May 30, 2014

Matthew Kimmell
Regulatory Branch, CESWG-PE-RCC
U.S. Army Corps of Engineers
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318

Dear Mr. Kimmell:

The Environmental Protection Agency (EPA) Region 6 has reviewed Public Notice (PN) SWG-2009-00991, dated May 8, 2014. The project is located at on the north side of the Tule Lake Channel, approximately 4.25 miles WNW of the Harbor Bridge, in Corpus Christi, Nueces County, Texas. The project can be located on the U.S.G.S. quadrangle map entitled: CORPUS CHRISTI, Texas. Latitude: 27.82623 NORTH; Longitude: 97.48413 West.

The applicant, CCI Corpus Christi, LLP, proposes to construct and operate a new condensate splitter facility which includes a bulk petroleum terminal. The facility would be constructed on an 82-acre tract of land and would also include two ship docks and one barge dock located on the Tule Lake Channel of the Corpus Christi Ship Channel (CCSC) for condensate shipment receipt and product loading.

The project will result in the fill of approximately 31 acres of high marsh wetlands for development of the condensate splitter. An additional 3 acres of emergent wetlands along the shoreline will be filled for the construction of docks. The project structures will include nine (9) storage tanks 120 feet in diameter and 50 feet high, ten (10) storage tanks 180 feet in diameter and 50 feet high, two (2) tanks 250 feet in diameter and 50 feet high, a flare unit, three package sewage treatment systems (two are 10 feet by 10 feet and one is 15 feet by 30 feet), approximately 2 miles of roadways 30 feet wide, approximately 0.75 miles of dikes 22 feet wide, approximately 1,000 feet of steel pipe rack, three process units 300 feet by 200 feet, a five bay truck loading area, various buildings (lab, maintenance shop, warehouse, control room) less than 100 feet by 150 feet each, and a cooling water tower.

The proposed project would serve as an import/export liquid terminal and storage facility that would accommodate ships and ocean-going and inland barges. The terminal would consist of three docks and associated mooring and breasting structures. Ship Dock 1 would consist of a 75-foot by 140-foot pile-supported platform with a 126-foot by 20-foot pile-supported trestle connecting the dock to the shoreline. Ship Dock 2 would consist of a 75-foot by 140-foot pile supported platform with a 70.5-foot by 20-foot pile supported trestle connecting the dock to the shoreline. The barge dock would consist of a 50-foot by 90-foot pile-supported platform with a 72.5-foot by 20-foot pile-supported trestle connecting the dock to the shoreline. The piles will be

constructed with steel pipe and/or concrete. Each of the ship docks would have four breasting structures. There would be a total of 11 mooring structures located on each side of the ship docks and in between the ship docks. There would be three monopile dolphins located on each side of the barge dock for a total of six.

The proposed project would involve the dredging of a 14.8-acre area of open water to a depth of -46 feet MLT. The dredging profile would consist of a gradual slope (3:1) to the newly established shoreline. Approximately 1,050 linear feet of steel sheetpile bulkhead would be placed landward of Ship Dock 2 to sustain the 3:1 slope due to the proximity of the existing roadway. The proposed dredging activity would hydraulically and mechanically remove a total of approximately 865,000 cubic yards of material. The applicant is proposing to place the dredged material into one of the following Dredge Material Placement Areas (DMPAs): (1) Tule Lake – Cells A,B & C; (2) Suntide ; (3) South Shore – Cells A,B & C; (4) No.1; (5) No. 4; (6) No. 5; and/or (7) Herbie Mauer.

Approximately 1,050 linear feet of steel sheetpile bulkhead would be placed landward of Ship Dock 2 to sustain the 3:1 slope due to the proximity of the existing roadway. The slopes around Ship Dock 1 would be armored with shoreline articulating mats with fabric underlay to a depth of -20 feet MLLW and the barge dock would be armored to a depth of -17 feet MLLW.

The project will include the creation of four stormwater/treated process wastewater discharge points into the CCSC. The stormwater/treated process wastewater will be discharged through permitted Texas Pollutant Discharge Elimination System (TPDES) outfalls and will comply with the regulations issued under the National Pollutant Discharge Elimination System program (Section 402 of the Clean Water Act) and the TPDES program. Construction materials will be brought to the site via truck and ships. The applicant will apply best management practices during and after this work to control erosion and sedimentation into waters of the U.S. Proper confinement and siltation controls will be used.

The project site consists of an 82-acre tract of land located on a former dredged material placement site dominated primarily with various upland grass species, mesquite (*Prosopis glandulosa*), retama (*Parkinsonia aculeata*), huisache (*Acacia farnesiana*) and prickly pear cactus (*Opuntia spp.*). Also within the site boundaries are wetlands consisting of palustrine wetlands found in old dredge placement cells primarily dominated by sea oxeye daisy (*Borrichia frutescens*), cordgrass species (*Spartina spatinae*, and *Spartina patens*), *Pacicum sp*, glassworts (*Salicornia sp*), seaside heliotrope (*Heliotropium curassavicum*) and saltworts (*Batis sp*). The applicant has stated that these wetlands are of low function and value and have minimal aquatic communication with nearby waters of the U.S. and natural wetlands. Additionally, there are two large flat wetland areas on-site which do not appear to be associated with specific placement cells. In these two wetland areas, the topography is flat, and the vegetation includes large areas of glasswort (both *Salicornia bigelovii* and *Salicornia virginica*) and seaside heliotrope (*Heliotropium curassavicum*). The site contains a total of approximately 31 acres of palustrine wetlands. The project also includes approximately 3.0 acres of tidal wetlands along the CCSC. These wetlands are comprised of 0.18 acre of smooth cordgrass (*Spartina alterniflora*), 0.17 acres of black mangroves (*Avicennia germinans*) and 2.65 acres of high marsh.

The applicant has stated that they have avoided and minimized the environmental impacts by utilizing the smallest project footprint possible to impact the least amount of wetlands on the site.

As 1:1 mitigation for the proposed palustrine wetland impacts, the applicant proposes to create 32.43 acres of high-value marsh adjacent to existing wetlands on Corpus Christi Bays and Estuaries (CBBEP) property along Rincon Bayou in the Nueces Delta. The site was previously disturbed. The applicant will remove existing undesirable shrubs and upland grasses and excavate the site to elevations that will allow periodic riverine flooding and ground water intrusion *to the extent that wetland hydrology will be restored*. Excavated material will either be hauled to the project development site and used as fill, or will be taken to an upland location. Sixty days after excavation is complete, the site will be planted on 3-foot centers with sea ox-eye daisy (*Borrichia frutescens*), marshhay cordgrass (*Spartina patens*), gulf cordgrass (*Spartina spartinae*), and associated species in the higher elevations of the site, and saltgrass (*Distichlis spicata*), seaside club-rush (*Scirpus robustus*), Virginia glasswort (*Salicornia depressa*), turtleweed (*Batis maritima*) and associated species, along the perimeter of the proposed permanent freshwater ponds within the site. Temporary water wells will be installed to assist in irrigation of the transplants. Two (2) one-acre ponds will be constructed within the proposed palustrine mitigation site to provide permanent water sources for migratory birds and other wildlife. These ponds will be supplied with water by two permanent wells. The poorly drained soils will help retain water in the ponds. A mitigation ratio of 2:1 for the estuarine wetland impacts will be provided by planting smooth cordgrass (*Spartina alterniflora*) , black mangrove (*Avicennia germinans*), Virginia glasswort (*Salicornia virginica*), turtleweed (*Chlorodesmis fastigiata)*, saltgrass (*Distichlis spicata*), chairmaker's club-rush (*Schoenoplectus americanus*) and associated species on 3-foot centers in unvegetated areas along the banks of Rincon Bayou. Regular freshwater diversions from the Nueces River into Rincon Bayou have in recent years, created salinity levels conducive to establishment of salt marsh species.The applicant is currently collecting additional data to refine the plans for both the palustrine and estuarine mitigation sites, and will provide detailed plans and a 12-step mitigation plan in the very near future. Based on the applicant's analysis, the proposed mitigation will result in no net loss in the quantity and quality of wetlands.

The following comments are being provided for use in reaching a decision relative to compliance with the EPA's *404(b)(1) Guidelines for the Specification of Disposal Sites for Dredged or Fill Material* (40 CFR Part 230).

- We recommend the applicant explain the purpose of the proposed project, in greater detail. Why is the project needed?
- We recommend the applicant provide an alternatives analysis. The 404(b)(1) Guidelines require the least environmentally damaging practicable alternative be selected. The applicant should demonstrate that the proposed alternative is the least environmentally damaging practicable alternative.
- We strongly recommend the applicant explain how they avoided and minimized wetland impacts, as stated.
- We strongly recommend the applicant consider beneficial use of the dredged material for habitat creation/restoration, rather than disposal in dredged material placement areas (DMPAs), assuming the dredged material is *suitable material, free from toxic pollutants*.

- The Corpus Christi Inner Harbor, which the Tule Lake Channel is a part of, has a history of elevated concentrations of contaminants in sediments. EPA (1976) documented high concentrations of cadmium and zinc in Corpus Christi Inner Harbor sediments. USFWS (1995) found that sediments from the Corpus Christi Inner Harbor had elevated concentrations of chromium, copper, lead, mercury, and zinc. Nicolau and Nunez (2005) also found elevated concentrations of zinc in sediments of the Corpus Christi Inner Harbor.

- Based on the above, we strongly recommend the applicant provide recent data describing the quality of the material proposed to be dredged and disposed. Existing information is acceptable, assuming it is less than five years old, a broad suite of contaminants was measured, appropriate sample collection and laboratory analytical methods were used including appropriate detection limits, and the data are representative of the sediment proposed to be dredged. Excellent guidance is available to support the collection and interpretation of such data:

    - Evaluating Environmental Effects of Dredged Material Management Alternatives-A Technical Framework ([HYPERLINK "http://water.epa.gov/type/oceb/oceandumping/dredgedmaterial/upload/2004_08_20_oceans_regulatory_dumpdredged_framework_techframework.pdf"])

    - Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities — Testing Manual ([HYPERLINK "http://yosemite.epa.gov/r10/cleanup.nsf/0/fa0745084bfae55688256e5d000a382f/$FILE/trel03-1.pdf"])

    - QA/QC Guidance for Sampling and Analysis of Sediments, Water, and Tissues for Dredged Material Evaluations ([HYPERLINK "http://water.epa.gov/polwaste/sediments/cs/upload/evaluationguide.pdf"])

    - If new sampling and analysis are to be conducted, assuming the dredged material is to be disposed of in DMPAs, as proposed, we strongly recommend the focus be on elutriate testing of the sediments, using Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, or Upland Confined Disposal Facilities — Testing Manual ([HYPERLINK "http://yosemite.epa.gov/r10/cleanup.nsf/0/fa0745084bfae55688256e5d000a382f/$FILE/trel03-1.pdf"])

    - If however, the dredged material is to be used beneficially, as we recommend, we strongly recommend using the following guidance: Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual [HYPERLINK "http://water.epa.gov/type/oceb/oceandumping/dredgedmaterial/upload/2009_10_09_oceans_regulatory_dumpdredged_itm_feb1998.pdf"]

- In addition to providing sediment contaminant data, we recommend the applicant determine whether water quality criteria would be expected to be met at the discharge from the DMPA, as described in the Upland Testing Manual. Depending on the approach taken, this can range from simple comparison of elutriate sample results to water quality criteria, to simple calculations, or more complex modeling. Note also that since the applicant has proposed several alternative placement areas, this will require the applicant to demonstrate that water quality criteria will be met at the discharge from all of them. This could be simplified by proposing a single PA.

- We strongly recommend the applicant better quantify the loss of wetland functional values, rather than just acres of wetlands, that would occur if the project is constructed.

- Regarding the proposed mitigation:
    - We strongly recommend that the applicant be required to mitigate in-kind, and based on the wetland functional losses, and not just acres lost, that would occur if the project were constructed.
    - We disagree with the proposed mitigation approach of excavating upland habitat to create wetlands. While this approach has been used before, it seems ecologically inappropriate to compensate for the habitat losses incurred by the proposed project, by destroying a different type of habitat. Existing uplands adjacent to wetlands in the Nueces Delta provide benefits to the wetlands.
    - We question whether the proposed mitigation is the best option available. There are stronger restoration concepts available. For example, the authors of the following report recommended: Consider improving hydrologic connectivity through engineering solutions, including creation of channels, installation of culverts and diversions of water to historic drainage areas and tidal creeks in the Nueces marsh.
        - Hodges, B.R., K.H. Dunton, P.A. Montagna, G.H. Ward, et al. 2012. Nueces Delta Restoration Study. Report to the Coastal Bend Bays and Estuaries Program, Project 1001
    - While the creation of ponds and provision of permanent water sources has value for migratory birds, we do not support such habitat modifications for wildlife as compensatory mitigation for losses of wetland functions as a result of the proposed project. If these features are in addition to the required compensatory mitigation, then we do not object to them.
    - We recommend the applicant explain the following statement: "The applicant will remove existing undesirable shrubs and upland grasses and excavate the site to elevations that will allow periodic riverine flooding and ground water intrusion *to the extent that wetland hydrology will be restored*." Will wetland hydrology be restored? If not, what are the implications?

- We question the mitigation value of the proposed planting of smooth cordgrass (*Spartina alterniflora*), black mangrove (*Avicennia germinans*), Virginia glasswort (*Salicornia virginica*), turtleweed (*Chlorodesmis fastigiata)*, saltgrass (*Distichlis spicata*), chairmaker's club-rush (*Schoenoplectus americanus*) and associated species in unvegetated areas along the banks of Rincon Bayou. First, is planting necessary? Why aren't the elevations proposed to be planted naturally vegetated? If the answer to the former question is "yes", then are these the correct species to plant (see the following, from Hodges et al. 2012)?

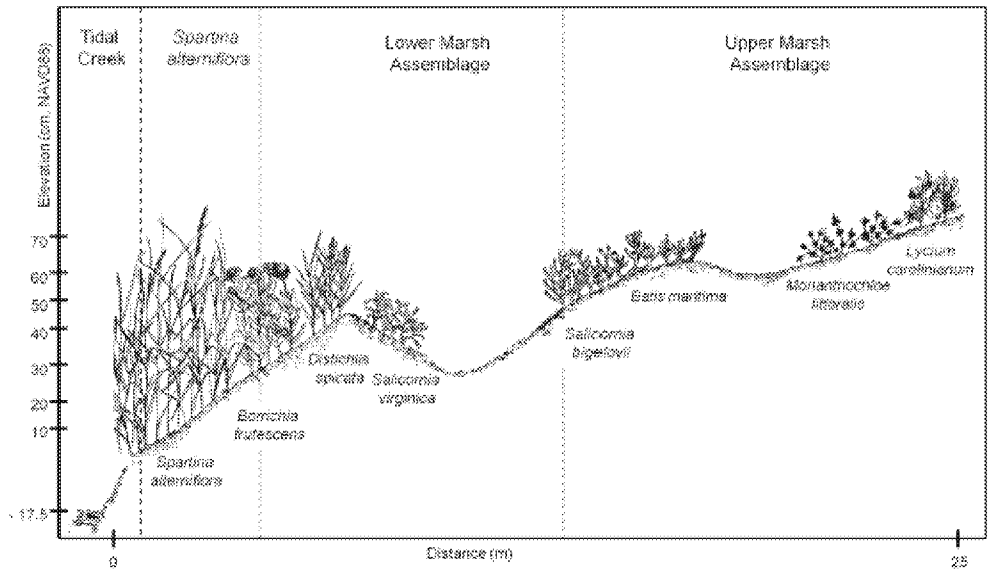

Figure 6. Zonation patterns of emergent vegetation in the Nueces Marsh in relation to vertical elevation. Tidal creek banks are dominated by *Spartina alterniflora* and *Borrichia frutescens*, whereas these species are largely absent in the interior marsh. As marsh species' habitat is separated primarily according to soil moisture and porewater salinity, areas of lower elevation in the marsh interior are characterized by vegetation "gaps", where high porewater salinity and moisture levels preclude plant establishment. As one moves upstream in the Nueces Delta, the vegetation "gaps" become increasing larger as the frequency of overbanking events related to tidal excursions become attenuated, leading to the occurrence of extensive salt pans. Adapted from Rasser et al., (2013).

Based on the above information, we question whether black mangrove (*Avicennia germinans*), turtleweed (*Chlorodesmis fastigiata),* or chairmaker's club-rush (*Schoenoplectus americanus*), are appropriate for planting here. Perhaps more importantly, we wonder why *Chlorodesmis fastigiata* is being considered for this site at all, as it is a filamentous green alga found on coral reefs in the Pacific Ocean. We also question whether *Salicornia bigelovii, Batis maritima, Monanthochloe littoralis*, and *Lycium carolinianum*, should also be considered for planting (if planting is actually found to be appropriate). Also based on the above information, it will be important to plant at the correct elevations. Finally, the applicant should only receive credit for the functional lift of this site attributable

to their actions, since some of the structure and function already exists, provided by nature.

- Similarly, we are unsure whether the species proposed to be planted along the perimeter of the proposed permanent freshwater ponds within the site (sea ox-eye daisy (*Borrichia frutescens*), marshhay cordgrass (*Spartina patens*), gulf cordgrass (*Spartina spartinae*) and associated species in the higher elevations of the site and saltgrass (*Distichlis spicata*), seaside club-rush (*Scirpus robustus*), Virginia glasswort (*Salicornia depressa*), turtleweed (*Batis maritima*) and associated species) are appropriate. We recommend the applicant provide information in support of their selection of these species for planting.

In particular, the EPA recommends that the Corps of Engineers not issue a permit for this activity until the applicant has fully satisfied the requirements of the 404(b)(1) Guidelines, including an alternatives analysis, provides evidence that water quality criteria will be met at the discharge from DMPAs, and proposes an acceptable mitigation plan that fully compensates for the loss of wetland function as a result of the proposed project.

If you have any questions on these comments, please contact Ken Teague of my staff at 214-665-6687.

Sincerely yours,

Sharon Fancy Parrish
Chief
Wetlands Section

cc: Jackie Robinson, TPWD
Heather Young, NOAA Fisheries
Pat Clements, USFWS
TCEQ

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