Anchor Environmental, L.L.C.
1423 3rd Avenue, Suite 300
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131

Memorandum

To: Sean Sheldrake, EPA

From: Ryan Barth and Carl Stivers, Anchor Environmental, L.L.C.

CC: Rick Wadsworth, Parametrix Inc.
Patty Dost, Schwabe Williamson & Wyatt
Bob Wyatt, NW Natural

Date: October 18, 2006

Re: Gasco Tar Body Removal Post-Construction Controls – Buoys and Signage

The Monitoring and Reporting Plan (MARP; Anchor 2006) identified post-construction controls to be implemented at the NW Natural "Gasco" Site (Site) to protect the pilot cap. Two of the identified controls included posting signs on the beach and adjacent oil pipeline and placing buoys with the "no wake" symbol and text surrounding the temporary cap. Following completion of the tar body removal, NW Natural initiated both of these proposed controls. The remainder of this memorandum discusses issues associated with these controls and the proposed path forward.

The United States Coast Guard (USCG) and Army Corps of Engineers (ACOE) were contacted to determine what type of language could be posted on the signs to assist with protection of the pilot cap. Neither agency could confirm whether signage could include "No Wake" text without formal approval. Also, placement of signage was evaluated. Signage placed along the pipeline that extends from the upland portion of the property would not be visible by marine traffic due to the orientation of the pipeline. In addition, signage along the bank area would need to be placed above the range of water level conditions annually encountered. Since the shoreline area is heavily armored and/or vegetated and steep near the top of bank, signage would need to be placed along the top of bank area. Given that vegetation (i.e., two small trees and shrubs) near the top of slope limits visibility, signage in this area near the pilot cap would be very difficult to see and would therefore have limited effectiveness. As discussed below, it will likely be much more effective to use a system of buoys to demarcate the pilot cap area (i.e., no disturbance area) and continue to use the tenant oil containment boom to restrict access to

the pilot cap area. Therefore, NW Natural proposes to identify the "no wake" area through the use of marked buoys rather than placement of signs on the bank and oil pipeline.

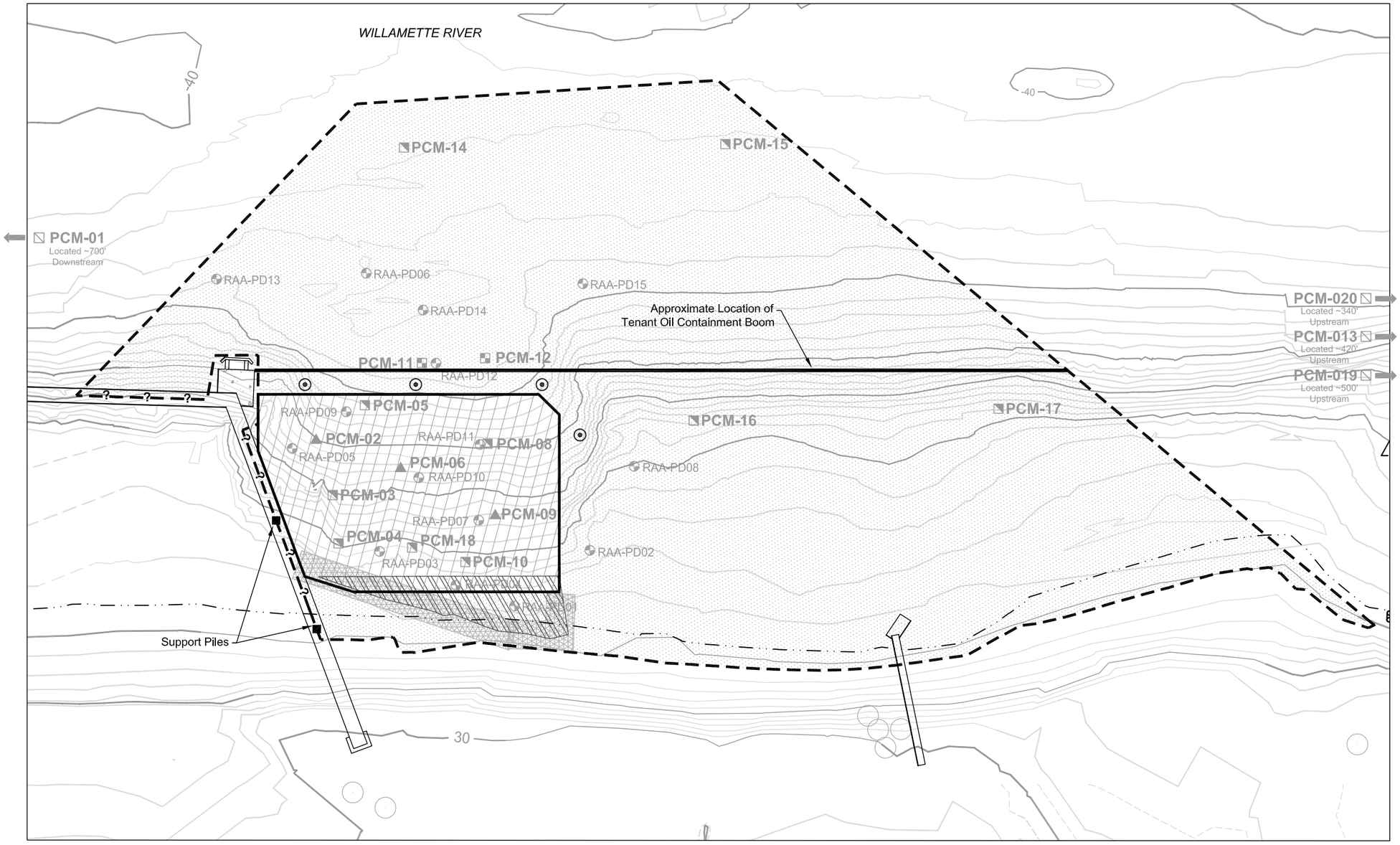
The USCG was contacted to determine what actions needed to be taken to gain approval for placement of buoys surrounding the pilot cap area. The USCG indicated that a buoy is considered an aid to navigation and therefore NW Natural needed to fill out the "Private Aids to Navigation Application – CG-2554 (Rev. 7-76)". As part of this application, the ACOE needs to provide approval for placement of the navigational aid. NW Natural contacted the ACOE and is in the process of obtaining this approval. Following receipt of the approval, the application will be submitted to the USCG for final buoy placement approval.

NW Natural has coordinated with the tenant that operates the adjacent fuel oil pipeline to determine where buoys could be placed surrounding the pilot cap area to avoid disturbance to their operations. Based on these discussions, the buoy locations shown in Figure 1 were identified. These locations allow their vessels to access and exit the pipeline area without obstruction while also being constructable and adequately demarcating the perimeter of the pilot cap area. As described in the MARP (Anchor 2006), each buoy will have the no wake symbol and text. If sufficient space exists on the buoy, the text "No Anchoring" may also be included. The condition of the buoys will be monitored during the visual monitoring events to ensure they remain in place. NW Natural is prepared to install the buoys during the Year 0 Event 3 long-term monitoring activities currently planned for late November 2006 if USCG approval is obtained prior to that time.

As an additional institutional control, the tenant using the oil pipeline will continue to store its oil containment boom in the upstream direction parallel to the shoreline while barge refueling is not occurring (refueling operations limited in occurrence). This boom will be deployed channel ward of the buoys (approximate orientation shown on Figure 1) to restrict access to the pilot cap area, protect the buoys from damage caused by floating debris during the high river level winter months, contain any potential sheen originating from the pilot cap area, preclude anchoring, limit the potential for direct prop wash scour, and dampen wakes.

Legend:

- Proposed Buoy Placement
- Support Pile Location
- Extent and Elevation of 18 in Thick Cap
- Extent and Elevation of 6 in Thick Cover
- Reactive Organo-Clay Mat (RCM) Location
- Lateral Extents of Surf Zone Armoring d50 = 3 inches
- PCM-02 ▲ Co-located Core, Porewater, Near-Bottom Surface Water & Depositional Surface Sediment Sample
- PCM-03 Co-Located Core, Porewater & Near-Bottom Surface Water Sample
- PCM-01 Background Near- Bottom Surface Water Sample
- PCM-11 Seepage Monitoring Core
- RAA-PD13 Post-Dredge Surface Sediment Sample (October 2005)



0 60
Scale in Feet

Notes:

1. Post-construction bathymetric contours produced from surveys provided by Blue Water Engineering dated August 2006.
2. Upland topography directed by Anchor Environmental as part of upland investigation (2002).
3. Horizontal Datum: Oregon State Plane North NAD 83 (International Feet).
4. Vertical Datum: NAVD 88 (Feet).
5. Former drainage ditch location from Phase 1 Remedial Investigation Summary Report (HAI 1998).

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ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Proposed No Wake Buoy Placement
NW Natural "Gasco" Site