Notice of Construction (NOC) Worksheet

pscleanair.org
Puget Sound Clean Air Agency

Applicant: Targa Sound Terminal	**NOC Number:** 11265
Project Location: 4130 E 11th St, Tacoma, WA 98421	**Registration Number:** 13828
Applicant Name and Phone: Matthew Kolata, 253) 272-9348	**NAICS:** 424710
Engineer: Gerry Pade	**Inspector:** Max Scarberry

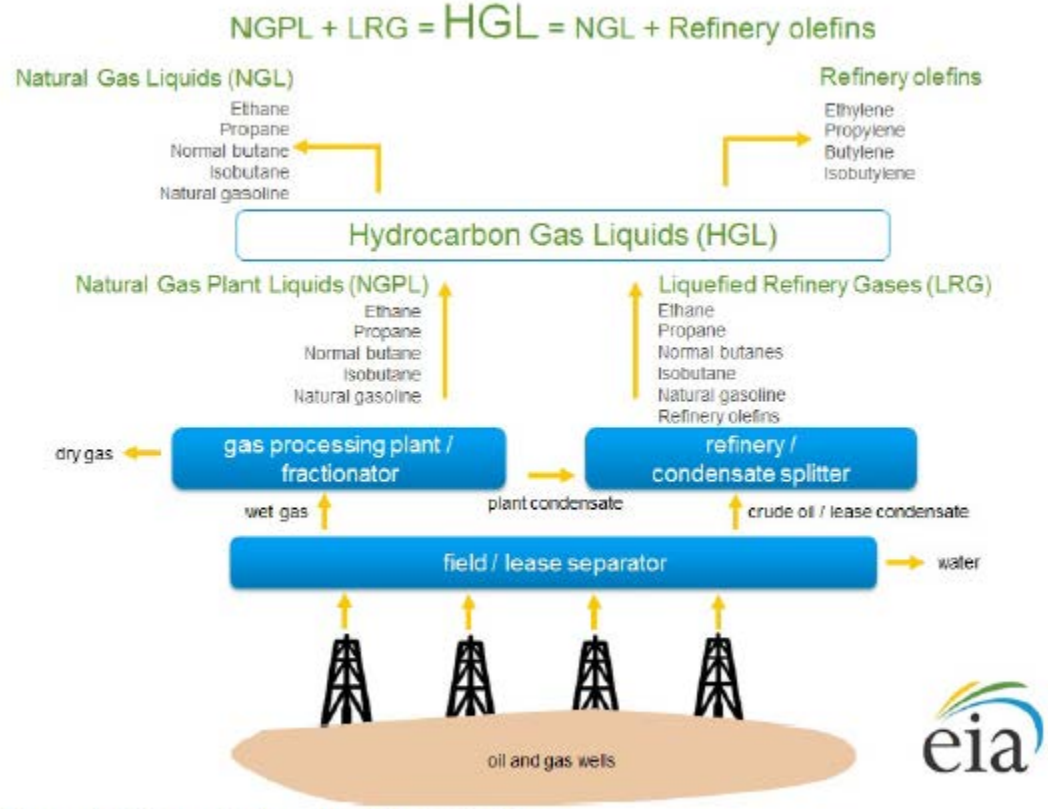
A. DESCRIPTION

Modification of 4 storage tanks (T-208H, T-209H, T-210H, T-211H) to enable storage of gasoline, isooctane, denatured ethanol, and natural gasoline. The project includes marine loading of natural gasoline (151,500,000 gal/yr).

Additional Information:

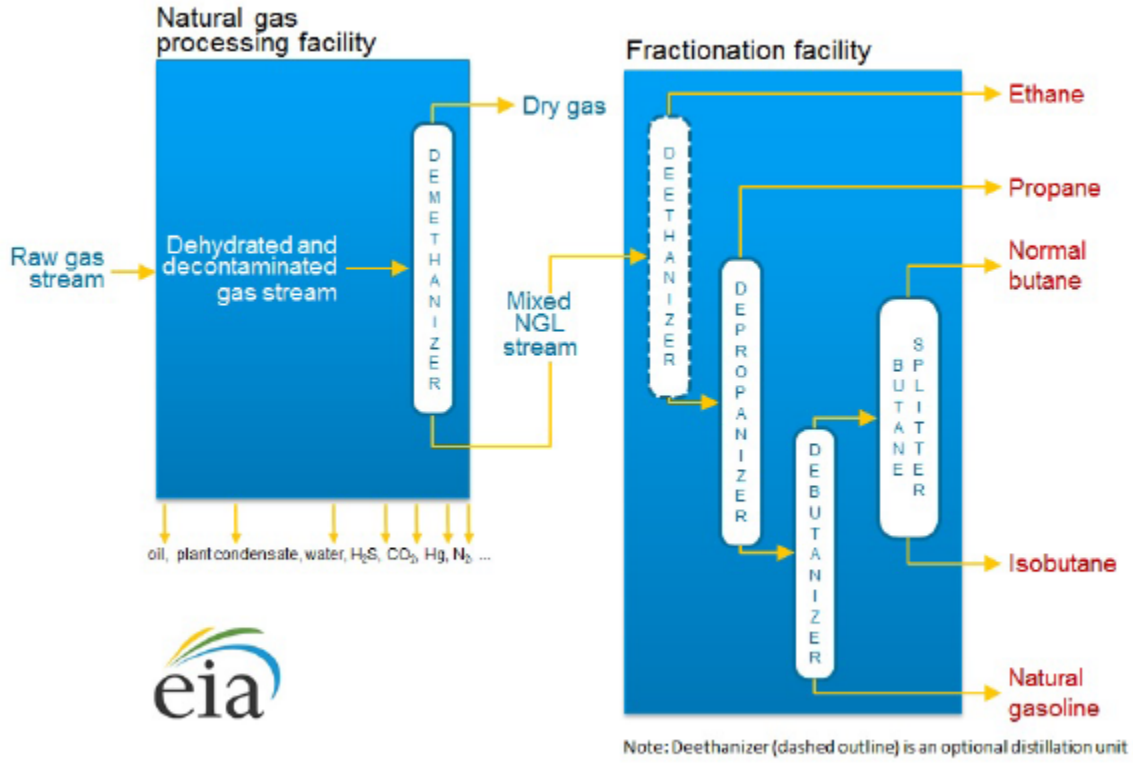
The term 'natural gasoline' can refer to: 1) stabilized lease condensates from oil and gas wells; 2) processing plant condensates; 3) bottoms from the debutanizer or final distillation column in a natural gas liquids fractionation facility; or 4) light naphtha from an oil refinery (or splitter). Though natural gasoline consists primarily of pentane and hexane ('pentanes +'), its chemical composition differs dramatically depending upon how much it has been processed.

Figure 1. HGL taxonomy, simplified



Source: U.S. Energy Information Administration.

Figure 4. Natural gas processing and fractionation schematic



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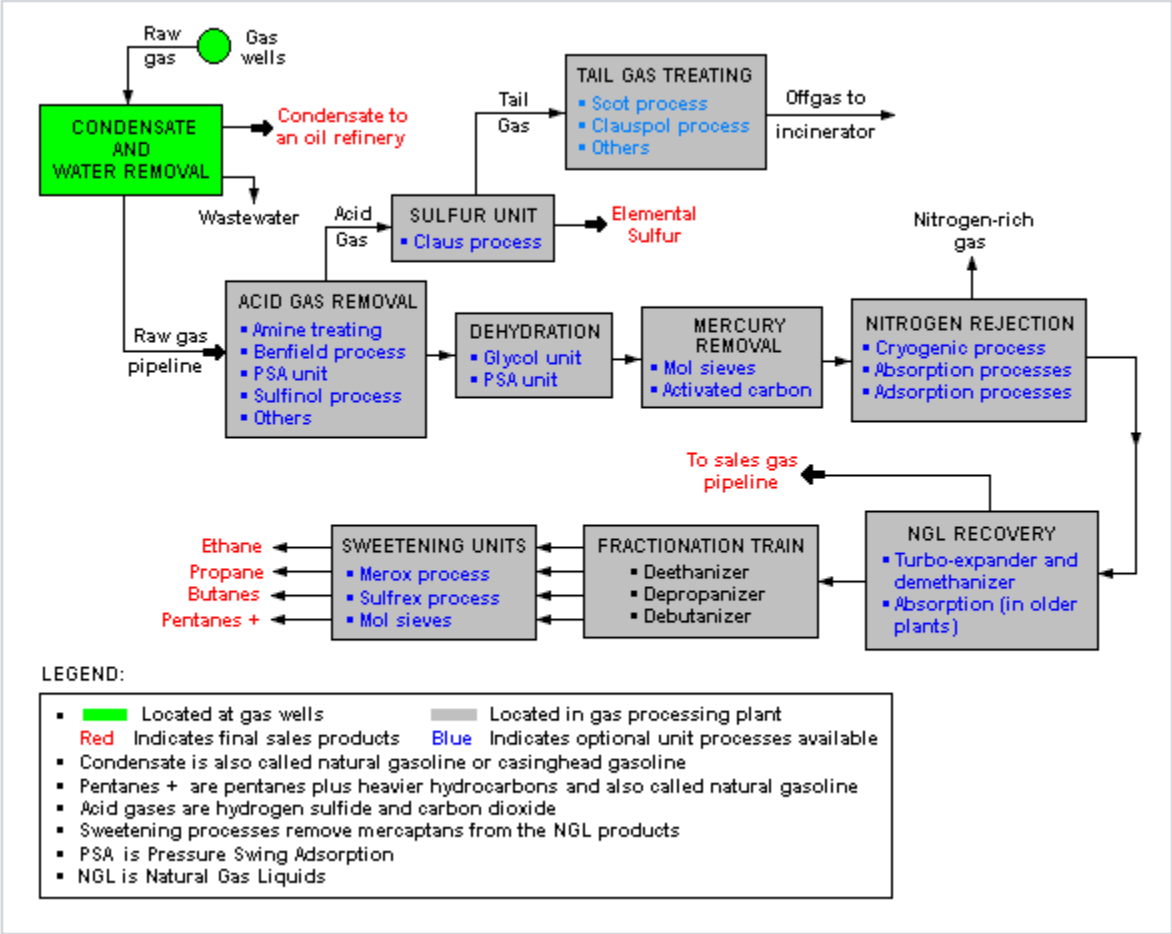

The primary purpose of a natural gas processing plant is to produce pipeline-quality natural gas from raw or wet gas, removing NGPL, carbon dioxide, sulfur, and other contaminants in the process. Depending on economics, a processing plant may be co-located with a fractionation facility to further separate the mixed NGPL stream using distillation techniques (fractionation) into separate streams of marketable ethane, propane, normal butane, isobutane, and natural gasoline. However, more often fractionation plants receive a mixed NGL stream (sometimes referred to as a "Y-grade" stream) from one or more gas processing plants (see Figure 4 above).

B. DATABASE INFORMATION

Targa Sound Termi...	38	11265	62 - storage tank...	2017	1	3700.00	BBL	T-208H (gasoline, isooctane, denatured ethanol, and natural gasoline); NSPS Subpart Kb
Targa Sound Termi...	39	11265	62 - storage tank...	2017	2	42100.00	BBL	T-209H & T-211H (gasoline, isooctane, denatured ethanol, and natural gasoline); NSPS Subpart Kb
Targa Sound Termi...	40	11265	62 - storage tank...	2017	1	67200.00	BBL	T-210H (gasoline, isooctane, denatured ethanol, and natural gasoline); NSPS Subpart Kb
Targa Sound Termi...	41	11265	62 - storage tank...	2017	1	42400.00	BBL	T-211H (gasoline, isooctane, denatured ethanol, and natural gasoline); NSPS Subpart Kb

NSPS	**Yes**	**Applicable NSPS:** Subpart Kb	**Delegated?** Yes
NESHAP	**Yes**	**Applicable NESHAP:** Subpart BBBBBB (applies only to gasoline storage and truck loading)	**Delegated?** Yes
Synthetic Minor	**Yes**		

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fee Description	Cost	Amount Received (Date)
Filing Fee	$1,150	
Equipment (modify 4 storage tanks)	4x$600=$2,400	
NSPS Surcharge	$1,000	
Refined Dispersion Modeling Analysis Review	$1,000	
Public Notice	$700 + publication costs	
Filing received		$1,150 (10/25/16)
Additional fee received		$5,100 (5/25/17) + publication costs
Total	**$6,250 + publication costs**	

Registration Fees:
Issuance of this permit will not change the facility's registration fees.


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D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

The City of Tacoma issued an MDNS on 3/20/12 by for the new tank farm (which includes tanks T-208H, T-209H, T-210H, & T-211H) and a DNS on 12/5/13 for the railcar unloading facility and equipment for marine loading of light products. On 11/4/16 I sent an email to Shirley Schultz at the City of Tacoma to see if she believed they adequately address the current proposal. She hadn't responded as of 11/21/16 so I called to follow-up. Ryan Erickson, a Fire Code Official with the Tacoma Fire Dept. has been involved. Ultimately, the city determined no need for additional review.


RE City of Tacoma Notice of Decision - S

Accordingly, I recommend that we incorporate these documents by reference as allowed under WAC 197-11-635.

E. BEST AVAILABLE CONTROL TECHNOLOGY REVIEW

Similar Permits

Recent permits for storage vessels at Targa Sound Terminal include isooctane (NOC 11069), ethanol (NOC 10688), crude oil (NOC 10554), and gasoline (NOC 10582, 10325). Marine loading of crude oil, gasoline, ethanol, and isooctane at Targa Sound Terminal was covered under NOC 11069. A similar permit covered marine loading of crude oil, gasoline and gasoline blend stocks at US Oil (NOC 10620). None have involved natural gasoline.


11069.pdf


10688.pdf


10554gsp.pdf


10582.pdf


10325.pdf


10620.pdf

Other Regulatory Agencies BACT - Storage Tanks

Bay Area AQMD Reg. 8, Rule 5 (see http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/reg-08/rg0805.pdf?la=en) applies to existing storage vessels. For products with a true vapor pressure ≥11 psia, Section 301 requires a pressure tank or an approved emission control system and Section 306 requires ≥95% control relative to a fixed roof tank without an approved emission control system. For other products, Section 301 requires a floating roof and Section 305 requires a metallic shoe seal that meets Section 321 and a secondary seal that meets Section 322 and deck fittings that meet Section 320. The BAAQMD BACT guidance for new or modified internal floating roof organic liquid storage tanks ≥20,000 gal is either a vapor recovery system with an overall efficiency ≥98% or an internal floating roof that complies with this rule and is equipped with a zero gap secondary seal, controls for any slotted guidepole, and vapor seal boots on the roof legs.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	*Storage Tank - Internal Floating Roof, Organic Liquids*	Revision:	*2*
		Document #:	*167.4.1*
Class:	All	Date:	*03/03/95*

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *Vapor recovery system w/ an overall system efficiency ≥98%*[a,T] 2. *BAAQMD Approved roof w/ liquid mounted primary seal and zero gap secondary seal, all meeting design criteria of Reg. 8, Rule 5. Also, no ungasketed roof penetrations, no slotted pipe guide pole unless equipped with float and wiper seals, and no adjustable roof legs unless fitted w/ vapor seal boots or equivalent*[a,T]	1. *Thermal Incinerator; or Carbon Adsorber; or Refrigerated Condenser; or BAAQMD approved equivalent*[a,T] 2. *BAAQMD Approved Roof and Seal Design*[a,T]
NOx	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
SO_2	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
CO	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
PM_{10}	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
NPOC	1. *Vapor recovery system w/ an overall system efficiency ≥98%*[a,T] 2. *Same as for POC above*	1. *Carbon Adsorber; or Refrigerated Condenser; or BAAQMD approved equivalent*[a,T] 2. *BAAQMD Approved Roof and Seal Design*[a,T]

The California Air Resource Board's BACT Clearinghouse shows a couple internal floating roof gasoline storage tanks recently permitted by the San Diego APCD with both mechanical shoe primary seals and secondary seals (https://www.arb.ca.gov/bact/bactnew/query.php).

The Oklahoma DEQ recently permitted a storage tank for natural gasoline. Because of the volatility of natural gasoline being permitted at that facility, a closed-vent system and control device (VCU) was required. A similar finding was made by the West Virginia DEP (see http://docplayer.net/19272272-Engineering-evaluation-fact-sheet.html).

OKDEQ Explorer Pipeline 2908.pdf

The Texas DEP issued an operating permit to Plains LPG Services that included pressure vessels for storage of natural gasoline (see https://yosemite.epa.gov/r5/in_permt.nsf/932df6c77d85e1b48625763f00510c78/d00ae1569f11e2be86257fed00574430/$FILE/05090038.pdf).

Other Regulatory Agencies BACT - Marine Loading

Bay Area AQMD Reg. 8, Rule 44 (http://data.baaqmd.gov/dst/regulations/rg0844.pdf) applies to existing marine tank vessel operations. The control requirements in Section 304 of this rule are less stringent than MACT Subpart Y (see the worksheet for NOC 11069). The BAAQMD BACT guidance for new or modified marine loading operations is a vapor recovery with an overall efficiency ≥98%.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	*Liquid Transfer & Handling - Marine Loading*	Revision:	*1*
		Document #:	*107.1*
Class:	*All*	Date:	*10/28/91*

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *n/d* 2. *Vapor recovery and control system: compressor, condenser, and thermal incinerator w/ a destruction efficiency ≥98.5%* [b]	1. *n/d* 2. *BAAQMD Approved Design and Operation* [b]
NOx	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
SO_2	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
CO	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
PM_{10}	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
NPOC	1. *n/d* 2. *Vapor recovery system w/ an overall system efficiency ≥95%* [b]	1. *n/d* 2. *Vapor Balance; or Refrigerated Condenser; or Carbon Adsorber; or BAAQMD Approved Equivalent* [b]

Analysis

This is our first permit application involving natural gasoline. The Agency has recently issued permits for similar light products including gasoline, crude oil, isooctane, and denatured ethanol. Proposed restrictions on the vapor pressure, sulfur content and benzene content of the natural gasoline to be handled will ensure that the natural gasoline to be terminaled is similar to the other light products previously permitted.

Our permits for marine loading of light products included the use of a John Zink Marine Vapor Combustion Unit (MVCU) which is warranted to ≥99.0% destruction efficiency for VOC. This is more stringent than MACT Subpart Y (≥98% destruction) and the BAAQMD BACT guidance (≥98.5% destruction). No increase in marine loading of gasoline, ethanol or isooctane is being proposed, only natural gasoline (≤151,500,000 gal/yr). Loading is to be accomplished using the existing MVCU meeting the same emission limitations previously imposed for other light products.

Our permits for equipment leaks (e.g., pumps, valves, flanges) at gasoline loading terminals relied on the monthly visual inspections required under the Gasoline Distribution GACT standard under Subpart BBBBBB and, for US Oil & Refining, the LDAR program under NSPS Subpart GGGa. The fugitive emissions from equipment leaks associated with this project were estimated to be <0.23 ton/yr of VOC, primarily from the railyard across the Hylebos Waterway. Except for components in gasoline service, there are no federal leak detection and repair requirements at Targa Sound Terminal. The previous permit required Targa to comply with the Subpart BBBBBB leak detection and repair requirements for all light products, which will be extended to include natural gasoline.

Our permits for light product storage tanks have largely followed the Bay Area AQMD BACT guidance, which goes well beyond NSPS Subpart Kb (adopted in 1987) and other, more recent, federal standards, including Subpart C of 40 CFR Part 65 and Subpart WW of 40 CFR Part 63. Subpart C is referenced as an alternative compliance option under Subpart Kb. Subpart WW is referenced as an alternative to Subpart Kb under the Gasoline Distribution GACT standard. It's the only one that specifically addresses slotted guidepoles and is the only one with a numerical gap limit for gaskets, seals and wipers. None of these subparts require a secondary seal for the internal floating roof, vapor seal boots for roof legs, or monitoring of the VOC concentration above the floating roof.

Targa's proposal to modify 4 existing tanks to store light products would comply with the most stringent provisions in these standards as well as the Bay Area AQMD rule and BACT guidance and is consistent with our previous permits.

Proposed restrictions on the vapor pressure, sulfur content and benzene content of the natural gasoline will assure the natural gasoline ensure the required control technology will be consistent with our previous permits. As described below, natural gasoline properties vary widely, depending upon the well field and the degree to which it's processed/refined.

VAPOR PRESSURE. Processing has a dramatic impact on the vapor pressure of natural gasoline, as reflected in the Gas Processors Association (GPA) specifications -

GPA Natural Gasoline Specifications and Test Methods

Scope: These specifications state the required properties of Natural Gasoline. Natural gasoline is a mixture of liquid hydrocarbons extracted from natural gas, composed principally of pentanes and heavier hydrocarbons, although varying amounts of butanes may be included, depending on the commercial grade.

Natural gasoline is defined further for commercial purposes by the following:

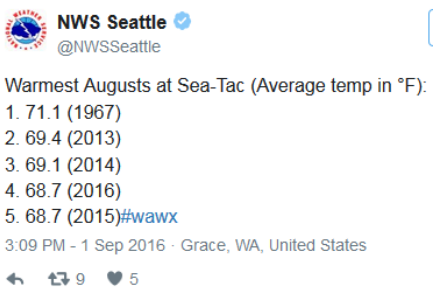
Product Characteristic	Specification	Test Method
Reid Vapor Pressure	10-34 pounds	ASTM D-323
Percentage evaporated at 140°F	25-85	ASTM D-216
Percentage evaporated at 275°F	Not less than 90	ASTM D-216
End Point	Not more than 375°F	ASTM D-216
Corrosion	Not more than classification 1	ASTM D-130 (modified)
Color	Not less than plus 25 (Saybolt)	ASTM D-156
Reactive Sulfur	Negative, "sweet"	GPA 1138

In addition to the above general specifications, natural gasoline shall be divided into 24 possible grades on the basis of Reid vapor pressure and percentage evaporated at 140°F. Each grade shall have a range in vapor pressure of four pounds, and a range in the percentage evaporated at 140°F of 15%. The maximum Reid vapor pressure of the various grades shall be 14, 18, 22, 26, 30, and 34 pounds, respectively. The minimum percentage evaporated at 140°F shall be 25, 40, 55, and 70, respectively. Each grade shall be designated by its maximum vapor pressure and its minimum percentage evaporated at 140°F, as shown in the following table:

Grades of Natural Gasoline
Percentage Evaporated at 140°F

Reid Vapor Pressure, psi	25%	40%	55%	70%
34	Grade 34-25	Grade 34-40	Grade 34-55	Grade 34-70
30	Grade 30-25	Grade 30-40	Grade 30-55	Grade 30-70
26	Grade 26-25	Grade 26-40	Grade 26-55	Grade 26-70
22	Grade 22-25	Grade 22-40	Grade 22-55	Grade 22-70
18	Grade 18-25	Grade 18-40	Grade 18-55	Grade 18-70
14	Grade 14-25	Grade 14-40	Grade 14-55	Grade 14-70
10				

Reid Vapor Pressure (RVP) is the absolute vapor pressure in pounds per square inch at 100°F. For comparison, motor vehicle gasoline has a maximum RVP of 15 in the winter and 9 in the summer. Most GPA grades of natural gasoline are too volatile to be stored in floating roof tanks. NSPS Subpart Kb imposes a true vapor pressure limit of 11.1 psia at the maximum monthly average storage temperature. The maximum monthly average temperature reported by the National Weather Service for SeaTac airport is 71.1°F.



Methods for determining the true vapor pressure from the Reid Vapor Pressure (RVP) are available (http://www.jmcampbell.com/tip-of-the-month/2016/02/correlations-for-conversion-between-true-

and-reid-vapor-pressures-tvp-and-rvp/). I used equations 1b through 3b and the parameters in Table 1 to calculate an RVP equivalent of 16.8 for natural gasoline with a true vapor pressure of 11.1 psia @71.1°F. The BAAQMD rule prohibits storage of product with a true vapor pressure ≥11 psia in floating roof tanks, which corresponds to an RVP of ≥16.6.

The Safety Data Sheet from UEO Buckeye supplied with this permit application showed an RVP of 11.8 psi, which is comparable to gasoline. Because the Olympic Pipeline prohibits transmission of gasoline with an >15 psi, I proposed this as a limit. Targa requested maximum flexibility with an RVP limit of 16.5. They proposed documenting compliance by either a Certificate of Analysis (COA) or Safety Data Sheet (SDS). However, SDS don't specify either the actual or maximum value of each shipment.

Most natural gasoline that's been processed at a liquids fractionation facility is used as a denaturant for ethanol, which is then used as an oxygenate for motor vehicle gasoline. Cargill's standard ethanol marketing agreement (https://www.sec.gov/Archives/edgar/data/1370183/000119312506191648/dex108.htm) contains the following natural gasoline denaturant specifications, including an RVP<14.0, total sulfur content <50 ppm, and a benzene content ≤1.1%.

EXHIBIT E

Natural Gasoline Denaturant Specifications

Parameter	Specification	Test Method
RVP	less than 14.0	ASTM D323
Total Sulfur	Less than 50.0 ppm	ASTM D5453
Benzene	1.1 % vol max	ASTM D5580
Total Aromatics	35 % vol max (including benzene)	ASTM D5580
Olefins	10 % vol max	ASTM D6550
Distillation End Point	437ºF (225 C) max	ASTM D86
Additives	None allowed	

The above specifications parameters must be tested and reported on a Certificate of Analysis for each lot of product received and a copy must accompany each load. All rail cars must be sealed to ensure product quality. The Certification of Analysis results for natural gasoline denaturant shall be used to calculate benzene, aromatics and olefins content in the finished fuel grade ethanol for reporting on Certificates of Analysis for California delivery.

SULFUR. Processing also has a dramatic impact on the sulfur content of natural gasoline. Lease condensate can contain >0.5% (>5000 ppm) sulfur by weight. Processing plants remove sulfur (e.g., hydrogen sulfide) and convert mercaptans to disulfides. The resulting sulfur content is typically 100-200 parts per million by weight (https://www.aiche.org/academy/videos/conference-presentations/tier-3-processing-options-natural-gasoline-ngl-fractionation) but can be further lowered, as evidenced by Cargill's specification. The Safety Data Sheet (SDS) from UEO Buckeye supplied with this permit application didn't specify the sulfur content.

Effective 1/1/17, motor vehicle gasoline is subject to the Tier 3 sulfur limits (10 ppm annual avg., 80 ppm max per gal) under 40 CFR Part 80, Subpart O. This includes the sulfur in denatured ethanol added to the gasoline, which has to meet a 10 ppm (max per gal) sulfur limit per §80.1610. The denaturant (natural gasoline) can't exceed 3% by volume of the denatured ethanol and can't contain >330 ppm sulfur per §80.1611. A product transfer document must be included with each batch either specifying its sulfur content or simply that it's <330 ppm sulfur per §80.1611.

The GPA specifications require natural gasoline to be 'sweetened' in order to prevent corrosion of pipes and tanks. The EPA's new Tier 3 sulfur limits are designed to protect automobile catalytic convertors. Reduced sulfur compounds are also highly malodorous, with odor thresholds around a part per billion by volume. Some are also highly toxic.

The following paper from John Zink's website describes a marine crude oil loading terminal in Burnaby BC that was causing odor complaints. The terminal receives a blend of sour (tar sands) crude and lease condensate (natural gasoline) via the Trans Mountain Pipeline from Alberta. A Marine Vapor Combustion Unit was installed to combust the gases displaced during ship loading. These gases, which contained about 2600 ppmv of reduced sulfur compounds, were combusted with an efficiency >99.5%, resulting in stack gas concentrations of 0.4 ppm of mercaptan, 1.8 ppm of H_2S, and 0.1 ppm of carbonyl sulfide. Although these concentrations were still around 1000 times their odor thresholds, they were low enough to where atmospheric dispersion downwind of the stack could reduce them to near or below their odor thresholds.


tp_WhatsThatSmell.pdf

Targa Sound Terminal uses a nearly identical MVCU. If off-gases containing 330 ppm of sulfur (e.g., carbon disulfide) were destructed with ≥99.0% efficiency, the exhaust would contain <33 ppb of carbon disulfide and <33 ppm of SO_2, which would not be detectable downwind of the stack. This wouldn't necessarily the case for high sulfur natural gasoline (e.g., lease condensate). If the sulfur concentrations are high enough, its combustion could conceivably exceed the SO_2 emission limit of 1000 ppmv, which cannot be permitted.

Targa proposed that their contracts require that customer provide a Certificate Of Analysis for each product from a new or different source. Upon receipt of a COA with a sulfur level > 0.5% sulfur, they would either test the sample or conduct a stack test on the MVCU for the product to ensure the product is in compliance with Reg I, Section 9.07. However, I believe once the product has been received by Targa, it would be too late to prevent the emissions. Also, this approach would fail to demonstrate compliance with the Acceptable Source Impact Levels for reduced sulfur compounds and to prevent odor impacts.

BENZENE. Processing probably has little impact on the benzene content of natural gasoline, since its vapor pressure is less than that of hexane. The benzene content is probably more related to the well field from which it came. A natural gasoline Safety Data Sheet (SDS) from ConocoPhillips showed values as high as 5% by weight. The SDS from UEO Buckeye supplied with this permit application specified a benzene content in the range of 0-1% by weight, which is consistent with that of Bakken crude oil and motor vehicle gasoline (≤1.3% by volume per sample, ≤0.62% annual avg).

This is important because benzene is thought to be the most toxic hydrocarbon in natural gasoline. Based on the dispersion modeling initially submitted with this permit application, I recommended a limit ≤1.0% by weight. Targa subsequently remodeled with a benzene content of 1.3% to demonstrate compliance with the Acceptable Source Impact Level in WAC 173-460-150 (see Section H of this worksheet).

According to the Energy Information Administration, almost half of the natural gasoline produced is exported to western Canada as diluent for heavy crude, enabling its movement in pipelines (30% diluent) and railcars (15% diluent). Natural gasoline is also used as a denaturant for ethanol (≤2.5% by volume), making the alcohol unfit for drinking. Denatured ethanol is blended with gasoline to meet octane specifications, the Clean Air Act requirement for oxygenated gasoline, and the Energy Independence and Security Act requirement for renewable fuel use.

The natural gasoline to be terminaled by Targa is not going to be exported to Canada as a diluent for tar sands crude. Theoretically it could be exported to other countries for this purpose or even as a

feedstock for ethylene production. However, the shallow berth of Targa's dock significantly restricts the draft of vessels that can be loaded. Theoretically, it could be sent to US Oil or one of the refineries at March Point or Cherry Point. However, these refineries (except for Shell, which can receive oil from Tesoro) already have rail access and haven't historically handled natural gasoline. Accordingly, it will most likely be subject to motor vehicle gasoline regulations, including the 330 ppm sulfur limit as well as restrictions on vapor pressure (as evidenced in Cargill's specifications) and benzene content.

BACT Recommendations

BACT for VOC and organic TAC emissions from storage of natural gasoline, gasoline, denatured ethanol, and isooctane and is the same as specified in the recent permits issued to Targa Sound Terminal shown above. It includes compliance with NSPS Subpart Kb, boots for the roof legs, seals for any slotted guidepoles, floating roof mounted secondary seals, a 30% VOC limit for the space above the float (inspected semiannually), a 10 year maximum seal gap inspection frequency for Section 3.02, and emission controls for tank degassing. The RVP of any natural gasoline stored shall not exceed 16.5 psi, as documented by the product transfer documents (bill of lading or certificate of analysis).

BACT for TAC includes a limit on the benzene content of ≤1.3% by weight.

BACT for VOC from marine loading of natural gasoline is the same as specified in the recent permit issued to Targa Sound Terminal (NOC No. 10620) and includes a Marine Vapor Combustion Unit with ≥99.0% destruction efficiency for VOC.

BACT for SO_2 and H_2S from marine loading is the Part 80, Subpart O sulfur limit of 330 ppm, as documented by the product transfer documents (bill of lading or certificate of analysis) in accordance with 40 CFR 80.1611.

BACT for VOC from equipment leaks is compliance with the gasoline leak detection and repair program under 40 CFR 63.11089, even when storing natural gasoline, isooctane, and denatured ethanol.

F. EMISSION ESTIMATES

Proposed Project Emissions

Actual Emissions

The permit application included the following estimates -

Table 3-3. Emission Summary

Emission Unit	Maximum Hourly VOC Emission Rate (lb/hr)	Annual VOC Emission Rate (tpy)
Tank 208H [a]	17.84	1.88
Tank 209H [a]	18.64	1.96
Tank 210H [a]	30.72	3.23
Tank 211H [a]	18.64	1.96
Tanks Fugitives [a]	0.01	0.04
MVCU [b]	54.27	14.62
Marine Barge Loading Fugitives [b]	1.48E-03	6.47E-03
Rail Fugitives [b]	0.04	0.18
Total VOC	140.17	23.87

[a] Tanks emissions (including Tanks 208H, 209H, 210H and 211H) are evaluated for the worst-case for storing diesel, gasoline, natural gasoline and isooctane. Ethanol is not expected to have VOC emissions higher than any of these products; therefore, emissions for storing ethanol are not evaluated.

[b] Permitting Tanks 208H-211H to have the capability to store gasoline, ethanol and isooctane does not affect current throughput limits, nor cause additional VOC emissions at the marine dock and rail unloading. Therefore, emissions for MVCU and rail unloading are only evaluated for natural gasoline.

Their emission calculations are shown below –

Targa Sound Terminal NOC Applica

Targa Tank Modification Respons

The tank emission calculations were made with proprietary software that has not been independently verified. I asked Harold Laurence of Trinity Consultants why they did it this way and he said that it's because EPA is no longer supporting the TANKS4.09D software (https://www3.epa.gov/ttnchie1/software/tanks/). However, it's still available and its errors are known. The calculations these programs are in AP-42 and can be done manually or set them up in a spreadsheet as Trinity Consultants did.

Potential Emissions

See actual emissions above, which are calculated using worst case (maximum emission) scenarios. For example, the true vapor pressure was assumed to be 11.1 psia and throughputs were at the proposed limits.

Facility-wide Emissions

Actual Emissions

Reporting Source? Possibly

This emissions from the facility are capped via throughput limits and emission standards. The Agency requires an annual emission report if emissions exceed 25 ton/yr of VOC, SO_2, NO_x, CO or PM, 6.25 ton/yr of total HAP, or 2.5 ton/yr of any individual HAP. For calendar years 2014

and 2015, Targa reported that the facility was below emission reporting thresholds but it might exceed a reporting threshold in 2016.

Potential Emissions

The permit application included the following estimates for potential emissions -

Table 3-4. Facility-Wide Emissions Summary

	VOC [a] (tpy)	Individual HAP [b] (tpy)	Total HAPs (tpy)
Post-Project Facility-Wide Emissions	89.27	6.18	11.43
PSD Threshold	250	N/A	N/A
Title V Threshold	100	10	25

[a] This project only has VOC and HAP emission increase. Therefore, other criteria pollutants are not listed. The post-project facility-wide VOC emission rate includes fugitives.
[b] The individual HAP with highest emissions is 2,2,4-trimethylpentane.

G. OPERATING PERMIT or PSD

N/A

H. AMBIENT IMPACT ANALYSIS

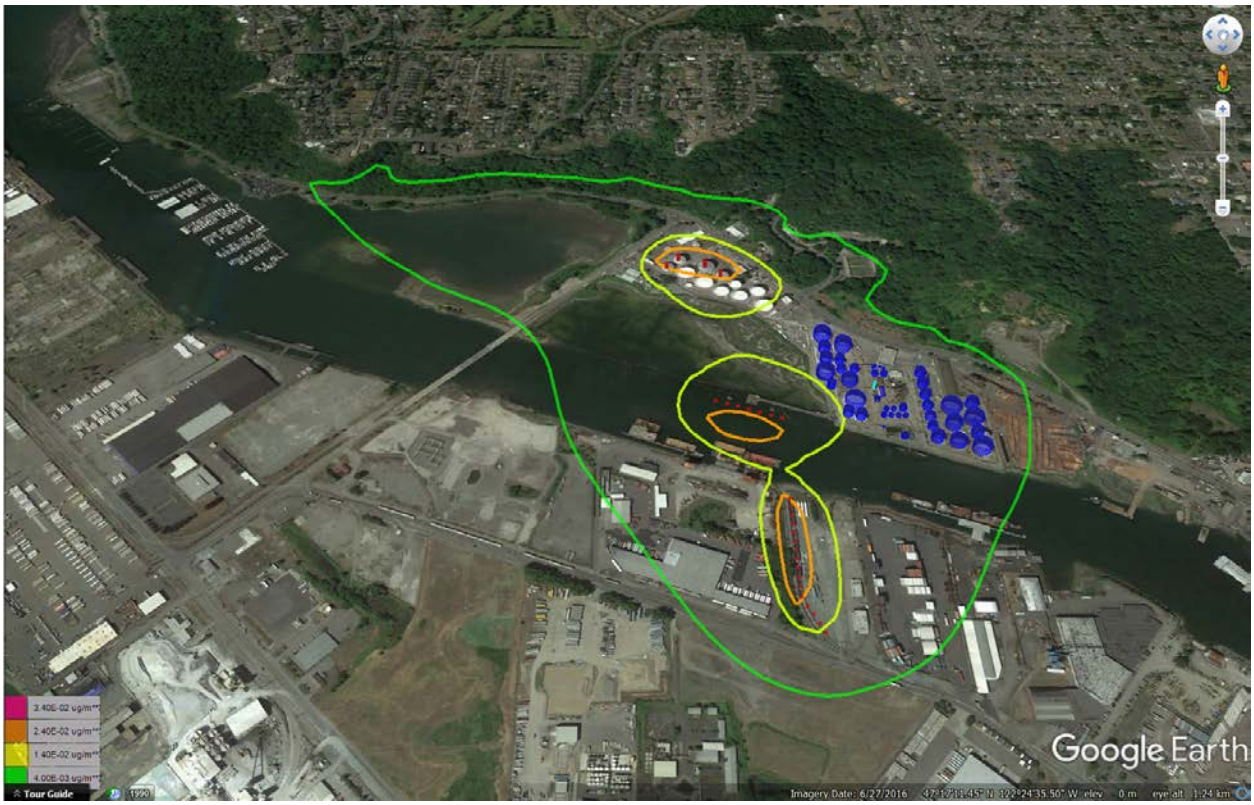
The permit application included dispersion modeling with AERMOD for benzene and hexane and indicating compliance with the Acceptable Source Impact Levels. All other TAC emissions were below the Small Quantity Emission Rates for which modeling is required.

Targa Sound Terminal NOC Applica

Table 2. Modeling Results

Pollutant	Averaging Period	October 2016 Modeling Results (µg/m³)	February 2017 Modeling Results (µg/m³)	ASIL (µg/m³)	Below ASIL?
Benzene	Annual	0.0260	0.0340	0.0345	Yes

Benzene isopleths for highest annual average (2009) -



Natural gasoline not certified for blending with motor vehicle gasoline may contain high amounts of sulfur (>5000 ppm). If, in the future, Targa wants to terminal natural gasoline containing >330 ppm of sulfur, Targa would need to file another permit application demonstrating compliance with the Acceptable Source Impact Level for reduced sulfur compounds including, but not limited to, hydrogen sulfide (1.4 ppb, 24-hr avg) and carbon disulfide (257 ppb, 24-hr avg), and compliance with the SO_2 emission limit for the MVCU (1000 ppm, 1-hr avg).

I. APPLICABLE RULES & REGULATIONS

1. PUGET SOUND CLEAN AIR AGENCY

REGULATION I

Section 5.05 Registration Requirements

(c) The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:

(1) Periodic inspection of all equipment and control equipment;
(2) Monitoring and recording of equipment and control equipment performance;
(3) Prompt repair of any defective equipment or control equipment;
(4) Procedures for start up, shut down, and normal operation;
(5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and

(6) A record of all actions required by the plan.

The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

Section 9.11 Detriment to Person or Property

(a) It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

Section 9.07 Sulfur Dioxide Emission Standard

It shall be unlawful for any person to cause or allow the emission of sulfur dioxide from any source in excess of 1,000 parts per million by volume on a dry basis, 1-hour average ~~(corrected to 7% oxygen for fuel burning equipment and refuse burning equipment)~~.

Section 9.20 Maintenance of Equipment

(a) It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

(b) It shall be unlawful for any person to cause or allow the operation of any equipment as defined in Section 1.07 or control equipment not subject to Section 9.20(a) unless the equipment or control equipment is maintained in good working order.

REGULATION II

Section 3.02 VOC Storage Tanks

(a) This section shall apply to all stationary storage tanks with a capacity of 40,000 gallons (151,400 liters) or greater storing volatile organic compounds with a true vapor pressure of 1.5 pounds per square inch (10.5 kPa) or greater at actual monthly average storage temperatures.

(b) It shall be unlawful for any person to cause or allow such storage unless the storage tank is a pressure tank maintaining working pressures sufficient at all times to prevent organic vapor loss to the atmosphere, or is designed and equipped with one of the following vapor loss control devices:

** * **

(2) A fixed roof with an internal floating-type cover that rests on the surface of the liquid contents at all times and is equipped with a closure device. The closure device shall prevent the emission of organic vapors such that the concentration of such vapors in the vapor space above the internal floating roof does not exceed 50% of the lower explosive limit (LEL) measured as propane; or

(3) A fixed roof tank with control equipment that reduces emissions by 95% or greater.

(c) All primary seals or closure devices shall meet the following requirements:

(1) The primary seal shall contain no visible holes, tears, or other openings.

(2) No gap between the tank shell and the primary seal shall exceed 1½ inches (3.8 cm). No continuous gap greater than ⅛ inch (0.32 cm) shall exceed 10% of the circumference of the tank. The cumulative length of all primary seal gaps exceeding ½ inch (1.3 cm) shall not be more than 10% of the circumference; and the cumulative length of all primary seal gaps exceeding ⅛ inch (0.32 cm) shall not be more than 40% of the circumference.

(d) All secondary seals or closure devices shall meet the following requirements:

(1) There shall be no visible holes, tears, or other openings in the secondary seal or seal fabric;

(2) The secondary seal shall be intact and uniformly in place around the circumference of the floating roof between the roof and the tank wall; and

(3) No gap between the tank shell and the secondary seal shall exceed ½ inch (1.3 cm). The cumulative length of all gaps exceeding ⅛ inch (0.32 cm) in width between the secondary seal and the tank wall shall not exceed 5% of the circumference of the tank.

(e) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves shall be:

(1) Equipped with covers, seals, or lids in the closed position except when the openings are in actual use; and

(2) Equipped with projections into the tank that remain below the liquid surface at all times.

(f) Automatic bleeder vents shall be closed at all times except when the roof is floated off or landed on the roof leg supports.

(g) Rim vents shall be set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting.

(h) Emergency roof drains shall be provided with slotted membrane fabric covers or equivalent that cover at least 90% of the area of the opening.

(i) Routine inspections shall be performed by the owner or operator as follows:

(1) For external floating roof tanks, conduct a semiannual visual inspection of all seals and closure devices and measure the primary and secondary seal gap annually;

(2) For internal floating roof tanks, visually inspect all seals and measure the concentration of VOC in the vapor space above the internal floating roof semiannually; and

(3) Maintain records of the results of any inspections performed for a period of 2 years after the date on which the record was made.

Section 2.05 Gasoline Loading Terminals

(a) Section 2.05 shall apply to all gasoline loading terminals with an annual gasoline throughput greater than 7,200,000 gallons.

(b) It shall be unlawful for any person to cause or allow the loading of gasoline into any transport tank unless all the following conditions are met:

(1) The loading terminal shall employ bottom loading and be equipped with a vapor recovery system;

(2) All loading lines and vapor lines shall be equipped with vapor-tight fittings that close automatically upon disconnect;

(3) All vapor return lines shall be connected between the transport tank and the vapor recovery system such that all displaced volatile organic compounds are vented to the vapor recovery system; and

(4) The back-pressure in the vapor lines shall not exceed 4.5 kPa (18 inches) of water pressure.

(c) The vapor recovery system required by this section shall prevent the emission of at least 90% by weight of the volatile organic compounds and shall limit the emission of volatile organic compounds to no more than 35 milligrams per liter (mg/l) of gasoline transferred.

(d) The vapor recovery system required by Section 2.05(b) shall be equipped with a continuous emission monitoring system meeting the requirements of Article 12 of Regulation I.

2. WASHINGTON STATE ADMINISTRATIVE CODE

WAC 173-400-040 General standards for maximum emissions.

*(5) **Odors**. Any person who shall cause or allow the generation of any odor from any source or activity which may unreasonably interfere with any other property owner's use and enjoyment of his property must use recognized good practice and procedures to reduce these odors to a reasonable minimum.*

(6) ***Emissions detrimental to persons or property****. No person shall cause or allow the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.*

RCW 70.94.040 Causing or permitting air pollution unlawful—Exception.
Except where specified in a variance permit, as provided in RCW 70.94.181, it shall be unlawful for any person to cause air pollution or permit it to be caused in violation of this chapter, or of any ordinance, resolution, rule or regulation validly promulgated hereunder.
RCW 70.94.030 Definitions.
(2) "Air pollution" is presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interfere with enjoyment of life and property. For the purpose of this chapter, air pollution shall not include air contaminants emitted in compliance with chapter 17.21 RCW.

WAC 173-491-040 Gasoline vapor control requirements.
(1) Fixed-roof gasoline storage tanks.
(a) All fixed-roof gasoline storage tanks having a nominal capacity greater than forty thousand gallons shall comply with one of the following:
(i) Meet the equipment specifications and maintenance requirements of the federal standards of performance for new stationary sources - Storage Vessels for Petroleum Liquids (40 C.F.R. 60, subparts K, KA and KB).
(ii) Be retrofitted with a floating roof or internal floating cover using a metallic seal or a nonmetallic resilient seal at least meeting the equipment specifications of the federal standards referred to in (a)(i) of this subsection or its equivalent.
(iii) Be fitted with a floating roof or internal floating cover meeting the manufacturer's equipment specifications in effect when it was installed.
(b) All seals used in (a)(ii) and (iii) of this subsection are to be maintained in good operating condition and the seal fabric shall contain no visible holes, tears, or other openings.
(c) All openings not related to safety are to be sealed with suitable closures.
** * **
(2) Gasoline loading terminals.
(a) This chapter shall apply to all gasoline loading terminals with an average annual gasoline throughput greater than 7.2 million gallons.
(b) Loading facilities. Facilities for the purpose of loading gasoline into any transport tank shall be equipped with a vapor control system (VCS) as described in (c) of this subsection and comply with the following conditions:
(i) The loading facility shall employ submerged or bottom loading for all transport tanks.
(ii) The VCS shall be connected during the entire loading of all transport tanks.
(iii) The loading of all transport tanks shall be performed such that the transfer is at all times vapor tight. Emissions from pressure relief valves shall not be included in the controlled emissions when the back pressure in the VRS collection lines is lower than the relief pressure setting of the transport tank's relief valves.
(iv) All loading lines and vapor lines shall be equipped to close automatically when disconnected. The point of closure shall be on the tank side of any hose or intermediate connecting line.
(c) Vapor control system (VCS). The VCS shall be designed and built according to accepted industrial practices and meet the following conditions:

(i) The VCS shall not allow organic vapors emitted to the ambient air to exceed thirty-five milligrams per liter (three hundred twenty-two milligrams per gallon) of gasoline loaded.

(ii) The VCS shall be equipped with a device to monitor the system while the VCS is in operation.

(iii) The back pressure in the VCS collection lines shall not exceed the transport tank's pressure relief settings.

* * *

(6) Equipment or systems failures.

(a) Specific applicability. This section shall apply to all gasoline transport tanks equipped for gasoline vapor collection and all vapor collection systems at gasoline loading terminals, bulk gasoline plants, and gasoline dispensing facilities as described in subsections (2) through (5) of this section.

During the months of May, June, July, August, and September any failure of a vapor collection system at a bulk gasoline plant or gasoline loading terminal to comply with this section requires the discontinuation of gasoline transfer operations for the failed part of the system. Other transfer points that can continue to operate in compliance may be used. The loading or unloading of the transport tank connected to the failed part of the vapor collection system may be completed during the other months of the year.

(b) Provisions for specific processes.

(i) The owner or operator of a gasoline loading terminal or bulk gasoline plant shall only allow the transfer of gasoline between the facility and a transport tank if a current leak test certification for the transport tank is on file with the facility or a valid inspection sticker is displayed on the vehicle. Certification is required annually.

* * *

(iii) The owner or operator of a vapor collection system shall:

(A) Operate the vapor collection system and the gasoline loading equipment during all loadings and unloadings of transport tanks equipped for emission control such that:

(I) The tank pressure will not exceed a pressure of eighteen inches of water or a vacuum of six inches of water;

(II) The concentration of gasoline vapors is below the lower explosive limit (LEL, measured as propane) at all points a distance of one inch from potential leak sources; and

(III) There are no visible liquid leaks except for a liquid leak of less than four drops per minute at the product loading connection during delivery.

(IV) Upon disconnecting transfer fittings, liquid leaks do not exceed ten milliliters (0.34 fluid ounces) per disconnect averaged over three disconnects.

(B) Repair and retest a vapor collection system that exceeds the limits of (b)(iii)(A) of this subsection within fifteen days.

(iv) The department or local air authority may, at any time, monitor a gasoline transport tank and vapor collection system during loading or unloading operations by the procedure in (c) of this subsection to confirm continuing compliance with this section.

(c) Testing and monitoring.

(i) The owner or operator of a gasoline transport tank or vapor collection system shall, at his own expense, demonstrate compliance with (a) and (b) of this subsection, respectively. All tests shall be made by, or under the direction of, a person qualified to perform the tests and approved by the department.

(ii) Testing to determine compliance with this section shall use procedures approved by the department.
(iii) Monitoring to confirm continuing leak tight conditions shall use procedures approved by the department.

(d) Recordkeeping.

(i) The owner or operator of a gasoline transport tank or vapor collection system shall maintain records of all certification tests and repairs for at least two years after the test or repair is completed.
(ii) The records of certification tests required by this section shall, as a minimum, contain:

(A) The transport tank identification number;
(B) The initial test pressure and the time of the reading;
(C) The final test pressure and the time of the reading;
(D) The initial test vacuum and the time of the reading;
(E) The final test vacuum and the time of the reading;
(F) At the top of each report page the company name, date, and location of the tests on that page; and
(G) Name and title of the person conducting the test.

(iii) The owner or operator of a gasoline transport tank shall annually certify that the transport tank passed the required tests.
(iv) Copies of all records required under this section shall immediately be made available to the department, upon written request, at any reasonable time.

(e) Preventing evaporation. All persons shall take reasonable measures to prevent the spilling, discarding in sewers, storing in open containers, or handling of gasoline in a manner that will result in evaporation to the ambient air.

3. FEDERAL

40 CFR Part 63, Subpart BBBBBB (Gasoline Distribution GACT standard) doesn't apply to natural gasoline before it's blended into gasoline, since it doesn't meets the definition of gasoline (*any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals* [4.0 psi] *or greater, which is used as a fuel for internal combustion engines.*) This was EPA's position on denatured ethanol in the final rulemaking (76 FR 4155).

40 CFR Part 63, Subpart EEEE (Organic Liquids Distribution, Non-Gasoline), R (Bulk Gasoline Terminals And Pipeline Breakout Stations), and Y (Marine Tank Vessel Loading Operations) don't apply to Targa, since it's not a major source of HAP.

NSPS Subpart Kb (below) applies to these tanks.

Subpart Kb §60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:
** * **
Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.
Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.
Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient

temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17);

(4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

* * *

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82 or 94 (incorporated by reference—see §60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;

* * *

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

* * *

§60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa ~~or with a design capacity greater than or equal to 75 m3 but less than 151 m3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa~~, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel

and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

* * *

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, §60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in §60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa [11.1 psia] *shall equip each storage vessel with one of the following:*

(1) A closed vent system and control device as specified in §60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in §60.114b of this subpart.

§60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

* * *

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by §60.7(a)(1) or, if the facility is exempt from §60.7(a)(1), as an attachment to the notification required by §60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in §60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, §60.18 (e) and (f).

§60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of

the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

* * *

(c) After installing control equipment in accordance with §60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with §60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa ~~or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa~~ shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa ~~or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa~~ shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) ~~For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar month average of the storage temperature.~~ For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For ~~crude oil or~~ refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

* * *

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

* * *

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of §60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

§60.7 Notification and record keeping.

(a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:

(1) A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

* * *

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

J. PUBLIC NOTICE

A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. However, the Northeast Tacoma Community Council has expressed concerns about petroleum odors from the Tideflats and Targa Sound Terminal is the nearest source of such odors. Therefore, I believe there is substantial public interest in this project, making it subject to a mandatory public comment process under WAC 173-400-171(3)(n).

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Specific Conditions:

3. Tanks T-208H, T-209H, T-210H, and T-211H are subject to 40 CFR Part 60, Subparts Kb and A.

4. The adjustable roof legs on these tanks shall be fitted with vapor seal boots or equivalent.

5. The slotted guidepoles on these tanks shall be equipped with a pole float with either a pole sleeve or a pole wiper. If a pole sleeve isn't employed, the seal of the pole float shall be higher than the pole wiper. The top of the guidepole shall be equipped with a gasketed cap which shall be closed at all times except when gauging or taking liquid samples.

6. The secondary seals on these tanks shall extend from the roof to the tank shell and shall not be attached to the primary seal.

7. The entire circumference of each primary and secondary seal on these tanks shall be inspected for compliance with the requirements of Section 3.02 of Regulation II during hydrotesting of the tanks. The time between inspections shall not exceed 10 years. If a new primary or secondary seal is installed, or if a primary or secondary seal is repaired, both seals shall be inspected at the time of the seal installation or repair. Flexible wiper seals shall be inspected when the outer edge of the seal is curved upward.

8. The concentration of organic vapor in the vapor space above the internal floating roof on these tanks shall not exceed 30% of its lower explosive limit (LEL).

9. The emissions from degassing of these storage tanks shall be vented to a control device.

10. The Reid Vapor Pressure (RVP) of the natural gasoline received shall not exceed 16.5 psi.

11. The sulfur content of each batch of natural gasoline received shall not exceed 330 ppm, as documented by product transfer documents in accordance with 40 CFR 80.1611.

12. The benzene content of each batch of natural gasoline received shall not exceed 1.3% by weight.

13. Marine loading of each of these products shall be performed in accordance with Conditions 3-9 of Order of Approval No. 11069.

13.1 The Marine Vapor Combustion Unit (MVCU) shall be used for all marine loading of natural gasoline, crude oil, gasoline, ethanol, and isooctane. The following conditions shall not apply to the loading of products with a true vapor pressure <0.5 psia.

13.2. The destruction efficiency of the MVCU shall be at least 99.0%, as determined by the procedures in 40 CFR 63.565(d)(1)-(4) and (6)-(8), except as follows:

i) EPA Method 25A may be used to determine the VOC concentration;

ii) EPA Method 19 may be used to determine the exhaust flowrate; and

iii) All testing shall be performed during the last 50% of loading of a tank or compartment.

13.3 Targa Sound Terminal shall conduct a performance test for determining compliance with Condition 5 of this Order within 60 days of initial startup of the MVCU.

13.4 Targa Sound Terminal shall maintain the loading cycle average MVCU combustion chamber temperature at or above the average temperature established during the performance test. Targa Sound Terminal shall continuously monitor and record the MVCU combustion chamber temperature during each loading cycle. The continuous temperature monitoring device shall meet the requirements in 40 CFR 63.564(e)(4).

13.5 For control of fugitive emissions, Targa Sound Terminal shall comply with the following provisions of 40 CFR Part 63, Subpart Y:

i) The standards for ship-to-shore compatibility in §63.562(b)(1)(ii) and vapor-tightness of marine vessels in §63.562(b)(1)(iii), as determined by the procedures in §63.563(a)(2), (a)(3) and (a)(4), and (c), §63.564(c), and (d), and §63.565(b) and (c); and

ii) The recordkeeping requirements in §63.567(h), (i)(1)-(3) and (i)(5)-(8), and (k).

13.6 Targa Sound Terminal shall capture 99.8% of the emissions from inert vessels during loading operations for treatment by the MVCU. If the Agency ordered testing to demonstrate compliance with this requirement, it shall be performed using methods approved by the Agency prior to commencing the test. For the purpose of determining compliance with §63.563(a)(4)(iv) and §63.567(h), Targa Sound Terminal shall document a vacuum of at least 1.5 inches water column during the loading of all non-inert vessels.

13.7 The natural gasoline, crude oil, gasoline, ethanol, and isooctane loading rates shall not exceed the MVCU processing capacity of 7,000 bbl/hr. For loading of these products, Targa shall only utilize pumps that, used individually or in combination, have a maximum rated capacity below 7,000 bbl/hr.

13.8 The natural gasoline marine loading throughput shall not exceed 3,607,100 bbl/yr (151,500,000 gal/yr) during any consecutive 12-month period. The crude oil marine loading throughput shall not exceed 14,601,600 bbl/yr (613,267,200 gal/yr) during any consecutive 12-month period. The gasoline and ethanol marine loading throughputs shall not exceed 2,555,000 bbl/yr (107,310,000 gal/yr) during any consecutive 12-month period. The isooctane marine loading throughput shall not exceed 3,000,000 bbl/yr (126,000,000 gal/yr) during any consecutive 12-month period. Targa Sound Terminal shall record the monthly and 12-month rolling total throughput within 30 days of the end of each month.

14. Marine loading of natural gasoline not exceed 151,500,000 gallons during any consecutive 12-month period. Targa Sound Terminal shall record the monthly and 12-month rolling total throughput within 30 days of the end of each month.

15. Targa Sound Terminal shall implement the leak detection and repair program required under 40 CFR 63.11089 for all products covered by this permit.

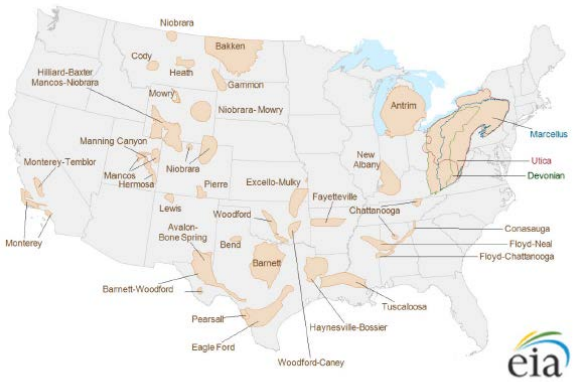
L. CORRESPONDENCE AND SUPPORTING DOCUMENTS

RE EXTERNAL
Notice of Constructio

M. REVIEWS

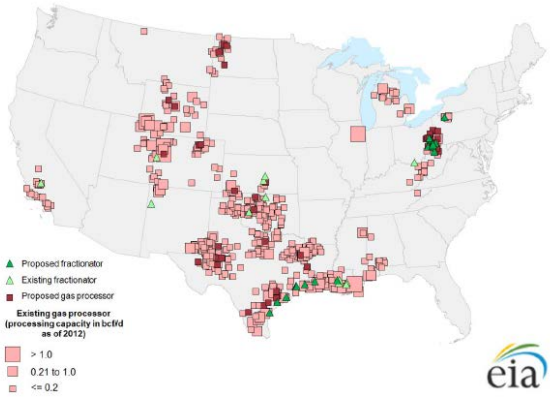
Inspector Name		Date:
Source Name		Date:

Figure 2. U.S. Lower 48 tight oil and shale gas plays



Source: U.S. Energy Information Administration.

Figure 6. Existing and announced U.S. gas processors and fractionators, 2012



Source: U.S. Energy Information Administration, Form EIA-757, Natural Gas Processing Plant Survey, 2012 capacity data and company and industry websites.