ESSENTIAL FISH HABITAT ASSESSMENT

IN SUPPORT OF
GREENHOUSE GAS PERMITTING

CCI CORPUS CHRISTI LLC
CORPUS CHRISTI, TEXAS

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), REGION 6
Multimedia Planning and Permitting Division
1445 Ross Avenue
Dallas, TX 75202

On Behalf of

CCI Corpus Christi LLC
Corpus Christi, TX

Prepared by

WESTON SOLUTIONS, INC.
2705 Bee Cave Road, Suite 100
Austin, Texas 78746
512-651-7100 • Fax 512-651-7101

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LIST OF ACRONYMS

BA	Biological Assessment
bpd	barrel per day
CFR	Code of Federal Regulations
EFH	essential fish habitat
ESA	Endangered Species Act
FMPs	fishery management plans
GHG	greenhouse gas
HAPC	habitat areas of particular concern
HUC	Hydrologic Unit Code
MSFCA	The Magnuson-Stevens Fishery Conservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
SILs	Significant Impact Levels
TCEQ	Texas Commission of Environmental Quality
tpd	ton per day
TPDES	Texas Pollution Discharge Elimination System
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

1. INTRODUCTION

CCI Corpus Christi LLC (CCI) submitted a greenhouse gas (GHG) permit application to the U.S. Environmental Protection Agency Region 6 (USEPA) on 4 November 2013 to obtain a Prevention of Significant Deterioration (PSD) permit authorizing the construction of a Condensate Splitter Process Facility (facility) at the proposed CCI facility in Corpus Christi, Texas.

1.1 SCOPE OF PROJECT

CCI proposes to construct a new Condensate Splitter Process facility in Corpus Christi, Texas that uses hydrocarbon condensate material for processing. The proposed new facility would encompass approximately 82 acres and would include 2 fractionation trains, storage tanks, and three marine loading docks.

1.2 PURPOSE

Section 7(a)(2) of the Endangered Species Act (ESA), 16 United States Code (USC) §1536(a)(2), and its implementing regulations at 50 Code of Federal Regulations (CFR) Part 402, requires USEPA to consult with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS), or both under certain circumstances, to ensure that USEPA issuance of a GHG PSD permit is not likely to jeopardize the continued existence of any Federally protected species or result in the destruction or adverse modification of such species' designated critical habitat.

The Magnuson-Stevens Fishery Conservation Act (MSFCA; 16 USC §38), commonly known as the Magnuson-Stevens Act, was originally passed in 1976 and has been amended several times since then. Most recently, the MSFCA was amended by the Sustainable Fisheries Act of 1996 and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. The MSFCA is regulated by the National Oceanic and Atmospheric Administration (NOAA)-NMFS. The MSFCA provides for the conservation and management of fishery resources through fishery management plans (FMPs). As a part of the FMP provision, fisheries are required to identify and describe essential fish habitat (EFH). Any action that might adversely affect designated EFH

must be consulted upon with the NOAA-NMFS, who are required to provide conservation recommendations.

The overall purpose for creating and submitting this EFH assessment is to support USEPA obligations under ESA Section 7 and MSFCS. This EFH assessment is provided as a supplement to the CCI Biological Assessment (BA). More detailed information, research, and analysis can be found in the CCI BA (WESTON, 2014).

2. PROJECT DESCRIPTION

2.1 PROJECT PURPOSE AND LOCATION

The project consists of the construction of the splitter facility, loading docks, and product pipelines. The construction of the facility in Corpus Christi is proposed with two primary phases described below:

- Phase I includes two identical fractionation trains, each capable of processing 50,000 barrels per day (BPD) of hydrocarbon condensate material, for a total processing capacity of 100,000 BPD; and
- Phase II includes process equipment for the loading of 500,000 BPD of condensate/crude at two planned marine loading docks and a barge marine dock. Additional process equipment associated with Phase II includes six storage tanks.

The product slate would consist of mixed light hydrocarbons (Y-grade), combined naphtha (consisting of heavy stripped naphtha and light naphtha), jet fuel, marine diesel, and heavy gas oil/bottoms. Process equipment associated with Phase I includes heaters/boilers, combustion sources, flare, cooling tower, storage tanks, wastewater treatment system, and marine loading with associated piping and other fugitive equipment.

The proposed facility would be constructed at the location shown in **Figure 2-1**. The proposed layout of the facility is shown in **Figure 2-2**. The construction lay down area, and all other temporary storage or workspaces associated with the construction would be within the proposed facility property boundary. CCI would use existing roadways for access. No temporary roadways are anticipated for the proposed project.

2.2 CONSTRUCTION AND OPERATION

Construction of the facility is scheduled to begin in November 2014. A finalized schedule of construction will depend on the USEPA's schedule for issuing the GHG permit. Once started, construction is estimated to take approximately 16 months to complete.

A finalized list of equipment necessary for the construction of the facility was not available as of the date of this report. However, it is expected that the construction equipment required will be

equivalent to the industry standards for a project of this scope and may include heavy earth-moving equipment such as cranes, bulldozers, backhoes, and/or excavators.

2.3 OPERATIONAL OUTFALLS

Four outfall structures are proposed for the facility. The structures would be constructed along the ship channel and would discharge treated wastewater and stormwater to the Tule Lake Channel consistent with a Texas Pollutant Discharge Elimination System (TPDES) Permit to be issued by TCEQ. One intake structure is proposed to provide backup fire water. The intake structure will be included in the TPDES permit.

Process wastewater would be generated from various process operations within Phase I. The individual process wastewater streams would be collected and combined in an enclosed wastewater gathering system or process sewer. The wastewater gathering system would include typical sewer components such as drains, pipes, and junction boxes (e.g., manholes). The combined wastewater from the gathering system would be processed in a wastewater treatment system. The treatment system would include oil-water separation, pH neutralization, other physical/chemical pretreatment operations, aerobic biological treatment, and secondary clarification. The treated wastewater would be discharged to the Tule Lake Channel consistent with a Texas Pollutant Discharge Elimination System Permit to be issued by TCEQ.

The final location of the proposed outfalls will be identified in the TCEQ TPDES permitting process. The project does not include thermal water discharge.

2.4 DOCK STRUCTURES

Construction would include two pile-supported ship docks and one pile-supported barge dock, with associated pile-supported trestles, bulkheads, and mooring structures. The docks would be constructed within the Tule Lake Channel. The docks would be approximately 15 feet above MLT. Docks and bulkheads will be constructed of materials that will not negatively impact coastal waters or critical areas.

Pile driving will be used for pile placement and would be primarily conducted from the waterfront via barges. Long-term stabilization of the shoreline includes the placement of approximately 1,050 linear feet of steel sheetpile bulkhead along a portion of the shoreline. The remaining shoreline would be armored with shoreline articulating mats with fabric underlay.

SITE LOCATION

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

LEGEND

Property Boundary

N

0 2

Miles

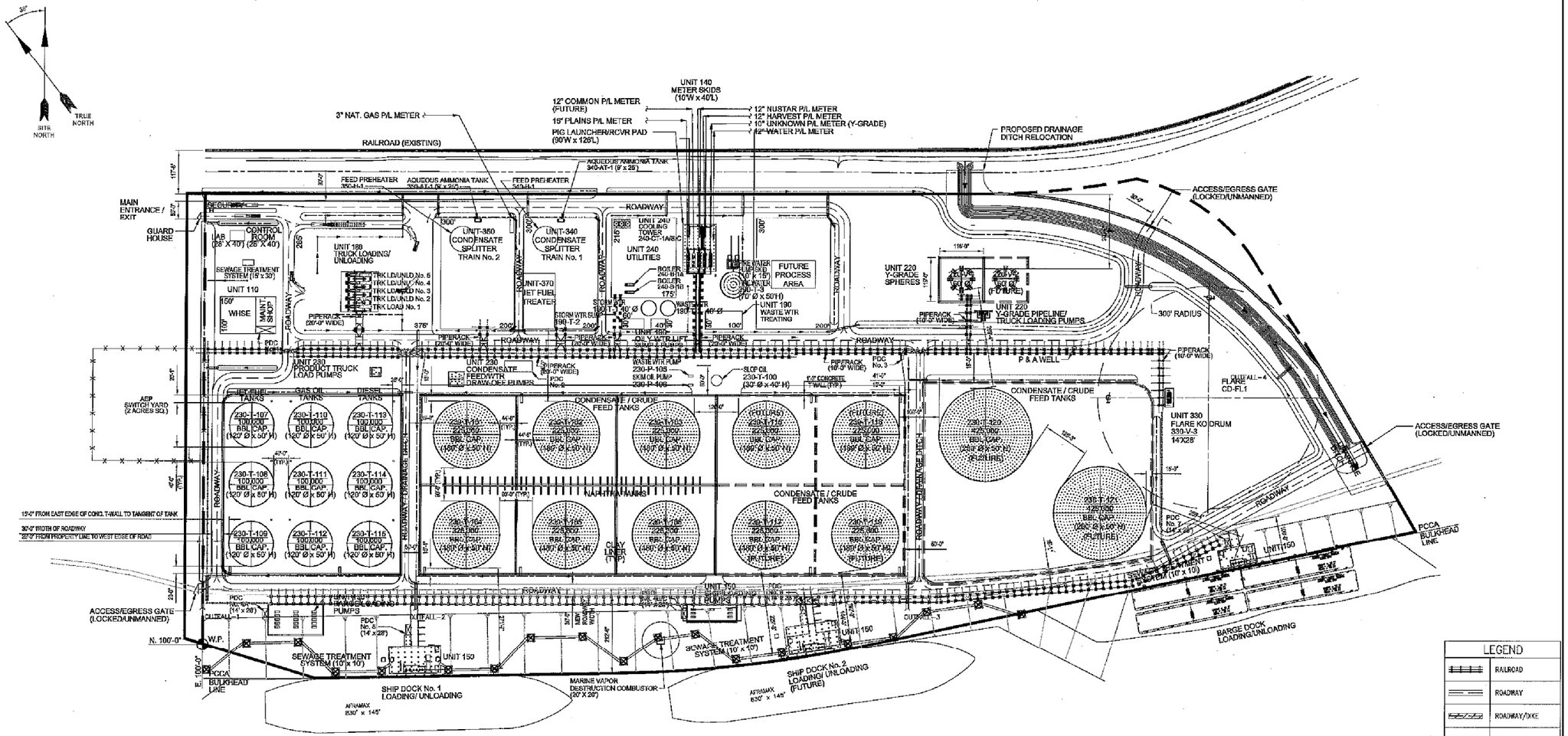
SOURCE:(c) 2010 Microsoft Corporation and its data suppliers

WESTON SOLUTIONS

FIGURE 2-1
SITE LOCATION MAP
CCI CORPUS CHRISTI
ESSENTIAL FISH HABITAT ASSESSMENT
CORPUS CHRISTI, TEXAS

DATE	PROJECT NO	SCALE
FEB 2014	13844.058.001.0007	AS SHOWN

FILE: I:\GIS Project Files\13844_CCI-LDH\CorpusEnviro\mxd\Figure Site-Location.mxd 1:13:07 PM 2/27/2014 perrint



FEL 3

PRELIMINARY
2-17-14

SCALE
0' 250' 500'
125' 375'

SOURCE: Conceptual Site Plan, Willbros Engineers, LLC

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FIGURE 2-2
PROPOSED PROJECT LAYOUT
CCI CORPUS CHRISTI
ESSENTIAL FISH HABITAT ASSESSMENT
CORPUS CHRISTI, TEXAS

DATE	PROJECT NO	SCALE
FEB 2014	13844.058.001.0007	AS SHOWN

FILE: I:\GIS Project Files\13844_CCI-LDH\CorpusEnviro\mxd\Figure Proposed Play Layout.mxd 11:52:58 AM 2/27/2014 perrint

3. ECOLOGICAL RESOURCES

The project area is located in the Gulf Coast Prairies and Marshes ecoregion of Texas (TPWD, 2013. Historically, this region was dominated by tall grass prairies and live oak woodlands, but much of the habitat has been lost due to agricultural and urban developments. This region of Texas typically consists of a slowly drained, level plain less than 150 feet above mean sea level in elevation and barrier islands off the coast. Several streams and rivers cross the region as they flow from inland areas to the Gulf of Mexico. Common vegetation communities in this ecoregion include salt grass marshes along bays and estuaries, remnant tall grass prairies, and oak mottes. Old growth woodlands can still be found in some river bottoms throughout the region (TPWD, 2012). Though much of the native habitat of this ecoregion has been lost, it still serves as important habitat for numerous species of migratory birds. The bays, estuaries, and rivers also serve as vital spawning areas for species of fish and shrimp (TPWD, 2012).

3.1 WATER RESOURCES

The proposed facility is located on a narrow strip of land (approximately 2000 feet) between the Tule Lake Channel and the Nueces Bay (South Corpus Christi Bay HUC #12110202). The Tule Lake Channel is a tidally influenced industrial waterway, dredged to a depth 45 feet. The proposed project area is approximately 3 miles from the Corpus Christi Bay.

The site of the proposed facility is separated from the Nueces Bay by a bermed railroad track, and the Joe Fulton International Trade Corridor. As shown in the historical aerial photos (Attachment A), the land within the proposed site area was once within the historical footprint of the Nueces Bay and the topography of the site has been altered due to the placement of dredged materials and other sedimentation within the area since the 1950s. The historical placement of dredge materials during the creation of the Tule Lake Channel along with other dredged and fill material were used to create the strip of land where the project is proposed.

The site is poorly drained and holds water in areas after rain events. Approximately 35 acres of low quality palustrine wetlands have been identified within the project area. Approximately 0.17 acres of black mangroves (*Avicennia germinans*) are present in small clusters along the ship

channel shoreline. Surface water and wetlands within and adjacent to the project area are shown in **Figure 3-1.**

3.2 ESSENTIAL FISH HABITAT

There is no EFH located within the boundaries of the subject property (NOAA, 2014a;). However, based on a review of the Essential Fish Habitat Mapper tool by the NOAA NMFS, the Corpus Christi Bay has EFH resources. A list of EFH species with the potential to occur in the Corpus Christi Bay is provided on Table 3-1. No NMFS habitat areas of particular concern (HAPC) or EFH areas protected from fishing were identified in the area of the Tule Lake Channel adjacent to the proposed project area (NOAA, 2014a). There are no areas federally designated as critical habitat for any threatened or endangered species within the adjacent stretch of the Tule Lake Channel (http://criticalhabitat.fws.gov/crithab/).

Table 3-1

List of Species with Designated EFH in Corpus Christi Bay

Common Name	Species	Life Stages
Brown shrimp	*Farfantepenaeus aztecus*	All
Pink shrimp	*Farfantepenaeus duorarum*	All
Royal red shrimp	*Pleoticus robustus*	All
White shrimp	*Litopenaeus setiferus*	All
Red drum	*Sciaenops ocellatus*	All
Almaco jack	*Seriola rivoliana*	All
Anchor tilefish	*Caulolatilus intermedius*	All
Banded rudderfish	*Seriola zonata*	All
Black grouper	*Mycteroperca bonaci*	All
Blackfin snapper	*Lutjanus buccanella*	All
Blackline tilefish	*Caulolatilus cyanops*	All
Blueline tilefish	*Caulolatilus microps*	All
Cubnera snapper	*Lutjanus cyanopterus*	All
Dog snapper	*Lutjanus jocu*	All
Dwarf sand perch	*Diplectrum bivittatum*	All
Gag	*Mycteroperca microlepis*	All
Goldface tilefish	*Caulolatilus chrysops*	All
Goliath grouper	*Epinephelus itajara*	All
Gray snapper	*Lutjanus griseus*	All
Gray triggerfish	*Balistes capriscus*	All
Grey amberjack	*Seriola dumerili*	All
Mahogany snapper	*Lutjanus mahogoni*	All
Misty grouper	*Epinephelus mystacinus*	All
Mutton snapper	*Lutjanus analis*	All
Nassau grouper	*Epinephelus striatus*	All
Queen snapper	*Etelis oculatus*	All

Red grouper	*Epinephelus morio*	All
Red hind	*Epinephelus guttatus*	All
Red snapper	*Lutjanus campechanus*	All
Rock hind	*Epinephelus adscensionis*	All
Sand perch	*Diplectrum formosum*	All
Scamp	*Mycteroperca phenax*	All
Schoolmaster	*Lutjanus apodus*	All
Silksnapper	*Lutjanus vivanus*	All
Snowy grouper	*Epinephelus niveatus*	All
Specklend hind	*Epinephelus drummondhayi*	All
Tilefish	*Lopholatilus chamaeleonticeps*	All
Vermilion snapper	*Rhomboplites aurorubens*	All
Warsaw grouper	*Epinephelus nigritus*	All
Wenchman	*Pristipomoides aquilonaris*	All
Yellowedge grouper	*Epinephelus flavolimbatus*	All
Yellowfin grouper	*Mycteroperca venenosa*	All
Yellowmouth grouper	*Mycteroperca interstitialis*	All
Yellowtail snapper	*Ocyurus chrysurus*	All
Blue marlin	*Makaira nigricans*	Juvenile
Blacktip shark	*Carcharhinus limbatus*	All
Bull shark	*Carcharhinus leucas*	All
Lemon shark	*Negaprion brevirostris*	Juvenile, Neonate
Scalloped hammerhead	*Sphyrna lewini*	Juvenile, Neonate
Spinner shark	*Carcharhinus brevipinna*	Juvenile, Neonate
Atlantic sharpnose shark	*Rhizoprionodon terraenovae*	
Bonnethead shark	*Sphyrna tiburo*	All
Finetooth shark	*Carcharhinus isodon*	All

Wetland ID	Acres
WP01	9.80
WP02	15.80
WP03	1.42
WP04	0.25
WP05	0.10
WP06	0.10
WP07	0.19
WP08	0.30
WP09	0.50
WP10	1.50
WP11	0.40
WP12	2.07
WP13	3.00

WP01
WP05
WP04
WP06
WP07
WP03
WP11
WP08
WP02
WP09
WP10
WP02
WP13
WP12

LEGEND

- Property Boundary
- Wetland - Palustrine
- Black Mangroves
- Spartina Alterniflora

WP01 - Feature Label
9.8 ac - Acres

Total Wetlands = 35.37 acres
Total Black Mangroves = 0.17 acres
Total Spartina Alterniflora = 0.18 acres

N

0 250 500
Feet

SOURCE: Texas Orthoimagery Program 2008/2009
0.5 Meter DOQQ, 01-13-2009

FIGURE 3-1
WETLAND DELINEATION MAP
ESSENTIAL FISH
HABITAT ASSESSMENT
CCI CORPUS CHRISTI
CORPUS CHRISTI, TEXAS

DATE	PROJECT NO	SCALE
FEBRUARY, 2014	13844.063.001.0001	AS SHOWN

FILE: I:\GIS Project Files\13844_CCI-LDH\CorpusEnviro\mxd\Figure 5-1 Wetland.mxd 3:26:19 PM 2/27/2014 perrint

4. ESSENTIAL FISH HABITAT

The proposed projects affected marine environment is limited to the area of the ship channel where proposed marine docks would be constructed. The overwater area of the proposed docks will be approximately 30,000 square feet.

4.1 IMPACT ASSESSMENT

The construction of a condensate Splitter on approximately 82-acres of land and the construction of approximately 8 miles of pipelines along an existing right of way do not contain areas that are Section 10 Navigable Waters, or other marine habitats and therefore will not adversely affect EFH resources.

The construction of marine docks for the shipment of product will be on the Tule Lake Channel, which is regulated as a Section 10 Navigable Water. The Tule Lake Channel is a tidally influenced marine habitat with potential implications for effects on EFH.

The Tule Lake Channel is permitted by the USACE to be dredged and maintained as a ship channel. The channel is maintained at -45 feet at mean low water (MLW) (Port Corpus Christi 2014). The construction of the docks will result in the dredging of approximately 14.8 acres of open water to a depth of -45 feet. A sea grass survey was performed in February 2014, sea grass habitat was not identified within the proposed impact area.

The vessel traffic associated with the project includes barges ranging from 300 to 400 feet in length, and ships ranging from 600 to 850 feet in length with a maximum draft of 45 feet. Up to four barges could dock per day and up to four ships are estimated to dock per week resulting in a maximum of 208 ships per year and a maximum of 1,456 barges per year. The barges and ship would typically travel at speeds of less than 10 knots within the ship channel depending on factors including the weather, tide and winds. These speeds would result in minimal boat wake and therefore minimal disturbance to submerged resources inside and outside the main navigation channels.

Ships and barges will travel only within the deep water ship channels allowing for adequate clearance between the deepest draft and the channel bottom. The vessels will not scour the bottom or increase turbidity and therefore will not cause impacts to submerged habitats. The increase in vessel traffic is expected to have minimal effect of EFH.

4.1.1 Dock Construction

The proposed project includes the construction of three docks and the dredging of approximately 865,000 cubic yards of material. Pile driving will be used for pile placement and would be primarily conducted from the waterfront via barges. CCI will use turbidity curtains during pile installation to reduce potential impacts to surrounding habitat.

4.1.2 Water Quality

Erosion and sedimentation controls would be utilized to protect water quality during the construction and operation of the proposed project in accordance with Section 401 of the Clean Water Act. The project includes the required construction stormwater permitting and notification, as well as implementation of a Storm Water Pollution Prevention Plan (SWPPP).

To ensure the project does not adversely affect EFH resources water quality, wastewater generated from the proposed facility will be treated prior to its discharge into the Tule Lake Channel. The levels of contaminants discharged will be below the levels authorized by the Texas Pollutant Discharge Elimination System Permit to be issued by TCEQ. The permitted discharge levels are considered protective of marine organisms. Therefore, discharges associated with the proposed project will not adversely affect EFH.

5. CONCLUSIONS

The issuance of a PSD permit to CCI Corpus Christi LLC for the construction of a condensate splitter facility in Corpus Christi, Texas will have no adverse effect on EFH protected under the Magnuson-Stevens Act. The Tule Lake Channel is a regularly dredged industrial ship channel and is not considered EFH. Suitable habitat, or designated critical habitats are not within the impact area of the proposed project. However, EFH was identified within the Corpus Christi Bay system. The EFH would not be directly or indirectly impacted by air emissions or water discharges resulting from the project, as all emissions and discharges would be within State-permitted allowances. Construction of the ship and barge docks will be implemented using best management practices to minimize turbidity in the surrounding water. Ship traffic associated with the project will be within existing shipping channels and will not cause scouring of the channel or bay bottom. The proposed facility would not have adverse impacts on EFH, and no mitigating actions would be required.

6. REFERENCES

NOAA (National Oceanic and Atmospheric Administration). 2013a. Habitat Conservation NMFS. Essential Fish Habitat Mapper: Location Query (Lat. 26.43; Long -95.21), [Online] http://www.habitat.noaa.gov/protection/efh/efhmapper/#. Reviewed: 13 February 2014.

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