

Excerpt from Findings of Fact, Conclusion of Law, and  
Order on NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h,  
4i, 4j, 4k, 4o, 4p, 4u, 6, and 8 (Excerpt)

**POLLUTION CONTROL HEARINGS BOARD  
STATE OF WASHINGTON**

ADVOCATES FOR A CLEANER  
TACOMA, SIERRA CLUB,  
WASHINGTON ENVIRONMENTAL  
COUNCIL, WASHINGTON PHYSICIANS  
FOR SOCIAL RESPONSIBILITY,  
STAND.EARTH, and THE PUYALLUP  
TRIBE OF INDIANS,

Appellants,

v.

PUGET SOUND CLEAN AIR AGENCY  
and PUGET SOUND ENERGY,

Respondents.

PCHB No. 19-087c

FINDINGS OF FACT, CONCLUSIONS OF  
LAW, AND ORDER ON NOC ISSUES 4,  
4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o,  
4p, 4u, 6, and 8.

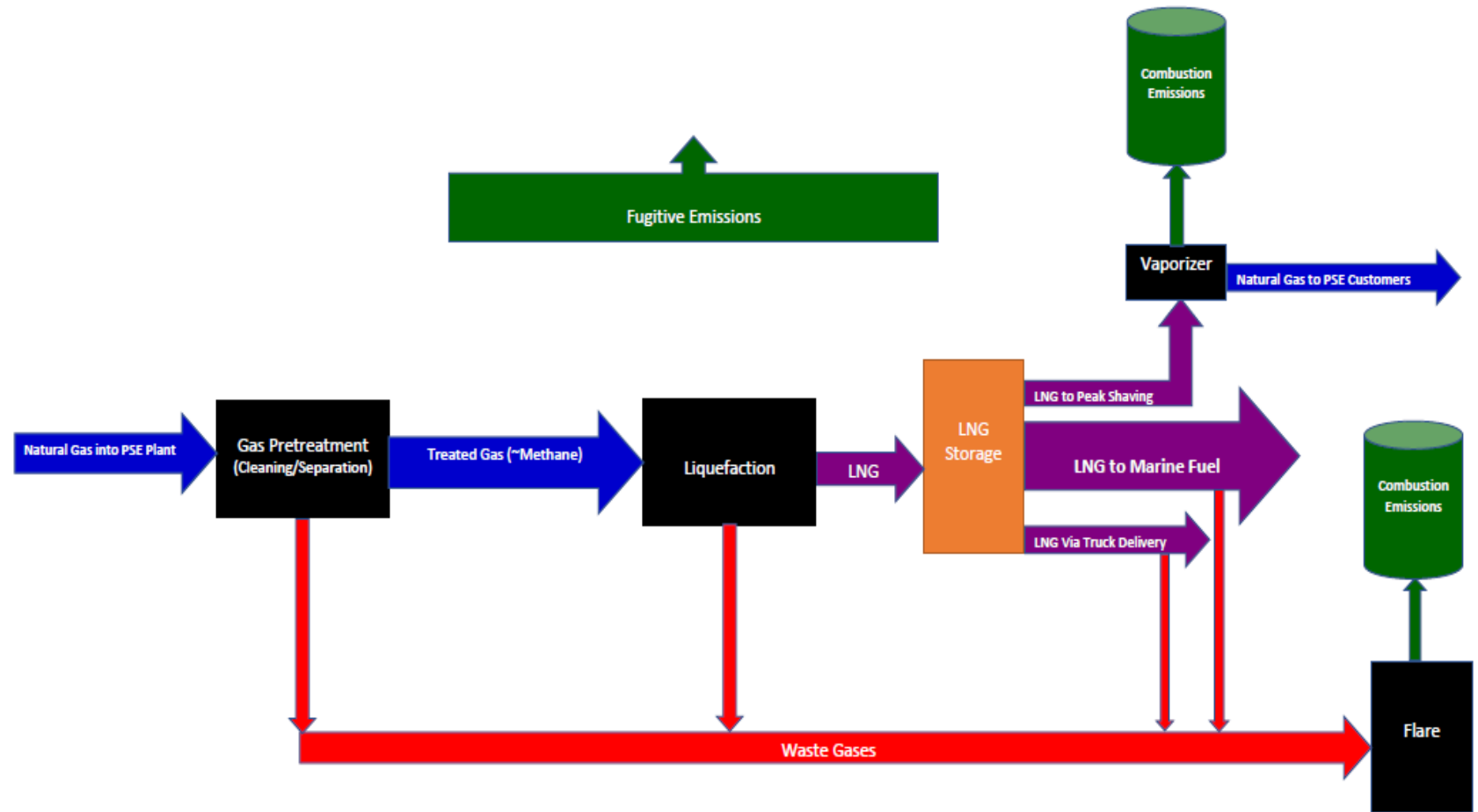
**I. INTRODUCTION**

This case concerns the Puyallup Tribe of Indians' (Tribe) and Advocates for a Cleaner Tacoma, Sierra Club, Washington Environmental Council, Washington Physicians for Social Responsibility, and Stand.Earth (collectively, ACT's) appeals of Order of Approval for Notice of Construction (NOC) No. 11386 (Permit) issued to Puget Sound Energy (PSE) by Puget Sound Clean Air Agency (PSCAA) to construct the Tacoma Liquefied Natural Gas facility (TLNG) and related equipment. The Appeals challenged both the Permit and the State Environmental Policy Act (SEPA) supplemental environmental impact statement supporting the Permit.

The administrative record in this case reflects the protracted discovery and voluminous motions filed. The ten-day hearing on the consolidated appeals took place before the Pollution

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# Simplified Process Flow Diagram - Puget Sound Energy Tacoma Liquefied Natural Gas Plant



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1 16.

2 The primary emission units at TLNG are the enclosed ground flare and the vaporizer.  
3 The flare would produce more emissions because the vaporizer is limited to a maximum of 10  
4 days per year of operation. *Ex. RA-68, p. 34; Ottersburg Testimony at 2216.* The flare has four  
5 burners to combust waste gases generated by the pretreatment, liquification, and fuel transmitting  
6 processes. *Ex. RA-15.* PSE contracted with LFG to design and build the flare. PSE provided  
7 specifications for flare height, waste gas composition, and a desired destruction rate efficiency  
8 for waste gases from which LFG designed and built the flare. *Stobart Testimony at 1992-93.*

9 17.

10 CB&I used UniSim, a commercially available process simulator, to design TLNG. When  
11 a simulation is run in UniSim, it produces an output file or report. In this case, a heat and  
12 material balance (or heat and mass balance) from a UniSim TLNG simulation was produced  
13 containing both inputs and outputs. *Stobart Testimony at 2060-62.* Relevant here, UniSim was  
14 used to develop bracketing cases of operating scenarios at TLNG that affect the type and amount  
15 of waste gases going to the flare. But certain processes are omitted from the UniSim model here.  
16 For example, UniSim did not address the fate of BTEX<sup>3</sup> coming into TLNG through feed gas  
17 and did not address other sulfur compounds except hydrogen sulfide. *Id. at 2062.*

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<sup>3</sup> BTEX refer to the chemicals benzene, toluene, ethylbenzene and xylene.

1 modeling were representative, and Appellants did not meet their burden of proving that the  
2 modeling was flawed on this basis.

3 120.

4 Appellants also present additional bases to support their claim of underestimated criteria  
5 pollutant emissions that were specific to PM<sub>2.5</sub>, nitrogen dioxide, and sulfur dioxide. Each  
6 criteria pollutant is discussed in turn.

7 **1. PM<sub>2.5</sub>**

8 121.

9 The parties agree that new air dispersion modeling with the correct wind direction for  
10 PM<sub>2.5</sub> shows that TLNG's PM<sub>2.5</sub> emissions of 1.3 ug/m<sup>3</sup> exceed WAC 173-400-113, Table 4a's  
11 *threshold* of 1.2 ug/m<sup>3</sup>. *Ex. RA-143*. But as stated in ¶¶ 113-115, PSCAA's and Dr. Libicki's  
12 background analysis did not show that the PM<sub>2.5</sub> NAAQS were exceeded. Appellants only point  
13 out that PM<sub>2.5</sub> emissions were still underestimated by using AP-42 emissions factors because  
14 they only represent an average range of emission rates.

15 122.

16 Landau used AP-42 emission factors from the EPA to calculate PM<sub>2.5</sub> emissions (among  
17 others) from gas combustion in the flare and vaporizer, as well as in its air dispersion modeling.  
18 *Ex. PSE-374, p. 27 (Libicki Pre-filed Testimony)*. AP-42 contains EPA's compilation of  
19 emission factors for carbon monoxide, nitrogen oxides, and VOCs that are used by industry  
20 based on emissions test data from various industrial facilities and sources. They are continually  
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