence stations and surface subsidence data by LIDAR.” Notably, continued monitoring is possible in the 4-Level storage area because the brine is stored in ponds, not to the ceiling as is proposed in the S3 Zone after it is flooded.

Accordingly, the proposed subsurface disposal in the S3 Zone is not consistent with Cargill’s existing mining operations, which call for active monitoring throughout all areas of the Mine. If it is not possible to monitor the stability of the S3 Zone long-term, the Permit must require Cargill to take necessary measures to minimize the potential for groundwater pollution and mine instability, including evaluating whether an alternative disposal option is appropriate to eliminate any long-term risks to groundwater resources. The long-term stability of the Mine should take precedence over the selection of the most convenient waste disposal solution.

* + 1. **Cargill has not identified any measures for reducing inflows into the Mine to reduce the need for additional subsurface disposal capacity.**

Leakage of waters from Shaft 1 into the Mine has increased significantly over the past two decades, which has correspondingly increased the need for additional waste disposal areas in the Mine. In 2015-16, Cargill performed grouting work in Shaft 1 that appeared to have reduced the rates for a time but they have once again increased.

In its Annual Report to DEC for 2011, Cargill informed the DEC that it planned to install piping in Shaft 1 for pumping shaft leakage waters to the surface. In its Annual Report to DEC for 2013, Cargill informed the DEC that the requisite piping for pumping Shaft No. 1 leakage waters to the surface was operational and being “optimized.” However, subsequent Annual Reports never mention this pumping system again despite Shaft 1 leakage making of the bulk[[9]](#footnote-9) of water inflows into the mine from then until the present. We do not know why Cargill abandoned this option which would have likely reduced the need for the flooding of the S3 Zone.

In any event, in accordance with § 422.2(c)(4), Cargill must be required under any Permit to identify measures to minimize leakage waters necessitating disposal, including in Shaft 1. Unnecessary shaft leakage requires either more surface discharges if the waters are pumped to the surface or more subsurface disposal capacity, which necessitated the need for Cargill’s current Application. Both increase the potential for pollution to surface or groundwater resources and potentially harm the people of the State in violation of DEC’s Mining Law regulations. Further, Cargill used the current inflow rate as the basis for their projection of future inflow. They assume inflow stabilization at the current level, but the inflow will likely be greater in the future. The Permit must therefore include conditions that require Cargill to minimize the need for any waste disposal.

* 1. **Cargill’s current Reclamation Plan and Reclamation Bond do not satisfy DEC’s Mining Law regulations and must be revised and supplemented.**

Under DEC’s Mining Law regulations, the goal of any Reclamation Plan is to restore any lands affected by mining “to a condition or physical state which is similar to and compatible with that which existed prior to any mining or which encourages the future productive use of the land.” 6 NYCRR § 422.3(b). Reclamation “shall” include, among other things, “disposal of refuse or soil,” and “proposals for the prevention of pollution, the protection of the environment … and the protection of the property, health, safety and general welfare of the people of the State.” *Id.*

Cargill’s existing Reclamation Plan was last amended in 2002. There are several material developments that have occurred in the intervening 22 years that necessitate renewed and exacting scrutiny of Cargill’s Reclamation Plan for current compliance with the law, including the following:

* Cargill’s new proposed flooding of the S3 Zone with waste from mining operations beneath Cayuga Lake represents a significant, new permanent waste disposal and resource management decision;
* Cargill recently explored a possible sale of the Mine, as it reportedly hired Deutsche Bank, which calls into question its commitment and accountability for long-term best practices and full reclamation of the Mine;
* DEC is now responsible for implementing the Climate Leadership and Community Protection Act (“CLCPA”), and Cargill’s decision to flood portions of the Mine forecloses the use of these areas of the Mine for more beneficial uses, such as carbon sequestration; and
* DEC is now subject to a constitutional obligation to ensure that each person in the State, including those who rely upon Cayuga Lake for drinking water, recreation, and fishing, and other uses, has access to “clean air and water, and a healthful environment,” N.Y. State Const. Art. I, § 19.

DEC must therefore ensure that Cargill’s existing Reclamation Plan complies with the Mining Law and is consistent with the activities Cargill proposes in its Application.

* + 1. **Cargill limited the scope of its Reclamation Plan to surface activities based upon an inaccurate reading of the Mining Law.**

Cargill’s Reclamation Plan claims that “[t]he New York State Mined Land Reclamation Law (MLRL) does not regulate or require the reclamation of the subsurface workings of underground mines.”[[10]](#footnote-10) This is not an accurate statement of the law. Nothing in the Mining Law excludes from regulation underground mining or underground reclamation activities. Under the Mining Law, a permittee must prepare a Reclamation Plan identifying its proposed methods for reclaiming “land affected by mining,” which includes surface lands as well as “*land under water*,” such as those subsurface lands beneath Cayuga Lake at issue in the current Application. *See* ECL § 23-2705(2) (emphasis added). The phrase “land under water” is also used in the Public Lands Law § 75 to describe those State-owned lands that may be granted or leased by the Office of General Services (“OGS”), including that “parcel of land under Cayuga Lake” granted to Cargill.[[11]](#footnote-11) If the phrase “land under water” did not include the areas of the Mine beneath Cayuga Lake, then Cargill would not have a right to lease such lands from OGS in the first place, which cannot possibly be Cargill’s position.

Further, the phrase “affected by mining” contemplates a broad consideration of both direct and indirect impacts to surface lands or waters from mining activities. A Reclamation Plan must therefore also address any subsurface mining activities that, for one reason or another, may “affect” surface lands or surface waters after mining is completed. This reading is confirmed by DEC’s Mining Law regulations. There, DEC states that “[a]ny cut or excavation within the permit area, whether it is for the purpose of gaining access to a mineral, mining a mineral, or of transporting a mineral shall be considered to affect the reclamation plan….Shafts, drifts, adits, tunnels, lifts, and inclines shall be considered types of cuts and excavations.” 6 NYCRR § 422.2(c)(3)(ii).

Accordingly, Cargill must be made to supplement its existing Reclamation Plan to address any subsurface mining activities that may affect surface lands or waters, or which affect lands under waters like those beneath Cayuga Lake, including subsidence.

There is no denying that, when rock is removed from the subsurface through mining, the ground surface naturally subsides. And yet, Cargill has not addressed in its Reclamation Plan the potential range of impacts associated with subsidence from its mining activities performed under Cayuga Lake, including those associated with the present Application. Specifically, Cargill has not addressed in its Reclamation Plan the potential for subsidence to open pathways in the layers of rock above the Mine that could result in new hydraulic connections between the Mine and Lake.

The potential environmental harms associated with subsidence are magnified by Cargill’s present proposal to dispose brine beneath the Lake. The permanent flooding of mine cavities under the Lake with under-saturated brine elevates the risk of catastrophic mine collapse leading to a large and rapid hydraulic connection between the Mine and the Lake. Geohydrologist Andrew Michalski, PhD, believes that a catastrophic mine collapse anywhere in the Mine under the lake could result in both building and infrastructure damage caused by flood plain subsidence that would occur when and if the aquifer under the City of Ithaca were rapidly dewatered as it might be during a catastrophic Mine collapse. The 1994 Retsof Mine caused measurable subsidence nearly four miles from the collapse zone.[[12]](#footnote-12)

Cargill should therefore be required to update its Reclamation Plan with information and analysis about the larger potential impacts of subsidence to both surface lands and surface waters under which mining is occurring.

* + 1. **Cargill must confirm whether the waste proposed to be stored in the S3 Zone will be disposed offsite during reclamation or left there permanently.**

In its current Reclamation Plan, Cargill states that, “[p]rior to final closure of the shafts, Cargill will remove any remaining fuels, oils, solvents, blasting agents and any other potential liquid pollutants from the mine.”[[13]](#footnote-13) This appears to mean that Cargill intends to eventually remove any wastewaters deposited into the S3 Zone at the time of reclamation, but DEC must confirm that this is the case before taking further action on the Application. *See Guptill*, 140 A.D.2d at 18 (stating that reclamation necessarily involves review of the permittee’s long-term plans).

To the extent that Cargill intends to permanently store subsurface wastes post-reclamation, before DEC takes any further action on the Application, Cargill must be directed to evaluate the impact of this revised reclamation proposal on the potential for groundwater pollution, mine stability, and the overall impact on the people of this State, in accordance with § 422.3(b). Further, all Reclamation Plans must undertake “[e]very reasonable effort … to minimize the disturbance of the prevailing hydrologic balance at and adjacent to the mine.” 6 NYCRR § 422.3(d)(2)(iii). Before the Permit is issued, Cargill must be made to demonstrate that the permanent disposal of wastewaters in the flooded portions of the S3 Zone aligns with this mandatory requirement for Reclamation Plans.

* + 1. **Cargill must be required to post additional security as a condition of any renewed or modified Permit.**

Under the Mining Law and its regulations, an applicant for a permit “shall furnish a reclamation bond … which is conditioned upon conformance with the applicant's mined land-use plan.” 6 NYCRR § 423.1(a). DEC is responsible for setting the amount of the bond, which is to be determined based upon the following factors:

* the type of mine;
* the number of acres of affected land;
* the geographic location of the mine;
* the proposed land-use objective and basic reclamation requirements;
* the length of the permit period;
* the proposed method and schedule of reclamation; and
* other criteria which may be considered relevant to the estimate.

6 NYCRR § 423.1(c).

 Under Cargill’s current permit, the bond is only $3.5 million. This amount does not appear to have been derived based on a consideration of each of the requisite factors enumerated above. Rather, the current permit states that this amount is only for “purposes of reclamation of all affected surface areas within the mine and proper closure of all shafts,” without factoring in subsurface closure or the long-term environmental risks associated with Cargill’s mining activities, including the permanent subsurface disposal of wastes or the long-term risks associated with subsidence.

In this case, the geographic location of the mine, the schedule of reclamation, and the basic reclamation requirements (including the protection of the environment and general welfare of the public) necessitate a significant increase to the amount of Cargill’s Reclamation Bond. A substantial portion of Cargill’s mining activities are occurring beneath Cayuga Lake on State-owned lands. The permanent flooding of mine cavities under the Lake with under-saturated brine elevates the risk of long-term salinity impacts on Cayuga Lake by increasing the erosion of small yielding pillars, abutment walls, and notches such that catastrophic mine collapse becomes more likely. Further, the mine voids of the Mine may take as long as 500 years to close, meaning that the subsidence impacts of the Mine on Cayuga Lake and its shoreline may not be fully discernable until well into the future. Cargill should be required to post adequate security to protect the people of the State against any long-term harm to the Lake from the Mine’s closure.

We therefore request that the bond be increased to $10 billion.

1. **The Negative Declaration must be rescinded and an Environmental Impact Statement prepared.**

Before taking further action on the Permit, DEC must also require the preparation of an Environmental Impact Statement under SEQR. DEC has correctly acknowledged that Cargill’s proposed activities are a Type I action under SEQR. A Type I action under SEQR is one that is presumed to require the preparation of an Environmental Impact Statement, and which is likely to result in one or more significant adverse environmental impacts. 6 NYCRR § 617.4. “It is well settled that, where a Type I action is involved, there is a relatively low threshold that must be met to require the issuance of a positive declaration under SEQR.” *Scenic Hudson, Inc. v. Town of Fishkill Town Board*, 258 A.D.2d 654, 656 (2d Dept. 1999).

SEQR is “designed to protect the environment by requiring parties to identify possible environmental changes before they have reached ecological points of no return.” *Meschi v. NYSDEC*, 114 Misc. 2d 877, 878 (Alb. Cnty. Supr. Ct. 1982) (internal citation and quotation marks omitted). To require an Environmental Impact Statement, the lead agency need determine only “that the action may include the potential for at least one significant environmental effect.” 6 NYCRR § 617.7(a)(1). “[T]he key word” in this analysis “is the word ‘*may*.’ At issue is not whether the project *will* have a significant effect on the environment…” *Meschi*, 114 Misc.2d at 878 (cleaned up).

Although DEC has already issued a Negative Declaration, finding that the action would not result in one or more significant adverse environmental impacts, the agency “must” rescind a Negative Declaration at any time prior to its underlying decision on Cargill’s Application if any one of the following is found to occur:

1. *Changes are proposed for the project;*
2. *New information is discovered; or*
3. *Changes in circumstances related to the project arise…*

*…that were not previously considered and the agency determines that a significant adverse environmental consequence may arise.*  6 NYCRR § 617.7(f).

 For this Application, DEC did not solicit public input or comment before issuing the Negative Declaration. Therefore, the agency will be faced with new information in these and others’ public comments on the Application that it had not previously considered. If, based on any of this new information, the agency determines that a significant adverse environmental consequence may arise, then the Negative Declaration must be rescinded and an Environmental Impact Statement prepared.

1. **The preparation of an Environmental Impact Statement for Cargill’s activities at the Mine is long overdue and necessitated by this proposed major permit modification and renewal.**

As discussed above, a request for a major modification to a permit is subject to the same requirements as a completed application for a new permit. In *Guptill*, the Third Department stated that this requirement “includes, where appropriate, the filing of an environmental impact statement” in accordance with SEQR. 140 A.D.2d at 20.

“Environmental Impact Statements are commonly prepared for mining projects,” including by DEC as lead agency. 1 Envtl. Impact Review in N.Y. § 4.13 (collecting cases). In *Demers v. N.Y. State Dep’t of Envtl. Cons.*, for example, DEC had issued a positive declaration as lead agency relating to the proposed expansion of mining operations on two parcels contiguous to an ongoing mine. 3 A.D.3d 744 (3d Dept. 2004). Similarly, in *Ten Mile River Holding, Ltd. v. Jorling*, DEC issued a positive declaration in connection with the proposed resumption of a previously permitted sand and gravel mine. 150 A.D.2d 927 (3d Dept. 1989). More recently, DEC Region 7 issued a positive declaration for the proposed Cortlandville Sand and Gravel Mine in 2021. DEC has also issued two Positive Declarations under SEQR for the other room and pillar salt mine in New York, American Rock Salt’s Hampton Corners Salt Mine in Livingston County. One was required prior to the mine receiving its mining permit and the second when American Rock Salt proposed expanding the footprint of the mine toward the west. Cargill, meanwhile, has never been required to prepare an Environmental Impact Statement in connection with its activities at the Mine.

Under both the Mining Law and SEQR, it is “entirely consistent” to require “comprehensive review of the cumulative effect, over time, of the incremental steps of the progressive exploitation of mining property subsumed in the periodic permit renewal process of [the Mining Law].” *Guptill*, 140 A.D.2d at 18. The “very concept of ‘reclamation,’” after all, “assumes review of the long-term plans for the exploitation of mining property” in terms of “conservation and protection of the environment.” *Id.* at 18.

With these principles in mind, Cargill’s Application for renewal and major modification of the Permit necessitates the preparation of an Environmental Impact Statement for the reasons that follow. The Negative Declaration must therefore be rescinded.

1. **The potential magnitude and location of environmental harm associated with mine instability beneath the S3 Zone under Cayuga Lake necessitates an Environmental Impact Statement.**

Under SEQR, in determining the “significance” of a potential environmental harm, context is everything. *Meschi*, 114 Misc. 2d at 878 (stating that it was the sensitive location of a new proposed transfer station that necessitated the preparation of an environmental impact statement). A potentially catastrophic event with a low probability of occurrence may necessitate the preparation of an Environmental Impact Statement depending on its potential magnitude, setting, irreversibility, geographic scope, and the number of people potentially affected. *See* 6 NYCRR § 617.7(c)(3).

A mine collapse in the S3 Zone would occur under the Lake. The consequences of a mine collapse and subsequent flooding of the salt mine would be catastrophic. Even a minor roof collapse in this area could lead to a rubble chimney, creating a hydraulic connection between the Mine and Cayuga Lake. Such an event would threaten the drinking supply for more than 100,000 people as the water would become more saline, potentially indefinitely. A similar event occurred when Lake Peigneur flooded a salt mine in 1980. Lake Peigneur’s water has been too saline to drink since the event occurred.

Had DEC required an EIS prior to allowing Cargill to begin extending the 6-level mine under Cayuga Lake in the early 1980s using small yielding pillar technology, that EIS might have concluded that small-yielding pillar technology, which is a lucrative mining technology with an extraction ratio of about 90%, is singularly inappropriate in a center of the valley location under a large lake. The Retsof Salt Mine–then the largest salt mine in North America–collapsed in 1994 at precisely the location where mining consultant Gary Petersen was trying to implement small yield pillar technology at a center-of-the-valley location in the Retsof Mine. In 2017, Mr. Petersen reportedly wrote to Cargill “that water from the Oriskany Formation has moved down linears and is increasing closure rates in the U12 and U40B panels [of Cayuga Mine]. This flow was due to the destressing caused by a yielding production pillar.” An EIS is urgently needed to determine whether the mysterious “other inflows” that Cargill has reported for the past five years include waters from the Oriskany Formation and whether this problem could have been avoided by the use of the lower-yielding Large Pillar Technology.

DEC attempts to minimize the risk and harm associated with subsurface brine storage in its Negative Declaration with reference to the fact that Cargill has engaged in subsurface brine storage previously. However, we understand that the current 4-level storage/disposal areas are under land. We are aware that, during the construction of Shaft No. 4, Cargill converted the west ends of mining panels U58 and U60 in the 6-level mine for the temporary storage of process waters associated with the upboring of Shaft 4. The capacity of the base pond—which included a cutout between the two panels—was reportedly 5.5M gallons, but with possible expansion to the east to a maximum capacity of 29.5M gallons.

DEC did not require any modification of Cargill’s mining permit due to the understanding that these ponds would be temporary in nature. To our knowledge, neither Cargill nor Boyd has ever mentioned these ponds in an annual report to the DEC. To the extent that there are or have been storage areas under the Lake, we question whether this has been previously disclosed by Cargill to DEC, and whether the activity is authorized. Further, as noted above, the 4-level storage areas are ponds, which allow for continued stability monitoring in those areas of the Mine. The new proposed disposal area, however, will be completely flooded, and it will also be located completely beneath Cayuga Lake, which magnifies the potential environmental harm associated with this activity exponentially, necessitating the preparation of an Environmental Impact Statement.

1. **Cargill’s modeling of rock stability upon which DEC relied is inadequate and incomplete because it failed to consider the potential impacts of pore water within the rock above the mine.**

DEC stated in its Negative Declaration that Cargill hired several consultants to evaluate geotechnical conditions associated with flooding the S3 Zone, including Agapito Associates, Inc., a firm with no reported prior experience at Cayuga Salt Mine. However, Agapito acknowledged in its report on mine stability that it was “not familiar with the hydrogeology of the Cayuga Mine, and details of hydraulic potential and its implications were beyond the scope of [its] study.” Based on a close technical evaluation of Agapito’s work, it appears that Agapito failed to account for the presence, variability, and effects of pore water within the many hundreds of feet of rock above the Mine. The presence of pore water has a substantial influence on rock properties. The Agapito report and modeling must therefore be supplemented and updated to account for the influence of pore water as part of an Environmental Impact Statement.

1. **DEC omitted reference to critical findings on mine instability identified by Cargill’s former consultant.**

Before retaining Agapito, Cargill initially relied upon another one of its consultants, RESPEC,--which has more than 20 years experience at Cayuga Salt Mine–to perform a mine stability analysis but neither RESPEC nor its stability analysis is referenced in DEC’s Negative Declaration. While RESPEC’s written analysis has never been made publicly available, its findings have been referenced in summaries and reports prepared by DEC’s outside consultant, Boyd. According to these excerpts, RESPEC identified serious concerns about the roof stability in the S3 Zone that must be evaluated as part of an Environmental Impact Statement. Specifically, RESPEC opined that flooding would cause the *first 15 feet of claystone roof rock over the S3 Zone to* *lose 95% of its strength*.[[14]](#footnote-14) RESPEC’s written findings and report have never been made publicly available, apparently because Cargill replaced RESPEC with Agapito, who performed the incomplete stability analysis addressed above.

Under SEQR, “[t]he lead agency must have sufficient information to show that the impact will not be significant at the time it makes its negative declaration.” *O’Donnell v. Town Bd. Of Amherst*, 171 Misc.2d 968, 974 (Erie Cnty. Supr. Ct. 1997) (quoting SEQR Handbook at 45 (1992 Ed.)). Here, it does not appear that Cargill made RESPEC’s analysis available to DEC, nor is RESPEC’s analysis referenced in DEC’s Negative Declaration. If DEC did not have the opportunity to review RESPEC’s analysis, then the agency was not able to reach an informed decision regarding the potential for mine instability from flooding the S3 Zone. While a lead agency is encouraged to consider the opinions of outside experts, a lead agency must ultimately “exercise[] its own judgment in determining whether a particular circumstance adversely impacts the environment.” *Matter of Boise v. City of Plattsburgh*, 219 A.D.3d 1050, (3d Dept 2023); *see also Coca-Cola Bottling Co. v. Board of Estimate*, 72 N.Y.2d 674, 683 (N.Y. 1988) (“[T]he final [SEQR] determination” “must remain with the lead agency.”)

Relatedly, the public has also been deprived of the opportunity to participate in the SEQR process because neither RESPEC’s analysis nor the complete Agapito report upon which DEC claims to have relied have been made publicly available. “[O]pportunity for public participation and engagement is an essential and mandatory part of the SEQRA process.” *Matter of Boise*, 291 A.D.3d at 1057 (quoting *Matter of Friends of P.S. 163, Inc. v. Jewish Home Lifecare, Manhattan*, 30 NY3d at 426). In *Matter of Boise*, for example, the court would not allow the agency to rely upon a safety plan that had not been made available for public review as part of the agency’s SEQR determination. The court explained that the “public will not be able to comment on whether [the safety plan] is appropriate” and it is therefore “shielded from public scrutiny,” contrary to the purposes of SEQRA. *Id.* Similarly, Cargill has so far completely “shielded from public scrutiny” RESPEC’s troubling analysis, as well as various redacted portions of the Agapito report. Both studies need to be made available to the public in non-redacted form for public digestion and input as mandated by SEQR for the Negative Declaration to ultimately withstand judicial scrutiny.

1. **Cargill does not propose to “maximize the saturation of chloride before being stored in the S3 mains,” as claimed in the Negative Declaration.**

As described above, fully saturated brine is about 26.6% salt, and yet Cargill is proposing to flood the S3 Zone of the mine with brine that would be between 22% and 26% salt. This is inconsistent with Cargill’s commitment in its Mining Plan to “maximize” the salt saturation in stored waters. The storage of under-saturated brines will dissolve salt in the S3 Zone and reduce the area’s stability, creating the risk of a major collapse with potential significant adverse environmental impacts on Cayuga Lake. DEC must therefore require an Environmental Impact Statement to assess the potential impacts of storing under-saturated brines in the S3 Zone as Cargill proposes in the Application.

1. **DEC did not address in the Negative Declaration the fact that the S3 Zone previously experienced “non-routine” microseismic events before it had been abandoned.**

In 2011, Cargill suspended mining in the S3 Zone because at least 24 “pops” were heard by miners in the area. A short period after, Cargill ceased mining in the S3 Zone permanently. “Pops,” which are also known as acoustic emissions, are associated with stick-slip rock movement. There is no discussion in the Negative Declaration of this previously detected risk factor in the S3 Zone. If the area was no longer deemed safe to mine, DEC must evaluate how the area is nevertheless sufficiently safe for flooding with brine as part of an Environmental Impact Statement. DEC should require public disclosure of the circumstances and data surrounding the seismic events and a vetting of the associated risks and dangers.

1. **DEC did not coordinate or consult with the Town of Ulysses, which should have been identified as an “involved agency” during the coordinated SEQR Review.**

In its Negative Declaration, DEC states that the Application “would not impact local land use,” but this is incorrect. The proposed brine disposal activities in the S3 Zone will occur beneath Cayuga Lake in an area within the Town of Ulysses’s Lake Shore Zone (“LS”). The Town Code specifies that the Town’s zoning boundaries extend to the center line of any applicable waterbody, here Cayuga Lake. Town Code § 212-11(D).

The Mining Law expressly permits municipalities to enact or enforce local zoning ordinances to determine permissible uses in zoning districts. Mining Law § 23-2703(2)(b). Here, under the Town of Ulysses Code, “[a]ny use not specifically set forth as a permitted use in any zone shall be expressly prohibited in that zone.” Town Code § 212-2(B). The conversion of the S3 Zone of the mine from a mining use to brine disposal use constitutes a new, non-conforming use, and therefore requires a variance from the Town’s Zoning Board of Appeals. This is a concern of several residents in the Town of Ulysses who have signed a petition asking the Town to rule upon their request that the Town’s LS zone be enforced.

Neither mining, nor brine storage or flooding are permitted in the LS zone as of right, as an accessory use, or by special permit. Town Code §§ 212-43 to -46. Accordingly, before Cargill engages in any brine disposal beneath this portion of the Lake, it must first apply for and obtain a use variance from the Town of Ulysses.

The Town of Ulysses should have therefore been identified as an involved agency and allowed to participate in the designation of the lead agency for the proposed action. Under 6 NYCRR § 617.6(b)(3)(i), in a coordinated SEQR review, whenever an agency proposes to approve a Type I action (as was the case here), the agency must provide notice to “all involved agencies” before a lead agency may be designated. DEC was responsible in this case for conducting due diligence to identify any other potentially involved agencies, 6 NYCRR § 617.6(b)(3)(iii), but that does not appear to have occurred in this case as it relates to the Town of Ulysses. This fact alone is sufficient to necessitate rescindment of the Negative Declaration.

1. **An Adjudicatory Hearing must be held, or at a minimum a public comment hearing, before DEC takes further action on the Application.**

Under DEC’s Uniform Procedure Act regulations, an adjudicatory hearing “shall” be held when public comments “raise substantive and significant issues relating to the application, and resolution of any such issue may result in denial of the permit application, or the imposition of significant conditions thereon.” 6 NYCRR § 621.8.

As described above, and incorporated herein, there are numerous substantive and significant issues raised by the Application that must be resolved in an adjudicatory hearing, and which may result in the denial of the Permit or the imposition of significant conditions, including but not limited to the following:

* The likelihood and potential consequences of catastrophic global mine or local mine instability associated with flooding the S3 Zone, including the adequacy of Cargill’s stability analyses;
* The proposal to store under-saturated brines in the S3 Zone in violation of DEC’s Mining Law regulations and the current Mining Plan;
* The potential long-term consequences associated with modifying Cargill’s Reclamation Plan to allow for the permanent flooding of portions of the Mine with brine;
* Cargill’s inability to monitor the stability of the flooded portions of the S3 Zone after inundation in violation of the Mining Law regulations and the current Mining Plan;
* The inadequacy of Cargill’s Reclamation Plan and Reclamation Bond relative to DEC’s Mining Law regulations;
* The source, volume, increasing rate, and chemistry of the Mine’s water inflows that contribute to the need for subsurface disposal and necessary measures to reduce said inflows; and
* The extent to which safer and less risky alternatives exist for the disposal of subsurface inflow waters.

Finally, if DEC nevertheless decides that an adjudicatory hearing need not be held, at a minimum, a public comment hearing must be held. Whether a public comment hearing is needed is based solely only upon whether there is “a significant degree of public interest” regarding a permit application for a major project. 6 NYCRR § 621.8(c)(1). In this case, there has been extensive public interest shown in this application by concerned citizens and environmental groups, concerned members of the public, and many interested local officials and municipalities. DEC cannot take further action on the Application until a public hearing is held.

1. DEC’s Negative Declaration. [↑](#footnote-ref-1)
2. Cargill’s April 2024 Response to Boyd’s Comments, Page 2. [↑](#footnote-ref-2)
3. Alternatively, if pillars are 11’ high, a single pillar volume would be ~3,960 cubic ft and the leakage would be capable of dissolving an equivalent of ~21 small pillars per year. According to a 2011 Cargill mining plan, Panel E9, which would be part of the first-flooded portion of the S3 zone, contains 62 small yielding pillars. Assuming a brine under-saturation value at 4.6% (26.6% - 22%) and a flooding/discharge rate of 30 gpm, one gets a potential dissolution of 1.4 gallons (14 pounds) of salt per minute, or approximately 2,000 pounds of salt per day. [↑](#footnote-ref-3)
4. Cargill Cayuga Mined Land Use Plan (“Mined Land Use Plan”) at 74 (emphasis added). [↑](#footnote-ref-4)
5. Mined Land Use Plan at 71 (emphasis added). [↑](#footnote-ref-5)
6. Mined Land Use Plan at 73. [↑](#footnote-ref-6)
7. Cayuga Mine S3 Monitoring Plan, June 13, 2023, at 3. [↑](#footnote-ref-7)
8. Cargill Response to Boyd Comments, May 2, 2024. [↑](#footnote-ref-8)
9. Between 16 and 30 gpm for the period 2013 to 2023 which amounts to 8.4M gallons to 15.8M gallons per year. [↑](#footnote-ref-9)
10. Mined Land Use Plan at 78. [↑](#footnote-ref-10)
11. Consent Order dated Dec. 19, 1994 between Cargill and OGS. [↑](#footnote-ref-11)
12. Yager, Richard. 2013. Environmental consequences of the Retsof Salt Mine roof collapse. USGS. p.2.

https://doi.org/10.3133/ofr20131174 [↑](#footnote-ref-12)
13. Mined Land Use Plan at 78. [↑](#footnote-ref-13)
14. Revised Planned S3 Submain Sump, Boyd (Aug. 2023) at pg. 5. [↑](#footnote-ref-14)