

**NPDES PERMIT NO. TX0092827**  
**STATEMENT OF BASIS**

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

**APPLICANT:**

U.S. Department of Energy  
Strategic Petroleum Reserve  
Big Hill Oil Storage  
24784 Big Hill Road  
Winnie, TX 77665

**ISSUING OFFICE:**

U.S. Environmental Protection Agency  
Region 6  
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**DATE PREPARED:**

January 22, 2014

**PERMIT ACTION:**

It is proposed that the facility be reissued 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 January 17, 2014.

**RECEIVING WATER – BASIN**

Gulf of Mexico, Gulf Intracoastal Waterway, Spindletop Marsh

**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 7	Intermittent stream with perennial pools
MMCFD	Million cubic feet per day
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. PROPOSED CHANGES FROM PREVIOUS PERMIT**

1. pH for Outfall 001, has been established in the draft permit based on the criteria for Segment 2501, Gulf of Mexico.
2. Testing frequency for all stormwater discharges except salinity at Outfall 008 (outfalls 003, 005, 006, & 007) have been reduced from quarterly testing to semi-annually testing based on good compliance history.
3. Electronic monitoring report requirement has been included in the draft permit.
4. Inclusion of a language prohibiting use of oxygen scavenging chemicals as well as the removal of DO requirements.
5. pH for Outfalls 002, 008, and 009 has been established to the range of 6.5 to 9.0, the criteria for Segment 0702.
6. Critical dilution is changed from 2.5% to 4.8% based on updated Cormix Model run.
7. A monthly reporting requirement for salinity at Outfall 008 has been established in the proposed permit based on new information.

**II. APPLICANT LOCATION and ACTIVITY**

As described in the application, the facility is located 9 miles south east of Winnie in Jefferson County, Winnie, Texas.

Under the Standard Industrial Classification (SIC) Code 5171, Petroleum Bulk Stations and Terminals, the applicant stores and maintains, in ready access, crude oil reserves to be used in the event of national energy crisis as determined by the president of the United States.

The effluent from the crude oil reserves facility is discharged as follows:

Outfall Reference Number	Discharge Coordinates Latitude Deg° Min' Sec'' Longitude Deg° Min' Sec''	Type of Discharge	Discharge Flow MGD	Receiving Water	Water Body Segment
001	29° 33' 56'' N 094° 11' 52'' W	Brine diffuser for saltwater from cavern depressuring, non-contact bearing cooling, raw water pipeline pigging, seal flush return flow	3.86	Gulf of Mexico (approx. 5 miles offshore)	2501*
002	29° 40' 59'' N 094° 11' 42'' W	Hydroclone Blowdown & filter backwash (inactive)	NA	Intracoastal waterway	0702
003	29° 44' 51'' N 094° 14' 18'' W	Retained stormwater from 14 cavern pads	0.060 Estimated	Spindletop Marsh	Unclassified
004	29° 44' 45'' N 094° 14' 15'' W	Sewage treatment	0.0011	Spindletop Marsh	Unclassified

Outfall Reference Number	Discharge Coordinates Latitude Deg° Min' Sec'' Longitude Deg° Min' Sec''	Type of Discharge	Discharge Flow MGD	Receiving Water	Water Body Segment
005	29° 44' 57" N 094° 14' 15" W	Stormwater from the site power substation sump	0.0092 Estimated	Spindletop Marsh	Unclassified
006	29° 44' 57" N 094° 14' 27" W	Stormwater from surge tank secondary containment	0.0050 Estimated	Spindletop Marsh	Unclassified
007	29° 44' 56" N 094° 14' 23" W	Stormwater from meter prover & crude oil meter skid through fire foam retention pond	0.0004 Estimated	Spindletop Marsh	Unclassified
008	29° 40' 59" N 094° 11' 42" W	Stormwater from transformer sumps & located at the RWIS**	0.0005 Estimated	Intracoastal waterway	0702
009	29° 40' 59" N 094° 11' 44" W	Recirculated ambient water from the intracoastal canal	0.92 Estimated	Intracoastal waterway	0702

\*State Water Standards apply to outfall 001 because the discharge occurs within 9 nautical miles (10.36 miles) in State waters, Gulf of Mexico.

\*\*RWIS means Raw Water Intake Structure

### III. PROCESS AND DISCHARGE DESCRIPTION

The Strategic Petroleum Reserve (SPR) stores crude oil in caverns leached deep underground into naturally occurring salt (dome) formations. The facility is currently filled to capacity and is being maintained in a stand-by or operational readiness mode, ready for drawdown. The operational readiness mode requires continual maintenance of systems and equipment and results in the routine discharges of treated effluent and of retained stormwater from various secondary containments around the site. The routine maintenance procedures result in intermittent discharges of washwater, fire systems test water, hydrostatic test water, vehicle rinse water, construction dewatering, and raw water associated with site specific drawdown readiness exercises and in a pump recirculation loop.

Information obtained from the application reveals that in 2012, a limited leaching operation designed to restore cavern space lost to long-term creep/closure was concluded. There was oil drawdown in the summer of 2011.

**Table 1: Discharge Characteristics for Outfall 001**

The table below shows facility's pollutant concentrations obtained from the NPDES application.

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	13.73	3.86
pH, su	6.3 minimum – 7.3 maximum	
Oil and Grease	2.5	2.25

Note: There were no flows from Outfall 002 during the last permit cycle. Outfall 002 is an inactive unit representing a backwash flow from raw water filtration (hydroclone).

**Table 2: Discharge Characteristics for Outfall 003**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.086	0.060
pH, su	7.1 minimum – 8.9 maximum	
Oil and Grease	1.5	1.3
TOC	37	18

**Table 3: Discharge Characteristics for Outfall 004**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0036	0.0011
pH, su	5.7 minimum – 7.7 maximum	
BOD	7.9	2.9
TSS	7.0	3.67

**Table 4: Discharge Characteristics for Outfall 005**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0132	0.0092
pH, su	7.3 minimum – 8.2 maximum	
TOC	4.5	4.28

**Table 5: Discharge Characteristics for Outfall 006**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0072	0.0050
pH, su	6.5 minimum – 7.8 maximum	
TOC	13.9	8.73
Oil and Grease	1.2	1.15

**Table 6: Discharge Characteristics for Outfall 007**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0005	0.0004
pH, su	6.5 minimum – 8.5 maximum	

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
TOC	19.7	7.98
Oil and Grease	1.2	0.875

**Table 7: Discharge Characteristics for Outfall 008**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0007	0.0005
pH, su	7.2 minimum – 8.1 maximum	
TOC	17.1	8.7
Oil and Grease	1.1	1.1

**Table 8: Discharge Characteristics for Outfall 009**

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	23.48	0.0005

#### IV. 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 renewal of an existing permit. An NPDES Application for a Permit to Discharge (Form 1 & 2C) was received on July 25, 2013, and was deemed administratively incomplete on November 22, 2013. Additional permit application information was received via email on December 20, 2013, and was deemed administratively complete on January 21, 2014.

**V. 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 Oil and Grease, TSS, TDS, TOC, & BOD. 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 facility discharges Brine diffuser for saltwater from cavern depressuring, non-contact bearing cooling, raw water pipeline pigging, seal flush return flow, Hydroclone Blowdown & filter backwash (inactive), stormwater, Sewage treatment, and recirculated ambient water from the intracoastal canal. As a result, Oil and Grease, TSS, TDS, TOC, salinity, & BOD limits are included in the proposed permit.

Stormwater has been identified by the permittee as a component of the discharge through Outfalls 003, 005, 006, 007 and 008. Discharges from Outfalls 003, 005, 006, 007 and 008 also include other miscellaneous discharges to the existing Stormwater system. These discharges include fire system test water, hydrostatic test water, construction dewatering, and raw water system test water (RPX), which includes a minor stream of potable water used as once-through

non-contact bearing cooling water (RPX cycle of occurrence 1 in 5 years). These discharges must be addressed under allowable non storm water discharges. See G.4. of the draft permit.

The BMPs for the resulting rinse water of 500 gallons per day, from clean metallic surfaces prior to painting with mixture of potable water from a high pressure washer containing a prescribed amount of biodegradable cleanser or weak disinfectant are:

- a) Clean up visible spills;
- b) Wash water containing biodegradable cleanser or disinfectant must be collected and disposed of in sanitary sewer or by landscape irrigation;
- c) These discharges are subject to no discharge of floating solids or visible foam in other than trace amounts, and no discharge of visible oil (visible sheen).

The ability to rinse dirt from outside of site motor vehicles with portable water using no soaps or detergents or other additives is allowed as a miscellaneous intermittent discharge to the stormwater management ditches. These discharges must be addressed under allowable non-storm water discharges. See G.4. of the draft permit.

A requirement to develop a Stormwater Pollution Prevention Plan (SWP3) is continued in the draft permit. It is proposed that the facility conduct an annual inspection of the facility to identify areas contributing to the storm water discharge and identify potential sources of pollution which may affect the quality of storm water discharges from the facility.

The draft permit requires the permittee to develop a site map. The site map shall include all areas where storm water may contact potential pollutants or substances which can cause pollution. It is also proposed that all spilled product and other spilled wastes be immediately cleaned up and properly disposed. The permit prohibits the use of any detergents, surfactants or other chemicals from being used to clean up spilled product. Additionally, the permit requires all waste fuel, lubricants, coolants, solvents or other fluids used in the repair or maintenance of vehicles or equipment be recycled or contained for proper disposal. All diked areas surrounding storage tanks or stormwater collection basins shall be free of residual oil or other contaminants so as to prevent the accidental discharge of these materials in the event of flooding, dike failure, or improper draining of the diked area. The permittee shall amend the SWP3 whenever there is a change in the facility or change in operation of the facility.

## 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 2010 EPA-approved Texas Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.9, effective August 24, 2012.

The designated uses of the Intracoastal Waterway Tidal of the Neches-Trinity Coastal Basin in Segment No. 0702 are identified by the Texas Commission on Environmental Quality (TCEQ) as a water body with the following designated uses:

Contact Recreation  
High Aquatic Life

The unclassified Spindletop Marsh is located south of the main site and is not yet classified by TCEQ.

Gulf of Mexico, Segment 2501 is identified by the Texas Commission on Environmental Quality (TCEQ) as a water body with the following designated uses:

Contact Recreation  
Exceptional Aquatic Life  
Oyster Waters

#### 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 Outfalls 001, 002, 008 & 009 flow into the Gulf of Mexico, Segment 2501, and the Intracoastal Waterway Tidal of the Neches-Trinity Coastal Basin in Water Body Segment No. 0702, which has Texas WQS of 6.5 – 9.0 s.u. As a result, pH for Outfalls 001, 002, 008 and 009 shall be limited to 6.5 – 9.0 s.u., the criteria listed for Segments 2501 and 0702.

The unclassified Spindletop Marsh is located south of the main site and is not yet classified by TCEQ. The limitation of pH for Outfalls 003, 004, 005, 006, and 007 shall be limited to the range 6.0 to 9.0 su's.

##### 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 discharge shall not present a hazard to humans, wildlife, or livestock.

The following narrative limitations in the proposed permit represent protection of water quality which requires that

“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.

State Water Standards do not apply to outfall 001 because the discharge occurs in federal waters, Gulf of Mexico. Effluent limitations and/or conditions in the draft permit, however, must comply with Ocean Discharge Criteria at 40 CFR Part 125 Subpart M. For all other outfalls with discharges that may affect state waters, a review of the application and updated information revealed that almost all priority pollutants were believed absent. In addition, Big Hill Strategic Petroleum reserve is a minor facility with intermittent discharges in all of its outfalls. Since this is a minor facility with intermittent discharge, water quality based effluents limits, with the exception of pH are not included in the permit.

d. Dissolved Oxygen

The permittee also requested that EPA remove the Dissolved Oxygen (DO) requirements from this discharge. The permittee stated that oxygen scavenging chemical injection historically used in the ponds just upstream of the brine disposal pumps has not been conducted during the current or previous permit terms and the equipment for storage, injection and mixing have been removed from service. EPA notes that the use of oxygen scavenger necessitated the DO requirements in the previous permits and since the permittee has not used oxygen scavenging chemical for several years and has since removed the equipment from service, the DO requirements is removed from the proposed permit. However, the proposed permit prohibits the use of Oxygen scavenger. The permittee shall notify EPA and the RRC should it decide to use oxygen scavenging chemicals in future. At that time, this permit shall be reopened and modified to include the DO requirements.

e. Salinity

The permittee requested relief from the salinity limitation at Outfall 008 for the following reasons: there is no brine source from this Outfall, no process or operational controls for salinity for the discharge, drought conditions, receiving water is on average more salty than the limit, and dilution is not a perceived solution. The permittee also requested a report only requirement in the proposed permit and that DMRs shall report only each salinity excursion with an explanatory footnote.

EPA reviewed last five years of DMR and found that there were three quarterly excursions for Outfall 008 in 2013 as opposed to one excursion in 2013 cited by the permittee. EPA also notes the previous permits issued in September 26, 2003, with modification on December 21, 2004; and the December 29, 2008, all had salinity limit of 8 g/l with a footnote of “when discharging.” However the original permit issued in 1984 did not have salinity requirements but rather have TOC, Oil and grease and pH limits.

The permittee submitted additional information on its discharges from Outfall 008 and the receiving stream data for salinity. Analysis of these data shows that the receiving stream is highly saline, in most cases above the 8ppt permit limit. The utility water used at Big Hill SPR

is directly from the intercoastal Waterway (ICW). Although, the utility water does not get discharged back to Outfall 008, there is utility water on the platform where the containments and curbs are. The curbs do get spray from the pump packings that the utility water is used; also the screens/fish excluders that are washed with the same utility water creates a lot of spray that can also “coat” the curbs and containments. Eventually, these areas dry up leaving salt behind. The next rainfall washes these salts from the curbs and small containment down into the oil/water separator. The sprays (aerosols) of utility water are not discharges to the 008 outfall but do cause the salt to be accumulated.

EPA notes that salinity is based on tides, rainfall and natural run-off from the land. Since the receiving water is on average more salty than the 8g/l limit, the proposed permit revert salinity limitation to a monthly reporting requirement. The facility shall also monitor salinity in the receiving stream on a monthly frequency. EPA shall re-evaluate the salinity of both the receiving stream and discharge during the next permit cycle to see if salinity limit is appropriate. Since the applicant submitted new information on the salinity for both the receiving stream and the salinity of its discharges at Outfall 008, a report only requirement is not considered antibacksliding, based on new information. Salinity of both the receiving stream and salinity at Outfall 008 shall be monitored monthly.

#### 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.

#### D. 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.

The permittee had requested that (Outfalls 003, 005, 006, and 007) all stormwater discharges be tested semi-annually based on the long compliance history, current trend towards limiting this type of discharges, in these similar light industrial settings, through the use of a visual examination as found in the applicable Sector P, of the EPA’s multi-sector general permit (MSGP), the maintenance of a current storm water pollution prevention plan (SWPPP), and the maintenance of facility’s ISO 14001 (2004) certification and associated EMS.

For the same reasons cited above, the permittee also requested that the testing frequency for Outfall 008 be set to that of semi-annual requirement and that the salinity limitation be allowed to revert to that of “report only.” The permittee also justified the specific location of this Outfall, nearer the coast, where salt-containing rain and aerosols condense salt onto impervious surfaces within the open-air collection curbs to be carried down into and perhaps further concentrated by conditions (between rain episodes) within the water-side of the flow through separator. Further

justification was based on the nature of the intracoastal waterway (ICW) receiving water which contains historical average and median salt-contents above the current 8 g/l effluent limit and the earlier permit had “report only” requirement.

A review of the Discharge Monitoring Results reveals six excursions in three episodes in 2012. These excursions include for Outfall 001 – brine diffuser; missed sample on a single brine flow in November 2012, which produces monthly testing requirement infractions for: pH, TSS, TDS, and O & G. For Outfall 002 – treated sanitary wastewater; low pH (5.7 s.u.) on a monthly discharge sample. For Outfall 002 – treated sanitary wastewater; low pH (5.8 s.u.) on monthly discharge sample.

The permittee is commended on achieving an overall annual site compliance rate of 100 % in 2009, 2010 and 2011, and 99.1 % in 2012. Based on these and for the reasons stated above, the draft permit establishes a semi-annual monitoring requirement for these stormwater Outfalls: Outfalls 003, 005, 006, and 007.

The previous permit had a salinity limit of 8g/l at Outfall 008, with a monitoring frequency requirements of once per quarter. Based on new information, the salinity limit is removed from the proposed permit. However, the salinity of both the receiving stream and salinity discharges from Outfall 008 shall continue to be monitored and reported monthly.

For ALL other outfalls, monitoring frequency established in the current permit is continued in the proposed permit

The permittee is commended on completing 10 years of successful WET testing per the current and previous permit requirements. However, monitoring frequency reduction will not be granted during this permit renewal phase. However, the permittee may apply for a testing frequency reduction upon successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. The quarterly Biomonitoring frequency is proposed based on biomonitoring frequency policy.

#### E. 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.

The facility had requested that the frequency of WET testing for the two species be changed to semi-annual requirement based on process stability, the salt water discharge resulting from a mining process associated with a transportation related business is not in the same category of “produced water” associated with exploration and production, chemical additives not being used in the process, the frequency request from quarterly to that of semi-annual for one of the testing species was once granted by Region 6, and oxygen scavenging chemical injection historically used in the ponds upstream of the brine disposal pumps has not been conducted during the

current and previous permit terms and the equipment for storage, injection and mixing have been removed from service. As with other facilities of this type, quarterly testing is required with a reduction option if there is no lethal or sublethal toxicity during the first year. Accordingly, this permit requires that discharge to outfall 001 be monitored by a 7-day chronic toxicity test, with quarterly monitoring according to the provisions indicated in Parts I and II of this permit.

Critical dilution is changed from 2.5% to 4.8% based on updated Cormix Model run. EPA re-ran CORMIX model and the model calculates a new CDF of 4.769% at the edge of the 100-meter regulatory mixing zone edge. Based on the latest model, the CDF to be used for biomonitoring shall be 4.8%. The rounding to 4.8% is to simplify the results for biomonitoring. The dilution series for the biomonitoring test is established using a minimum of five effluent dilutions in addition to the CDF. These additional effluent concentrations, and the CDF, based on a 0.75 series, are 2.0%, 2.7%, 3.6%, 4.8%, and 6.4%. A jet velocity of greater than or equal to 30 fps permit limit is continued in the proposed permit.

The proposed permit continues the requirements to prohibit the use of corrosion inhibitors in the raw water during Presidential drawdown.

#### F. FINAL EFFLUENT LIMITATIONS

See the draft permit for limitations.

### VI. 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.

#### C. SOLID WASTE PRACTICES

Sludge from the sanitary sewage treatment and from the oil/water separator is shipped off-site by

C. Johnnie on the Spot  
4635 Hodgson Road  
Nederland, TX 77627

to the

City of Groves Waste Water Treatment Plant  
1222 Taft Avenue  
Port Arthur, TX 77642-0962

No other solid wastes are produced by the process for other disposal.

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

According to the 2012 State of Texas 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs), the receiving stream for Outfalls 002, 008 & 009, the Intracoastal Waterway Tidal in Segment No. 0702 of the Neches-Trinity Coastal Basin is listed for bacteria under category 5c, dioxin in edible tissue and PCBs in edible tissue under category 5a on the Texas 2012 Clean Water Act Section 303(d) List. The receiving stream for Outfall 001, the Gulf of Mexico in Segment 2501 is listed for bacteria and mercury in edible fish tissue, under category 5c.

TCEQ's category 5a, implies that a TMDL is underway, scheduled, or will be scheduled while category 5c implies that additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. In light of the nature of the system, the discharger is not likely going to contribute bacteria, mercury in edible fish tissue, dioxin and PCBs in edible tissue. Therefore, no additional requirements beyond the previously described technology-based or water quality-based effluent limitations and monitoring requirements, are established in the proposed permit.

## **VIII. 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. There are no increases of pollutants being discharged to the receiving waters authorized in the proposed permit.

## **IX. 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. The

removal of DO and salinity at Outfall 008 requirements do not constitute antibracksliding since they are based on new information.

## **X. ENDANGERED SPECIES**

The Environmental Protection Agency has evaluated the potential effects of this permit upon listed or proposed endangered or threatened species. Using available tools, primarily the U.S. Fish and Wildlife Service web page, Endangered Species List, EPA Region 6 has determined that discharges proposed to be authorized by the proposed permit may affect but not likely to adversely affect the Green sea turtle (*Chelonia mydas*); Hawksbill sea turtle (*Eretmochelys imbricata*); Kemp's ridley sea turtle (*Lepidochelys kempii*); Leatherback sea turtle (*Dermochelys coriacea*); Loggerhead sea turtle (*Caretta caretta*); and piping Plover (*Charadrius melodus*).

### **SPECIES FOUND IN JEFFERSON COUNTY**

Six species in Jefferson County are listed as Endangered or Threatened, according to the most recent listing on the U.S. Fish and Wildlife Service web page for the Southwest Region Ecological Services office at [http://www.fws.gov/southwest/es/ES\\_Lists\\_Main.cfm](http://www.fws.gov/southwest/es/ES_Lists_Main.cfm). The piping Plover (avian) and the green sea turtle (reptiles) are endangered and threatened. The Kemp's ridley sea turtle, hawksbill sea turtle and the leatherback sea turtle are listed as Endangered.

Five marine mammals, five turtles, two fish and two invertebrates are listed as endangered or threatened in the Gulf of Mexico according to the National Marine Fisheries Service website at <http://sero.nmfs.noaa.gov/pr/pdf/Gulf%20of%20Mexico.pdf>. The marine mammals are Blue whale, Finback whale, Humpback whale, Sei whale and Sperm whale. All the turtles found in the Jefferson County are also in the Gulf of Mexico. The threatened fish in the Gulf of Mexico is the Gulf Sturgeon; the threatened turtles are the loggerhead sea turtle and green sea turtle, while the threatened invertebrates are the Elkhorn coral and Staghorn coral invertebrates. Information obtained from NMFS reveals that the Smalltooth sawfish, Elkhorn and Staghorn coral species are not present in the area covered under this permit. Since their range is outside the scope of this permit, no further discussion of the species is included in this Biological Evaluation.

### **Description of Federally Listed Threatened and Endangered Species**

Available information from the U.S. Southwest Region Ecological Services web page presents the occurrence of the listed threatened and endangered species in Jefferson 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.

#### **HAWKBILL 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, subadults 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.

## **SPECIES FOUND IN THE GULF OF MEXICO**

### **BLUE WHALE (*Balaenoptera musculus*)**

The blue whale is the largest of the whales and, in the North Atlantic, can grow to 89 feet in length and weigh nearly 300,000 pounds. Krill is the main food of this species. They range from the subtropics to Baffin Bay and the Greenland Sea, but are rarely seen in continental shelf waters along the eastern coast of the United States. Blue whales have been known to occasionally stray into the Gulf of Mexico. The historic decline in this species is thought to be the result of hunting, which has since ceased. On-going human impacts include: collisions with ships, disturbance by vessels, entrapment and entanglement in fishing gear, acoustic and chemical pollution, and military operations.

### **FINBACK WHALE (*Balaenoptera physalus*)**

The finback whale is the second largest whale species, growing to more than 75 feet in length and 150,000 pounds. This species is found throughout the North Atlantic from the Gulf of Mexico northward to the edges of the polar ice cap and tend to occur over the continental shelf and slope in greater than 650 feet of water. Fin whales are thought to migrate seasonally and feed in more northerly latitudes while fasting in southerly latitudes. Their diet consists of krill, capelin, herring, and sand lance. Like the other endangered whale species, the reason for decline of the finback whale is historic hunting. Existing human impacts include: collisions with ships, disturbance of vessels, entrapment and entanglement in fishing gear, habitat degradation, and military operations. Presently, hunting in the North Atlantic only occurs in Greenland. Under the International Whaling Commission's aboriginal subsistent whaling authorization 20 are allowed to be taken each year.

### **HUMPBACK WHALE (*Megaptera novaeangliae*)**

The humpback whale grows in length up to 59 feet and can weigh up to 97,000 pounds. Diet of the humpback whale consists of krill, other large zooplankton, and small schooling fish. This species is known to occur in all ocean basins worldwide and it generally inhabits areas over the continental shelves, their slopes, and near some oceanic islands. Humpback whales are

migratory, summering in higher latitudes (35 to 65 degrees) and wintering in tropical or temperate latitudes (10 to 23 degrees). Feeding is thought to mainly occur in the more productive summer range. They are not thought to normally inhabit the Gulf of Mexico. The only known observations in the Gulf were off the Cuban coast in 1918 and Tampa Bay in 1962 and 1989. Historic hunting led to the decline of the species. Existing causes of human impact are: entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

### **Sei Whale (*Balaenoptera borealis*)**

In the western North Atlantic, sei whales are known to occur from western Greenland to the southeastern United States. Like other whales, they tend to spend the summer in the northern latitudes and winter farther south. They tend to prefer deep water and can be found over the continental slope, basins between banks, and submarine canyons. Sei whales do not normally enter semi-enclosed waters such as the Gulf of Mexico or the Gulf of Saint Lawrence. However, there are recorded strandings along the northern coast of the Gulf of Mexico. Their preferred food consists of calanoid copepods and krill. Major human impacts to the species include: collisions with ships, disturbance from vessels, entrapment and entanglement in fishing gear, and military operations.

### **Sperm whale (*Physeter macrocephalus*)**

The sperm whale is the largest of the toothed whales average 62 feet in length and can weigh as much as 120,000 pounds. They feed on a large deep water squid and a variety of fish. This species occurs throughout most of the oceans from the tropics to the polar ice caps. Sperm whales generally occupy deep waters and are rarely seen over the continental shelf. Like the other whale species, historic hunting resulted in their decline. Existing human impacts are: entrapment and entanglement in fishing gear, collisions with ships, and acoustic disturbance from ships, and aircraft.

### **Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)**

The gulf sturgeon, an anadromous fish, is found in riverine environments during the summer months and migrates to warmer water in estuaries and the near shore Gulf of Mexico during winter. Adult Gulf sturgeon usually spends approximately three quarters of the year in rivers and one quarter (cooler months) in estuaries or Gulf of Mexico waters. Younger Gulf sturgeon does not tend to migrate to open waters of the Gulf, but remain in riverine and estuarine environments. The fish has a sub-cylindrical body and a snout extending from the lower surface of the head which is blade-like in shape. Adult Gulf sturgeon generally grows to 227 centimeters in length. This sub-species is a bottom feeder tending to consume amphipods, crustaceans, oligochaetes, polychaetes and chironomid and ceratopogonid larvae. They have been found to eat during the three to four months they are in the marine environment and fast the remainder of the year while in the freshwater environment. Commercial fishing and habitat destruction are the main causes for the decline of this species. Means of habitat destruction include construction of dams which interfere with migration, dredging, and decreased ground water flows.

The mammals are usually found near shores, bays, lagoons, river mouth/tidal rivers and shallow water. Shallow coastal waters, estuaries, bays, rivers, and lakes; throughout most of the range, appears to prefer rivers and estuaries to marine habitats.

The mammal is primarily dependent upon submerging, emerging, and floating vegetation; diet varies according to plant availability; may opportunistically eat other foods (e.g., acorns in early winter in Florida, fishes caught in gill nets in Jamaica).

It is threatened by high mortality often associated with human activity (especially collisions with boats in Florida), in conjunction with low reproductive rate and habitat loss. It is vulnerable to catastrophic mortality when gathered in large numbers at winter aggregation sites in Florida. Some die when caught in water control structures. Hunting is responsible for the decline throughout much of the range. Low tolerance of human disturbance in calving areas, but moderately tolerant of swimmers in wintering sites. It has potential as weed/plant consumer in clogged waterways; benefits from some human disturbances, such as thermal pollution.

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

#### **Turtles**

Many of the threats to listed threatened or endangered turtle species are related to activities in coastal areas and 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 turtle species.

Threats to turtle species which could be related to Petroleum Bulk Stations and Terminals in the area covered under the proposed permit include: oil spill during brine discharge, industrial pollution, and boat collisions. Of those potential threats, only oil spill during brine discharge is directly relevant to the proposed discharges. The proposed renewal 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 Oil & Grease, Total Suspended Solids, Total Dissolved Solids, Biochemical Oxygen Demand, flow and pH. The proposed permit is written to include limitations and monitoring requirements on those parameters as a continuation of the conditions in the current permit.

#### **Whales**

The reason for decline in numbers of most of the whale species is historic hunting. Hunting has ceased in the Gulf of Mexico and North Atlantic with the exception of a small amount of subsistence hunting for fin whales near Greenland.

The existing threats to the endangered or threatened whale species include: entrapment or entanglement in fishing gear, collision with ships, habitat destruction such as dredging or sewer discharges, disturbance by vessels, acoustic and chemical pollution, military operations, and acoustic disturbance from ships, and aircraft. Reissuance of the proposed permit will have no effect on the threats of entrapment or entanglement in fishing gear or military operations. Authorization of the proposed discharges will not increase or decrease the potential effects of entanglement or entrapment in fishing gear or military operations. The other threats, which include: collision with ships, acoustic disturbance, habitat destruction, disturbance by vessels, and chemical pollution, can be indirectly associated with Bulk Petroleum Storage and Terminals.

Chemical pollution is noted by the recovery plan for the blue whale as a threat to that species. It is not listed in the recovery plans for other whale species as a threat to those species. Although the discharges which are proposed to be authorized will contain pollutants, sufficient controls will be required to protect the environment and mitigate potential effects on listed threatened or endangered whales.

The threat to listed whale species from collision with or disturbance from vessels is indirectly related to the proposed authorization of the discharges.

Habitat destruction is a potential threat to several of the listed threatened or endangered whale species. The proposed permit will not affect the habitat of the listed threatened or endangered species.

### **Fish**

Discharges proposed to be authorized by this permit renewal will not affect the main human induced threats to the Gulf sturgeon of habitat destruction or commercial fishing. Causes of habitat degradation are: construction of dams which interfere with migration, ground water usage which diminish the natural flow to rivers, and dredging. Those factors occur in inland waters and not in the area of the Gulf of Mexico covered under this permit. Commercial fishing is also not expected to change as a result of the discharges proposed to be authorized by this permit renewal.

Adult sturgeon may occasionally occur, during the winter months. However, those discharges are highly intermittent and short term in nature. The proposed permit contains requirements for discharges to limit potential toxic effects to aquatic species, including the Gulf sturgeon.

### **Determination**

The permit renewal reflected here does not change the nature or volume of the pollutants from the current condition. EPA is unaware, at this time, of any service concerns regarding this discharge and believes that the change in compliance period will have no effect on listed species and designated critical habitat. The permit has retained the limitations and conditions of the expiring permit. EPA believes these limitations are adequate to protect the listed species for Jefferson County and the Gulf of Mexico.

Based on information described above, EPA Region 6 has determined that discharges proposed to be authorized by this permit renewal may affect but are not likely to adversely affect the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), blue whale (*Balaenoptera musculus*), finback whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*) humpback whale (*Megaptera novaeangliae*) and sperm whale (*Physeter macrocephalus*), Kemps ridley turtle (*Lepidochelys kempii*), loggerhead turtle (*Caretta caretta*), leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricata*), green turtle (*Chelonia mydas*) and piping plover (*Charadrius melodus*), nor is the proposed action likely to result in destruction or adverse modification of designated critical habitat.

In accordance with 50 CFR 402, EPA shall meet its obligation to ensure its actions are not likely to jeopardize the continued existence of any listed species or will result in the destruction or adverse modification of critical habitat. EPA will consult on this determination with the National Marine Fisheries Service and Fish and Wildlife Service and will not proceed with final issuance of this permit prior to fulfilling its obligations under the Endangered Species Act.

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.

## **XI. OCEAN DISCHARGE CRITERIA EVALUATION (40 CFR PART 125)**

The permittee had previously prepared an Ocean Discharge Criteria document (see *Ocean Discharge Criteria Document for Big Hill Salt Dome, Jefferson County, Texas, December, 1982*) and addressed each of the ten factors considered in the determination of unreasonable degradation of marine environment. These factors include: (1) Potential for bioaccumulation or persistence of the pollutants to be discharged; (2) The potential transport of such pollutants by biological, physical or chemical processes; (3) The composition and vulnerability of the biological communities which may be exposed to such pollutants including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act or the presence of those species critical to the structure or function of the ecosystem such as those important for the food chain; (4) The importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways or areas necessary for other functions or critical states in the life cycle of an organism; (5) The existence of special aquatic sites including but not limited to marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas and coral reefs; (6) The potential impacts on human health through direct and indirect pathways; (7) Existing or potential recreational and commercial fishing, including fin fishing and shell fishing; (8) Any applicable requirements of an approved Coastal Zone Management Plan; (9) Such other factors relating to the effects of the discharge as may be appropriate, and (10) marine water quality criteria developed pursuant to Section 304 (a)(1).

Since the proposed permit contains limitations which will protect water quality and in general reduce the discharge of toxic pollutants to the marine environment, the Region finds that discharges proposed to be authorized by the permit will not cause unreasonable degradation of the marine environment. In addition, based on the Ocean Discharge Criteria document as well as the results of the latest DMR, Big Hill brine discharge, operating in compliance with the permit, will not cause unreasonable degradation of the marine environment. However, the permit shall be modified or revoked at any time if, on the basis of any new data, the director determines that continued discharges may cause unreasonable degradation of the marine environment.

## **XII. MAGNUSON-STEVENSON FISHERIES CONSERVATION & MANAGEMENT ACT**

The Magnuson-Stevens Fisheries Conservation and Management Act require federal agencies proposing to authorize actions that may adversely affect essential fish habitat to consult with National Marine Fisheries Service (NMFS). The entire Gulf of Mexico has been designated Essential Fish Habitat. EPA has determined that this permit issuance will not adversely affect essential fish habitat. The Agency will seek concurrence from NMFS before the final permit is issued.

## **XIII. COASTAL ZONE MANAGEMENT ACT**

EPA has determined that the activities which are proposed to be authorized by this permit reissuance are consistent with the local and state Coastal Zone Management Plans. The proposed permit and consistency determination was made by EPA.

The proposed permit limits are consistent with the TCEQ's Water Quality Management Plan for Segment No. 702 (Intracoastal Waterway) and 2501 (Gulf of Mexico).

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

According to supplemental information submitted by the permittee, the Texas Historical Commission responded in a letter dated August 15, 2012, stating that the project may proceed without any further consultation. The issuance of the permit should have no impact on historical and/or archeological sites since no significant archeological deposits are encountered during construction and development of the property.

## **XV. COMPLIANCE HISTORY**

Monitoring frequency reduction was considered. Copies of the Discharge Monitoring Report (DMR) reviewed indicated that this facility has had about six excursions in three episodes in 2012. These excursions include for Outfall 001 – brine diffuser; missed sample on a single brine flow in November 2012, which produces monthly testing requirement infractions for: pH, TSS, TDS, and O & G. For Outfall 002 – treated sanitary wastewater; low pH (5.7 s.u.) on a monthly discharge sample. For Outfall 002 – treated sanitary wastewater; low pH (5.8 s.u.) on monthly discharge sample.

The permittee is commended on achieving an overall annual site compliance rate of 100 % in 2009, 2010 and 2011, and 99.1 % in 2012. Based on these and for the reasons stated above, the draft permit establishes a semi-annual monitoring requirement for Outfalls 003, 005, 006, and 007.

The permittee also had salinity excursions due to extreme drought beyond process or operational control of stormwater at remotely located Outfall 008. There was one quarterly salinity value in July 2011; two quarterly salinity values, in January and October 2012. There were three quarterly excursions for Outfall 008 in 2013 as opposed to one excursion in 2013 cited by the permittee. However, the permittee submitted additional information on its discharges from Outfall 008 and the receiving stream data for salinity. Analyses of these data show that the receiving stream is highly saline, in most cases above the 8ppt permit limit. As a result, the proposed permit revert salinity limitation to a monthly reporting requirement. The facility shall also monitor salinity in the receiving stream on a monthly frequency.

#### **XVI. 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.

#### **XVII. VARIANCE REQUESTS**

No variance requests have been received.

#### **XVIII. CERTIFICATION**

The permit is in the process of certification by the 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.

#### **XXIII. ADMINISTRATIVE RECORD**

The following information was used to develop the proposed permit:

##### **A. APPLICATION**

NPDES Application for Permit to Discharge, Form 1 & 2C, dated July 15, 2013.

##### **B. REFERENCES**

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

"Implementation of the Texas Commission on Environmental 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 24, 2012.

<http://www.nmfs.noaa.gov/pr/species/fish/smalltoothsawfish.htm>

<http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Pristis+pectinata>

<http://www.nmfs.noaa.gov/pr/species/invertebrates/elkhorncoral.htm>

#### C. 40 CFR CITATIONS

Sections 122, 124, 125, 133, and 136

NPDES Permit TX0074012, issued on 12/29/08, effective February 1, 2009, and expires January 31, 2014.

#### D. MISCELLANEOUS CORRESPONDENCE

Letter from Dorothy Brown, EPA, to Mr. W.C. Gibson, Jr., Project Manager, dated January 21, 2014, informing applicant that its' NPDES application received July 26, 2013, is administratively complete.

Letter from Jenaie Franke, EPA, to Mr. Thomas Westbrook, dated November 22, 2013, informing applicant that its' NPDES application received July 26, 2013, is administratively incomplete.

Email from Andrea Abshire, EPA, to Maria Okpala, EPA, dated December 10, 2013, on Outfall location information.

E-mails from Thomas Westbrook, at DynMcDermott Petroleum, contractor to Bryan Mound Strategic Petroleum Reserve, to Maria Okpala, EPA, 12/20/13, 12/11/13, 12/2/13, 11/26/13, & 11/25/13 on additional Permit application information.