APPENDIX H

Jurisdictional Determination

Prepared by Glenn Lukos Associates,
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Regulatory Services

December 10, 2009

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Poseidon Resources
Director – Business Development
17011 Beach Boulevard, Suite 900
Huntington Beach, California 92647

SUBJECT: Jurisdictional Determination for Areas within Containment Berms associated with the Proposed Poseidon Resources Facility in Huntington Beach, California

Dear Ms. McKinley:

This letter report summarizes our preliminary findings regarding whether wetlands are present on two decommissioned oil tank sites on the AES Huntington Beach Generating Station property and one decommissioned oil tank site on City of Huntington Beach property that combined make up the proposed location for Poseidon's Huntington Beach Desalination Project. The subject site contains no blue-line drainages (as depicted on the U.S. Geological Survey (USGS) topographic map Newport Beach, California [dated 1965 and (photorevised in 1981)] [Exhibit 1]. On February 10 and 24, March 5, 2009, and May 13, September 10, and October 19, 2009 Senior Wetland Specialist Tony Bomkamp of Glenn Lukos Associates, Inc. (GLA) examined the project site to determine the presence of areas that could be defined as wetlands in accordance with the wetland delineation criteria used by the U.S. Army Corps of Engineers, City of Huntington Beach Local Coastal Program (LCP) and the California Coastal Act (CCA). Enclosed is a 125-scale aerial photograph [Exhibit 2] that depicts the areas evaluated for wetlands with data point locations. Wetland data sheets are attached as Appendix A.

SUMMARY OF RESULTS

Three containment areas were evaluated for the presence of wetland indicators: the Northeast Tank Containment Area and the Northwest Tank Containment Area on the AES property and the City of Huntington Beach Tank Containment Area on City of Huntington Beach property.

The Northeast Tank Containment Area

The Northeast Tank Containment Area is approximately 3.01 acres in size, including the 0.80-acre storage tank, and exhibited periods of brief localized ponding following rainfall events during February 2009. Testing of the limited areas that were ponded with alpha alpha dipyridyl did not find reducing conditions. Based on this strong evidence, wetland hydrology is not

associated with the Northeast Tank Containment Area. Given the lack of wetland hydrology and hydric soils, areas of vegetation within the containment area that exhibit a predominance of plants with an indicator status of FAC or wetter are not wetlands because the plants are not growing as hydrophytes. Therefore, it is determined that there are no wetland areas, based on both federal and Coastal Commission definitions, within this containment area.

The Northwest Tank Containment Area

The Northwest Tank Containment Area is approximately 3.32 acres in size, including the 0.80-acre storage tank and has in the past been used to store storm water from other locations on the Huntington Beach Generating Station property, which we understand was actively pumped into the containment area during and immediately following storm events. With several occurring rain events, the pumping of excess water into this area, over and above the ambient rainfall during each rain event, and the design of the area to contain water and not allow the water to percolate into the ground, this area exhibited ponding for periods exceeding 24 days with some areas exhibiting ponding for up to 40 days. Given the artificial source of the water in the containment area, the ponding observed during 2009 is not related to drainage or naturally recurring conditions.

Most of the containment area is dominated by non-native five-hook bassia (*Bassia hyssopifolia*, FAC) with a very limited 250-square foot area that during the May 13, 2009 visit was dominated by FACW species such as rabbitsfoot grass (*Polypogon monspeliensis*, FACW), slim aster (*Aster subulatus ligulatus*, FACW), and Mexican sprangletop (*Leptochloa uninervia*, FACW). By early September, Russian thistle (*Salsola tragus*, UPL) had become one of the dominant species in this area and the area failed to exhibit a predominance of wetland indicator plants. Given that the pumping of water into the containment area was an operational practice of the property owner that is now discontinued, under normal conditions (i.e., lack of hydrologic subsidies), we would not expect this 250-square foot area to be ponded, and therefore do not believe that the area would support a predominance of plants with an indicator status of FAC or wetter. It is also important to note that areas immediately adjacent to the 250 square foot area, with the same hydrological conditions, supported a predominance of upland plants both during the May 13 and September 10 site visits, demonstrating that the plant species detected in the 250 square foot area are not reliable indicators of wetland conditions. Given the lack of natural wetland hydrology, no hydric soils, and vegetation no longer exhibiting a predominance of wetland indicator species, it is determined that there are no wetland areas, based on both federal and Coastal Commission definitions, within this containment area.

The City of Huntington Beach Tank Containment Area

The City Tank Containment Area is located immediately to the north of the Northeast Tank Containment Area and covers approximately 3.84 acres including the 0.80-acre former storage tank. The area does not exhibit evidence of wetland hydrology or hydric soils and vegetation is sparse, consisting of weedy herbaceous species including five-hook bassia (*Bassia hyssopifolia*, FAC) and the non-native invasive Spanish sunflower (*Pulicaria paludosa*, FAC). Other species detected in localized areas include seaside heliotrope (*Heliotropium currasavicum*, FAC), which occurs on the spoil piles near the southeast corner of the containment area, and cotton-batting plant (*Gnaphalium stramineum*, FAC), which occurs in scattered clumps with the highest concentrations beneath and adjacent to the above-ground pipelines at the southwest corner of the containment area. The spoil piles also support low densities of tree tobacco (*Nicotiana glauca*, FAC), mulefat (*Baccharis salicifolia*, FACW), Emoryi's baccharis (*Baccharis emoryi*, FACW) all of which have been cut at ground level. Given the lack of wetland hydrology and hydric soils throughout, the facultative weedy vegetation is not growing as hydrophytic vegetation, it is determined that there are no wetland areas, based on both federal and Coastal Commission definitions, within the containment area.

I. METHODOLOGY

Prior to beginning the field delineation, a site reconnaissance visit was conducted to determine whether portions of the site support plant species that are potentially indicators of wetland conditions. Based on the initial reconnaissance, limited areas within the containment berms associated with three decommissioned oil storage tanks were field checked for the presence of areas with a predominance of vegetation with a wetland indicator status of facultative (FAC) or wetter, hydric soils, and wetland hydrology. Potential wetland areas were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[1] (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (Arid West Manual).[2] While in the field the location where data was collected was recorded using a Trimble GeoXT GPS Unit, with sub-meter accuracy or mapped on aerial photographs using visible landmarks. Field data were

[1] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

[2] U.S. Army Corps of Engineers. September 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement Version 2.0. Ed. J.S. Wakeley, R.W. Lichevar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

recorded onto wetland data sheets. Data collection points were selected based on the areas that exhibited one or more of the following characteristics:

- Local areas with concentrations of plant species with an indicator status of FAC or wetter; and/or

- Micro depressions or other topographic low points where water is most likely to collect and persist.

A. Vegetation

During the February 10 and 24, March 5, May 13, September 10, and October 19, 2009 site visits, a GLA wetland specialist examined areas within the containment areas that exhibited a predominance of plants with an indicator status of FAC or wetter. Vegetation predominance data was analyzed using the methodology described in the Corps' Arid West Regional Supplement (see attached wetland data sheets included as Appendix A). Because the areas are limited, each area was treated separately and data collection points are depicted on Exhibit 2. In some areas, plant species with an indicator status of FAC or wetter such as mulefat (*Baccharis salicifolia*, FACW) and Emoryi's baccharis (*Baccharis emoryi*, FACW) were observed growing on spoil piles, or even through the concrete or asphalt of the containment berms, that obviously lack wetland hydrology.

The presence of hydrophytic wetland indicator plant species was determined based on *The National List of Plant Species that Occur in Wetlands*[3] and as needed *The National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (1996 National List).*[4]

As discussed in Section II.A below, the presence of a predominance of wetland indicator plants does not always lead to the conclusion that an area meets the Coastal Act's definition of a wetland. For example, for the Bayview Landing project in Newport Beach, Dr. John Dixon, the Coastal Commission's Ecologist found that while a specific area exhibited a predominance of plants with an indicator status of FAC or wetter, the area lacked wetland hydrology and therefore the plants were not growing as hydrophytes. Specifically, Dr. Dixon stated:

[3] Reed, P.B., Jr. 1988. *National List of Plant Species that Occur in Wetlands.* U.S. Fish and Wildlife Service Biological Report 88(26.10).

[4] U.S. Fish and Wildlife Service. 1997. *The National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (1996 National List).* Published by the U.S. Fish and Wildlife Service, National Wetlands Inventory, St. Petersberg, Florida. This list was used where particular species, (e.g., *Penisetum clandestinum*) was not included in the 1988 list but was updated with an indicator status of FACU the 1997 list.

> *Therefore, based on the evidence that is now available, I conclude that the wetland indicator species present in Area A does not meet the wetland definitions in the Coastal Act and the California Code of Regulations.*[5]

As discussed in more detail in Sections III and IV below, areas that clearly lacked wetland hydrology that supported a predominance of plants with an indicator status of FAC or wetter were carefully evaluated.

B. <u>Soils</u>

The Soil Conservation Service (SCS)[6] has mapped the two soil types as occurring in the general vicinity of the project site [Exhibit 3]:

Tidal Flats
Tidal Flats are nearly level areas adjacent to bays and lagoons along the coast. Periodically they are covered by tidal overflow. Some of the higher areas are only covered during very high tides. Tidal flats are stratified clayey to sandy deposits. They are poorly drained and high in salts.

Bolsa
The Bolsa series consists of somewhat poorly drained soils on alluvial fans. These soils formed in mixed alluvium. They have slopes of 0-2 percent, are nearly level and occur on large alluvial fans. A typical profile exhibits a matrix color of 10YR 4/2 from 0-29 inches when moist. The following Bolsa series soil type was mapped on the :

- Bolsa Silt Loam (122)

Neither of these soil types is entirely consistent with the soils observed on the site, which is characterized as fill material imported for purposes of creating the containment areas. Nevertheless, while in the field, the soils were checked for color using a Munsell Color Chart. The soils were also checked for reducing conditions using alpha alpha dipyridyl. [7]

[5] Dr, John Dixon. October 17, 2003. Memorandum addressed to Anne Blemker, Subject: Wetlands on the Lower Bayview Site. Coastal Commission Staff Report 5-03-91, Exhibit 24.
[6] SCS is now known as the National Resource Conservation Service or NRCS.
[7] Alpha alpha dipyridyl is a chemical agent which is used to test for the presence of anaerobic/reducing conditions. A positive test during normal rainfall conditions is strong evidence that an area exhibits wetland hydrology; whereas a negative test during a normal rainfall year is strong evidence of upland conditions regardless of the vegetation that is present. As noted, application of alpha alpha dipyridyl to the soil during a period of brief ponding was negative, meaning that reducing conditions and therefore wetland hydrology was not present.

C. Hydrology

During the February 10 and 24, March 5, and May 13, 2009 site visits observations of hydrology were recorded, including ponding or areas with saturated soils and are included on the data sheet attached as Appendix A. As noted above under soils, the soils were also checked for reducing conditions using alpha alpha dipyridyl. Finally, conditions not considered "normal" were noted, specifically, pumping of water to the Northwest Containment Area that resulted in artificially induced ponding was recorded in field notes and in site photographs.

II. JURISDICTION

A. Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:
(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or
(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...
(4) All impoundments of waters otherwise defined as waters of the United States under the definition;
(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands[8]);

- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

The Army Corps typically does not consider an area as a wetland if it is artificially irrigated and would revert to upland conditions if the artificial irrigation ceased.

B. City of Huntington Beach Local Coastal Program

The City's LCP defines wetlands as follows:

[8] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10). The National List includes five categories or ratings used to designate the affinity or "preference" for each species relative to its occurrence in wetlands. The five categories or "statuses: are Obligate Wetland (OBL) (estimated probability >99-percent occurrences are in wetlands), Facultative Wetland (FACW) (estimated probability 67 to 99-percent occurrences are in wetlands), Facultative (FAC) (estimated probability 33 to 66-percent occurrences are in wetlands), Facultative Upland (FACU) (estimated probability 1 to 33-percent occurrences are in wetlands), and Upland (UPL) (estimated probability <1-percent occurrences are in wetlands).

> ***LCP Wetland Definition****: "Land which may be covered periodically or permanently with shallow water and includes saltwater marshes, freshwater marshes, open or closed brackish water marshes, mudflats, and fens. Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following attributes: 1. At least periodically, the land supports predominantly hydrophytes; or 2. The substrate is predominantly undrained hydric soil; or 3. The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year."*

C. CCA Wetlands

Pursuant to the California Coastal Act (California Public Resources Code Section 30233), the CCC regulates the diking, filling, or dredging of wetlands within the coastal zone. The Coastal Act Section 30121 defines "wetlands" as land "*which may be covered periodically or permanently with shallow water.*" The 1981 CCC Statewide Interpretive Guidelines state that hydric soils and hydrophytic vegetation, "*are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act. In the past, the Commission has considered all relevant information in making such determinations and relied upon the advice and judgment of experts before reaching its own independent conclusion as to whether a particular area will be considered wetland under the Coastal Act."*

In applying this definition, Coastal Commission Staff uses a "one-parameter" approach, meaning that a site that 1) exhibits a positive test for a predominance of plants with an indicator status of FAC or wetter, **or** 2) a positive test for hydric soils, **or** 3) a positive test for wetland hydrology, is presumed to be a wetland unless the presumption can be "rebutted by strong, independent evidence of upland condition." (This is a quote from Staff Ecologist Dr. John Dixon at a Coastal Commission hearing on November 5, 2003.) Dr. Dixon also wrote in an opinion referenced in a staff report prior to that 2003 hearing that "In recognition of the fact that a proportion of wetland indicator plants occur in uplands, the wetland presumption may be falsified where there is strong, positive evidence of upland conditions." Therefore, once the Commission establishes the presumption, the burden shifts to the applicant who must then prove that one or both of the other indicators does not exist.

See Section IV below for a detailed discussion regarding application of these definitions to wetland delineation within the Coastal Zone.

III. RESULTS

A. Description of Containment Areas

Construction of the oil tanks and associated containment areas began between 1955 and 1958 [Exhibits 5 and 6].

By 1963, the tanks and containment areas, created to capture any spillage or leakage from the associated oil storage tanks, were completed. Aerial photographs during the 1970s [Exhibits 7-10] show that the containment areas were maintained free of vegetation, which has been the condition throughout the lifetime of the storage tanks, which were decommissioned in 1985. While vegetation on the site has been maintained historically, recently, maintenance has been haphazard on the Northeast and Northwest Containment Areas, resulting the colonization of limited areas with plant species that under some circumstances may grow in wetlands. All of the species are highly opportunistic and while known from wetland areas, also are well documented to grow in non-wetland areas.

B. Vegetation

1. Northeast Tank Containment Area

Areas around the Northeast Tank Containment Area exhibit sparse vegetation with a mix of upland species and species with an indicator status of FAC or wetter. Upland species include coyote bush (*Baccharis pilularis,* UPL), non-native hottentot fig (*Carpobrotus edulis,* UPL), telegraph weed (*Heterotheca grandiflora,* UPL), non-native bull thistle (*Circium vulgare*, FACU), non-native myoporum (*myoporum laetum*, UPL), non-native Mexican fan palm (*Washingtonia robusta*, UPL), and non-native Russian thistle (*Salsola tragus,* UPL). Plant species with an indicator status of FAC or wetter include mulefat (*Baccharis salicifolia*, FACW), Emoryi's baccharis (*Baccharis emoryi,* FACW), alkali heath (*Frankenia salina,* FACW), seaside heliotrope (*Heliotropium currasavicum*, FAC), alkali mallow (*Malvella leprosa*, FAC), five-hook bassia (*Bassia hyssopifolia*, FAC), and non-native invasive Spanish sunflower (*Pulicaria paludosa,* FAC); however, throughout the Northeast Tank Containment Area, these species are growing in areas that lack wetland hydrology, being for the most part associated with berms, spoil piles, and in the case of Emory's baccharis, Spanish sunflower, and tree tobacco, growing through the broken pavement on the tops of the containment berms [Exhibit 4, Photograph 1].

Localized areas (in some instances just a few square feet) associated with Appendix A, Data Sheets NE1 – NE4 exhibit a predominance of plants with an indicator status of FAC or wetter in areas that exhibited brief periods of ponding during February (see discussion in hydrology section below) but lacked reducing conditions, based on testing with alpha alpha dipyridyl during

the February 24th visit and was dry by the March 5th site visit, and therefore lacked wetland hydrology during the 2008/2009 rainfall season. Given the lack of wetland hydrology and hydric soils throughout the containment area, the limited areas that exhibited ponding that support a predominance of plants with an indicator status of FAC or wetter would not be considered wetlands due to the otherwise upland character of such areas. In addition, localized areas that failed to exhibit ponding but which support patches of vegetation with a predominance of species with an indicator status of FAC or wetter (e.g., Emoryi's baccharis and mulefat) would not be considered wetlands based on the lack of wetland hydrology and the ability of these species to colonize disturbed upland areas. Therefore, no wetlands, as defined in accordance with the federal or Coastal Commission definitions, are associated with this containment area.

The property boundary, between the adjacent City of Huntington Beach Tank Containment Area and Northeast Tank Containment Area is located along the extreme northern boundary of the Northeast Tank Containment Area. As with other areas within the Northeast Tank Containment Area, limited area that straddles the boundary exhibited brief ponding during the February 24th visit, with ponding no longer present by March 5th. As with other areas that exhibited ponding in the Northeast Tank Containment Area, this area straddling the property line exhibits sparse areas of Spanish sunflower (*Pulicaria paludosa*, FAC).

2. Northwest Tank Containment Area

Areas associated with the Northwest Tank Containment Area exhibit sparse vegetation, including non-native myoporum (*Myoporum laetum*, UPL), non-native Russian thistle (*Salsola tragus*, UPL), mulefat (*Baccharis salicifolia*, FACW), Emoryi's baccharis (*Baccharis emoryi*, FACW), non-native rabbitsfoot grass (*Polypogon monspeliensis*, FACW), Mexican sprangletop (*Leptochloa uninervia*, FACW), slim aster (*Aster subulatus ligulatus*, FACW) and non-native five-hook bassia (*Bassia hyssopifolia*, FAC); however, as noted for the other containment areas, throughout most of the Northwest Tank Containment Area, the mulefat and Emory's baccharis are associated with berms, spoil piles, and in the case of Emory's baccharis and tree tobacco are growing through the broken pavement on the tops of the containment berms.

Overall, the Northwest Tank Containment Area exhibits substantially less vegetation than the Northeast Tank Containment Areas with the five-hook bassia dominant across much of the area. Data was collected at a number of locations as depicted on Exhibit 2 and detailed in Appendix A, Data Sheets NW1-NW7. Besides the berms and spoil piles, the flat bottom of the containment area is very sparsely vegetated with non-native five-hook bassia (*Bassia* hyssopifolia, FAC) which at the time of the May 13, 2009 visit had just begun to germinate. As such, certain areas exhibit a predominance of five-hook bassia with no other vegetation; whereas, other areas support a mix of five-hook bassia with upland species such as Russian thistle (*Salsola tragus*, UPL) and therefore exhibit a predominance of upland vegetation.

A limited area immediately adjacent to or below a large abandoned pipe on the south side of the tank supports areas with a mix of weeds, primarily Russian thistle (*Salsola tragus*, UPL), rabbitsfoot grass (*Polypogon monspeliensis*, FACW) and limited patches of Mexican sprangletop (*Leptochloa uninervia*, FACW) that does not exhibit a predominance of wetland indicator plants. During the May 13 visit, another small area, in the vicinity of the pipe, covering approximately 250 square feet was found to support a predominance of plants with an indicator status of FAC or wetter including rabbitsfoot grass (*Polypogon monspeliensis*, FACW) and slim aster (*Aster subulatus ligulatus*, FACW) [Exhibit 4, Photograph 2]; however, by September 10, 2009, additional upland species (primarily Russian thistle) had colonized this 250 square foot area and the vegetation no longer exhibited a predominance of wetland indicator species. Therefore, no wetlands, as defined in accordance with the federal or Coastal Commission definitions, are associated with this containment area.

3. City of Huntington Beach Containment Area

The City of Huntington Beach Containment Area exhibits minimal vegetation due to regular maintenance. Species observed in low densities throughout the containment area include five-hook bassia (*Bassia hyssopifolia*, FAC), and the non-native invasive Spanish sunflower (*Pulicaria paludosa*, FAC). Other species detected in localized areas seaside heliotrope (*Heliotropium currasavicum*, FAC), which occurs on the spoil piles near the southeast corner of the containment area, and cotton-batting plant (*Gnaphalium stramineum*, FAC), which occurs in scattered clumps with the highest concentrations beneath and adjacent to the above-ground pipelines at the southwest corner of the containment area. The spoil piles also support low densities of tree tobacco (*Nicotiana glauca*, FAC), mulefat (*Baccharis salicifolia*, FACW), Emoryi's baccharis (*Baccharis emoryi*, FACW) all of which have been cut at ground level, and a few dense patches of non-native rabbitsfoot grass (*Polypogon monspeliensis*, FACW).

C. Soils

Soils within each of the containment areas consist of compacted fill that was incorporated into the tank farm containment areas during construction and during ongoing maintenance of the site. Because the substrate consists of highly compacted fill, the percolation of surface water into the soil is limited, which also limits the ability for hydric soil conditions to develop. The presence of the mapped tidal flats and/or Bolsa Silt Loam were not confirmed in the field for the Northeast and Northwest Tank Containment Areas and it is presumed that the native soils are under an estimated three to five feet of fill. The City of Huntington Beach Tank Containment Area exhibits fill soils ranging from three to 12 inches underlain by the now-drained tidal flat soils.

1. Northeast Tank Containment Area

The areas within the Northeast Tank Containment Area consist of highly compacted soils that that were placed on the site during construction. While the soils consist of fill throughout, the soils are fairly consistent throughout the areas sampled. The upper 3-7 inches consists of sandy loam with a matrix color of 2.5Y 3/2 or 4/2 with no redoximorphic features underlain (i.e., from 3-7 inches down to 16 inches) by a loamy sand, 2.5Y 4/3 with no redoximorphic features. At one location, where the soil exhibit a higher clay content, the matrix color was 10YR 3/2 from zero to 16 inches with about two percent redoximorphic features in the upper 3 inches only.[9] While very limited portions of the Northeast Tank Containment Area exhibit short-term ponding, as discussed in the hydrology section below, the ponding is not of sufficient duration or frequency to result in the formation of hydric soils. Therefore, the area does not meet the minimum requirement for hydric soil associated with wetlands in accordance with both federal and Coastal Act wetland definitions.

2. Northwest Tank Containment Area

Soils within the Northwest Tank Containment Area are similar to the soils described for the other two containment areas, consisting of highly compacted soils that that were placed on the site during construction. In some areas, asphalt-like material forms a one-inch thick layer just below the soil surface [Exhibit 4, Photograph 3]. Below the asphalt-like material, or in areas where is does not occur, the soils are mostly silty loams or loams, 2.5Y 3/2 or 10YR 3/3 with no redox and no other hydric characteristics. Occasional localized areas were noted in the Northwest Containment Area with less than two percent redoximorphic features within the upper half-inch of the soil profile; however, as already noted in Footnote 8, according to F6 – Redox Dark Surface, the redox concentrations must occur in a layer at least four inches thick; therefore, the area does not meet the minimum requirement for hydric soils associated with wetlands in accordance with both federal and Coastal Act wetland definitions.

3. City of Huntington Beach Containment Area

Soils within each of the containment areas consist of fill that was incorporated into the tank farm containment areas during construction of the site. Unlike the Northeast and Northwest Containment Areas, the presence of the mapped tidal flats and/or Bolsa Silt Loam was detected in the upper portions of the soil profile ranging as close to the surface as three inches in localized areas to more than 12 inches in other areas. Fill soils overlaying the now-drained marsh soils consist of silty or sandy loams, 2.5Y 3/1 or 10YR 3/2 with no redoximorphic features. The fill

[9] According to F6 – Redox Dark Surface, the redox concentrations must occur in a layer at least four inches thick; therefore, the area does not meet the minimum requirement for hydric soils.

soils do not exhibit profiles typical of soils formed in place; rather, they exhibit laminations, clay inclusions, areas of buried gravel and areas of buried asphalt or "tank-bottom" materials. In many areas the underlying tidal soils appear to be fill as well as there is generally no consistent profile, rather, there are clays mixed with sands and areas where the profile is clearly disturbed or it is obvious that the soil did not form in place.

A small area at the base of the berm in the northwest corner of the Northeast Containment Area, located on City of Huntington Beach property, that exhibited brief ponding observed during the February 24th site visit is underlain by a layer of asphalt or "tank bottom" material that slows or limits downward percolation of water. Localized areas at this location exhibited approximately two percent redoximorphic features in the upper one to one and a half inches. However, as already noted in Footnote 8, according to F6 – Redox Dark Surface, the redox concentrations must occur in a layer at least four inches thick; therefore, the area does not meet the minimum requirement for hydric soils associated with wetlands in accordance with both federal and Coastal Act wetland definitions.

D. Hydrology

In addressing the presence of wetland hydrology, two factors were considered. First, the hydrological indicators set forth in the Arid West Manual Version 2.0 and second, the definition in the Coastal Act which includes areas "*which may be covered periodically or permanently with shallow water.*" It is important to note that containment areas were designed to retain/contain potential oil spills and as such are also designed to retain water. The design of the containment berms ensures that the containment areas prevent contaminated water (or other liquids) from leaving the site creating potential harmful effects.

Application of the hydrological indicators set forth in the Arid West Manual Version 2.0, does not directly apply because the areas are designed to retain water for purposes of pollution control and any indicators of wetland hydrology must be viewed in the context of the functions of the containment areas. Furthermore, the Northwest Tank Containment Area, discussed below, received artificial subsidies of water during each storm event, which was pumped into the containment area from surrounding areas of the site.

1. Northeast Tank Containment Area

During the February 10, 2009 site visit, limited areas of the Northeast Tank Containment Area exhibited localized ponding with depths not exceeding one to two inches. This visit was on the final day of a five-day period that accounted for 1.8 inches of rain. Soil pits excavated within these areas did not exhibit saturation below the upper one inch of the surface. By February 24, ponding was substantially reduced to a few small areas and testing of the soils with alpha alpha

dipyridyl found no reducing conditions. By the March 5, 2009 site visit, all ponding had dissipated and there was no saturation in the soil profile. While the highly compacted soils may exhibit brief periods of ponding, the ponding dissipates quickly and therefore, the Northeast Tank Containment Area does not exhibit wetland hydrology in accordance with both federal and Coastal Act wetland definitions. The observations for this containment area also include the narrow strip of City property associated with this containment area [see Exhibit 3 for the boundary].

2. Northwest Tank Containment Area

During the site visit of February 10, essentially all of the containment area exhibited ponding due to the 1.8 inches of rain that fell on the site combined with water from surrounding areas on the Huntington Beach Generating Station site that was pumped into the containment area during the preceding five days. Site visits on February 24th following another 1.0 inch of rain found that ponding was unchanged as did the site visit on March 5th, 2009, wherein substantial areas of the Northwest Tank Containment Area exhibited ponding with depths ranging from three to six inches [Exhibit 4, Photograph 4]. Exhibit 4, Photograph 5 depicts the condition within the containment area following dissipation of the ponding in early May 2009. As previously explained, during the site visits, it was noted that storm water from each event was pumped from various portions of the Huntington Beach Generating Station site into this containment area to prevent discharge of storm water following storm events, providing an artificial subsidy of water to this area, which in turn results in longer ponding durations that would not occur without the subsidies. As a typical example, pumps were actively discharging water to the containment area on March 5th. Exhibit 4, Photograph 6 documents one of a number of locations from which water is pumped to the Northwest Tank Containment Area [Exhibit 5 depicts the approximate drainage areas from which water has been historically pumped into the containment area following storm events]. We understand that the storm water is no longer being diverted to this tank site, and in the absence of this pumping, it is expected that ponding conditions in the Northwest Tank Containment Area would be similar to those observed in the Northeast Tank Containment Area. Therefore, the highly compacted soils will exhibit brief periods of ponding, dissipating quickly and therefore, the Northwest Tank Containment Area will not exhibit wetland hydrology in accordance with both federal and Coastal Act wetland definitions.

3. City of Huntington Beach Containment Area

No evidence of surface ponding sufficient to meet the minimum threshold for wetland hydrology was observed for the City Containment Area. As noted under soils and vegetation for this containment area above, a localized area at the northwest Corner of the Northeast Containment Area, that straddles the property boundary, exhibited short-term ponding during the February 24th, 2009 site visit and ponding had dissipated by March 5th. As noted, under soils above,

portions of this area are underlain by asphalt or "tank bottom" material which is the likely reason that this area ponds water for brief periods. While the highly compacted soils may exhibit brief periods of ponding, the ponding dissipates quickly and therefore, the City of Huntington Beach Tank Containment Area does not exhibit wetland hydrology in accordance with both federal and Coastal Act wetland definitions.

IV. DISCUSSION

A discussed above, under Section II(A), the City's LCP and the Coastal Commission presumes the presence of wetlands when any of three criteria: a predominance of wetland indicator plants, hydric soil, or wetland hydrology, are present. Where any of the three are present, strong, independent evidence of upland conditions must be provided in order to demonstrate that an area is not a wetland under the Coastal Act.

A. Northeast Tank Containment Area

The Northeast Tank Containment Area exhibits conditions that are at first glance somewhat ambiguous but upon more detailed examination not consistent with the presence of wetlands. First, while the area exhibited brief localized ponding, overall, the containment area did not exhibit wetland hydrology (i.e., ponding for 14 consecutive days)[10] during the 2008/2009 rainfall-year; however; small, localized areas of very shallow ponding (e.g., one to two inches) were present in the southeast quadrant of the containment area. Testing of the soils for reducing conditions was performed with alpha alpha dipyridyl and reducing conditions were not present. By March 5, 2009, all ponding had dissipated and there was no saturation within the soil profile. The Northeast Tank Containment Area does not exhibit hydric soils, which is consistent with the lack of reducing conditions and a determination that the area lacks wetland hydrology.

Vegetation within the Northeast Tank Containment Area included several localized areas that exhibit a predominance of plants with an indicator status of FAC or wetter with Emoryi's baccharis (*Baccharis emoryi*, FACW) as the most common species, along with mulefat (*Baccharis salicifolia*, FACW), which is also common. However, both of these species are most common on berms and spoil piles in areas that clearly lack wetland hydrology and hydric soils, with Emoryi's baccharis commonly growing through the broken asphalt on the top of the containment berms as noted on Exhibit 4, Photograph 1.

[10] The application of the 14-day threshold for ponding is described by the Corps in the Arid West Supplement, Version 2.0 on page 95.

Within the flattest portions of the Northeast Containment Area, including but not limited to areas that exhibited short-term seasonal ponding (i.e., less than 14 days), but lacking reducing conditions, the two dominant plants were Spanish sunflower (*Pulicaria paludosa*, FAC) and five-hook bassia (*Bassia hyssopifolia*, FAC), both of which are common on upland areas throughout the containment areas and other portions of site, including the tops of berms. Given the lack of wetland hydrology as demonstrated by the lack of ponding of sufficient duration and reducing conditions, and the facultative character of the vegetation, it must be concluded that this area is not wetland in accordance with the federal or Coastal Commission wetland definition, as the plants are not growing as hydrophytes.

B. Northwest Tank Containment Area

Unlike the Northeast Tank Containment Area, which failed to exhibit ponding of at least 14 days, most of the Northwest Tank Containment Area exhibited ponding for periods exceeding 14 days due to the pumping of water into the containment area for each storm event from surrounding areas on the Huntington Beach Generating Station site. Specifically, during the site visit on February 10, essentially all of the containment area exhibited shallow ponding i.e., depths of three to four inches); however, following additional rains (approximately 1.0 inch) and pumping of water to the containment area between February 14 and 18, a site visit on February 24 found persistent ponding throughout large portions of the containment area. A site visit on March 8, found that ponding was still present throughout much of the containment area as depicted on Exhibit 4, Photograph 4; however, because water is pumped to the containment area from surrounding areas, it is clear that the ponding is not a result of drainage or naturally recurring conditions and represents a "subsidized" condition (Exhibit 4, Photograph 5 depicts the area following dissipation of the ponding (photograph taken on May 13, 2009). Further, the soils in the Northwest Tank Containment Area were not observed to have hydric conditions. Since we understand the property owner has stopped pumping water into the Northwest Tank Containment Area (and will not do so in the future), it is not expected that the Area would exhibit ponding for durations exceeding 14 days in the future, and therefore that the Northwest Tank Containment Area will be more like the Northeast Tank Containment Area.

It is noteworthy that the Northeast Tank Containment Area (addressed above), which does not receive a hydrological "subsidy," fails to exhibit wetland hydrology. This is also the case for the City of Huntington Beach Containment Area. This is an important observation because the conditions associated with these two containment areas appear to be very similar with the one major difference being that water was pumped to the Northwest Tank Containment Area. In the absence of pumping, it is not expected that the Northwest Tank Containment Area would exhibit wetland hydrology. In fact, as with the Northeast Tank Containment Area, the Northwest Tank Containment Area is best characterized as upland.

Vegetation within the Northwest Tank Containment Area is dominated by five-hook bassia (*Bassia hysspoifolia*, FAC) across the site, with other opportunistic wetland indicators plants that are locally dominant in a limited 250-square foot area, including rabbitsfoot grass (*Polypogon monspeliensis*, FACW), Mexican sprangletop (*Leptochloa uninervia*, FACW), and slim aster (*Aster subulatus ligulatus*, FACW). [See Exhibit 2.] While this 250-square foot area exhibits a positive test for a predominance of plants with an indicator status of FAC or wetter, it is not expected that these plants would be supported in the absence of artificial water pumping into this containment area. Accordingly, the determination for this 250-square foot area is based on the fact that the artificial water subsidy will cease and the area will no longer exhibit any wetland characteristics in accordance with the federal or Coastal act definitions, and as such would not be considered a wetland.

C. City of Huntington Beach Containment Area

The City of Huntington Beach Containment Area supports little vegetation and the species most common include three herbaceous weedy species: five-hook bassia (*Bassia hyssopifolia*, FAC), Spanish sunflower (*Pulicaria paludosa*, FAC), and cotton-batting plant (*Gnaphalium stramineum*, FAC). The site lacks indicators for hydric soil formation, which is consistent with the lack of hydrology observed within the containment area. No wetlands as defined under the federal or Coastal Act definitions, are associated with this containment area

If you have any questions regarding this letter report, please contact Tony Bomkamp at (949) 837-0404, extension 41.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Tony Bomkamp
Regulatory Specialist

Wetland Report_City Site Added 102009.doc

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POSEIDON RESOURCES FACILITY

Historic Aerial 1958

N

0 75 150 300

Feet

GLENN LUKOS ASSOCIATES

Exhibit 6

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Legend

Project Boundary

POSEIDON RESOURCES FACILITY

Historic Aerial 1963

N

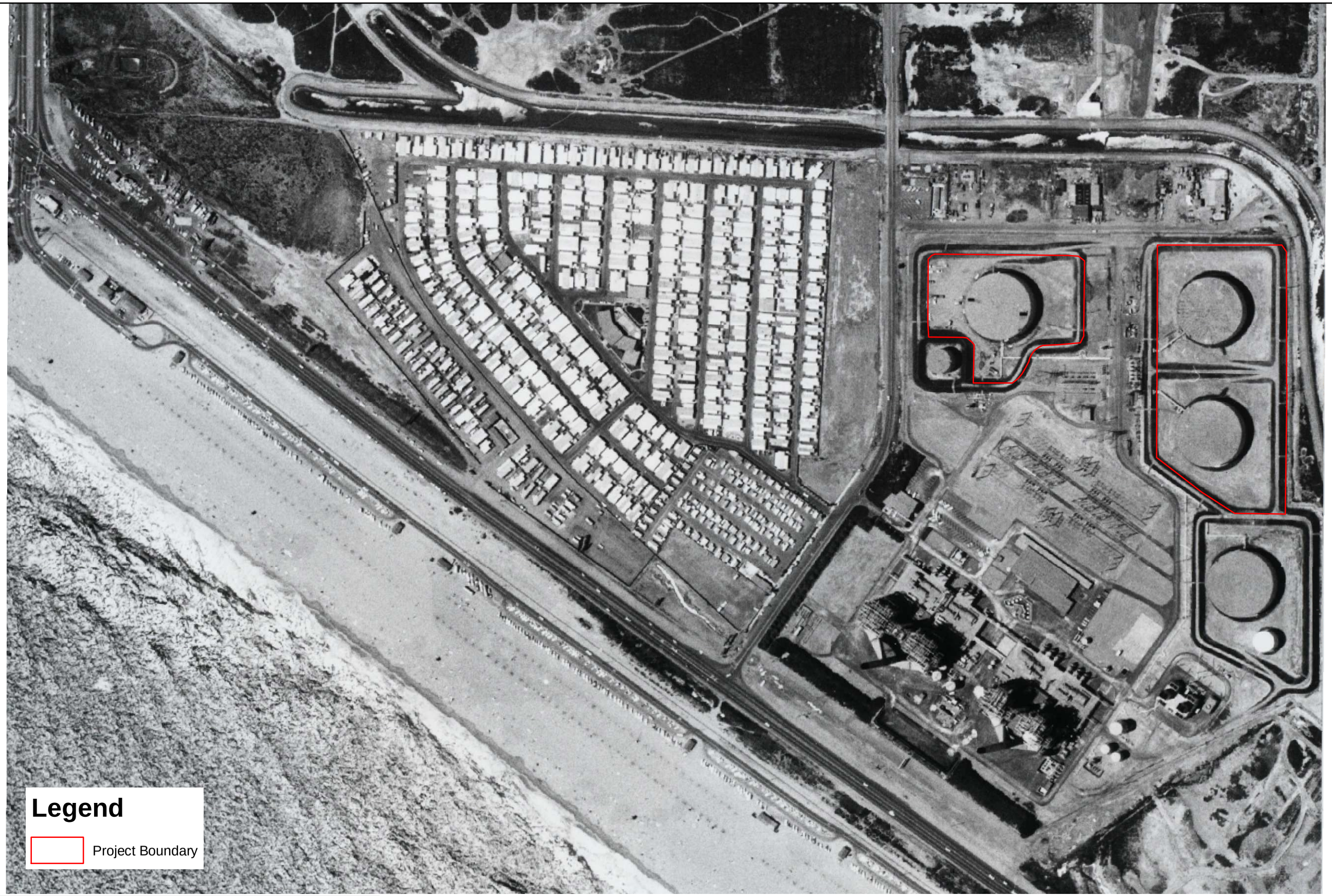
0 75 150 300

Feet

GLENN LUKOS ASSOCIATES

Exhibit 7

X:\0363-THE REST\0476-9POS\\476-9GIS\Historical Aerial\



POSEIDON RESOURCES FACILITY

Historic Aerial 1971

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Feet

GLENN LUKOS ASSOCIATES

Exhibit 8

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Legend

Project Boundary

POSEIDON RESOURCES FACILITY

Historic Aerial 1976

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GLENN LUKOS ASSOCIATES

Exhibit 9

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Legend

Project Boundary

POSEIDON RESOURCES FACILITY

Historic Aerial 1994

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Feet

GLENN LUKOS ASSOCIATES

Exhibit 10

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