

TESTIMONY

of

William Terry
President and Chief Executive Officer of
Eagle Rock Aggregates Incorporated

before the

Subcommittee on Coast Guard and Marine Transportation
House of Representatives Committee on Transportation and
Infrastructure

regarding the

Economic Impacts of the North American
Emission Control Area

March 4, 2014

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I.

Introduction

Good morning Chairman Hunter and Representative Garamendi, I appreciate and welcome the opportunity to testify before you and the rest of the distinguished Subcommittee members. I am William Terry, President and Chief Executive Officer of Eagle Rock Aggregates Incorporated, a company headquartered in Richmond, California serving the construction aggregate needs of the San Francisco Bay area and Hawaii. Eagle Rock is a subsidiary of Polaris Minerals Corporation, located in Vancouver, Canada that develops and operates quarries on Vancouver Island. I have nearly 40 years of experience in the public and private sectors following my service as a U.S. Army officer. I have previously been the Deputy Director of Street and Sanitation for Dallas and the Waste Management Inc. Vice President for Landfills. I have also served on the national boards of the American Public Works Association, the National Solid Waste Management Association and the Environmental Research Foundation.

I am testifying today to raise concern over the less visible but severe impacts that the North American Emission Control Area or "ECA" is having on businesses that rely, directly and indirectly, upon Short Sea Shipping to complete essential public and private infrastructure and construction projects.

A. Eagle Rock Aggregates

To best understand how the ECA impacts businesses such as Eagle Rock Aggregates one should understand what we do and how we do it. Eagle Rock imports and distributes large volumes of commercial grade construction aggregate as a wholesale supplier to regional concrete contractors. Our flagship terminal, located in Richmond, California receives bulk cargoes from specially designed self-unloading vessels for final delivery via our storage and distribution center. Our facility, built in 2007, features an enclosed building which has a capacity to store 50,000 tons of material. We are permitted to handle 1.5 million tons of aggregate annually. In addition to our Richmond facility, we also use other marine terminal sites in San Francisco, Redwood City, and in Petaluma. In 2013, we are projected to ship over 3 million tons of construction aggregates into the San Francisco market. Additionally, Polaris Minerals ships aggregates directly from the quarry to Hawaii for commercial, military, and mass transit

projects. We have received both Federal and State permits for a new terminal under development within the Port of Long Beach to serve the greater Los Angeles Region beginning in 2014.

B. Construction Materials

Marine delivered materials supplied by us are high quality sand and gravel. These materials are the key construction aggregates required for high strength concrete mixes needed in massive quantities to support major infrastructure projects such as commercial and residential structures, public facilities (schools and hospitals), public works projects (sewers, runways, and water infrastructure) roads, and bridges. The premium material shipped from the Orca quarry in remote British Columbia is our cargo; it is of a very high grade and meets the rigorous performance standards demanded by the American Society for the Testing of Materials (ASTM) for use in the United States. It also meets the rigorous specifications of the California Department of Transportation (CALTRANS) for their infrastructure projects. Our material's high durability and favorable mineral particle shape results in very strong concrete with low cement content resulting in a final concrete product meeting high strength performance specifications while reducing costs to the construction industry and the public.

II. ECA Regulatory Requirements

The ships employed to deliver our cargoes meet all of the provisions of the International Convention on the Prevention of Pollution from Ships (MARPOL), including Annex VI of the convention. Annex VI defines measures to reduce air emissions from ships. It is under the auspices of Annex VI that the North American ECA went into effect on August 1, 2012. The ECA creates a 200 mile zone around the United States and Canada (with the exception of the Aleutian Islands and other limited outlying areas). Upon entering the 200 mile ECA, ships must switch from heavy marine fuel oil to a low sulfur fuel containing no more than 1% of sulfur to reduce air emissions. In 2015 the sulfur levels in marine fuel will be dramatically lowered (by regulation) to 0.1% for all ships operating inside of the ECA regardless of their size or measured emissions.

As a member of the Maritime Industrial Transportation Alliance (MITA), I am concerned that the current ECA boundary was established without firm scientific rationale for all vessels. The boundary overwhelms vessels engaged in the short sea trade routinely or those exclusively operating within the 200 mile ECA or self-unloading vessels which, by competitive necessity, are typically smaller vessels, with corresponding smaller and less polluting propulsion systems.

A. Independent Analysis Conclusions

A study released in 2012; "*Modeling the Air Quality Impacts of Short Sea Shipping Emissions and the Implication for the North American ECA*" conducted by Drs. Ranajit Sahu and Andrew Gray, analyzed short-sea ship emissions (Dr. Sahu's and Dr. Gray's curriculum vitae are included in Exhibit A of the Report). The study indicates that smaller ships (with corresponding lower horsepower propulsion systems) used in short sea trades, have negligible environmental impact on the East or West Coasts of North America when operated beyond 40 miles. More specifically, the results indicate that ships fitted with propulsion systems of 20,000 horsepower (14,913 kW) or less had no (or negligible) air quality

impact on the coasts even when using fuel with a sulfur content of 2.6%. Despite using test fuel assumptions of 2.6% sulfur, (over twice the sulfur content permitted by the current ECA and 26 times the sulfur content of the pending 2015 ECA), the specimen vessels still performed exceptionally well indicating negligible SO_x concentrations at the coastline when the ship was 40 miles off-shore and beyond.

III. Why Short Sea Shipping Works for Eagle Rock Aggregates

We have long considered self-unloading short sea ships such as the fleet owned and operated by CSL, to be a vital component of our supply chain. The self-unloading short sea ships that we employ make operational, economic, and environmental sense on various scales. The critical sea-bridge provided by Short Sea Shipping is a foundational element of our business model. History has proven that self-unloaders; with their self-contained conveyor cargo transfer systems provide the best option for clean, safe, reliable, and cost-effective transportation of the large volumes of material that companies like Eagle Rock move.

A. Environment

The 2011 San Diego Regional Aggregate Supply (SANDAG) Study commissioned by the San Diego Area Governments and CALTRANS, through its own independent modeling, revealed that on a cost per ton mile basis ships have lower fuel consumption and CO₂ emissions than trucks or rail before the introduction of the 200 mile ECA.

Specifically, from a fuel consumption perspective, shipping out performed all other modes of transportation in a gallon per cargo ton analysis¹:

Gallons per Net Ton	Pay load
• Truck 0.0086	25 tons
• Rail 0.0021	100 tons/hopper car
• Barge 0.0068	1,500 tons
• Ship 0.0004	72,786 tons

Similarly, the SANDAG study concluded that ships' CO₂ emission rates were far less per net-ton of cargo mile of cargo than any other mode as follows²:

Grams of CO₂ per Net Ton-Mile	Pay load
• Truck 86.9	25 tons
• Rail 21.4	100 tons/rail car
• Barge 69.6	1,500 tons
• Ship 5.34	72,780 tons

¹ SANDAG Study, Table 4-2, Page 4-9

² SANDAG Study, Table 4-4, Page 4-10

The average self-unloading bulk-ship, such as the assets that we employ from CSL, can carry approximately 70,000 deadweight tons of cargo. Compared to other modes of transportation; one short sea ship's carrying capacity is equal to:

- about 636 rail cars; or
- about 3000 trucks at 25 short tons each

In July 2012, the U.S. Green Building Council that publishes LEED - the green building rating system used by architects announced that for purposes of calculating waterborne transport of construction materials the actual mileage would be divided by 15 based on the environmental impacts. As a consequence, short sea shipping of aggregates from Vancouver Island has the same impact as a 69 mile one-way trip for land transportation. That is less than the distance that aggregates will be trucked in many regional markets based on remaining quarry life projections and shortfalls based on forecasted construction needs.

B. Social Value

Socially, the ships that arrive at our facility use screens and suppression systems to reduce fugitive dust during the cargo discharge. Additionally, the state-of-the art conveyor systems will deliver cargo at 4000-5000 tons per hour which means a quick turn-around time, less time at the dock, and therefore, less visual and noise impact to our neighbors. This assertion has been borne out in independent analyses conducted under the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA).

C. Volume Efficiency

The types of construction projects that Eagle Rock supports are major endeavors that are critical to restoring, improving or re-shaping vital infrastructure, housing, and sustainable regional economic development. The volume of sand and gravel required for the concrete to build road, bridge, and structural projects is significant. Projects such as these require material tonnage measured in hundreds of thousands not hundreds or thousands. The most viable option for most of these regional needs given the overall shortage of land sited aggregates is marine transportation.

D. Flexibility

The ships' physical foot prints are smaller which, allow entry to confined dock spaces that larger ships cannot negotiate. Further, the relatively small size and corresponding shallow draft facilitate access to smaller shallow water ports. In some extreme cases ports are too shallow, even for the self-unloaders, such as Petaluma site that supplies the northern San Francisco Bay counties. These unique instances are where the real value of self-unloading ships are leveraged. Using their self-contained conveyor and articulating boom systems, self-unloading ships discharge cargo onto shallow water barges in the shelter of a safe anchorage for final delivery. The operational utility of the self-un-loading short sea ship is truly unmatched.

IV. Economic Impact of ECA

Aggregate is a low-unit-value commodity with high transportation costs due to its bulk and weight. The inherent high cost to transport cargo will now be additionally impacted by fuel costs. Eagle Rock selected its Richmond site because of its central location to Bay Area customers, access from the sea, and ability to berth Panamax size coastal bulk ships. Our siting decision was, in part, based on the existing cargo rates. In fact, freight rates are a major component of cost in the success of implementing our business model and containing the cost to the ultimate end user for a cubic yard of concrete.

As we prepared for the North American ECA in 2011 and the first half of 2012, Eagle Rock planned for an acceptable 3-10% marine cargo rate increase based upon the best available predictions at the time. We are now finding through no fault of the shipping companies, fuel surcharges of 20% over pre-ECA rates, which is not sustainable.

A. Fuel Surcharges

The United States is now about one year into the first phase of the ECA which requires ships to use 1% sulfur fuel within 200 miles of the coast, as opposed to their legacy Intermediate Fuel Oil (IFO). On the West Coast, fuel storage and availability is causing the 1% sulfur fuel to be sold at over a 20% premium of pre-ECA 2012 (IFO) prices. This alone is a dramatic fuel cost increase borne by the shipping company which is passed to the customer in a fuel surcharge or cargo rate increase.

What is more concerning is that the second phase of the North American ECA is set for enforcement on January 1, 2015. At this milestone, the North American ECA fuel sulfur content will be dropped [again] to 0.1% when operating inside of the 200 mile boundary. The only viable fuel alternative for ships is Marine Gas Oil as there is no Intermediate Fuel Oil refined to such a low sulfur level. Marine Gas Oil currently costs about 22% more than the presently acceptable 1% low sulfur fuel and an unsustainable 40% higher than Intermediate Fuel Oil. Witnessing such dramatic and unprecedented fuel premiums, only one year into the ECA, I am not convinced that we won't see at least a 40% increase in gross fuel costs that the MITA and operators like CSL predict.

B. Quantified Impact

Current ECA related fuel surcharges are at 20% for Eagle Rock. This balloon in price is passed, in part, to the *Ready Mix* companies that we serve at about 74 cents per ton of material (on average) which equates to about \$1.50 in added cost to each cubic yard of concrete. The result is an unnecessary higher final price of the concrete that our aggregate produces for houses, hospitals, bridges and other commercial as well as tax payer funded municipal projects.

Example: I offer an example of a typical public works project to better illustrate consumer impact.

Borrowing from an excerpt of the 2012 California Aggregate Sustainability Report, a "one mile of six-lane interstate highway requires about 113,500 tons of aggregate."³ Based on the fuel surcharges that Eagle Rock is shouldering, we must pass a portion of the added cost to the "Ready Mix" companies that

³ California Department of Conservation 2012 Aggregate Sustainability in California Report, Page 18.

will perform the concrete work for the municipality. If the cost of the material is approximately \$20 per ton and we add just 74 cents per ton to that material, it needlessly adds \$83,990 to the price tag of that one mile of road. If the project grows to five miles of road, the added price of the road approaches a half of a million dollars (\$419,950).

These are added costs to consumers with no apparent added environmental benefit as evidenced by the Sahu/Gray Study.

C. Hidden Impacts

As a growing company seeking to reach a business objective to aid in alleviating the California and Hawaii aggregate short-falls, we endeavor to expand our operations and geographical reach. We are very interested in pursuing cargo distribution services similar to our Richmond facility in Southern California.

In 2010, Eagle Rock Aggregates secured a lease to develop a marine distribution terminal within the Port of Long Beach. We have secured the required Federal and State permits to import 3 million tons of aggregate annually into the greater Los Angeles area. We must now look at the long term ramifications of the ECA as ships will continue to transit the entire 3000 mile (approximate) round-trip voyage entirely within the ECA requiring exclusive use of 0.1% sulfur fuel starting on January 1, 2015.

Similarly, Eagle Rock Aggregates is negotiating with the Port of San Diego for rights to construct a marine aggregate terminal with hopes to start operations in 2016. We are now examining the ECA influenced cargo rates to weigh the viability of our plan to assist in addressing the aggregates shortfalls identified in the SANDAG study.

Reducing, limiting or losing such expansion opportunities will not only deeply impact Eagle Rock as a company but will also limit efficient, economical, and environmentally sound delivery of much needed aggregate for Southern California. Additionally, stalling an expansion could result in uncreated jobs that we would provide and over reliance on other cheaper yet less efficient modes of transportation. Our decisions to expand and to what extent are influenced by the extraordinary fuel prices that are a result of short sea ships sailing entirely (or largely) within the ECA.

V. Macro Issues

Quoting the 2011 San Diego Association of Government Study: “While the demand is expected to increase, according to a 2006 study by the California Geological Survey, an anticipated aggregate supply shortfall is expected in nearly all regions of California. According to the study, existing sources of aggregate in the San Diego region will be able to meet only 17 percent of the demand through 2055. The region is expected to use more than a billion tons of aggregate by the end of 2055. Permitted aggregate reserves are estimated to be 198 million tons, resulting in an 83 percent shortfall in meeting the region’s needs. The same study projects a 40 percent shortfall in the statewide supply of aggregate material, reflecting the importance of this topic as a statewide concern.”⁴ Such a reduction in resources demands

⁴ SANDAG Study, Page ES-1

sourcing from longer distances by road or rail adding to cost, congestion, and environmental impact. Marine transportation can relieve much of this strain including sourcing.

A. 2011 San Diego Aggregate Supply Study (SANDAG)

In 2011 the San Diego Association of Governments produced a study that examined their regional aggregate resources and the modes of the transportation used to deliver construction aggregates. Their independent study, (San Diego Aggregate Supply (SANDAG)) highlighted marine transportation as the most fuel efficient and less emitting transportation option per ton of cargo. This conclusion was based on fuel sulfur and emissions data before the ECA took effect.

B. Maritime Industrial Transportation Alliance (MITA) Participation

In 2012, Eagle Rock recognized that the ECA was inflicting economic damage beyond the scope that was projected by the EPA. Seeking to raise the visibility of the issue, we sought a united public voice to seek a balanced solution. We joined a coalition of other industrial leaders in the United States and Canada that were also being severely impacted by the North American ECA called the Maritime Industrial Transportation Alliance or “MITA.” We selected to join the MITA not because it opposes the ECA, but rather it advocates a science based approach to improving air emissions from ships while considering the economic value that Short Sea Shipping delivers. The MITA takes a strong position that all ships are not the same and don’t create the same emissions. The MITA and its proposal for a balanced ECA is supported by the following members.

- U.S. Gypsum / Gypsum Transportation Ltd
- Georgia Pacific
- National Stone, Sand and Gravel Association
- National Gypsum Company
- Polaris Minerals / Eagle Rock Aggregates
- Road and Highway Builders
- Atlantic Coast Materials LLC
- Canadian Manufacturers & Exporters
- Chamber of Marine Commerce
- Portland Cement Association

VI. Transportation Alternatives

The North American ECA aside, the 2012 California Aggregate Study supports the well understood notion that transportation plays a major role in the cost of aggregate to the consumer. Aggregate is a low-unit-value, high-bulk-weight commodity which makes transportation a principal constraint for final consumers. We at Eagle Rock have invested in an infrastructure that relies upon ships to deliver our product. The volume and nature of our product necessitates the use of ships as the only viable transportation option for us to transport readily available aggregates from environmentally sound, economically feasible quarries in British Columbia to U.S. markets facing demonstrated shortages. The ECA will now penalize our business model that by all accounts, is eco-friendly based on the favorability

of marine transportation, as outlined in a 2011 Maritime Administration (MarAd) report to Congress⁵. The ECA penalties that we face from higher cargo rates driven by unprecedented fuel price hikes, will be passed to our customers which ultimately impact constituents. The SANDAG study cites the 2006 California Geologic Survey projection of a “40 percent shortfall in the statewide supply of aggregate material needed to meet demand through 2055. They also project an 83 percent shortfall in the region’s supply of aggregate material. As the locally based supply of aggregate decreases, needs are met by importing aggregate from other regions or other countries.”⁶

A. Modal Shift Options

It is important to note that many industries will have a choice in the mode of transportation that serve them. Where road or rail is available, modal shift can relieve operational costs to operators – but with negative environmental and social impacts of increasing rail and road traffic. Despite the well documented social, environmental, and air quality benefits of Short Sea Shipping, there is concern that consumers with a choice, will be forced to pursue cheaper yet less efficient modes of transportation that are more damaging to the environment. Paraphrased, the 2012 California Aggregate Sustainability Report estimated “that over 7.2 million truck trips are conducted each year in California to haul aggregate alone... which amounts to more than 360 million truck miles traveled between 1981 and 2010.”⁷

Considering one 50,000 deadweight ton self-unloading bulk ship can remove nearly 2000 trucks, 25 short- ton trucks (and all of the on-shore emissions that they produce), it makes a compelling eco-friendly argument to consider the wider benefits of Short Sea Shipping. Increasing to a slightly larger short sea ship of about 70,000 deadweight ton could remove roughly 3100 trucks.

MarAd agreed in their 2011 report to Congress citing “America’s Marine Highway offers the potential of significantly enhancing the environmental sustainability of the nation’s transportation system. In particular, water transportation is often the most energy-efficient means of moving cargo between two points, with corresponding reductions per ton-mile in greenhouse gas (GHG) emissions. Similarly, with appropriate technology and regulation, water transportation is an environmentally-friendly transportation mode that can reduce noise and air pollution and have minimal impacts on water quality.”⁸

The unintended consequences of a modal shift of any scale, conflicts with the Maritime Administration’s 2010 Marine Highway Program, which will increase truck and rail demand. The California Department of Conservation, when considering additional road hauling claimed “the importation of aggregate from neighboring regions typically results in longer [road] haul distances, higher costs, and increased carbon dioxide emissions, air pollution, traffic congestion, and highway maintenance.”⁹ Social factors of modal shift include:

- elevated road and rail accident risk;
- increased road and infrastructure maintenance;

⁵ America’s Marine Highway Report to Congress; Maritime Administration, April 2011 page 21

⁶ 2011 SANDAG Study, ES-1

⁷ California Department of Conservation 2012 Aggregate Sustainability in California Report Page 1

⁸ America’s Marine Highway Report to Congress; Maritime Administration, April 2011 page 21

⁹ California Department of Conservation 2012 Aggregate Sustainability in California Report, Page 10

- higher road congestion;
- more noise pollution;
- luminous pollution;
- vibration impacts; and
- visibility impacts.

Weighing the vast social and environmental benefits of transporting large quantities of low value but industrially necessary commodities by sea, I can't understand why a blind eye has been turned to the very real possibility of ECA driven modal shift.

VII. The Eagle Rock Projects

As a wholesaler, we import and distribute nearly three million tons of aggregate annually to "Ready Mix" concrete companies. The Ready Mix concrete companies use our aggregate to tailor mix concrete to specific specifications required by their customers for particular projects. Since we started our Northern California operations in 2007, short sea self-un-loading ships have delivered the unmatched volumes of aggregate that were needed for our wholesale distribution to major public and private projects including:

- San Francisco Bay Bridge (East Span) which opened in September;
- The Caldecott Tunnel (California State Highway 24, Berkeley to Walnut Creek)
- The University of California, Berkley Memorial Stadium (60,000 seat capacity)
- The Millennium Tower in San Francisco;
- The new Trans Bay Transit Center and tunnel connecting San Francisco to Oakland.
- In Hawaii, products delivered by CSL will significantly contribute to a new light rail that will be constructed over the next 18 months as well as on-going DoD projects.

VIII. Conclusion

The North American ECA, through unintended consequence, is likely to change the landscape of Short Sea Shipping and the industries it serves in the United States unless regulatory relief is provided. I stand with CSL and my fellow MITA members in pursuit of a "right sized" ECA that improves air quality without damaging a narrow margin industry.

My testimony regarding the impacts to Eagle Rock only discusses my one small niche that relies on Short Sea Shipping. Short Sea Shipping companies will be forced to raise rates on all of their customers, not just Eagle Rock. The short sea customer portfolio extends far beyond aggregates; it includes end users in the fields of agriculture, energy, steel production, various construction, and mineral imports. I am only one customer, providing my perspective and real-world example of the ECA and this issue of growing concern.

I join Mr. Jones in proposing that Congress and the EPA, in consultation with the U.S. Coast Guard and MarAd, to revisit the ECA boundary and:

- Maintain the 200 nautical mile North American ECA for all ships using 1% sulfur fuels; however;
- **Reduce** the 200 nautical mile ECA to **50** miles for **0.1%** sulfur fuels (in **2015**) for lower emitting ships of 20,000 horsepower and below.

I thank the entire Sub-committee for this opportunity to address this important issue while there is still time to reach a balanced solution.