



John Beath Environmental, LLC
Striving to make something better every day

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Investigating Alyeska Pipeline's Valdez Marine Terminal's Air Emissions Related to a New EPA Rule

2020 Updates to 40 CFR 63, Subpart EEEE - *National Emissions Standards for Hazardous Air
Pollutants for Organic Liquids Distribution (Non-Gasoline)*

Prepared for Prince William Sound Regional Citizen's Advisory Council



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Introduction



Introduction: **Why Are We Here?**



The EPA recently issued a rule* to further reduce emissions from non-gasoline organic liquid distribution sites.

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Alyeska objected, concerned the rule may not reduce emissions from the VMT.

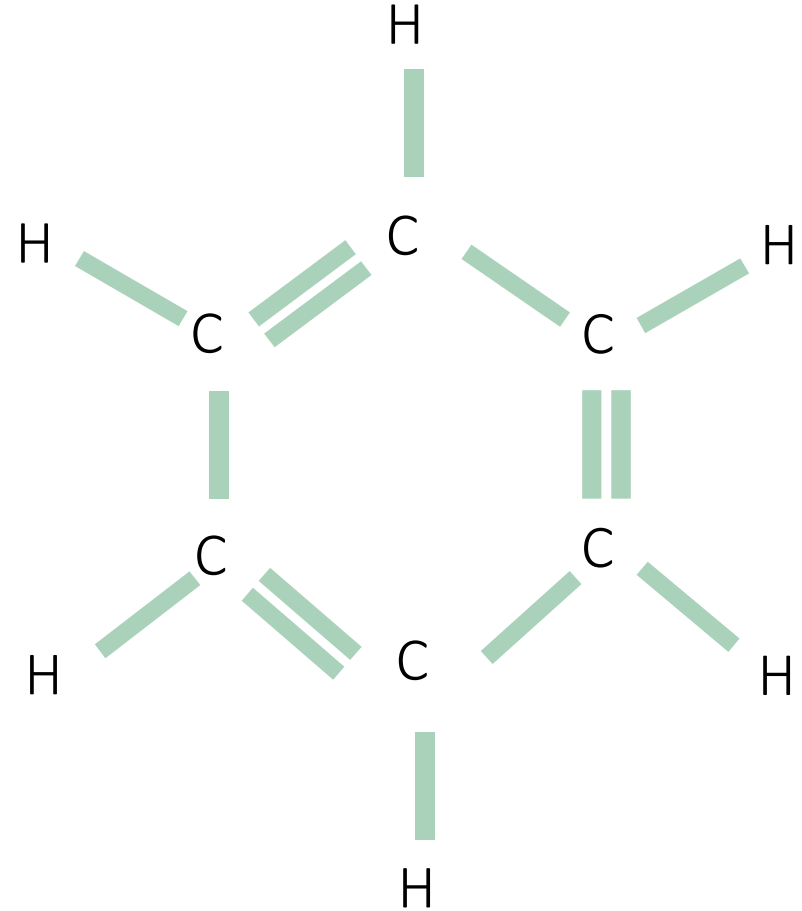




| Introduction - **Hazardous Air Pollutants**

Hazardous air pollutants (HAPs), also known as toxic air pollutants or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects.

The EPA is tasked with regulating toxic air pollutants from industrial facilities.





Introduction - Overview of OLD MACT

40 CFR 63, Subpart EEEE, also referred to as the OLD MACT, establishes national emission limitations, operating limits, and work practice standards for organic hazardous air pollutants (OHAPs) emitted from non-gasoline organic liquids distribution operations. **As a crude oil terminal, the VMT is subject to this rule.**

First Regulation to Require Vapor Control for Crude Oil Storage

To Control Vapors, Schemes Include:

- ❖ Fixed Roof with a Vapor Recovery System
- ❖ Internal Floating Roof Storage Tanks
- ❖ External Floating Roof Storage Tanks

Introduction - Regulatory Timeline

2004

EPA Finalizes OLD MACT

EPA finalizes 40 CFR 63, Subpart EEEE which governs HAPs at VMT

2008

SSM Exemption Overturned

Sierra Club v. EPA - Startup, Shutdown, and Malfunction Exemption is Overturned in OLD MACT

July 2020

EPA Finalizes Updates to OLD MACT

EPA issues updates to the OLD MACT

October 2020

Alyeska Files Stay with D.C. Circuit

Petitions consolidated in D.C. Circuit (AFPM, API, and ACC, CCAT, Coalition for a Safe Environment, and Sierra Club). Alyeska files a motion with the D.C. Circuit to stay the OLD MACT while the case is being heard.

December 2020

Reconsideration Granted

EPA concedes to reconsider issues raised in petition (i.e., through work practice standards). D.C. circuit grants Stay only pertaining to specific provisions of updated OLD MACT

Sept. 2020

Alyeska Files Petition to Stay with EPA

Alyeska files a Petition for Rulemaking, Reconsideration, and Stay with EPA challenging 2020 OLD MACT

January 2021

Until at least April 2021

Case Held in Abeyance

All parties to D.C. Circuit Appeal move to hold the case in abeyance until April 12, 2021, to allow for discussion and consideration of the petitions.



Introduction - Current Tank Configuration

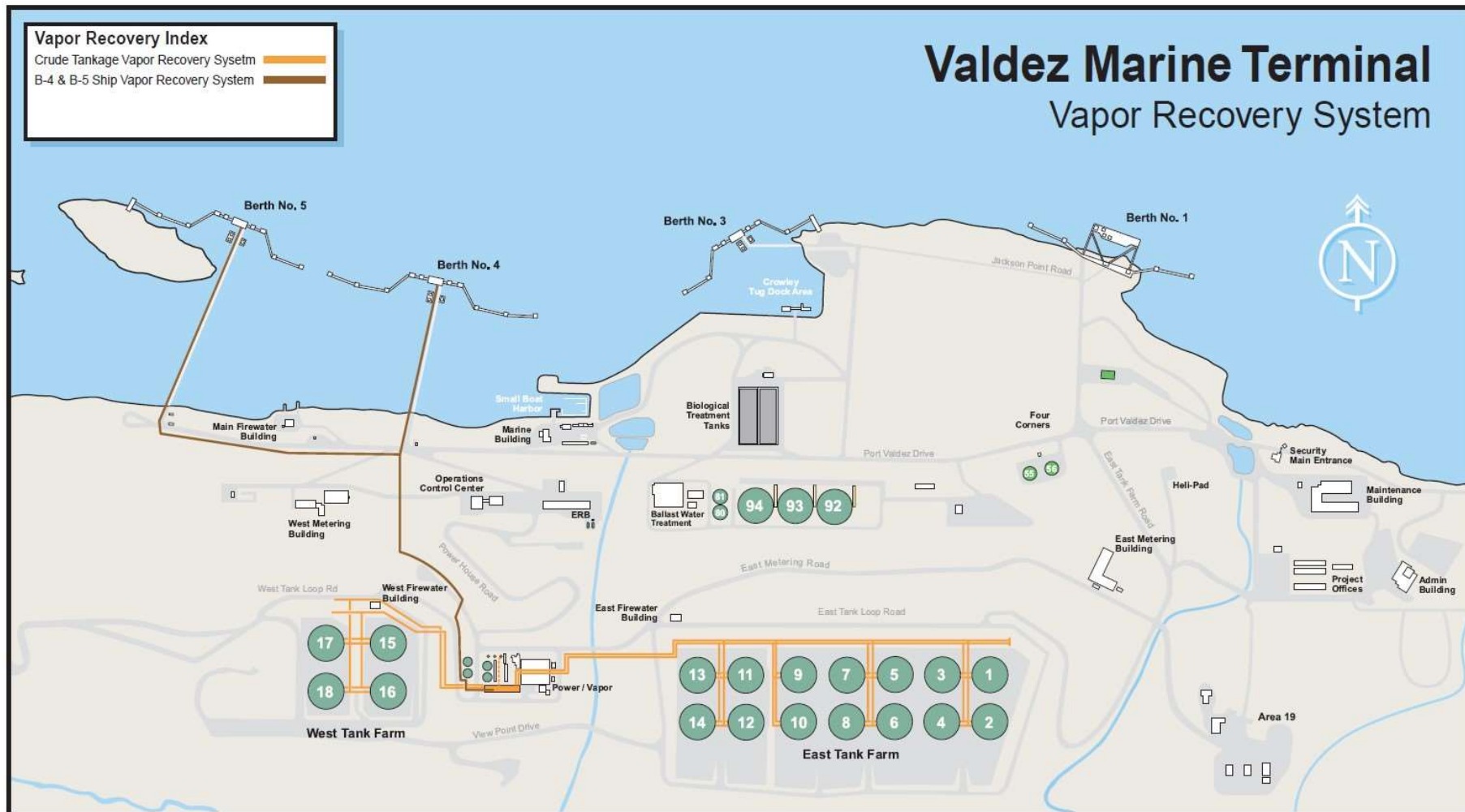


Photo Credit: valdezalaska.org

Current Operations

- Alyeska operates 14 fixed roof, crude oil storage tanks.
- Each is equipped with a conservation vent that only opens during unsafe operating conditions.
- Venting to atmosphere only occurs for a few minutes per year.
- **Under the rule updates, opening the conservation vent will NOT be allowed.**

Introduction - Valdez Marine Terminal (VMT) Layout

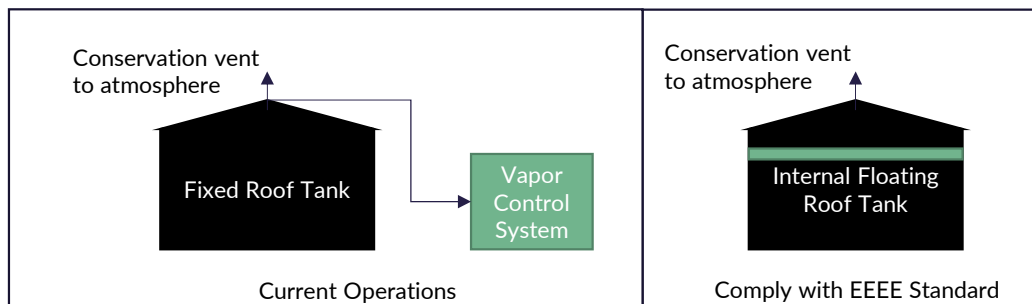


Project **Scope and Objectives**

JBE's investigation analyzed:

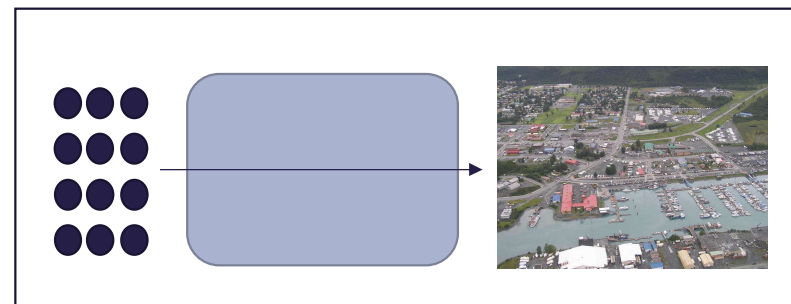
Rule compliance implications

1. Would the new rule control method decrease emissions at VMT?
2. Would it be practical to operate without any conservation vent emissions



Health effects implications

3. Do VMT emissions pose an unacceptable health risk to nearby residents?



HAP Emissions from Crude Oil Storage Tanks

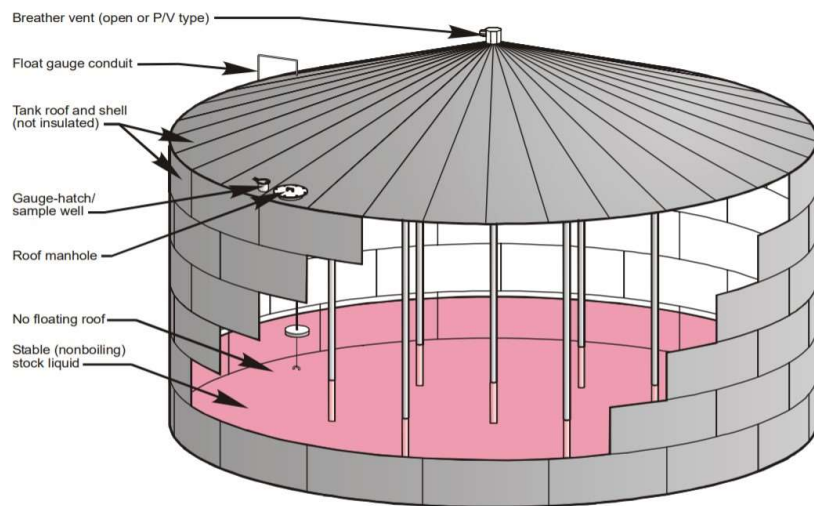


Photo Credit: <https://www.alyeska-pipe.com>

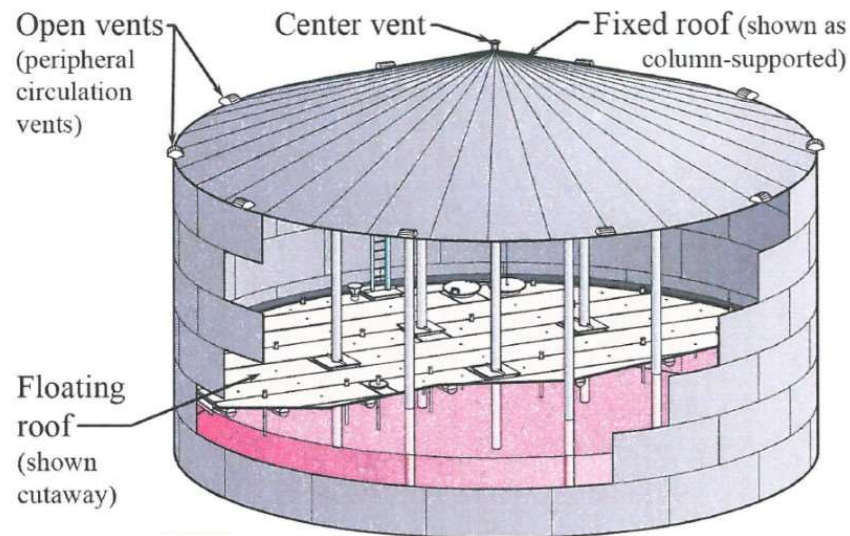
Storage Tank Roof: **Comparison**

There are different roof types for tanks, and they manage emissions differently.

Fixed Roof



Internal Floating Roof





Storage Tank Roof: **Comparison**

Problem with Fixed Roof

Eliminating the Ability to Operate the Conservation Vent to Atmosphere for Any Reason:

- Is contrary to process equipment design guidance
- Introduces a more complicated control system that would increase the possibility of malfunction
- Adds substantial capital cost for very limited emissions reduction benefit

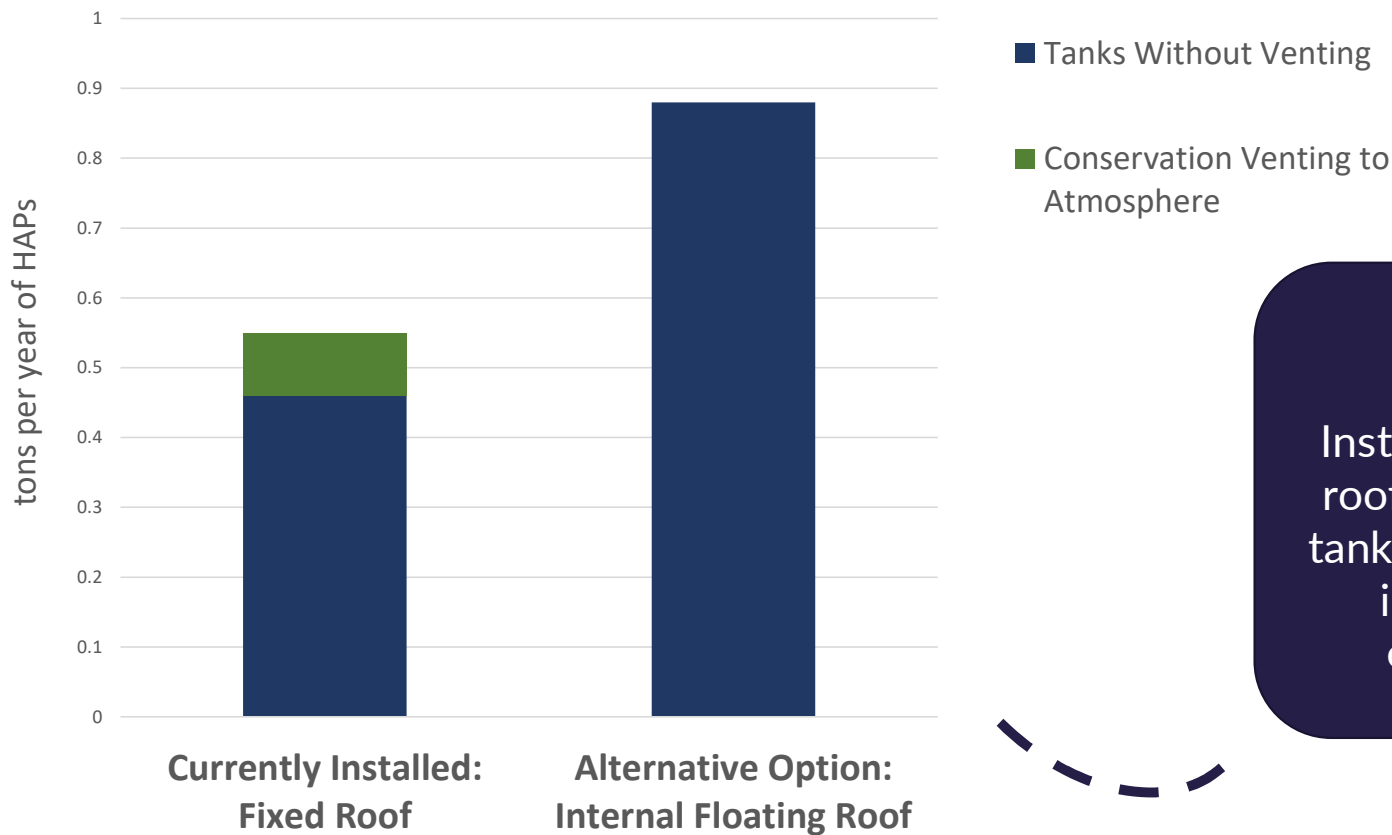
Problem with Internal Floating Roof

HAP Emissions Increase as Compared to VMT's Existing Configuration

- The rule did not contemplate comparing emissions to a fixed roof tank with vapor recovery
- EPA typically does not contemplate rule changes that would increase emissions



HAP Emissions in Different Scenarios

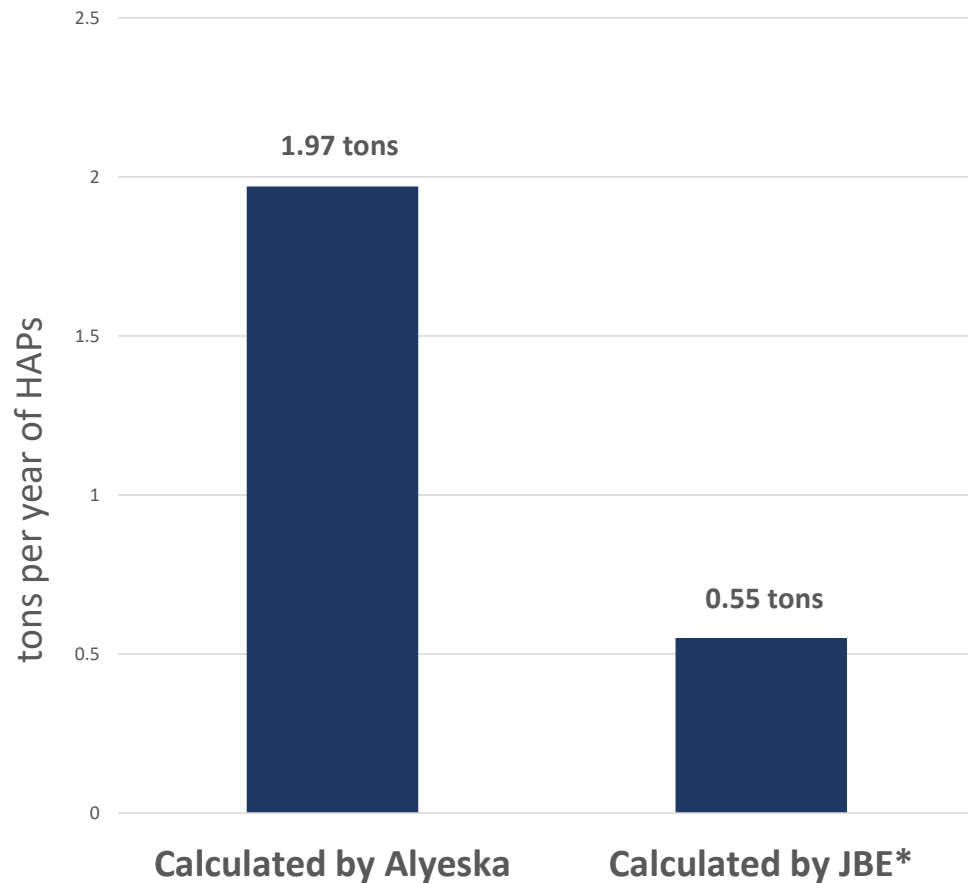


RESULT:

Installing floating roofs on VMT oil tanks would result in HIGHER emissions.



VMT Conservation Vents: **Annual HAP Emissions**



RESULT:

Alyeska's emissions estimates are fair and conservative.

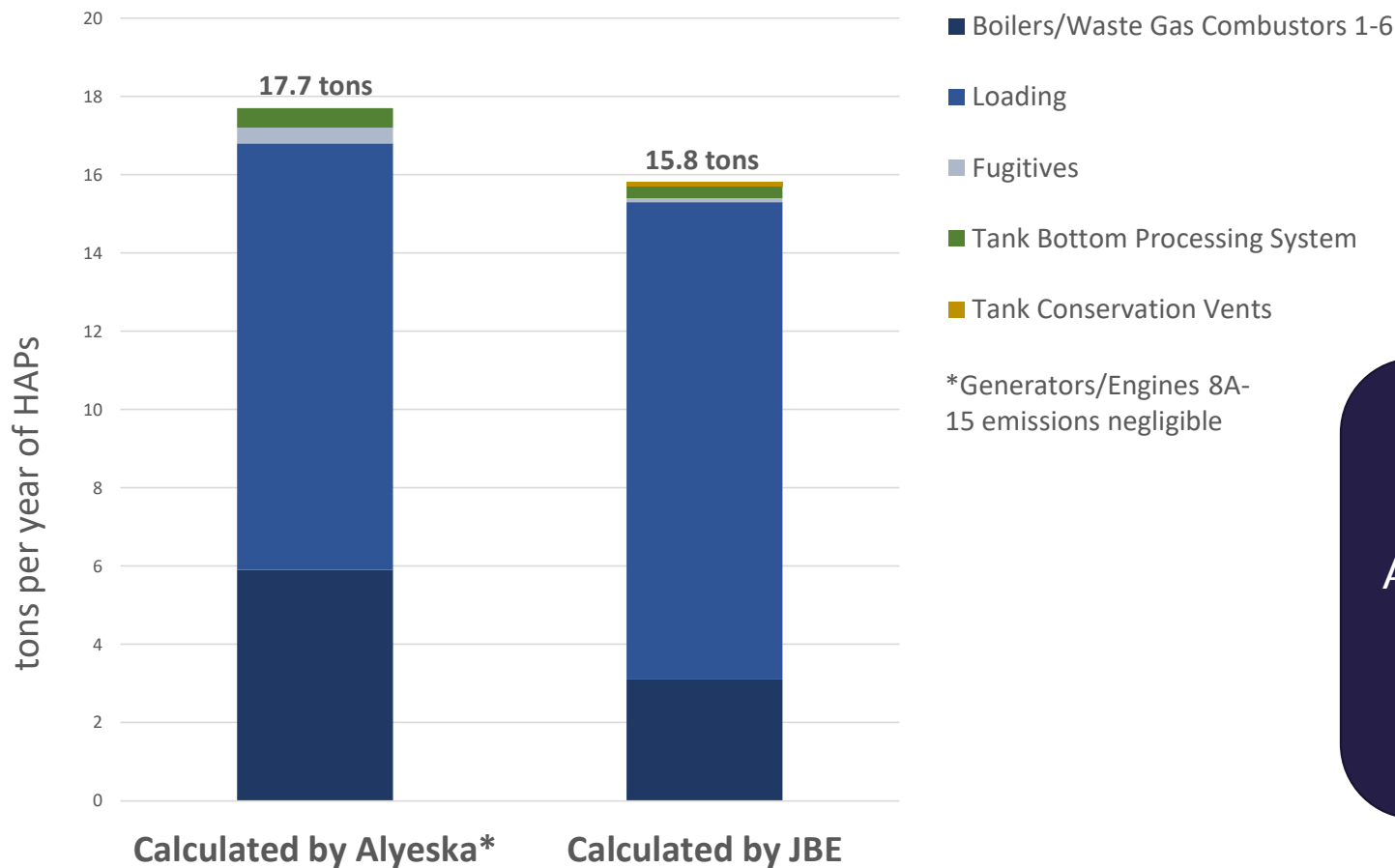
*Pressure Rise Method used for JBE calculations with data provided by Alyeska

Health Effects Screening Evaluation





Potential to Emit: **VMT Annual HAP Emissions**

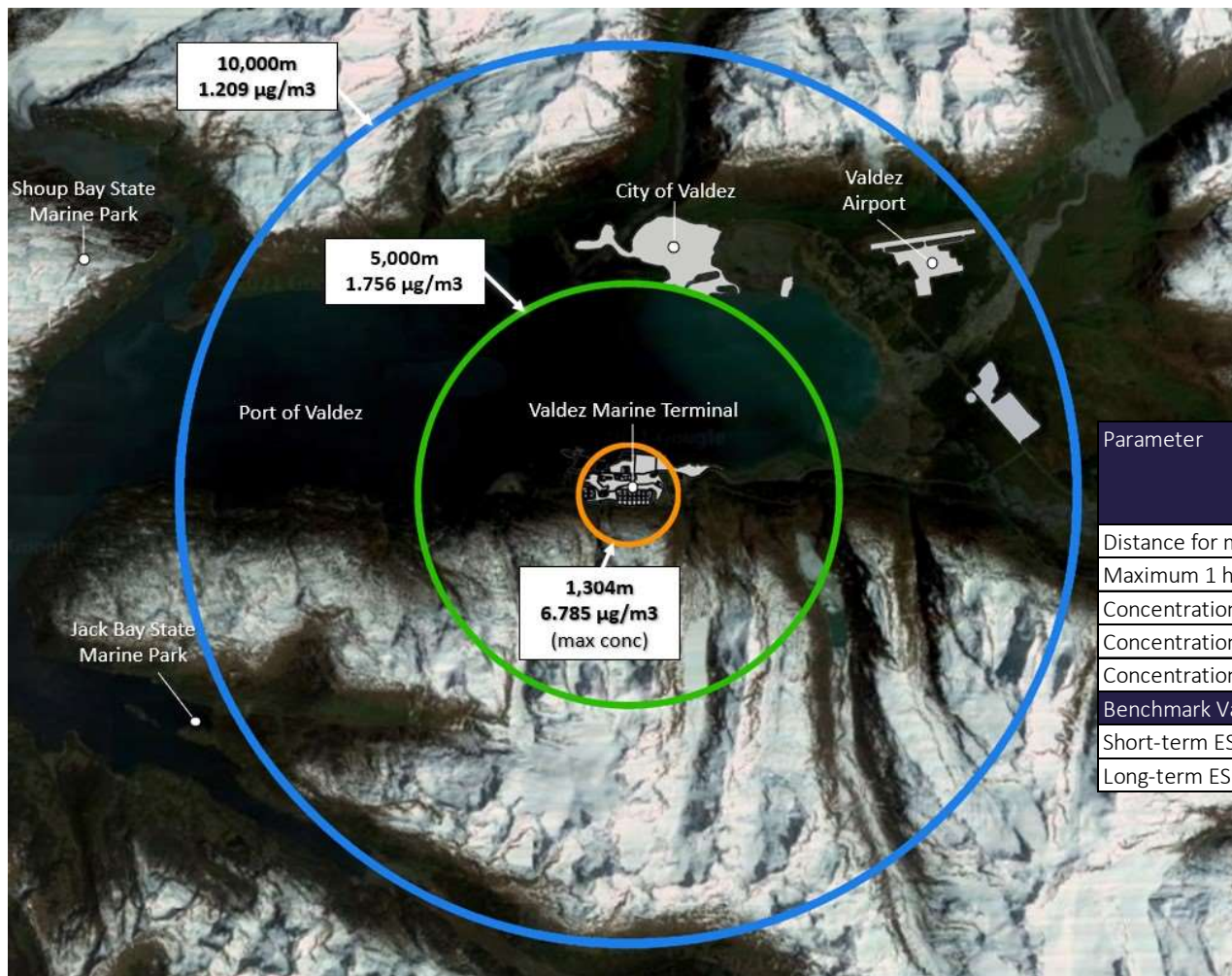


RESULT:

Alyeska's emissions estimates are fair and conservative.

Air Dispersion Model **Results**

Modeled HAP representative compound (benzene) air concentration was well below long-term ESL (effects screening level) in vicinity of City of Valdez



Parameter	Benzene, Sitewide	Benzene, Vents Only	Units
Distance for max concentration	1304	709	meters
Maximum 1 hr concentration	6.785	0.034	µg/m ³
Concentration at 1000 m	6.475	0.032	µg/m ³
Concentration at 5000 m	1.756	0.016	µg/m ³
Concentration at 10000 m	1.209	0.008	µg/m ³
Benchmark Values:			
Short-term ESL Health, Benzene		170	µg/m ³
Long-term ESL Health, Benzene		4.5	µg/m ³

Conclusions





Conclusions

JBE's results support Alyeska's arguments that the new EPA rule will not reduce emissions.



Implementing the rule at the VMT could lead to an increase in HAPS emissions.



On all accounts Alyeska's arguments were sound.

Alyeska and the EPA are currently negotiating rule revisions for the VMT.



THANK YOU

Please visit www.beath.us for
more information

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