EXH 230-1

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Land Use Department

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(Since 1999, 25 years)

Public Statement
Ledyard Planning and Zoning Commission
Application PZ#11-SUP and PZ#12-CAM of Gales Ferry Intermodal, LLC.
Public Hearing December 12, 2024

I am a professional civil engineer, retired, formerly registered in the State of Washington. My practice was in remediation of solid waste landfills where I dealt with identifying the types of contaminants and the nature and extent of the contamination leaving the sites. This involved characterizing the soil and rock layers under and in the vicinity of the sites, the hydrogeology (the layers and flows of groundwaters), wetlands and surface waters, and air quality. Remediation requires a thorough understanding of all four of these environments in a 360-degree view of every site. These are the same elements that will be impacted by the applicant's proposal before you this evening.

I wish to make the following points:

1. An inherent danger from drilling and blasting operations that has not been discussed in these hearings is flyrock. That is rock which is propelled from the blast area by the force of the explosion. I reference an expert's published report (submitted as an attachment to this statement) describing the dangers of flyrock and the limited ability of the municipality to prevent damaging incidents.
2. I discuss the limitations of modeling and making judgements based on those results. Model outputs are only probabilities based on aggregated and averaged data. They do not describe what happens in all conditions and circumstances such as at the highest wind states, for example. I reference EPA's AP-42 that very clearly states the limitations of its emission factors and their use. It makes clear that the applicant cannot definitively state that there will be no airborne escape of hazardous silica and arsenic contaminants.
3. I present how special permit modification approval, even with the clearest conditions and restrictions **will not** ensure that the requirements under 11.3.4, 9.1, and 9.2.C would be met or maintained without intensive and persistent monitoring, inspection, and oversight by knowledgeable experts.
4. Even with the monitoring program just described, virtually the only remedies are administrative fines and litigation. These often take years to complete after the harm has already been done, and most often the injury and damage cannot be reversed or corrected even with a monetary award.
5. Finally, I will describe how the commission and town have no recourse if the quarrying operations do not proceed as proposed and operations are slowed down or stopped before completion at the applicant's sole discretion.

## I. Flyrock.

Please note that very little has been said in these hearings about "flyrock". What is flyrock? Flyrock is "the term used to define rocks which are propelled from the blast area by the force of the explosion. This action is a predictable and necessary component of a blast and requires that every blast have an exclusion zone established within which no persons or property which [sic] may be harmed are permitted".[1]

Flyrock is "the ultimate *adverse effect.* [It] has the potential to:

a) injure or kill humans, pets, livestock and wildlife
b) damage personal and real property"[2]
c) specifically damage, in this case I might add, AmSty tanks and facilities, rail locomotives, rail cars, ships, vessels, other watercraft and their operators.

The above quotes are from an extensive report prepared by Mr. Tony Sevelka. He is a Canadian expert who dedicated three years to researching and writing about blasting quarry operations and their adverse effects on nearby residents and adjacent properties.[3] His August 2022 report is an attachment to my statement and is submitted for the record.

Mr. Sevelka analyzed 92 flyrock incidents showing that:

a) ninety-one percent (91%) (84) of them expelled rocks as far as 1,099 meters (3,606 feet),
b) another six percent (6%) flew as far as 1,299 meters (4,262 feet),
c) a few flew out even farther to 2,300 meters (1.43 miles).[4]

Think about those distances.

a) Route 12, Anderson Dr., Thamesview Pentway, Pheasant Run, Whalehead Rd, Garden Dr. and Whalehead Dr. are all within 1,500 feet (457 meters) of the proposed blast sites. Well within the range of the highest probability flyrock impacts.
b) Going further north, River Rd., Clark Lane, Woodbridge Circle, Oakridge Dr., and Tom Allyn Ct. are all within 4,620 feet (1,400 meters). Still within the range of potential flyrock impacts.
c) Note on RT 12; it is so close to the blasting operations that it will be likely that CT DOT will require it to be closed when the active blasting occurs. Yet another impact to traffic flow and motorist safety.
d) The above residential areas' close proximity to the blast area is significant because even when mitigating measures are taken Mr. Sevelka stated, "Flyrock is **uncontrollable and can never be eliminated**".

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[1] Tony Sevelka, "OBJECTION RESPONSE PREPARED BY TONY SEVELKA, AACI, P.APP, MAI, AI- GRS, SREA, FRICS" (JULY 20, 2022, REVISED AUGUST 12, 2022), p.17.
[2] Ibid, p.11.
[3] Ibid,p.5.
[4] Ibid, p.69.

What can the town do to preclude the possibility of a flyrock incident? What can the town do when such an incident occurs? Will the town have the authority to shut down operations immediately until the investigation is completed and approved corrective measures are in place? What would the remedy be? Finally, how would the town ensure that no further flyrock impact events would occur?

## II. Modeling Limitations.

I would like to share the following from AP-42 (the EPA document describing air emissions factors from stationary sources) which was used by the applicant in their estimation of airborne spread of hazardous particulates. Chapter 11, Mineral Products Industry states in part,

> "Particulate emissions from some of the processes such as **quarrying, yard storage, and dust from transport** are difficult to control, but most can be reduced by conventional particulate control equipment such as **cyclones, scrubbers, and fabric filters**. Because of the wide variety in processing equipment and final products, emission levels will range widely."[5]

Please carefully note that the control equipment listed are all designed to be installed in closed systems such as indoor dust removal systems and vent stacks. These are not useable in outdoor open applications such as are being proposed by the applicant. Note also that misting is not mentioned as a suggested control method.

Further, in its Introduction to AP-42, the EPA wrote this caveat:

> "Emission factors in AP-42 are neither EPA-recommended emission limits (e.g., best available control technology or BACT, or lowest achievable emission rate or LAER) nor standards (e.g., National Emission Standard for Hazardous Air Pollutants or NESHAP, or New Source Performance Standards or NSPS). Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is NOT recommended by EPA. Because **emission factors essentially represent an average of a range of emission rates, approximately half of the subject sources will have emission rates greater than the emission factor** and the other half will have emission rates less than the emission factor. As such, a permit limit using an AP-42 emission factor could result in approximately half of the sources being in noncompliance."[6]

The important carry-away is that these factors and the subsequent **modeling results are only estimates** based on aggregated and averaged data. They **do not** describe what happens at the highest wind states, for example, such as we have been experiencing for several days at a time over the past few weeks. Therefore, the applicant cannot definitively state that there will be no

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[5] AP-42: Compilation of Air Emissions Factors from Stationary Sources, Fifth Edition, U.S. Environmental Protection Agency, October 10, 2024, p. 11.0-1; downloaded from https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors-stationary-sources, November 10, 2024.

[6] Ibid, p. 2.

airborne escape of hazardous silica and arsenic contaminants. Their models estimate the probabilities that these dangerous contaminant plumes may not leave the site. Those estimates, however, are insufficient to protect the community. Based on the EPA's caveat above and the case studies referred to below, it will be shown that fugitive dust and contaminants, vibrations, noise, and turbid potentially contaminated stormwater **will** leave the site and create negative impacts.

In its denial of a proposed development on Rt-214 that backed up to Allyn Brook, former Planning & Zoning Commission chairman Capon stated that because any contamination of the public water supply watershed would be reasonably likely to have an unreasonable impact, "even the possibility of a contaminant release is sufficient to deny the permit." The same principle applies here. The quarrying operations are reasonably likely to have unreasonable impacts on the community. **Therefore, even the possibility of these negative impacts escaping the site and adversely affecting the local residents and the children in schools, preschools and churches is sufficient to deny the application.**

## III. Even the clearest conditions and restrictions placed on the special permit will not ensure that the requirements under 11.3.4, 9.1, and 9.2.C would be met. It will require intensive and persistent monitoring, inspection, and oversight by knowledgeable experts.

Others have presented and outlined point by point how and why the application fails to meet the requirements of the Town of Ledyard Zoning Regulations (2022). I wish to summarize several cautionary tales that demonstrate how special permit modification approval, **even with the clearest conditions and restrictions (including approved response plans) does not ensure** that the requirements under Section 11.3.4 Special Permit Criteria, Section 9.1 Site Design Requirements, and 9.2.C Performance Standards, will be met or maintained.

The present application may be unique for Ledyard, that is, the request to create a new rock quarrying and crushing operation adjacent to residential properties where none has existed. However, in site after site, and town after town, a review of similar situations across the country in a dozen states and locations, including Canada, revealed that residents, commissioners, and regulators have dealt with all of these same issues that have raised the concern of residents, town officials, other town commissions, and historians here. These issues, which others have addressed specifically in these proceedings are:

- Dust
- Toxic Metals (silica, arsenic)
- Noise
- Vibrations
- Traffic
- Irreversible damage to a unique historic site
- Irreversible damage to the nature and character of the community
- Various other impacts and hazards due to blasting/quarrying/crushing operations

This review also yielded the following insights that should be of serious concern as you move forward to consider the application before you.

1. Monitoring and enforcement *require significant effort and knowledgeable experts* to provide continuous monitoring, persistent inspection, and consistent enforcement. Generally, municipalities and in this case The Town of Ledyard, have neither the capacity nor the technical capabilities to provide the required oversight. There are several different areas of expertise needed, for example, in hydrology and hydrogeology (surface and groundwater), geology and geotechnical engineering, drilling, blasting, and quarrying operations (especially explosives handling), air quality, human health risks and impacts, water quality, and riverine/marine life. The town does not have these experts on staff and would require hiring them directly or contracting with specialty firms. Even so, the first indication of impact or damage would be noticed by affected residents who would have to report to the town, so the real burden of ensuring compliance will fall on the residents. The Commission cited that concern in its recent discussion over permitting short term rentals (STR) within Ledyard and based its denial partially on the undue burden for enforcement that would fall on the adjacent residents. This would be the same if this applicant were allowed to proceed. The following are examples of how that undue burden has resulted in unsatisfactory results in several similar situations.
    a. ***2021, No. Smithfield, RI,*** the residents have videoed active violations regarding excessive truck traffic, noise, and dust, and provided these videos to the regulators. Their responses? Violations could not be issued unless the regulator physically viewed them. The **N. Smithfield quarry** illustrates that it cannot be assumed that a quarry will play by the rules and unless the town and state has the means of **ensuring compliance** and is willing to incur the **costs** associated with monitoring and enforcement, there is no incentive for the operator to comply.
    b. ***2020-2023, Chester, VT,*** residents complained over the course of three years about the constant noise impacting their wellbeing "I would end up crying" one resident was quoted as saying, "because it never stopped!". Other impacts were the vibrations shaking their homes, sediment runoff into nearby stream, flyrock fragments escaping and impacting adjacent roadway, houses, and structures. These complaints are now under review.
    c. ***2017, Augusta, ME,*** numerous residents' complaints over five years regarding dust, noise, vibrations, operating on prohibited days and times, operating outside of the permitted footprint prompted the planning official to draft a report to the Commission. Resolution is pending. Meanwhile the offensive operations continue.

2. Once injury or damage has occurred, most often found and reported to authorities by the injured party, a local resident, culpability will be denied. The burden of proof falls on the injured party to show the injury or damage is the result of the quarrying operations.

a. ***2004 - 2009, Dyer v. Maine Blasting and Drilling (MBD), Waldo County, ME,*** the resident and her two sons found significant damage to their home's foundation, basement, and structure experiencing 3-5 inches of settlement, significant cracking, and sagging floor support beams. MBD referred the complaint to their bonding company. The bonding company denied that MDB was culpable and challenged the suit brought against them on legal technical terms (that they were not subject to "Strict Liability"). It was five years before the case went to the Supreme Judicial Court of Maine, who found that MDB **was** subject to Strict Liability and that the case should be tried on its merits. The burden of proof still remained on the homeowners to show that,
    i. a duty or standard of care exists for the operation (blasting),
    ii. that the standard was violated,
    iii. that this violation caused the injury (home damage), and
    iv. that monetary impacts resulted (cost of repair or loss of property value).

## IV. The only remedies to adjudicated violations are administrative fines and litigation that often takes years to complete after the harm has already been done. Most often the injury and damage cannot be reversed or corrected even with a monetary award.

A review of case after case from across the country found a consistent pattern of actions that provided these insights.

1. Bonds will not compel or incentivize compliance. Nor will they make for immediate repairs, or corrective action. As stated above the first response will be denial as the bonding company's interest is to **not pay damages**.
    a. ***2004 - 2009, Dyer v. Maine Drilling and Blasting (MD&B),*** MD&B referred the complaint to their bonding company. It was the bonding company that denied culpability and fought the case for five years.
    b. ***2018, Garfield, CO***, Operator was sued to compel compliance, took three years until judgement in favor of plaintiff, currently under appeal.
    c. ***2017, Augusta, ME,*** Structural damage after blasting is regularly reported to authorities and referred by the operator to their bonding company. Over the past ten years, however, not one claim has been paid!
    d. ***2018, Andover, MA,*** During construction of the senior housing development, "Stonehill at Andover", Maine Drilling and Blasting conducted forty-two blasts over 39 days which damaged several homes on Elm Street and adjacent streets. These claims were denied by the contractor and developer. The town and state have been unable to step in to assist the homeowners in pressing their claims. Litigation is their only recourse.

2. Violations when issued by regulators or town officials, and when the appeals process has run its course, usually result in fines or monetary settlement to the plaintiff (injured

party). The final resolution often takes years through the administrative and legal processes. These fines and settlements ***are simply the cost of doing business***, usually built into the operator's or bonding company's budgets and fee structure.

a. ***2010, Cumberland, RI,*** Operator fined $7,500 for violations of air quality standards.
b. ***South Coast Air Quality District, CA,*** Operator fined for multiple violations of air quality standards (dust), 6 times over 2 years total to $12,350, regulator - "Not unusual".
c. ***2023, Eugene, OR,*** DEQ levied $83,055 fine for uncontrolled stormwater discharges into adjacent river.
d. ***2012, Meriden, CT,*** DEEP issued $12,000 fine for unpermitted open burning of waste materials at York Hill Trap Rock Quarry, first reported by residents.
e. ***2020, Westerly, RI,*** Operator fined $68,000 for stormwater and process water runoff violations and ordered to halt the discharges until a plan for control and treatment was approved. Given 90 days to submit. Operations were allowed to continue during the 90 days.

Regarding the level of these fines, **they are merely "decimal dust".** For example, even a significant fine of $100,000 is only 0.09 percent of the applicant's expected revenue of $112,500,000[7] from its quarrying operations, hardly enough to be a deterrent.

3. No matter how well run, well intentioned the operator, or responsive the oversight, once a violation event occurs the impacts are irreversible, especially when the injuries are to an individual's personal health and wellbeing.
   a. ***2020-2023, Chester, VT, and 2004 - 2009, Dyer v. MD&B,*** residents moved because the conditions were untenable, created anxiety that was resolved only by moving.
   b. ***2023, Eugene, OR, and 2020, Westerly, RI,*** sedimentation to the adjacent rivers significantly impacted marine life and vegetation which are slowly recovering.
   c. ***2022, Front Royal, VA,*** a blasting miscue resulted in flyrock injuries to ten persons offsite and damage to cars and buildings as far as ½ mile away. (refer to my first point above).

## V. The commission and town have no recourse if the quarrying operations do not proceed as proposed and operations are slowed down or stopped before completion.

Although the applicant has stated publicly that the 5-phases of quarrying will be completed and closed within ten years of commencement, there has been no such limit specified in its application. So, the timeline for operations could go on for an undetermined period of time. As proposed, the drilling, blasting, rock crushing, trucking, noise, and vibrations could be conducted indefinitely which would continue harming our town but would not be grounds for

[7] This assumes the applicant's estimate of 3.75 million cubic yards is extracted and sold at $29 - $45/yard per current market prices.

calling the bond in accordance with the Section 8.1.6.G of the regulations. The town would therefore have no mechanism to compel the applicant to stop their quarrying operations and close the site as required in the special use permit.

Similarly, should the applicant fail to request renewal of their special use permit every three years (as required by the regulations to continue operating) and simply ceases operations, the town is powerless. It cannot call the bond solely because the applicant is not actively conducting operations. Again, the town has no mechanism to compel the closure of the site.

## VI. Conclusion.

Given the above, I would offer that these examples provide **prima facia evidence** of activities that are **contrary to regulations regarding the preservation of the health and welfare of the community**. These examples show that even with adequate monitoring, enforcement to ensure compliance with all laws, regulations, and permit conditions is limited to administrative actions, such as small fines, or litigation, all of which take time, or may not even be possible. The operations will likely continue during those proceedings because the town has almost no authority to shut down operations.

The negative impact of having a quarry in the middle of an historic residential area will have lasting damaging effects on the historic nature and character of the community. **Far more concerning**, however, would be the **negative impacts on the health and welfare of community residents,** including the **cancer risk, pulmonary disease risk,** and psychological impacts from the persistent unrelenting noise and vibration from the blasting and rock crushing, and also from the barge, rail car, and truck loading operations. Fugitive silica and arsenic particulates are extremely dangerous, and **the consequence of silicosis is life altering – even life ending. The merest possibility that these significant consequences could occur is sufficient to deny the application.**

It appears that the town's ability to compel repairs/replacement of damaged wells, homes, businesses, structures, utilities, and roads – and these are only the infrastructure impacts - unless voluntarily undertaken by the applicant or their operator, **would only result from lengthy legal battles**. This complicated process would start with an affected resident appealing to the town to document such violations and attempt to compel compliance, followed by engaging with the State DEEP and other appropriate agencies, and then moving through the court system. All this will be very costly to the plaintiffs (residents who are damaged) in both time and money with no assurance of restitution. Meanwhile quarrying operations and the harms they cause would continue.

Regarding those recognized harms, the applicant has not prepared nor submitted for approval any risk mitigation and contingency (response) plans for any possible exceedance events in all four environmental areas: air, surface, sub-surface, and riverine. Activities like rock drilling and blasting, excavation, soil disturbance, and use of heavy machinery pose risks to soil and water quality, real and personal property, and human health. Risk mitigation and contingency plans

describe what preventive, protective, and corrective actions will be taken when negative impacts occur. Further, understanding that the proposed actions are appropriate and ensuring that these proposed measures would be properly undertaken requires deeply knowledgeable and experienced professionals to monitor, inspect, and evaluate operations on a consistent basis to ensure safety and compliance with permit conditions. Developing these plans is a best practice for industrial facilities, construction sites, and transportation operations and should be required by the Commission.[8]

Let me conclude by reading the following from the RFP issued by the Town of Ledyard this past summer for a RT-12 corridor study:

> "The Town of Ledyard is a residential town that **prides itself** on its **rural character, historical heritage, and having quality schools"**. "Over the years, *Ledyard citizens have consistently expressed the desire* for the town to **remain a safe rural community with businesses that blend well with the community and improve the quality of life for all.** The Town of Ledyard is **a community where family values, local culture, historic and agricultural heritage, and the environment are respected and protected"**.[9]

It is clear on its face that the applicant's proposal will not "blend well with the community and improve the quality of life for all." Furthermore, it will destroy the "rural character" and "historical heritage" of the community and will not "respect and protect" the environment. You the Planning and Zoning Commission have a legal duty to protect the community and its inhabitants in the short- and long-term by ensuring that non-compatible land uses such as the proposed quarry **not be permitted.**

**Therefore, given the above examples of the application's non-compliance with the regulations, the town's limited ability to enforce compliance with any special use permit conditions, and the high consequences of the negative impacts to the community, this application should be denied.**

Attachment: OBJECTION RESPONSE PREPARED BY TONY SEVELKA, AACI, P.APP, MAI, AI- GRS, SREA, FRICS" (JULY 20, 2022, REVISED AUGUST 12, 2022)

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[8] S. Dione, J. Y. Ruwanpura, J. P. Hettiaratchi, "Assessing and Managing the Potential Environmental Risks of Construction Projects", Practice Periodical on Structural Design and Construction, Volume 10, Issue 4 (2005); downloaded from https://doi.org/10.1061/(ASCE)1084-0680(2005)10:4(260), December 11, 2024.

[9] REQUEST FOR QUALIFICATIONS (RFQ) / REQUEST FOR PROPOSALS (RFP) CORRIDOR STUDY - ROUTE 12, GALES FERRY, CT; Elizabeth Burdick, Director of Land Use and Planning Town of Ledyard, July 2, 2024, p. 1.