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Trumansburg, New York 14886  
November 30, 2016

Joseph M Dlugolenski  
NYSDEC Region 7 Cortland Sub-Office  
1285 Fisher Ave  
Cortland, NY 13045

Re: DEC Application ID#0-9999-00075/00001 (Cargill Mine Shaft #4)

Dear Mr. Dlugolenski:

I write regarding Cargill's proposed Mine Shaft #4 project to urge DEC to require a Draft Environmental Impact Study (DEIS), obtain and publish the additional information necessary to determine safety, and hold a public hearing.

I also urge DEC to rescind its 2015 negative declaration on Cargill's application to mine the 150.03-acre access mine passage to the proposed Mine Shaft #4 location because of Cargill's improper segmentation of the two project permit applications, and urge DEC to require a permit application, DEIS and public hearing for the entire project.

Notwithstanding DEC's recent two negative declarations on the improperly segmented project, there are substantive and significant environmental issues concerning both the sub-surface and surface parts of this project that, if confirmed, could lead DEC to deny or impose significant conditions on either or both permits for this project. The matters forming the base of my opposition to DEC's negative declarations, and the specific grounds that could lead DEC to rescind its negative declarations and either deny or impose significant conditions on the project, are summarized below.

**(1) Possible Salinization of Cayuga Lake**

Dr. John Warren, an independent expert on salt geology, has noted the poor documentation on the highly-fractured rock around the Mine Shaft #4 location. He is concerned that in reaming the hole for Mine Shaft #4, Cargill could establish an unintended connection between an aquifer beneath Cayuga Lake and the mine itself (see attached).

Dr. Warren's concern is not merely theoretical. In 1994, portions of the Akzo-Nobel rock salt mine in Livingston County ("the Retsof mine"), the largest salt mine in the U.S., located in similar bedded-plane geology, collapsed due to unanticipated weaknesses in the overlying rock layers. The collapse led to

flooding of the entire mine by the local aquifer and up to a 70-foot ground subsidence that damaged roads, bridges, houses, and farmland. Subsequently the local aquifer--now in communication with the salt layers--became salinized and non-potable. Uncontrolled water leakage on a smaller scale into the Himrod salt mine on Seneca Lake, also located in similar bedded plane geology, led to brine contamination and mine closure in the mid-1970s.

In 1995, legislative hearings on the Akzo-Nobel disaster raised concern that a failure could occur in Cargill's salt mine under Cayuga Lake because of similar geology and mining techniques. Assemblyman Martin Luster stated in those hearings, "I have no desire to have, in my district, what might become the world's third largest in-land body of salt water."

Of course, what Mr. Luster meant was that if the same sort of connection that caused the Retsof mine to flood (or the Himrod mine to leak) occurs in the remaining of Mine Shaft 4, mine flooding could eventually lead to gradual or sudden subsidence of the lake bed and/or communications between the flooded mine and Cayuga Lake, leading to the sort of salinization as has happened at Retsof.

This time, however, it would be lake salinization, not aquifer salinization. And because the deepest aquifer between the mine and Cayuga Lake is already salinized, in such a case Cayuga Lake's safety margin would be even less. Examples from Dr. Warren's report suggest that the worst-case scenario resulting from such subsidence and brine discharge into the lake could be a geologically unstable shoreline, the sinking of roads and buildings, the death of aquatic life, and non-potable lake water.

Even if the likelihood of such a water connection is very low, the possibly dire consequences make this a significant and substantive concern. It is therefore absolutely necessary to obtain the information Dr. Warren recommends, present it in a DEIS, and hold a public hearing on these concerns before proceeding with the project.

## **(2) Water storage**

Cargill states it plans to store all the water that leaks from the mineshaft in the mine itself. However, if the volume of water is larger than anticipated and challenges the mine's water storage capacity, as happened at Retsof, under-saturated brine could well erode mine support pillars and jeopardize mine safety--especially if a fire, explosion, earthquake, or pipe or dam failure occurs. Furthermore, the presence of fluid storage areas within the mine raises ambient humidity levels, increasing rates of salt creep, pillar yield and room closure, which can lead to ceiling collapse and progressive collapse of rock layers

between the mine and any bodies of water located above the mine. These significant and substantive concerns merit a DEIS and public hearing.

### **(3) Greenhouse Gases**

Based on the amount of natural gas encountered in Cargill's test hole, as much as 4.85 million cubic feet of natural gas could be released during the year or more required to ream and seal the Mine shaft #4. DEC's negative declaration makes no mention of climate change impacts, and gives the erroneous impression that methane leaking from the Shaft 4 might actually be contained within the mine when in fact it will be vented to the atmosphere within days. The public deserves to hear what the effects of that natural gas leakage will be. Because this constitutes a potentially significant and substantive environmental impact, a DEIS and public hearing should be required.

### **(3) Viewshed**

DEC's negative declaration states that "photo simulations" from Taughannock Park and from Frontenac Point indicate that the planned 93'-high shaft building and two other buildings were either "obstructed from view by vegetation or topography or were barely discernible." No mention is made as to whether the photo simulation was done in summer or winter. However, an independent leaf-off season viewshed map (attached) indicates that the tower will be visible from at least three miles of Cayuga Lake's west shoreline in Tompkins County, and from at least 2.5 miles of west shoreline in Seneca County. To the best of my knowledge, no Seneca County landowners have yet been notified about this impact on their views.

Furthermore, the nine-story shaft building would be located within a quarter of a mile of Route 34B. It is probable that the top seven stories will be visible from Route 34B and from large areas of the lake, completely changing the ambience of this scenic rural landscape. In our environmentally conscious communities this change would be a significant and substantive concern. The affected public in neighboring counties should therefore be notified, and all should have the opportunity to comment on this issue in a public hearing.

### **(4) Industrialization Potential**

The land on either side of Route 34B north of Salmon Creek is zoned agricultural/residential and currently has little hint of industrial activity. Should Cargill subsequently apply to expand its permit, much of their salt removal and processing at Portland Point could be moved to this site. Cargill's facility on Portland Point is already one of the two least-attractive frontages on Cayuga Lake's 85+ mile circumference. To place a similar facility directly across from the New York State Park at Taughannock Falls would be a major environmental

impact. The public deserves to know that such further industrialization could be made much easier by this project.

To be sure, Cargill has not yet indicated any intention to engage in salt removal and processing at the proposed Mine Shaft #4 site. But as the DEC has already learned, Cargill's expressed intentions regarding the Mine Shaft #4 project cannot be trusted (see "improper segmentation," below.)

### **(5) Improper Segmentation**

The DEC and the public were badly misled by Cargill in its application to mine the 150 additional acres necessary to reach the subsurface location where Mine Shaft #4 is now proposed. DEC's Environmental Notice Bulletin for 4/8/15 states, "The reviewed Life of Mine (LOM) expansion area is 150.3 acres, and there are no other proposed changes to the currently permitted operation. All activities associated with this modification will take place underground, and **there will be no additional surface development associated with this proposal**" (emphasis added).

Yet the mining of a two-mile passage southeastward through that 150.3 acre extension is the necessary and sufficient condition for Cargill to access its sub-lake mine operations via Mine Shaft #4. Given Cargill's decades-long expressed preference and practice for choosing sub-lake rather than sub-land mining (for reasons of safety, extraction ratio, cost, simplicity, and timing), there is no credible reason for Cargill to have applied to expand its mine under shoreland in this way, other than to enable the construction of Mine Shaft #4 and thereby provide mine access.

Cargill's disingenuous and improperly segmented application in this case goes entirely against both the spirit and the letter of DEC's SEQR process. This breach should be reason enough to require a DEIS and public hearing. In such a hearing DEC should correct Cargill's improper application process by recombining Cargill's improperly segmented permit application so that matters having to do with the mining itself as well as the mineshaft can be properly considered, with DEIS and public hearing, in the proper context of the entire project. In the meanwhile DEC should rescind its 2015 negative declaration for Cargill's 150.3 acre expansion pending the results of that proper process.

### **Request**

The public needs more disclosure of any and all risks associated with the construction of the proposed new shaft and the mine expansion proving access to it. The best way to assure protection of the environment and lake safety in this project is to have a fully-informed public discussion of both permit applications

together, of the sort required by a DEIS and a public hearing. Surely where this beautiful, environmentally important and economically critical lake is concerned, we can't be too careful.

Thank you very much for seriously considering these requests.

Sincerely,

Rob Mackenzie