

**NPDES PERMIT NO. TX0002887**  
**STATEMENT OF BASIS**

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

**APPLICANT:**

Targa Resources  
Mont Belvieu Fractionation Plant  
P.O. Box 10  
Mont Belvieu, Texas 77580

**ISSUING OFFICE:**

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

**PREPARED BY:**

Maria E. Okpala  
Environmental Engineer  
NPDES Permits Branch (6WQ-PP)  
Water Quality Protection Division  
Voice: 214-665-3152  
Fax: 214-665-2191  
Email: okpala.maria@epa.gov

**DATE PREPARED:**

July 17, 2012

**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 July 6, 2012.

**RECEIVING WATER – BASIN**

Unnamed tributary of Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity – San Jacinto Coastal Basin; Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity – San Jacinto Coastal Basin

**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
MLQ	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. Monitoring and reporting requirements for total zinc and total copper at Outfall 002 have been removed from the proposed permit based on application information data.
2. Limitations and monitoring requirements for total copper have been established at Outfall 001 based on application information data.
3. A WET limit as well as a 3 year compliance schedule has been established for *Mysidopsis bahia* at Outfall 002.
4. Internal Outfall 101 has been established in the proposed permit based on information obtained from the permit application.

## II. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 1321, the applicant operates a natural gas liquid plant.

As described in the application, the facility is located at 10319 Hwy 146 North, Mont Belvieu, Chambers County, Texas. The plant consists of approximately 80 acres in Mont Belvieu quadrangle. The facility is planning to expand the existing facility, Train 4. Wastewater discharges from the facility are as follows:

Discharges from Outfall 001 consist of stormwater which flows into unnamed tributary of Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity – San Jacinto Coastal Basin.

Discharges are located on that water at:

Outfall 001: Latitude 29° 50' 14.85"N; Longitude 94° 54' 15.91"W

Discharges from Outfall 002 consist of existing process wastewater outfall which flows directly into Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity – San Jacinto Coastal Basin at the following:

Outfall 002: Latitude 29° 49' 44.84"N; Longitude 94° 54' 43.33"W

The proposed internal Outfall 101 for Train 4 which consists of process wastewater will be directed into the central ditch, which ultimately flows through Outfall 001. Discharges from internal Outfall 101 are located at the following:

Outfall 101: Latitude 29° 50' 18.30"N; Longitude 94° 53' 55.23"W

## III. PROCESS AND DISCHARGE DESCRIPTION

The facility receives natural gas liquids (NGLs) via pipeline and truck. The NGLs are fractionated into ethane, ethane/propane mix, propane, normal butane, isobutene, and natural gasoline. The NGL fractions are transported off-site via pipeline, railcar, or transport truck. Underground salt dome storage of both Y-grade (raw NGLs) and other fractionated NGLs also occur at the site.

Process water is generated from cooling tower blowdown, boiler blowdown, reverse osmosis flush water, emergency water/plant service water and stormwater runoff. The average flow from Outfall 001 over the past 2 years is 0.234 MGD, with a maximum 30 day value of 0.557 MGD. Similarly, for Outfall 002, the average flow from Outfall 002 is 0.194 MGD, with a maximum 30 day value of 0.289 MGD. The facility anticipates that the quantity and quality of process wastewater discharged from Train 4 will be similar to conditions for Outfall 002.

### Table 1: Discharge Characteristics

The table below shows facility's pollutant concentrations contained in the NPDES application.

#### Outfall 001:

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.557	0.234
pH, su	6.59 min – 8.64 max	
TSS	26.2	
TOC	6	
COD	37	
BOD	53.6	9.94
Oil & grease	<2.98	
Bromide	2.23	
Flouride	5.18	
Ammonia (as Nitrogen)	<0.1	
Nitrogen, Total Organic	0.64	
Sulfate	28.7	
Cadmium	<0.01	
Chromium	<0.01	
Iron	1.41	
Magnesium	2.619	
Phosphorus	0.22	
Aluminum	1.879	
Arsenic	<0.01	
Barium	0.1	
Nickel	<0.01	
Manganese	0.031	
Molybdenum	<0.02	
Copper	0.014	
Zinc	0.079	
Phenols	<0.05	
Benzene	<0.01	
Bromoform	<0.005	
Chloroform	<0.01	
Ethylbenzene	<0.005	
Toluene	<0.005	

**Outfall 002:**

<b>Parameter</b>	<b>Max Concentration, mg/L unless noted</b>	<b>Average Concentration, mg/L unless noted</b>
Flow, MGD	0.289	0.194
pH, su I	6.45 min – 8.80 max	
TSS		
TOC	17	
BOD <sub>5</sub>	11.80	4.15
COD	88	
TOC	17	
TSS	25.2	
Oil & grease	<2.9	
Chromium	<0.01	
Ammonia (as Nitrogen)	<0.1	
Bromide	22.6	
Fluoride	12.1	
Nitrogen, Total Organic	0.95	
Sulfate	799	
Cadmium	<0.01	
Iron	0.103	
Phosphorus	1.41	
Aluminum	0.057	
Arsenic	<0.01	
Barium	0.939	
Copper	106 ug/L	13.3 ug/L*
Nickel	<0.01	
Magnesium	19.477	
Molybdenum	0.060	
Manganese	0.012	
Zinc	73.3 ug/L	12.6 ug/L*
Phenols	<0.05	
Benzene	<0.01	
Bromoform	0.015	
Chloroform	<0.01	
Ethyl Benzene	<0.005	
Toluene	<0.005	

\* 2 years of DMR data used for reasonable potential

#### **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 2C and process/discharge description) was received on May 2, 2012, and was deemed administratively incomplete on May 8, 2012. Additional permit application information was received on May 22, 2012; and was deemed administratively complete on May 31, 2012.

## **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 BOD5. Water quality-based effluent limitations are established in the proposed draft permit for pH and copper.

#### **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 previous permit established reporting only requirements for BOD5 at Outfall 001, discharge of intermittent stormwater. The proposed internal Outfall 101 for Train 4 which consists of

process wastewater will be directed into the central ditch, which ultimately flows through Outfall 001. The proposed permit establishes an internal Outfall 101 with limitations and monitoring requirements for BOD<sub>5</sub> of 20 mg/l monthly average and 30 mg/l daily maximum. The estimated process flow provided in the application for internal Outfall 101 is 0.432 MGD. The loading limits are calculated as follows:

lbs/day = Concentration of pollutant (mg/l) multiplied by 8.34 multiplied by Flow (MGD)

BOD<sub>(5)</sub> monthly average : 20 mg/l x 8.34 x 0.432 MGD = 72 lbs/day

EPA calculates the daily maximum values by multiplying the daily average by 1.5.

BOD<sub>(5)</sub> daily maximum: = 108 lbs/day

The previous permit also established limitations and monitoring requirements for BOD<sub>5</sub> of 20 mg/l monthly average and 30 mg/l daily maximum at Outfall 002. These requirements shall be continued in the proposed permit. Since flow is continuous, mass limits was also established and will be established in the proposed permit as follow:

lbs/day = Concentration of pollutant (mg/l) multiplied by 8.34 multiplied by Flow (MGD)

BOD<sub>(5)</sub> monthly average : 20 mg/l x 8.34 x 0.432 MGD = 72 lbs/day

EPA calculates the daily maximum values by multiplying the daily average by 1.5.

BOD<sub>(5)</sub> daily maximum: = 108 lbs/day

EPA notes that the current permit erroneously calculated BOD<sub>(5)</sub> loading limits as 88 lbs/day for monthly average and 133 lbs/day for daily maximum.

Stormwater has been identified by the permittee as a component of the discharge through Outfall No. 001. A requirement to develop a Stormwater Pollution Prevention Plan (SWP3) is proposed 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 proposed 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.

## C. 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 Cedar Bayou Tidal, Segment 0901 are contact recreation and high aquatic life.

#### 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 Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity-San Jacinto Coastal Basin. The designated uses of Segment 0901, Cedar Bayou Tidal are contact recreation and high aquatic life. The instream pH standards for the Cedar Bayou Tidal, waterbody Segment 0901 is in the range of 6.5 to 9.0 su's. The current permit established pH limits of 6.5 - 9 at both Outfalls and is continued in the proposed permit.

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 Outfalls 001 and 002:

“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.

The previous permit established the rationale that the discharge via Outfall 001 enters a freshwater streambed, and then within three-miles, enters an estuarine system. As a result, the discharge via Outfall 001 must first protect freshwater acute WQS, and human health and chronic protection shall be based on estuarine WQS. TSS, pH, hardness, and chlorides data for the freshwater Segment, Cedar Bayou above Tidal, will be used for the freshwater acute conditions. These values are 4 mg/l, 7.14 s.u., 54 mg/l, and 81 mg/l respectively for Segment 0902, Cedar Bayou above Tidal.

For Outfall 001, the facility discharges into unnamed tributary of Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity- San Jacinto Coastal Basin. The critical low flow, 7Q2 for Segment 0901, Cedar Bayou above Tidal is 0.66 cfs (0.43 MGD), while the harmonic mean is 2.64 cfs. TCEQ'S TEXTOX Menu 9 (Discharge to an intermittent water body within 3 miles of a tidal water body(< 400 ft) with upstream flow information), is appropriate for evaluating the discharge.

For Outfall 002, discharge is directly to a tidal water body, Cedar Bayou Tidal in Segment 0901. The segment specific values for Cedar Bayou Tidal, Segment 0901 are TSS of 18 mg/l, hardness is 1700 mg/l, pH is 7.5 s.u., and chloride is 2570 mg/l. The critical low flow, 7Q2 for Segment 0901, Cedar Bayou above Tidal is 0.66 cfs (0.43 MGD), while the harmonic mean is 2.64 cfs. TCEQ'S TEXTOX Menu 6 (Discharge is directly to a tidal water body (<400 ft) with upstream flow information) is appropriate for evaluating the discharge.

For Outfall 001, the reasonable potential calculations were performed based on data obtained from the permit application using Menu 9 model run. Also the application shows that for stormwater discharge, the maximum 30-day flow during the last two years for Outfall 001 is 0.557 MGD (0.862 cfs). Since the facility is expanding i.e. discharges from internal Outfall 101 will comingle with Outfall 001. Furthermore, the maximum 30-day flow from Outfall 002 (0.289 MGD) is representative to that of Outfall 101. As a result, total discharge flow from Outfall 001 used for reasonable potential is 0.557 MGD +0.0.289 MGD = 0.846 MGD(1.31 cfs)

For end-of-pipe acute WQS protection, the mixing zone is 100 %. For the chronic WQS protection, the dilution from the receiving stream is allowed. The effects of the discharge into Cedar Bayou Tidal,  $E_F$ , are based on a narrow tidal river. The Texas implementation Standards identifies two separate effluent fractions,  $E_F$ 's that are evaluated. One  $E_F$  is at the edge of the mixing zone (MZ), and the second  $E_F$  at the zone of initial dilution (ZID). For perennial streams and narrow tidal rivers, 25% of the 7Q2 is used to calculate the dilution at the edge of the ZID. The dilutions are determined as follows:

$$E_F @ \text{Edge of MZ} = \frac{Q_E}{Q_S + Q_E}$$

$Q_E$  = effluent flow;  $Q_S$  = 7Q2 stream flow

$$E_F @ \text{Edge of MZ} = \frac{1.31}{0.66 + 1.31} = 0.665$$

$$E_F @ \text{Edge of ZID} = \frac{Q_E}{[(0.25 \times Q_S) + Q_E]}$$

$$E_F @ \text{Edge of ZID} = \frac{1.31}{[(0.25 \times 0.66) + 1.31]} = 0.888$$

$$\% \text{ effluent @ edge of Human Health mixing zone (HHMZ)} = \frac{Q_E}{Q_E + HM} \times 100\%$$

where:  $Q_E$  = effluent flow;  $HM$  = harmonic mean flow

$$= \frac{1.31}{1.31 + 2.64} \times 100\%$$

$$= 33.16\%$$

For Menu 9 model run, the reasonable potential calculations performed for Outfall 001 show that copper is greater than 85% of the calculated daily average limit. As a result, copper shows reasonable potential to violate TSWQS. The proposed permit establishes limitations and monitoring requirements for total copper

For Outfall 002, the facility discharges directly into Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity-San Jacinto Coastal Basin. The facility also installed a diffuser in

order to lower the impact of the effluent discharge on the receiving waters. The permittee submitted a CORMIX mixing zone model (Version 7.0) which demonstrated the impacts of the discharge on the receiving water. The model reviewed by EPA was found to be technically sound, determined that under conservative assumptions, the chronic effluent percent for aquatic life, at the MZ, is 3.12% , the acute effluent percent for aquatic life, at the ZID, is 6.39%, and the human health mixing zone is 2.52%.

TCEQ'S TEXTOX Menu 6 – Narrow Tidal River is appropriate for evaluating the discharge. Acute criteria are applied at the edge of the zone of initial dilution (ZID); chronic criteria are applied at the edge of the aquatic life mixing zone.

The reasonable potential calculations were performed for discharges into the Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity-San Jacinto Coastal using TCEQ'S TEXTOX Menu 6. Also the application shows that the maximum 30-day flow during the last two years for Outfall 002 is 0.289 MGD.

Results of the model run for Outfall 002 reveal that none of the pollutants show reasonable potential to violate TSWQS. The current permit has monitoring requirements for total copper and total zinc. EPA notes that both total zinc and total copper did not show reasonable potential to violate TSWQS. As a result, total zinc and total copper monitoring requirements are removed from the proposed permit

#### 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.

For all Outfalls, flow shall be monitored daily using a recording flow meter. For internal Outfall 101 and Outfall 002, BOD<sub>5</sub> shall be measured and reported once per two weeks, using grab sample. For Outfall 001, copper shall be measured and reported once per two weeks using grab sample. For any reporting period, copper, pH and BOD<sub>5</sub> samples shall be taken at least seven (7) days from the first sample of the previous reporting period.

#### 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.

OUTFALL 101 (representative of process wastewater from Outfall 001)

EPA is repositioning the WET requirements at Outfall 001 (combined stormwater plus process wastewater) to internal Outfall 101 (process wastewater only) since it is more restrictive. Outfall 101 is from a new process NGL plant.

The 2003 TCEQ Implementation Plan directs the WET test to be a 7 day chronic test using *Mysidopsis bahia* and *Menidia beryllina* at a once per 3 months frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the either or both test species for the following 2-5 years of the permit. The vertebrate species (*Menidia beryllina*) may be reduced to once per year. The invertebrate species (*Mysidopsis bahia*) may be reduced to twice per year. If any tests fail during that time the frequency will revert back to the once per three months frequency for the remainder of the permit term. The both species shall resume quarterly monitoring at a once per three months frequency on the last day of the permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 17%, 23 %, 30%, 40%, and 53%. The low-flow effluent concentration (critical low-flow dilution) is defined as 40% effluent. Note the maximum 30-day flow during the past two years used to compute critical dilution at internal Outfall 101 is 0.289 MGD (0.448 CFS). Outfall 002 is representative of internal Outfall 101

DMR reports reveal three (3) passing test for both the *Mysidopsis bahia* and *Menidia beryllina* species during the last permit term for Outfall 001. Outfall 101 will now regulate the process wastewater that is discharged to outfall 001 so biomonitoring will hereby be established at the 101 outfall in lieu of outfall 001 that would dilute the process wastewater with stormwater. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP exists but EPA concludes that since this effluent did not cause or contribute to an exceedance of the State water quality standards, WET limits will not be established in the proposed permit.

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 101 thence to unnamed tributary of Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity- San Jacinto Costal Basin. Discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE MONITORING</u>
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<u>30-DAY AVG MINIMUM</u>	<u>7-DAY MINIMUM</u>
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Whole Effluent Toxicity Testing  
(7 Day Static Renewal) 1/

*Mysidopsis bahia*  
*Menidia beryllina*

REPORT  
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REPORT

EFFLUENT CHARACTERISTICMONITORING REQUIREMENTSFREQUENCYTYPE

Whole Effluent Toxicity Testing  
(7 Day Static Renewal) 1/

*Mysidopsis bahia*

1/Quarter

24-Hr. Composite

*Menidia beryllina*

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.

OUTFALL 002

The 2003 TCEQ Implementation Plan directs the WET test to be a 48 hour acute test using *Mysidopsis bahia* at a once per 3 months frequency for the first year of the permit. The permittee will be granted three years to come into compliance with the Whole Effluent Toxicity limit for the *Mysidopsis bahia* test species. A three year compliance schedule is appropriate because it gives the permittee ample time to acquire funding, perform a toxicity study to identify/understand the source of toxicity, then upgrade the facility's equipment where needed while still attaining compliance with the WET limit as soon as possible.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 13%, 17%, 23%, 31%, and 41%. The low-flow effluent concentration (critical low-flow dilution) is defined as 31 % effluent.

The previous permit established WET biomonitoring with CD = 30%. DMR reports reveal failing WET tests for the *Mysidopsis bahia* test species during the last permit term. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP exists. EPA concludes that this effluent has and will cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will be established in the proposed permit.

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 002 - the discharge to Cedar Bayou Tidal in Waterbody Segment Code No. 00901 of the Trinity- San Jacinto Coastal Basin. Discharges shall be limited and monitored by the permittee as specified below:

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 002 - the discharge to Cedar Bayou Tidal in Waterbody Segment Code No. 00901 of the Trinity- San Jacinto Coastal Basin. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS	
	30-DAY AVG MINIMUM	48-Hr. MINIMUM
Whole Effluent Lethality (PCS 22414) (48 Hr. NOEC) <u>1/</u>	31%	31%
<i>Mysidopsis bahia</i>	REPORT	REPORT

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
	FREQUENCY	TYPE
Whole Effluent Lethality (48 Hr. NOEC) <u>1/</u>		
<i>Mysidopsis bahia</i>	1/Quarter	24-Hr. Composite

#### FOOTNOTES

1/ Monitoring and reporting requirements begin on the effective date of this permit. Compliance with the Whole Effluent Toxicity limitations is required three years from the permit effective date. See PART I, Compliance Schedules, and Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

#### OUTFALL 002

The 2003 TCEQ Implementation Plan directs the WET test to be a 48 hour acute test using *Menidia beryllina* at a once per 3 months frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the following 2-5 years of the permit. The vertebrate species (*Menidia beryllina*) may be reduced to once per year. If any tests fail during that time, the frequency will revert back to the once per three months frequency for the remainder of the permit term. This test species shall resume quarterly monitoring at a once per three months frequency on the last day of the permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 13%, 17%, 23%, 31%, and 41%. The low-flow effluent concentration (critical low-flow dilution) is defined as 31% effluent.

The previous permit established WET biomonitoring with CD = 30%. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP does not exist. EPA concludes that this effluent does not cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will not be established in the proposed permit.

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 002 - the discharge to Cedar Bayou Tidal in Waterbody Segment Code No. 00901 of the Trinity- San Jacinto Coastal Basin. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE MONITORING	
	<u>30-DAY AVG MINIMUM</u>	<u>48-Hr. MINIMUM</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) <u>1/</u>		
<i>Menidia beryllina</i>	REPORT	REPORT

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
	<u>FREQUENCY</u>	<u>TYPE</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) <u>1/</u>		
<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.

**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.

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

Wastewater discharges from the facility flows into Cedar Bayou Tidal in Waterbody Segment Code No. 0901 of the Trinity – San Jacinto Coastal Basin. The receiving stream is listed as impaired for bacteria (Category 5c), dioxin in edible tissue (Category 5a), and PCBs in edible tissue (Category 5a) in the 2010 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 and 5c. Category 5a implies that a TMDL is underway, scheduled, or will be scheduled while Category 5c implies that additional data and information will be collected before a TMDL is scheduled. The facility does not discharge bacteria, dioxin and PCBs. If the waterbody 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.

## 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 proposed permit maintains the limitation requirements of the previous permit for BOD and pH.

## X. 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/EndangeredSpecies/EndangeredSpecies\\_Lists/EndangeredSpecies\\_Lists\\_Main.cfm](http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies_Lists/EndangeredSpecies_Lists_Main.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*.

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.

The Environmental Protection Agency has evaluated the potential effects of issuance of this permit upon listed endangered or threatened species. After review, EPA has determined that the reissuance of this permit will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. No pollutants are identified by the permittee-submitted application at levels which might affect species habitat or prey species. Issuance of this permit is found to have no impact on the habitats of these species.
2. No additions have been made to the US Fish and Wildlife list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
3. EPA has received no additional information since the previous permit was issued April 25, 2007, which would lead to revision of its determinations.
4. EPA determines that Items 1, 2, and 3 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “*no effect*” on listed species and designated critical habitat.

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

The reissuance of the permit should have no impact on historical and/or archeological preservation. The facility has consulted with the local historical and archeological preservation office and has concluded that its construction activities will not have any impact on historical and archeological preservation

## **XII. 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.

## **XIII. VARIANCE REQUESTS**

No variance requests have been received.

## **XIV. COMPLIANCE HISTORY**

The effluent from the facility has been monitored under the conditions of the current permit with a May 1, 2007, effective date. Five years of DMR data has been reviewed and facility was out of compliance for zinc and copper during the period that the interim limits were in effect. Zinc and copper had more stringent limits during the interim period. On the other hand, the facility was in compliance for zinc and copper limits after the interim period, during the time that higher zinc and copper limits were in effect. The higher limits are due to a combination of changes in the water quality standards and the flow rate. In addition, the facility added a diffuser at the end-of-pipe as it enters Cedar Bayou Tidal to effectively lower the critical dilution enabling them to meet the limit on a consistent basis.

DMR reports also reveal failing WET tests for the *Mysidopsis bahia* test species during the last permit term. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP

exists. EPA concludes that this effluent has and will cause or contribute to an exceedance of the State water quality standards. Therefore WET limits have been established in the proposed permit.

## **XV. CERTIFICATION**

This permit is in the process of certification by the State agency 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.

## **XVI. FINAL DETERMINATION**

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

## **XVII. ADMINISTRATIVE RECORD**

The following information was used to develop the proposed permit:

### **A. APPLICATION**

NPDES Application for Permit to Discharge, Form 1 & 2C, received on May 2, 2012, and was deemed administratively incomplete on May 8, 2012. Additional permit application information was received on May 22, 2012; and was deemed administratively complete on May 31, 2012.

### **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**

Email from David McQuade, Environmental Manager, Targa Resources, to Maria Okpala, EPA dated July 16, 2012, on Cormix Modeling results.

Email from Robert Kirkland, EPA, to Maria Okpala, EPA, dated July 12, 2012, and July 16, 2012, on critical conditions information.

Letter from Dorothy Brown, EPA, to Mr David McQuade, P. E., P.G., Targa Resources dated May 31, 2012, informing applicant that its NPDES application received May 2, 2012, is administratively complete.

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