

Tesoro Refining and Marketing Company LLC (TRMC)

Avon Wharf

At Berth Terminal Plan

This terminal plan has been prepared pursuant Section 93130.14(a)(3) of the Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At Berth in a California Port.

1. GENERAL INFORMATION	
Terminal Contact Name: Anne Partmann	
Phone Number: 925-372-3006	Email: APartmann@Marathonpetroleum.com
<i>Berths Included in this Plan:</i>	
<u>Name:</u>	<u>Approximate Geographic Boundary Coordinates:</u> *
1. Avon Wharf	1. 38.049165, -122.090473
<i>*The number of berths on a terminal and the spatial positioning of berths are dependent on vessel size; thus, the geographic boundary coordinates are approximates only.</i>	
2. STRATEGY DETAILS	
<i>Strategies used to comply with the requirements for ocean-going vessels at berth:</i>	
Provided technology is sufficiently developed to operate with an acceptable level of personal and process safety risk, TRMC plans to employ the following strategy: 1. Vendor-Provided and CARB-Approved Barge-Based Capture and Control (C&C) System as a CARB-Approved Emission Control Strategy (CAECS)	
2.1 Strategy 1: Vendor-Provided and CARB-Approved Barge-Based Capture and Control System	
<i>Identification and description of all necessary equipment:</i>	
<u>Equipment:</u>	<u>Location:</u>
1. Vendor-Provided and CARB-Approved Barge-Based Capture and Control System a. Fully contained barge system including collection system and treatment system	1. Avon Wharf
Number of <u>vessels</u> expected to use this strategy (annual): 25	
Number of vessel <u>visits</u> expected to use this strategy (annual): 100	
<i>Berths where equipment will be used:</i>	
1. Avon Wharf	
<i>Schedule for installing equipment:</i>	
<u>Project:</u>	<u>Estimated Completion Date:</u>
Vendor-Provided and CARB-Approved Barge-Based Capture and Control (C&C) System	As of the date of this plan, a Vendor-Provided and CARB-Approved barge-based capture and control system does not exist for the majority of tankers docking at Avon Wharf. The estimated completion date is projected based on current knowledge and development status of the systems being proposed. • 1/1/2032*

- C&C estimate assumes technology is proven safe, controls all emission sources required in the Regulation, and the CARB Executive Officer has approved a minimum of two independent vendors by the end of 2030.

*Any unmitigated risks detailed below may result in a change to the Estimated Completion Date stated above.

- Full resolution of considerations identified in the Safety Study under the CARB grant for C&C Systems for Oil Tanker Project awarded to SCAQMD where TRMC resources are actively supporting advancement as a demonstration partner.
- Full resolution of considerations from future safety studies and hazard assessments which TRMC anticipates and views as necessary to ensure safe operations on tanker vessels
- Stack connection/collection design demonstrates:
 - Ability to capture emissions from a variable set of stack configurations without impacting or damaging the terminal or vessel.
 - Ability to capture emissions without introducing backpressure in the vessels exhaust systems.
 - Ability to capture emissions without creating sparks (electrical continuity)
 - Ability to capture emissions without impacting normal operations or offload/load rates of the vessel and terminal
 - Ability to capture emissions while accommodating vessel draft, pitch, etc. changes due to cargo operations
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 - Ability of connection/collection system to adequately transport a wide range of flow rates from multiple stacks
 - Ability to capture emissions without placing an individual in harm's way or requiring them to work in an unintended location
 - Ability to safely and reliably operate in the metocean and environmental conditions experienced at the Avon Wharf
- Barge congestion and siting around vessels
 - C&C barges must not interfere with adjacent vessel traffic
 - C&C barges must stay clear of mooring lines of the vessel at berth
 - C&C barges must not interfere with containment boom

- C&C barge mooring systems must not impact submerged utilities crossing navigational channels
- C&C barge must not hinder the vessel from being able to meet California State Lands 30-minute departure requirements
- C&C barge must be permitted by applicable agencies or governing bodies to use spuds at any point throughout a given calendar year
- Ability to safely maintain positioning through the use of spuds.
- Barge personnel should be sufficiently trained and qualified to safely operate the barge.
- Implementation of adequate emergency preparedness to ensure safety of barge-based system operators near hazardous cargo
- Treatment system performance meets or exceeds emission reduction requirements for all emissions sources that are required to be controlled on tankers
- To prevent monopolization of services, a minimum of two vendors needs to be approved as a CAECS and have equipment available in the market.

Physical or Operational Constraints

Project:

Vendor-Provided and CARB-Approved Barge-Based Capture and Control (C&C) System

Constraints:

As of the date of this plan, a Vendor-Provided and CARB-Approved barge-based capture and control system does not exist for the majority of tanker vessels docking at Avon Wharf. Until systems are effectively developed and safely demonstrated, a complete list of constraints cannot be fully assessed and finalized. The following list is based on current knowledge of the systems being proposed and may be amended once a system has been demonstrated and approved.

- Physical Constraints
 - Impedance or blockage of traffic in the channel
 - Inability to spud due to environmental restrictions
- Operational Constraints
 - Lack of safe and/or readily available CARB-approved barge-based capture and control systems
 - Lack of tug availability to move CARB-approved barge-based capture and control systems around the channel(s)/port(s)/terminal(s)
 - Lack of adequate safeguards of the CARB-approved barge-based capture and control system
 - Incompatibility between the design of the CARB-approved capture and control barge and the terminal/vessel. This includes, but is not limited to:

- Undersized C&C treatment system, leading to an inability to treat all the vessel's emissions required by the Regulation.
- Connection/collection design incompatible with the vessel's stacks
- Undersized spuds that prevent the barge from being able to spud alongside the vessel
- Inability to safely operate the C&C barge due to lack of visibility or access to the vessel
- Exposing individuals to a harmful or unsafe work environment
- Inability to safely maintain positioning due to metocean or environmental conditions
- Insufficient barge operability or employee qualifications – barge hinderance of vessel's ability to meet California State Lands 30-minute departure requirements

TRMC participated in a technology assessment led by the DNV to evaluate emissions control strategies that could be used to meet the requirements of the Regulation. The physical and operational constraints listed above are included as additional constraints to what was identified by the DNV study. A copy of the DNV study is provided as an attachment to this plan.

2.4 Feasibility Studies

Section 93130.14(a)(3)(H) states '*A terminal operator claiming that a physical and/or operational constraint will delay its ability to implement its preferred CARB approved control strategy to achieve emission reductions from vessels at berth according to the requirements of section 93130 et seq., must also include with its terminal plan a technical feasibility study evaluating if there are any other emission control options that could be implemented more quickly at the terminal*'.

As of the date of this plan, the only CARB approved control strategy for all tanker vessels is shore power. TRMC has elected to invest in the implementation of a shore power system at its Avon Wharf. Within this Terminal Plan, TRMC has identified the operational and physical constraints which will delay the implementation of a shore power system according to the requirements of section 93130 et seq.

Due to the physical and operational constraints identified and to support CARB's request to evaluate if any other emission control options could be implemented more quickly at the terminal, TRMC assessed the implementation of alternative technology. To TRMC's best knowledge, the only other technology which may be capable of meeting the requirements of section 93130 and not already being implemented by TRMC is a land-based capture and control system. However, based on the results of the feasibility study completed in Long Beach, the estimated completion date to install a land-based shore power system at Avon would surpass that of a shore power system. Additionally, a physical constraint exists with the land-based capture and control infrastructure due to the separate infrastructure required for a shore power system. Operational constraints, reflecting those identified for a barge-based system, also exist due to the need to design a connection/collection system capable of safely capturing emissions from a variable set of stack configurations.

In summary, TRMC believes all efforts have been exhausted to identify technologies capable of meeting the requirements of section 93130 which are not already being pursued through barge-based capture and control, a terminal shore power system, and innovative concepts. An industry study from the DNV, (attached), also did not identify alternative technologies which may be able to meet the requirements of section 93130.

3. TERMINAL OPERATOR/PORT BERTHING RESTRICTIONS

Are there any terminal or port specific berthing restrictions? If yes, please describe.

1. Future dock enhancements necessary to accommodate barge-based capture and control system could necessitate additional berthing restrictions.
2. Underwater utilities located near the vessel berthing locations could restrict capture and control mooring (spudding) systems.
3. Metocean conditions (i.e., tides) can necessitate certain berthing restrictions

4. DIVISION OF ROLES AND RESPONSIBILITIES

Division of responsibilities:

Not applicable at this terminal as there is no Port authority for the Avon Wharf.

	Port	Terminal
Submission of terminal plan		✓
Submission of port plan	N/A	

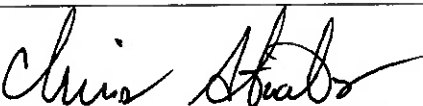
5. SIGNATURE OF TERMINAL OPERATOR

By signing below, the Terminal Operator's responsible official confirms under penalty of perjury that he/she has reviewed this At Berth Terminal Plan and is submitting this At Berth Terminal Plan as TRMC's compliance strategy for the At Berth Regulation. TRMC understands this plan is subject to verification by CARB staff.

Name: Chris Staats

Title: VP, Refining

Signature:



Date:

6/29/2026