

**NPDES PERMIT NO. TX0134004**  
**STATEMENT OF BASIS**

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

**APPLICANT:**

Oyster Bayou EOR Facility  
Denbury Onshore, LLC  
5874 FM 1941  
Stowell, TX 77661

**ISSUING OFFICE:**

U.S. Environmental Protection Agency  
Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

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**DATE PREPARED:**

May 30, 2014

**PERMIT ACTION**

It is proposed that the facility be issued an NPDES permit for a 5-year term in accordance with regulations contained in 40 Code of Federal Regulations (CFR) 122.46(a).

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of May 28, 2014.

**RECEIVING WATER – BASIN**

East Fork of Oyster Bayou.

**DOCUMENT ABBREVIATIONS**

For brevity, Region 6 used acronyms and abbreviated terminology in this Statement of Basis document whenever possible. The following acronyms were used frequently in this document:

|                  |   |
|------------------|---|
| BAT              | Best Available Technology Economically Achievable)                |
| BOD <sub>5</sub> | Biochemical oxygen demand (five-day unless noted otherwise)       |
| BPJ              | Best professional judgment  |
| CFR              | Code of Federal Regulations                                       |
| cfs              | Cubic feet per second   |
| COD              | Chemical oxygen demand  |
| COE              | United States Corp of Engineers                                   |
| CWA              | Clean Water Act   |
| DMR              | Discharge monitoring report                                       |
| ELG              | Effluent limitation guidelines                                    |
| EPA              | United States Environmental Protection Agency                     |
| ESA              | Endangered Species Act  |
| F&WS             | United States Fish and Wildlife Service                           |
| GPD              | Gallon per day  |
| IP               | Procedures to Implement the Texas Surface Water Quality Standards |
| µg/l             | Micrograms per liter (one part per billion)                       |
| mg/l             | Milligrams per liter (one part per million)                       |
| Menu 6           | Narrow Tidal Water  |
| MGD              | Million gallons per day   |
| MSGP             | Multi-Sector General Permit                                       |
| NPDES            | National Pollutant Discharge Elimination System                   |
| MQL              | Minimum quantification level                                      |
| O&G              | Oil and grease  |
| RRC              | Railroad Commission of Texas                                      |
| RP               | Reasonable potential  |
| SIC              | Standard industrial classification                                |
| s.u.             | Standard units (for parameter pH)                                 |
| TAC              | Texas Administrative Code   |
| TCEQ             | Texas Commission on Environmental Quality                         |
| TDS              | Total dissolved solids  |
| TMDL             | Total maximum daily load  |
| TOC              | Total Organic Carbon  |
| TRC              | Total residual chlorine   |
| TSS              | Total suspended solids  |
| TSWQS            | Texas Surface Water Quality Standards                             |
| WET              | Whole effluent toxicity   |
| WQMP             | Water Quality Management Plan                                     |
| WQS              | Water Quality Standards   |

## I. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 1311, the applicant operates crude petroleum and natural gas plant. As described in the application, the facility is located at 5874 FM 1941 Stowell, Chambers County, Texas. Wastewater discharge from the facility is as follow:

Discharges from Outfall 001 consist of non-contact cooling water which flows into a ditch 0.89 miles upstream of the East Fork Oyster Bayou in Waterbody Segment Code No.2423A of the Oyster Bayou Basin.

Discharge is located on that water at:

Outfall 001: Latitude 29° 41' 34"N; Longitude 94° 30' 17"W

## II. PROCESS AND DISCHARGE DESCRIPTION

The Oyster Bayou EOR Facility (facility) is a central facility for processing oil, water, and CO<sub>2</sub> in Denbury's Oyster Bayou oil field. The facility is used primarily to recover crude oil for separation into marketable product. The basis of the oil recovery process hinges around tertiary recovery technique that utilizes CO<sub>2</sub> injection to produce the crude oil. At the Oyster Bayou oil field, pressurized CO<sub>2</sub> (liquid state) is injected into the formation to break free oil remaining in the reservoir that would likely not flow to the surface under primary or secondary recovery methods. CO<sub>2</sub>, water, and oil are recovered from production wells and transferred to the facility. At the facility, production well streams flow through a series of separation vessels where the liquids and off-gas are separated. The off-gas is captured by compressors and discharged to the CO<sub>2</sub> injection header. The produced water is sent to the water storage tanks and then injected into saltwater disposal wells or into water curtain wells. After separation, oil is sent to the oil storage tanks and sold via trucks or pipeline.

The proposed wet surface area coolers (WSACs) are a component of the facility used exclusively to cool CO<sub>2</sub> pipelines. The gas, mainly CO<sub>2</sub>, which is separated from the liquids will be routed to suction scrubber and then to the compressors. The gas lines after separation will be cooled off by routing them through the WSACs before compression. Cooler gas temperature increases compression efficiency. Gas or any other product will not come in direct contact with the water in the WSACs.

### Table 1: Discharge Characteristics

The facility has not had any actual discharges. The facility submitted estimated technology based effluent characteristics, but did not submit any information in its application that would describe the nature of the discharge. However, should any discharge occur, the discharge shall be sampled within one hour of beginning of the discharge for the pollutants listed at 40 CFR 122, Appendix D, Tables III and IV, plus pH, hardness, TDS, and TSS and the results submitted to EPA and RRC. Should the discharge continue for more than one day, additional samples and analyses results shall be submitted for each additional day. These pollutants are listed in Part 2 of the proposed permit.

The table below shows facility's pollutant concentrations contained in the NPDES application and additional permit application information submitted to EPA.

**Outfalls 001:**

| <b>Parameter</b> | <b>Max Concentration, mg/L unless noted</b> | <b>Average Concentration, mg/L unless noted</b> |
|------------------|---|---|
| Flow, MGD        | 0.025                                       | 0.025   |
| Temperature °C   | 20 winter; 30 summer                        | 20 winter; 30 summer                            |
| pH, su           | 6-9   | 6-9   |
| TSS              | <4  | <4  |
| COD              | 50  | 50  |
| BOD              | <5.8  | <5.8  |
| Oil & grease     | NA  | NA  |

**III. REGULATORY AUTHORITY/PERMIT ACTION**

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water;” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). This is a first time permit issuance. An NPDES Application for a Permit to Discharge (Form 2E and process/discharge description) was received on December 23, 2013, and was deemed administratively incomplete. Additional permit application information was received on February 14, 2014; and was deemed administratively complete on February 27, 2014.

**IV. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS****A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS BASED EFFLUENT LIMITATIONS AND CONDITION FOR PERMIT ISSUANCE**

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, on best professional judgment (BPJ) in the absence of guidelines, and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent. Technology-based effluent limitations are established in the proposed draft permit for BOD5. Water quality-based effluent limitations are established in the proposed draft permit for pH.

**TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS**

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

**BPT** - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

**BCT** - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

**BAT** - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The proposed permit establishes discharge and monitoring requirements for BOD5 at Outfalls 001, discharge of non-contact cooling water. The proposed permit establishes limitations and monitoring requirements for BOD5 of 20 mg/l monthly average and 30 mg/l daily maximum. The estimated process flow provided in the application for Outfalls 001 is 0.025 MGD. The draft permit will not propose mass limits since the flow is variable and intermittent. Concentration limits will be protective of the stream uses. These limitations are based on the Best Professional Judgment of the permit writer.

## B. WATER QUALITY BASED LIMITATIONS

### 1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

### 2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

### 3. State Water Quality Standards

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard. Additionally, the TWQS found at 30 TAC Chapter 307 states that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Procedures to Implement the Texas Surface Water Quality Standards" (IP) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

The IP document is not a state water quality standard, but rather, a non-binding, non-regulatory guidance document. See IP at page 2 stating that "this is a guidance document and should not be interpreted as a replacement to the rules. The TWQS may be found in 30 TAC Sections (§§) 307.1-.10."). EPA does not consider the IP to be a new or revised water quality standard and has never approved it as such. EPA did comment on and conditionally "approve" the IP as part of the Continuing Planning Process (CPP) required under 40 CFR §130.5(c) and the Memorandum of Agreement between TCEQ and EPA, but this does not constitute approval of the IP as a water quality standard under CWA section 303(c). Therefore, EPA is not bound by the IP in establishing limits in this permit – but rather, must ensure that the limits are consistent with the EPA-approved state WQS. However, EPA has made an effort, where we believe the IP procedures are consistent with all applicable State and Federal regulations, to use those

procedures.

The general criteria and numerical criteria which make up the stream standards are provided in the 2000 EPA-approved Texas Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.9, effective August 17, 2000.

The designated uses of Oyster Bayou Tidal, Segment 2423A are contact recreation, aquatic life, and Fish consumption.

#### 4. Reasonable Potential- Procedures

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow the IP where appropriate. However, EPA is bound by the State's WQS, not State guidance, including the IP, in determining permit decisions. EPA performs its own technical and legal review for permit issuance, to assure compliance with all applicable State and Federal requirements, including State WQS, and makes its determination based on that review. Waste load allocations (WLA's) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long term average (LTA) is calculated, for both chronic and acute toxicity, using a log normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with upstream flow data, and the 99th percentile confidence level is for the remainder of cases. For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The lowest of the calculated LTA; acute, chronic and/or human health, is used to calculate the daily average and daily maximum permit limits.

Procedures found in the IP for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. If the average of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit, monitoring for the toxic pollutant will usually be included as a condition in the permit. If the average of the effluent data is equal to or greater than 85% of the calculated daily average limit, the permit will generally contain effluent limits for the toxic pollutant. The permit may specify a compliance period to achieve this limit if necessary.

Procedures found in the IP require review of the immediate receiving stream and effected downstream receiving waters. Further, if the discharge reaches a perennial stream or an intermittent stream with perennial pools within three-miles, chronic toxicity criteria apply at that confluence.

#### 5. Permit-Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

Wastewater discharges from the facility flow into Oyster Bayou Tidal in Waterbody Segment Code No. 2423A. The designated uses of Segment 2423A, Oyster Bayou Tidal are Aquatic Life, Contact Recreation, and Fish Consumption use. The pH standards for the Oyster Bayou Tidal, waterbody Segment 2423A is in the range of 6.5 to 9.0 su's. The propose permit establishes pH limits of 6.5 - 9 at Outfall 001.

b. Narrative Limitations

Narrative protection for aesthetic standards will propose that surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life.

The following narrative limitations in the proposed permit represent protection of water quality for Outfall 001:

“The effluent shall contain no visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.”

c. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criteria, the permit must contain an effluent limit for that pollutant.

Since the facility has not had any actual discharges, it did not submit any information in its application that would describe the nature of the discharge. However, should any discharge occur, the discharge shall be sampled within one hour of beginning of the discharge for the pollutants listed at 40 CFR 122, Appendix D, Tables III and IV, plus pH, hardness, TDS, and TSS and the results submitted to EPA and RRC. Should the discharge continue for more than one day, additional samples and analyses results shall be submitted for each additional day. These pollutants are listed in Part 2 of the proposed permit. The reasonable potential calculations shall be performed and the permit re-opened following EPA's receipt of its effluent characteristics.

Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is continued in the proposed permit. In addition, there shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks.

C. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40

CFR §122.44(i)(1). The monitoring frequencies are based on BPJ, taking into account the nature of the facility, the previous permit, and past compliance history.

For Outfall 001, flow shall be monitored daily, when discharging using a recording flow meter, BOD<sub>5</sub> and pH shall also be measured and reported daily when discharging, using grab sample.

D. WHOLE EFFLUENT TOXICITY LIMITATIONS

Biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity.

OUTFALL 001

According to TCEQ’s Implementation Plan (IP), the percentage of effluent at the edge of the mixing zone is 8% for bays, estuaries, and wide tidal rivers. The East Fork Oyster Bayou tidal falls under this category. Permittees that discharge into bays, estuaries, and wide tidal rivers will normally conduct chronic WET tests with a critical dilution of 8% if the effluent flow is less than or equal to 10MGD in this case. The TCEQ IP directs the WET test to be a 7 day chronic test using *Mysidopsis bahia* and *Menidia beryllina* at a quarterly (once per month) frequency for both the vertebrate and the invertebrate test.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001- the discharge to a ditch 0.89 miles upstream of the East Fork Oyster Bayou tidal in Waterbody Segment Code No.2423A of the Oyster Bayou Basin. Discharges shall be limited and monitored by the permittee as specified below:

| <u>EFFLUENT CHARACTERISTIC</u>                                      | <u>DISCHARGE MONITORING</u> |                      |
|---|-----------------------------|----------------------|
|   | <u>30-DAY AVG MINIMUM</u>   | <u>7-DAY MINIMUM</u> |
| Whole Effluent Toxicity Testing<br>(7 Day Static Renewal) <u>1/</u> |                             |                      |
| <i>Mysidopsis bahia</i>   | REPORT                      | REPORT               |
| <i>Menidia beryllina</i>  | REPORT                      | REPORT               |

| <u>EFFLUENT CHARACTERISTIC</u>                                      | <u>MONITORING REQUIREMENTS</u> |                  |
|---|--------------------------------|------------------|
|   | <u>FREQUENCY</u>               | <u>TYPE</u>      |
| Whole Effluent Toxicity Testing<br>(7 Day Static Renewal) <u>1/</u> |                                |                  |
| <i>Mysidopsis bahia</i>   | 1/Quarter                      | 24-Hr. Composite |
| <i>Menidia beryllina</i>  | 1/Quarter                      | 24-Hr. Composite |

FOOTNOTES

- 1/ Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

#### E. FINAL EFFLUENT LIMITATIONS

See the draft permit for limitations.

### V. FACILITY OPERATIONAL PRACTICES

#### A. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

#### B. OPERATION AND REPORTING

The permittee must submit Discharge Monitoring Report's (DMR's) quarterly, beginning on the effective date of the permit, lasting through the expiration date of the permit or termination of the permit, to report on all limitations and monitoring requirements in the permit.

### VI. IMPAIRED WATER - 303(d) LIST AND TMDL

Wastewater discharges from the facility flows into a ditch 0.89 miles upstream of the East Fork Oyster Bayou in Waterbody Segment Code No.2423A of the Oyster Bayou Basin. The receiving stream is listed as impaired for dioxin in edible tissue (Category 5a), and PCBs in edible tissue (Category 5a) in the 2012 State of Texas 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs). These impairments are under TCEQ's category 5a. Category 5a implies that a TMDL is underway, scheduled, or will be scheduled. The facility does not plan to discharge dioxin and PCBs. If the water body is listed at a later date for additional pollutants, and a total maximum discharge loading determined for the segment, the standard reopener clause would allow the permit to be revised and additional pollutants and/or limits added. No additional requirements beyond the already proposed technology-based and/or water-quality based requirements are needed in the proposed permit.

### VII. ANTIDegradation

The Texas Commission on Environmental Quality, Texas Surface Water Quality Standards, Antidegradation, Title 30, Part 1, Chapter 307, Rule §307.5 sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the proposed permit are developed from the State WQS and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water.

### VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements and exemption to meet Antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR Part 122.44(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. This is a first-time permit issuance.

### IX. ENDANGERED SPECIES

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, [http://www.fws.gov/southwest/es/ES\\_ListSpecies.cfm](http://www.fws.gov/southwest/es/ES_ListSpecies.cfm), seven species in Chambers County are listed as Endangered or Threatened. The listed species are the Green sea turtle *Chelonia mydas*, the Hawksbill sea turtle *Eretmochelys imbricata*, Kemp's ridley sea turtle *Lepidochelys kempii*, Leatherback sea turtle *Dermochelys coriacea*, Loggerhead sea turtle *Caretta caretta*, brown pelican *Pelecanus occidentalis*, and the Piping Plover *Charadrius melodus*.

Available information from the U.S. Southwest Region Ecological Services web page presents the occurrence of the listed threatened and endangered species in Chambers County as follows:

#### **GREEN SEA TURTLE (*Chelonia mydas*)**

Sea turtles are graceful saltwater reptiles, well adapted to life in their marine world. With streamlined bodies and flipper-like limbs, they are graceful swimmers able to navigate across the oceans. When they are active, sea turtles must swim to the ocean surface to breathe every few minutes. When they are resting, they can remain underwater for much longer periods of time. Although sea turtles live most of their lives in the ocean, adult females must return to land in order to lay their eggs. Sea turtles often travel long distances from their feeding grounds to their nesting beaches. Human threats include: oil spills, live bottom smothering with sediments and drilling fluids, dredging, coastal development, agricultural and industrial pollution, seagrass bed degradation, shrimp trawling and other fisheries, boat collisions, under water explosions, ingestion of marine debris, entanglement in marine debris, and poaching.

#### **HAWKSBILL SEA TURTLE (*Eretmochelys imbricata*)**

The hawksbill is a small to medium-sized sea turtle averaging approximately 2.8 feet in curved carapace length with a weight of approximately 176 pounds. Hawksbills reenter coastal waters when they reach approximately 20-25 cm carapace length. Coral reefs are widely recognized as the resident foraging habitat of juveniles, sub-adults and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. The ledges and caves of the reef provide shelter for resting both during the day and night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. Hawksbills are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent. In Texas, juvenile hawksbills are associated with stone jetties. Hawksbills utilize both low- and high-energy nesting beaches in tropical oceans of the world. Both insular and mainland nesting sites are known. Hawksbills will nest on small pocket beaches and, because of their small body size and great agility can traverse fringing reefs that limit access by other species. They exhibit a wide tolerance for nesting substrate type. Nests are typically placed under vegetation. Threats to this species include: poaching, oil spills, vessel anchoring and groundings, artificial lighting at nesting sites, mechanical beach cleaning, increased human presence, beach vehicular driving,

entanglement at sea, ingestion of marine debris, commercial and recreational fisheries, water craft collisions, sedimentation and siltation, and agricultural and industrial pollution.

### **KEMP'S RIDLEY SEA TURTLE (*Lepidochelys kempii*)**

The Kemp's ridley sea turtles are the smallest of all extant sea turtles. Adult Kemp's ridleys' shells are almost as wide as long. Neonatal Kemp's ridleys feed on the available sargassum and associated infauna or other epipelagic species found in the Gulf of Mexico. In post-pelagic stages, the ridley is largely a crab-eater, with a preference for portunid crabs. Age at sexual maturity is not known, but is believed to be approximately 7-15 years, although other estimates of age at maturity range as high as 35 years. The major nesting beach for Kemp's ridleys is on the northeastern coast of Mexico. This location is near Rancho Nuevo in southern Tamaulipas. The species occurs mainly in coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean. Hunting of both turtles and eggs contributed to the decline of this species. Existing threats include: development and human encroachment of nesting beaches, erosion of beaches, vehicular traffic on beaches, fisheries, oil spills, floating debris, dredging, and explosive removal of old oil and gas platforms.

### **LEATHERBACK SEA TURTLE (*Dermochelys coriacea*)**

The leatherback is the largest living turtle, and is so distinctive as to be placed in a separate taxonomic family, Dermochelyidae. The carapace is distinguished by a rubber-like texture, about 4 cm thick, and made primarily of tough, oil-saturated connective tissue. No sharp angle is formed between the carapace and the plastron, resulting in the animal being somewhat barrel-shaped. The front flippers are proportionally longer than in any other sea turtle. Nesting occurs from February - July with sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

Leatherbacks become entangled in longlines, fish traps, buoy anchor lines and other ropes and cables. This can lead to serious injuries and/or death by drowning. Leatherback turtles eat a wide variety of marine debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts. Leatherbacks are vulnerable to boat collisions and strikes, particularly when in waters near shore. Marine turtles are at risk when encountering an oil spill. Respiration, skin, blood chemistry and salt gland functions are affected.

### **LOGGERHEAD SEA TURTLE (*Caretta caretta*)**

Loggerheads are the most abundant species in U.S. coastal waters, and are often captured incidental to shrimp trawling. Shrimping is thought to have played a significant role in the population declines observed for the loggerhead. Maturity is reached at between 16-40 years. Mating takes place in late March-early June, and eggs are laid throughout the summer. Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. In the United States, killing of nesting loggerheads is infrequent. However, in a number of areas, egg poaching is common. Erosion of nesting beaches can result in loss of nesting habitat. Loggerhead turtles eat a wide variety of marine debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and raw plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts. Turtles are taken by gillnet fisheries in the Atlantic and Gulf of Mexico. Several thousand vessels are involved in hook and

line fishing for various coastal species. Sea turtles are at risk when encountering an oil spill. Respiration, skin, blood chemistry and salt gland functions are affected. Pesticides, heavy metals and PCB's have been detected in turtles and eggs, but the effect on them is unknown. Turtles have been caught in saltwater intake systems of coastal power plants. The mortality rate is estimated at 2%. Underwater explosions can kill or injure turtles, and may destroy or damage habitat. The effects of offshore lights are not known. They may attract hatchlings and interfere with proper offshore orientation, increasing the risk from predators. Turtles get caught in discarded fishing gear. The number affected is unknown, but potentially significant.

#### **PIPING PLOVER (*Charadrius melodus*)**

A small plover has wings approximately 117 mm; tail 51 mm; weight 46-64 g (average 55 g); length averages about 17-18 cm. Inland birds have more complete breast band than Atlantic coast birds. The nonbreeding plovers lose the dark bands. In Laguna Madre, Texas, non-breeding home ranges were larger in winter than in fall or spring. The breeding season begins when the adults reach the breeding grounds in mid- to late-April or in mid-May in northern parts of the range. The adult males arrive earliest, select beach habitats, and defend established territories against other males. When adult females arrive at the breeding grounds several weeks later, the males conduct elaborate courtship rituals including aerial displays of circles and figure eights, whistling song, posturing with spread tail and wings, and rapid drumming of feet. The plovers defend territory during breeding season and at some winter sites. Nesting territory may or may not contain the foraging area. Home range during the breeding season generally is confined to the vicinity of the nest. Plovers are usually found in sandy beaches, especially where scattered grass tufts are present, and sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments.

Food consists of worms, fly larvae, beetles, crustaceans, mollusks, and other invertebrates. The plovers prefer open shoreline areas, and vegetated beaches are avoided. It also eats various small invertebrates. It obtains food from surface of substrate, or occasionally probes into sand or mud.

Strong threats related primarily to human activity; disturbance by humans, predation, and development pressure are pervasive threats along the Atlantic coast.

#### **BROWN PELICAN (*Pelecanus occidentalis*)**

On November 17, 2009, brown pelican *Pelecanus occidentalis* was removed from the federal list of threatened and endangered species due to recovery (74 FR 59444 59472). After nearly disappearing from most of the United States decades ago, brown pelican is now flourishing across the nation and no longer needs the protection of the Endangered Species Act.

#### **Potential Effects of Discharges Authorized by this Permit Issuance**

Many of the threats to listed threatened or endangered species are will not be affected by the proposed discharges. Those threats include: poaching of turtles and eggs, development and human encroachment of nesting beaches, erosion of beaches, vehicular traffic on beaches, beach armoring, artificial lighting, mechanical beach cleaning, marina and dock development, coastal development, increased human presence, dredging, non-native vegetation, seagrass bed degradation, and agricultural pollution. Other threats which may occur in the area covered under the proposed permit, which are not related to the proposed discharges are: entanglement at sea, commercial and recreational fisheries, and shrimp trawling. The discharges proposed to be authorized by the permit renewal will not affect those threats to threatened or endangered species.

Threats to species which could be related to Natural Gas Liquids in the area covered under the proposed permit include: oil spill, industrial pollution, and boat collisions. Of those potential threats, only oil spill is directly relevant to the proposed discharges. The proposed permit contains controls to limit the quantity of pollutants which are discharged and prevent toxic effects in the receiving waters. The proposed permit has limits for Biochemical Oxygen Demand, flow and pH. The proposed permit is written to include limitations and monitoring requirements on those parameters as a permit conditions.

### **Determination**

EPA is unaware, at this time, of any service concerns regarding this discharge and believes the limitations proposed in this permit are adequate to protect the listed species for Chambers County.

Based on information described above, EPA Region 6 has determined that discharges proposed to be authorized by the proposed permit will have no effect on the listed species in Chambers County.

The standard reopener clause in the permit will allow EPA to reopen the permit and impose additional limitations if it is determined that changes in species or knowledge of the discharge would require different permit conditions.

### **X. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS**

The issuance of the permit should have no impact on historical and/or archeological preservation. Although construction activities are planned in the issuance, there are no historical and archeological preservation nearby or the facility believes that its construction activities will not be impacted by any known historical and archeological preservation.

### **XI. PERMIT REOPENER**

The permit may be reopened and modified during the life of the permit if relevant portions of the Texas WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated. Should the State adopt a new WQS, and/or develop a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR §122.44(d). Modification of the permit is subject to the provisions of 40 CFR §124.5.

### **XII. VARIANCE REQUESTS**

No variance requests have been received.

### **XIII. COMPLIANCE HISTORY**

This is a first-time permit issuance.

**XIV. CERTIFICATION**

This permit is in the process of certification by Railroad Commission of Texas following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

**XV. FINAL DETERMINATION**

The public notice describes the procedures for the formulation of final determinations.

**XVI. ADMINISTRATIVE RECORD**

The following information was used to develop the proposed permit:

**A. APPLICATION**

NPDES Application for Permit to Discharge, Form 1 & 2E, received on December 23, 2013, and was deemed administratively incomplete. Additional permit application information was received on February 26, 2014; and was deemed administratively complete on February 28, 2014.

**B. State of Texas References**

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

"Procedures to Implement the Texas Surface Water Quality Standards via Permitting," Texas Commission on Environmental Quality, January 2003.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.9, effective August 17, 2000.

<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>

**C. 40 CFR CITATIONS**

Sections 122, 124, 125, 133, and 136

**D. MISCELLANEOUS CORRESPONDENCE**

Letter from Dorothy Brown, EPA, to Mr. Sucheta Gokhale, P.E., Environmental Compliance Coordinator, Denbury Resources, Inc. dated February 28, 2014, informing the applicant that its NPDES application received December 23, 2013, is administratively complete

Email from Robert Kirkland, EPA, to Nasim Jahan, EPA, dated March 26, 2014, on critical conditions information.