

Richmond Terminal (Kinder Morgan) At-Berth Terminal Plan

1. GENERAL INFORMATION	
Terminal Contact Name: Dan Beath	
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<i>Berths Included in this Plan:</i>	
<u>Name:</u>	<u>Approximate Geographic Boundary Coordinates:</u> *
1. Richmond 11	1. [37° 55'2.69"N 122° 22'9.61"W]
<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>Strategy/strategies used to comply with the requirements for ocean-going vessels visiting each berth:</i>	
1. Emissions Capture and Control - Barge Based	
2.1 Strategy 1 - Emissions Control Barge (3 rd Party Service Provider)	
<i>Identification and description of all necessary equipment:</i>	
<u>Equipment:</u>	<u>Location:</u>
1. Preconditioning Chamber.	1. Barge
2. Cloud Generation Chambers.	2. Barge
3. System ID Fan.	3. Barge
4. Selective Catalytic Reduction (SCR).	4. Barge
5. Heater (Burner).	5. Barge
6. Heat Exchanger.	6. Barge
7. Exhaust Intake Bonnet (EIB).	7. Barge
8. Articulating Arm.	8. Barge
9. Placement Tower.	9. Barge
Number of vessels expected to use this strategy (annual): 40	
<i>Berths where equipment will be used:</i>	
Richmond 11	
<i>Schedule for installing equipment:</i>	
<u>Project:</u>	<u>Estimated Completion Date:</u>
1. Emission Control Barge	1. Kinder Morgan will contract with a 3 rd party service upon CARB certification of a barge based CAECS for liquid bulk vessels.

3. TERMINAL/PORT BERTHING RESTRICTIONS

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

By December 2023 Kinder Morgan will engage a 3rd party Marine Engineering firm to perform layout studies, mooring and passing vessel analysis considering the barge-based technologies currently under development. Target completion date is December 2023.

4. DIVISION OF ROLES AND RESPONSIBILITIES

Division of responsibilities for enacting infrastructure:

Port:

NA

Terminal:

By December 2023, initiate contracting with 3rd party service provider.

Are there any contractual limitations applicable to the terminal relevant to enacting the infrastructure? If yes, describe.

Kinder Morgan is in the process of accessing and comparing the two currently viable barge emission capture technologies, CAEM and STAX, while also watching the market for others. Service proposals are being reviewed in lieu of negotiating and executing service contracts at this time. The expectation is to select a provider and initiate contracting by December 2023.

Port approval of responsibilities: **N/A – no engagement with the port.**

By signing below, the port's responsible officer confirms that he/she has reviewed the division of responsibilities and agrees to them under penalty of perjury.

Name:

Title:

Port:

Signature:

Date:

5. SIGNATURES

By signing below, the terminal's responsible officer confirms that he/she has reviewed this plan under penalty of perjury and understands this plan is subject to verification by CARB staff.

Name: Dan Wittenberg

Title: Director of Operations

Signature: *Daniel Wittenberg*

Date: *5/20/2022*